



Verticality and Conflicting Identities in the Contemporary Chinese City: The Urban Development of Suzhou Industrial Park

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ABSTRACT

The unprecedented pace of urbanization and modernization of China in the last three decades has led to a huge restructuring of the pre-existent urban fabrics and the progressive reshaping of the city form, its inner structure and urban landscape, by promoting the growth of many new high-rise residential superblocks and suburban commercial, industrial, and business districts built around major Chinese cities. Famous for the UNESCO protected urban gardens, Suzhou has over 2,500 years of history. Like in many Chinese cities, the low-rise urban landscape of the old city clashes visually with the verticality of the contemporary built environment, especially evident in the new residential urban zones of Suzhou Industrial Park (SIP). Focusing on four selected case studies of large-scale housing projects in SIP, the paper explores how these new residential communities have engaged the themes of verticality and high-density living to create extensive constellations of modern but uniform high-rise urban communities. It also considers how and comment about the contradictions within this acontextual modern urban landscape, which mirror to some extent a larger trend in Chinese and other East Asian cities, in a phase of exceptional urban development and economic growth at the turn of the 21st century.

Keywords: Chinese cities, Suzhou Industrial Park, superblock, high-rise housing, Chinese modern architecture, East Asian urbanism

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1. INTRODUCTION

China's spectacular urban growth in the 20th century was heralded by the "Open Door" policy in 1978 and driven by economic reforms which was triggered by the unprecedented scale of internal migration, conducive to one of the largest urbanization processes in history ^[1-3]. Millions of people have moved from rural areas to old urbanized and new urbanizing areas, compressing in much shorter time an experience that was achieved over much longer periods in the Western countries and other East Asian developed nations. The rapid and massive urbanization of China and the transition toward a more urban model of society in the 21st century has been mostly characterized by a peculiar process of rural industrialization which in the view of the planner John Friedmann has been constructed around the designation of a few government-sponsored key coastal regions, such as the Pear River Delta, the Lower Yangzi Delta, the Capital Region of Beijing ^[4]. These metropolitan areas have become the main economic engines of this process, with the subsequent creation of a vast number of peripheral new settlements and scattered industrial zones in synergic relationship with other dense urban areas in proximity to these core key coastal regions. By 2017, China had become the second largest economy of the world after the US (which it is expected to overtake by 2028) and before Japan ^[5]. Reversing a process of ideological de-urbanization, which during the 1950s chairman Mao considered cities as corrupt and decadent, this process of progressive re-urbanization in China during the last 30 years has been directly linked to the radical shift in the economic structure of the country. Indeed, this process has triggered a massive movement from the internal rural areas of the country which has been carefully orchestrated by the central government to ensure a controlled and progressive process of technological modernization of China with the intent to secure a more relevant geopolitical role in the world economy ^[6-10]. Looking at the experience of Suzhou, the paper intends to highlight the disparate links

connecting various urban development patterns, socio-economic structure and the production of large-scale mass housing communities in the city.

1.1 Rapid and extensive urbanization in China

Radical infrastructure and industrial development and modernization have led to an unprecedented urbanization in China, both in scale and rapidity, resulting in expanding cities which must accommodate a new class of urbanites and more immigrants, resulting in a constant need for more large-scale residential buildings and integrated community services in what was once rural land. In 2013, the Chinese urbanization rate reached 53.7% while urban residents surpassed rural residents in number for the first time in Chinese history in 2011 ^[11,12]. With Chinese urbanization rate reaching nearly 60% in 2021, this frantic development in all major cities has completely transformed China's urban landscape, very often resulting in forms of diffuse sprawl characterized by high-rise and high-density housing types ^[13]. Since 1990, a total of 190 million cars have poured into the cities with consequent traffic congestion and environmental pollution, resulting in the creation of a very chaotic process of urban growth and the expansion of an unfriendly and generally poorly built environment ^[14-17]. The strong vertical dimension of most of the new constructions and other urban developments in the cities is closely related to the economic model inspired by the so-called "Socialism with Chinese Characteristics," that can be intended as a form of State sponsorship's neoliberal capitalism approach which has a strong influence on the urbanization agenda. The process of city expansion is the direct consequence of the development of urban infrastructures, public facilities and amenities, and above all of the large-scale high-rise urban residential complexes which are directly promoted by big developers supported by the policies of the central (or the local) governments in order to foster economic growth by means of urban

infrastructure spending. The construction of modern and comfortable collective vertical mass housing projects was without a question instrumental for their government's ambitious political and economic agenda. Therefore, the development and construction of large residential complexes received particular attention as this is related directly to the necessities of larger redevelopment projects in the cities which could be planned, organized, and integrated with new urban infrastructures, and in general related to the broad process of industrialization, economic growth, and eventually the modernization of the country.

1.2 Institutional and socio-economic factors shaping the built environment in urban China

The national urbanization policy of China is structured with the system of *hukou* (household registration) whose aim is to control the urban population growth and prevent free movement into large cities and other crowded urban centers by diverting them toward small- and medium-sized cities, which in general provide minor urban public services and social security supported by the government. New comprehensive plans for large regional networks of cities have fostered the formation of several sub-centers with the intent to decentralize and move people and activities from central cities, creating a new habitat of multicentric urban structures in large regions which interconnect urban and rural landscapes. In response to the government's economic and political agenda to increase the urban development as foundation of economic growth, Chinese planners and architects have proposed new radical projects for the planning and construction of many new towns located at some distance from the main urban centers. A good example of this comprehensive regional planning approach which seeks to combine and foster an integrated economic growth, social progress, planning control and political will, is the case of project for a new constellation of new towns around Shanghai named "One City-Nine Towns," which was

promoted and enacted since the early 1990s to decentralize excessive congestion of the major conurbation ^[18].

In general, a series of institutional and socio-economic factors have largely contributed to reshaping the model of urban development in China and have directly fostered the construction boom of residential buildings in the last two decades. These are mainly the distinctive Chinese system of land ownership, the tax system, and the practice of using the sale of land as financial tool to produce credits for the urban growth. With no exception, the land in China belongs to the local governments, which have the right to lease and sell it (usually for 70 years) as a major source of funding for local governments' activities and new urban plans. Typically, the local governments lease the land to developers at a lower price, who can invest large amount of money in lucrative new redevelopment projects which are sold at market price and bring high returns. The local government of many Chinese cities indeed rely on "land revenue" to finance new urban developments (housing and services) and the infrastructural expansion. Rural land at the urban edge is cheaper, and the large unbuilt space available present many potentialities for future development; therefore, local governments are strongly motivated to develop these areas with a view for future economic development, also because taxation for these areas is controlled by the municipality instead of the central government. At the same time, since the late 1990s, the central government has boosted the shift toward homeownership with the result that most of the citizens' savings and big companies' money are invested into the real estate market, triggering an unprecedented construction boom of urban residences and infrastructure, which has been the real engine behind the enormous urban development in many suburban areas of Chinese cities. Since the turn of the 21st century, this massive construction boom during the last two decades has supported the growth of a huge housing market which has also profoundly impacted the basic urban structure of the pre-

existing districts and altered the traditional framework of the social communities, and the lifestyle of people dwelling in the large cities.

2. RESEARCH METHOD

For this study, quantitative methods and qualitative, interview-based approaches have been implemented through substantial literature review, empirical direct observations, fieldworks, and direct on-site surveying. Spanning a period of several years, four representative examples of large housing estates and urban districts located in SIP Higher Education Town were selected and analyzed in detail using maps, photos and reviewing various graphic/documentary sources available, such as real estate brochures and catalogues.

The core materials for the study were collected during five consecutive summer fieldworks in 2013-2017, each supported by research grants (e.g. Summer Undergraduate Research Fund). Intensive and in-depth mapping, review and analysis of the existing literature and relevant documents has been conducted by the author prior to each fieldwork. Most of the primary activity for the study, such as interviews and on-site surveying, were conducted in August-September, involving the direct participation of the author with a group of 2-3 students. During the on-site survey, the author systematically collected photos, made sketches and videos, and conducted interviews with local stakeholders (real estate agents, planners, and tenants). Pre-arranged contacts with local design and planning companies, real estate's agents and other professional experts, and informal interviews with residents and tenants of the specified estates provided fundamental information which enhanced the progress and articulation of the study. Indeed, interviews have been used as benchmark to test empirical evidence and then incorporated in the final analysis, although without direct reference to specific contribution. No audio recording was used, but notes were taken and transcribed after each interview and following interviewee consent. In various phases of the study, the

students helped out as Chinese-English interpreters as well as translators for relevant documents and various written resources.

The direct analysis of the residential superblocks has highlighted many of their key spatial elements (in particular, layout design principles, footprint, street landscape, building typology, services provisions and collective facilities, transport connections, green provision, relations community-city) in terms of architectural typologies, planning and design approach and resulted impact on urban morphology, which have been reviewed and assessed for the present study.

3. FINDINGS

This part of the study illustrates the selected case studies in Suzhou Industrial Park and explains the typical mass housing pattern in Chinese cities by discovering similarities and trying to discuss key aspects of the institutional reasons behind them. It also explains the links between urban development path, economic structure, and socio-political structure.

3.1 Origins and evolution of Suzhou Industrial Park (SIP)

The economic growth and extensive urban development of China during the second half of the 20th century has been largely based on the planning and construction of many schemes of new towns and urban clearance projects, following the lessons of the Western city planning theories developed since the 1930s (Western Europe, Soviet Russia, the United States) and further developed at the dawn of great economic growth following the end of the Second World War. In China, these new urban entities have been designed as response to several problems (social, economic, political) mainly caused by the excessive concentration of functions and people in the few main conurbations of the country, with special consideration for the Capital Region of Beijing and Tianjin conurbation and other important urban conurbations (e.g. the Shanghai-Suzhou metropolitan area, the Pearl River Delta area and the Hong Kong-Shenzhen region). In six decades, different types and models of new

towns have been developed, some designed to be plain bed towns, other more recent models developed as prototypes of “eco-cities,” and a number built (with mixed success) as a showcase of the newest technologies both for buildings and the productive systems. Concerning the model of urban renovation and expansion of existing cities, the lessons from Suzhou urban development projects is very relevant.

Suzhou is classified as one of the second-tier cities in China. This industrial city of five million people is set in the Yangzi-River-Delta, along the axis which connects Shanghai metropolitan region to Nanjing. Suzhou has experienced a radical urban development and fast economic growth focusing on the promotion of industrial innovation and high-quality service production. A combination of foreign direct investment (FDI) and domestic investment have fueled an impressive GDP growth, which has directly impacted on the overall transformation of the city into an important commercial and highly regarded cultural and technological innovation center in Jiangsu Province. One of the main urban development projects that have driven the recent success of Suzhou as a global city with an illustrious heritage and an ecological touch was the development of the SIP project. This was planned and designed as high-tech industrial park, filled and integrated by a variety of research institutes, liveable green residential areas, tempting new commercial complexes, various national and international academic institutions and medium to large industrial factories and firms of local and multinational companies.

In SIP, the infrastructural system serves the employees of large multinational and local firms who live there within urban areas containing residential buildings, hospitals, education facilities and shopping centers. Typically, the multi-functional districts filled with extensive and dense residential and commercial areas provide higher standard of living and require better-quality services than those available for conventional industrial areas ^[19]. Since the eco-city was generally

seen as a possible solution to the multiple challenges related to the need to minimize consumption-related waste and pollution from industrial and commercial factories, it was assumed that the implementation of the concept of the eco-city in the planning and design of SIP was both suitable and consistent with the intent to attract investment, high-tech companies and skilled immigrants to the area. This approach in turn has helped its development at an urban scale while ensuring additional support to the rapid economic development and urbanization of the larger metropolitan area of Suzhou City. During the different stages of the execution of the project, the central government strongly advocated and supported the eco-city construction in SIP. Unlike traditional industrial park, the SIP not only provides services for basic industrial functions, but also offers liveable, green residential areas, as well as generally well-maintained, efficient and highly attractive commercial services. Since many cities in China aim to build or are trying to build eco-cities, SIP district was intended to serve as a model of ecological development, and exemplary showcase of technologies, methods and completed projects from which other cities could learn and possibly imitate ^[20-22].

The UNESCO-listed historic gardens and the waterways are the best-known urban elements of the historical districts of Suzhou, which was described by Marco Polo as the “Venice of the Orient,” as the Venetian traveler compared the numberless artificial canals of this Chinese city, to the sea canals of the Italian city. In the last few decades, two important development projects have reshaped the general layout of the city, whose master plan and urban structure can be essentially divided into three main areas or zones defined according to the vision of “one body-two wings”: the central core of the city containing the historical city with its rectangular shape of grid street pattern ^[23]; a Western district known as Suzhou New District (SND), and an Eastern area named Suzhou Industrial Park (SIP), a large and well-designed and landscaped green park

(according to SIP planning codes, around 40% of all the land was reserved and destined for green space), which host many foreign high-tech companies and other educational and industrial and research facilities integrated in a vast system of public services.

3.2 SIP master planning: Flagship architectures in the CBD and Dushu Lake Higher Education Town

As a new emergent cultural and industrial metropolis located between ancient Nanjing and futuristic Shanghai, Suzhou presents an evident dichotomy, represented by the ancient city with its low-rise and dense core full of vitality, and the sense of history still found in traditional architecture, and public spaces along small streets and retails mixed with residential areas, which stand opposite to the

new densely developed suburban areas of SND and SIP [Figures 1 and 2]. In fact, these two major suburban zones are true expression of the global ambitions of the city through the modern and impeccable sharp lines of high-rise towers immersed in an urban tissue prevalently without mixed functions, with the retail and commercial activities largely separated and organized and concentrated at the local scale into specific neighborhood centers serving their semi-secluded communities. Here, the city is truly a patchwork of mini community villages and micro-towns separated by walls, streets, and green buffers and fences, whilst the historic city shows in large untouched parts of their residential areas a more comprehensive design and the feeling of being part of a larger whole.



Figure 1. The townscape of the historical district of Suzhou. (A) Gongyuan Street and (B) Pingjiang Road. Source: Photos by the author, 2018

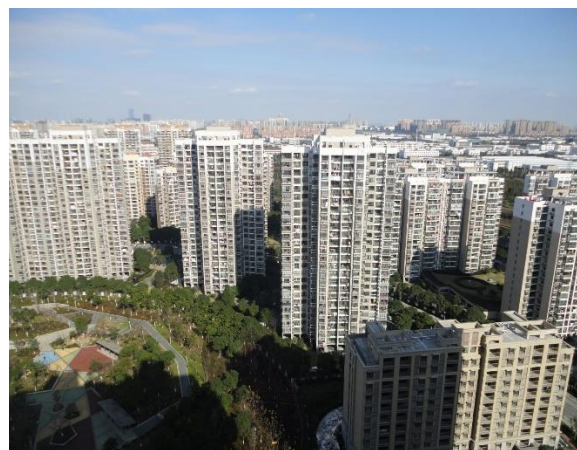


Figure 2. The view of high-rise towers in Dushu Lake Higher Education Town, Suzhou Industrial Park. Source: Photo by the author, 2018

The large urban area of Suzhou Industrial Park (originally named Suzhou Singapore Industrial Park or SSIP, now commonly referred to as SIP after the partnership with Singapore ended due to unsettled conflicts during the process of development of the area), was set up originally as a joint venture between Suzhou Metropolitan Government (under the sponsorship of the Chinese government) and the Singapore government. It was intended as a prototype and demonstration project of a modern and exemplary industrial district conceived on the most advanced planning strategies and up-to-date urban design concepts as developed in Singapore, with the intent to provide a model of new town from which other Chinese cities could learn from. Following initial discussions in 1992, Singapore Suzhou Industrial Park was thus co-founded in February 1994 by the Singaporean and the Chinese governments as a joint project with the intent of introducing China to the urban planning practice and urbanization techniques of Singapore. At the time, Chinese leaders were strongly impressed by the achievements of Singapore, spacing from economic development to infrastructure and design capabilities, and building technologies innovation: "Singapore is in a good society order due to strict management. We should learn from their experience and do better," as commented by Deng Xiaoping in occasion of the presentation of the plan of the new area in Suzhou. Singapore urban planning system was also imported into this experimental new town, and SIP was determined to be an "international, modern, informative and eco, creative, happy new town."

The framework of the Singapore model was used as foundation for the initial development of SIP, especially concerning new concepts such as functional zoning, neighborhood system, spare land and green belts. The experts from Singapore and China formulated planning proposals based on the extensive experience of Singapore urban planning but adapted to the actual situation in Suzhou ^[24]. Indeed, this large project was

built with the deliberate scope to create a comprehensive urban entity of districts and development zones within a new town not far from Suzhou. Most importantly, it would feature first-class industrial infrastructures, clusters of planned islands of mostly self-secluded residential complexes (essentially gated communities inspired by the concepts of Clarence Perry's "Neighborhood Unit") and high-standard services and technology incubators, while promoting and "branding" the new image of the city at a national and international level ^[25]. These proposals included the preparation of the master plan and the layout of industrial, commercial, traffic, residential, and landscape functions. The knowledge and know-how borrowed from Singapore's consolidated city planning and design experience on various innovative planning methods and construction and management practice were implemented and integrated during the different stages of the construction and development of various SIP projects, to manage and minimize short term and long-term alterations of the original plans.

With the goal to achieve a high standard quality of the individual projects at various scale and limit malpractice and failures, strict building codes and an effective set of elaborated planning rules and environmental quality control systems were operative at SIP from the beginning to safeguard the ecological sustainability, and ultimately the general economic, mediatic and social success of the entire SIP zone.

Waves of new immigrants were attracted by the new positions created by new factories in SIP, while the original farmers were displaced and then relocated into newly constructed apartment blocks built to control this rapid urbanization process. The number of people living in SSIP in 2010 was 762,000 inhabitants, and the plans for developing a new urban area on the western side of Suzhou named Suzhou New District (SND) further fostered the urban growth of Suzhou; in a few years SND and SIP became important poles of attractions for activities and people, which prompted a higher demand of new residential

projects in the last 20 years to house growing numbers of residents.

The key urban elements that connect the vast extension of SIP to the old historical districts of the ancient city are the renovated CBD and the new entertainment and financial district surrounded by extensive open public green areas and other commercial and cultural services. These spaces are developing along an ideal east-west axis stretching from the complex of offices and commercial zones clustered around the malls and the residential tower of the Gate of the Orient, the new symbolic landmark of Suzhou, to the recently completed tower of the new financial district nearby Suzhou Times Square. The vertical development of this part of the city is responsive to the current trends toward the search for an urban image inspired by globalization which affects many other Chinese cities, as well as the need to brand the new Suzhou of high-rise towers as opposite more than integrated to the old Suzhou, with its traditional horizontal gardens and the old waterways and canals. The two new fundamental urban areas of SIP are placed one around the eastern and western sides of Jinji Lake and another on the edges of Dushu Lake to the south. They are examples of modern and international architectural and creative city planning and design practice with a local touch because urban design has an important role in materializing the vision of the future for the city and is used as flag of the globalism of Suzhou. The central spine or main axis of services and office towers clustered around the city's CBD and focused on the double towers of the Gate of the Orient on the western side of the Jinji Lake connects the Financial Tower on the eastern side around Suzhou Times Square. This is one of the most relevant urban projects built in SIP on a monumental scale, and its vistas and visual long axis stretching along the open space from one side of the lake to other.

The impressive skyline of the core of SIP is thus dominated by the Gate of the Orient [Figure 3], the city's famous landmark standing above the Suzhou Center (a multi-level mega-mall), from which visually

departs an axis that frame the new iconic skyscraper of the Suzhou International Financial Square. Several new entertainment waterfront areas have recently been developed, connecting along an ideal east-west line several urban functions and international-level facilities on the lakeshore, such as the Jinji Lake International Exhibition Zone, the Culture and Exhibition zone, the Art Center and the Conventional Hall, and Moon Harbour, Ferris Wheel Park and Times Square entertainment area [Figure 4], all set on the east bank of the lake. The architectures are modern in style and monumental in scale to impress the tourists and enhance the feeling of global taste of the lakefront. Along the green promenades close to the water, several different types of restaurants, pubs, and fashionable shopping areas are surrounded by a large and attractive open park, carefully designed as a system of public spaces with beautiful sightseeing spots and picturesque and natural landscape views.



Figure 3. The view of the Gate of the Orient and Suzhou Center Shopping Mall. Source: Photo by the author, 2019

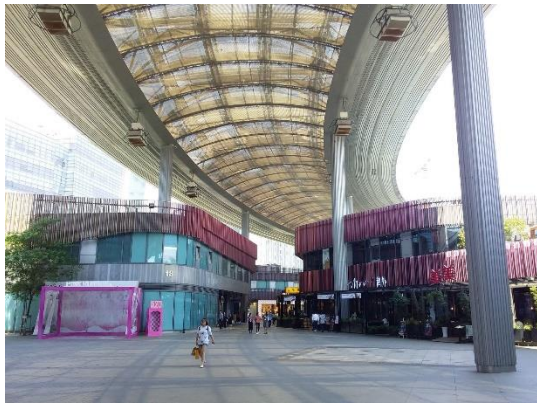


Figure 4. The entertainment and shopping complex at Suzhou Times Square. Source: Photo by the author, 2019

Especially in the last decade, tourism is becoming more relevant in the economy of the city, and the colorful lights of the bright façades in the night transform large sections of the city into an artificial scenography in perennial celebration of some special event, with an effect that is both appealing and strange. Indeed, the kinetic cornices and neon lights of the buildings and towers create amazing views of electrographic architectures which transform the usual cityscape and provide every night a show of visual richness and blasts of vivid colors, changing graphic patterns and bizarre light effects in the sky which intermingle with street lights and flashlights, bar signs and other street signals on the ground. The new visual environment which can be seen in the night in the lakefront in SIP is something that is replicated everywhere in other major Chinese cities which aspire to be part of the urban elite and recognized as a legitimate global city.

Southeast of Suzhou CBD lays Dushu Lake Higher Education Town, a research and education pole which is set on the eastern bank of the Dushu Lake and comprises an impressive number of university campuses and academic institutes, both Chinese and international, such as Soochow University, Xi'an Jiaotong-Liverpool University, the University of Singapore Research Institute, and Renmin University of China, which provide and combine a big variety of facilities and accommodation types for students and researchers into a green and pleasant

environment. The new residential areas, planned and designed as huge high-rise and high-density closed communities, have seen a steady and progressive development of a large number of apartment complex projects which have attracted workers and immigrants alike who are employed in local factories and industries, especially in the service sector.

3.3 High-rise residential superblocks in SIP

Property-led urban development in China has been conceived on the idea to foster a rapid economic growth and promote a far-reaching physical transformation of the cities by selling government land to private developers to fund large residential projects and urban infrastructure investments and unleash the benefits of a market economy in terms of job creations and service supplies [26]. As such, the property development in Suzhou has constantly gained prominence in terms of national GDP numbers, and as the open market inaugurated since the early 1980s took hold, housing and apartment have been conceived as goods to buy and sell, resulting in a primary form of lucrative financial investment. Internal immigration into the new, developing industrial districts and the effects of an aggressive economic reform have accelerated this trend with the result that in general, the production of high-quantity housing stocks had precedence over its overall quality, in Suzhou like elsewhere in China. A concomitant action of multiple factors related to the profound changes driven by the sustained economic growth and progressive urbanization process since the 1980s has produced substantial transformation in the typical urban structure in the modern Chinese city. Since the late 1990s, the *Danwei* enclaves, mixed residential and working units developed since the 1950s after Russian models, have been evolved and redefined as *Xiaoqu* (or gated superblocks) as a fundamentally extensive and super-dense residential gated communities, mostly designed as high-rise apartment blocks [27-29]. Large-scale urban gated community projects have become the

most typical form of residential community for developers and Chinese local governments by now, both aiming to maximize their commercial profit and to enhance the sense of security and control for the urban neighborhoods. This new type of gated residential superblocks shares several formal architectural aspects and similar planning methodology of its precedents and are structured as standardized high-rise towers of apartments with generous dimensions inserted into large green spaces, commonly with a few playgrounds and minimal communal services. The development of such large-scale gated communities is strongly supported by government policies and mainly driven by market demand which builds on the desire for the new wealthy and middle-income citizens to move and live in brand new, large, and modern apartments set in green, well-maintained and nicely landscaped and decorated gardens as status symbol. But the rigid management system, the omnipresent fenced boundaries and CCTV at the corners of the walls, the constant surveillance by guards in uniform standing at clear checkpoints and at the main car entrance and gate of the communities became explicitly indication that while security is a main concern, another function of this residential superblock type is to control the citizens' life and activities^[30,31]. To the residents, the sense of security generated by living in tightly controlled and generally well-maintained gated communities becomes a contributing factor which enhances a feeling of stability and reassurance of their social status in their daily life. In this regard, the developers and real estate companies are functional in promoting and advertising the sense of security and the higher standard of living in new gated residential developments, which are now the largely preferred type of residential community in the Chinese city, contributing directly to the fragmentation of its urban tissue in countless macro units.

In China, like in other parts of East Asia, the allure of Western names, lifestyle, images and icons has triggered a rush for the branding

and marketing of new exclusive residential projects and developments by stressing concepts like exclusivity, comfort, and elegance. In these terms, the gated communities have thus become the most popular form of residential communities and the place where people choose to live and invest in to show their privileged status. In Shanghai, between 1991 and 2000, about 83% of residential neighborhoods were gated^[32], and in 2002 the Ministry of Construction reported that more than 80% of housing stock was privately owned^[18].

Hyde Park, Lotus Village Community, Lakeview Community, and Living Bank Community (Feng Qing Shui An) housing complexes are typical examples of large-scale residential projects designed and built as superblock gated communities in SIP [Figure 5]. All these projects are located in Dushu Education Town and are examples of hybrid large-scale middle-income residential developments, whose scheme and organization of the communal services, and of public and semi-public spaces are inspired by the lessons and layouts of former precedents like the Russian micro-district and US's Neighborhood Unit principle. However, often the profile of the imposing apartment towers typology has an unmistakably East Asian flavor and skyline, recalling the urban environment of Hong Kong and Singapore, even though the general construction standards show less quality and innovation. The built environment and the urban landscape are hence structured by integrated elements connecting large district (gated superblocks or *xiaoqu*) clustered around community centers inspired by different urban planning theories.

Lotus Village was built in 1998 as relocation community of eight villages to host new immigrants, and many of its residents are former farmers who lived in the rural areas before the development of SIP project and were eventually displaced and relocated. The Living Bank and Hyde Park are newer residential communities built from 2008, but much smaller in their extension [Figures 6 and 7].

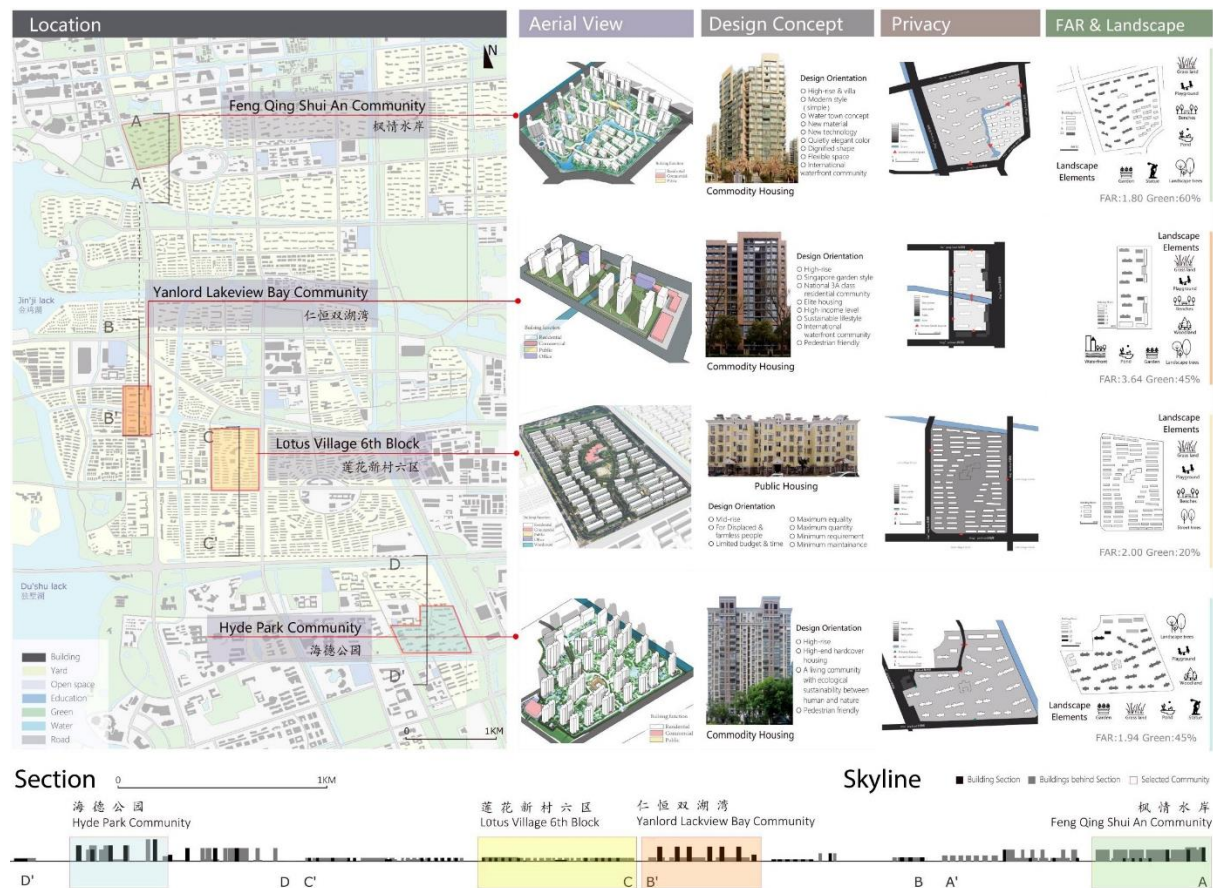


Figure 5. Comparative chart of selected residential blocks in SIP. Source: Compilation by the author, 2017



Figure 6. A typical model of gated community in SIP – high-rise and landscaping at the Living Bank Community in Dushu Lake Higher Education Town. Source: Photos by the author, 2017



Figure 7. Green and high density in a gated community in SIP – landscaped garden of Hyde Park Estate in Dushu Lake Higher Education Town. Source: Photo by the author, 2017

A mixture of strict building codes (to maintain minimum standards) and the tendency to maximize the economic profit of the developers are behind the standardization of physical planning and design of large residential complexes, whose urban plans, architectural forms and interior layouts lack variety but are usually quickly implemented and easily managed in terms of construction and marketing. The architectural typologies implemented for the design of the residential units is the high-rise tower apartment blocks, which are suitable to reach high densities because most of the space on the ground is used for green areas and motor streets, while giving room for additional services and leisure spaces. The residential blocks have common characteristics: they are mostly mono-functional enclaves gated with walls, fences and often electric fences as safety precautions, and the gates have closed-circuit television (CCTV) and checkpoints and are regularly patrolled by guards and other security. The internal public spaces which contain the collective services (small retails, health and medical facilities, libraries and other sport and cultural areas) are heavily landscaped green areas (in Suzhou up to 30%–40%) with public spaces for resting and other communal areas for daily outdoor activities, even though the green is mostly used as decoration and is unpractical for most residents. These compounds form large superblocks which are filled with distanced south-facing high-density towers and slabs (because of the sunlight requirements) with an imposing skyline, with façades in various

colors, style, and shapes, but monotonous in the repetitiveness and inhuman scale, with 20–30 floors of flats because of the implementation of high floor-to-area ratio (FAR). These superblocks shape a landscape of frantic vertical volumes through a high-density urban development which minimize the construction costs while maximizing the gains for the developers (the higher the FAR, the higher the profit). All the blocks present broad setbacks and are surrounded by wide streets which are designed for heavy traffic with cars, which is often the main transportation mode. While the central government has attempted in recent years to open the fences and the walls surrounding the towers to break up the precincts and limit the obvious problems of permeability which fragments the city, most people still see them in favorable terms as a protective barrier from outside insecurity and risks. Permeability inside the gated communities is also a problem, as superblocks commonly use large parts of the open space for gardens and other green landscaped areas which host dense high-rise apartment blocks, therefore movement inside the gated communities requires long walking distances. Instead, car streets dominate the urban scene outside the gated communities, even though the long distances among the various parts of the city are getting more connected by efficient public mass transport services, such as bus and the new lines of extended metro, which now run north-south and east-west.

In terms of overall general planning, the lesson of the Neighborhood Unit system proposed since 1929 has been imported from Singapore and extensively applied to structure these new urban residential areas. Among the key planning elements inherited from the UK planning legacy, Singapore adopted this model in its urban redevelopment in the 1960s to support the “public housing” policy. This has resulted in an efficient way to organize the local residential communities and overall proved to be successful in providing various commercial and public services integrated

with residential elements at the community level.

It is interesting to note that the Neighborhood Center as an effective urban planning concept has been imported in the forms developed in Singapore and then systematically applied to the mass housing projects throughout all of SIP, being a practical spatial unit, which can organize larger urban districts at the local core. These units can be easily, physically, and functionally enclosed, and are highly responsive to traditional Chinese urban design approach, which tends to emphasize enclosure and separation over connectivity and permeability. In fact, Singaporean design firms and construction companies were largely used for the first stage of SIP development, and this allowed the import of an architectural style and a use of the landscaped areas reminiscent of the ideas circulating in Singapore, especially the ideas around the concept of creating a model of the "Green Vertical City."

Yet in Suzhou and more generally in China, these residential superblocks share some similar characteristics which have the same problems. All the towers are strictly standardized types and responsive to strict building codes and are ordained and orientated to the same direction because the required direct sun-access for the apartments, and this explains the image of endless, monotonous rows of parallel tall slabs and towers which allow for little flexibility of the urban layout and masterplan of the cities. The vacuum around the towers and slabs generates extensive decorated areas which contain a minimum of collective services; on the external edge outside the gated perimeter of the enclave, facing the streets and the public domain, small shops and retails are surrounded by wide traffic arteries and is common that un-used setbacks among these transform large portions of public space into unfriendly and mostly unused urban areas. Regardless of the intensions of architects and planners, too many housing projects do not provide enough services and public spaces where it is possible to enjoy a variety of

activities so important to grant urban vitality to the city, being essentially residential enclaves.

Long-term urban sustainability practices and attention to ecology protection has gained much relevance in terms of waste management, and urban mobility and transit circulation; separation and recycling of the urban waste is a practice more and more popular among the citizens, and largely supported by administrators and local and regional governments. The development of efficient and effective mass transit infrastructures is seen as an important asset for the future, and several new metro lines extension have been completed while the promotion of walkable spaces, electric bike usage and bike sharing services are quite diffuse and contribute to the overall partial success of Suzhou SIP model of eco-friendly urbanization.

4. CONCLUSION

The process of rapid urbanization in China implemented during the past few decades has disclosed several problems and contradictions which are typical of a country and a society that strives to modernize its economy, expand its urban environment, and transform cultural features under a very strict top-down controlled program. This has resulted in an increasing need for a functional upgrading of the city, especially the mobility network, which has been recently expressed in an evident car-oriented urban development which inevitably clashes with the needs of the preservation of the fragile pattern of the traditional city. Furthermore, it also has highlighted the importance of preserving the industrial development while protecting endangered eco-systems and limit pollution among the population.

Suzhou is a city with an urban fabric which stresses the differences between the modern suburbia (vertical and hyper-dense) and the ancient historical core (low-rise and compact), which are neatly separated by time, scale, and forms. The new vertical image of the residential superblock in SIP inspired by the lesson of Singapore has produced a built

environment and an urban context which may seem flashing and captivating for a consumerist society but proposing urban forms and spaces which can hardly be integrated with the more traditional local context and the authentic original “genius loci” of the place.

For cities like Suzhou, which has inherited a long and remarkable historic past, the key stakeholders like the government, the developers and the planners should put more efforts to conciliate heritage protection, promoting ad hoc regeneration projects (more than new construction initiatives), and shift toward a clear emphasis on more sustainable forms of urban development beyond rhetoric and economic-driven considerations. Like many Chinese cities, Suzhou has rushed to modernize the urban infrastructures and its housing stock. But, like other cities, Suzhou is now lingering in a post-growth, post-industrial condition which is heralded by the reality of expected demographic decline, slow growth, and future urban conditions like shrinking cities, depletion of resources, environmental concerns, growing localism and aging society, all factors suggest setting up a new and comprehensive urban and architectural agenda for the rest of the 21st century. A series of breakthrough both in the planning policy and urban design approach is urgently needed to face the challenges of the coming years to reform the urban spaces and make them more suitable for an increasing aware and balanced urban society. Particularly important will be the need to control the constant increase of urban land price and real estate values, while breaking the excessive reliance in China on the “property-led” urban development which has been the real growth engine behind the recent modernization of urban China but at the cost of crescent social inequality and environmental depletion.

5. RECOMMENDATIONS

The analysis of some representative new high-rise residential urban superblocks in SIP has revealed several shortcomings and relevant problems when it comes to the

planning and design for modern living in high-density urban contexts. In this sense, a possible agenda for the coming decades would be to shift the attention to issues of urban sustainability and environmental protection. In fact, it will be vital for China to design and produce complexes of buildings which are less energy-demanding, given that high population density cities like Suzhou consume great amounts of energy which in China are still now largely supplied by the extensive use of coal, a pollutant which inevitably cause health hazard and ecological disruption with obvious impact on the quality of life in the city. Much attention should be directed toward the proposition of a new approach in the planning and design of the physical forms of the residential communities, which in the coming years should aim at producing urban residences and communities which are more livable, present more variety, and offer greater affordability focusing on local and regional needs. The problem of limited stocks of urban affordable housing is at the forefront, and it will require enormous efforts to drive Suzhou and other large cities of China toward more social justice and stability. This goes in pair with the promotion of a more effective economic balance with the vast rural areas present in the country, given that the large majority of urban immigrants currently struggle to find appropriate accommodation because of the high cost of buying or renting housing units.

Finally, it would be important to foster design innovation, experimentation and creativity in the planning and design profession with more public competitions and pilot projects at local and national level, thus moving progressively from a limited range of residential models and types. This will be extremely useful with a view to produce a larger variety of neighborhood layouts and architectural forms integrated with open spaces and green precincts which are not only decorative areas (like in too many contemporary projects), but conceived and designed as mixed-use public areas serving mixed household types in new developed

multi-functional urban residential communities.

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CONFLICT OF INTEREST

The author declares no conflict of interest.

FURTHER DISCLOSURE

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