

STRATEGIC PLANNING INDICATORS FOR URBAN REGENERATION: A CASE STUDY ON MIXED-USE DEVELOPMENT IN SEOUL

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ABSTRACT

Following rapid economic growth, older sections of Seoul have experienced a decline. Mixed-used Developments (MXDs) offer viable approaches for urban regeneration in Seoul. The MXD projects that have been constructed were intended to improve built environments as well as revitalise social and local culture. Whilst visions and directions for urban regeneration in world cities are well documented, little is understood of the strategic planning of urban projects in Seoul. This paper investigates five MXD projects via 12 strategic planning factors. It outlines the opportunities and challenges of MXD projects within Seoul contexts. The factors consisted of 41 strategic planning schemes, extracted from relevant literature and a survey of experts. We used 30 strategic planning schemes as indicators for measuring strategic planning to support urban regeneration. The results of a case study indicate that strategic planning for 'User convenience', 'Functional integration' and 'Visual perception' is commonly applied to five projects. However, strategic approaches to 'Divergence of connection', 'Regional identity', 'Art & design unification' and 'Amenity of low levels' vary with different visions and urban functions. This implies that the underlying strategic planning of MXD projects can be characterised via our strategic planning indicators. The case study has allowed us to explore MXD projects and the strategic planning indicators for urban regeneration with an understanding of the urban context of the city. This paper contributes to evaluating MXD projects in terms of strategic planning as well as to the construction of strategic planning indicators for future developments.

Keywords: Strategic planning indicator, Planning schemes, Urban regeneration, Mixed-use development, Case study

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1. INTRODUCTION

Seoul, the capital and largest city of South Korea, is a major global city with a history of over 600 years (Kim & Han, 2012). It is arguable whether the global city model is applicable to Seoul (Child Hill & Kim, 2000; Sassen, 2001). Seoul has the fastest urban development in the world, led by the central government (Kim and Han, 2012). Local contexts have often been ignored in a similar manner to other cities in East Asia (Logan, 2002). Since local government emerged in 1991, decentralisation has progressed slowly (Hermanns, 2009). Seoul, known as a concrete jungle, has been reconstituted into a city epitomised by good design. Seoul, also the World Design Capital (WDC) titleholder for 2010, now has a new attractive image for the global as well as the local public.

The city has been marketed in response to international competition, which has increased in most world cities. Seoul also needs publicity and gentrification (Cameron, 1992) if it is to cater for its citizens' high income level. As Seoul has one of the highest populations and land costs in the world, smart growth (Aurand, 2010) and Mixed-used Development (MXD) (Grant and Perrott, 2011, Tucker, 1980, Witherspoon et al., 1976) offer viable approaches for urban regeneration. To promote and market new places (Kearns and Philo, 1993, Ashworth and Voogd, 1993) as well as to lead city marketing (Bramwell and Rawding, 1996), MXD has come to be regarded as an ideal approach in Seoul.

Many urban regeneration projects have emerged during the last decade in South Korea (Yu and Kwon, 2011). Several projects have simply followed examples of other well-known projects without consideration to their own contexts or visions. Unsuccessful urban projects have raised awareness of the need for urban strategic planning corresponding to regional contexts.

Whilst urban regeneration projects in other parts of the world are well documented, little is understood about these projects in terms of their strategic planning (Carmona, 2009, Francos, 2002, Mintzberg, 1994, Rider, 1983, Steinberg, 2005). Since urban regeneration projects are likely to be subject to greater uncertainty and complexity than other construction projects (Yu and Kwon, 2011), this paper presents an approach supporting the strategic understanding of urban projects via a case study which outlines the opportunities MXD provides for Seoul.

This paper, a follow-up study, highlights a case study of strategic planning indicators which were selectively derived from 41 strategic planning schemes of the previous study (Lee, 2010). The study reported here aims to verify the strategic planning indicators through a case study as well evaluate and explore MXD projects in Seoul.

The remainder of this paper is divided into three parts. Section 2 provides a research rationale which introduces previous literature and strategic planning factors. Section 3 describes the results of five case studies and the strategic evaluation. Finally, Section 4 concludes with an outline of future work.

2. RESEARCH RATIONALE

2.1. Strategic planning factors and indicators

World cities with longstanding experience of urban developments have long-term strategies and directions based on evaluations of past achievements and recommendations. For example, Melbourne (Melbourne (Vic.), 1994, Melbourne (Vic.), 2005) established its strategic plan in 1985 and improved its public spaces in 1994 and 2004. The principles of new urbanism (Smith, 2002, Katz et al., 1994) and the Athens Charter of 1933 (Corbusier, 1973) provided ideal planning schemes or strategies. By contrast, previous literature (Carmona, 2009, Francos, 2002, Mintzberg, 1994, Rider, 1983, Steinberg, 2005) argues that successful urban regeneration should be based on regional contexts. Strategic planning and its results vary with different urban contexts and visions. Thus, we need urban strategic planning factors corresponding to regional contexts. Strategic planning factors and schemes reflecting such contexts and visions enable us to provide a better understanding of urban developments in Seoul as well as to evaluate urban projects in terms of strategic planning.

The indicator-based approach supports the attitudes and capacities of local policy makers to cope with their use (Wong, 2000) and includes contextual assessment of the area, the conditions within which the strategy is operating and the

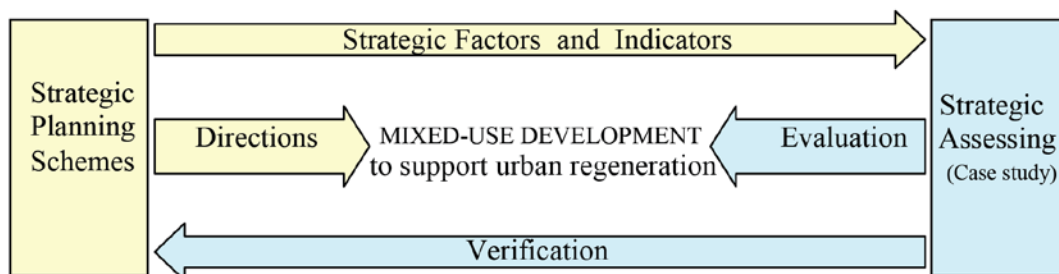
effects of policy actions (Hemphill et al., 2004). Gardiner (1998) developed SAR (Samples of Anonymised Records) based indicators to assess the potential for urban regeneration. This approach drew on the population census and provided indicators such as a supply-side ‘over qualification’. By contrast, Hemphill et al (2004) presented an indicator-based approach for measuring sustainable urban regeneration performance. They highlighted five key factors: Economy and work, Resource use, Buildings and land use, Transport and mobility, and Community benefits. Their study developed 9 to 12 indicators for evaluating each factor. The indicators were based on literature reviews supplemented by the consensus opinions reached in a Delphi survey.

This paper adopted meaningful planning schemes in the context of South Korea. Lee (2010) presented 12 strategic planning factors and 41 schemes via a literature survey and an expert questionnaire survey. This paper adopts the strategic schemes as indicators for measuring strategic planning to support urban regeneration. Considering the correlation between strategic planning factors and urban visions in the study (Lee, 2010), we have classified the strategic planning factors into two categories: ‘convenient & economic’ and ‘sustainable & cultural’. The convenient & economic category consists of seven factors: *User convenience*, *Image promotion*, *Systematic network*, *Functional integration*, *Visual perception*, *Amenity of low levels*, and *Pedestrian usage*. The sustainable & cultural category consists of five factors: *Divergence of connection*, *Openness of open space*, *Cultural reflection*, *Regional identity*, and *Art & design unification*. This paper selectively adopts the strategic planning indicators from these strategic planning factors.

2.2. Methodology

This study was designed to verify the strategic planning indicators to lead urban regeneration through a case study as well as to evaluate MXD projects in Seoul. Figure 1 illustrates a research framework that supports the directions of MXD projects as well as the evaluation of the strategic performance of the urban regeneration projects. The strategic planning schemes provide strategic indicators for a case study, while the strategic assessment allows for the evaluation of the strategic performance and the verification of the schemes. He et al. (2011) provided a framework for integrating urban planning and strategic environmental assessment consisting of nine steps from ‘define the objectives’ to ‘review and evaluate’ and ‘stakeholders involvement’. Focussing more on assessment, their detailed steps are of benefit to formally evaluate strategic performance.

Figure 1: Research framework



Although our framework is a comparatively simple process, it allows us to describe the strategic assessment process and verify the strategic planning schemes as the indicators here. This paper investigates MXD as an urban regeneration project, which is

a series of actions designed to accomplish urban regeneration goals such as improvement in the economic, physical, social, and environmental conditions of an area that has been subject to change. Thus, the characteristics of urban regeneration projects significantly differ to those of general construction projects, especially in terms of their high degree of complexity and uncertainty (Yu and Kwon, 2011, p. 889).

We believe that urban regeneration projects can become successful as a result of the strategic directions of consensual strategic planning schemes. Lee (2010) presented 12 strategic planning factors and 41 schemes via a literature survey and a questionnaire survey of experts to reflect consensus within regional contexts. That is, the 12 strategic planning factors and 41 indicators are based on complicated relationships among various stakeholders. Since urban regeneration projects bring improvements in the social, economic, physical, and environmental aspects of an urban area (Yu and Kwon, 2011), these strategic planning indicators should capture these aspects of urban projects. This paper, therefore, verifies the potential of our indicators via a case study. We also focus on identifying the characteristics of urban regeneration projects in Seoul using the indicators.

During the past decade, MXD projects constructed in Seoul were constructed to improve built environments as well as to revitalise social and local culture. This paper argues that MXD is an ideal approach for regenerating urban Seoul. An indicator of the 'building and land use' indicators for measuring the performance of sustainable urban regeneration (Hemphill et al., 2004) refers to a combination of mixed use (residential, commercial and recreational). MXD projects can consider regional contexts and potential to effectively support urban regeneration. Thus, strategic planning indicators were cultivated from 29 Korean research papers dealing with planning schemes of MXD. A case study also explores the strategic planning schemes of MXD projects in Seoul.

Lin and Hsing (2009) presented a framework to analyse the social and institutional dynamics of a culture-led regeneration project. Their framework consists of as a series of participatory observations, collecting informal data relating to the regeneration plan, and observing the planning process of the regeneration project. By contrast, our framework verifying the potential of strategic planning factors and indicators, involves our field investigation of five cases and a literature review to collect data relating to five cases.

The strategic planning factors and indicators do not measure all the performance indicators of urban regeneration or the effects of policy actions (Hemphill et al., 2004), but aim to evaluate strategic planning to support urban regeneration within regional contexts. This is because the strategic planning indicators originate from literature about MXD in South Korea. Thus, the indicators are limited to exploring strategic urban planning and design of MXD projects in Seoul. The definition of 'urban planning' relates to

the category of spatial planning, which gives geographical expressions to the economic, social, cultural and ecological policies of a society. In the meantime, being a combination of a scientific discipline, an administrative technique and a policy, urban planning has been developed as an interdisciplinary and comprehensive approach for a balanced regional development and physical organization of space in accordance with an overall strategy. (He et al., 2011, p. 550)

Strategic planning indicators here focus on accessing urban planning and design factors rather than economic concerns and work or resource use for urban regeneration. Our indicators allow us to measure the performance of urban regeneration and focus on three factors (Hemphill et al., 2004): Buildings and land use, Transport and mobility, and Community benefits. To effectively evaluate the performance of urban regeneration for each case, we needed to develop a scoring system. Hemphill et al.(2004) argued that

the application of indicators has little or no meaning unless set against a scoring system whereby a case-study scheme can be evaluated in terms of its performance against a benchmark established through the weighting and scoring of indicators. (Hemphill et al., 2004, p.735)

Qualitative and quantitative indicators that accommodate various scaling methods (e.g. frequency, value, Likert scale, etc) need to be taken into account. For examples, 'Amenity as a city park' in the 'Divergence of connection' factor of our second category can be evaluated qualitatively by a seven-point Likert scale (where 1 is lowest and 7 is highest), while 'Establishment of convenient facilities' can be counted quantitatively. Furthermore, 'Connection to downtown areas' may be scored directly by the distance in metres or a scoring system (e.g. > 1000m = 1, 400-500m= 4, <100m=7). Before developing a detailed scoring system, this paper briefly examines strategic planning factors and indicators. It is only concerned with whether or not the strategic planning indicators are applied to each MXD project.

Using this Yes/No scoring system, we adopted 30 indicators. This paper excluded 11 indicators, viz. *Amenity as a city park, Seamless connection within streets, Individuation of streets, Space planning for comfort, Strengthening user convenience, Promoting public use of open spaces, Zoning functions centring on functional axis, Consideration of image marketing, Required functions of new city as an urban planning phase, Integrating functions within spaces, and Formation of placeness.* This is because they are qualitative indicators and need further development based on expert opinion to be utilised successfully to frame the point scoring target-setting measures (Hemphill et al., 2004). This paper is limited to the quantitative and the simple qualitative assessments of the Yes/No scoring system.

Next section describes the field investigation of the strategic planning of five MXD project using the 30 indicators developed here. The 'Convenient & Economic' category consists of seven factors and 23 indicators as follows:

- User convenience: Establishment of convenient facilities, Improvement of task convenience
- Image promotion: Bridging between pedestrian space and regional landmarks, Connection to downtown areas
- Systematic network: Systematic connection of transportation to internal circulations, Population inflow through the establishment of commercial and cultural spaces, Distinguishing and networking vehicle and pedestrian and service circulation
- Functional integration: Integration of vertical programs, Connection with horizontal functions

- Visual Perception: Visual openness at the edge of entrances, Symbolic entrances, Establishment of signage identifying spaces
- Amenity of low levels: Connection to underground spaces through sunken spaces, Establishment and connectivity of public spaces in low levels, Consideration of day lighting in intermediate spaces
- Pedestrian usage: Establishment of pedestrian spaces to enable evacuation and fire-fighting, Connection between facilities through footpaths

The 'Sustainable & Cultural' category consists of five factors and 18 indicators as follows:

- Divergence of connection: Connection to footpaths, green areas and water space, Provision of bicycle roads,
- Openness of open space: Providing accessibility of open spaces, Establishment of plazas
- Cultural reflection: Establishment of facilities for cultural events, Connection to exhibition spaces as public cultural spaces, Reflection on the context of regional society, culture, and history
- Regional identity: Establishing residents' identities through enlargement of regional communities, Planning basement for growing surrounding markets, Formation of placeness, Providing privacy for facilities
- Art & design unification: Design unification of interior spatial components, Relationship between art works and a space, Connecting footpaths to hotels, commercial areas and cultural functions

3. CASE STUDY

3.1. General characteristics

Strategic planning factors and indicators here suggest ways to investigate the status of strategic planning of MXD projects in Seoul. Seoul is divided into 25 'Gu' (administrative subdivisions) each inhabited by about 150,000 to 650,000 people. This paper selected target cases amongst urban projects supporting urban regeneration of each Gu. Next, we narrowed cases down into five MXD projects (discussed in the other literature). This has allowed us to collect data relating to five cases. Table 1 summarises these five cases.

TS (Times Square), a recently completed project, has four concepts of image marketing, viz. 'be ahead', 'be divergent', 'be comfort' and 'be greatest'. 'Be ahead' highlights a landmark image and the nation's largest shopping and cultural space of 300,000 m², while 'be divergent' leads to a one-stop resource for a complex shopping centre. TS as a 'City in the city' emphasizes MXD, combining shopping, culture, education, wedding and convention, food, fitness, hotels and business facilities. 'Be comfort' presents the advantages of the combination of inner and outer mall to allow for a pleasant 'Malling'. 'Be greatest' deals with the composition of 21% natural square area to allow for both shopping and relaxation.

SC (Star City) consists of two complex parts of commercial facilities and residential facilities. It was designed for the regeneration of an aging baseball stadium. The commercial area is divided into two parts, 'Star Zone' and 'City Zone', which are connected by internal bridges. The internal street of the commercial area is effectively applied to provide horizontal and vertical functional linkages as well as to promote the commercial effect of SC.

GF (Garden Five), located in the suburbs, was intended for the migration and the activation of over 6,000 merchants due to the 'Cheonggyecheon development' (8.4 km urban renewal and beautification project along Cheonggyecheon creek flowing through downtown Seoul to create modern public recreation space of the city centre). It currently consists of a 'LIFE' block for household shops, a 'WORKS' block for apartment-type factories, and a 'TOOL' block for industrial supplies.

IM (I-Park Mall) was designed for the regeneration of an aging railway station and has emerged with active urban marketing and a new brand development. The commercial function of IM highlights a strong variety of new retailers (department stores, special stores, discount stores) and cultural facilities consisting of cinemas, theatres, and an exhibition complex. It presents a cultural living space representing 'Malling culture' as a major strategy of spatial marketing.

CE (COEX) has been called KOEX (Korea Exhibition) and the newly renamed COEX (CONvention EXhibition) Centre. The project was intended for the 3rd ASEM (Asia-Europe Meeting) in 2000 and expanded to complex cultural and commercial facilities with the Korea World Trade Centre. It includes a business hotel, convention, entertainment,

air terminal, and shopping facilities. The COEX Mall is the largest underground shopping centre in Asia and effectively bridges between the various functions. It is the largest project and has the most diverse facilities in our cases.

Table 1: Case summary

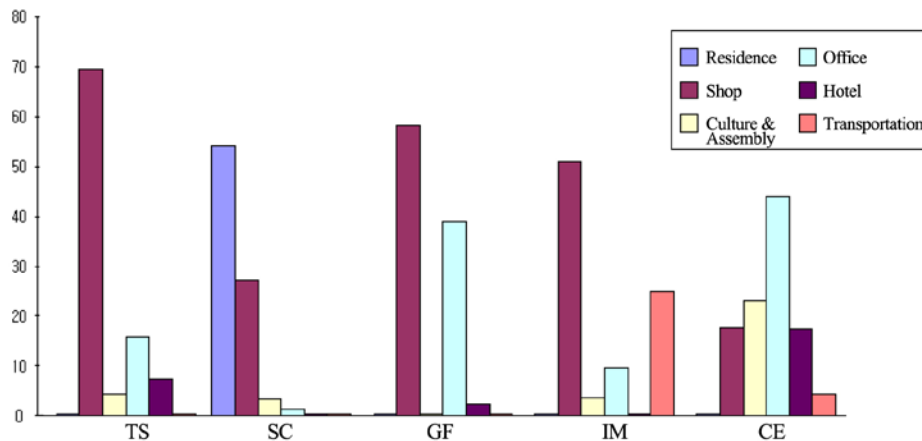
| Case | Mixed Function | Completion Year | Site area (m ²) | GFA* (m ²) | Location, strategic characteristics |
|---------------------|---|-----------------|-----------------------------|------------------------|--|
| TS (Time Square) | Shop, Office, Hotel, Culture Assembly | 2009 | 44,291 | 340,895 | Located in Yeongdeungpo District, 'be ahead', 'be divergent', 'be comfort' and 'be greatest' |
| SC (Star City) | Housing, Shop, Culture Assembly, Office | 2008 | 60,235 | 417,948 | Located in Gwangjin District, Combining commercial facilities and residential facilities |
| GF (Garden Five) | Shop, Office, Hotel | 2008 Partly | 83,598 | 820,228 | Located in Songpa District, Merchants' migration and the activation |
| IM (I-Park Mall) | Shop, Office, Culture Assembly, Transportation | 2004 | 126,931 | 270,285 | Located in Yongsan District, 'Malling culture' as a major strategy |
| CE (COEX) | Shop, Office, Hotel, Culture Assembly, Transportation | 2000 | 190,386 | 938,019 | Located in Gangnam District, COEX Mall bridging between the various functions |

*GFA stands for Gross Floor Area

Seoul has many CBD (Central Business District) areas. Each 'Gu' district has more than one CBD area. Many MXD projects that support urban regeneration are located in CBD areas. Four cases are in the CBD and GF is located in a suburban area of Songpa District. CE is the largest mixed-use buildings in Seoul (938,019 m²) and GF is also a large scale development. Only SC has both residential and commercial areas, but there are a lot of MXD projects in Seoul which include residential elements and high-rise apartments. TS (340,895 m²) and IM (270,285 m²) are the common scale of commercial-centred MXD in Seoul. These imply that urban development of aging regional infrastructures is being developed primarily on a medium-sized scale (about 300,000 m²).

MXD has three or more significant revenue-producing functions (Witherspoon et al., 1976). Thus, it is important to identify features of the distribution of the functional areas introduced in Figure 2. SC has the highest percentage residential function and CE has the highest percentage office function. Commercial-centred MXD (TS, GF and IM) has more than 50% of sales facilities to provide a platform for growing surrounding markets. CE is relatively evenly distributed into various functions. It is considered that an equitable distribution results in a more diverse population influx and usage.

Figure 2: Percentage of the functional area of each case



3.2. Indicator-based assessment

3.2.1. User convenience, Functional integration, Visual perception

Table 2 indicates that strategic planning of ‘User convenience’, ‘Functional integration’ and ‘Visual perception’ is commonly applied to five MXD projects. These factors in the ‘convenient & economic’ category form a base for economic planning. Since the MXD projects basically aim to secure commercial interests, all cases satisfy the indicators in the factors. Of course, if we use an alternate scoring system (such as frequency and a seven-point Likert scale) each case performance will vary. For example, CE has many convenient facilities while SC includes a few convenient facilities. Nonetheless, the results in Table 2 imply that there is no significant strategic difference between cases in terms of ‘User convenience’, ‘Functional integration’ and ‘Visual perception’. We also believe that these factors include basic indicators to effectively support urban regeneration.

Table 2: User convenience, Functional integration, Visual perception

| Factor | Indicator | TS | SC | GF | IM | CE |
|------------------------|---|----|----|----|----|----|
| User convenience | • Establishment of convenient facilities | √ | √ | √ | √ | √ |
| | • Improvement of the convenience of office facilities | √ | √ | √ | √ | √ |
| Functional integration | • Integration of vertical programs | √ | √ | √ | √ | √ |
| | • Connection with horizontal functions | √ | √ | √ | √ | √ |
| Visual Perception | • Visual openness at the edge of entrances | √ | √ | √ | √ | √ |
| | • Symbolic entrances | √ | √ | √ | √ | √ |
| | • Establishment of signage identifying spaces | √ | √ | √ | √ | √ |

3.2.2. Image promotion, Systematic network, Amenity of low levels, Pedestrian usage

‘User convenience’, ‘Functional integration’ and ‘Visual perception’ in the convenient & economic category are basic factors for strategic planning of MXD whilst ‘Image promotion’, ‘Systematic network’, ‘Amenity of low levels’ and ‘Pedestrian usage’ are advanced factors. Each indicator of these advanced factors in the category identifies a different performance among the cases (shown in Table 3). All cases are well evaluated by each advanced factors’ indicator exploring five MXD projects and identifying the characteristics in terms of strategic planning.

‘Image promotion’ consists of two indicators: *Bridging between pedestrian space and regional landmarks*, and *Connection to downtown areas*. As expected, the four cases, which are located in CBD and intended for the revitalisation of the regional areas, are well suited to these strategic regeneration schemes. However, GF that was intended for the migration and located in the suburban area is a lack of the consideration of the strategic schemes. GF

has been regarded as one of the unsuccessful urban projects. Since ‘Image promotion’ is an important factor for place marketing (Kearns and Philo, 1993, Ashworth and Voogd, 1993) as well as city marketing (Bramwell and Rawding, 1996), successful urban projects must satisfy this strategic factor regardless of their development purposes.

‘Systematic network’ highlights *Systematic connection of transportation to internal circulations, Population inflow through the establishment of commercial and cultural spaces, and Distinguishing and networking vehicle, pedestrian, and service circulation*. While SC, IM and CE are good for these indicators, TS lacks the provision of systematic connection of transportation to internal circulations and GF only satisfies the establishment of commercial and cultural spaces. Many urban regeneration projects in Seoul have included railway or subway stations to provide internal circulation. The transportation-centred projects should also have the potential to allow for population inflow and systematic circulation.

The performance of ‘Amenity of low levels’ in the five cases is evaluated by three indicators: *Connection to underground spaces through sunken spaces, Establishment and connectivity of public spaces in low levels, Consideration of day lighting in intermediate spaces*. While SC and CE are good indicators, IM does not satisfy the last two indicators. Since the low level of IM is the Yonsan railway station, the strategic schemes for amenity of low levels are difficult apply to IM. ‘Establishment and connectivity of public spaces in low levels’ is not applied to TS and GF because it is referred to as a specific planning scheme.

The performance of ‘Pedestrian usage’ is evaluated by two indicators: *Establishment of pedestrian spaces to enable evacuation and fire-fighting, and Connection between facilities through footpaths*. All cases do not adequately support ‘Pedestrian usage’. While GF lacks connection between facilities through footpaths, four cases (TS, SC, IM and CO) lack pedestrian spaces to enable evacuation and fire-fighting. All cases include commercial facilities and four cases (TS, SC, IM and CO) include a culture & assembly function. They rely on complex construction equipment rather than strategic planning and design, highlighting the need to support pedestrian usage more effectively.

Table 3: Image promotion, Systematic network, Amenity of low levels, Pedestrian usage

| Factor | Indicator | TS | SC | GF | IM | CE |
|-----------------------|---|----|----|----|----|----|
| Image promotion | • Bridging between pedestrian space and regional landmarks | √ | √ | | √ | √ |
| | • Connection to downtown areas | √ | √ | | √ | √ |
| Systematic network | • Systematic connection of transportation to internal circulations | | | | √ | √ |
| | • Population inflow through the establishment of commercial and cultural spaces | √ | √ | √ | √ | √ |
| | • Distinguishing and networking vehicle, pedestrian, and service circulation | √ | √ | | √ | √ |
| Amenity of low levels | • Connection to underground spaces through sunken spaces | √ | √ | √ | | √ |
| | • Establishment and connectivity of public spaces in low levels | | √ | | | √ |
| | • Consideration of day lighting in intermediate spaces | √ | √ | √ | √ | √ |
| Pedestrian usage | • Establishment of pedestrian spaces to enable evacuation and fire-fighting | | | √ | | |
| | • Connection between facilities through footpaths | √ | √ | | √ | √ |

3.2.3. Divergence of connection, Openness of open space

In comparison with strategic planning factors in the convenient & economic category, the sustainable & cultural category of this paper is more concerned with sustainable urban planning. Five strategic planning factors – ‘Divergence of connection’, ‘Openness of open space’, ‘Cultural reflection’, ‘Regional identity’ and ‘Art & design unification’ – and 13 indicators are developed in the ‘sustainable & cultural’ category. All cases are robustly evaluated by these sustainable & cultural indicators, which enable us to understand the strategic planning schemes of each case.

The sustainable & cultural indicators may be related to the evaluation of the ‘sustainable city’ of Rogers: A Beautiful City, A City of Easy Contact and Mobility, A Compact and Polycentric City, A Creative City, A Diverse City, etc. (Doughty and Hammond, 2004). This section presents the results of the evaluation by indicators in the ‘Divergence of connection’ and ‘Openness of open space’ factor in Table 4.

The performance of ‘Divergence of connection’ in the five cases is evaluated by two indicators: *Connection to footpaths, green areas and water space*, and *Provision of bicycle roads*. While SC and CE satisfies all the requirements of these indicators, TS, GF and IM have few connections to footpaths, green areas and water space. Responding to the governor’s policy of building bicycle roads, all cases do provide bicycle roads.

‘Divergence of connection’ provides a basic planning scheme for urban regeneration. This paper developed three additional schemes in section 2.2, viz. *Amenity as a city park*, *Seamless connection within streets*, and *Individuation of streets*. Whilst the three indicators cannot be evaluated by our Yes/No scoring system, they do indicate significant strategic planning schemes for supporting urban regeneration. The divergent aspects of mobility become new urban factors (Brighenti, 2012). The connection through physical distance can be extended to place building (Lowe, 2005) and to the strategic manipulation of distance and proximity (Jones and Evans, 2006).

The performance of ‘Openness of open space’ is evaluated by two indicators: *Providing accessibility of open spaces*, and *Establishment of plazas*. All cases adequately support ‘Openness of open space’. Only SC, including residential facilities, does not provide accessibility to open spaces because it highlights private open space for residents. To the indicator for the accessibility of open spaces, we need to consider the public usages as well as the quality of private life. Anderson and West (2006) also distinguishes between protected open space (public) and developable open space (private) to measure the total quantity of surrounding open space. Their finding is interesting as the effect of open space on sales price depends on a home's location and neighborhood characteristics. Literature argues that open space affects residential property values (Anderson and West, 2006).

Table 4: Divergence of connection, Openness of open space

| Factor | Indicator | TS | SC | GF | IM | CE |
|--------------------------|--|----|----|----|----|----|
| Divergence of connection | • Connection to footpaths, green areas and water space | | √ | | | √ |
| | • Provision of bicycle roads | √ | √ | √ | √ | √ |
| Openness of open space | • Providing accessibility of open spaces | √ | | √ | √ | √ |
| | • Establishment of plazas | √ | √ | √ | √ | √ |

3.2.4. Cultural reflection, Regional identity, Art & design unification

Table 5 shows the results of the evaluation by indicators of ‘Cultural reflection’, ‘Regional identity’, and ‘Art & design unification’.

The performance of ‘Cultural reflection’ in the five cases is evaluated by three indicators: *Establishment of facilities for cultural events*, *Connection to exhibition spaces as public cultural spaces*, and *Reflection on the context of regional society, culture, and history*. While SC, IM and CE satisfy all the requirements of these indicators, TS and IM do not reflect the context of regional society, culture, and history. This is because TS highlights more new image marketing beyond the image of aging and run-down areas, and GF is a new urban development in the suburban area. Three other cases also highlight one or two urban contexts. For example, SC shows the reflection of the context of regional society and culture while CE highlights the context of culture and history in the area. This implies that the strategic planning scheme can be applied to urban contexts and aims. GF needs to consider the connection of exhibition spaces as public cultural spaces.

The performance of ‘Regional identity’ is evaluated by three indicators: *Establishing residents’ identities through enlargement of regional communities*, *Planning basement for growing surrounding markets*, and *Providing privacy for facilities*. Only SC satisfies all the requirements of these indicators because the others have no residential function. GF lacks a planning basement for growing surrounding markets while IM lacks privacy for facilities. ‘Regional identity’ may be considered to be part of ‘Divergence of connection’ in terms of the affective and emotional connections (Jones & Evans, 2011). ‘Regional identity’ is such a basic planning factor and can support the sustainable & cultural schemes as well as the convenient & economic schemes.

‘Art & design unification’ consists of three indicators: *Design unification of interior spatial components*, *Relationship between art works and a space*, and *Connecting footpaths to hotels, commercial areas and cultural functions*. As expected, the four cases which are located in CBD and highlight both the cultural and commercial function satisfy all the requirements of these indicators. By contrast, GF intended for the migration and the activation to the suburban area,

lacks consideration of the strategic schemes. The results are similar to those of ‘Image promotion’ in the convenient & economic category. Our strategic planning indicators may be related to each other. Doughty and Hammond (2004) describe Rogers’s ‘A Beautiful City’ that art, architecture, and landscape spark the imagination and move the spirit.

Masayuki (2010), rethinking creative city theory, argues that artistic and cultural creativity must be recognized as factors that have an impact on urban regeneration. With an understanding of the historical context of the city, Masayuki (2010) highlights the shared awareness of fusing contemporary arts with traditional culture. However, Evans (2005) indicates a problem when moving to cultural city status and to iconic projects. He observes that we are in a cultural lottery game and that we should sustain cultural values. This paper highlights these strategic planning factors – ‘Cultural reflection’, ‘Regional identity’, and ‘Art & design unification’ – leading to sustainable & cultural urban regeneration.

Table 5: Cultural reflection, Regional identity, Art & design unification

| Factor | Indicator | TS | SC | GF | IM | CE |
|--------------------------|--|----|----|----|----|----|
| Cultural reflection | • Establishment of facilities for cultural events | √ | √ | √ | √ | √ |
| | • Connection to exhibition spaces as public cultural spaces | √ | √ | | √ | √ |
| | • Reflection on the context of regional society, culture, and history | | √ | | √ | √ |
| Regional identity | • Establishing residents’ identities through enlargement of regional communities | | √ | | | |
| | • Planning basement for growing surrounding markets | √ | √ | | √ | √ |
| | • Providing privacy for facilities | √ | √ | √ | | √ |
| Art & design unification | • Design unification of interior spatial components | √ | √ | | √ | √ |
| | • Relationship between art works and a space | √ | √ | | √ | √ |
| | • Connecting footpaths to hotels, commercial areas and cultural functions | √ | √ | | √ | √ |

3.3. Strategic planning indicator

The performance of strategic planning of all five cases was well evaluated by our each strategic planning indicator. The indicators enabled us to explore five MXD projects in Seoul and identify characteristics in terms of strategic planning. We have summarized the strategic planning indicators in Table 6. These indicators consist of the 21 quantitative and 20 qualitative indicators. The convenient & economic category has been developed to two levels. The indicators of ‘Cultural reflection’, ‘Regional identity’ and ‘Art & design unification’ in the sustainable & cultural category are refined to evaluate the performance in the specific contexts.

The indicators in Table 6 are extended to a variety of scoring systems which precisely evaluate the strategic performance of each case and are considered for the future work. The detailed scoring systems are selectively adopted from other literature (Gardiner, 1998, Hemphill et al., 2004). They also provide insight to precisely refine our indicators. For example, Hemphill et al. (2004)’s indicators related to our ‘Divergence of connection’ and ‘Openness of open space’ factors are: Ratio of open space to built form, Land devoted to roads (percentage of site area), Land dedicated to pedestrians (percentage of road network), Public transport links (walking distance to nearest facilities), Access to open space (average journey time by foot), Access to cultural facilities (average journey time by foot), etc.

The next stage establishes the detailed scoring system that will formally evaluate the performance of MXD projects with a focus on the evaluation of each case. This paper highlights the verification of strategic planning indicators contributing to a framework of strategic planning indicators for future developments.

Table 6: Strategic planning indicator

| Factor | Indicator | Quantitative | Qualitative |
|--|---|--------------|-------------|
| <i>Convenient & economic category</i> | | | |
| <u>Basic Level</u> | | | |
| User convenience | Establishment of convenient facilities – percentage | √ | |
| | Improvement of the convenience of office facilities – percentage | √ | |
| Functional integration | Space planning for comfort | | √ |
| | Strengthening user convenience | | √ |
| | Integration of vertical programs | | √ |
| Visual Perception | Connection with horizontal functions | | √ |
| | Integrating functions within spaces | | √ |
| | Symbolic entrances – quality of symbolic design | | √ |
| | Establishment of signage identifying spaces – quality of signage systems | | √ |
| | Zoning functions, centring on functional axis | √ | |
| | Visual openness at the edge of entrances | | √ |
| <u>Advanced Level</u> | | | |
| Image promotion | Bridging between pedestrian space and regional landmarks – distance | √ | |
| | Connection to downtown areas – walking distance | √ | |
| | Consideration of image marketing | | √ |
| Systematic network | Systematic connection of transportation to internal circulations | | √ |
| | Population inflow through the establishment of commercial and cultural spaces – percentage of each commercial and cultural spaces | √ | |
| | Distinguishing and networking vehicle, pedestrian, and service circulation | | √ |
| Amenity of low levels | Required functions of new city as an urban planning phase | | √ |
| | Connection to underground spaces through sunken spaces – percentage | √ | |
| | Establishment and connectivity of public spaces in low levels | √ | |
| Pedestrian usage | Consideration of day lighting in intermediate spaces – percentage | √ | |
| | Establishment of pedestrian spaces to enable evacuation and fire-fighting | √ | |
| | Connection between facilities through footpaths – average walking time | √ | |
| <i>Sustainable & cultural category</i> | | | |
| Divergence of connection | Connection to footpaths, green areas and water space – distance | √ | |
| | Provision of bicycle roads – percentage | √ | |
| | Amenity as a city park | | √ |
| | Seamless connection within streets | | √ |
| Openness of open space | Individuation of streets | | √ |
| | Providing accessibility of open spaces – distance to private and public open space | √ | |
| | Establishment of plazas – ratio of plazas | √ | |
| Cultural reflection | Promoting public use of open spaces – walking distance to open space | | √ |
| | Establishment of facilities for cultural events – percentage | √ | |
| | Connection to exhibition spaces as public cultural spaces – average walking time | √ | |
| Regional identity | Reflection on the context of regional society, culture, and history | | √ |
| | (Establishing residents' identities through) Enlargement of regional communities – percentage of community | √ | |
| | Planning basement for growing surrounding markets – distance | √ | |
| | Formation of placeness – effectiveness of placeness | | √ |
| Art & design unification | Providing privacy for facilities – effectiveness | | √ |
| | Design unification of interior spatial components – quality of interior design | | √ |
| | Relationship between art works and a space – average walking time | √ | |
| | Connecting footpaths to hotels, commercial areas and cultural functions | √ | |

4. CONCLUSION

This paper has explored five MXD projects in terms of the performance of strategic planning. It presents the results of a case study using 12 strategic planning factors consisting of 30 indicators for measuring strategic planning to support urban regeneration. Since the main purpose of this paper was to verify the strategic planning indicators through a case study, we have examined whether the strategic planning indicators are applied into each MXD project to support urban regeneration or not.

The previous work (Lee, 2010) presented 12 strategic planning factors and 41 schemes via a literature survey and a questionnaire survey of experts. A research framework has been developed to present a new approach to bridging between the strategic planning schemes and the case study. The strategic planning schemes as indicators supported the directions of MXD projects as well as the evaluation of the strategic performance of urban regeneration projects. The framework contributes to providing the strategic directions by consensual strategic planning indicators and to a better understanding of the opportunities and challenges of MXD projects within Seoul contexts.

The results have indicated that all cases are well evaluated by each indicator exploring five MXD projects and identifying the characteristics in terms of strategic planning. The strategic planning of 'User convenience', 'Functional integration' and 'Visual perception' was commonly applied to five projects. Each indicator of the advanced factors – 'Image promotion', 'Systematic network', 'Amenity of low levels' and 'Pedestrian usage' – in the convenient & economic category enables us to identify the different performance among MXD projects.

The sustainable & cultural category in this paper is more concerned with sustainable urban planning. Five strategic planning factors – 'Divergence of connection', 'Openness of open space', 'Cultural reflection', 'Regional identity' and 'Art & design unification' – have been developed in the 'sustainable & cultural' category. The last three factors have revealed that the strategic planning indicator can be applied to urban contexts and aims. They have showed that the strategic performance of five projects varies with the urban contexts and has a different impact on urban regeneration. This implies that our strategic planning indicators have the potential to evaluate the underlying strategic planning of MXD projects to support urban regeneration.

Finally, this paper present strategic planning indicators consisting of the 21 quantitative and 20 qualitative indicators. The case study also revealed that some strategic planning indicators need to be refined to be able to reflect specific contexts. The case study has allowed us to explore MXD projects and refine strategic planning indicators for urban regeneration with an understanding of the urban context of the city. However, our indicators need to be extended into formal scoring systems that precisely evaluate the strategic performance of each case. This will enable us to verify our strategic planning indicator in detail. Thus, our future work lies in the development of a detailed scoring system and its application. This paper contributes to evaluating MXD projects in terms of strategic planning as well as the construction of strategic planning indicators for future developments.

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