

Applying Interactive Exhibition in Museum of Insects, Taman Mini Indonesia Indah Jakarta

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ABSTRACT

Nowadays, people have started to forget the importance of recreational place with knowledge value such as museum because the development of time and technology. One least visited museum is Museum of Insects. Indonesia is known as one of the countries which has tremendous varieties of insects. However, people still pay little attention to visit the museum because monotonous arrangement of collections and nonoptimal functions in the museum. A change of arrangement in the museum is needed in order to be more attractive. The interior design of Museum of Insects TMII serves to increase attention of people toward the museum again. The design is done pragmatically with qualitative method (descriptive analytical) by collecting data first from Museum of Insects and relevant museums as precedent study to create analytical process about technical and non-technical aspects in the museum. The applied concept for the museum is interactive exhibition with thematic interior approach from the habitat of insects as a result of idea in making Final Project of Interior Design Study, hoping that visitors of the museum will have new experiences when visiting Museum of Insects with interactive exhibition.

Key words: Interior, Interactive, Exhibition, Museum of Insects

1. INTRODUCTION

Indonesia is known as one of the countries which has tremendous varieties of flora and fauna [1]. One biological variety which is able to be proud of from Indonesia is insects with 250.000 types or about 15% from total known main biota in Indonesia [2]. Even about 16% types of worldwide insects are in Indonesia.

A new study in journal of Biological Conservation [3] reveals that more than 40 percent species of insects will extinct in few upcoming decades. As a result, introducing varieties to world of insects and stimulating both eagerness and concern from public towards role and potency inside are needed. One medium to achieve the purpose is Museum of Insects.

American Associations of Museums (AAM) explains the definition of museum as following: "museum as organized as a public or private nonprofit institution, existing on a permanent basis for essentially educational aesthetic purposes, that cares for owns or uses tangible objects, whether animate or inanimate, and exhibits these on regular basis...and museum is open to the general public on regular basis." [4]. Meanwhile, exhibition area can be described more specific which is a public display of works of art or items of interest, held in an art gallery or museum or at a trade fair [5]. Exhibition which is held in a museum sometime can be held permanently where the collections are exhibited without time limitation and numbers of collections are able to be added anytime, as well as

temporary which means the exhibition is held within a certain limitation of time.

Museum of Insects TMII is a museum which exclusively exhibits collections of insects. Generally, DS-TMII has 4 (four) aspects which include science, education/research, conservation and tour [6].

Numerous facts and knowledge are able to be received in Museum of Insects. The knowledge is not only about types and varieties of insects, but also about habitat and behavior patterns of insects [7]. However, attention from public is still low to visit the museum, because nonoptimal functions of museum which should be educative, innovative and recreative.

Ardiwidjaja [8] classifies problems which internally faced by museum is nonoptimal usages of information technology, collections in museum which arranged outdatedly, and undeveloped museum as convenient and enjoyable place for public. Therefore, interior design in Museum of Insects is needed. As with the improvement of both arrangement and interior environment, museum will be more attractive and creative which is able to fulfil the educative, innovative and recreative functions.

Before designing interior for a museum, choosing presentation method and presentation flow concept which will be used is needed. Collection presentation method is way to represent or communicate between collections and visitors. Asiarto (2008) in Ghiafri [9] says that collection presentation method consists of come approaches as

- Aesthetic approach method, emphasizes esthetic aspect of exhibited items;
- Romantic approach method, arranges to show certain mood which connected with exhibited items;
- Intellectual approach method, arranges to give information and knowledge which connected with exhibited items;
- Symbolic approach method, uses certain symbols as medium to interpret visitors;
- Contemplative approach method, builds imagination of visitors towards exhibited items;
- Interactive approach method, presents collections which visitors may be able to interact directly with exhibited items.

Besides collection presentation methods, presentation flow concept is divided into four approaches. First, chronologic approach, which placing collection items chronologically or in order from time to time. Second, taxonomic approach, which presenting collections based on types of quality, usage, style, period, and maker. Third, thematic approach, which emphasizes in presenting collection based on certain story rather than to the object. Whereas the last approach is a mix from previous approaches which consist of chronologic, taxonomic and thematic approaches [10]. In designing Museum of Insects TMII, the applied presentation collection method is interactive exhibition, which between visitors and collection items with arrangement flow of thematic collection approach. Interactive means something related with two-ways of communication/something which takes action to each other, actively and connectively that has interrelationship [11]. Museum could be considered as an unattractive place for majority of people, for this reason, in order to be attractive yet still gives education the museum will be turn into interactive museum. Here are some keys in making interactive museum [12] :

- Making linear line in museum
- Design which engage visitors to interact socially
- Involving physical activities: using games to give education (learn from experience)
- Showing art in appealing way
- Using modern technology: using video, audio and mobile in element of design to attract young people to visit

Moreover, interactive multimedia meaning is a medium which gives interactive study in 3D, sound, graphic, video, animation and creating interaction [13].

Museum of Insects with interactive exhibition will provide new experience for visitors. Visitors will be invited to enter a tour to museum with thematic approach where visitors are be able to study and interact with collections through thematic interior approach that is inspired from habitat of insects.

2. METHOD

- The method of designing interior in Museum of Insects was done pragmatically based on steps of design process making. Data collecting method

was done by literary study, field survey, interview, and documentation from the museum or other relevant museums as data for comparison.

- Factual relevant data with activities, facilities, room sizes, and technical or nontechnical needs would be supported deliberately with anthropometric and ergonomic data.
- On the other hand, data analyzes method and the elaboration used qualitative method (descriptive analytical) which based on literary data and both other physical and non-physical aspects to achieve the targeted design.

3. RESULTS AND DISCUSSION

Museum of Insects TMII is a museum which exclusively exhibit numerous collections of insects. The designed location is inside Taman Mini Indonesia Indah in south section, which located at Jalan Hankam Raya No.39 Ceger, Kecamatan Cipayung, South Jakarta.

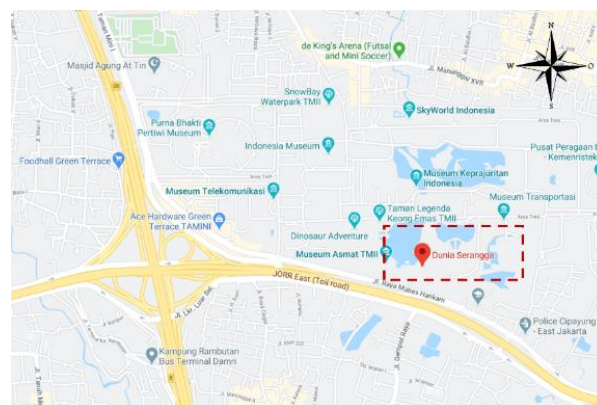


Figure 1 Museum of Insects Location
(Processed result from Google Maps, 2020)

In designing Museum of Insects, the design will emphasize for new experience which wanted to be given to visitors when entering museum related to interaction between visitors and collection items. Because of this, there are 4 types of visitors that will be divided as:

Table 1 Visitors type category

Type	Service Procedure
Personal Type	Visitors who come with no particular reason, such as only seeing collections, adding information and recreation.
Family Group Type	Group of family who comes to see collections and to do recreation
Group Type	Usually more than >10 people and come from schools such as from elementary to college students
Research Group Type	Come with particular reasons, such as to get detailed information or research.

Source: Museum of Insects

Generally, visitors of the museum are in learning circles which means educational functions in designing must be a priority. The collections in Museum of Insects are divided into 3, which are main collections, procurement collections (animate and inanimate), and donated collections. The entire collections in Museum of Insects-TMII are from all around Indonesia and nowadays has collections from 9 ordo, 418 types dan 3.498 individuals [6].

The general concept from the design is to make Museum of Insects emphasizes for applying on interactive exhibition. Interactive means a process where visitors are able to get direct involvement with museum or involved with available exhibited items or involved with the atmosphere of room which designed to be able to be perceived by human senses. Interpersonal communication model which is two-ways direction is able to be achieved through educational programs, living interpretation, and interactive display through various medium such as audio visual, touchscreen and multimedia. Nowadays, technology advancement supports the development of display types. With interactive exhibition, visitors are expected to have experience or deep impression and through those deep impressions, visitors are also expected to memorize every or some information fully and easily. Museum does not have not only educational function, but also has values of entertainment, recreation, and relaxation so that the purpose of the visit from people and hope towards museum also achieved [14] (Andriana, 2019).

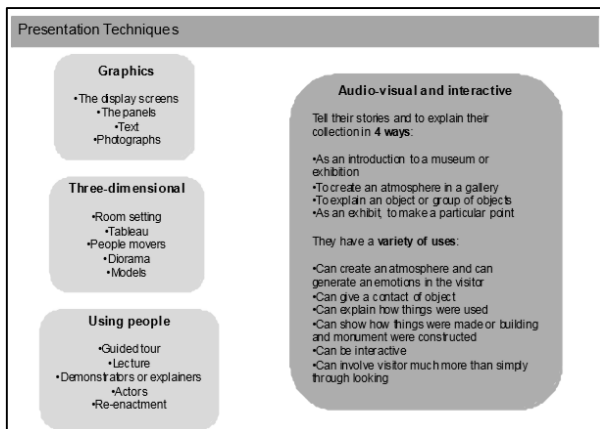


Figure 2 Interactive Presentation Technique (Hashim, 2014)

Interior designing for the museum is done with thematic approach, where the whole theme is “Travel Through Insect nature”, or a journey in habitat of insects. Visitors will be invited to travel around museum with certain matched room themed based in habitat of insects which started from underground to the garden.

Each exhibition has certain matched themed with types of habitat from exhibited insects. The environment that will be used for the design are forest, underground, swamp, jungle, and meadow.



Figure 3 Concept of Interior Ambiances (Processed from various sources, 2020)

The themes will be divided into several environment which wanted to be achieved as:

1. *Open Forest: Lobby* with natural forest feel which is bright and open;
2. *Underground Tunnel*: Exhibition area which is inspired from tunnel of ants;
3. *The Dim Swamp*: Exhibition area which is inspired from dimmed and cold of swamps;
4. *The Jungle Experience*: Exhibition area with full interactive LED screen which present atmosphere and information from forest insects;
5. *In The Middle of Meadow*: Semi-opened exhibition with feel of meadow.

The concepts of shapes, colors and materials of each area could be adjusted with certain themes, yet generally, the shapes are both natural and dynamic shapes, tend to be biomorphic. Therefore, for materials and colors which used are natural colors from habitat of insects, that strongly related to earth tone colors, such as brown (wood), green (plant), and grey (stone).

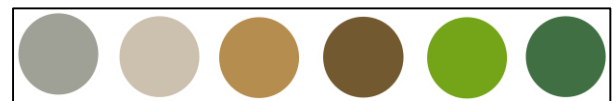


Figure 4 Illustration of Color Scheme

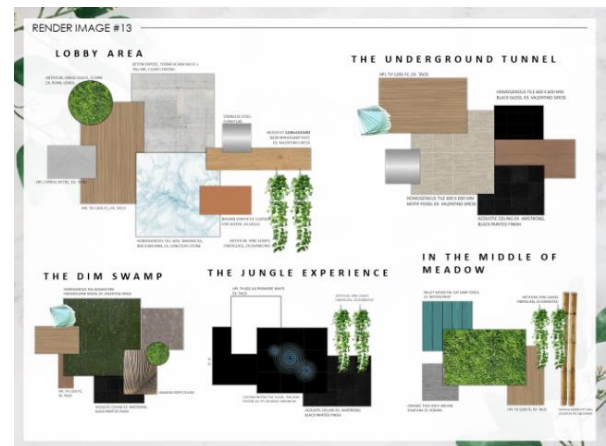


Figure 5 Material Scheme

Based on the theme which illustrate journey, then circulation that will be applied for whole museum design is room to room where visitors visit each room consecutively from one room to another room to be more directed. In museum interior, way findings will be provided.

First, visitors will enter museum lobby and will be greeted by wide and open forest environment. In lobby area,

ticketing which also acts as deposit counter is available. Aside from that, lounge and information areas act as both ticket checking and directing for visitors are also available.



Figure 6 Museum Lobby

As an additional facility, there is also a self-ticketing area where visitors may print entry ticket which has been booked online through available machine. LED touchscreen usage is also provided for visitors to access information about museum.



Figure 7 Self-Ticketing Area in Lobby

Next, visitors will enter a channel room, where information about insects and museum as a whole will be provided. In order to enter this room, visitors will access an entry gate that resembles tunnel located in lobby area. In lobby area, signage has been provided to make easy circulation of information for visitors.



Figure 8 Information Area and entry gate to enter exhibition

After entering the channel area, visitors will enter the underground tunnel exhibition. The exhibition shows numerous collections which lived on the ground such as ants, spiders, etc. the exhibition is a long tunnel with dim lights which focus to the collections in order to resembles underground.



Figure 9 Exhibition Area *The Underground Tunnel*

Collections will be arranged based on ordo and will be given LED signage for each group. As an interaction facility between visitors and collections, touchscreen LED information which connected to bigger LED screen in order to make ease information is given for each ordo.

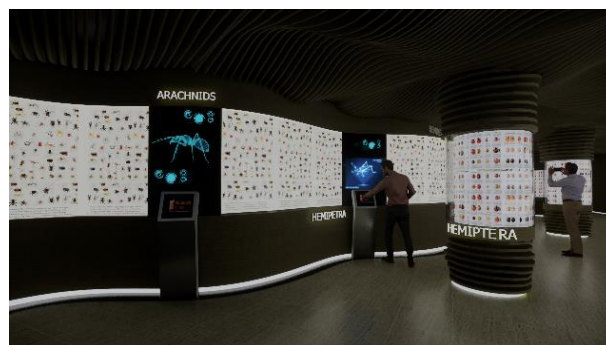


Figure 10 Interaction between Visitors and Collections in *The Underground Tunnel* area

Furthermore, visitors will enter The Dim Swamp exhibition area which has dimmed and cold environment. In the area, visitors are able to see numerous collections of insects that can be seen in swamps and rice fields. LED touchscreen information is also applied in the area in so visitors may access information through the technology.

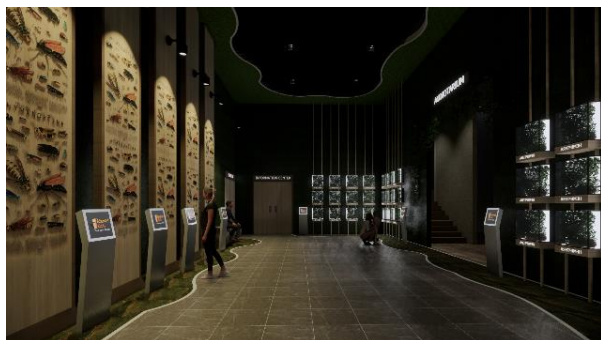


Figure 11 Exhibition Area *The Dim Swamp*

Besides the applications before, interactive exhibition is also supported with sound concept (underground and swamp echo), and temperature (made warmer than lobby). QR code feature is also available on the corner of collection display, so visitors may get information from smartphones.



Figure 12 Interactive Illustration system which used in the underground tunnel and the dim swamp exhibition areas

After visiting the dim swamp exhibition, visitors will enter the jungle exhibition area. The area is a visual exhibition, so all collections and information are in digital form.



Figure 13 *The Jungle Experience* Exhibition Area

In this area, the floor which used is interactive floor with tracking system, so that floor will light up from footsteps of visitors. Moreover, visitors may be able freely enjoy the experience of finding insects in forest by clicking numerous icons on LED wall screen. When visitors click the icons, the information related with will appear. This area is also supported with audio which plays atmospheric sounds in forest (water flows, crickets, etc.)



Figure 14 Interactive illustration system used in the jungle experience exhibition area

Furthermore, visitors will enter In The Middle of Meadow exhibition room. This area is wide, bright and opened because this area is located in a hall which uses dome skylight as the ceilings. The skylight is coated with UV filter technology. As a result, although the sun light comes in, the heat of the light doesn't damage the collections.



Figure 15 *In the Middle of Meadow* Exhibition Area

The exhibition shows collections of insects and butterflies (preserved) which will be categorized based on the ordo. Moreover, the area also provides numerous experiences. Besides having touchscreen LED information to access information about collections. Above display case, LED screen which plays videos as an illustration about the beauty of insects in nature is also provided.



Figure 16 Display Case collection *preserved*, touchscreen information and LED Screen

As focal point, there are interactive display cases which can be accessed by visitors in the middle of the area, some of the interactive displays are virtual reality and headphone audio display which will present numerous visualization and information about collections.



Figure 17 VR and Audio Display Experience

4. CONCLUSION

In designing Museum of Insects TMII a conclusion can be taken that designing will be focused in applying interactive exhibition between visitors and collection items. The interior designing is done with thematic approach, where the theme is "Travel through Insect nature". Visitors will be invited to take a tour around museum with certain theme for each area that resemble insect habitat from underground to the garden.

The applied interactive exhibition could be achieved through usages of technologies such as digital information, QR code feature, VR, and audio display experience. With interactive exhibition, visitors are expected to have new and deep experience so that visitors are able to memorize various information fully and easily. The applied interactive exhibition between visitors and collection items are expected to make Museum of Insects fulfill the functions as museum which are informative, conservative, and recreative.

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