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The Concept of State Defence on Spatial Planning Training and Education Of UPN "Veteran" of East Java

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Abstract

State-defense is an attitude and behavior that is imbued by a sense of love to the Republic of Indonesia which is based on Pancasila and the constitution of 1945. All citizens are entitled and must participate in an effort of defending the country. The fundamental consciousness to state-defense is the willingness to serve and to sacrifice in the defense-effort of the country. The concept of state-defense is interpreted physically by taking up arms against the enemy, while a non-physical interpretation of the concept may defined as any attempts to defend the state by raising nationalism, which is consciously living as a citizen of the nation and the state, imparting passion for the country and play an active role in advancing the nation. UPN "Veteran" of East Java, as the state-defence campus, carry out the principal of state-defense into the educational curriculum. The Area Arrangement for Integrated Trainings & Education of State-Defense in UPN "Veteran" of East Java is the implementation of that principle. These area arrangements are used as the facility of state-defense basic training and education for university students, lecturers and employees as well as the general public. The area arrangements proposal preceded by the location survey to identify the potential and the threat of the area, which is then followed by configuring the site-planning concepts and generating planning images for the training area.

Keywords: Arrangement, design concept, state-defense

INTRODUCTION

The Faculties Flagship Product is one of the promotion events for the Faculty of Architecture and Design (FAD). UPN "Veteran" East Java as PTNB (PerguruanTinggi Negri Baru, or Newly-Stated National Universities) is currently trying to develop and align itself with other PTN (Perguruan Tinggi Negeri, or State Universities) that are already independent. The step taken is to improve the status of the State University management into a BLU (Badan Layanan Umum, or Public Service Agency). Preparations are made by increasing the management of income from other sources outside the PNBP. In this regard, the steps taken are to optimizes the assets owned which is not properly managed, one of which is an vacant land in Pulosari village, Bareng-Wonosalam sub-district, Jombang.

This vacant land in Pulosari village, Bareng Jombang sub-district owned by UPN "Veteran" of East Java is 20 hectares land at an altitude of 245 meters above the sea level as shown in the following picture:

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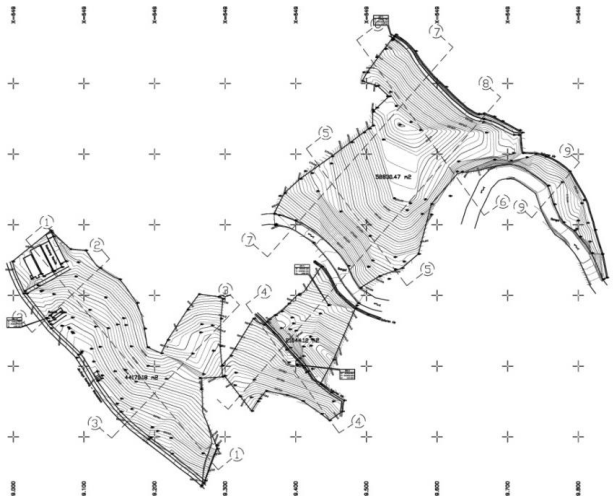

Figure 1. Site Map

The land is located on the slopes of Anjasmoro Mountain with an average slope gradient of 17-35%. As shown in the following site section picture.

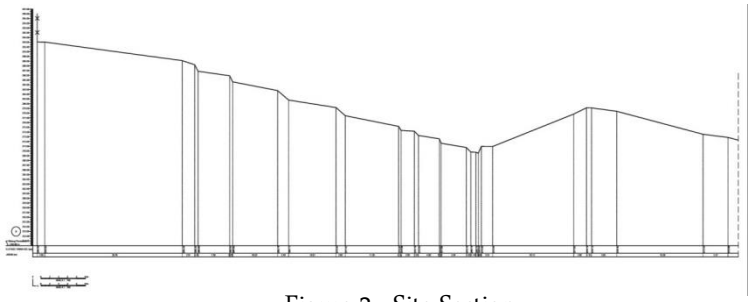

Figure 2. Site Section

The area arrangement of UPNVJT's integrated state-defense training and education center in Pulosari village is the flagship product of the Architecture & Design Faculty which is carried out through the stages of studying the needs of the Education and Training facilities and their availability; location survey to find out any potential and constraints in restructuring the area; followed by drafting the initial concept of planning and drawing up the site-planning of the training and education center area.

State-defense is an attitude and behavior that is imbued by a sense of love to the Republic of Indonesia which is based on Pancasila and the constitution of 1945. All citizens are entitled and must participate in an effort of defending the country. The fundamental consciousness to state-defense is the willingness to serve and to sacrifice in the defense-effort of the country. The spectrum of state-defense is very broad, from the most subtle, to the hardest. Starting from maintaining good relations with fellow citizens, to hand-in-hand counteracting the imminent threat of armed enemies. Included in it is to behave and doing the best for the nation and state.

The efforts to defend the country must be carried out within the framework of fostering the awareness of state-defense as an effort to mold Indonesian citizens who understand and appreciate and are sure to fulfill their rights and

obligations. The Indonesian nation also wants to have a superior and noble civilization. Such civilization can be achieved if our society and nation is also a good society and nation, peaceful, just and prosperous, as has been passed down by the nation's founding fathers in the Preamble of the 1945 Constitution.

The location of this research area is at the foot of Mount Arjuno, the land area reaches 124,044.77 m2 with the highest altitude of 315 m above sea level and as low as 250 m above sea level. Based on observations and field surveys, it is known that this area is a contoured hill dominated by a slope of 15-25% (steep) covering an area of 89,198.30 m2 (71.9%). Whereas slopes of 0-8% (flat) only amounted to 2,713.55 m2 (2.18%) and the remaining 8-15% (sloping) were 11,024.12 (8.89%) and> 45% (very steep) of 9,038, 04 m2 (very steep). Refer to Table 5.2 for more detailed information.

Table 1. Distribution of Slope Inclination

No.	Classification	Inclination (%)	Size (m2)	Percentage (%)
1.	Flat	0–8%	2.713,55	2,18 %
2.	Sloping	8-15%	11.024,12	8,89 %
3.	A bit steep	15-25%	12.069,99	9,73 %
4.	Steep	25-45%	89.198,30	71,9 %
5.	Very Steep	>45%	9.038,04	7,3 %

Source : Analysis result, 2018

Contour classification referring to SK Mentan No. 837/KPTS/Um/11/1980.

According to Marsh (1991), the suitability of land use designation according to the slope inclination level is divided into three categories namely maximum slope inclination, minimum slope inclination, and optimum slope inclination. Likewise, Chiara and Koppelman (1997: 128) explain the criteria for slope in each land use divided into two categories, namely maximum and minimum. The results of the synthesis of the two sources can be seen in Table 2.

Table 2. Land Use Designation according to The Slope Inclination

No	Designation Type	Slope Inclination Level (%)		
		Maximum	Minimum	Optimum
(1)	(2)	(3)	(4)	(5)
1	Housing	20-25	0	2
2	Playground	2-3	0,05	1
3	Transportation/Street	4-12	0.5	1
4	Pedestrian Ways	4-10	0.5	1
5	Parking Area	3-8	0,05	1

Source : Extracted from 1) Marsh, W.M. (1991), 2) Chiara D.J/Koppelman L.E. (1997:128).

Shape and Mass of the Building

The shape and mass of the building is more related to the problem of building height, distance between buildings, orientation and shape of buildings that are influenced by topographic factors, sunlight, circulation, wind direction, soil and hydrology and design themes that will be used. These things become the basis to establish a building.

The topographic approach has been explained by Frick (2006: 39) that buildings on the mountain slopes always follow contour lines, and buildings on mountain slopes can be built densely because the natural light can be guaranteed. According to the inclination of the mountain slope, split-level buildings or terraced building can be used, as seen in Figure 3.

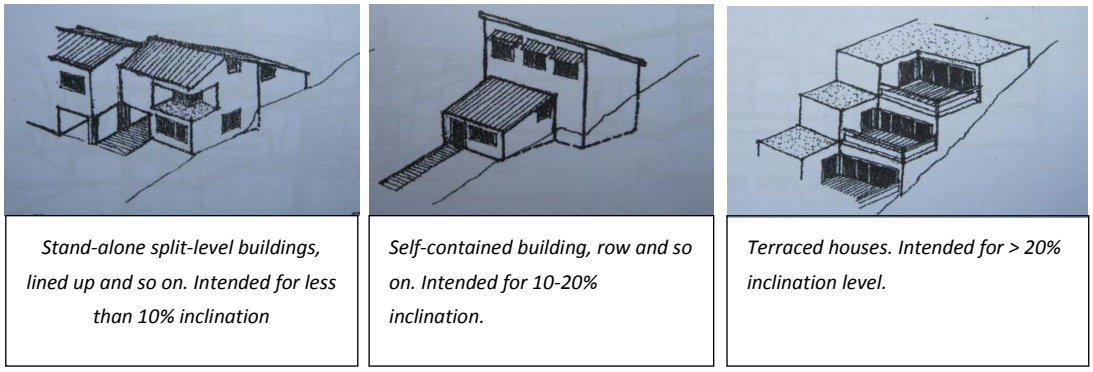

Figure 3. The House Shapes and Its Designated Used According to The Slope Inclination Level. Source : Frick, H. (2006).

Land Consideration

Understanding the soil conditions on a site will help to determine the suitability of the site in supporting buildings and roads, as well as providing insight into existing plant communities and associated wildlife habitats, Chiara and Koppelman (1997). Some considerations related to soil conditions are surface depth, depth to seasonal tides, depth to bedrock, typical drainage properties, suitability to excavation and grounding, conformity with values as foundation material, sensitivity to compaction and sensitivity to erosion. Other considerations regarding the relationship of land to building codes include:

1. The less dense soil type is clay with a thickness of more than 2.5 m. This type of land has the potential for landslides, especially if there is rain. Appendix of Minister of Public Works Regulation No. 22 of 2007 concerning the Landslide Disaster Zone Spatial Guideline .
2. Soil conditions on steep slopes affect the concept of shape, foundation and placement of buildings. As stated by Untermann, et, al (1977: 224), For more detail, refer to Figure 4.

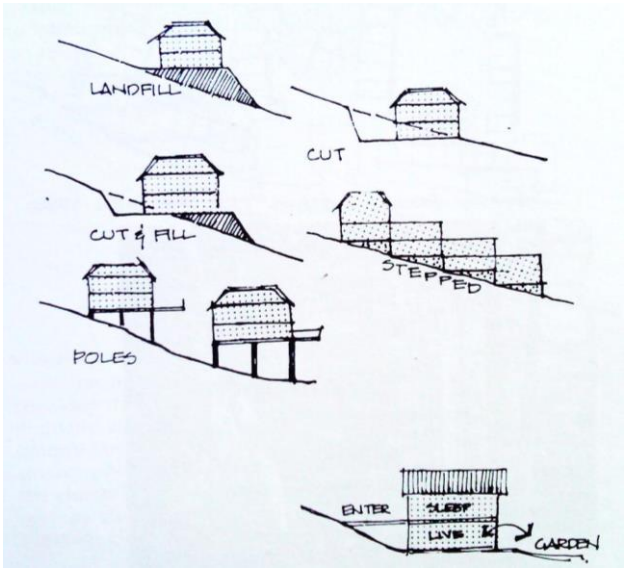

Figure 4. The Concept of Form, Foundation dan Building Placement Based on Steep Slope Soil Condition. Source : Untermann, R. dan Small, R. (1977).

Consideration of Sunlight

According to Littlefair, et al (2000: 62) the layout of the building is the most important factor to get the sun's heat to the building. It also affects sunlight in open spaces, ventilation, wind spots and the spread of pollutants. When planning a new development, the impact on nearby buildings must be considered. The building layout as referred to will be explained below.

Building Orientation and Distance for Comfortable Sunray

Strategy: Ensure access to sunlight for buildings where needed, with the main orientation of space for the southern part of the sky and limiting the barrier. Manurung (2012: 31) explains the orientation of buildings in climates such as Indonesia which is being passed through the equator, where the good orientation for the building is facing north, then the bedroom should be facing east to get the morning sun, and for the other room that do not urgently requires the morning sunlight can be placed in the west. If the location factor is not suitable then the sunlight should be made to enter from various sides of the building : from the front, side and back. But if the level of building density is very high so that it only has an open side on the front, the sunlight can be made to enter from above.

According to Chiara and Koppelman (1997: 120-122) the orientation of the building layout to sunlight is most successful when the sun illuminates the kitchen in the morning when it is winter and reaches part of the living room in the afternoon. If this ideal situation cannot be fulfilled, then the desirable result can be at least considered to be achieved if some sunrays is available in each room for a few moments each day. To be more precise, refer to the Table 2.3 regarding the literature synthesis of structuring the shape and mass of the buildings.

Table 3. Spatial Angle for Sky Light

No.	Alignment (°)	Critical Barrier Angle (°)	Critical Vertical Sky Component (%)
1	up to 40	40	18

According to Littlefair, et al (2000: 62) distance for lighting as a strategy for distance control and barrier height that allow good access during the day in new and existing buildings. Getting good daylight starts at the site layout stage. If the building is blocked or covered by large buildings, adequate lighting will be difficult to achieve. The spread of light in the room will be affected as well as the amount received. At the stage of the site layout in the design, the position of the window will often be unclear. A reference line of 2 meters above ground level can be used in each of the main facades of the building (the level of possibility is from the top of the window). First, draw a section in the plane perpendicular to the main facade (Figure 2.6). If there is no building blocking the h-angle subtends to horizontal (measured from the 2 meter reference line) greater than the critical value in Table 2.2, then there will still be potential for good lighting in the building. Buildings are built on flat slopes and ramps, but because of their location scattered over several parts of the site, it is not ideal to require buildings to be built on the minimum slope inclination because they will extend the circulation path, which will required more expensive development cost. In addition, this has become less effective in providing the access and ease of access between building masses which impact may disrupt the activities within the site.

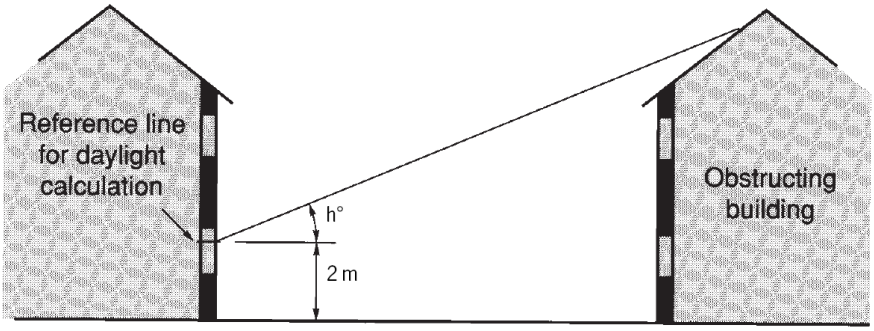

Figure 5. Barrier Angle Altitude Cannot Exceed Critical Value h. Source : Littlefair *et al.* (2000).

METHODS

This research was compiled using qualitative descriptive method. Data collection involved the participation of the UPN "Veteran" academic community in East Java. This is to determine the Training & Education Center's functions and facilities so that the resulting design model can meet sustainability criteria in the social dimension. Data collected is arranged systematically according to the type of data, namely literature data and comparative studies related to the Education and Training Center. Then the data that has been collected is analyzed. Data analysis is divided into 2, namely:

Qualitative analysis which is conducted for the data that cannot be measured directly by numbers and is an investigation process, where the main data and additional data are collected. Qualitative data in the form of photographs showing the condition of the site.

Quantitative analysis which is conducted for the type of data that can be directly measured or calculated in the form of information or explanation expressed in numbers, or in the form of numbers. Quantitative data being compiled is in the form of the amount of space needed, capacity of space, type of space, etc.

From the results of data analysis, the gathered main data and additional data obtained from the investigation process can then be developed at the programming stage and design concept. The design concepts is being determined based on architectural rules. The formulation results of the planning and design concept, followed by realizing the initial ideas in the form of geometric transformations. This process uses exploratory research methods (Faqih, 2007), which is to explore a design idea that is being materialized into a two-dimensional (2D) and three-dimensional (3D) model.

The next stage is to formulate concepts of draft design concepts that will be arranged based on architectural rules, which consist of:

- Concept of Activities and Facilities (Spatial Program)/
- The concept of Outdoor Space Arrangement, related to patterns and elements of the outdoor space needed.
- Material concepts, related to the selection of materials used to support open space design
- Concept of Utility, related to the availability of infrastructure in open spaces and buildings.
- The concept of UPN "Veteran" of East Java's Academic Community Participation, related to the form and participation or community participation starting from the design process, implementation until future management.

RESULT AND DISCUSSION

State-defense is a concept compiled by a set of laws and state officials regarding the patriotism of an individual, a group or all components of a country in the interests of maintaining the existence of that country. The definition of state-defense is the attitude and behavior of citizens who are inspired by his love for the Republic of Indonesia which is based on Pancasila and the 1945 Constitution in establishing the survival of the nation as a whole. Physically, this can be interpreted as a defense effort facing physical attacks or aggression from parties that threaten the existence of the country, while in non-physical terms this concept is interpreted as an effort to play an active role in advancing the nation, both through education, morals, social and improving the welfare of the people who make up the nation.

Basic Elements of State Defense

1. Love for the country
2. The awareness as a state and a nation
3. Believe in the Pancasila as the state ideology
4. Willingness to sacrifice for the sake of the country
5. Having the fundamental capability to defend the country

While the nature of defending the country consist of 2, namely :

- Soft nature as a form of understanding of the national insight (psychological) and active role in advancing the nation (physical).
- Toughness, as a form to face military threats

From the explanation above, it can be interpreted that defending the country contains two objectives, namely physically which is the embodiment of the tough-nature of defending the state, and non-physical nature which is the manifestation of soft nature. Architecturally this translation can be realized in the form

- Soft properties: implemented in the form of dynamic shapes such as arcs, elements of water, vegetation, and colors that tend to be soft.
- Hardness: the implementation of masculine traits embodied in lines that are firm, sturdy (exposed structure).

In addition to adopting the two traits above, one form of the state-defense theme in the architectural embodiment is by displaying local wisdom as part of the effort to preserve of the nation's wealth. As a country with the motto of Unity in Diversity, which despite having diversity but still in one unit, the center part of the Training & Education center which is of course composed of many masses emphasizing the idea of the unity concept through each mass of the building that will have a distinctive shape but still being unified by certain style. The description of the state defense theme will later be used as a reference for the shape and mass of the building.

UPN "Veteran" East Java as a state university with the state-defense characteristics. Signified by the logo of UPN "Veteran" East Java, it has a yellow pentagonal shaped symbol with 2 (two) black borders. Inside the pentagon is white jasmine flower with 5 (five) petals that are still budded-closed and 2 (two) petals that have bloomed, red flames that are blazing on the right and left of the jasmine flowers, 3 (three) black terraced-pedestal, white ribbons in which there is a black inscription written WIDYA MWAT YASA, green metal military helmet with yellow stars at the top of the jasmine flowers, with the circular inscription of Universitas Pembangunan Nasional "Veteran" at the top and Jawa Timur written on the bottom with black Arial letters. The colors used are :

Table 4. RGB color code

Color	RGB Color Code
Yellow	255, 255, 0
Red	225, 17, 62
Green	40, 109, 37
Yellow	200, 150,0
Black	0, 0, 0

Concept Implementation

Ornament and Building Concept

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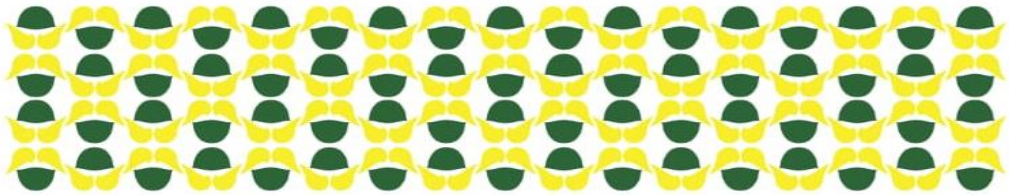

Figure 6. Alternative 1 of state-defense ornament

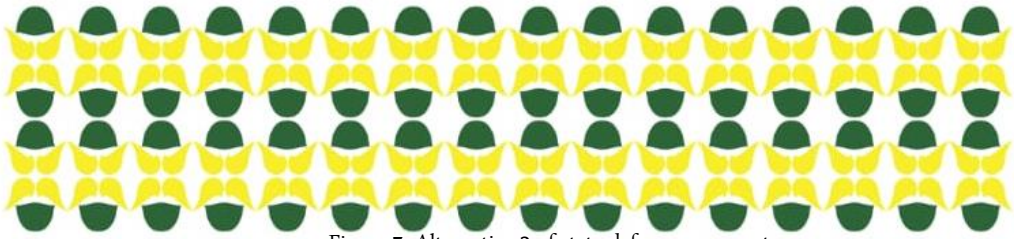

Figure 7. Alternative 2 of state-defense ornament

The concept of this ornament is based on the shape of flame, jasmine flower and military steel helmet. The shape of the flame is arranged to convey the image as if supporting the military steel helmet. This means that UPN V East Java has the courage to express and remain true to its state-defense characteristic, which is always be the first priority, and sustained by a flaming spirit to raise the pride of the nation, so that the state's defensive character in UPN "Veteran" of East Java will never be forgotten. The colors used are yellow and green, which is the signature color of UPN "Veteran" that reflects the state-defense characteristic. The ornamental supergraphic mentioned above can later be applied as a blanket for buildings such as sun shading or other ornamental decorations on floors, walls, ceilings or columns.

Ornament application in the building design

Figure 8. Ornament as an aesthetic element in guesthouse

Figure 9. Ornament as an aesthetic element of student dormitories

Figure 10. Ornament as a sunscreen of bridge connecting

Figure 11. Shape exploration of plane and lines with the firm, sturdy, and strong characteristic

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CONCLUSION

The implementation of the state-defense concept is manifested through the intangible metaphorical method with the pentagonal shape as the form-transformation basis that represents the 5 basic values of state-defense as well as the UPN "Veteran "of East Java logo, which is then applied in lines and planes forms that have firm, sturdy and strong characteristics.

Translating the state-defense concept is also done by applying the local values of architectural wisdom through the form of tajug roofs, "limasan" and roof saddles to give the impression of formal and orderly educational buildings. The emphasis of the integrated concept is carried out by maintaining the potential of the research area's location, which is the area of livestock and plantations that can provide added value for the Education & Training Center area through the careful planning of the vehicles and humans circulation according to the site conditions without disrupting the activities of each zone.

ACKNOWLEDGMENT

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