



Architectural Approach to the Upper Floor of a Multi-Storey Conventional Market

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Abstract. Multi-storey conventional markets are designed to maximize the use of available space, but because of low visitor traffic, the higher levels are frequently underutilized. This issue suggests a connection between the degree of spatial activity and architectural design. In order to activate the upper floors of Multi-storey conventional markets, this study will look at architectural design strategies. A descriptive, qualitative approach with an architectural focus is employed, which includes observations of the building's physical state, accessibility and circulation systems, and space user behavior. The findings show that the increase in activity on the higher floors can be attributed to a number of factors, including accessibility, circulation clarity, and spatial appeal. It is anticipated that this study will be used as a guide for creating multi-storey conventional marketplaces that are more user-responsive and functional.

Keywords: conventional market; architectural approach; circulation; upstairs

1. Introduction

Since a large number of individuals rely on market buying and selling, markets are crucial to the community's economic cycle. The presence of visitors is therefore crucial because a large number of buyers and traders will purchase goods and services from the market. However, this does not always occur in every area of the market building because there are also areas that are quiet from visitors. This is also the case in the Bulu Market and Sampangan Market in Semarang, where there are areas that are quiet and areas that are packed with people. This study seeks to determine the aspects that contribute to this issue, which can undoubtedly be harmful to traders who are quiet from tourists [1].

There is an issue with low activity on the top floors of conventional markets, where accessibility and spatial circulation are essential for drawing customers from the bottom floor upward. According to studies, inadequate circulation systems, functional zoning, and spatial design cause some areas—like the higher floors—to become less used and less visited. According to conventional market revitalization research, the degree of comfort and activity of users across the market is greatly influenced by elements like accessibility and spatial zoning. As a result, these are essential elements in creating a conventional market that works.

This is likewise the case at Sampangan Market and Bulu Market in Semarang City, where the ground floor sees the majority of trading activity while the higher floors are rather quiet and unused. This phenomenon shows that despite multi-storey markets' efforts to maximize land utilization, the appeal of upper floor area and restrictions in circulation design cause the activity distribution between floors to remain uneven. Therefore, by taking into account factors like vertical access, user comfort, and spatial movement as crucial components of market design, this study looks at architectural design strategies that can boost upper-floor activity in both markets [2].

2. Methods

In this study, an architectural approach is combined with a descriptive qualitative method. This approach was used in order to directly observe space, circulation, and user behavior in order to comprehend the current circumstances and the phenomena of low activity on the higher floors of multi-storey conventional markets. The study focuses on how architectural design techniques might help conventional markets' top floors be used more efficiently and sustainably by reviving their activity and function.

Sampangan Market and Bulu Market, two multi-storey conventional markets with underutilized upper-floor activities, served as the research subjects. This study focused on the interpretation of spatial conditions and user experiences as the foundation for developing design strategies rather than using quantitative statistical analysis.

2.1. Research Approach

Understanding spatial phenomena and user actions within the architectural context of a multi-storey conventional market is the main focus of the qualitative descriptive study approach that was employed. The relationship between architectural design features, including vertical access, spatial circulation, visibility, and comfort, and the volume of activity on the market's upper levels is interpreted using this method.



Figure 1. Bulu Market



Figure 2. Sampangan Market

Table 1. Evaluation of the Bulu Market's Current Situation

No.	Aspects Examined	Analysis Findings
1	The building's physical state	Compared with Sampangan Market, Bulu Market features a multi-storey building that is larger and more open in design. The upper floors, on the other hand, are rarely used and typically lack the spatial quality necessary for both visitor direction and visual comfort.
2	Pattern of Circulation	There is a distinct flow of movement and a greater concentration of visitors on the bottom floor. Visitors hardly ever continue their activities upstairs since the main circulation channel does not include transitions to the top floors.
3	Access Vertically	Although there is vertical access, it is not very visually appealing. The upper floors' function in the market space system is still poor since the placement and layout of vertical access do not adequately promote visitor flow to the top floors.
4	Transactions	The ground floor is the most active for trading, although the upper floors are less active. There is little connection and transaction because several of the kiosks on the upper floors are not functioning at their best.

Source: Semarang City Regional Regulation Number 9 of 2013 [3]

Table 2. Examination of the Sampangan Market's Current Situation

No.	Aspects Examined	Analysis Findings
1	The building's physical state	A multi-storey public market with a closed, vertical building mass is called Sampangan Market. The ground floor sees the majority of activity, whereas the upper floors use the space sparingly. The upper floors' comfort and aesthetic appeal haven't been sufficient to draw guests in and keep them there.
2	Pattern of Circulation	On the ground floor, horizontal movement dominates visitor circulation patterns. Natural upward mobility is hindered by the routes leading to the top levels' inadequate integration with the main circulation flow. As a result, not many people visit the higher floors.
3	Access Vertically	Although there is vertical access via steps, it is not well-marked or positioned. Because there is little visibility to the higher levels, guests frequently do not know that there is commercial space there.
4	Transactions	With high kiosk occupancy rates, there is a lot of trading activity on the bottom floor. On the other hand, the area feels passive and less welcoming to guests on the top floors due to the small number of operational kiosks and low transaction traffic.

Source: Ratnasari, 2015 [4]

This method enables researchers to investigate in detail how the building's physical state and user movement patterns affect the higher floors' aesthetic appeal. The findings of the investigation are then utilized to develop architectural design ideas that could potentially boost the market's upper levels' intensity of use.

2.1.1. Information and Data Gathering Methods

Field observations and a review of the literature were used to gather research data. In order to evaluate the physical state of the buildings, circulation patterns, vertical access, trade activity, and the conduct of patrons and vendors on both the lower and upper floors, direct observations were made at Sampangan Market and Bulu Market.

In order to perform a literature study, theories and concepts pertaining to commercial architecture, conventional market design, spatial comfort, and methods for energizing multi-level public spaces were examined. To find issues and possible design advancements, the gathered data was further subjected to descriptive analysis.

Table 3. Features of Conventional Multi-Level Market Research Items

No.	Name of Market	Location	Year of Rehabilitation	Principal Issues	Documentations
1.	Sampangan Market	Jl. Menoreh Raya No.33, Sampangan, Kec. Gajahmungkur, Kota Semarang, Jawa Tengah 50232	Pernah direhabilitasi (±2010-an)[4]	There is little activity on the top floors, less appealing vertical access, unguided visitor circulation, and little aesthetic appeal and auxiliary features.	  
2.	Bulu Market	Jl. Mgr Sugiyopranoto, Barusari, Kec. Semarang Sel., Kota Semarang, Jawa Tengah 50245	Pernah direhabilitasi (± 2012-2015) [5]	The lower floor is where most activities take place, the upper floor is not used to its full potential, the space is not visually comfortable or legible, and its direction is confusing.	  

3. Results and Discussion

3.1. Current State of the Multi-Storey Conventional Market's Upper Floor

Field observations at Sampangan Market and Bulu Market indicate that, in comparison to the ground floor, the higher floors of both multi-storey conventional markets show very low levels of activity. While the higher floors are typically quieter and less visited, the lower floors see greater trading activity and visitor flow. When multi-storey commercial buildings lack efficient circulation design and spatial strategies, this phenomenon is frequently observed [6].

This situation demonstrates that the issue of low upper-floor use is not solely due to economic considerations, but is also strongly tied to the caliber of architectural design and the way people perceive the space [7].

3.1.1. The building's physical state



Figure 3. Sampangan Market

Physically, Sampangan Market and Bulu Market's top floors have spatial characteristics that make them less suitable for business operations. The higher floors are not very appealing to visitors due to a lack of appealing features, a lack of natural illumination, and a less open visual area. The physical discomfort of the buildings has a direct effect on how users view the purpose and worth of the place [8].

According to Carmona, the physical attributes of commercial and public areas have a significant impact on how intensely people use them [6]. Consequently, one factor contributing to the low level of activity in the area is the poor physical condition of the top floors in both marketplaces.

3.1.2. Pattern of Circulation

Horizontal movement on the ground floor dominates the visitor circulation patterns at Sampangan Market and Bulu Market, according to observations. Vertical movement does not naturally occur since the path leading to the upper levels is not a part of the primary circulation flow. The higher floors are therefore less accessible and seldom visited.

According to [9], For the building's circulation system to naturally direct user movement, it must be continually and clearly designed. Upper-floor spaces are often overlooked when vertical circulation isn't connected with primary operations.

3.1.3. Access Vertically

Although vertical access to both markets is useful, it is devoid of a motivating or directing factor. Visitors find it challenging to interpret the steps leading to the upper floors because of their less strategic placement and lack of visual prominence.



Figure 4. Sampangan Market

Gehl underlined that through visually appealing and instantly identifiable designs, the linking components between spaces must be able to promote human circulation [7]. One of the primary causes of the low use of the upper floors at Sampangan Market and Bulu Market is suboptimal vertical access.



Figure 5. Bulu Market

3.1.4. Transactions

There is little buying and selling activity and a small number of active stalls on the upper floors of Sampangan Market and Bulu Market, which indicates little trading activity. This gives the impression that the top levels have little bearing on the market system as a whole.



Figure 6. Sampangan Market

According to Whyte, the existence of varied and sustainable activities is crucial to the development of public areas [8]. Visitors' interest in using the area is further diminished by the absence of business activity on the upper levels, which detracts from its social and economic attraction.



Figure 7. Bulu Market

3.2. Techniques for Activating the Upper Floors in Architectural Design

According to the findings and discussion above, the upper floors of multi-storey conventional markets can be activated through the use of architectural design solutions. Enhancing visual components that guide movement to the top levels and positioning vertical

access points along important visitor routes are two strategies that can be used to improve the readability of vertical circulation.

The appeal of upper floors can also be increased by including eye-catching supporting features like kitchens, gathering places, or short-term events. This strategy is in line with ideas for public space design that prioritize spatial connection, activity diversity, and user experience [6], [8]. The upper levels of Sampangan Market and Bulu Market have the potential to develop into lively, cozy, and sustainable areas with the correct architectural approach.



Figure 8. Sampangan Market



Figure 9. Bulu Market

From a spatial configuration perspective, the underutilization of upper floors can also be explained through spatial integration theory. [10] argues that spaces with low integration values tend to receive less pedestrian movement, resulting in reduced social and economic activity. In both markets, vertical circulation elements are not embedded within the primary spatial network, weakening the configurational accessibility of upper floors.

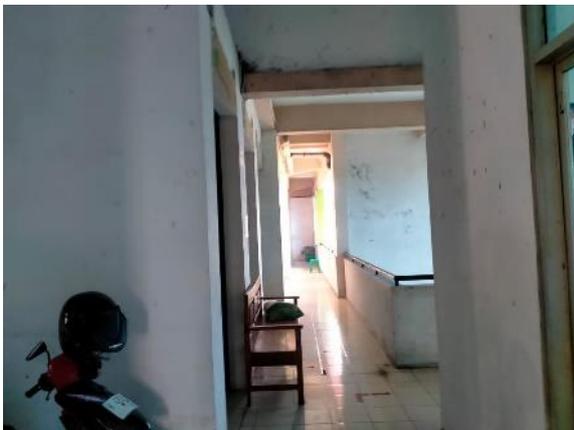


Figure 10. Sampangan Market



Figure 11. Bulu Market

Furthermore, urban vitality theory emphasizes that activity concentration and functional diversity are essential in sustaining public space performance [11]. Upper levels that lack anchor functions or activity generators struggle to attract consistent visitor flows [12]. Therefore, activating upper floors requires not only physical improvements but also strategic spatial integration and the introduction of complementary functions within the overall market system.

4. Conclusions

The low activity on the upper floors of these multi-storey conventional markets can be attributed to architectural design limitations, specifically with regard to the physical quality of the buildings, circulation patterns, and vertical access, according to research on Sampangan Market and Bulu Market. Due to a lack of design features that promote user interaction and integration with the primary circulation routes, the upper floors of both marketplaces show low usage levels.

This result is consistent with other research that found that the degree of utilization of multi-storey spaces is significantly influenced by the space's readability and efficient circulation [13] [14]. The poor use of the higher levels is also a result of the vertical access design, which is less aesthetically pleasing and less strategically placed [15].

Enhancing the visual elements that direct vertical movement, integrating vertical circulation with the main visitor pathways, and adding user-attracting supporting functions like culinary areas or social interaction spaces are all suggested architectural design strategies for enlivening the upper floors of multi-storey conventional markets. It is anticipated that putting these techniques into practice will result in an upper floor area that is more lively, cozy, and useful within the framework of a multi-storey conventional market.

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