

A COMPARATIVE STUDY OF URBAN SPACE IN NANJING AND ROME

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ABSTRACT

Rome and Nanjing are the cities playing the role of both active mega-city and historical city, but developing through very different cultural backgrounds and social evolutionary processes. This article presents a comparative study of the urban street structure in the historic districts of Rome and Nanjing. Taking Campo Marzio in Rome and the Laochengnan area in Nanjing as examples, the study analyses the physical evolution of the street structures from the 1940s to 2019 in terms of the number, length, increase, and decrease of streets. By reviewing the history of urban development in the two districts during this period, and in-depth analysis of the three urban renewal projects in the Laochengnan area of Nanjing, the mechanisms and causes of changes in street structure were discussed. The three projects represent the awareness of Nanjing and even China on the conservation of the old district, as well as the process and results of the game in urban renewal. It found that under different land ownership and development modes, Nanjing and Rome have different protection methods and policies for the old districts, resulting in different changes in the urban street structure during the same period. Keywords: comparative study, urban space, street structure, protection and renewal.

INTRODUCTION

The comparative study is a major issue in most fields. With the apparent increase in attempts at the cross-cultural comparison, the morphological study of the form of cities may be entering a new phase (Conzen, 2009; Conzen, et.al. 2012; Whitehand, et.al. 2016). However, in urban morphology, faced with the diversity of urban landscape forms, the variety of terms invented to understand them, and linguistic barriers between researchers, cross-cultural comparative studies are still difficult to construct and implement (Whitehand, 2012). This paper attempts to make a little contribution to this issue and provides an urban morphological comparison between China and Europe.

To a great extent, the study in urban morphology depends on the direct observation of urban forms and various representations of these forms, such as maps and plans. The reconstruction of detailed changes to the urban landscapes of cities in China is much more difficult than in most western cities (Gu and Zhang, 2014). Based on the available cartographic source, historical satellite photos and city maps, the evolution of the street structure of the historical centres of two culturally representative mega-cities in Europe and China will be examined.

When choosing traditional European and Chinese cities for comparison, we mainly consider the representation of these cities in their cultural regions. Nanjing, located in the central and eastern part of China along the Yangtze River, is a city with a history of more than 1800 years. It was the ancient capital of the Six Dynasties and also the capital during a large part of the Republican Period of China from 1912 to 1937. Although Nanjing is no longer the national capital, as the provincial capital of Jiangsu Province, it is still the developmental cornerstone of the region. Rome is the capital of Italy. The city has been a major human settlement for over 2000 years. Located in the central-western portion of the Italian Peninsula along the shores of the Tiber River, Rome is the

country's most populated city. Therefore, Nanjing and Rome are the cities playing the role of both active mega-city and historical city but developing through very different cultural backgrounds and social evolutionary processes. Based upon urban morphological aspects of form changing process, it is worthwhile to study whether cultural influence forms urban fabrics and how it acts during the social evolutionary processes.

THE URBAN STREET STRUCTURES OF THE RESEARCH AREAS IN NANJING AND ROME

The research areas selected in Nanjing and Rome are both located in the core area of the old city, inside the city walls and along the river, and are similar in size (Figure 1). The study area in Nanjing is the area of South old town or can be called the Laochengnan area, with an area of 0.87km². It is the oldest residential area in Nanjing and still retains some of the houses and streets from the Ming and Qing dynasties. The study area in Rome is Campo Marzio, the 4th rione of Rome, with an area of 0.88km². Since the 6th century, Campo Marzio has been one of the most densely populated areas of Rome.

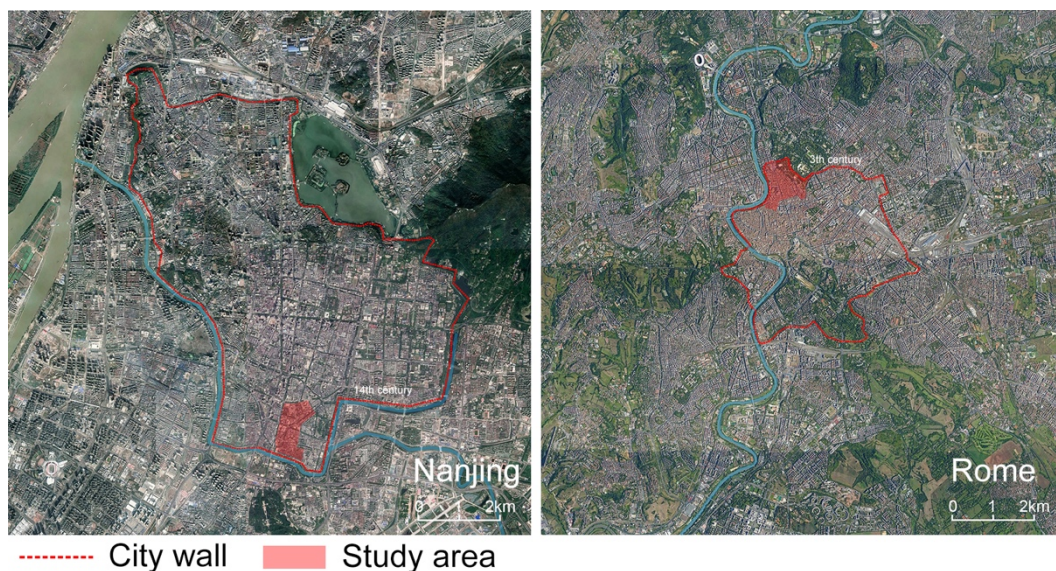
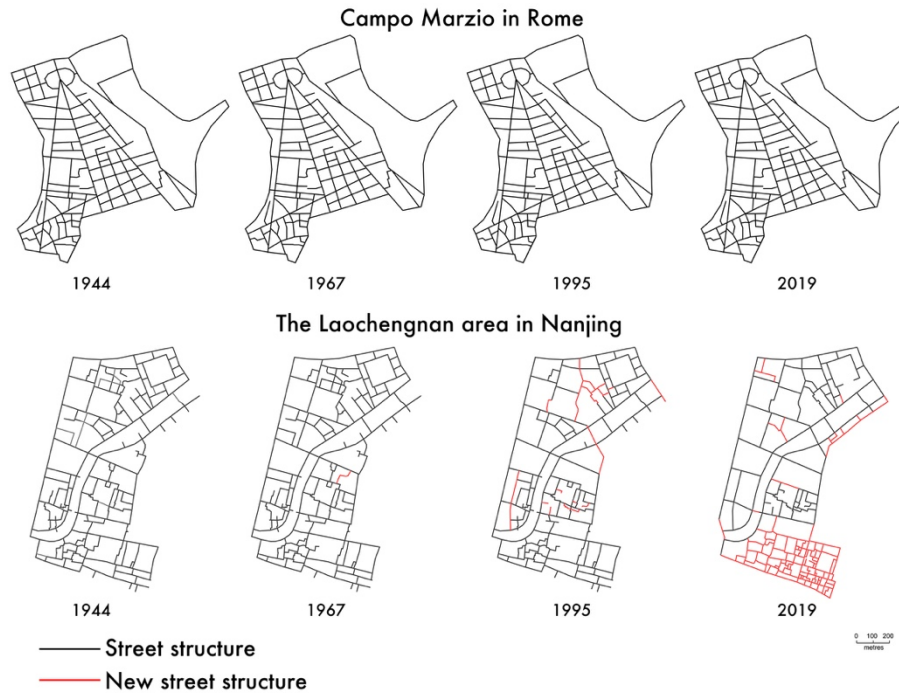


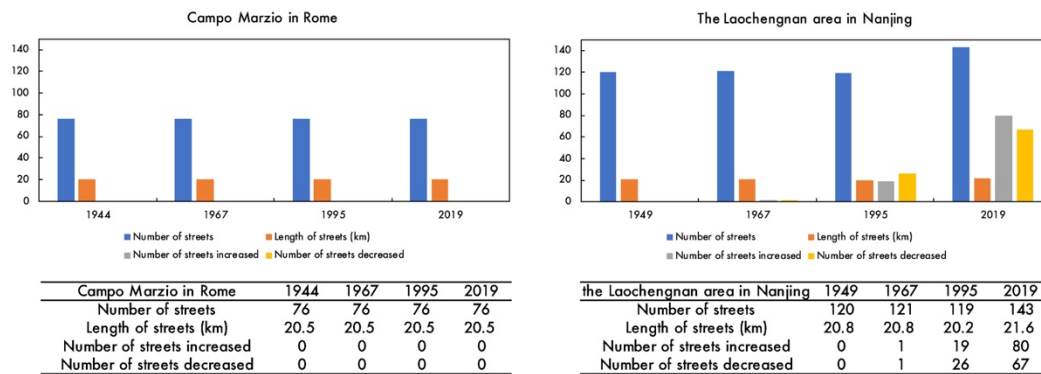
Figure 1 The research area and the location in Nanjing and Rome. Source: Google image from 2019.

Based on the satellite imagery of the study areas in Nanjing and Rome in the 1940s and 2019, as well as various cartographic sources including Nanjing city street maps in 1949, 1967, 1995, and 2019, and the plot map of Nanjing in 1937 and 2019, the urban street structure of Campo Marzio in Rome and that of the Laochengnan area in Nanjing can be drawn as shown in Figure 2(a), with the new streets emerging at each phase marked in red. According to the street structure shown in Figure 2(a), the number of streets, the length of streets, the number of streets increased, and the number of streets decreased between Campo Marzio in Rome and the Laochengnan area in Nanjing from the 1940s to 2019 are counted (Figure 2b).

The figure shows that in 75 years, the street structure of Campo Marzio in Rome has not changed, but the street structure of the Laochengnan area in Nanjing has changed a lot. From 1949 to 1995, the number of streets in the Laochengnan area remained stable at about 120. By 2019, the number of streets has increased to 143. It can be seen that from 1995 to 2019, the street structure in the Laochengnan area has undergone great changes. During this period, the number of streets increased and the number of streets decreased both increased a lot. Although there are many more streets in Nanjing than in Rome, their streets are almost equal in length.



(a)



(b)

Figure 2 (a) Transformation of the street structure of Campo Marzio in Rome and the Laochengnan area in Nanjing from 1940s to 2019; (b) Statistics of the number of streets, the length of streets, the number of streets increased, and the number of streets decreased between Campo Marzio in Rome and the Laochengnan area in Nanjing from the 1940s to 2019.

Since 1870, when Rome was established as the capital of a unified Italy, five general plans have guided its development. The first plan (1883) guided initial growth. In 1909, a liberal plan was initiated, and in 1931 there was a third plan embodying Fascist perspectives. Each of these plans sought to accommodate growth and expansion within Rome's historic framework, building, gradually outward from the historic core (Krumholz, 1992). After World War II in 1945, a large number of refugees arrived from war-ravaged areas all over the country. The city became the focus of various migrations affecting Italy. In response to the demand for housing caused by rapid population growth and a lack of regulation, a new and densely populated residential area has emerged around the old historical centre. The housing problem was dire and stayed so for at least 20 years. The fourth master plan was formulated in 1962. A key feature of this plan was to draw commercial, industrial, and residential development away from the historic centre of the city. (Gordon, 2006). The year the plan was adopted saw a record number of new homes built.

Unfortunately, that was exactly when the economic cycle saw a downturn. As the population growth stopped and industrial production restructured, a large number of declining areas appeared, which made the 1962 planning unsustainable. The most recent master plan was adopted by the city council in March 2003. The new plan takes into account the new requirements of contemporary society, such as the quality of living, environmental issues such as ecological nature and historical archaeology, as well as the positioning of the city in international competition.

At the same time, Nanjing has also experienced the development of urbanization. The urban fabric of Nanjing was formed under private land ownership. After the founding of the people's Republic of China in 1949, great changes have taken place in the urban land development system, development and protection mode, and urban planning system. The traditional urban form began to evolve continuously. In 1949, New China was founded, urban land was gradually nationalized. The following years were the main period of the planned economy. With the Reform and Opening-up Policy in 1978, the planned economy system gradually disintegrated. The revision of the Chinese Constitution and Land Administrative Law in 1988 completely changed the land administrative system. After 1988, trading of land-use rights through land auctions was legalized, and the former land policy of free allocation began to be phased out. Since the 1980s, under the different policies of prioritizing economic construction and preserving historical memory, the area faces a variety of needs under different social conditions and has undergone a large number of urban renewal projects. Therefore, based on the changes of the social and economic system and urban renewal policies, the morphological period of the Laochengnan area can be divided into four phases: the period of the traditional form (before 1949), the period of industrial construction (from 1949 to 1967), the period of preliminary urban renewal (from 1967 to 1995), and the period of rapid urban renewal (from 1995 to 2019). Since urban street structure in the Laochengnan area in Nanjing has changed significantly, it is necessary to analyse the mechanisms and causes of this change.

CASE STUDY IN NANJING: THE EVOLUTION OF THE URBAN STREET STRUCTURE

The street structure in the Laochengnan area has changed dramatically since the 1980s, which was deeply guided and restricted by the urban development and city protection policy. Due to the long-term rapid development of Nanjing, the urban renewal policy has undergone many changes accordingly. The urban renewal policy in each period is a game of urban development and conservation, as well as a tripartite game among the government, developers and scholars. In this context, this study selected three old city protection projects in the Laochengnan area, namely the Confucius Temple area, the Changledu area and the Laomendong area. These three projects represent the awareness of Nanjing and even China on the conservation of the old city, as well as the process and results of the game in urban renewal.

- The Confucius Temple area (in the 1980s)

Since the reform and opening up in 1978, the national economy has begun to recover, the pace of urban construction has accelerated, and the scale of the city has been expanding. The new urban planning and construction brought new impacts and damages to the historic fabric. Against this background, the State Council issued a document to protect national historic cities in 1982, and announced Nanjing as the first batch of national historic cities. In the same year, *Cultural Relics Protection Law of the People's Republic of China* was passed and implemented. Cultural relics are historic monuments and sites which should be approved, published and protected by the government. The law stipulates that cultural relics need to be protected at the original site, and the

height of buildings around the cultural relics also needs to be controlled (Figure 3a and 3b). In 1986, Nanjing Planning Bureau organized and compiled *the planning of Confucius Temple area*. Under the guidance of the planning, as the municipal officially protected monuments and sites, the buildings centred on Confucius Temple were restored and protected (Figure 3c). Since the law only controls the height of the buildings around the cultural relics, this has led to a large number of subsequent changes in street structures and buildings that meet the height control requirements. Especially under the pressure of population growth, the government introduced the multi-storey residential mode to replace the traditional courtyard-style houses, which greatly damaged the traditional street structure.

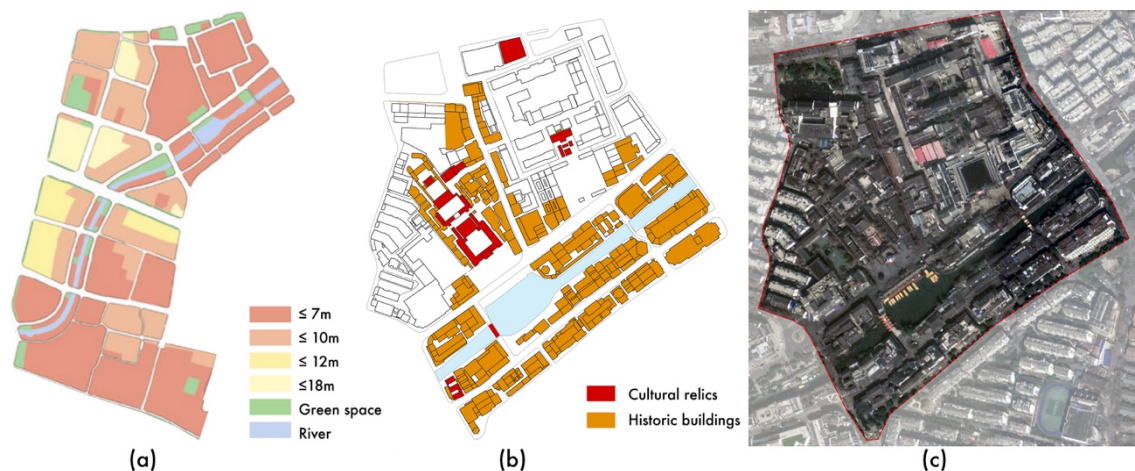


Figure 3 (a) Height control plan in the Laochengnan area; (b) Cultural relics and historic buildings in the Confucius Temple area; (c) The satellite imagery of the Confucius Temple area in 2019. Source: Google image.

- The Changledu project (2007-2015)

Under the loose old city protection policy, after more than 20 years of development from the 1980s to the early 21st century, the traditional townscape of the Laochengnan area gradually disappeared. From 2006 to 2009, in the game of demolition, construction and protection, dozens of well-known domestic experts and scholars called for the suspension of urban fabric damage, which caused a concentrated discussion on the protection of the Laochengnan area, including the central government, the media, scholars and citizens. One of the achievements of this discussion is *“The urban design for the protection and renovation of the historical district in the south of Nanjing old city”*, which was published in 2012. It proposes the principle of small-scale unit-type renewal, referring to the boundary of the original plot and courtyard, and using the traditional fabric characters such as courtyard volume, style and material to control the design. In 2007, land in the Changledu area was sold to real estate developers at a high price. Most of the buildings were demolished and all residents were relocated (Figure 4). The Changledu project was temporarily suspended due to public opinion, and it was not restarted until 2013. In order to strike an economic balance with the government's requirement to preserve the traditional fabric characters, the developer has positioned the project as pricey courtyard houses, replacing the original buildings and streets with new courtyard houses that meet the modern living standards. In 2015, the Changledu project was completed.



Figure 4 The Changledu area in 2005, 2007, and 2015. Source: Google image.

- The Laomendong project (2011-2017)

While the Changledu project was underway, many scholars questioned the renewal mode of the Changledu project. Since the Changledu project is a high-end residential project, its internal streets are hardly open to the public. Although the fabric of the Changledu area embodies the characteristics of the traditional courtyard fabric, it has lost its publicity. With the proposal of the government's "Nanjing Conservation Planning of Historic City (2010-2020)" at the end of 2009, the renewal of old city is moving towards a government-led commercial development mode that conforms to traditional fabric characters. The government-led Laomendong project started in 2011, with the first phase of the pilot street opening in 2013 and the whole area opening in 2017 (Figure 5). The Laomendong project is a typical case of the tourist-oriented renewal model. Although in the renewal process, all the residents were moved out, most of the buildings were demolished and rebuilt, and the fabric and street structure also underwent great changes. However, for both ordinary urban residents and tourists from other places, the historical symbols and the life scenes matched with modern life displayed by the Laomendong project make them obtain emotional and consumer satisfaction.



Figure 5 The Laomendong area in 2010, 2011, and 2017. Source: Google image.

According to the statistics of the number of streets affected by the above projects, it can be found that different projects in different periods have changed the street structure of the Laochengnan area (Figure 6a). The least number of streets increased and the largest number of streets decreased

are the multi-storey residential projects. Since the multi-storey residential projects mostly occupy large areas and are managed in a closed manner. The largest increase in streets is the Laomendong project, which has a total of 52 streets. Although the commercial development of the Laomendong area changed the original street structure, several main east-west and north-south long streets were slightly offset from the original positions, which can be said to still exist. And because it is a commercial tourism project, a lot of passageways have been designed for tourists to walk through the buildings. The Confucius Temple project is a kind of urban renewal with the protection of cultural relic. The number of streets increased and decreased are both small, 13 each. As a residential project, after absorbing the lessons of the multi-storey residential projects to change the urban fabric characters, the number of streets has not changed after the renewal, but the location of the streets has changed a lot. An examination of the urban fabric of the Laochengnan area reveals that 49% of the Laochengnan area has maintained the traditional fabric character, which includes the Confucius Temple area, the Changledu area, the Laomendong area and undeveloped area (Figure 6b).

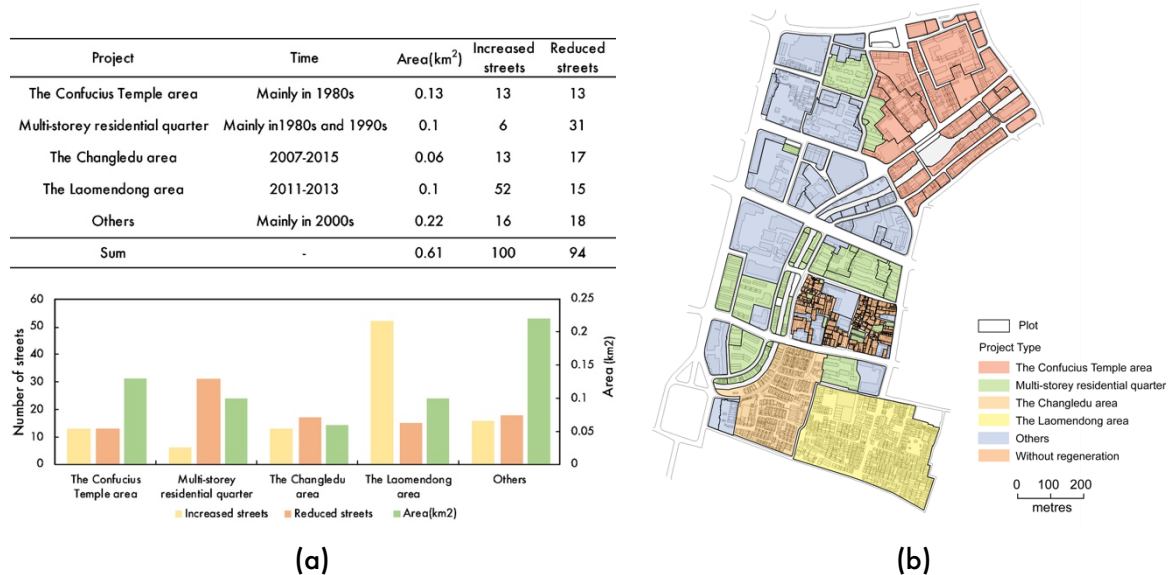


Figure 6 (a) Statistics of the number of streets increased and decreased by type, time, area of different projects; (b) Different projects in Laochengnan area.

CONCLUSIONS

Campo Marzio in Rome and the Laochengnan area in Nanjing are both old urban areas of the city, and both undergone urban renewal. From the 1940s to 2019, the street structure of Campo Marzio remains the same as it was in the past. The street structure in the Laochengnan area has undergone great changes, especially after the 1980s, under the influence of different projects.

For the protection of the old city, Nanjing and Rome have different protection methods and policies. Rome is the project protection, and Nanjing is a combination of project protection and height control. Although they are both project protections, the specific protection methods and results are also different. Under the private ownership of Rome, almost every building in the old city is a protected project. In Nanjing, under the public ownership, except for a few cultural relics that are strictly protected by the law, the protection projects are large plots including many buildings and are being developed as a whole. As a result, the traditional urban fabric of Rome cannot be easily replaced, whereas that of Nanjing would be replaced to a large extent. There are

two ways to renew the fabric of Nanjing. One is to replace the original texture at a controlled height, as in the case of multi-storey residential projects. The other is based on a study of the original urban fabric, as in the case of the Laomendong project. The latter is based on research, usually referring to the location and physical characteristics of the original streets and buildings. However, in the absence of adequate research, the old fabric may be damaged. Therefore, the development of conservation projects in Nanjing often depends on the quality of the design.

Over the past 70 years, both Rome and Nanjing have experienced urbanization. During this period, Rome gradually entered a stable period of urbanization, while Nanjing, especially after the 1980s, entered the climax of urbanization. Faced with the same pressures of urban development and population growth, Rome chose to expand around the old city, while Nanjing chose to renew the old city fabric and expand outwards at the same time. After the urban renewal, only 49% of the Laochengnan area maintained its traditional fabric characters, while in Campo Marzio, 99% of the traditional fabric remains unchanged.

REFERENCES

Conzen, M., Gu, K. and Whitehand, J. (2012) 'Comparing traditional urban form in China and Europe: A fringe-belt approach', *Urban Geography*, 33(1), pp. 22–45. doi: 10.2747/0272-3638.33.1.22.

Conzen, M. P. (2009) 'How cities internalize their former urban fringes: A cross-cultural comparison', *Urban Morphology*, 13(1), pp. 29–54.

Gordon, D. L. A. (2006) *Planning twentieth century capital cities*. Routledge. doi: 10.4324/9780203481561.

Gu, K. and Zhang, J. (2014) 'Cartographical sources for urban morphological research in China', *Urban Morphology*, 18(1), pp. 5–21.

Henriot, C. (2009) 'Shanghai in post-1949 maps: secrets, lies, and urban icons', (<http://www.virtualshanghai.net/Texts/Articles?!ID=60>) accessed 30 June 2020.

Krumholz, N. (1992) 'Roman impressions: contemporary city planning and housing in Rome', *Landscape and Urban Planning*, pp. 107–114. doi: 10.1016/0169-2046(92)90015-R.

Whitehand, J. W. R. (2012) 'Issues in urban morphology', *Urban Morphology*, 16(1), pp. 55–65.

Whitehand, J. W. R., Conzen, M. P. and Gu, K. (2016) 'Plan analysis of historical cities: a Sino-European comparison', 20, pp. 139–158.

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