Unity in Environmental Design and Livable Neighborhood

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Abstract

The over resemblance of architectural features often creates a built-environment with monotonous and placelessness. This research attempts to examine the perception of both architects and non-architect persons on their perceptions over design element configurations. A set of simulated photographic stimuli embedded with relevant variables are utilized to persuade answers between two groups of respondents on their perceived unity in the neighborhood. The research suggested that, in order to create a united appearance, architect must pay close attention to wall color consistency and uniformity of roof and pavement color which could help create environmental harmony without boring side effects.

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1. Introduction

In current urban settings, most of activities are occurring at dwellings and surrounding neighborhoods. The physical conditions of residential areas could affect dwellers’ behaviors as well as the socio-economic status of a community. A well configured physical appearance of dwelling units and adjacent to each other and their surrounded environment and landscape are crucial factors contributing to the unity of the neighborhood. These elements play a key role in creating a strong “sense of place” to make a place feel like home, feel like being a part of the community, cherish and love to live in their community. This is a perception held by people who live within a community. It can also strengthen the interrelationship

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among members of the community and finally result in improving social conditions and quality of life. (Nunta, 2003)

Housing estates are a group of built dwelling units in a single project that have been recently gaining popularity. Each estate is usually constructed by a single developer or contractor, with the only few building styles and designs. Housing units in such an estate tend to be uniform in appearance. Unity of urban fabric is made possible by means of elemental resemblance of architecture and their surroundings. The over resemblance of architectural features often creates a built-environment with monotonous and *placelessness. Architects and lay persons frequently disagree with each other over how the arrangements be optimized to suit the needs of young dwellers.

*Places that lack a "sense of place" are sometimes referred to as "placeless" or "inauthentic." Placeless landscapes are those that have no special relationship to the places in which they are located—they could be anywhere. Roadside strip shopping malls, convenience stores, fast food chains and chain department stores are often cited as examples of placeless landscape elements. Even some historic sites or districts that have been heavily commercialized (commodious) for tourism and new housing estates are sometimes defined as having lost their sense of place.

This research attempts to test the perception of both architects and non-architect persons on their perceptions over design element configurations. Following a theoretical and literature survey, a number of architectural elements and environments are grouped to form a list of variables to be applied to the research framework. A set of simulated photographic stimuli embedded with relevant variables were created to be utilized to inquire information from two groups of respondents—architects and non-architect persons—on their perceived unity and livable in the neighborhood. The research suggests the important design elements that can be improve to avoid the united appearance and placelessness of the neighborhood. The study proposes a set of design guidelines for the improvement of building designs towards environmental coherence.

2. Literature Review

The theoretical background for this study is centered on the following line of thoughts: Gestalt theory, the principle of design theories, human perception and the elements of design concepts. Fig.1. demonstrated the frame of relevant concepts and theories that are used as a basis for the literature review. The figure also shows significant linkages between the main concepts and theories being considered in this study as well as the expected results and final suggestion.

![Fig.1. Framework of the literature review](image-url)
Derived from the literature review, the conceptual framework describes all relevant variables and their interrelationships (Figure 2). As showed in Figure 2, the variables can be grouped into three categories: (1) independent variables including personal attributes; (2) intermediate variables including architectural and environmental elements; and (3) dependent variables including the target group’s perceptual responding to resemblance of community.

Fig.2. The research framework

3. Methodology

The study employs the combination of quantitative and qualitative research approaches to examine factors influencing the perception of both architects and adolescence lay persons on their perceptions over design element configurations. Following a theoretical and literature survey, a number of architectural elements are grouped to form a list of variables to be applied to the research framework—roof style, window style, wall style, and house style. Human attributes within the adolescence cohort are also assumed affecting the preference and perception of built-environment. Two series of simulated photographic stimuli—neighborhood with only attach houses and neighborhood with varies type of housing—embedded with variables mentioned earlier were created to be utilized to persuade answers from two groups of respondents—architects and non-architect persons—on their perceived unity in the neighborhood. Variables to be tested include resemblance of roof, void, house styles, exterior color, exterior texture, vegetation, building spacing, plot size, dwelling types, fence style and street design.

The research developed a questionnaire by applying the concept of semantic differential measurement. The questionnaire was used to inquire the target group’s resemblance perception on the different image stimuli. The questionnaire comprised 2 major parts including (1) personal attributes and (2) preference and perception of built-environment. The second part was designed to measure the resemblance perception of the target groups on different set of architectural designs. This part contained 5 adjective words—harmony, complex, monotonous, livable and appropriate to neighborhood—that reflected the 5 types of perception. They were measured the rating of the perceptions and tested the relationship. Table 1 shows the examples of different dwelling and environmental designs that use as visual stimuli in the questionnaire and table 2 is the questionnaire for measure the rating of 5 perceptions.
Table 1. Examples of visual stimuli used in the questionnaire survey

| Neighborhood with only attach houses | Neighborhood with varies type of housing |
|-------------------------------------|------------------------------------------|
| ![Wall Color Consistency](image1)    | ![Wall Color Consistency](image2)       |
| ![Uniformity of Roof and Pavement Color](image3) | ![Uniformity of Roof and Pavement Color](image4) |
| ![Uniformity of Outer Vegetation](image5) | ![Uniformity of Outer Vegetation](image6) |

Table 2. The questionnaire for measure the rating of visual stimuli’s perceptions

| Type of Perception | Rating Scale to The Neighborhood’s Visual Stimuli |
|--------------------|--------------------------------------------------|
|                    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Harmony            |   |   |   |   |   |   |   |
| Complex            |   |   |   |   |   |   |   |
| Monotonous         |   |   |   |   |   |   |   |
| Livable            |   |   |   |   |   |   |   |
| Appropriate to Neighbourhood |   |   |   |   |   |   |   |

4. Results and Discussions

A number of design elements determining the environmental coherence of community are identified. The research also examines the attributes within the human cohort that affect the preference and perception of built-environment. The architectural elements—roof type, window style, wall color, lot size, and house style are grouped and examined the different effects on the perception of two groups of respondents—architects and non-architect persons—one their perceived unity in the neighborhood.
Variables to be tested include resemblance of roof, void, house styles, exterior color, vegetation, building spacing, plot size, and dwelling types.

The research found three issues. First, perception of livable and appropriate to neighbourhood were significantly high correlated. In addition, harmonious was significantly and positively effective to the perception of livable that was controlled by complex and monotonous perceptions. Their over-rated perceptions effected to the low-rated livable perception.

Next, in the case of neighborhood with only attach houses, the most important elements creating a harmonized and livable landscape were wall color resemblance followed by uniformity of roof and pavement color and then uniformity of outer vegetation in the neighborhood. In addition, in the case of neighborhood with varies types of housing, the most important elements creating a harmonized and livable landscape were wall color resemblance.

Finally, This research founded that architects and non-architect persons, in some extent, shared perception on environmental configurations. The most important elements creating a harmonized and livable landscape were wall color resemblance followed by uniformity of outer vegetation in the neighborhood.

5. Conclusion

The research found that architects and non-architect persons, in some extent, shared perception on environmental configurations. Therefore this research suggested that, in order to create a united appearance and avoid placelessness of the neighborhood, architect must pay close attention to wall color consistency which could help create environmental harmony without boring side effects. Uniformity of roof and pavement color and uniformity of outer vegetation in the neighborhood would be also significant factors to be considered in the design of physical features of the livable community.

In addition, these configurations can create a strong “sense of place” in the community. It can also strengthen the interrelationship among members of the community and finally result in improving social conditions and quality of life.

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