

# The Localization of “Imported” Urban Form in Northeast China: The Case Study on Circular–Radial Space in Dalian City

LIU Jiankun<sup>1,\*</sup>, Atsushi DEGUCHI<sup>2</sup>

<sup>1</sup> School of Architecture, Tianjin University, Tianjin 30072, China

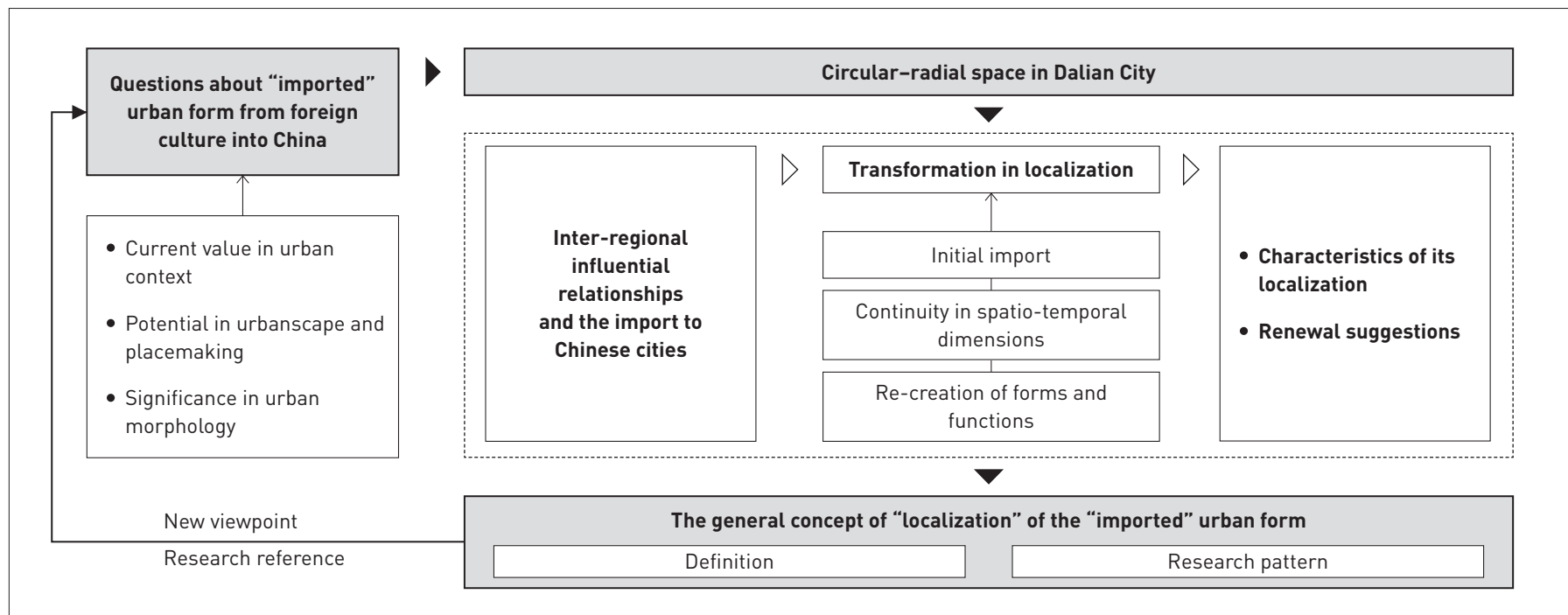
<sup>2</sup> Graduate School of Frontier Sciences, The University of Tokyo, Kashiwa 277-8563, Chiba, Japan

\*CORRESPONDING AUTHOR

Address: No. 92 Weijin Road, Nankai District, Tianjin 300072, China

Email: liu\_jiankun@tju.edu.cn

## GRAPHICAL ABSTRACT



## HIGHLIGHTS

- Argues that Baroque circular–radial space was imported into Chinese urban form from the West, creating new urbanscape
- Holds that circular–radial space initially localized in Dalian adapted to local natural terrain, instead of imitating Baroque symbolism
- Demonstrates that circular–radial space in Dalian has undergone a long-term transformation accompanying urban development and expansion, causing changes in form and function
- Reconsiders the concept of “localization” of “imported” urban form and its general research pattern

## KEYWORDS

Imported Urban Form;  
Circular–Radial Space;  
Localization;  
Transnational Urbanscape;  
Chinese Urban Context;  
Dalian

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After the “imported” urban forms, which originated from foreign cultures, were transplanted into Chinese cities, they generate brand-new urbanscape but suffer from a lack of cultural roots and a disconnection with the mainstream of contemporary urban planning. Thus, their current value and potential in urban renewal are questioned. The study takes the circular–radial space from the Baroque cities as an example to clarify the motivation of its import from the west to northeast China. It further clarifies their adaptive changes in form and function in the local urban context, through a case study on Dalian City.

The study finds that different geometric patterns of existing circular–radial space were influenced by European, American, and Japanese urban planning theories to varying degrees, but with equal emphasis on symbolism and functionality. Their implementation in Dalian has a continuity in time and space. But due to the changes

in topography, traffic, and planning concepts, their forms and functions tend to be independent, their connection weakens, and their importance recedes after the street network. The circular–radial space in Dalian led to distinctive urbanscape. But during their inheritance and transformation, the rationality of new forms and functions, as well as the necessity of continuing the initial ones need to be dialectically considered, so as to avoid dogmatic revival and antique reproduction.

Finally, the study reconsiders the concept of “localization” of “imported” urban form, and constructs a general research pattern to provide a new perspective for understanding the transformation of similar types of urban forms.

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## 1 Research Background

China’s relatively unified and continuous history allows for the inheritance of traditional urban planning and aesthetics, mainly in orthogonal system, such as Chang’an (Xi’an City) in the Tang Dynasty and Peking (Beijing City) in the Ming and Qing Dynasties. In contrast, influenced by Western planning theories and globalization trends, urban forms originated from foreign nations have also been transplanted into Chinese cities. For example, the “circular–radial” space, including circular city squares and circular traffic intersections with radial streets (e.g. traffic circle, rotary, roundabout) from Baroque urban planning, was imported into some cities in northeast China around 1900. Despite creating brand-new urbanscape, the lack of cultural roots in local cities and the disconnection from the mainstream of modern urban construction have called its value and potential for urban renewal into question.

### 1.1 Questioning the Value of Western Classical Circular–Radial Space in Contemporary Chinese Urban Contexts

As a public space at the intersection of roads, the circular-radial space is considered a perfect vehicle for expressing the Renaissance “ideal city”<sup>[1]</sup>, as a fundamental element in Baroque urban planning,

usually used in European cities, such as Paris. However, modern urban planning, led by Le Corbusier’s “The Radiant City” concept, preferred using grid as a symbol of industrialization for more efficient land use and higher capitalist commercial values<sup>[2]</sup>. At the same time, the boom of traffic in recent years has caused congestion and safety problems in traffic circles and rotaries<sup>[3]</sup>, now which is somehow considered “out-of-date.”

In Chinese cities, which have applied the orthogonal pattern in the traditional planning system, circular–radial space emerged in the 19th and 20th centuries under the influence of Baroque style, Garden City theory, and the American City Beautiful Movement<sup>[4]</sup>, and has been employed to the present day, while its form and function has changed in the long-term adaptation to local contexts and in the trend of globalization. Therefore, to contemporary Chinese cities, the role and significance of circular–radial space is worth exploring.

### 1.2 Exploring the Potential of Circular–Radial Space in Urban Renewal for Shaping Unique Urbanscape and the Sense of Place

Circular–radial space, regarded as a kind of nodal area in urban planning structure, contains essential processes and functions

in the city's daily life<sup>[5]</sup> and shows an importance at physical and psychological levels<sup>[6]</sup> that can directly influence the identity of urban space<sup>[5]</sup>. At the physical level, circular–radial space provides a spatial topology that defines “choice”: allowing people to slow down, stay, and face more possibilities<sup>[6]</sup>. At the psychological level, in addition to the visual stimulation brought by its spatial form, the personal, historical, and cultural values it contains make it a place with an urban memory<sup>[7][8]</sup>. Therefore, circular–radial space has an impressive potential for creating a sense of place, both from a functional and an aesthetic perspective. However, the attraction of these spaces to various behaviors makes them both dynamic and fragile, and they are often susceptible to the loss of social and cultural values<sup>[5]</sup>. Therefore, clarifying the transformation of circular–radial space and identifying the gains and losses in its form and function would offer a basis for creating attractive public spaces and forming unique urban space.

### **1.3 Identifying the Significance of Circular–Radial Space to Understand the Urban Morphology in Dalian**

Among cities with circular–radial space created with imported urban planning concepts around the 1900s, especially in northeast China, Dalian is one of the representatives. It has been planned and constructed by Tsarist Russian, Japanese, and Chinese governments sequentially since 1898<sup>[9]</sup>. Terms related to circular–radial space have been discussed from different views. The urban morphology of Dalian has been widely studied, especially on its formation in the modern time<sup>[10]–[12]</sup> led by Tsarist Russian and Japanese planners. They were conducted in a diachronic view of planning history<sup>[13]</sup> and spatial patterns<sup>[14]</sup> in early time, and have been analyzed in more quantitative ways<sup>[15]</sup> recently. Circular–radial space was more or less mentioned as a component of urban structure. In addition, it was also analyzed as a part of urban landscape, together with parks and green spaces<sup>[16]</sup>. When focusing on circular–radial space itself, it is usually discussed under the definition of city square, as public space and open space. Early studies were conducted from single cases to classify their functions and forms, while the recent ones focus more on the connections with human from the view of environment-behavior studies<sup>[17]</sup> and the design of healthy city<sup>[18]</sup>, as well as its value and preservation as heritages<sup>[19]</sup>. Moreover, it is also discussed under the definition of traffic circle and rotary, analyzing its efficiency in vehicle and pedestrian traffic<sup>[20]</sup>. However, previous research usually emphasizes a single urban construction period or a single attribute of circular–radial space and other similar spaces. Circular–radial space has not been identified sufficiently as a significant pattern in Dalian’s urban morphology,

lacking exploration about its cultural origin in a more worldwide context. From the temporal dimension, its dynamic localization process in Dalian requires clarification; from the spatial dimension, its connection with urban construction needs interpretation.

## **2 Research Objective and Methodology**

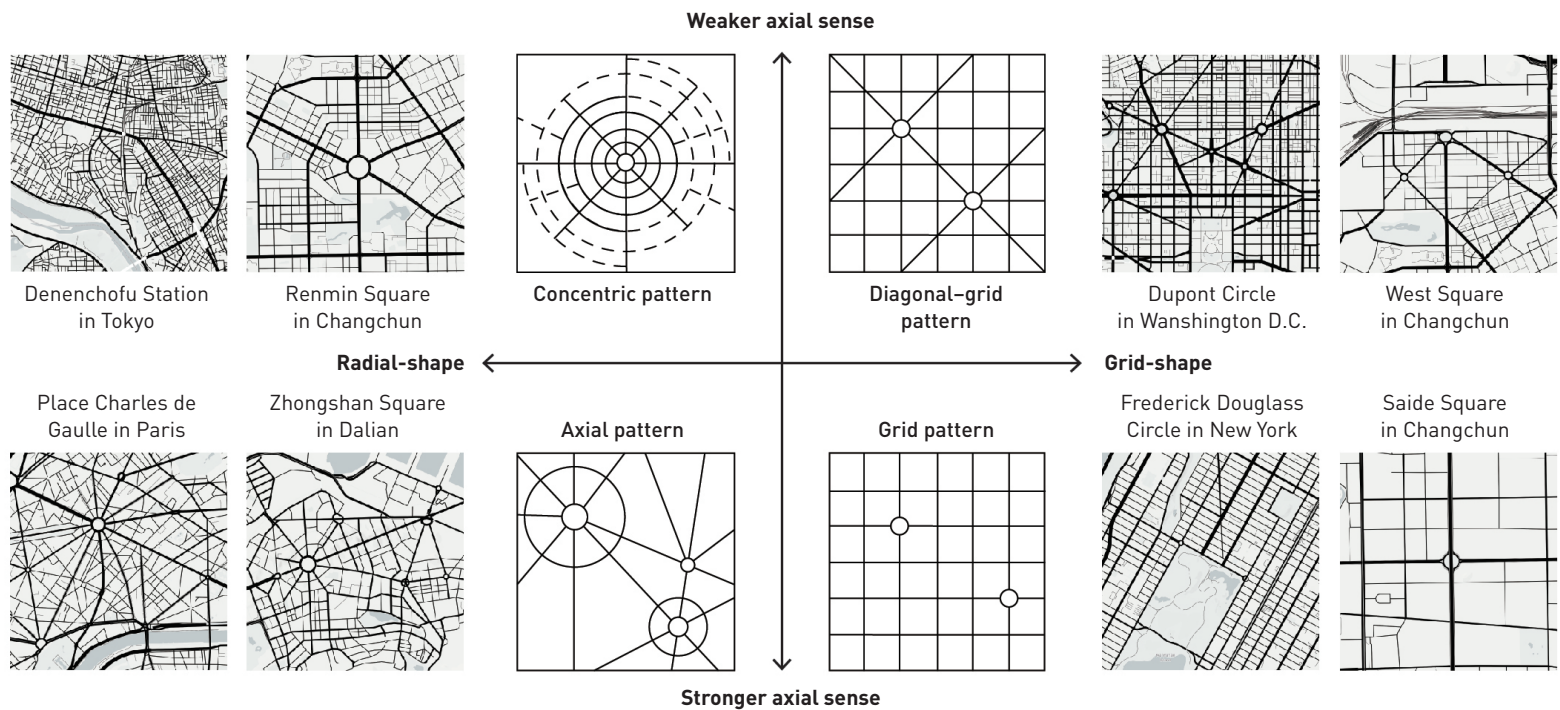
The study focuses on circular–radial space to clarify the motivation, adaptive changes, and contemporary value of its transplantation from the West to China, so as to provide references for solving the problems of homogenization of urban space and the lack of sense of place; to propose a localization mechanism and a common research pattern for imported urban forms; and, further, explores a new perspective for understanding the morphological transformation of cities with such imported urban forms.

The research firstly compares the application cases of circular–radial space worldwide by sorting out the transnational influences to clarify the background, dynamics, and characteristics of its introduction into Chinese cities. Secondly, the paper takes Dalian as the study object and examines 30 circular–radial case sites in the core area to explain their initiation and construction accompanying urban development process in temporal and spatial dimensions. Through records and data collected from field investigation, these case sites are classified into 6 morphological types and 4 functional clusters, to clarify the morphological and functional changes in the adaptation to the local context and to explore possible dynamics. Finally, the paper reconsiders the concept of the “localization” of “imported” urban forms and proposes a general research pattern.

## **3 Inter-regional Influential Relationships and the Import to Chinese Cities**

Circular–radial space, as an “exotic” from foreign cultures, is a result of passive urbanization of some Chinese cities when they were planned by Russian and Japanese, especially in northeast China, and has no foundation in traditional Chinese culture. Therefore, clarifying its origins and development in the world is a prerequisite for understanding its importation.

The radial and the grid geometry are commonly used in urban form, and their diverse combinations at the neighborhood scale produce the basic typologies<sup>[21]–[27]</sup> including axial pattern, concentric pattern, diagonal–grid pattern, and grid pattern (Fig. 1), which offer possibilities in forming various circular–radial space. The circular–radial space considered in this study represent: 1) the road junctions where traffic streams circulate a central island;



1. Geometric form-based typologies in forming circular-radial space (Source: Mapbox)

and 2) nodal public spaces existing at the intersections of the street network with roads radiating from the center, but unnecessarily adopting central islands.

The emergence of the aforementioned typologies in different regions of the world is not accidental, but owns a certain influential relationship (Fig. 2). First, the axial pattern is typically Baroque, with emphasis on symbolic considerations, such as the ones in Paris. It led influence on the initial plan of the old town of St. Petersburg, Washington, D.C., Dalian, and Denenchofu<sup>[22][25][28][29]</sup>. Second, the concentric pattern is usually seen in the imitation of the Garden City model devised by Ebenezer Howard (1850–1928). Take Denenchofu, Tokyo for instance, it was resulted from a combination of Garden City model and suburban private railway development. Third, diagonal-grid pattern exists as an important node in the orthogonal grid city. It rationally reinforced the strong symbolic character of the axial pattern by combining the grid and diagonal system, as it does in the L'Enfant plan used in Washington, D.C. Fourth, the grid pattern often appears as a traffic circle. It was proposed in Europe<sup>[30]</sup> to accommodate vehicle traffic, and then introduced into the Columbus Circle in New York, gradually amplifying its functional attributes as a public space<sup>[31]</sup>.

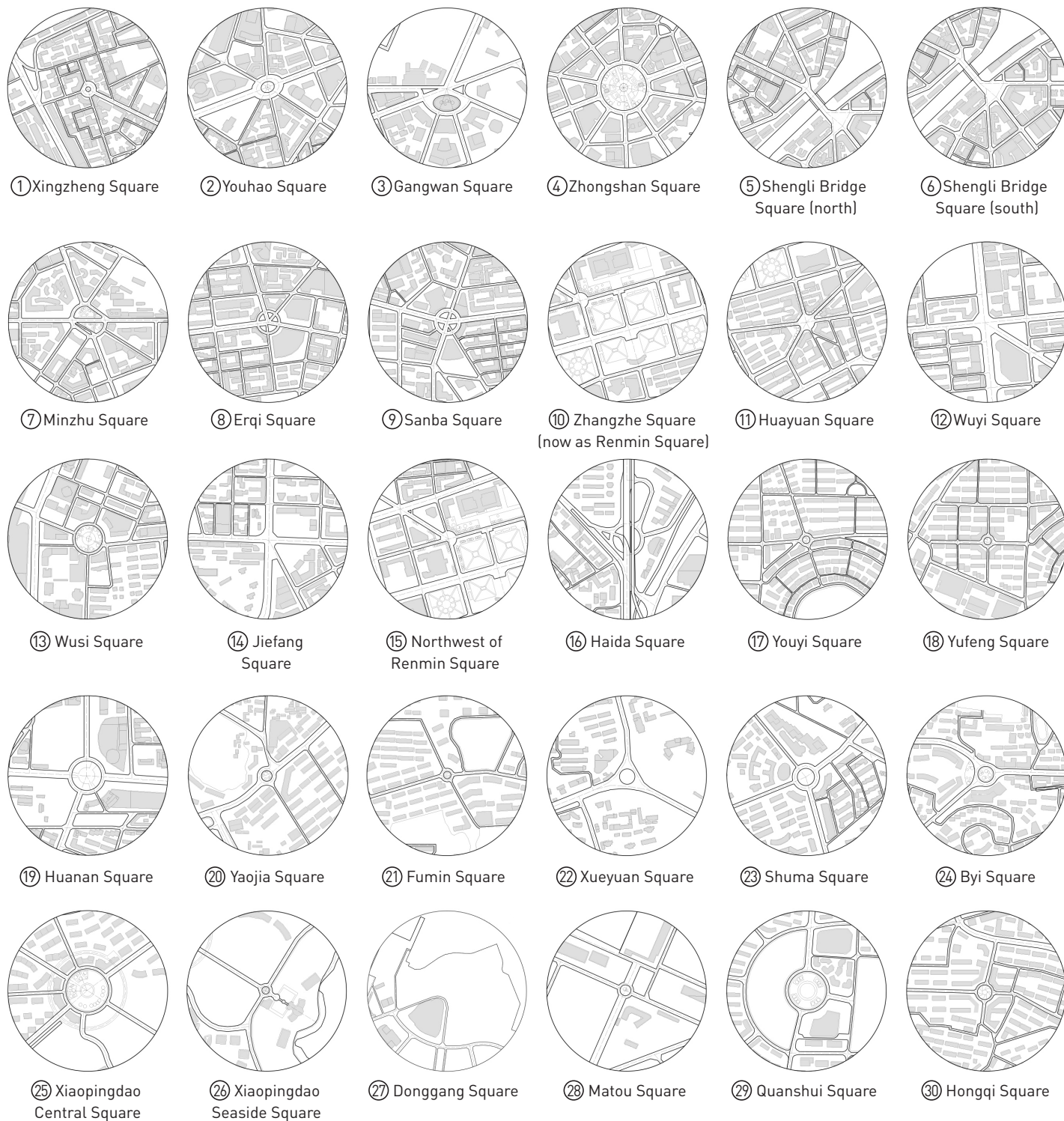
Although circular-radial space originated from Baroque urban planning and was initially characterized by symbolism, later, it was inherited in a unique and adaptive way in different cities. In the late 19th and early 20th centuries, circular-radial space in different

regions developed more concrete functions. For example, circular city squares were renewed to create convenient social life networks in Georges-Eugène Haussmann's renovation of Paris. Traffic circles took up the duty not only on calming traffic but also on improving the living environment by its subsequent management combined with the community<sup>①</sup>. As a result, circular-radial space was endowed with a more pragmatic tendencies.

It was the early urban plans by Tsarist Russia and Japan in some Chinese cities (Dalian, Changchun, Shenyang, Harbin, etc.) brought in the "exotic," with both functional and symbolic implications. By comparing the city plans of Dalian in 1898 (Tsarist Russian plan) and 1905 (Japanese plan), Harbin in 1902 (Tsarist Russian plan), Shenyang in 1907 (Japanese plan), and Changchun in 1907 and 1931 (Japanese plan), the following can be concluded: Tsarist Russian planning took the Paris urban space as a blueprint and prioritized the design of circular-radial space over the street network, but less reinforced its symbolic features. For instance, in Dalian, the locations of most circular-radial spaces were chosen to take advantage of the scenic views of mountains and sea within a walkable distance<sup>[9]</sup>. Japanese planning utilized various types of circular-radial space to demonstrate advanced urban planning concepts<sup>[29]</sup> in an effort to produce more optimal urban construction

① Please find more information at the website of See Seattle's Neighborhood Traffic Control Program (NTCP).





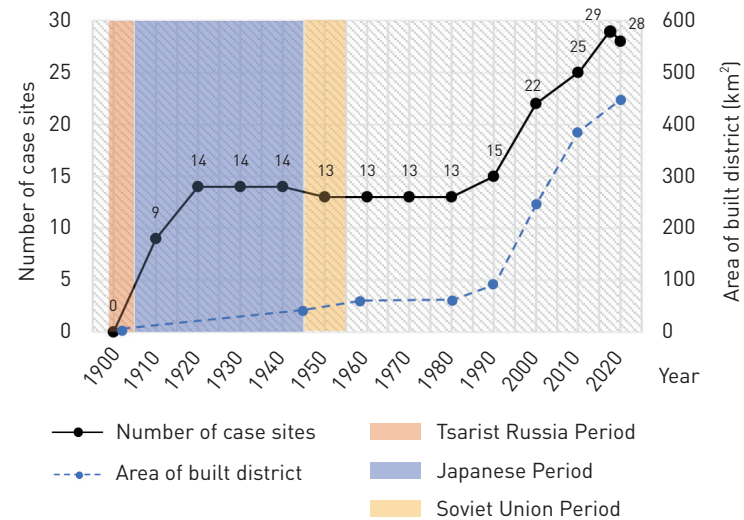
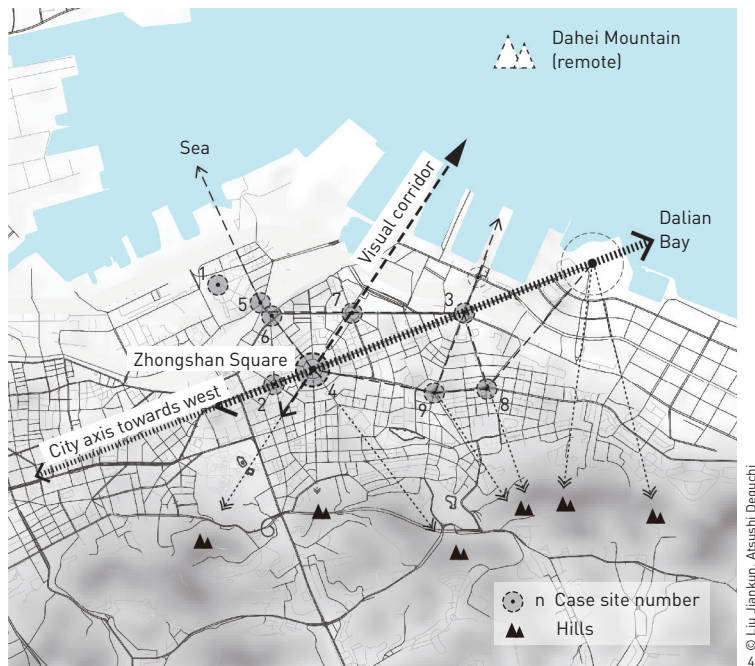
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3. The 30 case sites of circular-radial space in Dalian [Source: Baidu Maps]

solutions. European and American baroque planning, such as the plans for Changchun, was combined with efficient grid planning and partially integrated Chinese customs<sup>[4]</sup>. For illustration, the juxtaposition of diagonal and grid at Changchun's South Manchurian Railway Affiliated Area was planned to prevent monotony in the urbanscape, ease traffic, and exploit the surrounding amenities to encourage public participation<sup>[29]</sup>.

#### 4 The Localization of Circular-Radial Space in Northeast China: The Case Study on Dalian City

The study examined all the 30 case sites of circular-radial space in the core area of Dalian (Fig. 3), of which case sites 10 and 28 have been demolished or converted, to explain their local adaptation since the introduction in the 1900s and to identify the



- Diagram of landscape-oriented circular-radial spaces in Dalian (Source: Baidu Maps)
- Quantity change of circular-radial space in Dalian

morphological and functional changes they have undergone, in order to provide a viable path for urban renewal.

#### 4.1 Initial Import of Circular-Radial Space

As part of the Guandong Leased Territories, Dalian came under the territorial control of the Tsarist Russia from 1898<sup>②</sup> until the country's defeat in the Russo-Japanese War in 1905. Its first master plan was made by Vladimir Vladimirovich Sakharov<sup>③</sup> in 1899 with grid system, similar to Manhattan in the United States. The plan considered the street network as a priority in urban infrastructure<sup>[9]</sup>. For the first time, modern urban planning was introduced into Dalian. However, it was soon overturned by Kazimierz Skolimowski<sup>④</sup> in 1900. Dalian was anticipated to develop into a European-style city, similar to Paris, with circular nodal squares as priority<sup>[9]</sup> and a radial street network as connecting elements. Therefore, the localization of circular-radial space from Baroque city planning in China was started up.

Nevertheless, the fundamental driving force behind switching from the previous grid plan to the Baroque one was the adaptation of the natural terrain, instead of demonstrating the ascendancy of centralized coercion and stringent control<sup>[29]</sup>. In contrast to Paris' strong sense of artificial planning, the case sites in Dalian were primarily localized based on natural conditions.

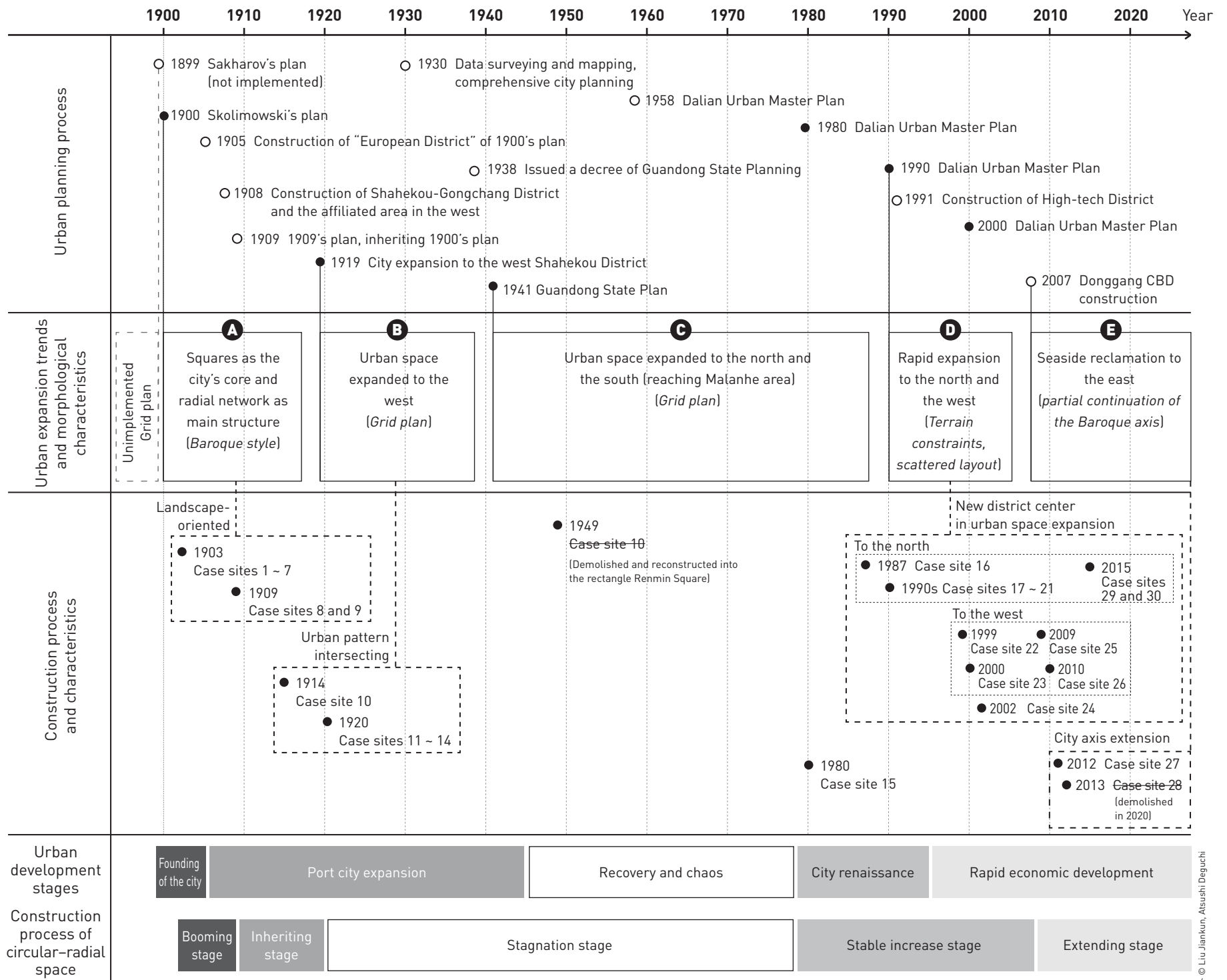
First of all, Dalian historically distinguished itself due to its location on a peninsula with hills and coastal landscapes. The Baroque axial system offered visual corridors directing to remote

mountain, hills and the sea, which made circular-radial space landscape-oriented (Fig. 4). Secondly, while the grid plan ignored the exhaust caused by climbing abrupt slopes, which can be up to  $11.3^{\circ}$ <sup>[9]</sup>, and included high land leveling costs, the Baroque axial system followed natural hills and valleys to realize functional zoning. Additionally, considering the bulging areas as circular city squares and connecting them with each other by streets lessened the devastation of the existing terrain. For a maximum efficiency in terms of traffic and human activity, the size of circular-radial space and the distance between them were carefully regulated. Hence, major transportation junctions were quickly achieved within 1.5 km walkable distance<sup>[9]</sup>. As a result, although originated from Baroque urban planning, it has witnessed an ingenious integration of the Baroque pattern with Dalian's local environment.

#### 4.2 Continuity in Spatio-Temporal Dimensions

The sharp increase in the number of circular-radial space both before 1950 and in the past three decades (Fig. 5) suggests that they

- In 1899, Dalian was given the name Dalny (Russian: Дальний), which means "distant" or "remote."
- Vladimir Vladimirovich Sakharov (Владимир Васильевич Сахаров, 1860-1904), a Russian engineer who had previously been tasked with developing the plan of Vladivostok.
- Kazimierz Skolimowski (Казимир Сколимовский, 1862-1923), an architect who developed the draft scheme of the master plan of Dalny City (Dalian, now) during 1899 to 1903.

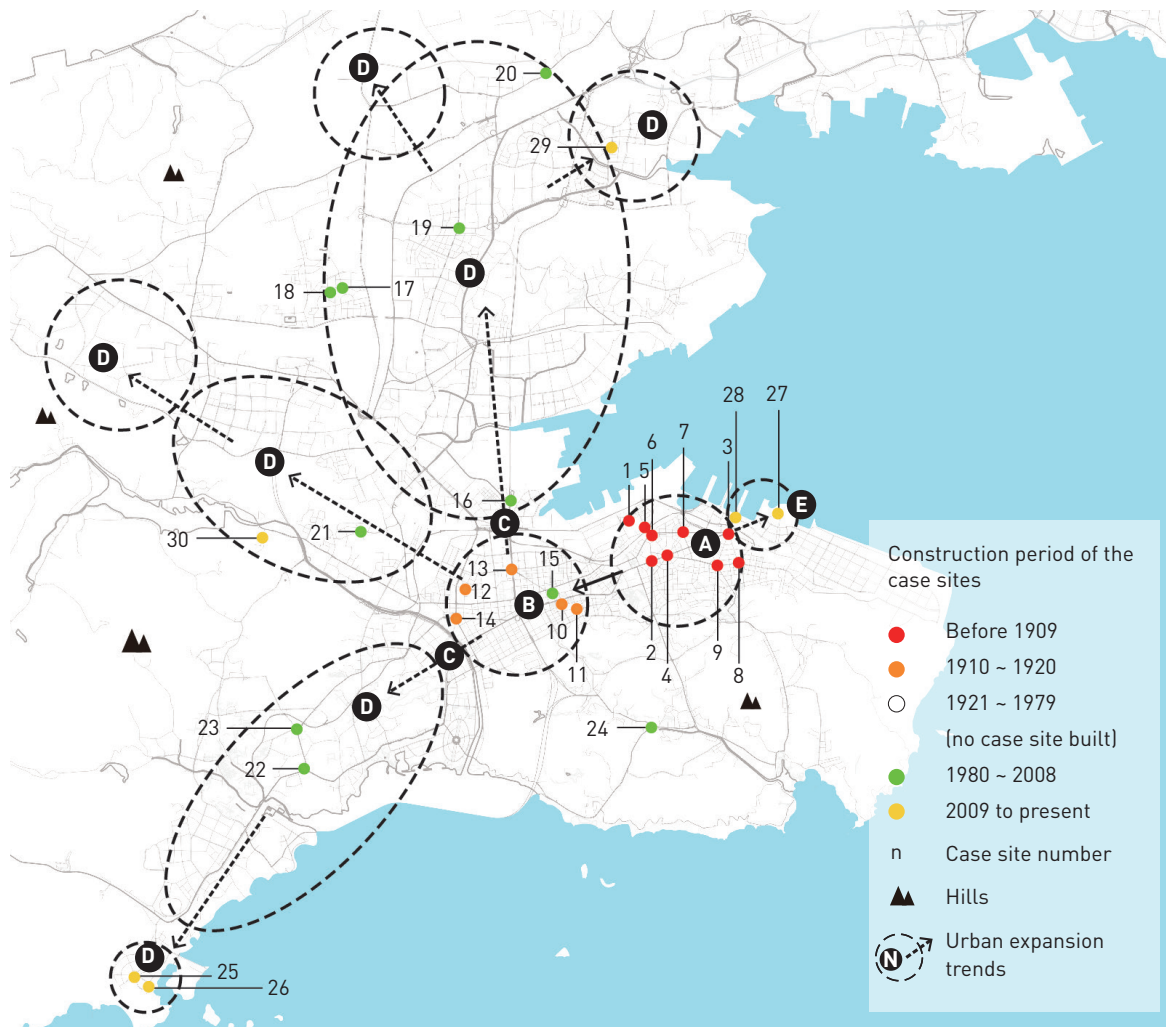


6. Urban development process and construction of circular-radial space in Dalian (Source: Refs. [9][32]; Baidu Maps)

are not the result of urban construction at a particular historical time, such as the period under the planning by Tsarist Russia and Japan, but rather a planning symbol that has been carried forward, not only chronologically but also spatially.

In the chronological dimension, the construction of circular-radial space usually occurs after the release of new plans. The five

construction stages—booming stage (before the year of 1909), inheriting stage (1910 to 1920), stagnation stage (1921 to 1979), stable increase stage (1980 to 2008), and extending stage (2009 to present)—roughly correspond to the five stages of its urban development (Fig. 6). In the space dimension, when the distribution of case sites is compared to the process of urban expansion, they



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7. Distribution of the case sites of circular-radial space in Dalian (Source: Baidu Maps)

generally coincide at each stage (Fig. 7). The distribution is not uniform, but occurs in groups to some extent, with an approximately linear pattern in-between. The groups can be identified based on how these circular-radial nodes and the street network interact, which depicts the collage pattern of Dalian's urban form. The nine landscape-oriented case sites built before 1909 (in Area A in Fig. 7) are the core and focal spaces of the Baroque urban planning of the time, taking precedence over the radial street network. However, the five case sites built between 1910 and 1920 (in Area B) are derivative forms at the intersection of the street network, taking a back seat to the street grid as subordinate spaces. The case sites built between 1980 and 2008 are scattered in the urban development Areas C and D, but they were all constructed along the natural terrain of the hills in three general directions while lacking geometric connections in-between. Finally, the most recently built case sites can be considered a continuation of the initial urban planning concept of the Tsarist

period. Two of them (case sites 27 and 28 in Area E) re-inherit the original baroque pattern, continuing the street axis and shaping a new axial endpoint.

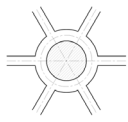

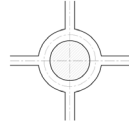
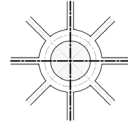
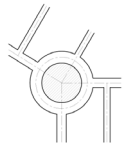
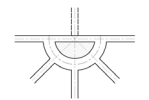
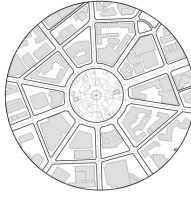


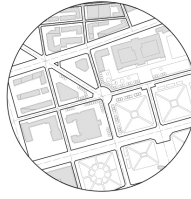


### 4.3 Re-creation of Form and Function in the Process of Localization of Circular-Radial Space

#### 4.3.1 Morphological Classification and Evolution

The study divides the 30 case sites into two groups according to whether the streets around each case site have similar morphologies, and then subdivided into six types (Table 1): centripetal, centripetal-axial, grid, grid with diagonals, intersectional, and starting-point. Among them, the centripetal, centripetal-axial, and starting-point types provide more possibilities for the surrounding street orientations, while the rest are usually fixed by the street network.

The centrality and isotropy of circular geometry result in its

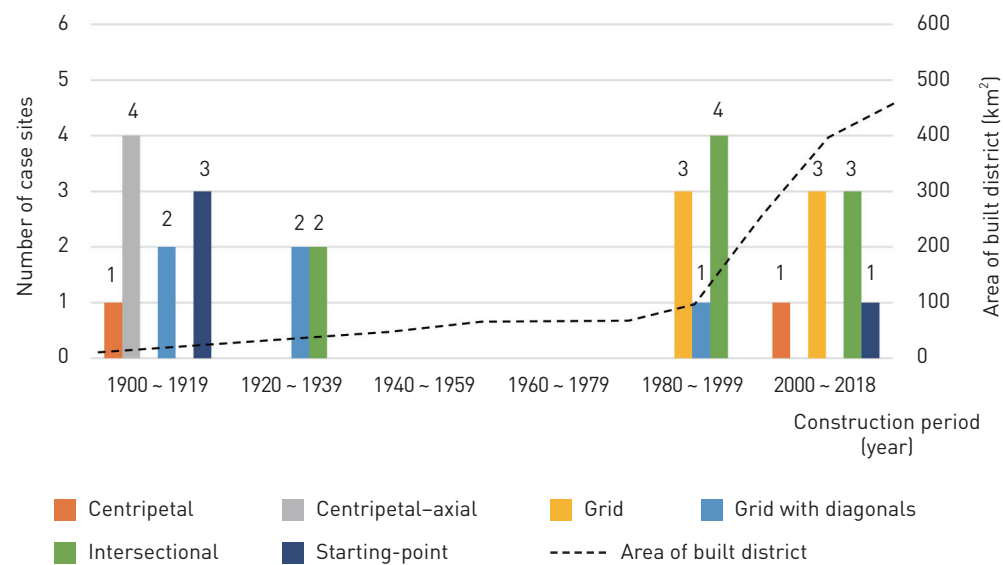
**Table 1: Morphological classification**

	The group with similar morphologic patterns of surrounding streets				The group with varied morphologic patterns of surrounding streets	
Type	Centripetal	Centripetal axial	Grid	Grid with diagonals	Intersectional	Starting point
Diagram						
Example	 Case site 4	 Case site 7	 Case site 28	 Case site 15	 Case site 13	 Case site 3
Feature	Have a strong centrality	Emphasize specific direction	Strengthen street junctions	Vitalize grid network	Connect different patterns	Close to area's boundary
Case site No.	4, 25	2, 7, 8, 9	10, 17, 18, 26, 28, 30	1, 11, 12, 14, 15	13, 16, 19, 20, 21, 22, 23, 24, 29	3, 5, 6, 27

specialty and significance in urban patterns. The centrality of circular–radial space in Dalian led to its prominent role in the city’s physical space, forming large-scale nodal spaces and dominating the street network. The original Tsarist plan for Dalian took advantage of its geometry by placing circular–radial space on higher ground and connecting them with the street network. However, this was not mainly for symbolic purposes, instead, it attempted to create a landscape corridor for viewing the mountains and the sea and to conform to the topography and reduce construction costs<sup>[32]</sup>. The high proportion of grid and intersectional types suggests their flexibility in organizing the street network. Due to the isotropic nature of circular geometry, the nine intersectional case sites show the potential of circular–radial space to connect different street textures. This explains the use of this type in both the city’s early construction and the later rapid expansion. In addition, the six grid case sites show that although the street network is spatially fixed, it can

add vitality to the urbanscape by emphasizing the intersections of the grid—so does the grid with diagonals type, which resembles more to the Japanese planning approach.

Morphological diversity existed in various periods (Fig. 8), but the preference changed from centripetal–axial and starting-point types towards grid and intersectional. The former two types both own a sense of direction and axis, and their combination implied the emphasis of axial pattern in Dalian; the preference change to the latter two types followed the rapid expansion of built areas after 1980s. As shown in Figure 7, the sharp expansion was subject to the hilly terrain. The intersectional type is able to connect streets from various directions smoothly, which however leads to the decrease of the types emphasizing axial pattern, suggesting a loss of morphological identity. It vitalizes the junctions of grid street network, but still being regarded as a part of the grid pattern. Therefore, although circular–radial space has been continually constructed, it has localized more to serve street network,



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8. The relationship between the morphological types and construction time of circular-radial space in Dalian

rather than highlighting its spatial perception. The distinguished urbanscape of Dalian created by the initial circular-radial space is hardly strengthened after its urban sprawl.

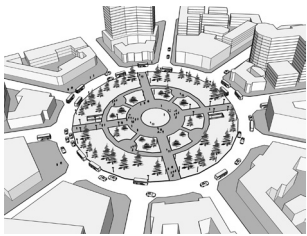
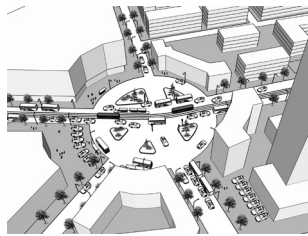
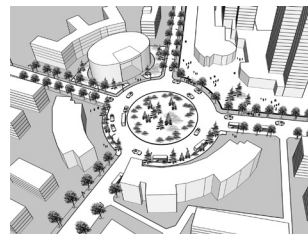
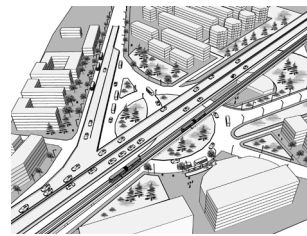
#### 4.3.2 Functional Classification and Evolution

Circular-radial space not only is a physical pattern in urban form, but also has the duty as nodal public space. How it is used under Chinese social context is essential to the understanding of its localization process. By recording whether there exist 13 physical

elements in each case site, ranging from traffic (i.e. ground-railway, underground-railway, overpass, non-railway, non-vehicle road), activity (i.e. crossing, underpass, accessible paving, facility), and landscape (i.e. tree, grassland, sculpture, others), and conducting cluster analysis, they were categorized into two functional clusters, activity-oriented and traffic-oriented, with four sub-clusters, namely activity, railway traffic, vehicle traffic, and multidimensional traffic (Table 2).

The high proportion of traffic-oriented case sites (67%)

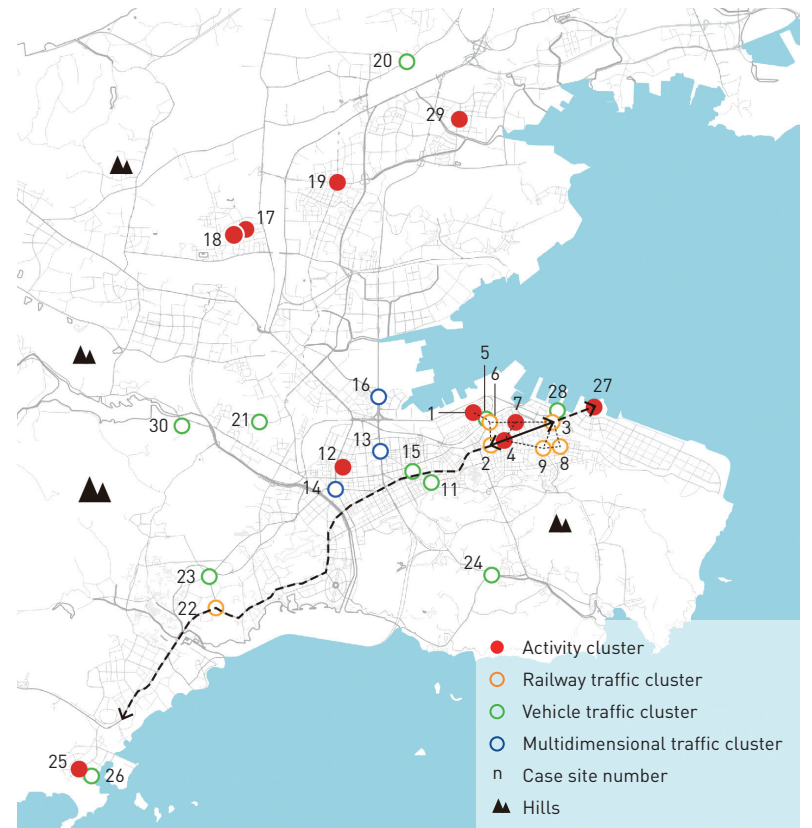
Table 2: Functional classification

Cluster	Activity-oriented	Traffic-oriented		
	Activity	Railway traffic	Vehicle traffic	Multidimensional traffic
Example				
Case site No.	1, 4, 7, 12, 17, 18, 19, 24, 26, 27	2, 3, 6, 8, 9, 21	5, 11, 15, 20, 22, 23, 25, 28, 29, 30	13, 14, 16

indicates that organizing traffic organization is still the main function of circular–radial space in Dalian, among which the railway traffic ones have gradually decreased and replaced by vehicle traffic ones. The activity-oriented case sites show its capacity as public space, which have been built throughout different periods.

The activity-oriented case sites serve as a container for civic activities after a long-term selection since its import. The initial case sites in Tsarist Russian plan connect closely with the traffic-oriented ones, creating a unified pattern. But, the case sites built after the 1980s are mostly located in new residential areas separated by natural hills, making it difficult to establish direct visual or traffic connections between each other. Meanwhile, they can be easily utilized as public spaces to create regional centers and draw in a wider range of activities. Therefore, there is a variation from the previous, but also a way of localization to the natural terrain. Last but not least, during the field research, although there are infrastructures and public spaces for activities, some troubles for citizens to easily access the center of circular–radial space are found. The contradiction between pedestrian traffic and the circular vehicle traffic bring up a new challenge.

Among the traffic-oriented case sites, the railway traffic cluster is distinguished as they were created by the historical ground tramlines in Dalian. Figure 9 displays that the case sites built in the early 20th century established visual corridors in-between and reinforced their sense of axis with ground trams in the Tsarist Russian planned area. But this close connection was overlooked in the recent case sites, until the construction of Donggang Central Business District (around case site 27) on reclaimed seaside area in the 2000s, which has extended the original urban axis along Youhao Square (case site 2)–Zhongshan Square(case site 4)–Gangwan Square(case site 3) with a strong ending, reviving the initial concept of circular–radial space. Simultaneously, as the vehicle traffic has gradually replaced ground trams and taken over the dominance in the city’s transportation, the sense of urban axis requires alternative elements to inherit and be strengthened. Thus the multidimensional traffic cluster has emerged, which is also able to emphasize the axial connection in a single direction, either by overpasses or by subways. The two-dimensional axial space became three-dimensional. But this cluster has brought new problems, such as how to take advantages of the so-called leftover space under the overpasses, and how to integrate entrances of subways with circular–radial space to maximize the efficiency for both place-making and citizens’ utilization. It could be an opportunity for Dalian to create a new urbanscape celebrating its identity and recalling its history.



9. Distribution of the functional clusters of circular–radial space in Dalian

## 5 Conclusions and Discussion

### 5.1 Characteristics of Localization Process of Circular–Radial Space

The Baroque circular–radial space originated as a symbol of power in the 17th century, but with the development of functionalism and modernism at the end of the 19th century, it was introduced into Chinese cities, especially the cities in northeast China with urban plans partly by other nations. At that time, it was endowed with more concrete functions and evolved into different specific forms adapting to the local environment, showing more pragmatic tendencies.

Circular–radial space was supposed to be an approach for achieving ideal urban planning. Its initial localization in cities in northeast China was realized by integrating Baroque geometric pattern with local natural conditions, urban orientation, and multiple modern urban planning theories of that time. This is reflected not only in its individual form and function, but also in its collective spatial organization.

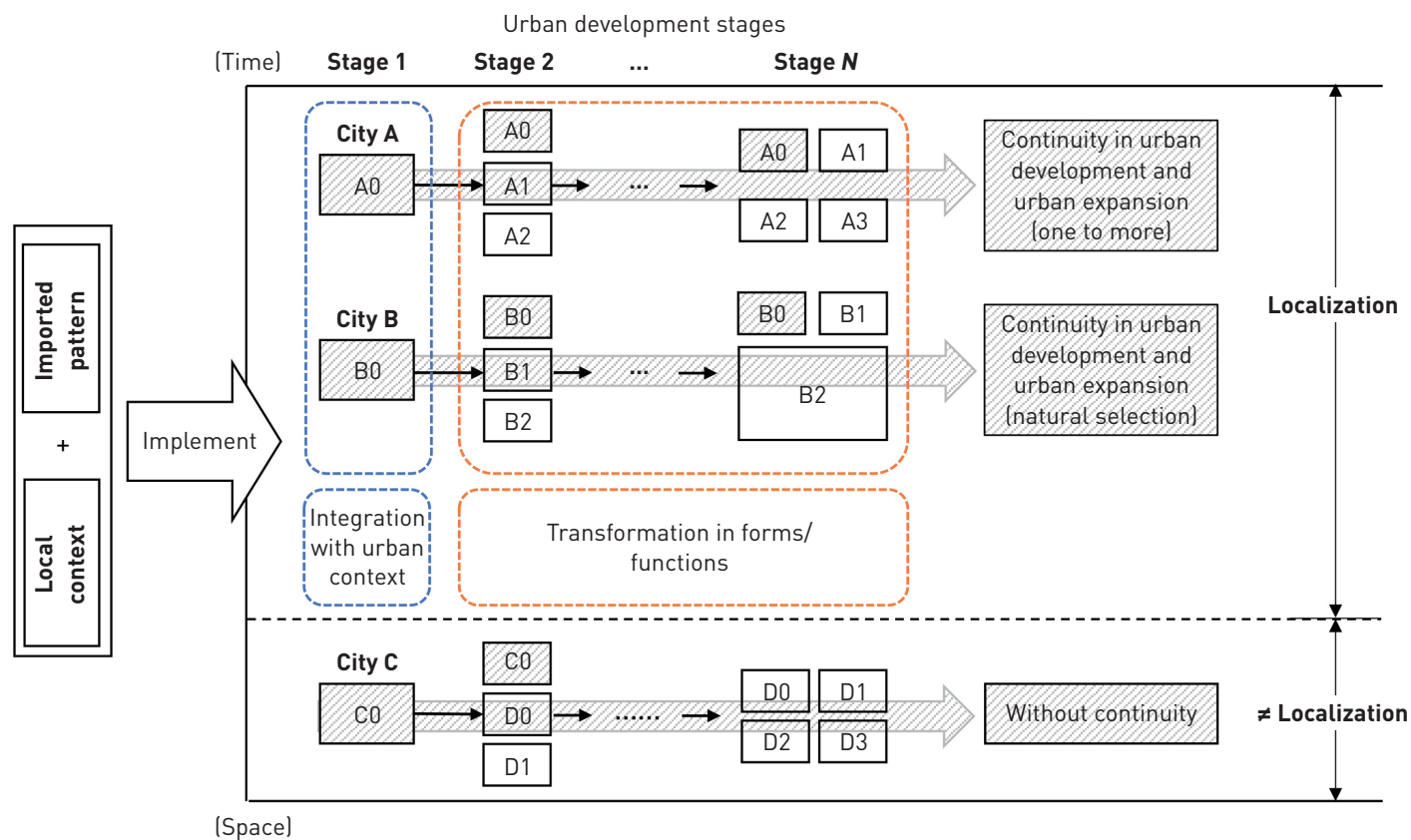
In Dalian, above all, the natural conditions played a significant

role in the localization of circular–radial space. The early case sites were landscape-oriented and randomly distributed following the peninsula’s hilly terrain and scenery, thus creating a sense of romance. Second, the localization has a chronological and spatial continuity in the urban development and expansion, which echoes the urban construction stages, strengthens the urban structure, and reflects the morphological characteristics of different built areas. Hence, the circular–radial space can be regarded as a clue to understand the history of urban spatial development in Dalian. Third, however, despite of the chronological and spatial continuity, the research proves that the subsequent transformation of circular–radial space lacks unity and identity inheritance of the city. This manifests the lack of connective relationships between each case site, not only considering their roles in urban structure but also their functions serving as public spaces. More case sites with varied morphological types suitable for connecting the street network and functional clusters convenient for vehicle traffic have been established. This implies the ignorance of its importance in improving urban identity and human perception for a long time—it also might be one of the reasons that some individual case sites were deconstructed.

## 5.2 Renewal Suggestions for Circular–Radial Space

The unique factors for introducing circular-radial space provide great potential for its renewal. In Dalian, the centripetal–axial type in the railway traffic cluster originated from the traditional ground tram lines. Some of the tram stops are located in the central islands which can be designed in synergy with the landscape, so that people are encouraged to use and get engaged with the landscape, and a new urbanscape is created. This will rebuild the interactions between people and nature, in addition to the increased accessibility of the central space. The multidimensional traffic case sites can employ a different approach but equally satisfactory in result by strengthening the urban axis through a better utilization of overpass and subway spaces, while offering opportunities to integrate people and landscape. As for the starting-point type, the other unique factor for Dalian, it has been derived from the natural topographic boundaries, and created by the juxtaposition of the manual and the natural, outlining the charm of the peninsula environment.

Renewing the circular–radial space needs to be treated in a dialectical way. On the one hand, for the case sites existing in historical districts, in order to perpetuate the role of urban cultural



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10. Diagram of the concept of "localization" of imported urban forms

symbols, highlight the city's image, and strengthen the collective identity of citizens, the principle of overall conservation and renewal should be followed to avoid the break between the physical space and the spiritual connotation. On the other hand, for other case sites, it is a prerequisite to assess the reasonableness of the new forms and functions in the process of localization, as well as the necessity to preserve the initial forms and functions, so as to avoid the dogmatic revival of Baroque spaces or the reproduction of "antique" spaces in the contemporary urban context.

### **5.3 The General Concept of "Localization" of Imported Urban Forms and Its Research Pattern**

By clarifying the dynamics of importing circular-radial space from Baroque city planning into Dalian, and interpreting its subsequent transformation in form and function, this research sets up a case study to understand how the imported urban form adapts to the local context of Chinese cities, especially the ones in the northeast. Based on the above, the concept of "localization" of imported urban forms is redefined (Fig. 10). It includes both the continuous process accompanying urban development in the chronological dimension and the one following urban expansion in the spatial dimension; also, it includes the initial integration of forms into the local environment at the beginning of importation, as well as the long-term changes in forms and functions to meet the updating urban requirements. Here, the imported urban form derives various factors in the adaptation to the local contexts, and some spatial patterns are retained to this day through the urban development in the process of derivation, like a sort of "natural selection."

In future, research on imported urban forms needs to pay attention to the dual relationship between "local and foreign" and "new and old" simultaneously. This paper concludes a possible research pattern for general. Firstly, establish a genealogy of the development of the imported urban form (circular-radial space in this paper) in the world considering by examining its geometric origins, classification and characteristics, transnational influence and continuity worldwide, and the period and spatial characteristics when importing into the case city (Dalian in this paper). Secondly, conduct the discrimination, transformation, and renewal of localization based on the case city by studying the initial integration origin and the long-term spatio-temporal changes in form and function to meet urban requirements, and by offering renewal proposals.

Circular-radial space, the imported urban form in this research, has weak cultural roots in Chinese cities and is often separated from

the mainstream of urban construction. In its long-term adaptation to the local urban context, its original planning motives and characteristics on the one hand are gradually lost, and on the other hand have developed new forms and functions that fit the local characteristics. Therefore, its value in urban renewal cannot be ignored, and its strategies for preservation and renovation should not be generic.

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# “输入型”城市形态在中国东北地区的本土化演变： 以大连市环形—放射状空间为例

刘健琨<sup>1\*</sup>, 出口敦<sup>2</sup>

1 天津大学建筑学院, 天津 300072

2 日本东京大学大学院新领域创成科学研究科, 柏市 277-8563

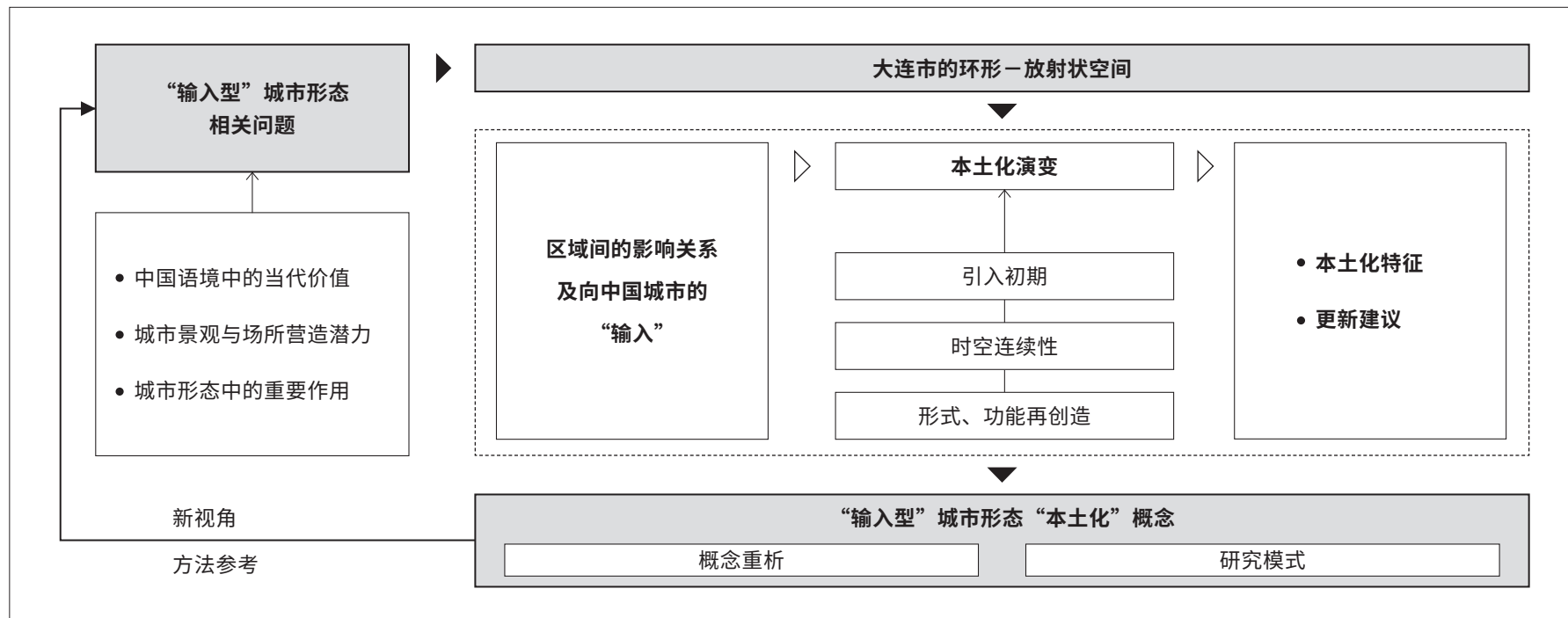
\*通讯作者

地址: 天津市南开区卫津路92号

邮编: 300072

邮箱: liu\_jiankun@tju.edu.cn

## 图文摘要



## 摘要

历史上源自外来文化的“输入型”城市空间形态在被“移植”至中国城市后, 由于文化根基缺失, 易与现代主流城市建设脱节, 其当代价值与城市更新潜力备受质疑。本研究以街区尺度下源于巴洛克城市的“环形—放射状空间”为例, 以厘清其引入中国东北地区城市的背景与动因, 并以大连市为例, 明晰其移植后在形式与功能上的适应性变化, 继而提出城市更新建议。

研究发现, 各种几何形式环形—放射状空间的引入, 虽然在不同程度上受到欧、美、日等地区城市规划与理论的影响, 但都强调象征性与功能性并重。环形—放射状空间在大连的城市规划建设具有时空连续性, 但受地形、交通、规划理念等变化影响, 形态与功能趋向独立, 关联性减弱, 重要程度退居街道网络之后; 其延承与变化在城市更新中需辩证考量。最后, 研究重新提出“输入型”城市空间的“本土化”概念, 并构建了普适性研究模式, 为理解相似类型城市形态的演变提供了崭新视角。

## 文章亮点

- 环形—放射状空间被引入中国城市形态中, 创造了新的城市景观
- 环形—放射状空间首先被引入大连, 其本土化过程并非对于巴洛克城市象征性的模仿, 而是对当地自然地形的适应性使用
- 环形—放射状空间伴随着城市的发展和扩张, 经历了形式与功能的长期演变
- 重新审视了“输入型”城市形态“本土化”的概念及其普适性的研究模式

## 关键词

“输入型”城市形态; 环形—放射状空间; 本土化; 跨文化城市景观; 中国城市语境; 大连

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