



A STUDY OF WAYFINDING AND CIRCULATION IN MALL DESIGN

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ABSTRACT

Malls are places where the influx of people is on the high side especially during peaks periods or festive seasons. Therefore, in other to avoid stampede during exit and entering of mall design, is imperative that every section of the mall should have a defining way that can allow easy identification. To this end, proper movement within and around this facility should be kept simple and should be made easy for users to find their way through this facility. This Journal therefore seeks to examine and highlight through the use of secondary data the possible ways wayfinding and circulation can be enhanced in mall designs.

Keywords: Wayfinding, Circulation, Mall Design, Movement.

INTRODUCTION

It is obvious and potential that one powerful influence on wayfinding and circulation behavior is the degree of familiarity an individual has with a given setting. If familiarity is increased to sufficient levels, initial difficulties in orientation may be overcome. This will enable efforts to be directed toward increasing the knowledge level of naïve users of a setting. On the contrary, familiarity alone does not explain disorientation, then other factors, such as visual or spatial features of the environment, ought to be considered Weisman,(1981),.

Wayfinding

Wayfinding as an idea has been in presence since the sixteenth century. Initially, it was referred to by the term “wayfaring,” which means travelling on foot to a certain destination (Arthur & Passini, 1992). Through the years, design professionals, architects, urban planners, graphic designers and environmental psychologists have developed the term wayfinding to describe the ‘navigation of one’s environment’. Wayfinding is ceaselessly developing dependent on

personal experience and evidence dependent on the utilization and control of complex conditions by end-users. (Oyelola, 2014) Wayfinding is the propensity to get to desired destinations in the natural and built environment. (Passini, Rainville, Marchand, & Joannette, 1998). Kelvin Lynch (1960), published his first book 'The Image of the City' of which he described wayfinding from the urban perspective, using concepts such as 'spatial orientation' and 'cognitive mapping.

Oyelola, 2014) Lynch in Oyelola (2014) further explains that the experience of wayfinding are based on environmental components such as paths, edges, landmarks, nodes and districts. These concepts and components form the basis of wayfinding design theory as it is presently utilized. Architectural wayfinding configuration addresses-built components, including spatial arranging, enunciation of form-giving highlights, circulation frameworks and environmental communication. Wayfinding configuration is integral to universal design since it advances simple comprehension and utilization of built elements at all scales.

Successful wayfinding design allows people to attain the following:

1. Determination of location within a setting (building or urban setting)
2. Determination of prospective destination
3. Development of a movement plan (from location to destination)
4. Execute the plan and negotiate any required changes (Mayor's Office for People with Disabilities, 2001) in (Hunter, 2010).

Passini et al, (1998) posits that wayfinding is composed of three interrelated processes:

1. Decision-making and the development of a plan of action
2. Decision executing transforming the plan into action and behaviors at the right place and time.
3. Information gathering and treatment which sustains the two decision-related processes. (Passini, Rainville, Marchand, & Joannette, 1998)

Passini graphically illustrated three levels of decision making using a scenario of moving from a location x to "Turtle Atoll". Here, he

breaks down the series of choices to be processed and actions to make based on the above three decision making processes. This is illustrated here. The trend of thought and decision-making processes is evident in everyday activities – decision to visit a museum, decision on what exhibits to visit, decision of museum curator on the proposed paths to be followed during exhibitions, movement plans, and a lot more.

Lindberg, and Mantyla (1983) found that accuracy in locating “building targets” was positively correlated with familiarity and with “free-viewing-access.” When we move about in a familiar environment we seldom experience disorientation. We also seem to be able to learn new spatial facts with little difficulty. This may be the case in an unfamiliar environment if we possess a legible map and are skilled at using it. Map by direct observations is an automated process not requiring cognitive resources to any great extent (Mooser, 1988). Recognition plays an important role in legibility and orientation. Recognition of places is not possible unless the environment is somewhat familiar. Maps, sign posts, and other media may play an important role for orientation in unfamiliar environments. People rely on numerous types of environmental information to find their way within buildings.

Weisman (1981) developed four groups of environmental variables thought to be influential on wayfinding:

- (a) Visual access to familiar cues or landmarks with in or exterior to a building,
- (b) The degree of architectural differentiation between different areas of a building that can aid recall, and hence orientation,
- (c) the use of signs and room numbers to provide identification or directional information, and
- (d) Building configuration, which can influence the ease with which one can comprehend the overall layout of the building. People find their way in complex settings by trying to understand what the setting contains and how it is organized. To form a mental map of the setting, spatial clues must be identified. Among the basic building blocks of cognitive mapping are spatial entities. Distinctiveness can be achieved by the for man volume of the space that define architectural and

decorative elements, and by the use of finishes, light, colors, and graphics (Arthur & Passini). Passini, Rainville, Marchand, and Joannette (1998) emphasize the importance of distinguishing a zone; they suggest that a zone with a strong character may favor a certain spatial identification, if only in the sense of being somewhere distinct. It is assumed that most architectural settings and larger scale environments are too extensive to be perceived in their entirety from any one location. Wright, Lickorish, and Hull (1993) state that finding a particular destination can be difficult in many modern building complexes, where the corridors on different floors can look very much alike. In those circumstances, information regarding specific locations, spatial relationships among those locations, and those locations in relationship to the rest of the building must be stored easily in one's head.

Principles of Wayfinding

Downs and Stea (1973) in Farr, Kleinschmidt, Yarlagadda, & Mengersen, 2012 proposed that wayfinding could be broken down into a four-step process comprising:

1. Orientation: The ability of a user to find out where they are with respect to nearby markers and the required destination
2. Route Selection: Choosing a route that will eventually lead to the desired destination.
3. Route Control: The constant control and confirmation that the individual is following the selected route.
4. Recognition of Destination: The individual's ability to realize that they have reached the desired destination. (Farr, Kleinschmidt, Yarlagadda, & Mengersen, 2012).

It is on the back drop of the above that the principles of wayfinding were developed and these principles as presented here comes from both the research of museum exhibits and the study of environmental psychologists, cognitive scientists, and others who study how humans represent and navigate in the physical environment; (mfoltz, 1998). As listed in the International Health Facilities Guidelines, there are eight (8) wayfinding principles these are thus listed and explained as follows:

1. Create an Identity at Each Location, Different from all others: spaces should be different from others in an overall design layout as this aid in recognition and overall cognitive mapping of position and orientation with respect to the overall layout of the design. This principle indicates that every place should function, to some extent, as a landmark – a recognizable point of reference in the larger space. (mfoltz, 1998) This principle was deduced from the Research work of Arthur and Passini (Arthur and Passini 1992), where the notions of ‘identity’ and ‘equivalence’ for speaking of perception of places were introduced. They went further to clarify that personality is the thing that makes one piece of a space discernable from another, and comparability is the thing that enables spaces to be gathered by their regular traits.

2. Use Landmarks to Provide Orientation Cues and Memorable Locations: Landmarks serve two useful purposes. The first is as an orientation cue; the second is as an especially memorable location. While the former enables the navigator or user of a space to identify his current location, he can say something about where he is, and which way he is facing in the space he shares with the landmark (Locational Orientation). The later creates a shared vocabulary platform for which verbal and written descriptions of locations or routes can be achieved. ‘Landmarks associated with decision points, where the navigator must choose which path of many to follow, are especially useful as they make the location and the associated decision more.

3. Create Well-Structured Paths: For a path to be well-structured, they must possess a set of characteristics such as: continuous; having clear headings (beginning, middle and end) when viewed in each direction (mfoltz, 1998). They should confirm progress and distance to their destination along their length; and a navigator should easily understand which direction he is moving along the path by its ‘directionality’ or “sidedness”. mfoltz, (1998)

4. Create Regions of Differing Visual Character: This principle deals with the division of spaces into regions of distinct set of visual attributes (colors, textures, forms, shapes, and others) to assist in wayfinding. The character that sets a space apart can be some

aspect of its visual appearance, a distinction in function or use, or some attribute of its content that is consistently maintained within the region of space but not without. Regions of spaces in buildings may not have readily defined boundaries as they tend to overlap, or their extent may be in some part subjective; but there is a generally agreed space said to be within the region of space, and a surrounding area said to be outside it. Mfoltz, (1998).

5. Minimal Navigation Choice for Users: If there is a story to tell, spaces should be designed so that it is coherent for every route the navigator might take. The basic story should be communicated by every path the navigator can take through the space. Opportunities for detours, side-tours, and exploration can branch off the main path, eventually returning to resume the main story mfoltz, (1998).

6. Use of Sight Lines to Reveal what is ahead: This principle deals with creating a visually accessible space(s) for which view in a distinct direction is made extensive and tailored with a purpose to attract visitors to that direction. In an exhibit space, in which the first-time visitor has uncertain expectations as to its extent and purpose, sight lines are valuable means of giving enough information about what is ahead to encourage the visitor to move farther. Sight lines give long narrow samples of unfamiliar spaces. To make a sight line more interesting, the design can adopt a strategy of creating an “attractor” – a goal to navigate toward. This might be some feature (sculpture, art work, and others) that is striking and unusual (mfoltz, 1998).

7. Provide Signs at Decision Points to Help Wayfinding decisions: Signs should be placed, where necessary, at decision points on the floor layout (most preferably, the use of sculptures, or multi directional arrow heads or beacons). Decision points are points where the visitor must make a wayfinding decision (whether to continue along a particular route or change direction). (mfoltz, 1998)

8. Use Survey View (Navigational Floor maps or Vistas): create floor maps which visitors will use as a navigational aid. Is places the

entire space within the navigator's view, and several kinds of judgements can be made readily. Survey views can also provide the basis for the visitor's mental map; and the mental map, primed with the image of his environment, can be augmented readily with experience gained from actual navigation in the space. (mfoltz, 1998)

The above set of principles can thus be classified into two main categories - during design and post-design; and these intrinsically affect the circulation design choices and outcomes. Principles such as – creation of distinct spatial identities, Use of Land marks, Creation of differing visual characters, Minimal Navigational Choices, Use of Sight lines to reveal what is ahead; can be integrated and achieved during the design stages. The provision of signs at decision points as well as use of survey views are achievable post design.

This thesis will thus explore the adoption of the principles of wayfinding that are applicable during design stages as highlighted above in a bid to create more navigable spaces which will thus greatly enhance visitor movement in museum spaces.

Visitor Circulation in Relation to Orientation and Wayfinding: The successful use of a complex of spaces is directly influenced by the factors of orientation and wayfinding. There are three major elements to visitor orientation and circulation: Conceptual orientation, wayfinding, and circulation Bit good, (2010). Conceptual orientation (also known as "thematic" orientation) includes an awareness and understanding of the themes and subject matter organization of the facility; although visitor expectation and prior experiences play a key role in conceptual orientation. Visitor orientation and circulation is related to all aspects of the museum experience. (Bitgood, 2010).

Lack of orientation information causes people to feel disoriented which leads them to an inability to situate themselves within the environment and incapability of having or developing a plan in order to reach their destination. (Arthur and passini, 1992, p.225 in Ash, 2005). Orientation will influence the circulation patterns of

visitors and circulation designs influence the users' orientation (Bitgood, 2010).

Charpman and Grant, (2002) in Ash, (2005) describes wayfinding as follows:

“Wayfinding is behavior. Successful wayfinding involves knowing where you are, knowing your destination, knowing and following the best route (or at least a serviceable route) to your

ARCHITECTURAL DESIGN CONSIDERATIONS TO ACHIEVING OPTIMAL SPECIAL ORGANIZATION AND RELATIONSHIP.

- **Spatial Planning.**

The planning and layout of a building forms the foundation for all other wayfinding elements. Spatial planning involves identifying, grouping and linking spaces.

Planning a layout involves the identification of spatial units and understanding their purpose, function and relationships to other units. Based on these relationships and functions, units can be grouped into zones of common function/ identity.

Understanding the logical progression of, and relationships between spaces will determine the circulation system and is an important aspect in creating an effective wayfinding system. Directional signs can only do so much to assist users in illogical, complicated routes. The goal is to keep circulation systems simple and legible to a user by reducing the number of decision points, maximizing visual access and minimizing any change in level and directions in between landmark and nodes.

Comprehending relationships between zones, including the physical and visual access required between them, allows the qualities required in the circulation paths that connect spaces to be explored. For example, clear lines of sight from car parks to entrances and from entrances to lift foyers or reception counters helps guide the consumer to their destination or to information that will further assist the consumer to navigate the health facility. These visual access requirements will therefore impact how these

zones are laid out and connected, for example how open and direct the path is.

Different methods can be used to plan library space and it will attain the openness, flow and functionality. Below are certain pattern that can be adopted to attain optimal spatial efficiency.

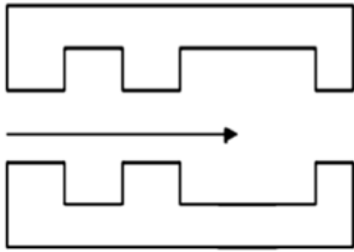


Fig 1: Chain Spatial Pattern.

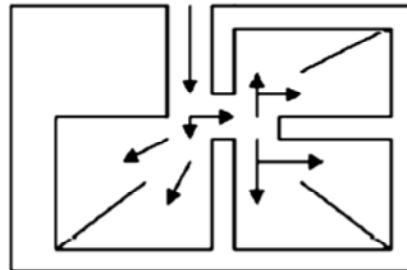


Fig. 2. Window spatial pattern

Chain (A): and window pattern **(B):** The main aim of the chain pattern is to allow visitors to navigate regarding their interest in displayed books or materials.

Window (B): From the central point, visitors can move towards the rooms according to their interests

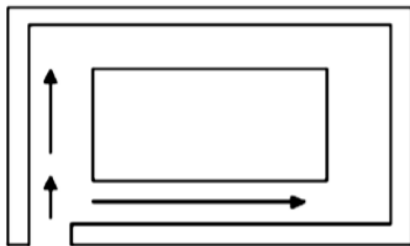


Fig. 3: Central Spatial Pattern: Spatial Pattern

Central: Describing the collection in the center, the aim is to allow visitors to see it from different viewpoints

Block: It provides navigation voluntarily and in a random fashion

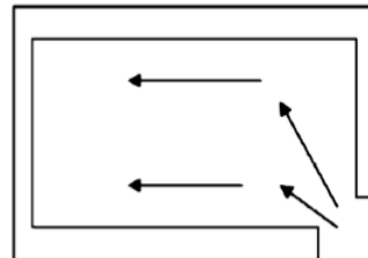


Fig 4: Block Spatial Pattern

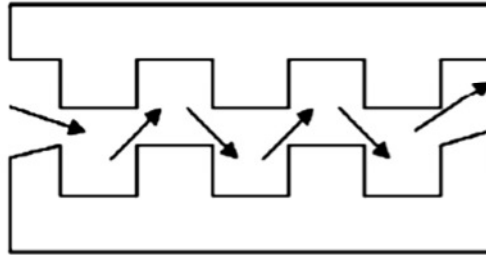


Fig 5: Brush Spatial Pattern: The main aim is to allow visitors to move through the rooms voluntarily.

Source: Erbay (1992) in Ash (2005).

The above are conceptual patterns which if it is followed it can enhance way finding and circulation in the mall. These patterns will enhance and make movement easy.

CONCLUSION

Circulation and wayfinding are necessities in the design of a mall that cannot be neglected. A functional design mall design must be arrayed in such a way that flow and movement if people must be directional and must enhance way finding. All requirement to achieve this purpose must be conceptually thought about because it is a factor that can be hardly corrected when design is already in place. One basic way of keeping this purpose optimized is o ensure that openness in layout of plan and arrangement of space is adopted, use of self-directional means i.e the use of synages should also be imbibe where necessary. Therefore, this paper is highly recommended as it aids and proffers solution to achieving a sustainability mall design. This paper is also subjected for further reviews and analysis.

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