A Study on the Changing Architectural Properties of Mixed-Use Commercial Complexes in Seoul, Korea

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Abstract: This study conducts a chronological analysis of six mixed-use commercial complexes in the Seoul metropolitan area and examines their planning characteristics and patterns of change. The analysis reveals the following changes. The spatial composition of these complexes is shifting away from large anchor type commercial facilities to small local commercial facilities. Their circulations and arrangement are shifting to consideration for non-consumption tendencies, and circular and three-dimensional connections between each space are emphasized. Central spaces are shifting from a large single center to small multi-centers, and the utilization of central spaces for events and performances is increasing. Concepts that stimulate visitors’ interest and non-daily experiences are being expanded, which include the use of new themes, such as natural motifs, and the reproduction of classical streets in the space, corridors, colors, and material planning. Based on their changing patterns, this study predicted such complexes’ direction of change. First, they will expand their role as the center of the local community. Second, they will bolster their linkage with local streets and expand the street-type circulation plan. Third, small multi-center spaces and themed external spaces will increase. Fourth, non-consumption and non-daily planning elements will increase.

Keywords: mixed-use commercial complexes; planning; spatial composition; circulations; central spaces

1. Introduction

1.1. Purpose of This Study

The attachment of people towards shopping centers is propelled by the changes of lifestyle, pattern of motorized transportation and intensive activities in shopping centers [1]. The management of physical and social facilities in shopping center can influence the enhancement of the functional values and create a sense of place and intense social relationships among visitor [2]. A particularly representative type of architecture that reflects this altered consumer culture of the modern era is commercial complex. As subway access areas around the Seoul metropolitan area are turning into commercial and cultural centers, commercial complexes are providing experiences at various levels, such as leisure-oriented cultural consumption, as well as traditional consumption. Additionally, they contain various facilities such as residences, businesses, cultural venues, and entertainment venues. The commercial complex is, thus, a space that symbolizes modern consumption culture and partly fulfilling social demands [3].

Recent prior research on commercial facilities were mainly based on their changes due to variations in the commercial environment. Examples include designing the skeletal sections of the spaces in shopping centers being made possible through the introduction of the main criteria on the creation of interactions [4], ensuring the integration and sustainability of e-commercial activities in virtual spaces and traditional commercial activities in urban commercial centers [5], identifying public places that influence consumer opinions of shopping malls to create a sense of culture in public space design [6].

However, there have been many previous studies based on commercial facilities, but it was difficult to find a study that reflected the trend of mixed-use commercial complex,
which has recently increased in international demand, and a study that analyzed them chronologically.

Based on this background, this study conducts a chronological analysis of mixed-use commercial complexes in the Seoul metropolitan area and examines their planning characteristics and patterns of change (Figure 1). This is done so that this study can be referred to in the future in order to design mixed-use commercial complexes that are differentiated and highly satisfying.

1.2. Method and Scope of This Study

First, factors that affect the changes in commercial facilities and the major elements of mixed-use commercial complexes and their elements for activation were identified through a literature review. Based on these factors, representative commercial complex facilities were selected chronologically. Relevant literature and visiting surveys accompanied each selected case.

Based on this, the study proposed measures to revitalize mixed-use commercial complexes by elucidating the characteristics of their changes and identifying meaningful facts related to architectural planning.

2. Theoretical Considerations

2.1. Changes in Commercial Space

The shift from individual stores to collective commercial streets resulted in the horizontal and linear expansion around the streets. Consequently, the arcade-type conventional market, which made the commercial street semi-indoors, developed from region to region. Later, the department store was built vertically and connected to the commercial spaces using escalators and elevators. With the emergence of mixed-use commercial complexes that connect commercial spaces to various facilities, the concept of a space layout based on the commercial environment of central space, anchors, and sub-anchors, and the circulation and activation measures for the connection and communication of each commercial, cultural, and entertainment facilities emerged as important elements of the mixed-use commercial complex plan (Figure 2). [7].

2.2. Elements for Activating Mixed-Use Commercial Complexes

Studies on mixed-use commercial complexes mainly focus on vitalization measures. Various analyses have presented location, planning, operation, and management as the main elements of activation [8]. However, this study focused specifically on planning. By emphasizing the urban aspect of commercial complexes, the method of deriving planning elements from the five elements of city planning suggested by Kevin Lynch: edge, path, node, landmark, and district is universally applied. In terms of mixed-use commercial
complexes, there are certain key components that affect the activation of a complex, such as the node (spatial composition), the path (circulation plan), and the landmarks (central space), which were adopted from the perspective of analysis [9] (Table 1). The first among these are the complex’s recruiting tenants, anchor tenants (Refers to a key store that attracts customers and determines the floating population of the business district. Some examples are: large bookstores, multiplex cinemas, large supermarkets, and clothing brand stores) [10], and its spatial composition. The movement of pedestrians and the selection of circulations serve as another integral factor. Lastly, a public (central) space affects the activation of a complex [11]. These three factors have a direct impact on the revitalization of mixed-use commercial complexes based on complexity and collectivity [9].

Table 1. Elements for activation.

| Element                  | Description                                                                                                                                                                                                 |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Spatial Composition      | A commercial complex is divided into various spaces, such as consumption, culture, and leisure (entertainment) that are closely related to each other. Intersecting usage behavior is a key characteristic of these complexes, which are paired with residential, business, lodging, and transportation facilities based on the characteristics of the area. Depending on customer attraction, it is divided into anchor facilities and general facilities. |
| Circulation Plan         | When planning the layout, vertical and horizontal circulation systems that consider perceptibility, directionality, and continuity are important because they enable users to effectively visit the target facilities. There are two types of vertical circulation—open-core and closed-core. Horizontal circulation is divided into centralized, where the central space is located at the center; dispersed, where the key tenant is dispersed; and circular, which is an important element for activation [12]. |
| Central (Public) Space   | It is generally located within the main circulation and has a significant impact on activation, depending on its size and type. If the central space is located indoors, it is planned mainly in the form of an open space. Measures to expand its attractiveness and publicness, such as planning it in a manner that enables it to serve as a space for events and cultural programs, should be considered. Additionally, it should be physically and visually linked to other facilities and circulations [13]. |

3. Case Selection and Analysis

3.1. Selection of Cases

Since the opening of COEX (2000)—Korea’s first mixed-use commercial complex—the commercial complex, centered around metropolitan subway access areas, has developed significantly from its initial stage (COEX Mall, I-Park Mall). Due to economic development, the increase in the urban population, and the proliferation of subways, commercial complexes underwent a development stage where commercial, business, and cultural functions were integrated and expanded (Time Square, D-Cube City). They ultimately reached a completion stage where functions such as commerce, residence, culture, and leisure were accommodated (Mecenatpolis, Gwanggyo Alley Way). In this study, representative mixed-use commercial complexes, located in the Seoul metropolitan area, were selected chronologically (2000–2019) (Table 2).

3.2. Elements for Activation of the Selected Cases

In this section, the elements that affect the activation of the selected complexes—their spatial compositions, circulation plans, and central spaces—were investigated. With regard to spatial composition, the study investigated the types and arrangements of anchor tenants that were combined in accordance with the characteristics of the major facilities and the areas they were located in. To ensure perceptibility, directionality, and continuity of the facilities by ameliorating the disconnection between facilities, which is a disadvantage of large commercial complexes, the ways in which they connected their circulation were
explored. Additionally, the location, size, and shape of their central spaces were examined in order to assess the status of the central space as a whole within these complexes.

Table 2. Case Study, (GFA and Floors are calculated only for commercial facilities).

| Development Stage | Time Square | D-Cube City |
|-------------------|-------------|-------------|
| Location/Year     | Yeongdeungpo-gu, Seoul/2009 | Guro-gu, Seoul/2011 |
| Size (GFA)        | 2 underground and 6 above ground floors (126,777 m²) | 2 underground and 6 above ground floors (116,445 m²) |
| Use               | Consumption, Culture, Offices, Hotels | Consumption, Culture, Residences |

| Completion Stage  | Mecenatpolis | Gwanggyo Alley Way |
|-------------------|--------------|-------------------|
| Location/Year     | Mapo-gu, Seoul/2013 | Suwon, Gyeonggi Province/2019 |
| Size (GFA)        | 7 underground and 6 above ground floors (40,175.21 m²) | 2 underground and 3 above ground floors (4809 m²) |
| Use               | Consumption, Offices, Culture, Residences | Consumption, Culture, Residences |

1 GFA; Gross Floor Area.

(1) COEX Mall (Initial stage/2000)

It was the largest underground shopping space in Asia (Table 3). It consists of four basement floors, four above ground floors (convention center, department store, multiplex, aquarium), a trade tower (54 floors above ground), and a hotel, which were built along with the convention center for the third ASEM (Asia-Europe Meeting) Summit in 2000. With the convention center at its center, anchor facilities such as offices (connected to the subway station) and hotels are placed on both its sides and are connected to commercial malls to promote movement across the entire facility through target routes. The routes consist of a main corridor, a commercial mall, and a number of complex labyrinthine rear corridors. However, it lacks perceptibility, directionality, and continuity due to the lack of connectivity between corridors. In 2000, its small central space was planned to be used only as a corridor during the opening. However, in 2015, the central space was renovated into a 2800-square-meter, two-story open library.

Table 3. Case Study, COEX Mall [14]/Source: Author.
(2) I-Park Mall (Initial stage/2004)

It is a complex that is connected to an express train station (Table 4). It is composed of department stores, shopping malls, duty-free shops, multiplexes, large supermarkets, large bookstores, and offices. It has three underground floors and 7 floors above ground. Its facilities are arranged around the atrium, which also serves as a waiting room for express trains. The commercial facilities are located on the lower floors, whereas duty-free shops, multiplexes, and offices are on the higher floors. As a result, the target routes bring in traffic from the lower floors to the higher ones. The internal corridor serves as a typical example of the design of early commercial complexes and has a department store-style simple corridor in order to maximize its rental area. Although there is a central space that functions as the station’s waiting room and a public space that enables vertical movement, there is a lack of connection between each corridor. Additionally, a visual and organic linkage is absent, and the activity of the space is insufficient for it to be considered a central public space in the modern sense.

Table 4. Case Study, I-Park Mall [15]/Source: Author.
Table 4. Cont.

| Anchor | Tenants | (D) Department Store, (S) Shopping Mall, (E) Electronics Shopping Mall, Duty Free Shop, (M) Multiplex, (LS) Large Supermarket, (B) Bookstore, (O) Office, (T) Railroad Station |
|---|---|---|
| Spatial Plan | Facilities placed around an atrium (train waiting rooms). Commercial space on lower floors, duty-free shops and multiplex on higher floors. |
| Circulation Plan | Department store-style simple internal corridors to maximize the rental area, which is a typical example of an early commercial complex centered around commercial facilities. |
| Central Space (Node) | Central space that serves as the waiting room of the railway station and a large public space for indoor and outdoor use that is only used as a corridor. |

(3) Time Square (Development stage/2009)

It is a building with two underground floors and six above ground ones (Table 5). It was built on a site that was formerly a textile factory, and it serves as an urban entertainment cultural space that combines commerce, business, culture, and leisure through facilities such as multiplexes, department stores, large supermarkets, wedding halls, hotels, large bookstores, and offices. One of its anchor facilities—a department store—is located near the entrance to Yeongdeungpo Station. By placing a large supermarket, a multiplex, and a large bookstore on the other side, the two anchors are connected using one main corridor and two or three rear corridors. A hotel and convention center are located at the end of the entire facility and serve as sub-anchors. Its central public space—a large atrium that penetrates the above ground floors—was made its visual center, and the center of the vertical and horizontal circulation, by placing it between the main and sub-anchors. The main corridor was planned as a keyhole section (When planning the main corridor of the shopping mall, the opening becomes bigger in the form of a key hole, increasing perceptibility through visual interpenetration between floors) to promote the commercial environment through visual interpenetration between each floor.

Table 5. Case Study, Time Square [16]/Source: Author.

Front View  Main Corridor  Central space (Atrium)

![Site Plan]

| Anchor | Tenants | (M) Multiplex, (D) Department Store, (LS) Large Supermarket, (W) Wedding Hall, (H) Hotel, (B) Large Bookstore, (O) Office |
|---|---|---|
| Spatial Plan | Activates the entire facility by placing anchor facilities on both sides of the site and on the upper and lower parts of the facility. |
| Circulation Plan | Connects main corridor and rear corridors. Ensures perceptibility through visual interpenetration between each floor. |
| Central Space (Node) | Central space in the shape of a large atrium that penetrates the above ground floors. The central space serves as the center of events and connections. |
(4) D-Cube City (Development stage/2011)

Built on a site that was formerly a coal briquette factory, it is an urban entertainment cultural complex that consists of commercial, business, and cultural facilities (Table 6), such as high-rise residential buildings, multiplexes, department stores, large supermarkets, musical performance halls, hotels, large bookstores, and offices. A large outdoor performance hall, an office, a hotel, a musical theater, and a multiplex are located at the entrance to the underground station. A large supermarket and a high-rise residential area are built on the other side, which is connected to the former side, in a circular manner, through a main corridor and belly-type outdoor corridor. Commercial facilities are located on the lower floors of the tower building. The musical theater, multiplexes, and offices on the higher floors, as well as the hotel at the top of the building, are located in the center to promote horizontal and vertical environments. However, there is a lack of consideration for vitalization, such as large central spaces and keyhole sections.

Table 6. Case Study, D-Cube City [17]/Source: Author.

| Anchor Tenants | Spatial Plan | Circulation Plan | Central Space (Node) |
|----------------|--------------|------------------|---------------------|
| (R) High-rise residences, (M) Multiplex, (D) Department store, (LS) Large supermarket, (P) Musical performance hall, (H) Hotel, (B) Large bookstore, (O) Office | Activates the facility through vertical and horizontal movement across target routes by placing anchor facilities on both sides of the site and on the upper and lower parts of the facility. | Circular connection of internal main corridor and belly-type outdoor corridor with anchors on both sides of the site. | Outdoor event space at the end of the entrance to the subway station. There is no large central space inside the facility. |

(5) Mecenatpolis (Completion stage/2013)

It is a residential and commercial complex that has seven underground floors and six above ground floors (Table 7). It was built on a site that was formerly a steel factory in an area that links Seoul’s city center with the outskirts. Its anchor facilities are high-rise residences, multiplexes, large supermarkets, and high-rise offices.
The terrace-type street corridor by the lake is used as a shopping, dining-out, and event area that links Seoul's city center with the outskirts. Its anchor facilities are high-rise residences, multiplex, and large supermarkets placed on the upper and lower floors (Table 7). It was built on a site that was formerly a steel factory in an organic circulation plan that resembles the natural environment. Two nature-themed public (central) spaces were placed at the site's central node, which is connected to each entrance. The large supermarket on the lower floor and the multiplex on the upper floor promote the accessibility of the site. The installation of a pilot 18 m above the main entrance of the site and compensating for the short distance of the site by creating organic circulation plan that resembles the natural environment. Two nature-themed public (central) spaces were placed at the site's central node, which is connected to each entrance. This open public space was designed to serve as a space for street performances and cultural events.

Multiplex and high-rise residential buildings were placed as anchor facilities at the farthest distance from the subway station, allowing a natural flow of traffic into the complex. The large supermarket on the lower floor and the multiplex on the upper floor promote the flow of vertical traffic. It created a natural form of circulation that resembles taking a walk by planning in the form of a street mall that has access to various entrances from outside the site—which included the installation of a pilot 18 m above the main entrance of the site—and compensating for the short distance of the site by creating an organic circulation plan that resembles the natural environment. Two nature-themed public (central) spaces were placed at the site's central node, which is connected to each entrance. This open public space was designed to serve as a space for street performances and cultural events.

(6) Gwanggyo Alley Way (Completion stage/2019)

This complex is located in front of Gwanggyo Lake Park, and it is the smallest among the ones investigated—consisting of two underground floors and three above ground floors (Table 8). Apart from high-rise dwellings, there are no large anchor facilities that are common in existing multi-commercial facilities. Small-scale living and culture-related local stores are arranged in the form of an outdoor street mall that overlooks Gwanggyo Lake. The terrace-type street corridor by the lake is used as a shopping, dining-out, and event space. Its three floors are connected by a vertical circulation. A large front square by the lake is the center of the facility, and it is used for leisure activities, flea markets, and events.
4. Case Study Analysis

To identify the changing patterns, over time, of mixed-use commercial complexes based on the case studies, the changes in the spatial composition (types and arrangement of anchor facilities), the arrangement of circulations (corridors and linkage measures), and the central space (types and forms) of each case were examined (Table 9).

Table 9. Summary of case analyses/Source: Author.

| Elements          | Initial Stage                                      | Development Stage                      | Completion Stage                           |
|-------------------|----------------------------------------------------|----------------------------------------|--------------------------------------------|
|                   | COEX Mall                                          | Time Square                            | Mecenapolis                                |
|                   | I-Park Mall                                        | D-Cube City                            | Gwanggyo Alley Way                         |
| Spatial Plan      | Large anchor facilities such as department stores, shopping malls, electronic shopping malls, duty-free shops, multiplexes, and aquariums. However, the space lacks connectivity due to department store-style vertical stacking (I-Park Mall) to maximize the rental area. | Local anchor facilities such as multiplexes, department stores, large supermarkets, wedding halls, hotels, large bookstores, and offices are located on both sides of the site and on the lower and higher parts of the complexes to activate the entire complex through movement across target routes (vertical, horizontal). | Alongside traditional anchor facilities such as multiplexes, large supermarkets, and offices, small living and culture-related stores are placed in the form of an external street mall. The complexes are devoid of high-rise residential buildings, life/culture-related commercial facilities (Mecenapolis), and large anchor facilities (Gwanggyo Alley Way). |
The central space is only used as a corridor (COEX Mall) at the node of the circulation or as a waiting room (I-Park Mall). This type of circulation plan results in a lack of interconnection, perceptibility, directionality, and continuity.

4.1. Spatial Composition: Types and Placement of Facilities

Early commercial complexes were built alongside national infrastructure, such as the International Convention Center (COEX Mall) and the high-speed railway station (I-Park Mall). Large anchor facilities such as department stores, shopping malls, electronic shopping malls, duty-free shops, multiplexes, and aquariums were spread out in a large underground space horizontally (COEX Mall) or a space that maximized the rental area, such as a department store-style vertically stacked space (I-Park Mall), was present. However, the complexes lacked connection between spaces due to the distance between its anchor facilities.

In the middle stage, the complexes were mainly developed alongside subway stations, as well as diverse living and cultural facilities, such as wedding halls, musical theaters, and cultural centers. These types of circulation plans result in a lack of interconnection, perceptibility, directionality, and continuity.
the complex, and facilities that were highly correlated with each other were placed at the top and bottom of the complex in order to promote movement (vertical and horizontal) across the entire complex through the target routes.

While the proportion of traditional large anchor facilities in later commercial complexes decreased, they were composed of small commercial facilities such as electronics, furniture, and mass merchandise stores that reflect the local commercial districts. In other cases, small-scale living, as well as food and beverage stores, were placed in the form of street malls (Gwanggyo Alley Way) without large anchor facilities—introducing new tenants and space constructions tailored to the needs and trends of local commercial districts.

4.2. Circulation Composition: Circulation and Connection Methods

The early commercial complex connected large spaces with a number of complex maze-like corridors (COEX Mall) or had department store-style circulations to maximize the rental area, with the ratio of the exclusive area of the store being overwhelmingly higher than that of the space used as circulations (horizontal, vertical) (I-Park Mall). This caused a partial disconnect between the facilities due to their lack of connectivity, perceptibility, directionality, and continuity.

In the middle stage, the concept of circulations that took into account the revitalization of commercial districts, such as the expansion of the perceptibility, directionality, and continuity of movements, began to be reflected in the plan, such as through simplified circulations (main corridor, sub-corridor), circular corridors (main and rear corridors are circular), and keyhole sections (secures visual interpenetration between floors).

In the case of later commercial complexes, various forms and structures were attempted, including circulation plans that link each floor three-dimensionally and organically, and open street malls, such as terrace-type street malls (Gwanggyo Alley Way) or free belly-type street malls (Mecenapolis) that resemble a nature trail.

4.3. Central Space: Form and Role

In early complexes, a relatively small area was planned at the node of the circulation and used only as part of the circulation in order to maximize the rental area. However, during the middle stage, the central space was recognized as an important space to increase the customers’ desire to consume by keeping them inside for a longer time. As a result, a large center was created to facilitate circulation and for various events, as demonstrated by the large atrium-shaped central space (Time Square) [20] that penetrates the above ground floors, as well as the large outdoor central space (D-Cube City) at the end of the facility that is the entrance to a subway station. The central area was enlarged to serve as a visual and spatial center at the entrance and the nodes (horizontal, vertical).

Later, complexes broke away from a single large central space and developed a structure that is divided into several small, themed central spaces. These were designed to be a popular place where various spatial and non-daily experiences are possible [21].

4.4. Sub-Conclusion

The analysis of chronological changes in Korean commercial complexes illustrates the following.

First, the spatial composition of complexes is shifting away from commercial facilities such as department stores, rental stores, large supermarkets, and entertainment-oriented large anchor facilities such as multiplexes and aquariums. Instead, local commercial facilities such as family restaurants, specialty stores, and mass merchandisers, and small facilities that are closely related to living, such as libraries and concert halls, have taken precedence.

Second, complexes are shifting from movement circulations and arrangement based on convenience, economy, and efficiency of shopping, to consideration for non-consumption tendencies, such as the extension of visitors’ stay time and meetings, walks, and leisure activities. Circular and three-dimensional connections between each space are emphasized.
Third, as the complexes’ tenants and themes have become diversified, they are adopting small multi-centers instead of a large single center. Additionally, the utilization of central spaces for events and performances is increasing.

Fourth, concepts that stimulate visitors’ interest and non-daily experiences are being expanded, which includes the use of new themes such as natural motifs (valleys, mountains, water, forest) and the reproduction of classical streets in the space, corridors, colors, and material planning [22].

5. Discussion

In this section, I will predict the direction of change of mixed-use commercial complexes based on their patterns of change thus far.

Expanding its role as the center of the local community: the COVID-19 pandemic is contrary to the architecture and urbanism principles [23], and it has caused an increase in virtual interactions and online shopping. As a result, commercial complexes have moved away from commercial facility-oriented activities [24]. Additionally, the expansion of local, small-scale living, culture-related tenants, and programs that integrate offline strengths such as culture, entertainment, and leisure demonstrates that these areas are expected to expand their role as the center of local offline communities [25].

Linkage with local streets and expansion of street-type circulation plan: an increase in the number of living-street circulation plans that reflect the characteristics of the region is expected [26], such as the expansion of organic circulations that can naturally participate in shopping, dining, and events by actively linking with existing streets in a circular and three-dimensional manner [27].

Expansion of small multi-center spaces and theme-type external spaces: the central space will be expanded to include virtual society, links with local streets, and diverse local tenants. Additionally, the transformation into outdoor space-oriented small multi-center spaces will be bolstered, and each small space is expected to host events, exhibitions, rest, and hands-on play areas for children and parents that match the nature of the space [28].

Expanding non-consumption and non-daily planning elements: shopping has become a way of socializing [29]. Due to the increase in visits for non-consumption tendencies (meetings, walks, leisure, etc.) [30] that require various attractions and experiences other than commercial activities, it is expected that the planning of the concept, form, material, and color of these spaces will integrate a greater degree of factors that will stimulate unique experiences [31].

6. Conclusions

Given the expansion of virtual society due to the COVID-19 pandemic, the role and importance of mixed-use commercial complexes that can satisfy both leisure and cultural enjoyment will be further expanded in order for the offline market to survive.

Based on their changing patterns, this study predicted such complexes’ direction of change. First, they will expand their role as the center of the local community. Second, they will bolster their linkage with local streets and expand the street-type circulation plan. Third, small multi-center spaces and themed external spaces will increase. Fourth, non-consumption and non-daily planning elements will increase.

In this respect, many changes of mixed-use commercial complexes reflect the basic concept of pre-modernism accessible human-scale mixed-use streets, i.e., the concept typical for medieval towns and villages, and might be an exciting field for future studies.

I hope that this review of the changes in Korean mixed-use commercial complexes and their planning will be utilized in the future as basic material for projecting the changing consumption culture of the present era and designing commercial complexes that are differentiated and satisfying.

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