CONTEXTUALISM IN ARCHITECTURE: THE DESIGN OF OFFICE BUILDING IN HERITAGE CONTEXT

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ABSTRACT

The first initial investigation is carried out by studying several precedents adapted from the rationalist and modern movement eras. The discussion starts with a question regarding why most office buildings use the international style as their building expression. International style has architectural characteristics such as a simple form, pure structure, simple geometry, glass wall facade, and form follows function. This style mostly shows a need for more identity that responds to local values and expressions. The architectural buildings become placeless and do not represent the place with specific environmental responses and identity (contextual architecture). Additionally, an office building should be able to respond to the users' activities and their identities/characters. This paper is based on the process of a design project, from design thinking, research, and design process to conceptual design proposal. Design thinking is started by asking the question, "what if" the new building design proposal reverses the international style's facts through literature studies? The goals are to create the latest concepts that express their character and image to portray both the users' characters and the location, which is human and environmentally friendly, using contextual analysis. Next, the design process includes explaining and arguing the process, from proposing the design concept to building transformation. Some methods are used to determine the 'big idea' and design criteria and parameters, including the first principle, domain-to-domain transfer, and the site response. The design proposal expresses the building's heritage and its atmosphere, users' characteristics, and low energy efficiency. The design results highlight the "value of the site" and "character of the building user," which are essential to creating the building image and identity.

Keywords: Contextualism, heritage, identity, international style, place

INTRODUCTION

This discussion explains why the international style is mainly used in office design. International style is an expression of modern architecture with rigid structural typology, geometric shape, and form of 90 degrees angle. Form follows function (Wicaksono M R T T, 2020). In addition, the hallmark of the international style is

the facade that has a glass finish, is transparent, and rejects ornaments. The international style is often applied to office building design related to several factors, including function and construction cost. Building cost and construction efficiency determine spatial and structure arrangement, building shape, and form expression. The design also minimizes construction costs, increasing capital efficiency.

This paper represents the exploratory and evaluative studies of the design process of office design by collecting design information that is later translated and transformed into the design concept and schematic design proposal. The study is focused on evaluating the internal aspects of architecture (building form, façade, materials, geometric typology, spatial arrangement) and external elements (interaction, privacy, efficiency, and so on) (Prajnawrdhi T A,2005). The first question is how international-style buildings influence the building expression, quality of space, and building atmosphere. The building form and shape of the international style follow the spatial design arranged rigidly. This principle likely failed to recognize the user's activity and preference expression. Hence, the building offers limited choices for the users to express their needs and wants.

Additionally, lighting, ventilation, and public space have limited exploration and application due to building typology, cost, and capital efficiency. Consequently, the design expression does not respond to the environmental factors and local identity because it keeps its international values and declaration. Besides, the building adopted an international style has less effort to embrace the importance of regional identity even in a country with different cultural contrasts (ex: Asia and Europe). Introducing city "image" to the citizens from architectural building design is a crucial tool to inform and know the meaning of the identity of the city/image in an area (Amar A, 2009). Thus, international-style buildings become lifeless, representing similar characteristics, typologies, and expressions because they only focus on space and construction and ignore locality and culture (Wahjutami E L 2017).

According to previous arguments, the design raises two design problems representing users' requirements and environmental factors. First, what aspects are considered when designing a rental office building placed in the heritage area and specific users? Second, 'what if the design is still considered the international style as starting idea but later reversed that user's and local environmental values are essential factors tangibly and intangibly in the building design? The aims are to give the building a new 'soul and expression' that represents the user's character, activities, and environmental value.

The global idea offered in this situation is to challenge and reverse the international style's main characteristic from *form follows function* into *form follows identity and users' needs* to dig and see how this offer could respond to the local situation based on historical value and other locality aspects. Thus, there are three main focuses in this design. The first is the facade style or expression for the building; the second is how to responses the sense of place (site contexts); and the third is the design user.

THEORY / RESEARCH METHODS

Theory

The focus of this discussion is divided into three aspects. The goals in this part are to infuse those factors, which are the identity of expression, the identity of the users, and the identity of the place, into the design by rebranding the concept to create a specific identity. By considering these aspects, it helps a plan to have value and originality in each context. This is the initial hypothesis made in this investigation. This design is considered information from outside of the domain of architecture which is the user and the place proposing the design ideas and concepts. User characteristics are the type of job, activities, personal characteristics, and needs. The place context is explored from its historical value and environmental expression and forces to get the design information and creative innovation. Architectural theory and tools are essential and will be explained in the following subchapter.

Some theoretical frameworks will be used to help analyze the previously determined aspects and form-making to achieve the required form at this step. First, to explore (the design research phase) the contexts in terms of place or users' characteristics and activities using contextual analysis (White, 1983). Contextual analysis is a method of pre-design research activities that focuses on the conditions and potentials in a site or a specific aspect/value. To carry out contextual analysis, it is necessary to understand what aspects will be studied to provide better results (White, 1983). Contextual architecture is involved in the design process because contextualism emphasizes the relationship between the environment and space and creates a harmonious relationship between the local atmosphere and the architectural design (Tabarsa & Naseri, 2017). Contextual architecture is also a design achievement that has a higher purpose by consistently combining modern architecture with ancient architecture (Tabarsa & Naseri, 2017). Contextualism is one way to solve problems regarding the historical environment by constructing new buildings in that place (Jon-nwakalo, 2019). Second, to process the aspects obtained from the design research, the *first principal* and *domain-to-domain* theoretical framework are used during the design process (Plowright, 2014).

The *first principal* theory is used to understand the most essential and fundamental aspects. This theoretical framework is used to analyze the identity of the place. By understanding the meaning and function of a context, we could reduce some keywords, ignore their natural form, and see the other factors of the manifestations we did (Plowright, 2014). Furthermore, understanding the aspects, we found in our investigation could be translated to get a different form but with the same intent.

To help analyze the user's character, the thinking tools of *domain-to-domain* are applied. These methods are used to find inspiration from outside the architectural context, help frame ideas to develop a design proposal, and can be significant by linking social and cultural contexts (Plowright, 2014). After applying the two theories above, the final step is to assemble the two results of the analysis by blending keywords to achieve the idea of the shape of the building.

Research Methods

This research is divided into two aspects: the research for the context of the appropriate site identity based on several choices and the identity of the user's character. The first research is site selection to obtain a specific identity for the building expression. The statement on creating a specific image for design with a clear identity in the heritage area in Surabaya is questioned here. The site selection was carried out by considering the three selected areas shown in figure 2. Considering the mix of environmental quality can be an option to produce a good place (Montgomery, 1998). Placemaking (figure 1) and contextual analysis are used to select site criteria for use in this research. The criteria for determining the tread value are set as follows:

a. Activity: close to downtown area; crowded; easy access; many settlements
b. Form: a site located among buildings adapted to the international style area (to support the reverse idea).
c. Image: located in a heritage area with a solid cultural context and place identity.
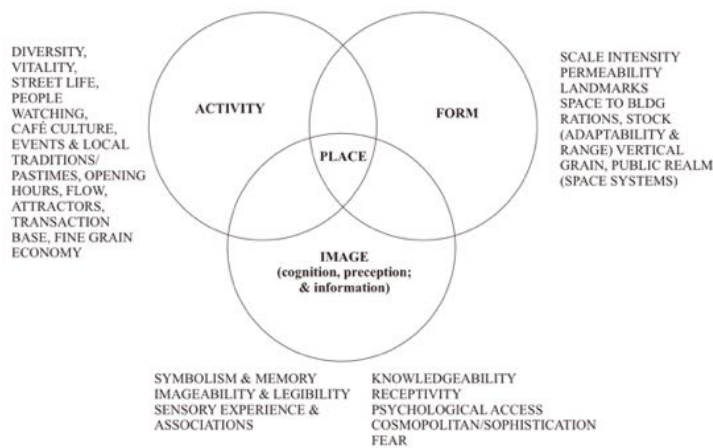
Figure 1. The Policy Direction to Foster Place Making based Montgomery
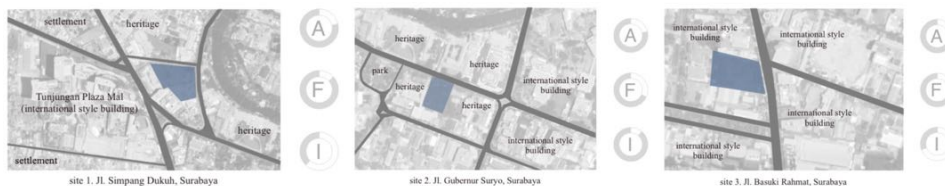
Figure 2. Heritage Site Selection Consideration by Contexts

The first site is in downtown Surabaya and is surrounded by modern buildings. This site is strategic to show the contrast between the locality context and the modern buildings in this area. The unfortunate aspect of this site is the imbalance

between the large scale of modern buildings, which could drown the value of the proposed design. The second site is the most potent site surrounded by historical context, while the third site is a mixture of modern and historical buildings but is too crowded.

From the results of the consideration of the three sites on (based on figure 2), site number 2 is chosen for the office design. This consideration is based on the context of the identity of the place from the heritage area, which has the potential to create a strong design image for creating a clear and specific identity. The busy areas and activities, such as some cafes, schools, and office buildings around the site, are also considered.

Figure 3. Heritage Building and Analysis Its Elements Among the Site Chosen

This phase is to identify the true meaning of heritage buildings among the site chosen. This identification is valid as a philosophical basis for the proposed design, considering that the immediate context at the beginning we discuss is to give an evident character to the design. The purpose of the first principal framework in this context is to translate the hidden meaning into a particular context. Here, heritage is the context referred to. The quality of local architecture (in this case, a heritage area) should be addressed because it can strengthen the image and value of the proposed design (Suriastuti et al., 2014).

After analyzing by using the location mapping in figure 3, several keys were found, which are the existence of massive and rigid columns; it looks solid; the white color (most); repeatable window shapes; its landscapes; and the power of the existence of the building why still standout till today. This fact then leads to several questions and some hypotheses in the following discussion—identifying the facts obtained previously. The shape, the color, the character, the landscape, the typology of characters, the sense of place, and the proportion are studied further (Figure 4). Furthermore, the role of the first principal framework is helpful at this stage. It is

used to extract the essence of some of these keywords to get a distinctive impression and atmosphere of the heritage area.

The second research is about the implementation of analysis from outside the domain. The user's character is broken down, some keywords underlie the work, and expressions are contextually below the user's work. The keywords used as representatives are program, coding, and computer. The analysis is divided into three stages according to the reference from the *domain-to-domain* theoretical framework. There are three steps to applying this tool. Step one is the breakdown of the source domain used. The second stage is the transfer process from outside the architecture domain and processed into the architectural domain syntax. The last step is named the target domain, the target or achievement resulting from previous domain transfer results (Figure 5).

Architectural composition is based on the amalgamation of internal cognition and external knowledge. The use of theoretical frameworks, both *domain-to-domain* and the first principle, has proven to be a tool to help to create architectural compositions more attractive. The discussion regarding the analysis of the sense of place in the heritage site showed that the nuances of being massive, solid, and arrogant were felt. A building with a rigid column shape can create a strong and arrogant. The cantilever principle was chosen to help create the impression of being arrogant, stable, and sturdy (Propose Moment 1). There is also no high barrier in this area, so water elements as a substitute for fences in the design are used. Thus, the keywords generated (Figure 4) are no barrier, white color, light and water element, sense of place, power, cantilever, and arrogance.

Meanwhile, at the time of Propose Moment 2, through a *domain-to-domain* framework, this theory helps translate objects from outside the architecture's scope into the architecture's scope. At the time of Propose Moment 2, discussing user expressions (non-domain), several keywords were found, flat façade, mysterious expression, landscape on building, services, full of riddles, floating, and unclear. These keywords represent the characteristics of the work and expressions of a software developer. From these results, the next step can be taken.

The process explained in this discussion is about combining proposed moments into one by blending them. The mixing method was applied to create the idea of the shape and concept of this building (shown in figure 6). The things to do to reach the basic form are to use addition, subtraction, push-pull, and standard methods in the form-making field based on figure 7.
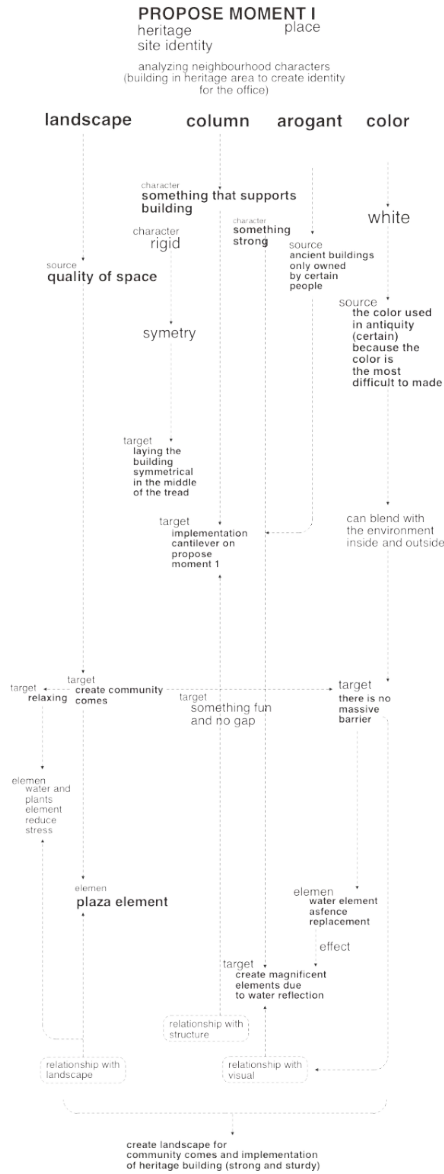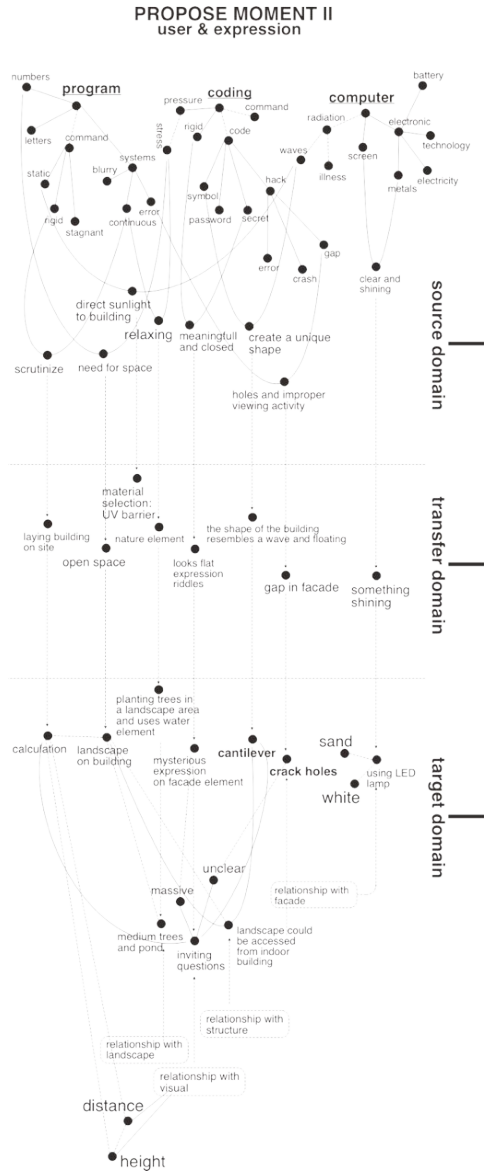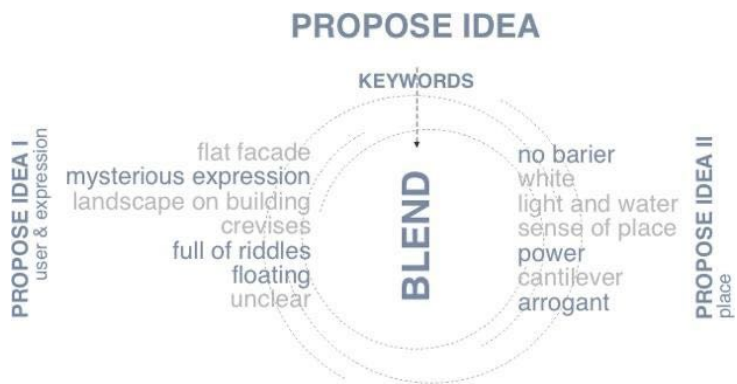
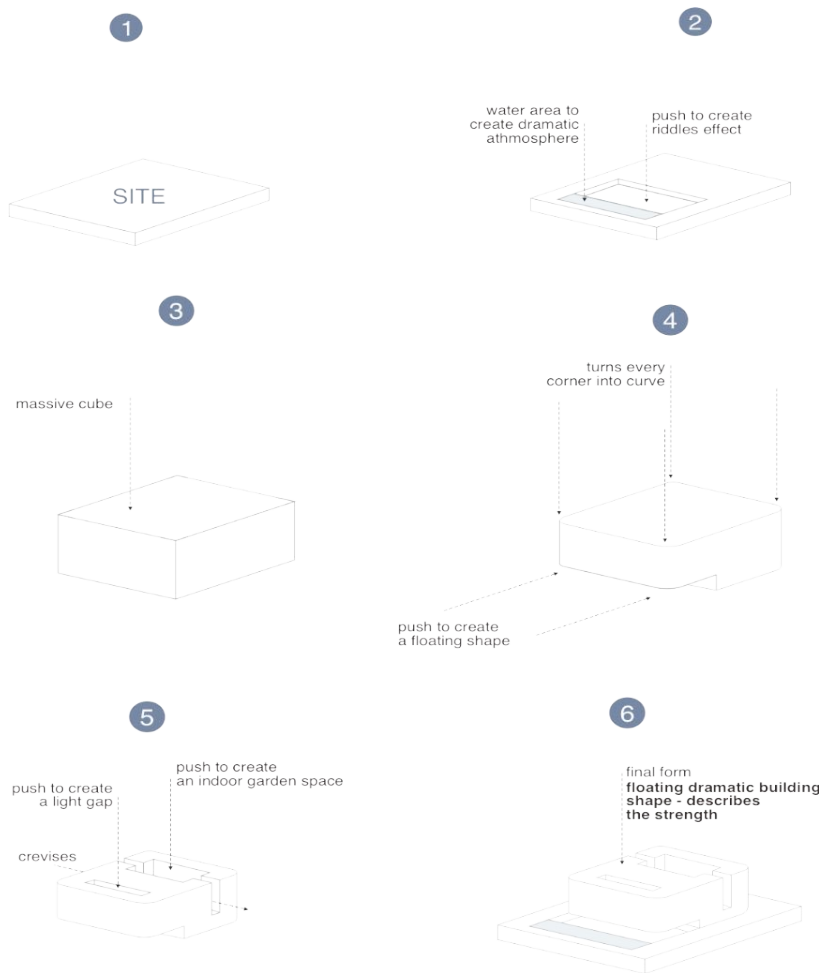**Figure 4.** Phase I of Design Activity

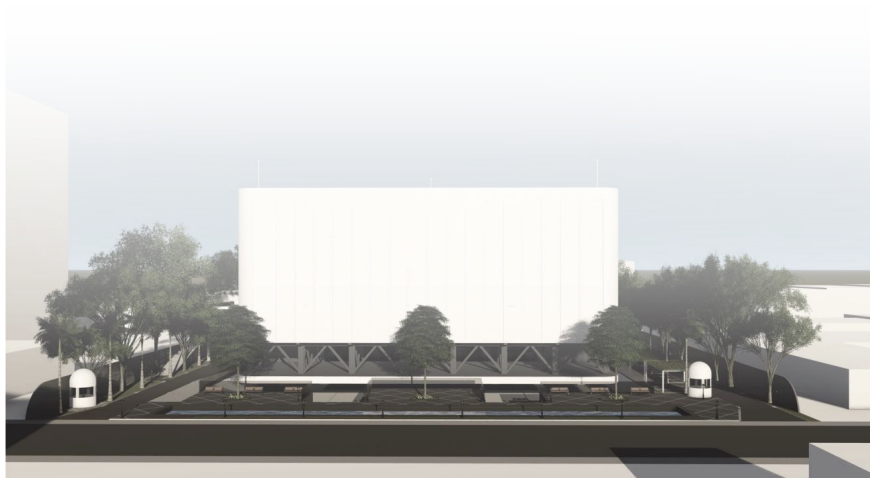**Figure 5.** Phase II of Design Activity

Figure 6. Propose Idea

**Figure 7.** Design Research Process

Figure 8. Flat Design and Mysterious Façade

Figure 9. Bird's Eye Perspective

In the final result, some of the keywords found in phase 1 (Figure 4) are also applied to the landscape elements in the design (Figure 9). The application aspects (Figure 10) are based on phase 1 instead of using the water element (as a security aspect) to replace the function of fences, the garden lamp, and the floor pattern adapted from the surrounding buildings around the site. The aim is as a contextual response to the existing building (around the site) and also to create a better atmosphere of the historic environment.
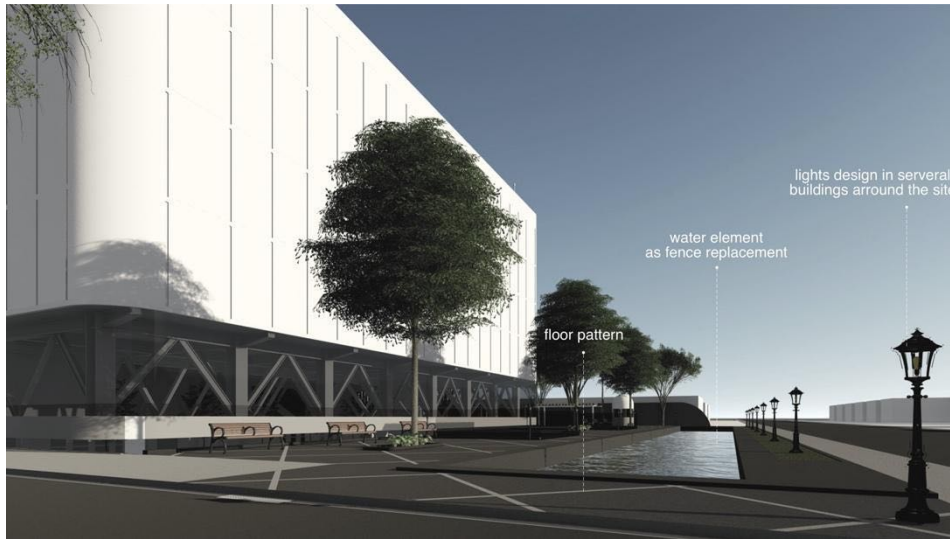
Figure 10. The Application of Keywords Found based Phase 1

RESULTS AND DISCUSSION

The first material we discuss and explore in this context is the characteristics of heritage buildings. After the basic form is obtained, the main context of the floating elements of the building has been achieved with the role of the cantilever system. These results are obtained from understanding the *first principal theoretical framework* (Plowright, 2014). his cantilever principle replaces the characters with the firm and sturdy impression of the heritage buildings. The existence of a cantilever reflects heritage building characteristics because even though there are no columns, it can still stand and does not collapse.

The following materials we found in this discussion are about mysterious expressions and secret keywords that represent the characteristics of the user's work and are applied to massive and flat designs and minimize the use of openings in the facade. It also gives a riddles effect due to the excellent shape shown in figure 8 and figure 9.

Third, the decision to minimize the aperture certainly impacts the context of direct lighting. Energy is one of the critical factors in development ranging from small to large scale. The building orientation and the window-wall ratio are also essential factors in creating a building energy saving (Yu et al., 2013). Therefore, to anticipate this impact, this building makes maximum use of voids in the design so that even though the building looks very closed from the outside, it is very open from the inside. The function of this opening is also helpful as direct lighting and a means of recreation for the user. The pressure of heavy work, but with the opening directly connected to the indoor garden, can relax the eyes and mind. In addition, the many transparent fields on the inside are also helpful in improving the quality of communication between workers.

The positive side of using a flat design on the outside and minimizing the use of transparent elements is that it can make this building an energy-efficient building. Based on the calculations carried out on the EDGE Green Certification, with the performance of such a building, the result is 40.16% energy saving. The most influential factor in energy saving is the window-to-wall ratio - WWR, which can save up to 32.67%. The percentage of the building's window-to-wall ratio (WWR) is crucial because it affects energy consumption in tropical climates (Rana et al., 2020). This is due to the high integration of solar radiation with annual average temperatures in tropical climates.

This is evidenced in Figure 11, which shows the default results of the EDGE (version 2.1.5) simulation at the beginning, with the final results after selecting the specifications and materials used in this design.
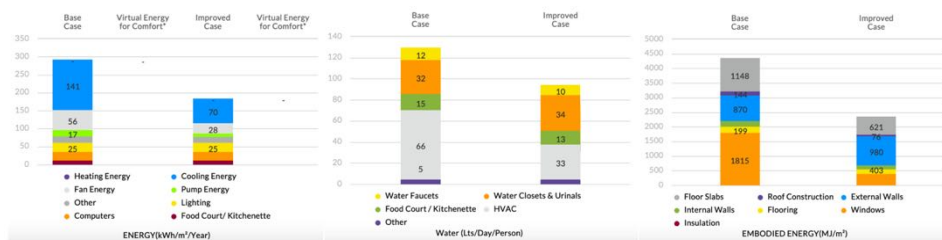

Figure 11. EDGE Simulation

Column elements in the site's context will be symbolized as a straight line. This symbol is then applied to the facade of the building as an element of "context binding" so that the context of "the existence of a column" can still be felt in this design, although in a different way. The white color is also applied to the building design as a feature that this building is in the context of a historical site.

CONCLUSIONS

Based on the research, an office should be able to characterize its work so that it has a prominent character. The use of international style has yet to prove sufficient in providing this context. The context of where the building is built can be used as a medium to provide a specific identity. Applying the theoretical framework from Philip D. Plowright, both *domain-to-domain* and the *first principal* have been proven to understand and find the meaning of a keyword both from the inside and outside of the architecture domain. In this case, the *domain-to-domain transfer* theory is used to obtain the identity of users who come from outside the architectural domain. The *First Principal* theory is used to translate the meaning of the regional context. In this case, the context is the heritage area. Thus, the building will have a clear identity, both representing the user/users and representing the image from the regional context, so that the building has a strong character and a specific design so that the design cannot be easily imitated/moved to another place because of the building design bound by the context of the surrounding area (heritage).

The words "meaningful and closed" as the proposed design moment (2) have resulted in a design of a closed facade by using minimal transparent elements for building openings. The minimal design opening provides an excellent energy-saving effect for this building. The design result also has an impact on energy use in the building.

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