

## Conference Paper

### Optimization in Sign System Design UPN “Veteran” of East Java

Aryo Bayu Wibisono <sup>1\*</sup>, Iwan Wahyudianjo <sup>1</sup>

<sup>1</sup> Universitas Pembangunan Nasional “Veteran” Surabaya, East Java, Indonesia

#### Abstract

UPN “Veteran” of East Java, Surabaya, East Java, Indonesia is a state university with State Defense characteristic which have its own vision, mission and reputation both on the national and international level. The reputation proven by the A rank in university accreditation scale (AIPT A). At this phase, infrastructure had become essential factor and therefore also become an important background of physical image. One of the physical image development effort is by optimizing the sign system on the campus building. On such basis, this study aims to fix the infrastructure through an integrated sign system. The sign system meticulously designed based on research to communicate the values of State Defense as well as the characteristics of UPN “Veteran” of East Java. The data collection in this research uses quantitative research methodology and supported by qualitative method. This research is conducted at UPN “Veteran” of East Java involving active campus residents. The research is also supported by design-related journals and books.

**Keywords:** Image campus, sign system, UPN “Veteran” of East Java

#### INTRODUCTION

UPN “Veteran” of East Java, Indonesia has strong character as Campus Bela Negara. the character has become a brand/image that has been attached to UPN “Veteran” of East Java, Indonesia. After becoming State Universities under Kemenristek Dikti, UPN “Veteran” of East Java, Indonesia has AIPT A rank. There means UPN “Veteran” of East Java must be able to compete with other campus in terms of quality or quantity (Figure 1).

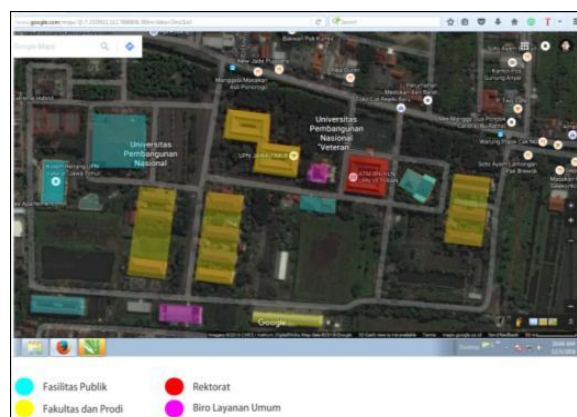


Figure 1. Map of UPN “Veteran” of East Java campus

\* Corresponding author

Email address: aryobayuw.dkv@upnjatim.ac.id

In 2015-2016 UPN "Veteran" of East Java has made infrastructure improvements through the construction of the building to the improvement of public space. But the physical image of UPN "Veteran" of East Java is not yet well designed, and it affects the viewer's perception both within the institution and outside the campus. UPN "Veteran" of East Java campus' Lack of awareness on the importance of sign system shown from the conventional and disintegrated signs around the campus environment. Many of the infrastructures within the UPN "Veteran" of East Java campus have not been supported by adequate sign system. Currently UPN "Veteran" of East Java campus has large area that still need to be arranged to communicate the image of state defense campus, and one of the way is through the physical design of the sign system to increase the added value within the campus environment (Kusumarini et al., 2012).

The research titled "Optimization of Sign System Development in UPN "Veteran" of East Java " aims to design an integrated information sign, wayfinding, and pictogram that will be based on the vision and mission of UPN "Veteran" of East Java Campus. This research will be conducted in 3 stages: the first phase is to build information sign to accommodate the needs of the campus stakeholder, second phase by building Gate Sign which aims to improve the image of the campus area, and the last phase is by building sign system within the internal area of UPN "Veteran" of East Java campus.

### **Design review**

#### **A. Sign System Design**

The sign system design will refer to the theory of Frutiger (1989) on the early stage of its development, which describes sign system that internally or externally aims to improve the tangible and intangible communication structure on the physical aspect/building of a place. This theory assumes the sign system has the function of shaping the image of the company, city, tourism place or University. This means that the presence of sign systems not only have an influence in terms of aesthetics and information as tangible factors, but also act as the image signifier of an institution

#### **B. Profil of UPN "Veteran" of East Java**

UPN "Veteran" of East Java is a campus located in eastern part of Surabaya UPN "Veteran" of East Java campus is strategically located on the east ring which serve as an access connecting the route of Surabaya-Madura-Sidoarjo-Mojokerto-Malang. This allows the UPN "Veteran" of East Java campus to be easily recognized by visitors from outside the city who happen to cross the route. UPN "Veteran" of East Java is an institution that has many buildings spread within the large campus area, and in addition the environmental conditions still have a lot of vacant land, green open space and lakes as water reservoir.

#### **C. Competitor Studies**

The strategic location of UPN "Veteran" of East Java as a new campus certainly makes infrastructure improvements important. Therefore an ideal comparison between UPN "Veteran" of East Java and other institutions needs to be made. The campus that is considered as ideal is the ITS college (Sepuluh Nopember Institute of Technology). ITS is being chosen based on the geographical similarity of the campus, the model of the building that is spaced between the faculty with each other, and the dominant green open spaces.

#### **D. Comparative Study**

The comparative study of this research took the Monash University campus from abroad as the ideal comparison. The campus has a geographical condition that is almost the same as the UPN "Veteran" of East Java campus. Besides, the selected sign system design at Monash University has an interesting concept of ergonomics to be researched in this study.

### E. Sign system Ergonomic Study

The height limit of the typical/frequently used signage is about 2 meters. The following Figure 2 is the height range of the sign system with the average Indonesian people's height (Griffin, 2004).

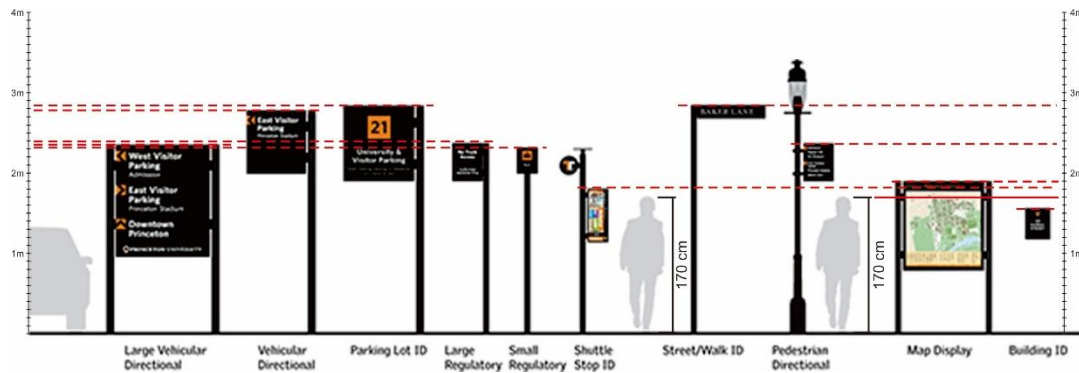


Figure 2. University's Signage System Gateand Information Sign

## METHODS

Table 1. Design Methods

A	Data Collection	Observation at UPN "Veteran" of East Java to find out the characteristic of the campus residents (Kriyantono, 2012): Demographic: Primary aged between 18-22 years old (Unisex); Secondary aged between 35-45 years old. Profession: Students and Lecturer. Geographic: The residents of UPN "Veteran" of East Java. Psychographic: having academic characteristic and always try to seek out informations
B	Data Analysis	1. Mind Mapping 2. Area Zoning 3. Interspatial connection
C	Conclusion	At this stage we categorized the core problems and made the solution design.
D	Design Concept	At this stage the data collection acquired through interviews, observation and questionnaires will be analyzed to be made into ideas and design concept.
E	Design Implementation	At this stage the typography, sign system design, ergonomic and the color with certain design characteristic will be produced

## RESULT AND DISCUSSION

Keyword in this study's designis procured based on the survey and observation results. The results of this keyword will later represent the design object and visual layout that will be used in this research. The keyword for this design is "Informative and Modern". According to Indonesia's National Dictionary the keyword denotatively means the element of informative and modern generally represents the energetic, creative moving-forward students of UPN "Veteran" of East Java. While the connotative meaning represents the vision and mission aspect of UPN "Veteran" of East Java campus that has accreditation A.

## Typography Concept

Typeface Helvetica Neue LT 67 NdCn :

**A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ;**  
**A b c d e f g h i j k l m n o p q r s t u v w x y z 1 2 3 4 5 6 7 8 9 0**

Helvetica Neue LT 67 NdCn typeface is used to support information on the sign system that is designed. This type of font also provides a model that is firm and still easy to read at a distance of 1 meter in the scale typography 15 pt. Helvetica type typography model is considered to have significant relevance if it is associated with UPN "Veteran" of East Java campus model that has a background of the State Defense campus.

## Sign System Design Concept

The design concept of the sign system is based on the pentagonal shape within the logo's morphology. The pentagonal shape will be developed into a sign system shape that represents a solid design model (Figure 3).

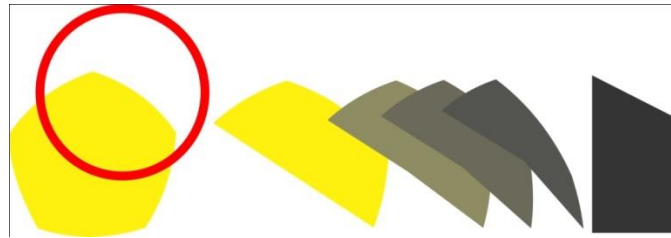


Figure 3. Changes Logo

## Colour Concept

The color concept of the sign will take three elements to be used on the sign system's visual aspect. The concept is ((Tim, 2009; Ambrose and Harris, 2010; Lawson, 2005; Lockwood, 2010):

Green: Green color is used to color to the map that will be used in the sign system. The green color on this map design is based on the use of green open space, buildings, public spaces and roads that exist at the university.

1. Yellow: Yellow color is taken from the color of UPN "Veteran" of East Java logo which has dominant yellow color. Yellow color will give the design color style on ACP (Aluminium Composite Panels) material structure in the sign system.
2. Black: The black color is taken from the line color dominating the logo of UPN "Veteran" of East Java visual. The black shapes on the sign system design serves to withstand the sun's heat outdoors, and in addition the black color is a solid color that gives off firm impression.

## Material

The material concept in the sign system design's material will consider a material model that has heat resistant properties, and has relevant visibility for both motorcycle riders and pedestrian users. The model of this material must be able to reduce heat because the design allows the material to be directly touched physically by the audience. The concept of material that later will become the reference in this sign system design is (Figure 4):

1. ACP (Alumunium Composite Panels).

ACP serves to form the basic sign characteristic, because ACP material characters is capable to withstand the heat and are easy to set up, thus it can be applied as the base/mount in UPN's many-angled sign.

2. Acrylic

Acrylic plate on the sign system will be used on the outer layer to show the information center with print mirror techniques on acrylic. In addition Acrylic plates also serves to hold the sticker into a layer after the ACP material on the sign system.

3. Oracal sticker

The Oracal sticker on the sign system has the role as the colorant on the ACP layer. Oracal color is selected because it is proven capable to withstand the heat, so the ACP material will not be damaged as a sign system even when installed outdoors.

4. Aluminum frame

Aluminum frame serves as the anchoring legs on the sign system. Footrest with aluminum material is chosen because it has resistance to rust, so it has a longer life time.

5. Galvalum

Galvalum is used as the frame, and it is chosen because the sign system has a systemic framework as a basic construction. Aside from functioning as the basic frame of the sign systems, the galvalum also become the sign system's counterweight. The galvalum will be welded with aluminum material in the bottom construction with the galvalum part positioned on top because the frame is lighter than aluminum. The aluminum material is denser so it will be stronger to be intersected with the ground.

## Map Design



Figure 4. Map *sign system*



## Ergonomi Desain

The sign system design implementation of UPN “Veteran” of East Java encompasses several factor (Figure 5):

1. Typography serves to refer to the clarity of visual information, between letters and the height of the sign system
2. The Sign system height must be in accordance with the average height of the students and employees.
3. The construction installation model in the ground must have a depth of at least 10cm from the ground surface
4. The color should be comfortable to look at in the daytime and night time.



Figure 5. Ergonomic Design

## Design Implementation

Implementation of this design will be placed on the intersection between the three faculties. The faculties are the Faculty of Engineering, the Faculty of Architecture and Design and the Faculty of Economics (Figure 6).



Figure 6. Design Implementation

## CONCLUSION

The sign system design should have an appropriate integration with the corporation. Identity in an integrated sign system will provide strong institutional image at the external level. UPN “Veteran” of East Java can use an integrated sign system through the researched design model. Some of the things that needs to be paid attention to in the next design is the use of materials that have been planned must be integrated with the indoor sign system.

## ACKNOWLEDGEMENT

We would like to exspress our appreciation to Ir. Sri Suryani, MT. for giving us advice to fix this paper. We would particularly like to thank our family for giving us motivation, and also the following people in our Departement for their assistance in our data collection : Ronaa, Hilman, Ilham, Rocha and Aswin.

## REFERENCES

- Ambrose, G., & Harris, P. (2010). *Design Thingking*. Switserland: AVA Publising 12.
- Frutiger, A. (1989) *Signs and Symbol: Their Design and Meaning*. Van Nostrand Reinhold, Jerman.
- Griffin, K. W. (2004) *Building Type Basics for Transit Facilities*. Willey Publhiser.
- Kusumarini, Y., Yong, D. S., & Thamrin, D. (2012) *Signage System of Malls in Surabaya: Universal interior design applications and suggestions for solution*. doi: 10.1016/j.sbspro.2012.12.245.
- Lawson, B. (2005). *How designer think: the design process demystified*, Oxford. Architectural Press in an imprint of Elsevier, (4<sup>th</sup> edition). 34
- Lockwood, T. (2010) *Design thinking integrating innovation, customer experience, and brand value*,New York, Allworth Press. 50.
- Tim, B. (2009) *Change by Design*. New York: Harperollins publisher. 16.