

# Analysis of Spatial Layout Design and Its Impact on Circulation Comfort at the Homedec Exhibition in ICE BSD Jakarta

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## ABSTRACT

This research aims to analyze the implementation of spatial layout in relation to visitor circulation comfort at the HOMEDEC 2024 Exhibition, held in Hall 3A of the Indonesia Convention Exhibition (ICE) BSD, Jakarta, from October 3rd to 6th, 2024. The background of this study is rooted in the importance of spatial arrangement to support smooth visitor flow and enhance the overall visitor experience during large-scale exhibition events. This study employs a descriptive qualitative research method, using data collection techniques such as direct observation, expert interviews, documentation, and the distribution of questionnaires to exhibition visitors. The analysis focuses on aspects including circulation path width, movement patterns, booth placement, zoning, and wayfinding within the exhibition space. The findings indicate that the spatial layout, designed using a combination of grid and radial patterns, successfully facilitated a relatively smooth flow of movement. However, several congestion points were identified, particularly in the prize giveaway area, the main stage area, and at the intersections of major circulation paths. Supporting factors that contributed to visitor comfort at the HOMEDEC exhibition included adequate main path widths, good lighting, and strategic booth placement. Nevertheless, limited boundary signage and high density in certain zones emerged as key constraints. This study recommends improvements in zone organization, widening of pathways in high-traffic areas, and the addition of directional signage to further enhance visitor circulation comfort in future exhibitions.

## KEYWORDS

Culture  
Fine Arts  
Design Software  
E-learning

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## INTRODUCTION

The MICE industry (Meeting, Incentive, Convention, and Exhibition) plays a strategic role in the development of Indonesia's creative economy, with exhibitions being one of the most frequently organized activities. The HOMEDEC Exhibition (Home Design and Interior Exhibition) is an annual event that focuses on interior design, infrastructure, and household innovations, serving as a major attraction for industry professionals and the general public. The success of an exhibition is not solely determined by the number of participants or the programs offered; spatial planning that supports visitor circulation comfort is also a critical factor. A well-designed spatial layout facilitates orientation, manages crowd distribution, and enhances the overall visitor experience.

Previous research has examined the relationship between spatial layout and user comfort in various contexts, including spatial planning (Rafii Pradana et al., 2022), zoning principles in interior design (Francis D.K. Ching, 2011), and public spaces (Edward T. Hall, 1966). These studies indicate that path width, zoning, and directional signage significantly influence perceived comfort and movement efficiency. However, studies that discuss the application of these concepts to large-scale exhibitions in Indonesia—particularly those involving diverse product categories such as

HOMEDEC—remain limited. Most existing research focuses on aesthetic aspects of exhibition design or marketing approaches, while fewer studies emphasize circulation as a key component of the visitor experience.

This research analyzes the implementation of spatial layout in relation to circulation comfort at the HOMEDEC 2024 Exhibition at ICE BSD, Jakarta. The study aims to identify the circulation pattern applied, determine the factors influencing visitor comfort at the event, and provide recommendations for improvement based on field observations. This research is expected to contribute to the scientific development of exhibition space design and serve as a practical reference for organizers of similar future events.

## METHOD

This research was conducted at the Indonesia Convention Exhibition (ICE) BSD City during the HOMEDEC 2024 Exhibition. The research employs a descriptive qualitative approach to analyze the implementation of spatial layout in relation to visitor circulation comfort. The research objects are the exhibition floor plan and visitor circulation patterns, while the research subjects include exhibition visitors, event organizers, and booth managers. Data were collected through direct observation, interviews, and questionnaires. Observations involved documenting the layout, measuring circulation path widths, and mapping visitor movement flows. Semi-structured interviews were conducted to obtain in-depth information from visitors and organizers regarding their experiences and perceptions of comfort. Questionnaires were distributed using a purposive sampling technique, with the criterion that respondents must have visited at least 50% of the exhibition area. The research variables include physical factors such as path width, distance between booths, zoning, and number of access points; visual factors such as signage clarity and spatial orientation; and comfort factors such as perceived density, ease of movement, and availability of rest facilities. The data were analyzed through data reduction, presentation in the form of tables and diagrams, and verification through source triangulation to enhance validity. Quantitative data from the questionnaires were described descriptively using frequency tabulation and percentage analysis to identify tendencies in respondent answers.

## RESULT AND DISCUSSION

### 1. The Exhibition

ICE BSD is one of the largest convention and exhibition centers in Indonesia, located in BSD City, South Tangerang, Banten. The HOMEDEC Exhibition was held in Hall 3A, where each hall has a standard size of 54 meters  $\times$  90 meters  $\times$  12 meters, with a total area of 4,860 square meters. A single hall can accommodate up to 320 booths, making it suitable for large-scale exhibitions.

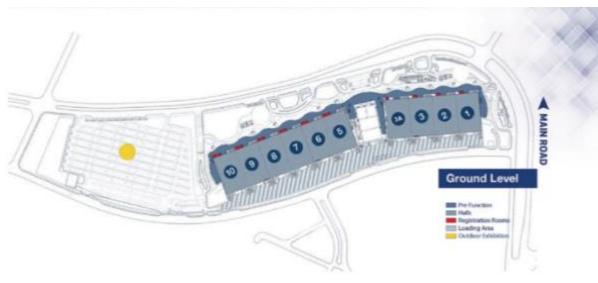


Figure 1.1 Map of ICE BSD  
Source: ICE Indonesia, 2015

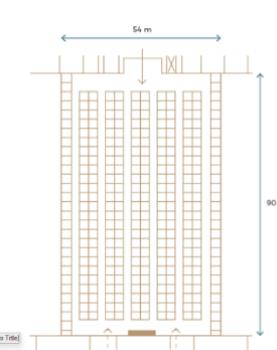


Figure 1.2 Exhibition Hall Layout Plan  
Source: ICE Indonesia, 2015

### 2. Homedec Exhibition

The HOMEDEC exhibition area has two main doors that function as both entry and exit points. Each door has a width of 2.6 meters, allowing up to three visitors to pass through simultaneously.

The registration area is equipped with six laptops, three on each side, for visitors who have not yet registered. Meanwhile, pre-registered visitors simply need to show the barcode from their confirmation email to enter. The exhibition features approximately 270 booths from various participating companies in the HOMEDEC Design and Interior Exhibition 2024. The exhibition layout includes aisles with a width of 2.4 meters between booths.



Figure 1.3 Exhibition Entrance Door  
Source: Personal Data, Suci, 2024



Figure 1.4 Exhibition Registration  
Personal Data, Suci, 2024



Figure 1.5 Exhibition Floor Plan  
Source: Homedec, 2024

### 3. Concept of Spatial Layout Implementation at the HOMEDEC Exhibition

The HOMEDEC 2024 Exhibition, held in Hall 3A of ICE BSD, demonstrated the application of a spatial layout designed for high flexibility and functionality. With an area of 4,860 square meters and a ceiling height of 12 meters, the space provided ample capacity for arranging booths, a stage, and other interactive areas. The grid layout facilitated systematic and efficient visitor circulation, supporting flexibility in zoning arrangements and event flow.

The exhibition's theme, "Smart Living, Smart Space," initiated by Dodo Aldiano from Tedesia, was manifested through a spatial configuration that supported direct interaction between visitors and modern, efficient, and adaptive residential living concepts. The theme aligned with the 3R concept—renovation, redecoration, and refurbishment—which was not only reflected in the content of the exhibition but also in its spatial organization. Zoning elements, such as the exhibition zone, education zone (HOMEDEC Clinic), resting area, and dining area, were strategically arranged to create a comprehensive spatial flow, consistent with zoning principles in interior design (Francis D.K. Ching, 2011).

However, the placement of booths without grouping them based on product categories

presented a limitation in the implementation of thematic zoning principles. As a result, some visitors experienced difficulty locating booths relevant to their interests, thereby reducing navigation efficiency within the exhibition space. This indicates the need for a more structured zoning system to improve visual information accessibility and better regulate visitor flow in future events. An example is illustrated in the following HOMEDEC exhibition floor plan:

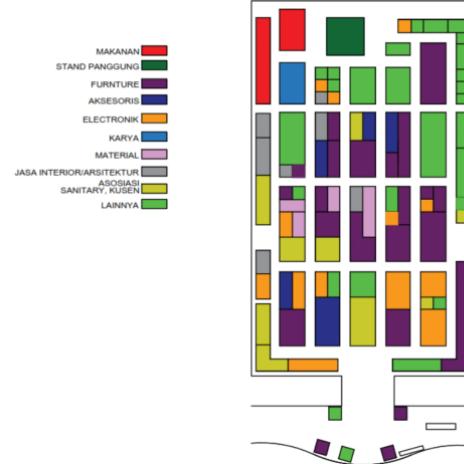


Figure 1.6 Booth Grouping

Source: Homedec, 2024

In the exhibition floor plan shown above, the area is predominantly occupied by furniture booths; however, their irregular and non-clustered placement results in an undirected visitor flow and disrupts the continuity of spatial experience. This irregularity reflects a weak implementation of thematic zoning principles, which ideally function to guide visitors in understanding spatial divisions based on specific functions or product categories. As noted by Francis D.K. Ching (2011), spatial order and legibility are essential in creating efficient circulation and intuitive wayfinding. The absence of these elements restricts visitors from logically navigating the space, potentially causing disorientation and visual fatigue, and ultimately diminishing the quality of interaction with the exhibition content. Therefore, while furniture dominates the exhibition area, its potential impact cannot be fully realized without the support of a strategically planned layout that considers user behavior and circulation patterns.

#### 4. Comfort in Visitor Circulation at the HOMEDEC 2024 Exhibition

Supporting facilities at the HOMEDEC 2024 Exhibition played a crucial role in enhancing spatial comfort and facilitating smooth circulation. The registration area utilized a barcode-based pre-registration system that accelerated the entry process, reduced queues, and minimized congestion at the entrance. The two main doors, each measuring 2.6 meters in width, supported efficient entry and exit flow, further aided by direct basement parking access to Hall 3A via elevators, allowing seamless visitor mobility from parking to the exhibition hall.

The aisles between booths measured 2.4 meters in width, which falls within the ideal range for two-way pedestrian circulation and visitor interaction without obstructing movement. This aligns with Fruin (1971) guidelines, which recommend a minimum width of 1.8–2.4 meters in high-density public areas. The spatial arrangement considered zoning functions—including exhibition, education, dining, rest, and visitor assistance areas—yet thematic zoning was not implemented. As a result, visitor movement tended to converge at high-attraction points such as the main stage area and prize giveaway programs, leading to localized crowding.

The grid configuration of the layout enabled flexible movement and clear access to various activity zones, minimizing directional confusion. The availability of two entrance–exit points further reduced the risk of bottlenecks. Visitor density varied throughout the event: the first and second days recorded densities of 0.21–0.23 people/m<sup>2</sup> (equivalent to a common personal space of 4.4–4.8 m<sup>2</sup>),

indicating a comfortable circulation condition. Density increased to 0.52 people/m<sup>2</sup> (1.9 m<sup>2</sup> per person) during the afternoon of the third day, which remained comfortable. However, peak crowding occurred during the evening of the third and fourth days, reaching 1.12–1.19 people/m<sup>2</sup> (0.83–0.88 m<sup>2</sup> per person), resulting in reduced movement efficiency, particularly in central areas. This phenomenon was also influenced by psychological factors, specifically the informational social influence effect (Banerjee, 1992; Cialdini, 2001), where individuals tend to follow others in spaces where information is limited.

The exhibition floor plan displayed booth numbers rather than brand names, requiring visitors to manually locate booths and potentially hindering spatial orientation, particularly for first-time attendees. In this context, incorporating logos as prominent visual markers may offer a more effective wayfinding solution, as the human brain processes images significantly faster than text (Lindström, 2005) and visual cues are more easily retained due to dual-coding processes involving both verbal and visual systems (Pavio, 1986).

## CONCLUSION

The implementation of the space layout at the HOMEDEC 2024 Exhibition is systematically designed to meet the needs of visitors for comfort, efficiency, and ease of orientation by referring to the main vision themed 3R (Renovation, Redecoration, and Refurbishment) which is the basic framework in the arrangement of the exhibition space. The grid pattern is used to arrange the booth in parallel with the aisles that intersect regularly so as to form a logical and flexible circulation flow, supported by the width of the aisle between booths that allows for comfortable two-way movement. Although there is no implementation of booth grouping based on product themes or categories, functional zones such as exhibition areas, education, culinary, rest, and support services are well organized and reflect the 3R principle through efficient space utilization, aesthetic consistency, and improvement of the quality of public facilities, including strategic rest areas, comfortable food courts, and barcode-based registration systems. The comfort of visitors' circulation is influenced by physical, visual, and psychological factors, with relatively low density variations at the beginning of the exhibition favoring movement comfort, but increasing in recent days leading to more limited movement and decreased comfort, especially in popular areas due to the tendency of visitors to follow the crowd. In general, the implementation of zoning, adequate aisle width, clear grid patterns, and smooth entry and exit support have helped visitors navigate and minimize potential congestion, although there are still limitations to the floor map system that only displays booth numbers without supporting visual elements, making it difficult for visitors to recognize and remember the location of a particular booth.

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