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Sense of Place in Place Making of Creative Multimedia Foundation Studies Annual Exhibition

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Abstract

The challenge of transforming an empty space into a gallery setting takes on the concept of place making. A place can be seen as space that has meaning when the setting considers space, surroundings, contents, the people and its activities. This research concentrates on investigating how visitors perceive the space by gauging their sense of place (sense of belonging towards a place). Galleries are currently facing changes in this technological era whereby multiple content and context, space and form, display modes, tools and devices are introduced in one single space. The many layers are seen to distract, confuse and divert visitors' attention and gallery experience. Meeting the curator's intention gets more complex when visitors' experience is not fully analysed and met. This study intends to address the research issue by i). Identifying visitors' behaviour patterns in gallery space setting. ii). Investigating visitor's sense of place in relationship with space, content, activities, and with other visitors. An observational study was done during the Foundation Studies Annual Exhibition held at Faculty of Creative Multimedia, Multimedia University. The exhibition was curated and managed by staff and students of Foundation Year showcasing an array of design works. Analogue and digital presentations of paintings, drawings, sculptures, photography and video works were displayed. Findings derived from the observation highlights visitors' experience (level of satisfaction, comfortability, ability to focus and interact, understanding of content and context and ability to grasp the message) in relationship with physical space usage and display flow, arrangement of display furniture and exhibition tools, and static, dynamic as well as interactive activity zones. The outcome of this research will contribute towards a better design criteria of place making which affects individual behaviour, social values and attitudes. Characterizing types of visitor experience will improve the understanding of a better design criteria of place making, acceptance, understanding and satisfaction.

Keywords Place making; Sense of place; Exhibition space; Gallery; Visitor experience

Introduction

Exhibition spaces such as museums and galleries are often associated and built on institutes of higher learning grounds for the utilization of the campus inhabitants. Some are built on purpose to serve the faculty or university while some are initiated progressively as or when the necessity arises. Aptly so as these exhibition spaces function as a place with the purpose to acquire, conserve, research, communicate and exhibits; “A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment” International Council of Museums (ICOM). Whether the exhibition spaces are designed for, or function as an impromptu solution, or progressively created together with the growth of the faculty, these spaces are important nodes for the inhabitants. With the objective of being a shared space to create, exhibit and reflect, the space generates experiences for the purpose of education, study and enjoyment.

Static museum and gallery institutions are changing to a more interactive, audience focused, community oriented, flexible, adaptable and even mobile. They are becoming spaces where one can share and interact (Simpson, Fukuno and Minami, 2019). Therefore, a study is needed to cater to these changes. In order to be able to produce a comprehensive and effective space, a sense of place in a heightened visitor experience is required. The issues identified with visitors’ experience in galleries are related to the concerns of spatial layout due to inadequate understanding of visitor flow, difficulties of navigating through the installations or displays, inefficiency use of digital device and technology which result in problems of communicating content and messages. By classifying and identifying visitors’ experience through an observation study, visitors’ behaviour and perceptions can be derived to gauge their sense of place.

Literature Review

In ‘The Language of Space’, Lawson (2001) mentioned that spaces form important constituent parts of what is known as ‘settings’, which are influenced by behaviours and constraints. He continued to stress that a setting consists of the space, surrounding, contents, the people and its activities. Norberg-Schulz (1979) indicates that “the spaces where life occurs are places... A place is a space which has a distinct character. Since ancient times the genius loci, or spirit of place, has been recognized as the concrete reality man has to face and come to terms with in his daily life. Architecture means to visualize the genius loci and the task of the architect is to create meaningful places, whereby he helps man to dwell.”

Museums now exceed conventional conservation and are faced with bigger responsibilities (Harada et al., 2018). It is crucial to understand the situation so as to come up with new possibilities in enriching visitors' experience. Museum Experience Model (Falk and Dierking, 2013), illustrates that the museum visitor's experience results from the overlapping of the physical context, the social context, and the personal context. The standard model suggests that each visitor's experience is different. Each visitor (i) brings his own personal and social contexts, (ii) is differently affected by the physical context, and (iii) makes different choices like which aspect of that context he wants to focus on. A proposed gallery plan as the applied idea of the theory and model above is designed to enable the initial set up of the exhibition space.

i) Content of Exhibition

Dimmock (2000) stressed the importance of content and knowledge thus a platform of hybrid design environment connecting analogue, digital, real and virtual is needed (Asanowicz, 2002). An array of shapes, sizes and types are selected whereby the nature and type of content will determine their placement in the gallery space, choice of display furniture and display platform. Foundation Studies exhibition showcases student artworks which include outputs from the four subjects below:

- a. Visual Research & Communication (2D and 3D visuals: static)
- b. Drawing: Life, Figure & Creative Drawing (2D visuals: static)
- c. Photography: Basic and Creative Photography (2D visuals: static)
- d. Computer Graphics (2D visuals: static, and video viewing: dynamic and interactive)

ii) Context / Space: Gallery Space

With the advancement of technology, exhibition spaces are facing changes in terms of content and context, highlighted by editors of the University Museums and Collections Journal (2019). Architecture and design need to respond to these changes of the new social environment especially in its cultural components (Varitlova, 2019). Physical spaces are intertwined with digital means and virtual platforms resulting in hybrids of space and forms that are constantly being designed. In addition to a normal gallery setting, a digital gallery would involve designing spaces for virtual environments (Bourdakis, 2002) which require physical setting, a functional context, a social setting and interactivity (Rivka, 2002). To accommodate these exhibition tools and multimedia devices, several factors should be considered such as the eye level, floor/display level, natural viewing level, exhibit floor area, floor shape and sequence of events, wall/ceiling heights and access size (Matthews, 1991). Items that are needed to be taken into consideration when designing a gallery space includes space / void, structure: physical wall and structure, entrance & exit, openings and closures, division of space: public, private and semi-public, height and floor level, and lighting & environment ambience.

Pin Huang suggested that museums consider media art which promotes social impact (Grau et al., 2019). These spaces with intended specific reactions give meaning to the user while driving the interactions and engaging them to continue their experience (Thobias & Spiegel, 2009). Problem arises when experience is often mismatched with responsive environment and there is no proper documentation being done of the exhibition space, its content and the multimedia applications of interactive exhibition (Meyboom, Johnson and Wojtowicz, 2011).

iii) Tools and Devices

Referring to Matthews (1991), content to be displayed, size of display and mode of exhibition will determine space needed such as display areas, storage areas, collection areas and loading bays, public users space and private spaces, special display areas, flexible exhibition spaces such as permanent, temporary, travelling; thematic, systematic, object-oriented, interactive, passive; open-plan, linear and complex layout gallery designs, and adaptability space for alternative usage.

He added that the objective is to provide its users with direct experience of the material evidence through suitably prepared exhibits. Therefore there is great variety of solutions to space, circulation, layout and exhibition mode and tools. There are four basic types of exhibition modes which are: hanging/wall mounted, freestanding/open exhibits, exterior/interior installation and contained/display cases. Other display devices include pedestal, easel, seating, lighting, signage, computer and monitor, navigation tools, speakers and others.

iv) Visitor Experience

There are four categories involved which are sensual thread, emotional thread, compositional thread and spatio-temporal thread (McCarthy & Wright, 2004). Being engaged and interactive requires familiarity as visitors are from all age group and knowledge background (Paul, 2010). In this study items to be taken into consideration are targeted audience, visiting experience and behavioural pattern, types of experience: passive, active and interactive.

These physical built environments try to cater to the dynamic changes but inadvertently tend to overlook visitors' experience. This is explained further by Falk (2009) when he talks about identity and the museum visitor experience, the connection of emotional value with every memory of a place linked to the human brain triggers to us as something meaningful. This concept relates to having more meaningful visitor experiences by seeking new tools and methods (Norris and Tisdale, 2017).

The Theory of Planned Behaviour (TPB) started as the Theory of Reasoned Action in 1980 to predict an individual's intention to engage in a behaviour at a specific time and place (La morte, 2019).

Yamada & Fu (2012) added that to influence the performance of behaviour under consideration, existing beliefs associated with the behaviour need to be uncovered to integrate them into persuasive messages. The results of their study demonstrated the utility of the Theory of Planned Behaviour (TPB) as a framework.

Being engaged with showcases on display makes visitors feel involve. Designers and researchers need to be able to construct ideas to build these interactions to encourage motivation and participation (Ahmad et al., 2015; Wood and Wolf, 2008).

Shaw & Ivens (2002) described customer experience theory; on how people choose their own path to get better experience rather than use intended pathways. Thus to get people back on track we need to design better experience. Deciding for visitors their route and enforcing 'keep off grass' rules results in an unsatisfied experience. Instead, try to design better alternatives, encourage freedom of choice and attract by enhancing their experience.

v) Place Making and Sense of Place

With all of these changes, sense of place in exhibition spaces is facing a challenge too and this needs to be addressed. Sense of place is a concept of emotion and attachment to human environment with perception of visitors to the environment which combines social and physical components (Hashemnezhad, Heidari & Hoseini, 2013). The factors which create a sense of place are divided into two categories: cognitive and perceptual factors; physical characteristic (Steele, 1981).

Sense of place is the relationship between man, his image and environment. It affects behaviour, social values and attitudes to individual and collectively. This results in visitors interacting accordingly to their perception of sense of place (Canter, 1977). In understanding this concept, an insight would be later established from the findings and discussions made. Jackson (1994) further added that sense of place describes the atmosphere of a place, the quality of its environment and consists of elements of attraction that give a certain sense of well-being. These attributes welcome people to return back to, time and again. Norberg-Schulz, C. (1979) in his book, *Genius Loci: Towards a Phenomenology of Architecture described as* representing the sense people have of a place, understood as the sum of all physical as well as symbolic values in nature and the human environment catering to a holistic engagement of all the senses as against the dominant privilege for the ocular sense or the visual. Falk, J. H. (2006) further states that visitors' experiences are deeply tied to each individual's sense of identity.

Proposed Gallery Space Design

Annually, the Foundation Studies Department conducts a week-length of activities which include trips, talks, discussions, exhibitions, workshops, performances and others. These activities are attended by students and staff of the faculty as well as invited guests from the creative industry. Some activities are held outside of the campus area while some are done on campus such as the Foundation Studies Exhibition which is the highlight of the week. In preparing for the exhibition, the display team went through an array of content selection of subjects with 2D and 3D visuals: Visual Research & Communication, Drawing and Photography, while dynamic and interactive content comes from Computer Graphics subject. The process further included themes, types, sizes, shapes and forms of the art works. Defining the content thus will lead into space inventory process of identifying themes / usage of space divisions such as public, semi-public, private and semi-private spaces. Elements are divided into content and context, tools and devices, visitor experience and sense of place.

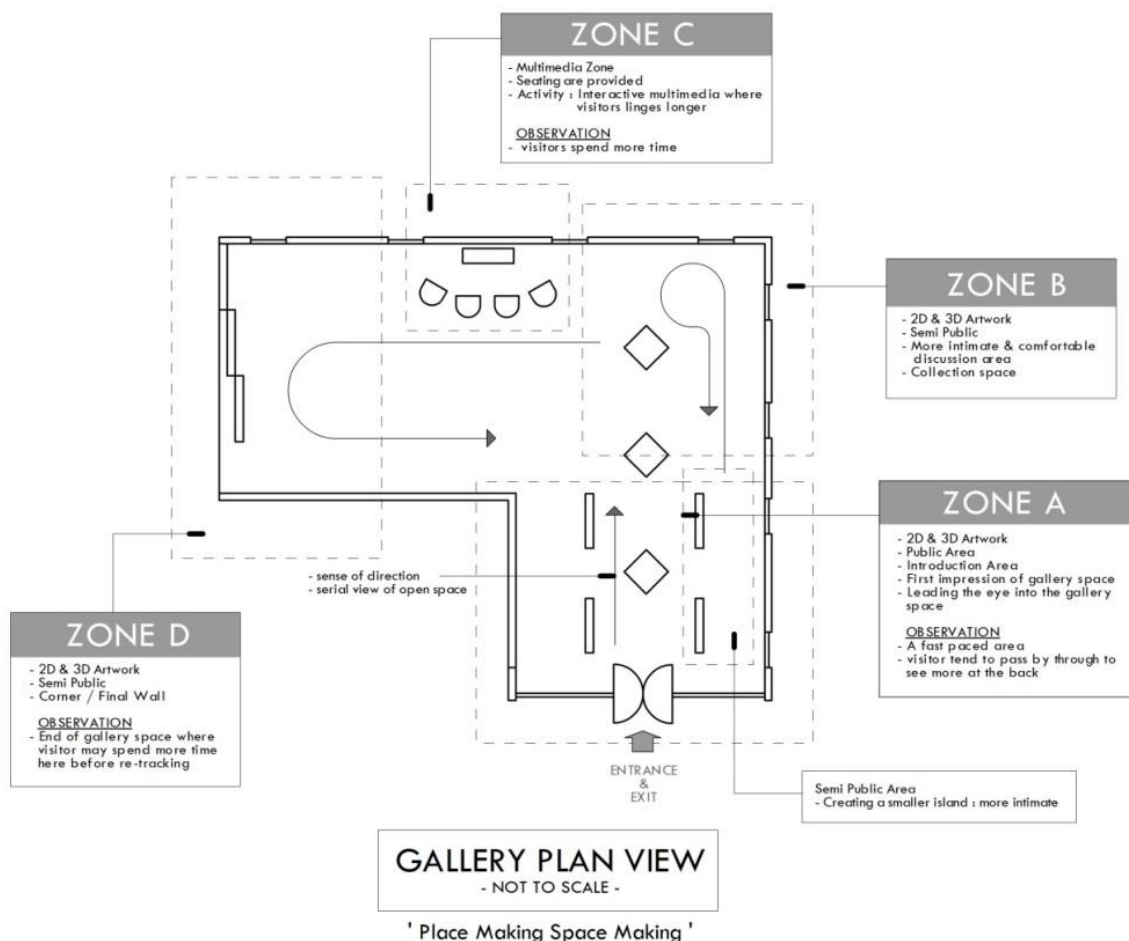


Figure 1 Proposed Gallery Plan with Space Zoning, Activities and Visitor Behaviour Pattern Space Planning as the Applied Idea from Theories and Models of the Research

Objective of Research

- i. To identify visitor behaviour patterns in this proposed gallery space setting.
- ii. To find out visitors' sense of place in relationship with space, content, activities, and with other visitors.

Methodology

Understanding visitors' experience is not easy as this involves different groups of people in a tangible, social and informative context (Falk, 2010). For this research a qualitative research method is conducted with the intention of finding out visitors' experience in an exhibition space. Focus is being given to the concept of space making and sense of place. An observational research with direct observation (looking at actual behaviour in real time) is done to collect data which is later tabulated into a descriptive analysis. The study takes into consideration the content, context, tools and devices and visitor experience. Data collected will be organised into clear categories of observation findings of behavioural patterns in a controlled specific setting. Findings are then established in table form and diagrammatic explanation accompanied by images taken throughout the exhibition period.

The implementation of a structured observation exercise (data collected to be organised into clear categories of specific categories of behaviour of single and group visitors) is to gather accurate information of recorded behavioural patterns in a contrived setting (a specific setting situation created by observer), using a non-disguised observation method (where visitors know that they are being observed) using convenient non probability sampling, via human observers who studied the gallery visits over a period of time through direct observations (looking at the actual behaviour in real time). The exercise were conducted by two observers over a period of one week. Photographs and notes were taken during the observation. Interpretation of observers during data analysis is tabulated. Reliability of observation is achieved by the agreement of more than one observer at the same time of the same sampling towards the set of behaviour collected and in terms of their coding of the behaviour pattern. Degree of consistency of observation over a period of time due to capacity of people behaving in different ways on different occasions and in different context. Validity can be checked through the strict administration of the observation schedule (Bryman, 2008).

To address Research Objective 1: To identify visitor behaviour patterns in this gallery space setting. Behaviours of observation include leisure viewing, brisk viewing, viewing with discussion, walk past through and re-visit (Table 1).

To address Research Objective 2: To find out visitors' sense of place in relationship with space, content, activities, and with other visitors. Observations were made at Zone A, B, C and D (Table 2).

Visitors were also observed on the intervention items which are allocation of another semi-public isle at Zone A, openings at Zone B, display at the wall on top of the digital device at Zone C and usage of easel at Zone D (Table 3).

Single and Group Visitor Behaviour were also observed to understand further the similarity and differences of both groups (Table 4).

Results and Discussion

i) Implementation of Gallery Plan and Scenes



Figure 2(a) Entrance view of the gallery



Figure 2(b) Exit view of the gallery

There is a sense of direction where visitors could see right through the serial view. This gives a sense of open plan space planning. It is inviting where visitors feel they have a choice to stroll leisurely, walk briskly, loop or stop for further discussion.



Figure 3 Entrance Zone

Public space with 2D and 3D artworks on display such as paintings and sculptures. Mode of display consists of display walls, display partitions and pedestals. Even though the space applies open space concept, the display partitions indirectly produces another two smaller viewing zones that allows visitors to have semi-public areas for them to mingle, view the artworks and discuss in a more comfortable mode. Visitors find too large a space intimidating and so smaller areas provide them the privacy that they need for lengthy discussions.



Figure 4 Semi Public Collection Space where Visitors Linger Longer for Discussions and Reflections

This area is at the far end of the gallery space, at a corner space. Again, corners do provide collection area as visitors feel that they could linger longer and not disturb visitor traffic. The 2D artworks are lined up against the wall while 3D sculptures are placed on pedestals. Visitors have choices between eye level mounted artworks or slightly lower placed sculptures. Their vision travels from the wall to the central point of view creating a dynamic 360 view. The openings at certain intervals gives another infinite sense of view, making the space seems bigger, although they may pose an intervention: disturbance to the contained space.



Figure 5 Multimedia Corner

Seating area provided for interactive activity. The activity changes from viewing to interacting in this area. Visitors are able to sit down to view and enjoy the multimedia videos. They also are able to interact with the device making the space a zone for activity. This results in group viewing and discussion area, or at times individual viewing and reflecting. The seats also provide a break in the viewing pace; a resting place. An important design decision here is to provide ample interactivity area so as not to disturb visitor flow to the other viewing zones.



Figure 6 Semi Public Display Space

Visitor loop signalling end of exhibition space. As visitors realise that this is a dead end, they have a choice of whether to loop; turn, linger longer for reflection before re-tracking their route. As this gallery space has a one entrance and exit point, visitor may trace same route, or take another route, to experience a different visitor experience.



Figure 7 Types and Display Mode for 2D and 3D Display: Paintings, Sculptures and Photography Images



Figure 8 3D Sculpture Display on Pedestals



Figure 9 Multimedia Content: Video Works on Computer

ii) Observation Analysis According to Gallery Zones**I. Research Objective:**

To identify visitor behaviour patterns in this gallery space setting.

Table 1 Types of behaviour pattern against space zoning

Space Zoning	Behaviour Pattern (Leisure, Brisk, viewing with discussion, Walk past through and Re-visit)
Zone A Public Area 2D & 3D Introduction Area	<p>Description of Space: Visitors will be introduced to the whole galley space in this welcoming area. It has an open space designed concept which has a leading eye perspective into the space. Visitors have a choice whether to view, walk straight or disperse to the semi-public space on either side. Artworks consist of 2D and 3D forms mounted on display walls, display blocks and placed on pedestals.</p> <p>Observation: It is observed that visitors in this area tend to brisk view at first due to the nature of the entrance zone. Later they might return back to do further leisure viewing especially during re-route. More leisure viewing to be found at the contained semi-public area on the left and right side where there is a smaller space contained in between panels. Here visitors tend to have discussions more. Seldom visitors walk past through the entrance space without stopping. Most visitors are seen doing a re-visit on items that they have missed.</p>
Zone B Semi Public 2D & 3D Corner Area	<p>Description of Space: This is a semi-public area situated at a corner of the gallery. It has 2D and 3D artworks mounted on walls and placed on pedestals. There are openings at both of the walls and as the contained area is a bit recessed, visitors find this space a bit secluded which provides them a quiet space for further discussions and longer mingling area.</p> <p>Observation: Visitors after going through Zone A find this semi-public corner area a breathing space where they can mingle longer at the corners and have longer leisure viewing. The openings also pose as a breather where they could rest their eyes into infinite views. This corner also provides a wide angle view from the entrance to the end of the gallery space. Visitors use this space to plan their next stop in the gallery. During re-route visitors also may flock at the corner to enjoy the exhibits.</p>
Zone C Multimedia Zone Activity Zone	<p>Description of Space: This allocated area for multimedia activity zone includes computer device that allows visitors to interact and choose videos to view. There is seating area to allow visitors to view longer at their own time and pace. The seating area also poses as a place for visitors to discuss while viewing, resulting in an active zone (visually and audibly).</p> <p>Observations: In this multimedia area, visitors come upon a different set of display and activity content. They are encouraged to sit or stand at the seating area while enjoying the videos. The designated empty space at the seating area provides visitors space to view (sit or stand) without disturbing the gallery flow to the other display areas. More interacting with discussing activity is found here. Some visitors also tend to walk past through as they associate</p>

	interacting with the device may take longer time or when there is already a large number of visitors at the area. They might re-visit when there is lesser visitors and they have ample time on their hands.
Zone D Semi Public 2D & 3D End of Display Wall	<p>Description of Space: This semi-public space marks the end of gallery space as the display wall do not allow visitors to pass beyond the display wall. There are 2D displays on the exhibition panel as well as on easels. Upon finishing the visitor’s route, visitors have come to a conclusion that their journey has ended in the gallery space and need to retract their way back to the entrance point. They can either reroute the same similar way or choose another path as they make their way to the exit.</p> <p>Observations: Visitors that find themselves viewing the last display content might spend longer time leisure viewing if they have more time on their hands since they know that they have gone through all display content earlier on. Or, they might just glimpse from a far due to the realization that the display is the last and they might want to re-visit other display that they have in mind.</p>

II. Research Objective:

To find out visitors’ sense of place in relationship with space, content, activities, and with other visitors.

Table 2 (a) Visitor sense of place via interaction with space, content and activities: Comparison between envisioned and observation findings at Zone A

Identified Space	Zone A
Content	2D and 3D Form mounted on display walls and pedestals.
Activity	Static Form of Display: Passive Viewing
Envisioned Visitor Behaviour	Leisure and Brisk Viewing, Viewing with Discussion
Observation Findings: Visitor Behaviour Pattern	<p>Most visitors will brisk view Zone A as there is a leading perspective to the end of the display which is marked by the sculpture on pedestal. This is also due to visitor eye level which leads them forward. Upon reaching the most end wall, some will proceed while some re-track as they find artworks that they have missed. Few realise that there is an isle / semi-public area on the left and right. This observation suggests that in a public zone, visitors do not prefer to mingle for a long time due to moving traffic at the same time, thus they will try to find a quieter corner or area.</p> <p>Findings: In a public entry zone, it is suggested to provide ample welcoming and passing route which means the open concept area should include a route to make it a serial zone or an array arrangement. This will help in segregating passage way and display way to provide comfortability and concentration to the visitors.</p>

Table 2 (b) Visitor sense of place via interaction with space, content and activities: Comparison between envisioned and observation findings at Zone B

Identified Space	Zone B
Content	2D and 3D Form mounted on display walls and pedestals.
Activity	Static Form of Display: Passive Viewing
Envisioned Visitor Behaviour	Leisure and Brisk Viewing, Viewing with Discussion
Observation Findings: Visitor Behaviour Pattern	<p>Observation made at this semi-public corner area indicates that visitors tend to gather at the collection point either for discussion, breather space or just to reflect and view the rest of the gallery space, as they find that they do not disrupt other visitors' path. Here their eye level will vary higher and lower and able to appreciate the artwork on the pedestal that is lower the normal eye level display. The location of the openings also posed as either a distraction or an advantage point as some visitors also were observed looking out of the openings.</p> <p>Findings: It is suggested that for a corner semi-public space it is preferred to provide amenities for visitors such as seating space or information kiosk and to have a change in display format and exhibit furniture to mark a difference with display flow and breather space. The openings should be treated, either to contribute to the display mood, or enhance it to become the backdrop if the area is a resting area, or to cover it if it disrupts the display flow.</p>

Table 2 (c) Visitor sense of place via interaction with space, content and activities: Comparison between envisioned and observation findings at Zone C

Identified Space	Zone C
Content	Multimedia Content via Digital Device.
Activity	Interactive Form: Active Viewing of Video Content
Envisioned Visitor Behaviour	Interactive Viewing with content and device. Discussion activity (sitting and standing)
Observation Findings: Visitor Behaviour Pattern	<p>Observation of visitors' behaviour in this space shows that as they come to the digital device, they tend to stand a distance and watch from afar what other visitors are doing, or watch the video display without interacting. After a while, visitors will start to interact when they began to feel more comfortable. Some visitors do not indicate that they are interested in interacting with the device therefore there is quite a chaotic section where visitors collide between passer-by and visitors who flock to watch and interact. Seating provided at times is not sufficient during peak hours.</p> <p>Findings: The seating area and interactive section should be placed away from passage way so as not to disrupt visitors flow, and the audience that is trying to watch the videos. There are also visitors who tend to sit and use the seats as a resting area. Therefore, the arrangement of the seating should be in the inner section of the viewing area and not just beside the passageway to avoid being used as a resting area.</p>

Table 2 (d) Visitor sense of place via interaction with space, content and activities: Comparison between envisioned and observation findings at Zone D

Identified Space	Zone D
Content	2D Form on display walls and easels.
Activity	Static Form of Display: Passive Viewing
Envisioned Visitor Behaviour	Leisure and Brisk Viewing, Viewing with Discussion
Observation Findings: Visitor Behaviour Pattern	<p>Observation made at the end of the gallery space /wall panel shows that over here visitors come to realisation that this is the end. Some do not reach the end as they are able to view from a distance and turn back while some spend more time as they know that this concludes the exhibition. A lot of thinking accompanies viewing over here in this section as they try to put all artwork together to decipher the meanings. They also make decision either to follow the same route out to the exit or stop at any sections to re-visit and reflect.</p> <p>Findings: It is therefore suggested that to end the display wall in a looping space concept, probably a distinctive display mode / furniture / info kiosk or even a heightened / change floor or ceiling level can give indication that that is the end. Some visitors tried to go beyond the display panel as they are not sure of the route direction.</p>

Table 3 (a) Intervention observation at Zone A

Identified Space	Zone A
Content	2D and 3D Form mounted on display walls and pedestals
Intervention Items	The allocation of another semi-public isle within the public area on the left and right.
Visitor Behaviour Pattern Observation	Some visitors tend to overlook and walk straight to the further end while some do take their time to view the semi enclosed section.
Findings	<p>Brisk viewers will just past by to get through to the next section.</p> <p>Leisure viewers realise that there is a semi-public area.</p> <p>Visitors who re-track usually re-visit items that they missed therefore the view from inside towards the exit should be more open to welcome re-tracking visitors.</p>

Table 3 (b) Intervention observation at Zone B

Identified Space	Zone B
Content	2D and 3D Form mounted on display walls and pedestals.
Intervention Items	Openings at perimeter wall.

Visitor Behaviour Pattern Observation	Some visitors view artwork as usual while some walk away from artwork and stand in front of openings.
Findings	Visitors will use the openings intervention as a breather space where they have infinite view. This is because half way through any exhibition passage visitors sometimes need a break and find amenities for assistance. They also find comfort in the nook / corner / recess that offer seclusion and security. This intervention can be treated as a resting place in future gallery designs.

Table 3 (c) Intervention observation at Zone C

Identified Space	Zone C
Content	Multimedia Content via Digital Device.
Intervention Items	Display at the wall on top of the digital device.
Visitor Behaviour Pattern Observation	Some visitors tend to be immersed in the interactive content that they are interacting with and do not realise that there are some hardcopy display available. The placement of the display also posed as an intervention as it disrupts concentration of viewers when visitors want to look closely and get in the way.
Findings	<p>The placement of this intervention of hardcopy artwork right behind digital device disrupts visitors' comfortability, focus and satisfaction as they need to lower their eye level so as not to be distracted.</p> <p>The movement of two groups, one viewing and one interacting also create chaos.</p> <p>Findings show that it is better to separate the placement for better visitor concentration of viewing / interacting / passing by groupings. This is because display furniture for hardcopy items and furniture for interacting differs according to function.</p>

Table 3 (d) Intervention observation at Zone D

Identified Space	Zone D
Content	2D Form on display walls and easels.
Intervention Items	The usage of easel instead of wall display method.
Visitor Behaviour Pattern Observation	This intervention indicates a sudden interest movement from visitors. Mostly seem to be attracted to a feature that protrudes, distinctive and different from its surroundings. Easels are more prominent than their background and able to gather visitors' movement towards them.
Findings	Any intervention that stands out, bigger and louder in its line, shape, value, texture, colour and space will definitely attract attention and change behaviour pattern. This includes changes in display furniture scale, height, placement and function. It is able to create an oasis and might even be focal points.

	<p>Findings suggest that whenever there is an intervention in the display section, furniture set up, environment ambience or display mode, visitors will tend to be distracted / not realising the intended display path, route or sections. This intervention on the other hand can provide an interesting feature and mode of exhibition as visitors will stumble upon it, creates a stir, provides stimuli and leaves choices for visitors to make upon their next move.</p>
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Table 4 (a) Single visitor behaviour

<p>Single Visitor</p>	<p>Zone A Single visitors tend to hurry and brisk view display in an open area section. They seem to linger more at semi-public areas.</p> <p>Zone B More of leisure viewing at semi-public areas and a more relaxed attitude observed here.</p> <p>Zone C More of single visitors take time to start interacting. They stand from afar and prefer to watch for a duration of time.</p> <p>Zone D Leisure viewing as the end of display wall provides a point of reflection and making decisions for re-tracking.</p>
<p>Findings</p>	<p>The observations lead to findings that denote sense of place when visitors come to a realization of their visiting objective.</p> <p>Single visitors can only interact with themselves, the artwork, the devices and the space. They are not able to express their thoughts with their companion therefore they are more aware of their surroundings, the elements of design, the artworks on display, the ambience, the technology and others. They usually focus more, reflect quietly and do more re-tracking and changing routes as they go along. They discover each space and content at their own leisure time while brisk view at areas that intimidate / expose them. They also take more time to try something new such as interacting with devices. Their communication with their surrounding can be heightened and their gallery experience a more meaningful one with the aid of spatial layout and thoughtful arrangements of display furniture, devices and ambience.</p>

Table 4 (b) Group visitor behaviour

<p>Group Visitor</p>	<p>Zone A Group visitors usually are more comfortable and adventurous in discovering spaces therefore they display leisure viewing with comfort at public areas.</p> <p>Zone B Group visitors find this area another spot for group interaction and discussion. They seem to spend more time here.</p> <p>Zone C</p>
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	<p>Group visitors also tend to adept easily to interactive items and display requirements. Some might be actively interacting while some passive viewers, together they form an active group of people that interacts well.</p> <p>Zone D Group visitors also might separate themselves at this junction where upon re-tracking, some might re-visit certain artworks while some re-route to the exit and some tend to discuss or reflect further before making a choice to re-track.</p>
Findings	<p>Findings from observations suggest that group visitors are more open, adventurous, able to interact freely and express enjoyment, distastefulness and other feelings more openly. They are also keen to interact and use content and space. The size of group visitors also determines their comfort and focus level as smaller spaces might pose as tight areas and limit their behaviour activity while larger space allows more freedom in movement and choices. Therefore, ample space allocation for content as well as passage way, seating area and breather space also must be considered so as to provide ease of viewing area as well as passing passages.</p>

Overall Discussion on Observation Findings and Recommendations

- i. It is found that the sense of place in this gallery space proved to be obtainable by most of the visitors through their viewing behaviour. The zones identified for viewing, seating and discussing at the public and semi-public areas identified produced targeted common behaviour. Visitors grasped the intended space usage and sense of place.
- ii. Sense of direction, open space, enclosed space, dead end, serial view and infinite view are included in the gallery space design to provide visitors a variety of experience. This adds colour to their viewing pleasure.
- iii. In a space that has width, length and depth (3D space) with defined boundaries, any placement of physical objects, digital devices and technologies as well as interactive activities have relative relationship and direction with one another. Scale and proportion also is in direct correlation with the human eye view and perception.
- iv. At certain points there were observations that produced a slightly different visitor behaviour such as:
 - a. The central pedestals with sculptures pose as interventions to the flow, they were meant to be stop points and yet some visitors walk past them due to the lower eye level of the sculptures. Visitors' eye levels are higher and also because of the open space, visitors tend to walk briskly according to the sense of direction. They seem to want to know what is at the end of the gallery space. Clear segregation between passageway and display area / furniture can provide visitors more comfort and heightened their level of focus.
 - b. Certain points that are thought to be collection area or semi-public area seem to have fewer visitors who linger there, probably due to the large glass opening on the left side

of the gallery at the entrance section; exposing the area more therefore visitors are distracted and quickly retreat into a more comfortable zone.

- v. It is also found out that there is a difference between single visitor and group visitor behaviour in a gallery space. This relates to their sense of place either individually or in groups as shown in Table 4.0.
- vi. As an experiment, the introduction of a multimedia section with seating area at one designated space posed as an intervention to the flow of 2D and 3D Form display which are viewing with leisure, brisk viewing, viewing with discussion and looping viewing. The interactive display with digital devices influenced visitors to linger longer while interacting with the content. The seating area also provides a comfortable resting area while enjoying the videos. The activity happening here added another viewing mode and variety. Thus findings are: expectation of visitors after going through three zones; public area, semi-public area, corner semi-public are deemed similar which are leisure viewing, brisk viewing, viewing with discussion and looping viewing. Once a different set of activities and display mode is introduced, a break in the flow of direction is created, providing visitors with choices of either to interact with the device, enjoying the video as is, or even discussing and talking creating a slight chaos in the flow of visitors.

Conclusion

Good architecture is all about using smart design solutions to solve challenging issues such as acquiring a sense of place in a limited space. Do visitors behave in each identified space as predicted? Do they perceive the space as how the designer of the exhibition space envisioned it to be? As shown from the findings of the observation, spatial design and planning of gallery furniture arrangements, choice of usage and function of devices and tools, clear indication of public and semi-public area, clear segregation of passageway and display area can contribute to a good gallery space. This enables gallery visitors to clearly grasp the sense of place and place making, resulting in a good gallery experience in terms of visitors' level of satisfaction, comfortability, ability to focus, ability to interact, understanding of content and context, grasping of messages and enhanced gallery experience. This is evident from the observed visitor behaviour pattern which focuses on duration of time spent, types of behaviour, interaction between visitor and space, device and tools as well as with other visitors. This is supported by Jiven & Larkham (2003) that sense of place should be implemented more by designers.

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