

The evolution of residential buildings and urban tissues in Guangzhou, China: morphological and typological perspectives

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Revised version received 2 May 2014

Abstract. *Based on the typological theories and methods of the Italian school, a fresh perspective on urban morphological studies in China is presented. A case study of the Guangfunan area – a suburb immediately west of the old city wall of Guangzhou, China – utilizes contemporary and historical cartographic sources, data collected during an extensive field survey, and secondary sources. The evolution of residential forms and urban tissues from 1840 onward is characterized. After distinguishing significant relationships between tissue configurations, inherited geomorphological conditions and old settlement patterns, and identifying architectural types and their variants, a morphogenetic process is revealed in which urbanization and densification give rise to a series of residential forms derived from one another. Spontaneous and purposeful building practices respond both to geographically-bounded conditions and constraints and potential for change ingrained in the morphological system.*

Keywords: urban tissue, building types, typological process, urban morphogenesis, Guangzhou, China

Originating in Europe, urban morphological research has since the 1920s been widely applied in diverse urban contexts in that continent and, to a lesser extent, other parts of the world such as in North America. Although architects and geographers have begun to develop a research programme on Chinese traditional architecture and its evolution since the Republican period (Whitehand and Gu, 2006, pp. 338-9), such studies have yet to yield a 'home-grown' thorough theoretical model of the process of physical transformation of the built environment.

Theories of urban morphology and architectural typology have been systematically introduced in China only in the last decade (Duan and Qiu, 2008; Dugan and Qiu, 2009;

Gu, 2001). A number of studies have drawn on ideas developed by the Anglo-German geographical school, following the work of M. R. G. Conzen (Chen, 2010; Gu, 2001; Gu *et al.*, 2008; Tian *et al.*, 2010; Whitehand and Gu, 2006; Whitehand and Gu, 2007; Whitehand *et al.*, 2011; Xu, 2012; Zhang, 2012). In particular, Whitehand and Gu (2007) examined the applicability of Conzenian concepts and techniques in Pingyao, Shanxi and provided a new research framework for subsequent studies of other Chinese cities (Chen, 2012; Whitehand *et al.*, 2011; Zhang, 2012).

Increasing attention has been given to the Italian school of process typology in recent years. Guo (2008) and Gu *et al.* (2008) have

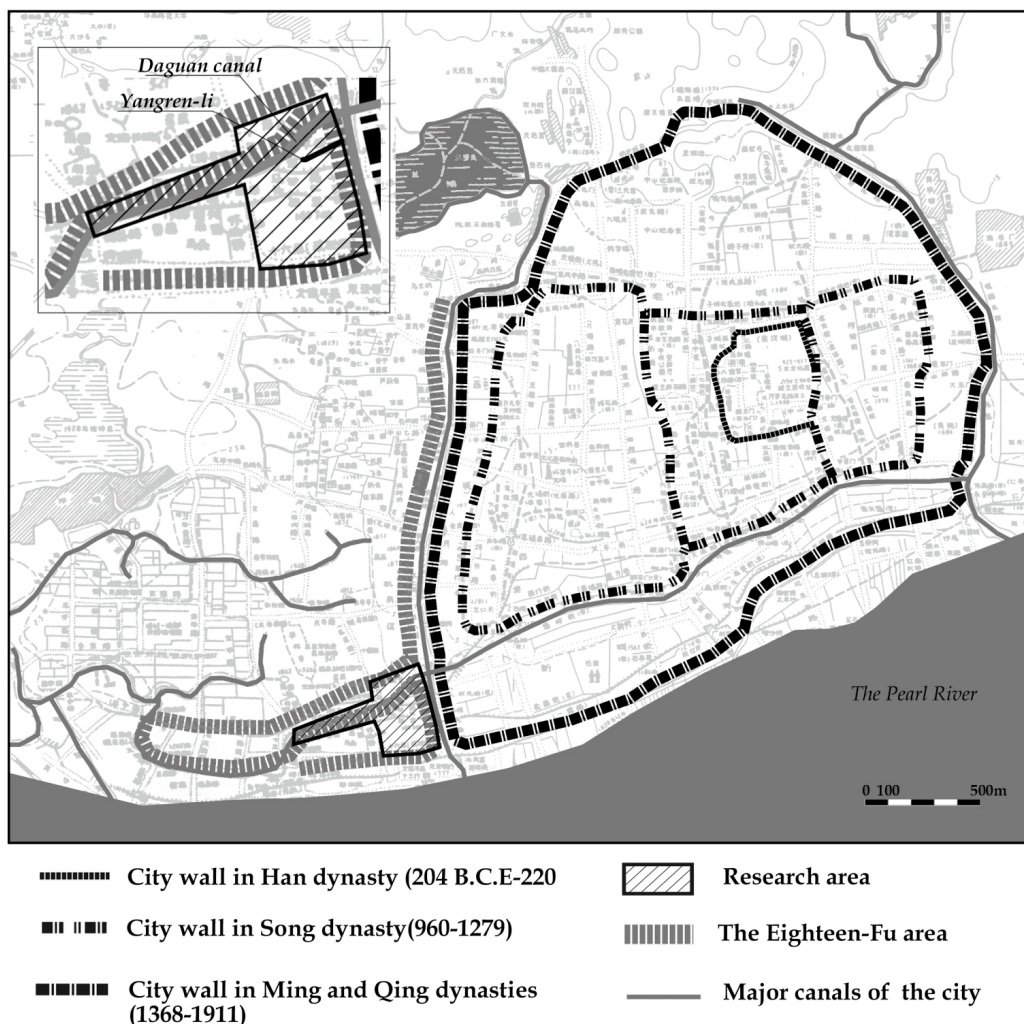


Figure 1. Location of the Guangfunan area. Based on *Guangzhoushi lishi dili jiantu* (*The historico-geographical map of Guangzhou*) in Zeng (1991).

used the typological concepts of the Italian architectural school to examine the evolutionary process of architecture and urban form in Shanghai and Guangzhou. However, typological research on Chinese cities has been slow to develop. Following the seminal work of Saverio Muratori and Gianfranco Caniggia, this paper explores the formation of and changes to residential buildings and other urban forms in suburban Guangzhou. It focuses on theories and methods concerned with process typology.

Guangzhou has a history extending over some 2000 years (Zeng, 1991). The city gradually became a prosperous port between the Jin dynasty (265-420) and the Tang dynasty (618-907), before undergoing several

expansions during the Song (960-1279) and Ming (1368-1644) dynasties (Zeng, 1991). The date of construction of the first city wall is still open to debate, but there are known to have been many transformations of the fortification system (Figure 1).

The Guangfunan area of Guangzhou is to the west of the most recent city wall, which was built in the Ming dynasty and reinforced in the Qing dynasty (Zeng, 1991, p. 378) (Figure 1). The earliest historical record for the area dates from the sixth century (Huang, 1994). Yangren-li is the oldest street for which a documentary record exists (Zeng, 1991). In the core of the Guangfunan area, a waterway named Daguang, canalized in 1472, ran parallel to Yangren-li (Zeng, 1991). This canal was

connected to the moat on the western side of the city and flowed into the Pearl River. Together, these features provided convenient means of communication, and supported trade between the late-fifteenth century and the early-nineteenth century.

By the late-nineteenth century, the Daguan canal had dried up and its course was gradually occupied by streets and dwellings – just one example of the many developments of the street pattern and architectural transformations that have characterized the area. The Guangfunan area is one of the most diverse neighbourhoods of Guangzhou, comprised of traditional dwellings, multi-storey buildings from the early-twentieth century, as well as modernist mid- and high-rise structures that are characteristic of the recent wave of development. The complexity of the street system and urban forms, and the diversity of the building types make this area appropriate for a case study in urban morphogenesis and the typological process.

The Italian school of process typology

Process typology conceptualizes the built environment as a complex dynamic system of interrelated elements, which functions at different scales. According to Caniggia and Maffei (2001), a ‘type’ is a set of conventions and norms developed in the course of the building experience. While being anchored in the accumulated collective experience, newer types emerge as responses to evolving environmental conditions and social needs. By examining the physical and spatial traces deposited in the built landscape during the successive phases of its development, it is possible to reconstruct analytically the ‘typological process’. The typological method can be used to understand both the genesis of architectural forms and the evolutionary process of larger areas, such as a neighbourhood or a city as a whole (Caniggia and Maffei, 2001, pp. 75, 247).

The same authors also developed the concept of ‘urban tissue’, which is a system that governs the spatial layout of elements

belonging to three different sub-systems: the streets, the plots (or lots), and the buildings (Caniggia and Maffei, 2001, pp. 118-19). The method of the Italian school relies on two principal analytical procedures which seek to reconstruct the process of formation and transformation of the different components of the built environment (namely, morphogenesis) and identify and classify *types*. ‘Types’ are recognizable as the formal characters and spatial configurations displayed by artefacts. They denote a synthetic model produced collectively over a phase of development of the urban organism. Classifying types both synchronically and diachronically produces a typology.

The present case study draws heavily on cartographic records, iconography, photographic surveys, and the observation and mapping of the architectural attributes of buildings and streetscapes. The analysis of cartographic representations from different periods allows the exploration of the transformation of built forms over time. The method is both progressive and retrogressive. In the absence of graphic documentation for earlier periods, previous conditions of the built system are inferred from traces left in cartographic representations of later stages of development of the urban organism.

This study entails a two-pronged approach. It focuses first on urban tissues. A ‘reading’ of the artefacts and spatial forms reveals various tissue configurations that allow the delineation of distinct morphological regions. Morphological characterization of each region synchronically reveals the spatial syntax of its tissue. Diachronic analysis sheds light on the way in which the evolution of the built environment has responded to geomorphological or human-induced physical conditions, namely the constraints and potential for change ingrained in the inherited morphological system. Spatial analysis is co-ordinated with secondary historical data to support the morphogenetic interpretation.

The study then focuses on architectural forms. Data analysis provides a basis for the identification and characterization of a variety of building types. Analysis of the formal

attributes of types is combined with accounts of the historical evolution of Chinese architecture in secondary sources and morphogenetic analysis. This supports the reconstruction of the typological sequence and interpretation of the typological process.

Compiling data from historical maps of Guangzhou or any other Chinese city is more challenging than in most European and North American cities owing to the scarcity and lack of accuracy of topographical information in most Chinese cartographic records. Before the twentieth century most maps are diagrammatic, showing little more than built-up areas and streets (Zhou and Xiao, 2003). The first systematic urban survey of Guangzhou was conducted by Guangzhou Land Bureau (*Guangzhou Tudiju*) from 1926 to 1935 (Whitehand *et al.*, 2011). Guangzhou Urban Planning and Design Survey Research Institute has prepared large-scale plans of the city since 1949. In the late 1980s, this Institute prepared a plan of the whole city at the scale of 1:500, and this has been updated several times during the last 3 decades. The part of the 2004 version of this plan for the Guangfunan area was used as a base map for the study. A preliminary characterization entailed examination of the pattern of plots, or 'built lots' to use the term employed by Caniggia and Maffei (2001, p. 124), and building footprints. In combination with examination of street configurations and plot-by-plot field observation of the attributes of buildings, this allowed the identification of five morphological regions.

Urban morphogenesis of the Guangfunan area

Historical maps and ancient texts allow retracing of the sequence of early settlement in the Guangfunan area, and reconstruction of the suburbanization process (Figure 1). To put it simply, urban morphogenesis is the 'creation and subsequent transformation of city form' (Vance, 1977, p. 37). The making of urban

tissue has been described by Gauthier (2005) as the outcome of a dialectical interplay between purposeful planning practices, everyday 'spontaneous' practices, and the resilience of the inherited built environment itself and the building culture of which it is a product. The engagement of various groups of agents with the natural and human-made environment over time has produced a number of traces that can be deciphered in the cultural landscape of the Guangfunan area.

When it is first mentioned in historical documentation, in the sixth century, the area was largely farmland (Huang, 1994; Zeng, 1991). An archaeological excavation in 1911 found a tombstone dating from 607 A.D., which indicates that Yangren fang – the core area of today's Guangfunan area – was a private dwelling of Wang's family (Huang, 1994). During the Tang dynasty, the Hualin Temple was close to the waterfront (Zeng, 1991). The built-up area along the Pearl River was used for commodity trading between Chinese traders and west Asian merchants. During the Song dynasty the river bank shifted towards the south-west, and a small town developed. A sizeable commercial and residential settlement eventually spread along the river bank and canals, as China's trade with more than 50 countries developed (Yang and Zhong, 1996, p.132). It became the first significant built-up area to the west of the city of Guangzhou and served as a commercial hub in the Ming and Qing dynasties.

The Dagan canal was an important asset in the development of the Guangfunan area and in the Ming dynasty the Eighteen-Fu commercial hub began to thrive along the canals. A catastrophic fire destroyed buildings in the south-east part of the area in 1822 and was followed by redevelopment entailing a shift in land utilization from commercial to residential. The newly-built structures closely followed the previous ground plan, but the ornamentation on the façades of buildings was influenced by Western neoclassical architecture. The street and plot patterns remained similar to those of the previous century (Figure 2).

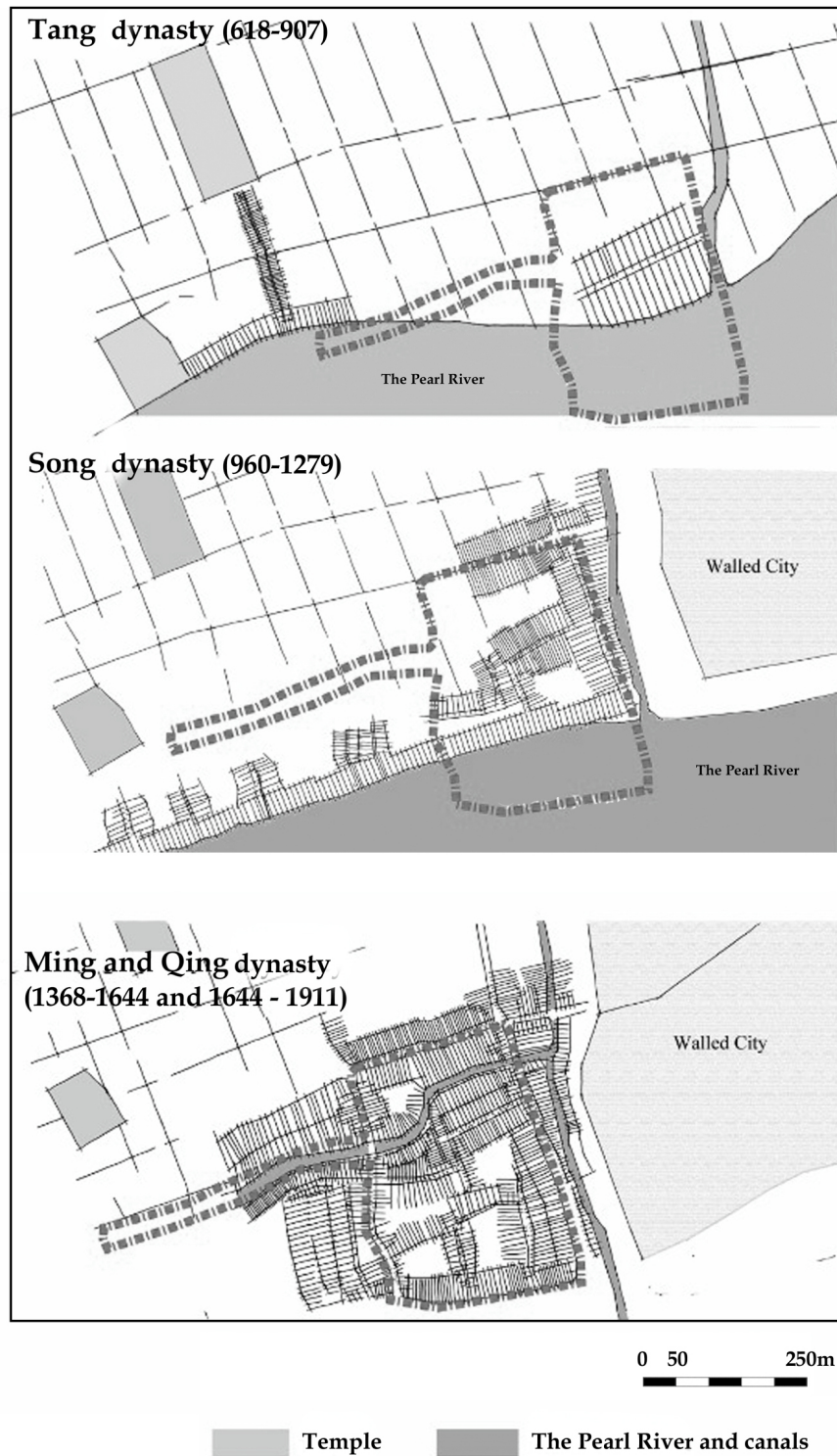


Figure 2. Theoretical reconstruction of early settlement patterns in the Guangfunan area.

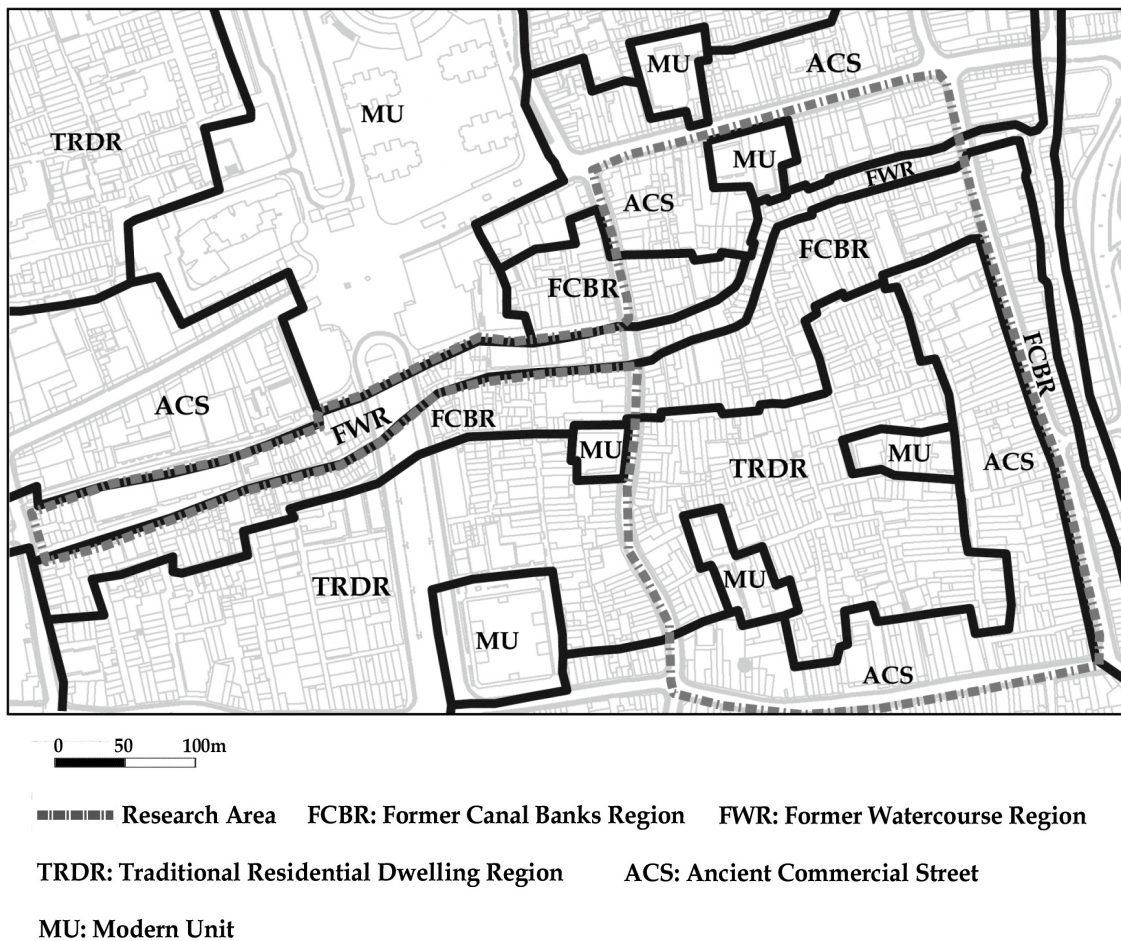


Figure 3. Morphological regions in the Guangfunan area .

Five morphological regions in the Guangfunan area

Five distinct morphological regions have been delineated. Each region displays characteristic morphological patterns, influenced by geomorphological conditions and human alterations of the natural landscape (such as land infill and canal construction) (Figure 3).

The Former Canal Banks Region (FCBR) consists of a series of plots laid out along the banks of two branches of the Dagan canal soon after its construction in the fifteenth century. These plots were initially created as part of the development of waterfront commercial streets running parallel to the canals. During the initial phase of development, buildings were built along the canal to

take advantage of waterborne trade. The plots were 1 *jian* (that is about 4 m) in width. As the neighbourhood grew, breakthrough streets at right angles to the canal were opened, increasing accessibility to the warehouses and dwellings in the backstreets. Existing plots at the corners were subdivided to form smaller plots facing the breakthrough streets (Figure 4). After the canal dried up in the early-nineteenth century, the waterfront plots lost their advantage and some of the buildings within them changed from commercial to residential use. Some buildings in this region still have features associated with the previous waterfront, such as small external steps that provided access to the canal. The former curving line of the canal is reflected in the present alignment of the street.

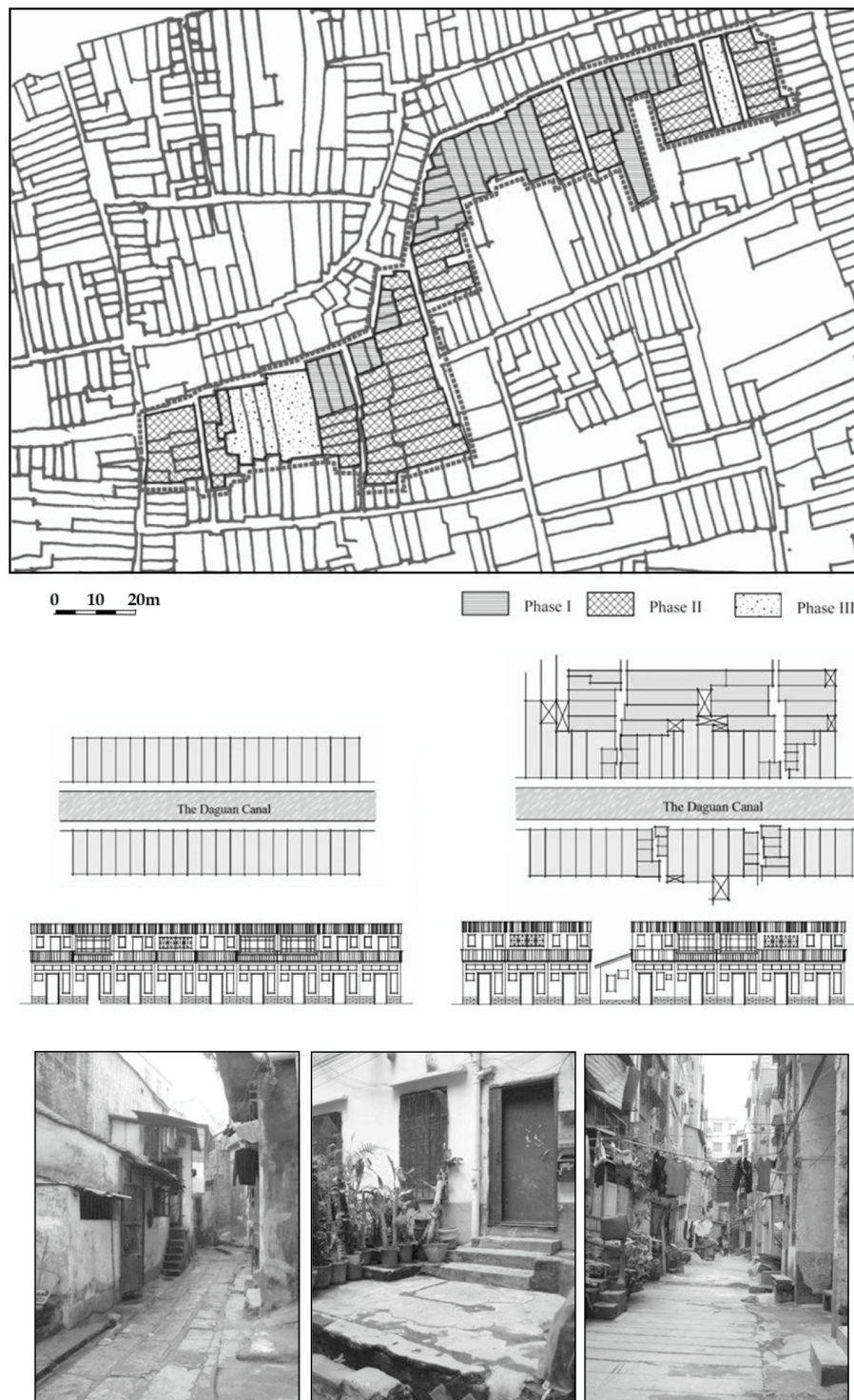


Figure 4. Theoretical reconstruction of the formation and transformation phases of urban tissue in the Former Canal Banks Region (FCBR). Based on field survey, 2011.

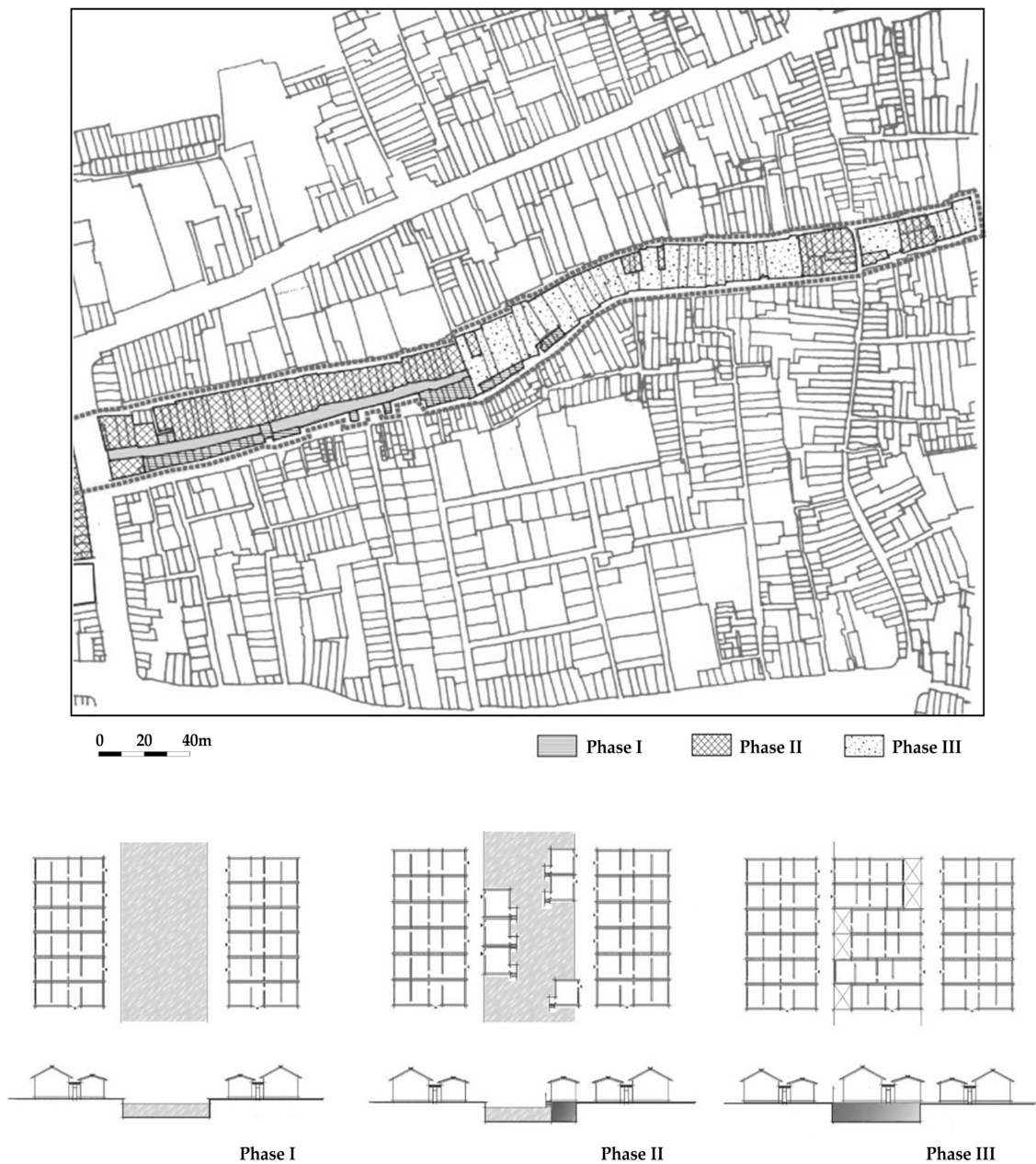


Figure 5. Theoretical reconstruction of the formation and transformation phases of urban tissue in the Former Watercourse Region (FWR). Based on field survey, 2011.

The Former Watercourse Region (FWR) corresponds to the former bed of the Daguang Canal. Buildings were constructed on the reclaimed land, on small plots that generally conformed to a width of 1 *jian*. The former canal bed provided space for backyards as the plots were extended over it. Some buildings were extended horizontally, taking advantage

of the increased depth of the plots. After the canal dried up completely, some buildings were replaced by larger ones. However, since the depth of the plots had been limited by the former canal width, the resulting ratio of plot width to plot depth was rarely more than 1:2 (Figure 5). Such ratios depart from the usual ratio associated with the *zhutongwu* – a house



Figure 6. Types of plots in the Traditional Residential Dwelling Region (TRDR). Based on field survey, 2011 and 2013.

type that prevailed in Guangzhou in the nineteenth century.

The Traditional Residential Dwelling Region (TRDR) is the largest region in the study area. It is characterized by a sizeable number of plots that conform to the traditional 1-*jian* width. These plots could be considered as the basic module of the tissue in the study area. Most of them were occupied originally by *zhutongwus*, the most common building type in the Xiguan area. Most plots were essentially rectangular and many backed on to one another. A single family originally occupied each plot. However, some plots were L-shaped. Buildings in these plots tended to have a small courtyard at the back that allowed natural light to percolate into the rear of the building (Figure 6).

The TRDR is the region that has undergone the most transformation. Many plots have

been amalgamated, allowing larger buildings to be accommodated. In some cases, buildings along the main traffic road have been converted for commercial use and their frontages contain several shopfronts. There is a hierarchy of streets, with smaller plots tending to occupy minor streets: in extreme cases a cul-de-sac less than 1 m wide is the only connection with the rest of the region (Figure 7).

Development in the Ancient Commercial Street (ACS) region after 1840 was influenced by the presence of an ancient commercial hub, the Eighteen-Fu. The ACS is characterized by a specific building type: the *qilou*, which is a commercial building that includes an arcade built over the sidewalk. *Qilous* began to be constructed in the early-twentieth century, creating a distinctive streetscape that came to express the identity of the commercial-residen-

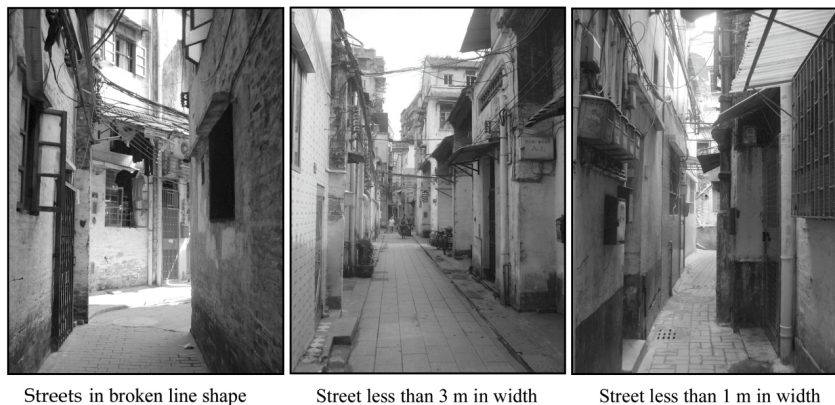
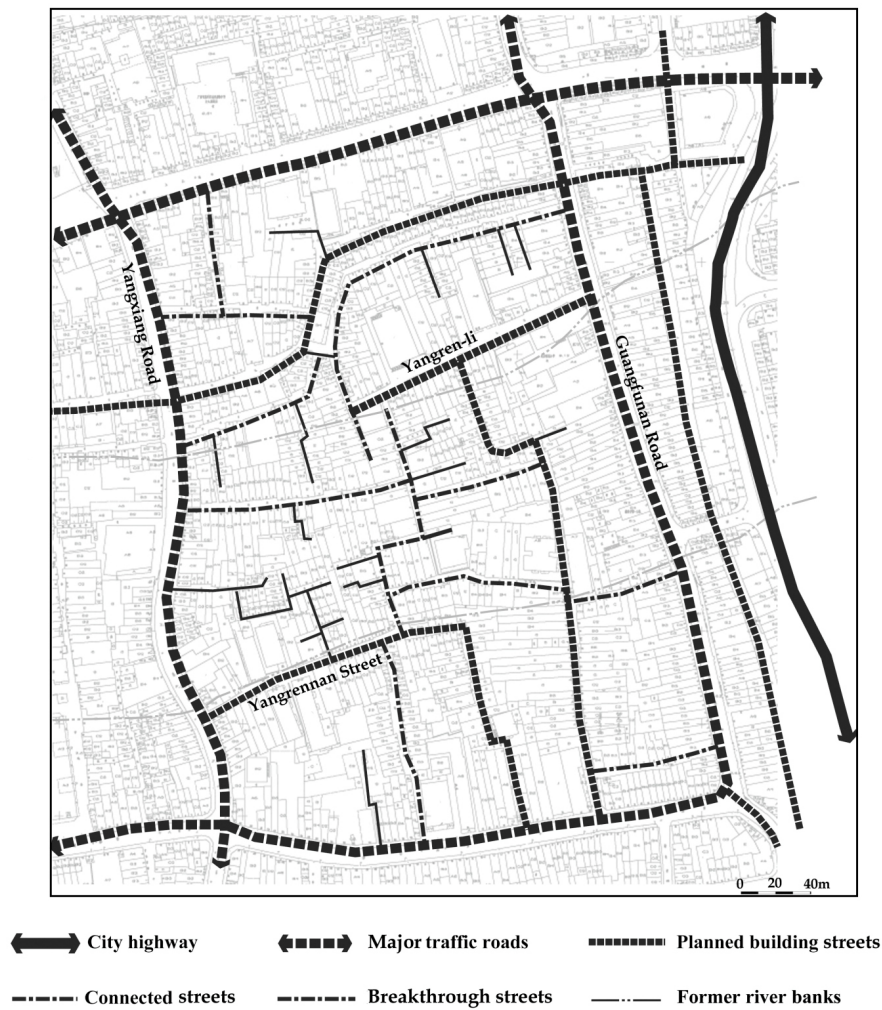


Figure 7. Present-day street hierarchy in the Guangfunan area.

tial neighbourhoods of western Guangzhou. They were in many cases replacements of the front portions of existing buildings. They introduced materials and types of ornamen-

tation that departed from the architectural tradition of Guangzhou. In a number of cases plots were amalgamated to accommodate larger buildings (Figure 8). The architectural



Figure 8. Transformation of plots in the Ancient Commercial Streets (ACS). Based on field survey, 2011, 2013.

expression of the façade of the *qilou* reflects the influence of a variety of Western architectural styles.

The Modern Unit (MU) region includes areas that have been altered from the 1960s onward to accommodate a model of residential development associated with the socialist mode of production. In such instances, existing urban fabric has been demolished and replaced by enclosed compounds known as *danweis*, or work units. This generally entailed the amalgamation of numerous plots. After the decline of the work unit system in the study area in the late 1990s, a similar approach prevailed that led to the market-based production of commercial and residential complexes. Thus the centrally controlled planning system after 1949 created a break in

the continuity of morphological processes.

Residential building types

In examining individual buildings as a complement to the consideration of tissues, cartographic analysis has permitted the identification and characterization of the 920 plots present in the study area (Figure 9).

From sanjian lianglang house to zhutongwu

The *sanjian lianglang* house is widely believed to have been the foundation building type prevailing within much of central Guangdong Province in the decades preceding

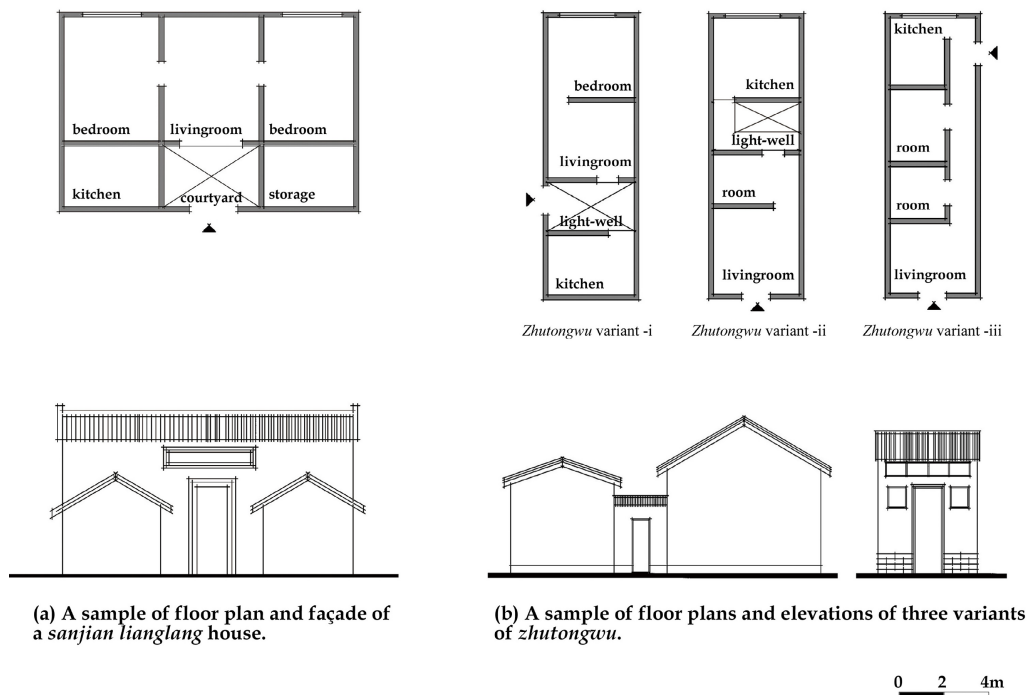


Figure 9. Classification of building types in the Guangfunan area. Based on field survey, 2011 and 2013.

suburban development of the Guangfunan area (Lu, 2004, p. 518; Lu, 2008, p. 73; Lu and Wei, 1990, p. 48). As its name suggests, it is a 3-*jian* (that is about 12 m) wide house with a symmetrical layout. Two bedrooms are on either side of the living room (Figure 10). The small courtyard provides shade and facilitates

natural ventilation, which has practical advantages in the subtropical climate in Guangzhou, especially in summer (Tang, 2005). Two small rooms serving as kitchen and storage space are on either side of the courtyard (Lu, 2008, p. 73).

In Guangzhou, the *zhutongwu* is the found-



(a) A sample of floor plan and façade of a *sanjian lianglang* house.

(b) A sample of floor plans and elevations of three variants of *zhutongwu*.

Figure 10. A sample of floor plans and elevations of a *sanjian lianglang* house (based on Lu, 2008, p. 74) and a *zhutongwu* (based on field survey, 2011).

ation residential type. Its presence is reported in various neighbourhoods by several authors. (Gu *et al.*, 2008; Lu, 2008; Whitehand *et al.*, 2011). Though its origin is unknown, examples appear in late-eighteenth century paintings (Hong Kong Museum of Art, 1996, 1999; Li, 2002). A living room, kitchen and bedrooms are generally connected by a patio or lightwell. The shortage of space in the city area would have been a key factor accounting for the narrowness of the building (Gu *et al.*, 2008). The *zhutongwu* could be regarded as a narrow and deep version of the *sanjian lianglang* house: these two house types have several components in common. The equivalent of the courtyard in the *sanjian lianglang* house is the lightwell in the *zhutongwu*: this connects to the kitchen and allows natural light into the rooms (Figure 10).

Zhutongwu and compact zhutongwu

Figure 10 illustrates differences in the floor plans associated with variants of the

zhutongwu that can be observed within Guangzhou. Plot size and location affect the sequence of rooms, the orientation and location of the entrance, and whether a lightwell is present or absent.

The predominant variant of *zhutongwu* in the study area is the *zhutongwu-iii*, which lacks a lightwell. There exist also two other variants of the *zhutongwu*. These are adapted to less common tissue conditions. These synchronic variants are the compact *zhutongwu-I* and the compact *zhutongwu-II* (Figure 11).

The compact *zhutongwu-I* is a two-storey building that first appeared in the Former Watercourse Region (FWR) when the Dagan canal started to dry up. Some plots in this region were originally only 6 to 8 m deep. Constraints on space stimulated vertical extensions. The type comprises a living room and kitchen on the ground floor, and a modest mezzanine floor that accommodates a bedroom reached by a small interior staircase. Examples of the original form of this sub-type are rare in the FWR.

In the late-nineteenth century, the develop-

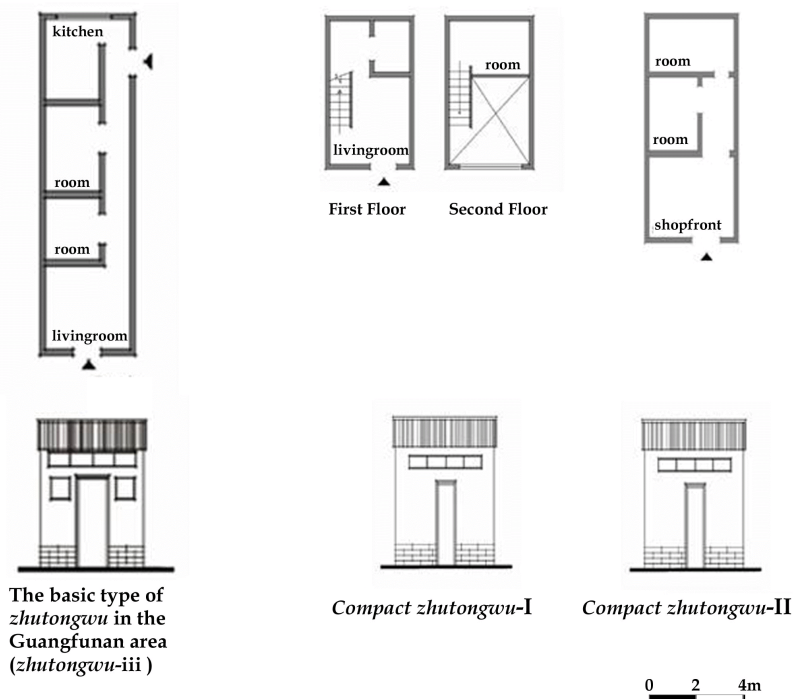


Figure 11. Floor plan and façade of *zhutongwu* and its compact variants in the Guangfunan area. Based on field survey, 2011.

ment of commercial activities in the old Eighteen-Fu, in particular in those shorter plots along the former canal, triggered the need for space specifically dedicated to shops. These requirements led to the appearance of the compact *zhutongwu*-II type. Although the interior space of this later type displays a different layout, *zhutongwu*-II still conforms to the 1-*jian* norm and the principal rooms are deployed along a corridor, as in the original *zhutongwu*.

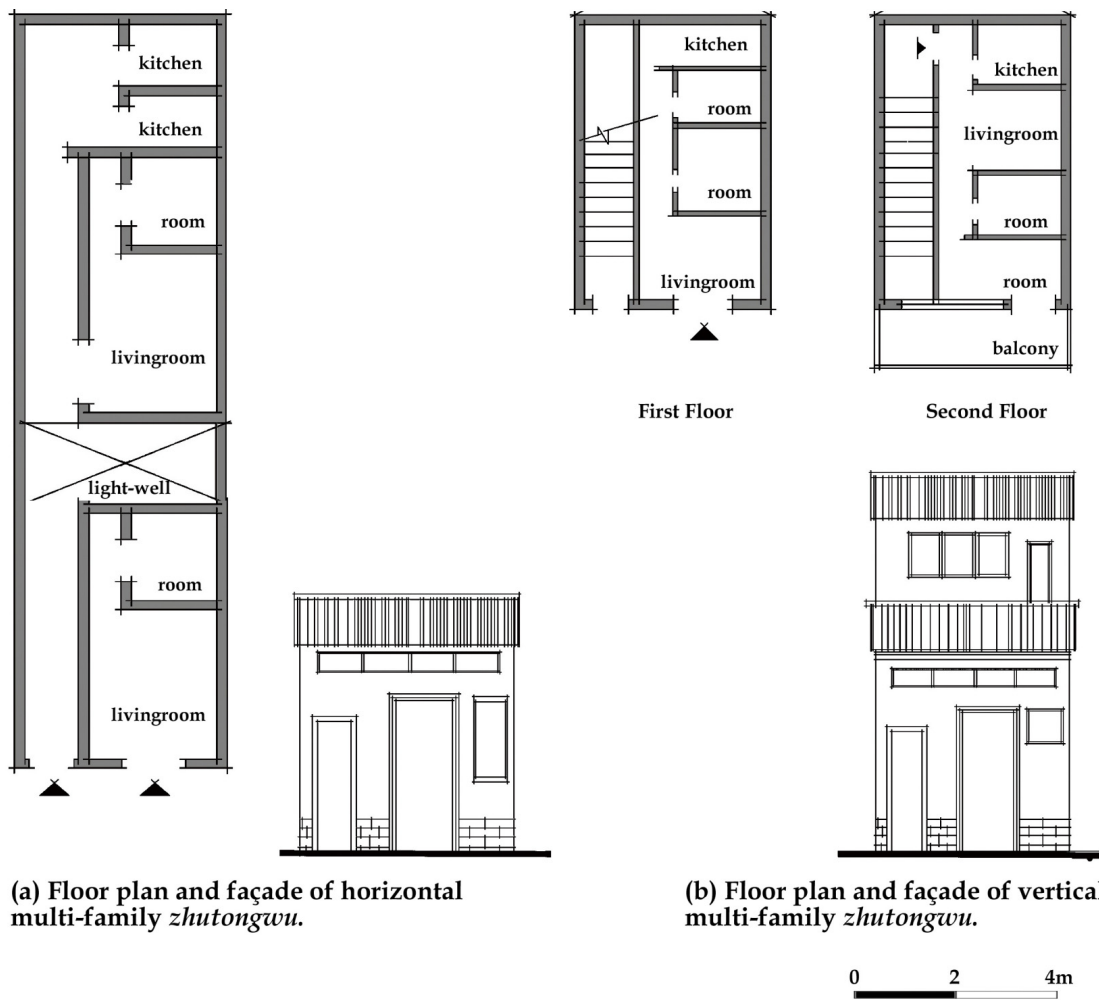
The advent of the multi-family zhutongwu

In deep lots, in particular those along the watercourses, buildings were extended horizontally on land reclaimed from the canal. Such transformations gradually led to the production of a new iteration of *zhutongwu* in the form of a multi-family residential type. This consists of two dwellings laid out on opposite sides of a lightwell. There was also the construction of multi-family residential forms associated with the vertical extension of

buildings owing to limitations on potential ground-floor space in small plots. Such transformations can be found, for example, in the Traditional Residential Dwelling Region. In most cases, a mixture of façade materials reflects the fact that the buildings have been redecorated and extended vertically, sometimes more than once, to two or three storeys. Less frequently, multi-family *zhutongwus* have apparently been constructed as new buildings. These variants of multi-family *zhutongwu* types were predecessors of the *zhutongwu* apartment type that appeared in the early-twentieth century (Figure 12).

The zhutongwu apartment and the 'doubling' process

A sizeable number of apartment buildings constructed between the beginning of the twentieth century and 1949 still exist in the Guangfunan area. Comparison of their floor plans with those of multi-family *zhutongwu* structures built in the nineteenth century,



(c) Photographs of the mixture of material on façades of multi-family *zhutongwus*.

Figure 12. A sample of multi-family *zhutongwus* in the Guangfunan area. Based on field survey, 2011.

strongly suggests an evolutionary process. The *zhutongwu* apartment is the result of the extension of the original *zhutongwu* house both horizontally and vertically. In a fairly high-density residential environment, such as in the core of the Traditional Residential Dwelling Region, the buildings are often built back-to-back. In most cases, the lightwell at the centre of the plot is the only means of achieving natural light and ventilation in the dwellings at the rear. In another transformation phase, the 1-*jian zhutongwu* apartment type has been 'doubled' to accommodate apartments sharing interior staircases and lightwells on plots 2-*jians* wide. In this layout, dwellings are located on either side of corridors extending from the front to the back of the building (Figure 13). Such transformations can be observed in Yangrennan Street and have also been reported in the Baoxiannan Road and Fengyuan Road areas (Gu *et al.*, 2008; Lu, 2008).

Since 1949 it has been common for several plots to be amalgamated for the construction of modern flats. This is a significant departure from traditional practice. Nevertheless, nearly 90 per cent of plots in the study area retain their pre-1949 dimensions.

The Qilou

After the Opium War of 1840-42, the presence of Westerners in Guangzhou influenced the introduction of new construction techniques and architectural styles. Buildings began to incorporate features of Western origin. This was particularly evident in the early-twentieth century *qilou* (Figure 14). However, although this Western influence was apparent in the building façades and the arcades at the fronts of buildings, the floor plans had considerable similarities to the compact *zhutongwu*-II. Such similarities strongly suggest that the *qilou* is linked to the local building tradition, and from which indeed it inherits many of its essential characteristics. Much previous research that concludes that the *qilou* is a colonial building type that mixes characteristics of indigenous and Western architectural styles (Lin, 2000;

Lin, 2006; Lin and Sun, 2004; Lu, 1990; Lu, 2004) arguably underestimates the influence of local building traditions.

The typological process

The identification and classification of the buildings types that are present in the Guangfunan area has provided a framework for understanding the diversity of the dwellings and settlements in that area. It suggests that simpler forms led the way to more complex ones, perpetuating inherited characteristics while incorporating new ones. It does indeed support the hypothesis that there has been a typological process in Guangzhou (Figure 15). The *sanjian lianglang* house (Type A in Figure 15) was almost extinct by the time the urbanization process unfolded in the Guangfunan area. Yet similarities in floor plans and the disposition of room functions strongly suggest the influence of the *sanjian lianglang* house on the *zhutongwu* (Type B in Figure 15).

The *zhutongwu* came in a series of variants, in relation to the location of the entrance and the lightwell (Figure 10b), as well as in two synchronic variants in the form of a more compact two-storey building, with or without a store at the front (the compact *zhutongwu*-II and compact *zhutongwu*-I, or B2 and B1 in Figure 15). The compact *zhutongwu*-I has appeared in less-standardized tissues, fitting within short plots created over the former canal as it dried up. The compact *zhutongwu*-II variant was triggered by the demand for specialized space devoted to commercial activity. Such space was created at the front, with residential space behind.

The rapid development of the city in the nineteenth and early-twentieth centuries led to pressures on land that were translated into greater residential densities. The original single-family residential forms (B and B1) were initially reorganized to accommodate two households. Dwellings were either located on opposite sides of a lightwell (B to C), or on each of the two storeys (B1 to C1, as well as B2 to C2 and C2'). Along with the intro-



Figure 13. Two diachronic types of *zhutongwu* apartments on ‘single’ and ‘double’ plots in the Guangfunan area. Based on field survey, 2011.

duction of new building technologies in the early-twentieth century, the process has gradually led to iterations of the multifamily *zhutongwu* apartment type.

The *zhutongwu* apartment incorporates attributes from both C and C1. It borrows the concept of stacked dwellings from C1, while adopting the back-to-back layout of the one-storey C type. The merging produces a multifamily building form of two or more storeys in which dwellings are arranged along a corridor on each floor (Type D in Figure 15).

The amalgamation of plots and changes in land utilization are salient characteristics of later transformations (Type E in Figure 15). Amalgamations of plots to accommodate larger buildings could presage the emergence of a new type that will flourish in new zones of

expansion in the city (Caniggia and Maffei, 2001, p. 186, for example, refer to the ‘successive doubling law’). Future extension of the study area would provide the opportunity to test such a hypothesis.

After the Opium War, intensive cross-cultural interactions influenced the architectural evolution of the Guangfunan area, as evidenced by the abundance of exogenous building attributes. However, the diachronic process from B to E reveals a strong filiation in which new buildings inherit traits from former types, including characteristics whose initial appearance could be linked to highly specific local conditions, such as the unusually short plots of the Former Watercourse Region.

Despite the speed of change, there are regularities in the way the process is struc-

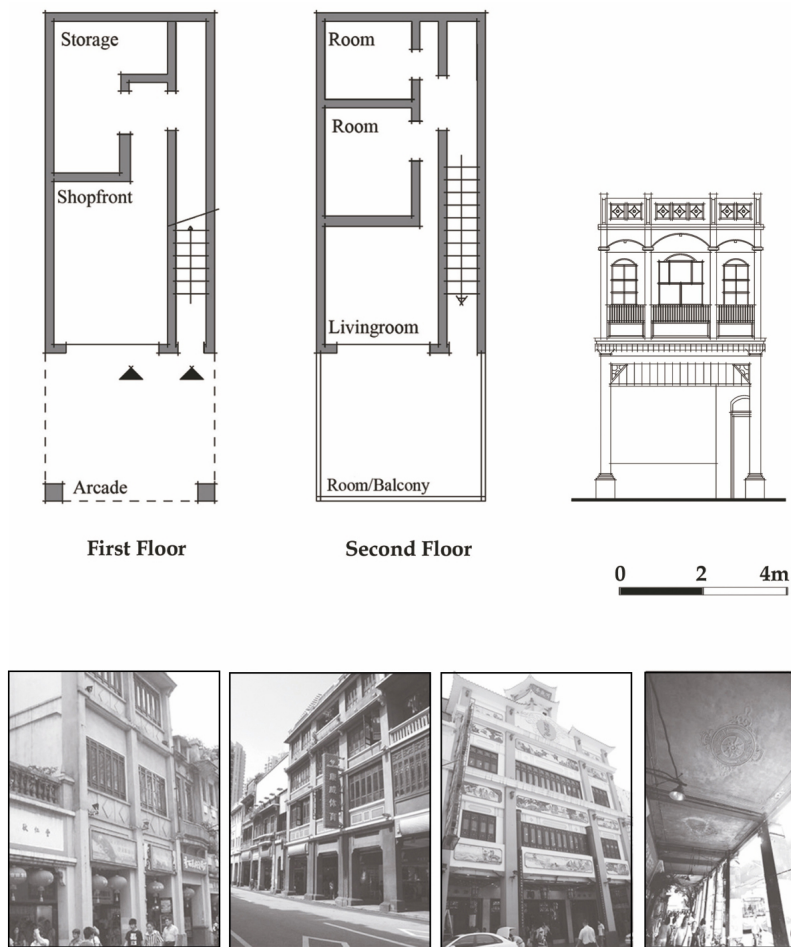


Figure 14. *Qilous* in the Guangfunan area. Based on field survey, 2011.

tured. Empirical evidence points to mostly spontaneous and incremental changes rather than drastic shifts. The response to changing requirements is specific and localized as transformations are informed by the constraints and potential for change ingrained in the local architectural, urban and geographical contexts. Exogenous influences on the local built environment may have been less significant than initially thought, at least until the mid-twentieth century.

Conclusion

This study is one of the first applications of Italian process typology in China. It demonstrates that such theory can be adapted to the

Chinese context, at least as far as the study of nineteenth-century architectural and urban forms is concerned.

The concept of the typological process sheds light on both continuity and change in the evolution of urban and architectural forms: on what can be called structural permanencies, or what remains the same in spite of change. These permanencies are an essential contributor to the local architectural identity. They reflect the way in which local people engaged with changing social and economic circumstances by articulating responses informed by their cultural experience on the one hand and grounded in local material and geographical contexts on the other. Morphogenetic analysis points to the intricate dynamic relationships between various components of the built

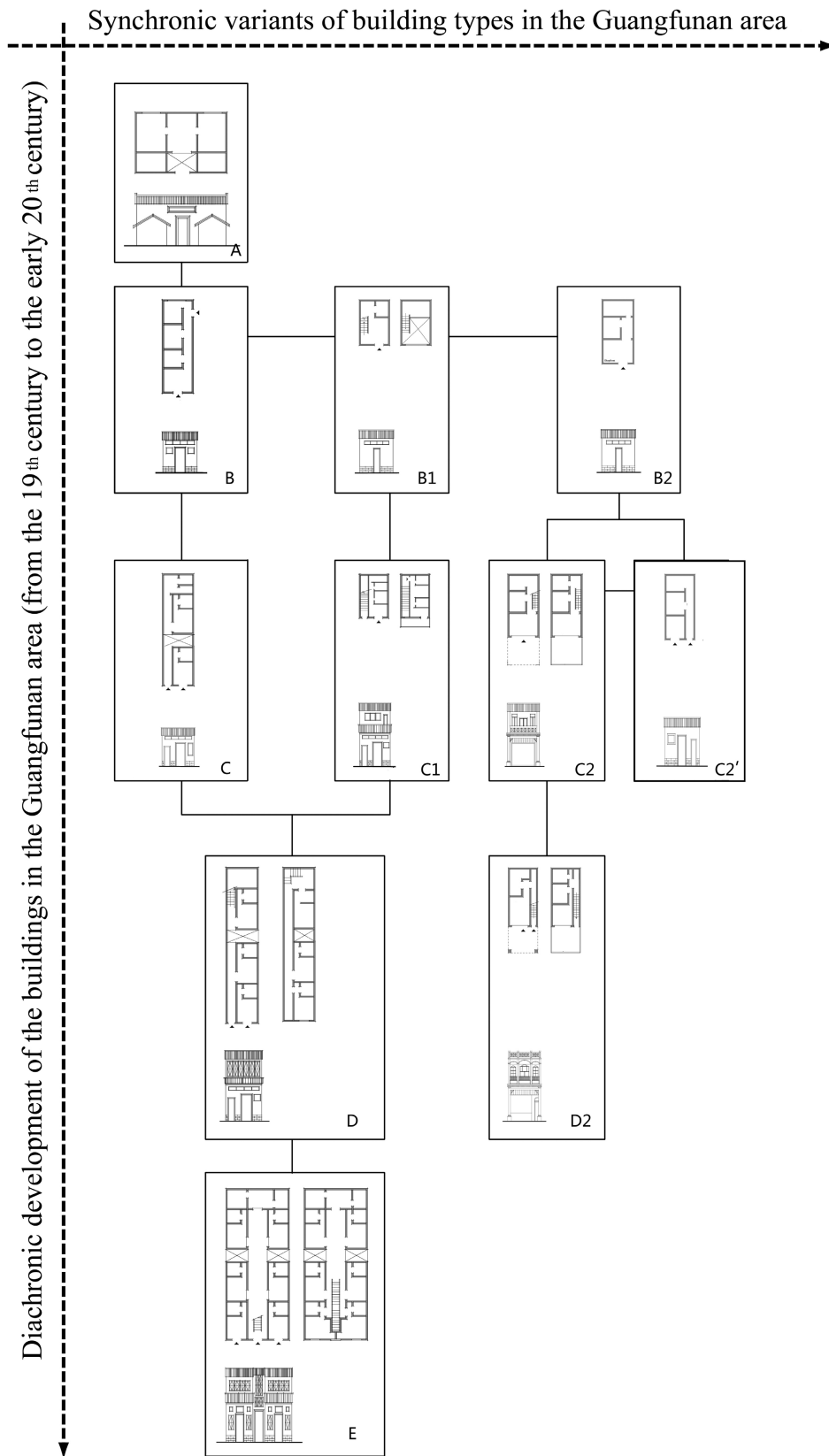


Figure 15. Reconstruction of the typological process in the Guangfunan area.

environment and the system as a whole. The analysis described here helps to better assess the extent of Western influence on the evolution of urban and architectural forms of Guangzhou in the nineteenth century. It turns out that such influence may well have been much less than initially thought.

By revealing the inherent connections between building types and urban tissue, and by stressing the influence of local conditions, this morphogenetic analysis demonstrates that the evolution of architectural and urban tissue is deeply embedded in its cultural, geographical and historical context. There is a cumulative effect in what might seem like individual acts of building and dwelling.

The analysis points also to the fact, although indirectly, that after 1949 the socialist reforms broke the continuity of the historical building process in the study area. More research will be needed to fully measure the impacts of such new development practices on Chinese material urban culture. However, the break induced by a shift in the mode of production of the built environment does not call into question the relevance of morphological research for contemporary planning. Beyond the production of historical knowledge – a most valuable undertaking in itself – morphological research has much to contribute to current practice, for example in planning and heritage preservation.

The steps outside the dwellings in the Former Canal Banks Region, for instance, have lost their initial *raison d'être*, but they denote the existence of private docks that were an essential feature of the waterfront commercial activity back to the fifteenth century. They are a concrete manifestation of some essential traits of Guangzhou urban culture that still resonate today. These artefacts point to the value of the inherited built forms in the study area, which calls for policies that would protect them from demolition. The conflict between traditional and modern forms, especially in a historical district, is one of the most challenging in current urban conservation and planning.

Planning policies should seek to balance the inherited historical attributes to be preserved

and the production of newly-built environments that respond to contemporary needs. Such a balance can be achieved by control of the transformations in existing environments, but it requires an in-depth understanding of the attributes that contribute to the identity of places and to historical transformation processes. This knowledge can be provided by morphological studies. Such studies can also draw attention to examples that merit emulation. Lessons can certainly be learned from the culturally- and historically-grounded experience of Guangzhou as to how to conjugate building density and richness of the urban fabric in the future.

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