A Study on Infrastructure-centered Publicness in Urban Public Space through a Look at Dutch Architectural Policies and Practices

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Abstract
This thesis works toward the development of a method for infrastructure-centered publicness in the design of urban public space by looking into the relationship between infrastructure and public space, keeping in mind changes in the concept of publicness in the age of globalization and personalization, in the context of Dutch architectural policies. This relationship shows two distinctive characteristics: "accessibility and adaptability of urban public space focused on infrastructure" and "diversity and specificity of the liminal space constructed by infrastructure." The former demands an integrative environmental design approach to designing public space and traffic space in order to acquire a multilayered architectural program incorporating attention to urban infrastructure, while the latter implies that infrastructure has been transformed into the foundation of everyday life. This indicates the possibility of producing a new shared space unreflected in the division between public and private space. The "infrarchitecturbanism" broadly discussed in Europe nowadays is merely a combination of architecture and dispersed infrastructure as a new condition for social mobility and communication, indicating the need for an urban landscape with attention not only to architecture but also to public space in contact with infrastructure and the urban landscape at the same time.

Keywords: infrastructure; mobility; liminal space; shared space; multiscape publicness

1. Introduction
1.1 Research Background

Recently, one of the most important topics mentioned in the discourse on cities and architecture has been "public space" and "publicness" as a normative characteristic. The reasons why this discussion, which has been around for more than 100 years, has recently become more active can be explained by some important factors related to the social, economic, and political situation of urban space. First, due to the rapid urbanization and mobilization that have been seen since the late 20th century, problems of publicness related to the access, distribution, and enjoyment of urban goods, including space, have begun to emerge. The resulting interest in the publicness of urban space has prompted urban sociologists, architects, urban planners, and the like to diagnose urban public space from diverse angles. As the current situations of urban public space have been researched, a sense of crisis—of loss of publicness—has become widespread. In addition, as the tide of globalization and individualization has dismantled the traditional definition of public space, a new paradigm of publicness has become required, and there have been attempts to (re)define public space and publicness from various perspectives. Since the 1990s, however, as the criticism emerged that public space had not contributed to the improvement of the quality of everyday life, there has been an increasing interest in the processes by which the composite system of infrastructure in contemporary urban space restructures urban publicness. This is seen for instance in communication and mobility infrastructure, which are the two major types of infrastructure. Infrastructure is related not simply to the intensity of physical mobility, but also to its density, that is, the degree of communication; hence, restructuring infrastructure in urban space also fosters a critique of urban space in modern society, in which mobility is widespread.

The Netherlands is one of the most densely populated countries in the world as well as a traditional distribution powerhouse, where infrastructure, architecture, and relationships among cities have been reviewed from various perspectives to the extent that a new word, "infrarchitecturbanism," was coined to describe them (Provoost, 1996); and based on
this foundation, various experimental public space projects have been discussed and executed. Within this backdrop, analyzing the case of the Netherlands should provide useful guidance to help us understand the possibility of a liaison between infrastructure and urban public space and its anticipated effects, and also the process of "making urban space" in major regions such as East Asia, large parts of which have similar quantitative features to the Netherlands in terms of density and infrastructure. Additionally, as stated above, because this kind of analysis is related to the mobility of urban space, and to its borderlines, it can ultimately contribute to the understanding of the internal and external problems of contemporary space, the defining characteristics of publicness and collectivity, and the social effects and implications of urban spatial structure.

1.2 Research Objectives and Methods
As stated in the research background above, with the rapid urbanization and mobility of modern cities and the tide of globalization and individualization that has accompanied them, this research aims to reformulate contemporary urban public space and "publicness" as a normative characteristic through the liaison with infrastructure and to derive policy and practical strategies for future public space designs.

Regardless of the fact that large cities in East Asia have different historic, cultural, economic, and social backgrounds, they show conditions similar to the socioeconomic model of the Netherlands with respect to urban space densification, economic structure, and widespread neoliberalism. With respect to architectural public policy, in particular, they require a new design solution for public spaces for application to urban public spaces due to the large-scale infrastructure developments. Therefore, a comprehensive and critical analysis of how "publicness", as defined in modern times, is managed, operated, and implemented politically and practically in the best contemporary cases in Europe, with a focus on the Netherlands, would have significant implications for the metropolitan cities in East Asia. For this reason, to establish a political, practical strategy for public space design in these large cities, case studies were carried out on the entire process of implementing a detailed project from policies and discourse.

To do so, the authors focused on documents related to the Dutch National Policy Document on Spatial Planning (Dutch acronym NOTA) and the Architectural Policy of the Ministry of Housing, Spatial Planning and the Environment (VROM) to review the important parts of Dutch policy related to public space. After examining the dominant discourse on public space and policy formed in the urban conditions of the Netherlands based on these data, the authors intend to analyze the system as a whole, from the policy and systematic foundation to practical strategies. The reason the authors select the Netherlands as the target of our research, besides the generalizability of the case mentioned above, is that this country established the world's first national architecture policy, in 1991; various support policies were set up to secure the publicness of architecture through the historic "national architect" system, and creative space experiments were carried out. Recently, by integrating architecture policy and culture policy, the country has been attempting to execute integrated strategies, for example setting as a priority the expansion of cultural publicness.

2. Dutch Architecture Policy System for the Promotion of Urban Public Space
Traditionally, Dutch cities have been developed as an independent cluster network based on the polder model. The center of these independent city clusters is a circular urban area called the Randstad or "Ring City," consisting of four major cities (Amsterdam, Utrecht, Rotterdam, and The Hague) surrounding the Groene Hart or "Green Heart," a vast central green land reserve, as well as other, minor cities including Delft; as Schiphol airport is located at the center, these city clusters operate as an urban agglomeration sharing one airport. This spatial feature makes it possible for each city to maintain its uniqueness and independence but simultaneously to share facilities with the other cities by allowing people to rapidly move between them through the open space of the Green Heart without passing through densely populated urban areas (Koolhaas and Mau, 1995). Traditionally, therefore, Dutch urban spaces have featured multifunctionality and a strong sense of sharing space; thus, accessibility has tended to be emphasized in defining public space.

The urban public projects wherein Dutch architects consider the coupling between infrastructure and public space as an important subject of a project due to the influence of the architectural policies of the Netherlands were selected as the cases in this study. These projects can be classified mainly into two groups. The first group includes projects related to the integrated development of the traffic infrastructure, such as those of the MAXWAN and UN Studio cases, which tested the integration of traffic-related facilities and integrated programs through various projects; these cases were selected for study. The other group includes projects on public space design based on infrastructure, which were represented by the NL Architects and West 8 projects, which expressed the reason for the relationship between public space and private space.

2.1 The Development of Policy on Public Urban Space
The space-related policy of the Dutch central government is represented by the NOTA and Architectural Policy of VROM, the first one in the world driven by a government, established in 1991. The fifth NOTA, established in 2000, is based on the concept of a "network city." This model is in a sense a compromise between two models: the "compact
city model," which was the major model of urban development at that time, was complemented with the "corridor development model" (see Ibelings, 1998). The latter model is based on the linear space usage method, which emphasizes space of flow and seeks the diffusion of spatial density and the amplification of urban mobility. This model for urban space development has important implications in relation to public space and has led to active discussion of the argument that the space of flow of traffic infrastructure is the modern concept of urban public space in which various communications occur; in particular, it is argued to have greatly contributed to the formation of creative and composite publicness, for example by promoting the development of composite programs combined with infrastructure and new types of communication space developed by architecting infrastructure space as a way of securing the publicness of traffic infrastructure space.

On the other hand, the "Supplement to the Fourth National Policy Document on Spatial Planning," written in 1990, also has an important implication in this regard. Through this document, more commonly known by its Dutch abbreviation VINEX, the public space policy of the Netherlands came to actively consider the participation of the private sector. Since then, while tuning government requirements through various architectural policies, it has motivated the strengthening of interventional functions to secure publicness.

Whereas the NOTA of VROM is a policy on physical space, the Architectural Policy of 1991 is a policy on space that emphasizes social and cultural characteristics. The first goal of this policy was for the establishment of "Space for Architecture" (1991), in other words, the expansion of systems and facilities for the development of architecture, focused on the role of the government as an arbitrator of architecture environments; through this policy, numerous spatial and cultural infrastructural entities, including the Netherlands Architecture Institute (NAI) and various support organizations, were constructed (see Cho, 2006).

The second goal of the Architectural Policy, "Architecture of Space" (1997), expanded its capacity to deal with urban development, landscape architecture, and infrastructure; the third goal, "Shaping the Netherlands" (2001) focused on policy enforcement and sought policy changes to the designer's roles and delivery systems, with the cooperation of several Dutch ministries.

Thus, the Architectural Policy, in which the publicness of architecture is emphasized, is not simply a policy on physical space but rather a comprehensive approach to an art form that has an impact on lives. Along with the initial emphasis on social and cultural publicness, the targets and subjects of the Architectural Policy are also expanding, and inter-ministerial coordination and adjustment are increasingly considered important to ensure the execution of specific projects; and in this process, integrated management and operation are also increasingly treated as important.

2.2 Systems to Support Urban Public Space Projects and Arbitral Authority

The first system and organization set up to support public space projects and to secure the publicness of architecture in the Netherlands was a complex architecture center, which was designed to support a range of activities related to architecture and urban planning. It built creative knowledge platforms such as the Netherlands Architecture Institute (NAI), a communication space between groups of experts and citizens, and the Berlage Institute, a space for international knowledge exchange between groups of experts. Although these organizations were established under governmental leadership, their frameworks were transferred to the private sector to foster independent and creative operation. Also established through the drive to meet the first goal of the Architectural Policy was the Architecture Local Center (Architectuur Lokaal), regarded as an authority for local architecture centers that has supported the establishment of resources such as the Dutch Architecture Promotion Fund (SfA), which financially supports public projects by entities including architectural firms, architecture centers, educational organizations, government organizations, private businessmen, and researchers working in architecture and planning; the Netherlands Foundation for Visual Arts, Design and Architecture (Fonds BKVB), and others. It also supports a competition for young architects (the Europan Netherlands), local architectural policy development, and the architecture-related activities of local governments.

These support organizations and local architecture centers have made it possible for various policies for the promotion of publicness to be effectively propagated, and have also played a role in fostering public interest in architecture.

The direction of Dutch policy on public space has been determined jointly by relevant ministries, and emphasizes the formation of a complex and integrated publicness reflecting economic needs, culture, urban planning, architecture, landscape, and traffic under a policy led by the central government. In particular, as urban networks and social, cultural, and spatial mobility have emerged as important issues (since the establishment of the fifth NOTA in 2000), integrated access at the level of the central government has come to be more emphasized than the role of local government.

2.3 Dutch Architectural Policy and the Design of Urban Public Space

The various types of policy examined earlier have played an important role in the notable success of
Dutch urban public space design since the 1990s and have induced integrated design approaches based on discussions among various disciplines, emphasizing tasks that focus on urban mobility and conversion of an infrastructural space, which is the center of mobility, to a meaningful space in which a new community can emerge. This kind of development of mobility-centered public space is deeply relevant in the context of the Netherlands, which has a traditional economic structure based on physical distribution, and is also aligned with the notion that infrastructural space, as an extension of everyday life, is the most important urban public space in modern society.

Such trends in Dutch urban public space design, as summed up in the new word, "infraarchitecturbanism", are an attempt to find new possibilities for space-sharing based on the dismantling of the existing binary division between public space and private space through a new combination of multiscale, multiscape structures, such as infrastructure, architecture, and cities, and with the intent of restoring urban identity and the quality of everyday life by actively creating infrastructure space. Moreover, given the adoption in the current NOTA of the city network model, in which the public ownership of basic facilities among cities is emphasized, the reorganization of new urban structures through "infraarchitecturbanism" has a significant meaning in terms of the integrated, regionally differentiated urban management strategies that have been put forward to address unbalanced development among cities.

3. Connectivity and Integrity of Infrastructure-Centered Urban Public Space

3.1 The Development of "Infraarchitecturbanism"

The trend of "infraarchitecturbanism" in Dutch urban public space design begins, above all, from the notion that infrastructure is literally the basis of everyday life. According to the Merriam-Webster Dictionary, infrastructure is defined as a resource required for action. This definition is so comprehensive that it encompasses resources such as manpower, in addition to buildings and basic facilities. In other words, infrastructure refers to the basic services, facilities, and systems necessary to the growth and development of a community, such as transport, funding of public and private projects of various sorts, education, and research. This is in contrast to a narrow concept of infrastructure focusing on physical-spatial systems, which can be largely divided into transportation (road, rail, air, canal, etc.) and communication systems. Recently, the possibility of infrastructural space as a mobile and generative spatial system in relation to discussions on the urban landscape has been newly the focus of attention in the Netherlands (Gausa, 1998).

A full-scale discussion on infraarchitecturbanism within the architecture system of the Netherlands was initiated by M. Provoost (Provoost, 1996) at Crimson, an urban architecture research institution, and others, who criticized both the humanistic practicality and the idealism of architecturbanism as promoted by J. B. Bakema, a leading light of Dutch architecture in the 1960s, Aldo van Eyck, and others, and also the uniformity observed in the road culture of the USA, symbolized by Las Vegas (Provoost, 2000). The background to this discussion is that infrastructure, as a condition of globalization based on abrupt temporal and spatial compression, began in this period to be understood as the condition of modern life and space in and of itself; this background led to a movement to intervene in active urban public space planning through architecture (Maas, 1999).

Given that this discussion started with criticism of idealism and uniformity, approaches to infrastructure space were taken up at a national level by focusing on performance-centered realistic planning and the formation of social and cultural diversity through the nesting of diverse programs that had close relationships with space policies such as NOTA and the Architectural Policy.

3.2 Mixing and Sharing an Architectural Program through Infrastructure Design

Numerous experiments with infrastructure space as the condition of new possibilities can be seen in various projects from MAXWAN, a Dutch architectural firm.

Fig.1. The Urban Adaptable Project
(Source: http://maxwan.nl/selected-projects/south-axis)

The "Urban Adaptable" project (Fig.1.), a research project on Amsterdam urban development policy, will serve as our starting point. This prototype design project, funded by the Amsterdam municipal government, can be plugged into infrastructure spaces such as highways, railroads, and subways. Based on this research, MAXWAN developed the Utrecht Central Project (UCP), which considered various types of infrastructure (high-speed railroads, railroads, roads, trams, parking lots), and programs (shopping malls, offices, and residential buildings). The core of this project is that two areas divided by the previous railroads are connected through a new type of infrastructure and that it aims to create a social, cultural platform in which communication and exchange as an extension of everyday life can be made possible through the lamination of various space types and complex program constructions. (See the discussion of the "Utrecht Center Project" in Van Broeckhuijsen, 1999). For this purpose, a big urban deck was planned...
to connect old downtowns divided by railroads, and as shown in Fig.2., communication and connection between commercial facilities was intensified by leaving a void in the deck; the project opened the possibility that residents could share a rooftop, a public space, by building a 20-story residential building on the urban deck.

Likewise, the Arnhem central station project by the architectural firm UN Studio and the Southern Amsterdam development project by the firm Architekten Cie stand as representatives of the movement of infrastructure-centered multiscape architectural integration, which prevailed in the 1990s. In the case of the Arnhem project, various types of traffic flows (high-speed and normal railroads, urban and suburban buses, personal vehicles, bicycles, and trams) were analyzed and laid out so as not to overlap with one another, to the extent that this approach obtained a nickname, the "traffic machine" (Berkel and Bos, 2002); as part of this project, a space tunnel that could direct traffic flows to their exact end points (Fig.4.) was designed, and commercial and business facilities, hotels, and residential buildings were located on top of the platform. This project is important for the discussion of shared public space or traffic space.

Among the infra-centered public space projects, MAXWAN's master plan for Leidsche Rijn, a Utrecht suburb, shows most clearly the importance of infra-centered multiscape architectural integration and sharing space as examined above, of negotiation and coordination among various fields and ministries, and of specific tools for negotiation and coordination. As Wouter Vanstiphout at Crimson has pointed out, this project is significant in that "it is a proud urban plan of negotiation; negotiation was not carried out to realize a design, but a design was created to negotiate and to construct a city" (Vanstiphout, 1998). Leidsche Rijn, selected as a place of the VINEX region by the fourth "Supplement to the Fourth National Policy Document on Spatial Planning," has an important spatial connection with the existing urban area in Utrecht in terms of the spatial planning principles of the region; however, it was impossible to more closely connect the two locations due to noise and environmental pollution laws that forbade program planning for dwellings within 600 meters of a planned new highway. In this situation, the solution that MAXWAN proposed was not to simply bury the highway underground but to gradually raise the level of surrounding areas and ultimately lower the level of the highway by constructing a highway in a kind of hollow dyke, as seen in the cross-sectional sketch in Fig.5.

This attempt is closely related to the concept of and discussion on sharing space, especially in the Netherlands. Sharing space is a concept oriented towards multifunctional, mixed-used spaces and refers to the approach, based on user behavior and performance, in which traffic space is treated not as a separate technical space but comprehensively, within the overall spatial structure. In short, shared space is public space in which flow, which can access various functions, and occupying coexist. Therefore, it is assumed that shared space requires complex and integrated design strategies rather than overly specific or tailored strategies.
of a community through them, proved that a new type of highway could be constructed at 40% of the expense of the existing tunnel method, and made it possible to plan various developments, including dwellings, in previously unbuildable areas. In particular, the various index systems created to effectively control the processes of negotiation, arbitration, and coordination constitute an important new development here.

As above, the integrated development projects for the traffic infrastructure designed by MAXWAN and UN Studio focused on urban mobility and emphasized infrastructure space, the base of mobility, as a meaningful place for the development of new communities. This is a clear implementation of the strategies in the fourth and fifth NOTA into actual projects, strategies that emphasized the need for "publicness" of infrastructure space for the "urban network model", which emphasized infrastructure sharing among cities, and the promotion of mobility in the city for "publicness" of infrastructure space.

4. The Realization of "Everydayness" and "Specificity" Through Infrastructure as a Liminal Space

4.1 Infrarchitecturbanism and Heteropian Space

As examined previously, "infrarchitecturbanism" is an attempt to find new possibilities for sharing space by dismantling the existing binary division between public and private space through a new combination of infra, architectural, and multiscale, multiscape space structures, including cities. It is rooted in the premise that infrastructure, above all, is the basis of everyday life, as implied in the term itself.

While the discussions and cases examined above grant insight into design trends in terms of connectedness and integrity, another key aspect of infrarchitecturbanism is its everydayness and specificity. Everydayness and specificity are deeply related to individual urban rights related to individuals' identities, interests, and demands as entities occupying public space. Also important to this approach is designing a space that has a heterotopian quality, because publicness emerges when the privatization of public space in everyday life is recognized by other people. Additionally, as Dehaene and De Cauter pointed out, nesting is assumed to be between public space and heterotopian space and always can be either collective space or sharing space (Dehaene and De Cauter, 2008).

The discussion on heterotopian space, which constitutes the dominant perspective in the discourse on public space in the Netherlands, focuses on new possibilities created in public space through processes in which everyday individual experience and space are converted to collective experience and space, in which individual urban rights are maintained, or into shared experience and space. Hence, this kind of space can be seen as a liminal space, transcending the binary division between public and private.

4.2 Daily Expression Through the Elimination of Semi-Public Space

Very important characteristics of this perspective are effectively shown in the firm NL Architects' three public space proposals (for N.A.P., paid parking, and train shopping) (Fig.6.). The project, although its content is conceptual and idealistic, converts public space to heterotopian space by enabling individual everyday behavior to actively intervene in public space; for example, a canal becomes a swimming pool, citizens get paid for parking in exchange for the promotion of a particular company, and a space in a train becomes converted to a supermarket. The privatization of public space and the public ownership of privately owned space are thus based on each subject's active space occupancy and the interpretation of publicness as an interaction.

From the same perspective, NL Architects' "Parkhouse" plan (Fig.7.), which places public space right next to individually/privately owned space by extending the public street right to the front of individual houses, converts residential buildings to an extension of the park space adjacent to them; in addition, it ensures the formation of more public space by eliminating common space through this direct contact. This project features various spectacles, including a huge strip-like space 19 meters wide and 1 kilometer long converted into continuous cycle rings, twisted like a horseshoe 30 meters in height—an evident manifestation of infrarchitecturbanism.
The movement of converting public space to an extension of everydayness by making everyday privately owned space face public space was experimented with at an urban scale in Borneo and Sporenburg's urban planning proposal for West8. By eliminating semi-public space such as neighborhood plazas, courtyards, and buffer green land, it created surplus space and returned it to private ownership; simultaneously, by concentrating public space, it aimed to construct space where more various kinds of behavior could be made possible.

West8 designed Borneo and Sporenburg in such a way that the maximum number of privately owned spaces can face public space by placing individual houses on the street in a long and narrow configuration. This reflects the assumption that maximizing individual expression and occupancy of space also increases publicness (Borret, 1999).

As the final product indicates, the first strategy for public space selected by West8 is a "void" strategy. This is because only a void can create various types of desirable behavior and occupancy, which cannot be programmed. The second strategy is to ensure direct contact between individualized, privately owned space, which promotes self-expression, and public space. From this perspective, Schouwburg Square (Schouwburgplein) is the project that best describes West8's concept of public space. As it explains, all the measures taken in the design of the square are conscious and intentional (Geuze, 2000). As the square is raised like a stage, even access to it is intentionally shaped or guided; and because of the various kinds of echoes created by its different flooring materials, the walker's attention is drawn to the fact that all his or her steps are also conscious choices. The presence of a coin-operated crane (Fig.9.) can turn the square into a stage on which individuals reveal themselves through their individual choices. Thus, this as a location where infrarchitecturbanism is symbolically present, and also an extension of the concept of the "city as a building," which is a common direction in contemporary Dutch architecture, city, and landscape design.

In short, an examination of the plans for the formation of public space and publicness initiated in the Netherlands from the perspectives of "everydayness" and "specificity" suggest that the normalization of public space, in which individual behavior is directly expressed and communicated, is being experimented with by inducing the privatization and elimination of some segments of (semi-)public space and the public ownership of privately owned space through direct contact between these types of space. This type of experimental thinking on the infrastructure-mediated relationship between private space and public space was made possible by the important role of the second and third Architectural Policy, which emphasized socio-cultural publicness as well as integrated management between entities for detailed project implementation, extending their influence beyond simply the physical space environment.

5. Conclusion

This research seeks the implementation of publicness newly created through the relationships between urban public space and infrastructure in a modern society, in which exist such epochal conditions as urbanization, mobilization, globalization, and individualization. It goes beyond the traditional political or spatial notion of publicness to a "multiscalar" publicness defined amid the conflicting interests of various entities (such as local companies, local communities, individuals, central government, local government, and multinational corporations) with a concern to preserve accessibility and openness; as the "multiscape publicness" that includes a sociocultural and economic sense of urban space rooted in infrastructure becomes important, the complexity of publicness is emphasized. To induce such a modern sense of publicness, and the composite condition of cities and architecture that it presumes, the authors investigated the dominant discourse on the topic by reviewing the public space–related policy of central and local governments in
the Netherlands, a leader in public space policy and projects, and also synergistically analyzed the ways in which this discourse and policy have been implemented through individual projects. Based on this, the authors draw the conclusion as follows.

First, the Architecture Policy and NOTA of the Netherlands both focus on the flow space created by infrastructure as modern urban public space. To establish the publicness of such infrastructure space, related policies should adopt the urban network model, which emphasizes sharing of basic facilities between cities, and strengthen the synergy of various policies related to urban development, architecture, landscape and infrastructure.

Second, the composite nature of architecture projects in public space employing city infrastructure requires access to a synergistic environmental design, including attention to traffic space. These integrated designs are consistent with the Dutch public space-related policy of modern cities developmentalism. Since then, Richard Sennett, Michael Sorkin, and others have criticized the contemporary urban character of public area or public space.

Fourth, the new "publicness" awareness, which is attempting to make infrastructure the foundation of everyday life, has revealed the possibility of a liminal space that transcends the public/private dichotomy, and has promoted the everyday use of public space through the design language that directly juxtaposes everyday public space and private space.

Similarly, the method of implementing infrastructure-centered publicness, which was examined through Dutch policies and projects, has significant implications for the metropolitan cities in East Asia that are undergoing urbanization, mobilization, and globalization. With the reorganization of urban space centering on infrastructure due to densification, the social agreement on publicness awareness, the role of the central government in adjusting the policies among various entities, and systematic policies to support them must be set, as they are in the Netherlands, before the infrastructure space can play a pivotal role in urban public life.

Notes

1. The political, cultural, and social norms that interpret and define public values based on the principles of multiplicity, commonality, and openness, which are the normative characteristics of public area or public space.

2. The discussion on public space or "public sphere" is not new. The origin of the discussion can be traced back to Camilo Sitte, an urban planner in the late 19th century; in the mid-20th century, it was revisited by Jane Jacobs who emphasized the value and restoration of public space in order to overcome the problems of modern cities developmentalism. Since then, Richard Sennett, Michael Sorkin, and others have criticized the contemporary urban public space for being a perfunctorily-emptied space in cities.

3. It is an attempt to find the possibility of a new sharing space by dissolving the dichotomy of public space and private space through new combinations of multiscale, multispace space structures, including infrastructures, architecture, and cities.

4. This discussion on corridor development originates from Neutelings, who argued that since the mid-1980s throughout Europe, beltway areas had been gradually turning into linear cities, which would replace the congested historic downtowns later, and also proposed the Antwerpen beltway development model in 1986 (see Ibelings, 1998).

5. The negotiation tool developed through these index systems came to be applied to the dynamic scenario planning in 2001, in which citizens participate through the Internet in Hogvilet, a Rotterdam suburb. This design strategy development system, named "Logica", begins with the premise that there is a spatial structure and a character logic in every good city. How this system differs from a series of selection decision systems is that it offers a framework not for developing a master plan like the previous index systems, but for decision-making; it is a planning technique to lead in making decisions as to what to preserve and change by discovering the unique logic for each city in the process of decision-making.

6. Indicates an area that creates new characteristics, and does not belong to any one space because it is formed at the boundary of different juxtaposed spaces with contrasting characteristics.

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