Shanghai Urbanism:
Reflections from the Outside In

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Executive Summary

This report was prepared by graduate students who took part in York University's Critical Urban Planning Workshop, held in Shanghai, China in May of 2015. Instructed by Professor Ute Lehrer, the course was offered in the context of the Major Collaborative Research Initiative on Global Suburbanisms, a multi-researcher project analyzing how the phenomenon of contemporary population growth, which is occurring rapidly in the suburbs, is creating new stresses and opportunities with respect to land, governance, and infrastructure. As a rapidly growing city, Shanghai is exposed to significant challenges with regard to social, economic, environmental, and cultural planning. The workshop was rich in exposure to a myriad of analyses and landscapes, combining lectures, field trips, and meetings with local academics, planners, and activists, our group learned about the successes and challenges facing China's most populous city. Indeed, this place-based workshop allowed for spontaneous exploration outside of the traditional academic spheres as well, and therefore the reflections shared in this report encompass the more ordinary, experiential side of navigating Shanghai's metro system, restaurants, streets, and parks in daily life.

As a rapidly growing city, Shanghai has achieved numerous successes and faces significant challenges with regard to land-use, social, economic, environmental and cultural planning. As a team of prospective planners with diverse backgrounds, we met with local academics, planners, and activists, and engaged in lectures and field research in Shanghai and nearby towns with the aim to learn from the planning context in Shanghai. We are seeking to explore directly the lessons that the City of Toronto can learn from with the planning related experiences in Shanghai. This research report places focus on land use planning, housing, real estate development, property rights and infrastructure in Shanghai. Particular focus will be placed on Urban Agriculture Disaster Management; Urban Revitalization; Industry/Economy, Disaster Management, Urban Redevelopment, Public Space/Urban Design, Transportation (Subway, Bike Lane, Cars), and Energy & Sustainability, as these are topics that will be discussed in this report.

Shanghai is China's largest commercial and industrial city, with a population of more than 24 million as of 2013 (Shanghai Bureau of Statistics, 2014). It is a global financial center and a transport hub with the world's busiest container port (World Shipping Council, 2015). With 0.1% of the land area of the country, it supplies over 12% of the municipal revenue and handles more than a quarter of total trade passing through China's ports (Pudong Planning Institute, 2015).

The city has the highest population density of all the first-order administrative units in China. Owing to its continued growth and industrial and commercial development, Shanghai also has the highest index of urbanization among all of China's first order administrative units, with 89.3% of the official population classified as urban (2010 Census data, National Bureau of Statistics).

Pudong panorama at night, Shanghai, 2015, photo by Nelly Volpert

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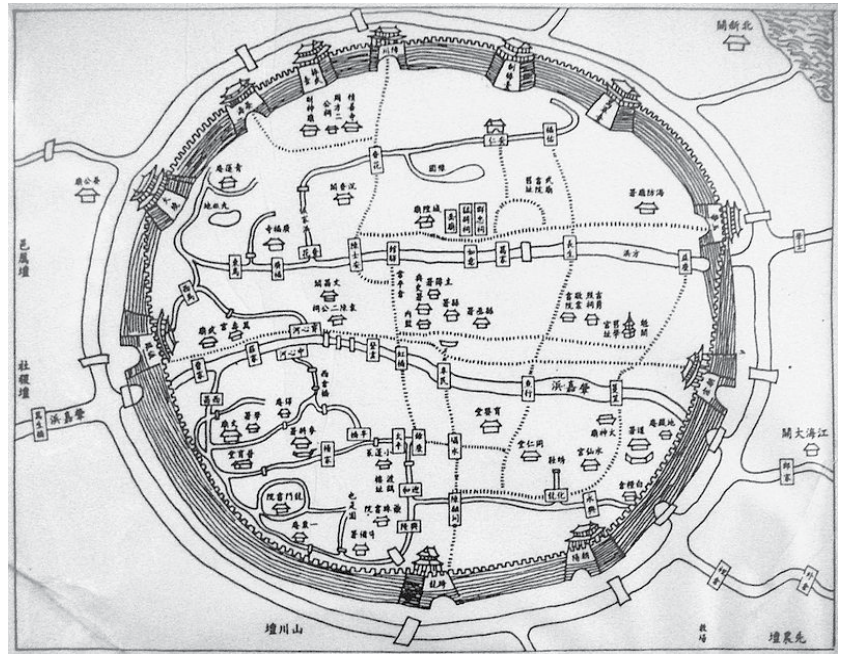
Introduction to Shanghai

The history of Shanghai spans over a thousand years and closely parallels the development of modern China. Originally, a small agricultural and fishing village, Shanghai developed during the late Qing dynasty (1644–1912) as one of China's principal trading ports (Shanghai Urban Planning Exhibition Center, 2015). Since the economic reforms of the early 1990s, the city has burgeoned to become one of Asia's financial, trading, and industrial centers.

In 1074 during the Song dynasty, the settlement was upgraded in status from a village to a market town (Guan, 1996). Shanghai first became a city in 1291 during the Yuan dynasty. At this time, five of Huating Zhen's villages were amalgamated to form a new Shanghai County (上海县; 上海縣; Shànghǎi xiàn) on the site of the modern city centre. This new settlement had a population of about 300,000 with many engaged in the shipping trade (Guan, 1996).

In 1553, a city wall was built around the Old Town (Nanshi) as a defense against the depredations of the Wokou (Japanese pirates) (Shanghai Urban Planning Exhibition Center, 2015).

After unsuccessful attempts to trade tea, silk, and opium with China, the United Kingdom forced Qing dynasty rulers to import British opium (which it produced in British India) by waging the First Opium War between 1839 and 1842. The war ended with the 1842 Treaty of Nanjing,



Map of the Old city of Shanghai, 17th century, source: World Imaging

which allowed the British to dictate opening the treaty ports for international trade. Shanghai was one of five Chinese cities to be opened up to the world. Soon consuls and merchants from UK, France, USA, Germany and other colonial powers began to move into Shanghai, carving out for themselves sovereign "concessions" (where they were not subject to Chinese laws) outside the walled city of Shanghai, which was still ruled by the Chinese.

According to Zhengji Fu (2001), it was in this international enclave of capitalism that a modern Shanghai was born, distinctive from its preceding form as a feudal commercial town. Under the Republic of China, during the 1920s and 1930s Shanghai became known as "The

Paris of the East, the New York of the West" (Yeh, 2008). Shanghai was made a special city in 1927 (direct-controlled municipality), and a municipality in May 1930 (Shanghai Urban Planning Exhibition Center, 2015).

The Bund in 1928, Shanghai, the WWI monument in the foreground was destroyed during WWII,
source: http://virtualshanghai.ish-lyon.cnrs.fr

By 1932, Shanghai had become the world's fifth largest city and home to 70,000 foreigners. In the 1930s, around 30,000 Jewish refugees from Europe arrived in the city (Shanghai Jewish Refugees museum, 2015).

During the 1950s and 1960s, after the Communist Revolution of 1949, Shanghai became an industrial center, and center for revolutionary leftism. The city went through disinvestment and significantly regressed during the Maoist era (Hai, 2015).

Shanghai was finally permitted to initiate economic reforms in 1991, starting the massive development still seen today and the birth of Lujiazui in Pudong. The new reforms encouraged both foreign and domestic investment, promoting the city as the economic hub of East Asia and gateway to the Chinese interior. Since that time, Shanghai has led China's overall development and experienced unprecedented continuous economic growth (between 9–15% annually) (Pudong Planning Institute, 2015).

Shanghai Exhibition Centre (former Sino-Soviet Hall), Shanghai, 2014,
source: http://www.chinese-architecture.info

Migration and Demographics

Migration and demographics play an important role in Shanghai's development. As this section will discuss, the fundamental migration control tool, the hukou System, emerged in the 1950s during the Communist Mao period. The hukou system still governs the mobility of Chinese citizens today and is intertwined with numerous urban dynamics.

Hukou System

The hukou system is a household registration system, which fixes a person's residence to their native place as a form of population control (Friedmann, 2005). It emerged during the 1950s when the Mao government implemented a code of laws, regulations, and programs whose effect was to formally differentiate residential groups as a means to control population movement and mobility with the goal of shaping state developmental priorities (Cheng and Selden, 1994). The origins of the hukou system lie embedded in the baojia system of population registration and mutual surveillance. Its roots can also be traced to the 20th century technique of social control perfected in areas under the Kuomintang and Japanese rule, and in the Communist-led revolutionary base areas. The Soviet influence of the propiska (internal passport) system and the role of Soviet advisors in creating social order that could be mobilized in the service of socialist developmental priorities were also major influences (Cheng and Selden, 1994).

The hukou registration not only provided the principal basis for establishing identity, citizenship, and proof of official status but effectively divided citizens into agricultural and non-agricultural classifications. This class divide changed what public services people were entitled to, creating differential access to resources and therefore, a two-tier class system of privileged urban residents and second-class rural residents. Although the government has tried very hard to control the number of urban hukous, about 1/5 of the increase in urban (residents) population has come from a reclassification of non-urban places to urban status (Friedmann, 2005). Resources that were essential for every aspect of daily life included access to food, clothing, shelter, employment, education, marriage, and enlistment into the army (Cheng and Selden, 1994).

According to Cheng and Selden (1994):

> *"the hukou system decisively shaped China's collectivist socialism by creating a spatial hierarchy of urban places and prioritizing the city over the countryside; by controlling population movement up and down the spatially defined hierarchy, enforcing the permanent exile of urban residents to the countryside, and tying people to the village or city of their birth and by transferring the locus of decision making with respect to population mobility and work from transformed households to the work unit or danwei, specifically in the countryside to the lower unit of the collective" (p. 645)*

In many important ways, the ongoing urbanization process is built on the shoulders of an emerging underclass, most of whom have rural designated hukou. Although this process is similar to the development of many western societies with large immigrant populations occupying menial or marginal positions by virtue of their tenuous citizenship status, in China these migratory and

non-migratory lower class workers are themselves Chinese. These workers are essential to successful urbanization, yet that very success can undermine their ability to partake in it, as housing costs and basic services are priced beyond their reach, even if the hukou status were to admit them (Heikkila, 2007).This population is better known as "the floating population" and was much discussed throughout our trip in Shanghai. A number of scholars at the MCRI conference presented their findings on population demographics, which we learned was an especially popular study when it comes to planning in China. The reason this phenomenon was of particular interest is that it is difficult to fully measure how many people are living and/or working in Shanghai. Although

Photo of a streetscape photo near Baoshan Station in Shanghai, taken by Justin Fok

the floating population is essential to the economic success of Chinese cities, a number of challenges have arisen. This includes an economic divide, racism and discrimination, and an inability to access resources because by law, they are not entitled to any rights in urban areas.

The first reform of China's hukou system occurred in 1984 when rural peasants were allowed to move to small towns, changing their registration from an agricultural to non-agricultural hukou. Despite this change, to migrate legally was costly. To get a job on the coast a migrant usually had to obtain various documents prior to leaving home (Friedmann, 2005). Migrant workers also needed to buy a return ticket in case they could not find a job and have enough money left over to cover expenses for a few weeks. The second major reform to the hukou system took place in 2001 when the State Council allowed agricultural hukou holders to move to small cities and designated towns on condition that they had a stable job and legal urban residence. When these conditions were met, migrants could then exchange their agricultural hukou for a non-agricultural work hukou (Friedmann, 2005).

Our visit to the Pudong Planning Office and the presentation by Xinjie Zhu (2015) shed light on how the floating population is understood in this part of Shanghai. According to his research, the population of Pudong is showing significant growth, the majority of which can be attributed to migration from rural areas with the most significant growth happening in the outer ring of the city. Since the cost of living is so high in Pudong, the phenomenon of group renting is becoming more and

more widespread. Group renting refers to multiple people (sometimes more than 10 occupying the same house. The response from the government has been two-fold: (1) enforce stricter rules to forbid multiple people from inhabiting spaces, which are deemed too small; (2) build more social housing inside and outside the city. The problem of access to social housing because of a rural hukou remains. Zhu (2015) explained that migrants can access social housing through marriage, however, no policies for individuals exist.

The problem in Pudong is not unique. Wu (2015) and Friedmann (2005) show that China has been developing unevenly for a long time. The emphasis on urban areas has meant that the industry and resources are concentrated there. In order to control migration, the hukou policy was developed. However, it is clear that the system disproportionately disadvantages those who do not have an urban hukou. Rather than keep them out of the urban areas, it creates a system by which they may be exploited as cheap labour. Although the government of China has relaxed some of the rules around obtaining an urban hukou, it persists as one of the biggest challenges in China today.

Floating Population

It is important to identify the effects of the hukou system and the implications it holds on planning decisions. The hukou system, a legacy of Mao's Communists Period, categorized Chinese citizens into two groups: urban and rural. This has influenced how people migrate within China and the difference access to various resources. With the communist period ending, and China opening its economic borders, most of the economic activity was found concentrated in eastern coastal cities of China. Economic reforms introduced in 1978 included a development policy called the Ladder-Step Doctrine. This policy favoured sped up development in China's coastal regions while the interior and western parts of the country were expected to benefit from 'trickle down' growth (Friedmann, 2005). The Ladder-Step Doctrine had immediate consequences for rural to urban migration. This spatially uneven model of economic growth resulted in millions of peasants leaving their farms in the interior to find their fortune in the coast (Friedmann, 2005). These populations of migrants are referred to as China's 'floating population.' They are often perceived to be a

Photo of a street cleaner, taken by Cara Chellew

threat to the status quo and public order. For cities to accept more migrants, it would be significantly

expensive due to the sheer numbers of migrants. It is also because of the expensive costs to incorporate migrants into urban hukou holders that cities have done little work to decrease the inequity between urban and rural hukou holders. Migrants tend to live out of sight in the urban fringe, on construction sites, or factories and face many challenges, including the denial of publicly financed social services (Friedmann, 2005). This is because the financing of public services rests on the local government which claims it cannot provide services to migrants due to fiscal burden. Conversely, migrant workers contribute to the economy through employment, consumption, and joining the social security system (Li, 2015). Wu (2015) further adds that migrant workers are often employed to do the three "D"s, the dirty, dangerous, and demeaning jobs.

Photo of Temporary housing for construction workers in Jiading, taken by Cara Chellew

Migrants who work in construction can live on the construction site in temporary container housing. This housing is then removed when the construction is complete. Many migrant workers live in informal housing, such as by renting out rooms in buildings that are zoned as commercial but are used in practice as unequipped residential spaces. People live in these buildings informally because they are cheaper to rent and not too far from the center. Unfortunately, these buildings are not equipped for residential use and lack amenities. There are recurring issues of gas explosions from people using gas stoves for cooking and heating (Jiading Planning Institute, 2015).

From our experience in Shanghai, it was difficult to determine who was a migrant worker without having to ask. From our learned experience at the Global Suburbanism Forum, we learned that Shanghai's 40% is of the total population of 24 million are migrants, and this number is roughly estimated to be around 14 million migrants. A number of scholars at the MCRI conference presented their findings on population demographics, which we learned was an especially popular study when it comes to planning in China. The reason this phenomenon was of particular interest is that it is difficult to fully measure how many people are living and/or working in Shanghai. Although the floating population is essential, in economic terms, to the success of Chinese cities, there are also a number of challenges that have arisen, including an economic divide, racism and discrimination and an inability to access resources because by law, they are not entitled to any rights in urban areas.

Our visit to the Pudong Planning Office and the presentation by Xinjie Zhu (2015), an urban planner at the Shanghai Pudong Planning and Design Institute, shed light on how the floating population is understood in this part of Shanghai. According to his research, the population of Pudong is showing significant growth, the majority of which can be attributed to migration from rural areas with the most significant growth happening in the outer ring of the city. Since the cost of living is so high in Pudong, the phenomenon of group renting is becoming more and more widespread.

Photo of tunnel leading to Shanghai Railway Metro Station, taken by Justin Fok

Land, (Sub)Urbanization, and New Towns

Land Governance

China uses a dual land tenure system that differentiates between urban and rural land. Land in urban areas is owned by the state and has defined property rights. The right to develop, lease, and determine urban land uses belongs to the state, although collaboration is on the rise between local officials and developers.

Rural land is collectively owned and property rights are unclear. Though a village collective governs rural land, the sale of rural land by farmers and citizens with rural status is forbidden. This is a right reserved for the state, which may expropriate and re-designate rural land as state-owned urban land or construction land. The state engages in 'virtual capital circulation' where expropriated land is used as collateral by state-owned development corporations in exchange for loans from financial institutions. The loans are then used to finance infrastructure development on the land. The serviced land is leased to developers and the profit gained is used to pay back the bank loans, completing the circulation of capital (Wu & Li, 2015).

Land use rights can be leased to developers on a long-term basis, which usually spans 75 years. The formal process of land transfer requires an application and involves approval from three levels of government (Friedmann, 2005). Land is also transferred informally where there are many opportunities for side payments and deals to be made through personal connections (guanxi). Municipalities rely on the leasing and development of land to fund civic services. In 1994, the central government downloaded social and public service expenses to local governments. Municipalities now fund civic services through a combination of revenue sources including, business taxes, the leasing and development of state-owned land, and 25% of the revenue collected from value added taxes (Wu, 2015).

Shanghai is currently experiencing a significant loss of farmland through urbanization and industrialization (Li, 2015a). Developing land in China is very profitable for both the developer and local municipality. The highest bidder of a plot of land is called 'king of the land.' Wu and Li argues land development profits are the major driver for suburban land development (2015). From 2005-2010, land consolidation was undertaken in China's urban periphery. This was done in order to transfer land quotas, rom rural towns and villages to urban centers. Land quotas were imposed by the central government as a means to limit the over development of agricultural land (Wu, 2015)

Urbanization

According to Friedmann (2005), large portions of China's rural areas have become urban which he refers to as in-situ urbanisation. This is marked by a gradual abandonment of rural ways of life in favour of working in rural industries (Friedmann, 2005). This rural industrialization helped to mitigate the flow of migrants from rural to coastal areas looking for work. It is also the driving force behind China's endogenous urbanization. Endogenous development is the result of local initiatives where economic growth is due to internal rather than external forces (Friedmann, 2005). Endogenous growth theory holds that investment in human capital,

innovation, and knowledge are significant contributors to economic growth.

Photo of Starbucks in Xin Tian Di, Shanghai, taken by Cara Chellew

Although it is argued that urbanization processes in China have occurred from within, Shanghai like many cities in the world is surrounded by signs of global corporatism, illustrated by the presence of major fast food chains, car culture, and advertisements primarily dominated by Caucasians. The influence of western thought and practice has made its mark in Shanghai. However, this is not a recent occurrence. Fulong Wu (2015) identifies the first taste of the western system during the Republic era in China. At the time the first generation of planners and architects were sent to the west, particularly in the United States of America. The Planners and Architects brought home theories of urban decentralization (e.g., new towns, neighbourhood units, regional planning) or in other words 'policy mobility'. The incorporation of western theories and practices is still common in China today as foreign planning consultants are hired to produce plans. This is because China views the west as possessing a greater level of experience and being more advanced in planning, providing China with a multitude of learning opportunities.

Suburbanization

Wu & Li describe Chinese suburbanization as, "a combination of the outward movement of residents from the central area and the inward migration process of rural population from other places" (2015, p.8). Suburban and new town development became a practical solution for improving living conditions in the post-reform era when individual incomes rose and there was a strong demand for improving the living environment. New construction projects were easier to develop on farmland in the periphery because the redevelopment of

the inner city required dealing with problems of disjointed ownership (Wu, 2015). Suburban spaces can differ tremendously. They include informal 'urban villages' as well as formal new town development projects (Wu & Li, 2015).

Photo of agricultural farm in Lingang New Town with high-rise buildings in the background, taken by Cara Chellew

Suburbs in China are highly fragmented, consisting of diverse populations. Large numbers of people migrate directly to suburbs which Zhigang Li calls the 'arrival suburb' (2015b). There is a lack of social service infrastructure (like ethnic organizations) to serve these new populations. The multi-center urban structure of Shanghai and its 'new town strategy' leads to inefficient land uses. These newly created towns have an intensive land use pattern, unfriendly street scale, and the overuse of resources. There is also a lack of integration of city and industry. For example Sonjiang new town contains no industries while the industrial park nearby has no housing (Shi, 2015).

Urban Villages

Land consolidation creates new urban and suburban forms by incorporating the multi-centric urban field and peri-urban areas with medium and large cities. The multi-centric urban field retains some of its rural qualities like village life and farming. Peri-urban areas are rural districts on the edge of larger cities that are gradually absorbed into the urban grid (Friedmann, 2005). Homes and businesses in these consolidated areas are either incorporated as part of city as an urban village or they are demolished so that new development can take place. Both types of consolidation include the transfer of hukou status of residents from rural to urban (Friedmann, 2005). Migrants living in consolidated areas are not eligible for relocation or compensation because they are not hukou holders (Li, 2015a).

In our field experience, we saw that farms on the periphery ranged in size, housing quality, and access to services. The expropriation of farmland was a common topic during the course, where we witnessed new towns being built on formerly rural land. Many farmers who are living on the reclaimed land are relocated to newly developed apartment blocks or given compensation.

Compensation housing was pointed out during the tours with our guides noting that some dwellers were pleased with their new housing, while others were poorer for having to move from the countryside, look for a job, and now pay higher costs for food and hydro. These

Photo of compensation housing in Jiading New Town, taken by Cara Chellew

communities of displaced farmers are what Chinese scholar Zhigang Li refers to as 'rebel suburbs' (2015b). In 2011, the Shanghai government restricted the area of non-agricultural land, which created a boundary of a concentrated construction area called the 'red line of eco-security.' The incorporation of industrial land outside of consolidated construction zones has been the primary agenda of the municipal government (Li, 2015a).

Our group visited an urban village in Pudong, Zi Tang, undergoing the process of consolidation. A few homeowners remained amongst the rubble because they disagreed with the developer's proposed compensation. Personal belongings dot the ruins including lost shoes and discarded furniture. The demolition of houses around the residences holding out for better compensation seems to be a tactic used by

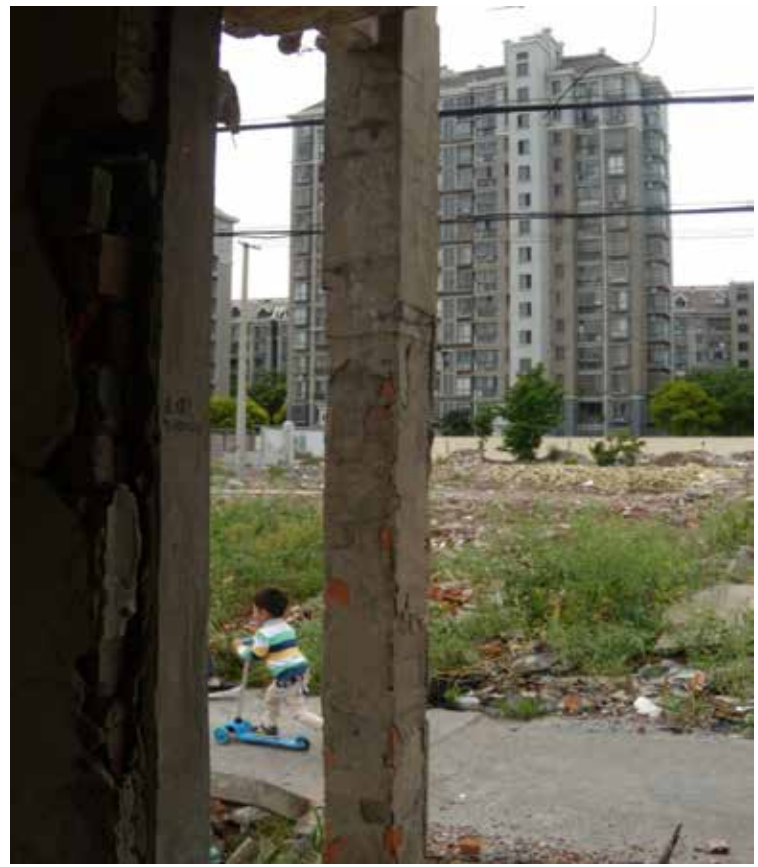


Photo of an Urban Village Zi Tang in Pudong, taken by Cara Chellew

the developers to make the environment inhospitable for the holdouts. This was a speculative anecdote from our guide in response to a question posed by our group in asking why some residents refused to move.

In HengMian urban village, also in Pudong, we learned that the neighbourhood would be preserved and redeveloped more intensely into the traditional housing style, with eight hundred households planned. The neighbourhood will be integrated into the proposed Pudong Disneyland development as a tourism site. As noted in the readings, this urban village is a case of heritage preservation. The majority of low-income residents currently residing in the village with be displaced or relocated.

New Towns

The history of Shanghai's new town development projects can be traced to the city's Metropolitan plan created in 1945. The plan proposed the development of new urban areas on Shanghai's fringes, forming cities with populations of half a million to a million people. The new urban areas were planned to have industrial and residential areas with a 500 metre green belt to separate industrial and residential uses (Wu, 2015). After the Communist revolution in 1949, the plan to decentralize the population was not implemented but the building of new urban areas was preserved as the development of soviet inspired satellite industrial towns (Wu, 2015).

The Soviet approach entailed building industrial complexes at the periphery of the city, which promoted the development of industrial suburbs and satellite towns to house people that worked in factories. In 1958, Shanghai planned five satellite towns, reflecting the continuity of planning objectives for population dispersal initially proposed by the Shanghai Metropolitan Plan. Unfortunately, the satellites towns failed to attract a significant population before large-scale suburbanization in 1990s and 2000s because they generally lacked social services and facilities (Wu, 2015).

In 2001, Shanghai announced a decree to accelerate new town development called 'one city and nine towns.' Each new town was proposed to be built in a distinctly Western style to promote a cosmopolitan image (Wu, 2015). These suburban developments developed as meg-projects and it could be argued new town development could be regarded as Chinese 'post-suburbia' (Wu, 2015). New towns refer to new settlements and large urban regeneration projects, which could include but are not limited to residential projects, a new financial center, an edge city of clustered office buildings, or a purposefully designed university campus (Wu, 2015).

Jiading New Town

Jiading's main industry is automobile manufacturing as well as research and development for the sector. Jiading is a new town mega-project that includes policy housing. Policy housing is government-funded housing for relocated farmers. It should not be mistaken for social housing which is subsidized for people of low income. Farmers displaced by development have a right to be relocated and the amount of land that was used in farming will dictate the amount of floor space allocated for a new

apartment. Most relocated farmers end up not working afterwards because they receive a stable income from the state and sometimes rent out their compensation housing as a means of income.

The town's slogan is 'you', which means 'another town.' The development goal is to create a self-contained town where people can work and live in the same place. This is an example of what Fulong Wu (2015) calls 'townification' and not 'suburbanization.' Although Jiading has a good transportation infrastructure including subway access, new roads, and bike lanes, the town faces issues of limited resources and high population. Displaced residents who used to have a house and yard are now living in new flats. Housing includes 30-year mortgages for buildings that are built for 70 years of use. Residents must have a Shanghai hukou to qualify for housing. The rapid development of the area did not involve the creation of public services to serve new populations. There is a shortage of services like kindergartens, senior's homes, and religious centers. The population has a high level of fluidity where about half of the 1.57 million people who live and work in Jiading are migrants and do not have a Shanghai hukou which means they have no access to state services or housing.

Photo of "You City" in Jiading New Town, taken by Cara Chellew

Planning in Shanghai

Chinese Planning in Perspective

Through our studies, we have found that it is important to view urbanization and planning in China within the context of the China's historical and political trajectories and traditions. Historically, Chinese cities were seats of imperial power and centres of trade. Although the imperial power practiced centralized controls and planned for monumental structures and road grids, the residential areas were left unplanned or were self-built by residents. In the Republican era between 1919 and 1949, western influences on China were shown significantly in the development of treaty port cities, such as Shanghai. It is also in this era that comprehensive planning was first proposed, exemplified by the Greater Shanghai Plan prepared in 1927 and the Capital Plan of Nanking proposed by Jiang Jieshi in 1930.

Between 1949 and 1978, China entered a new era under the direction of Mao Zedong. The key focus of socialist planning was to support the development of industrial cities. Taking a top-down approach, urban master plans were prepared to provide coordination for industrial projects at city levels and cities transformed from areas of consumptions to centres of production. State work units played an important role in urban development through their discretionary decision-making over land uses. Residential planning was strongly influenced by the Soviet concept of 'mikrorayon', which emphasized the 'neighbourhood' unit and the schema of superblock. In general, planning was marginal during Socialist China and even abandoned between 1960 and 1970.

The reform era began under Deng Xiaoping starting from 1979 and planning institutions and planning practices were restored in China. The State Council emphasized the role of city planning and proposed to actively construct small cities and towns while controlling the size of large cities. Through the enactment of the 1990 City Planning Act, the statutory status of city planning was set up and local planning authorities were granted power to enforce development control over its territory. Since the economic reform, planning in China has shifted back to the bottom-up approach.

Major Themes in Chinese Urbanization & Planning

Based on our studies of the two books, overall, we have identified the following major themes underlying Chinese urbanization and planning:

1. Friedmann (2005) states that instead of globalization, China's urbanization process is an endogenous development
2. Urban planning and urbanization is embedded in its histories
3. China has experienced distinct rapid rural industrialization which drove in situ urbanization
4. The urbanization and planning approaches are rooted in an collectivist approach
5. Lastly, Chinese planning policies are guided by the principle of planning for growth and local activism.

Planning in Pudong

According Xiang Luo, a planner at the Pudong Planning Institute, planning is directed from the central government and plans are often the product of an

international design process (2015). The overall plan making process includes the revision of previous plans, the creation of strategic plans, and the combining of plans. Four concerns of future planning revolve around spatial structure, resources, the environment, and transportation (Xiang Luo, 2015). Pudong plays a strategic role in Shanghai's urban development. According to Xiang Luo, plans for the development of a Disneyland located in Pudong is predicted to bring economic growth to the city and will also play a role in preserving sensitive ecosystems in the area. The creation of landscapes of consumption shows how Shanghai is shifting from an industrial to service based economy. Xiang Luo (2015) lays out planning issues that Pudong faces below:

1. How to better coordinate planning and development between Pudong and Puxi
2. How to upgrade and transform industries
3. How to perfect urban functions on the development zone model
4. How to prevent sprawl
5. How to improve transportation capacity

Planning Challenges

Professor Guixin Wang (2015), the Director of the Center for Urban & Regional Studies at Fudan University, outlines the challenges faced by the Chinese planning system in his presentation at the MCRI conference:

1. Planning functions are fragmented
2. Lower level authority must report to state council. State council can influence and change plans
3. Planning is politicized and planners are not as powerful as we perceive. Political leaders make planning decisions and plans can be changed under party whim. Planning also legitimizes the state.
4. Public participation is absent. In principle planning should integrate public participation but this does not happen in practice

Public Participation

According to Fulong Wu (2015), two major misconceptions need to be addressed about public participation in the Chinese planning system:

1. The claim that no public participation existed under the authoritarian state denies the complexity of the Chinese political processes. The danwei system saw that employees were represented by their work unit administration. Therefore, consultation took place within the state regulatory system, rather than between state and society.
2. Since reform, market-driven politics has shifted the emphasis of planning goals towards economic growth, with municipal officials collaborating with businesses. The claim that marketization opens up avenues to participate, however, is only partly true. Wu notes that with planning geared towards economic interests, participation is treated as a 'cost' towards competitiveness, a hindrance, even if diverse interests are increasingly introduced.

From the readings then, participation currently includes openness to professional consultants more than the public. Although the power of the public remains weak, there is an increasing awareness of environmental risk and growing nimbyism demonstrated by public protest to undesirable state projects.

Apparently, homeowner associations are also forming alongside continued tensions in redevelopment, where the public is not always kept informed about development decisions. As students, our experience of public participation in Shanghai was limited to conversations with neighbourhood residents about their feelings about development proposals. At the Jewish Ghetto, one resident expressed that regardless of their feelings, development would occur to the specifications of the state. Another resident was not necessarily against development despite sharing their enjoyment of the neighbourhood as is, though did not relate whether they had opportunities to provide input on the development outcome. In the Jewish Ghetto, current residents are rushing to register their hukou in preparation for displacement and opportunity for compensation.

In Tian Zi Fang, the focus on preservation of residential space rather than an emphasis on demolition appears to have mixed reviews. One researcher referred to the Tian Zi Fang's experience as a 'society-led experiment of urban renewal' with no large developer, and instead creative industrial and business growth. No state investment, rather the birth of a new urban landmark. In the case of this neighbourhood, the role of local government is to protect societal initiatives and autonomy. We see some signs geared towards the tourists saying 'keep out' and 'no photos'.

Clearly, a highly dense commercial space growing into residences creates some conflict and privacy issues - perhaps making a spectacle out of one's living quarters. We learn that some residents are adamant about maintaining their right to live in their home, others are eager to sell the property, and still others take the opportunity to commercialize their home by operating businesses out of the home or leasing the space to shopkeepers. One researcher noted that sixty-seventy percent of Tian Zi Fang shop-owners were foreign investors that had come to the neighbourhood under speculation. Moreover, though residents contributed to the project via consultations in the initial stages, the neighbourhood is currently considered 'over successful' and is too expensive for artists to rent out space.

Photo of developments outside of Fujin Road Station, taken by Justin Fok

Development Processes and Culture

Case Study: Top-Down (Xin Tian Di) vs. Bottom-Up (Tian Zi Fang) Approaches

Top down development approaches usually favours expert experience and comprehensive plan making. They also involve the view that communities are objects that should be planned for. Conversely, bottom up approaches involve empowering communities to have a say in how the city or their neighbourhood is developed. In this approach, the community is seen as a subject to be planned with.

Tian Zi Fang

Tian Zi Fang means 'neighbourhood.' The area became an artists' hub in the 1990s when Chinese artists from New York City moved into the area's empty factories, using it as inexpensive studio and gallery space. Soon, artists that got a start in the old factories began to rent street level space in the neighbourhood from old residents (Yu, 2015). Tian Zi Fang features traditional Shanghainese Shikumen housing and survived the threat of bulldozer redevelopment due to public protest. The Shanghai government decided to let Tian Zi Fang remain as an experiment in bottom-up redevelopment led by artists and businesses. The experiment was considered a success because it provided an alternative model of redevelopment. Unfortunately, it could be considered too successful because more investment and higher rents pushed many artists and residents out of the area (Yu, 2015).

Photo of entrance to Tian Zi Fang, taken by Paul Bailey

Photo Collage of Tian Zi Fang

Photo of streetscape in Tian Zi Fang, taken by Justin Fok

Xin Tian Di

Xin Tian Di is an upscale district in the centre of Shanghai converted into a pedestrian shopping and entertainment hub. As opposed to the bottom-up redevelopment of Tian Zi Fang, Xin Tian Di is a classic example of the top-bottom approach so dominant in China. According to Prof. Yu Hai (2015), it exemplifies a major trend of government led gentrification.

Photo of Xin Tian Di streetscape, taken by Nelly Volpert

Xin Tian Di is very popular with tourists, both domestic and overseas, and is one of the main attractions in Shanghai. It has a very active shopping and nightlife, especially on weekends.

Media sources consider the district one of the first lifestyle centers in China. Xin Tian Di is also the most expensive place to live in China, with some apartments costing more than Tokyo, New York and London. It is home to the Chinese elite and top executive expats.

Photo of Xin Tian Di alleyway, taken by Nelly Volpert

The Xin Tian Di model is based on a preservation of old housing stock and a change of land use from residential to commercial. The local government actively participated in the relocation of former residents and land provisions. The district is composed of reconstituted (not merely renovated) traditional mid-19th century *shikumen* ("stone gate") houses on narrow alleys as well as state-of-the-art new buildings that now serve as

cafes, restaurants, art galleries, souvenir and bookstores, and shopping malls.

Three distinctive features characterize Xin Tian Di redevelopment:

1. All area residents were relocated from the site
2. The district was redeveloped by a single big developer
3. Old historic houses were demolished and then reconstructed using the traditional architecture or completely gutting and renovating the interior.

It has been estimated that this urban renewal project displaced some 3,500 Shanghainese families.

The district was developed by a Hong Kong based 'Shui On Land' company during the re-development of the surrounding area, bearing the slogan "Yesterday meets tomorrow in Shanghai today". Xin Tian Di was designed by Wood and Zapata Inc., a Boston-based architectural firm specialized in adaptive re-use of old buildings, and the Singapore office of Nikken Sekkei International Ltd. The Shanghai Tongji University Urban Planning, Design and Research Institute served as the architectural consultant. Xin Tian Di has won the national "Innovation China 2001 - Architecture Award", "AIA Hong Kong Citation 2002" and 2003 Award for Excellence from US-based Urban Land Institute.

Creative Industry

Since the 1990s, as Shanghai's industrial economy has declined and the post-industrial economy has developed in its place, a robust creative economy has developed characterized by a range of creative industries such as design (He, 2014). Grassroots communities and the Government of China have prioritized the adaptive reuse of former factory complexes, establishing creative districts. Shanghai's M50 and Beijing's 798 creative districts are a mismatch of old infrastructure, art, and commercialized spaces. Interestingly, a number of artistic works combined popular Disney imagery with military themes. For example, a red sculpture in the 798 arts complex combines Mickey's head atop of a body dressed in communist era military attire. Perhaps this is a commentary on the way western culture is imported and sold to Chinese citizens and its connection to power in

Photo of 'Micky Mao', taken by Cara Chellew

the Chinese Communist Party. Plans are currently underway to develop a Disneyland in Pudong as a way to promote economic growth through tourism and consumption.

Public Space

The function and meaning of public space differs across numerous cultural traditions, influenced by varying degrees of social and political control (Hou, 2010). For example, in Eastern countries with roots in Confucian philosophy, social and individual life revolves around obligations to family and the state. Public space is often non-existent or tightly controlled while vibrant urban life occurs in back streets and alleyways (Hou, 2010). Public spaces in Shanghai are both highly regulated and informal.

Spaces that are meant for tourist consumption like the Bund and redeveloped Xin Tian Di are kept clean by an army of street cleaners and orderly by regularly stationed security forces. These highly regulated areas contrast with high levels of informality in streets and alleyways with unpermitted street vendors selling prepared food, produce, consumer goods, and a variety of services. Activities usually confined to the private realm of the home, workplace, or restaurant becomes public on the sidewalks and streets. Residents socialize, work, exercise, prepare food, and play on the sidewalks, streets, and alleyways surrounding their homes, blurring the divide of private and public space.

Nighttime food vendors are common in residential areas. One night, our group stopped to get some food from vendors gathered near Fudan University. All of a sudden, one of the vendors gave a warning about the police and all of the lights went out. The vendors packed up their carts quickly and ran off into the night.

People's Square

People's Square is the largest public square of Shanghai, which by its grandeur and formal status stands in sharp contrast to unofficial (often-spontaneous) public spaces of the city. It went through a comprehensive reconstruction in the beginning of the 90s and now covers an area of 140,000 square meters.

Photo of People's Square, taken by Nelly Volpert

The square, located in the south of Nanjing road, is a political, cultural, transportation, and economic centre of Shanghai. It is the site of the Shanghai Municipal Government, which was moved here from the Bund

during the reconstruction. The Shanghai Museum was also moved here from its previous site in a former office building. Additions that are more recent include the Shanghai Grand Theatre and the Shanghai Urban Planning Exhibition Hall.

Most importantly, People's Square was designed to show off the people's power after the victory of the Chinese Communist Party in 1949 (Hai, 2015). A former horse race track owned by the Shanghai Race Club was remade in a symbolic act into a huge public space. The square is open for people's everyday enjoyment and hosts formal parades during state holidays.

This vast open space is bordered by major throughways and imposing buildings. The overall feeling is quite formal with not many people using the square. On our visits during day and evening hours, there were no activities such dancing, card playing, tai-chi and sport games that were so characteristic to other, less formal, public spaces (Fuxing Park for example).

Photo of Shanghai Townhall, People's Square, taken by Nelly Volpert

Transportation

Introduction to Shanghai's Public Transit

Our experience in Shanghai and its public transit was primarily focused on its subway system. Prior to going to Shanghai, we have read that it has one of the most extensive subway infrastructures in the world. In Shanghai, the urban rail system was initiated in the early 1990s, and as of 1998, Shanghai has built 78.4 km of rail (Peng, 2005). Its first subway line opened in 1995 as the north-south corridor axis, which ran from Central Station to the southern suburbs. By 2010, Shanghai had a total of 450 km of subway lines, which comprises of 13 metro lines, including the Maglev (Xiao & Gu, 2012). Ridership for the metro lines in Shanghai average about 5.16 million per day (Xiao & Gu, 2012). What is remarkable about Shanghai's subway development is that it developed over 400 km of rail in under 20 years, and its current rail system matches the 100 years of rail development in western countries - rivaling New York's and London's subway systems (Xiao & Gu, 2012). Shanghai's public transit has the urban rail transport as its backbone, ground transit (buses, etc.) as basic service, and taxis as the complement (Xiao & Gu, 2012). The extensive rail infrastructure is seen in Figure 1, which displays the subway network in Shanghai (a larger map will be provided in Appendix A). There are fifteen lines, including the Maglev connection to the airport. Figure 2 is a chart with how long each metro line is and the number of stations.

Figure 1: Map of the Metro in Shanghai (Travel Guide China, 2015)

Line Number	Total Kilometers	Number of Stations
Line 1	38.1 km	28
Line 2	64.0 km	30
Line 3	40.3 km	29
Line 4	34.2 km	26
Line 5	17.2 km	11
Line 6	32.0 km	28
Line 7	44.2 km	33
Line 8	37.5 km	30
Line 9	52 km	26
Line 10	29.6 km	27
Line 11	72.0 km	35
Line 12	~20.0 km	16
Line 13	11.2 km	10
Line 16	59 km	13
	30.5 km	2

Figure 2: Chart of Metro Line Information

Global City Transport

As China continues to strengthen its status within the global market, what impact does a global city vision have on both local and global forms of transportation in Shanghai? When travelling to a global city like Shanghai, there is often an expectation that a convenient and easy to use airport-to-downtown express link exists. In Shanghai, this link did exist in the form of the Maglev train, also known as the magnetic levitation train. We were transported from Shanghai Pudong International Airport to city center in approximately 7 minutes. In

Photo of roads in Shanghai, taken by Anthony Dionigi

Canada's "premier global city" Toronto, we can now make a similar claim with a less than rapid, airport link known as the Union-Pearson Express or UPX. The

completion of the UPX project had been expedited faster than most public transit projects in the region, and this is partly due to the arrival of the Pan American Games, a global event drawing several thousand tourists to the City of Toronto.

The airport express has received significant criticism for a variety of reasons including the cost to riders, the selection of diesel technology over electrification, and because it is seen as a premium service that is geared almost exclusively to airport users in a region that desperately needs better transit. Transportation infrastructure in Toronto has largely been developed unevenly and unjustly according to Keil and Young (2008) and public transit for example has been consistently underfinanced, increasingly decentralized, and still faces problems of suburbanization and sprawl (Keil & Young, 2008, p. 749). Graham (2001) notes this tension as a "splintering" of infrastructures where places that are seen as more profitable are favoured as spaces to produce enhanced global linkages (Graham, 2001, p. 307). These customized spaces link and tie transportation infrastructure networks into global production chains and fliers; "an economic value-added chain linking networks of firms, across space and time, into interdependent systems" (Graham, 2001, p. 307 & 425). "New patterns of hubs, spokes and tunnel effects are emerging as infrastructure networks link up cherry-picked, favoured spaces across widening territories, whilst excluding and bypassing intervening spaces deemed to be less profitable" (p. 307).

Panorama photo of Shanghai Railway Station, taken by Justin Fok

The Future of Transport in China

Photo of roads in new towns, taken by Anthony Dionigi

As China continues to grow and open its national economy to global market forces, there becomes a greater emphasis placed on global interactions through the transfer and movement of goods, people, finance, and information (Harris, 1994, p. 332). Various modes of transport can be classified differently based on their level of importance and significance within a global city structure. Transport modes that are considered premium or "just-in-time" forms of transport place emphasis on the long-distance movement of people, goods and capital such as airports, ports, expressways, rail, or networks serving predominantly the global market. The more locally specific transportation infrastructures tend to focus on the short-distance movement of people and local goods. Examples include public transit, bicycle infrastructure, pedestrian routes, and local roadways. Transport modes within a global city do not function autonomous of one another but instead are interconnected and interdependent. Both share an exchange and a use value orientation but in some cases the use value of local transportation can become de-valorized relative to the use value of the premium networked infrastructure (Keil, Young, & Boudreau, 2009, p. 162 & 181), (Keil & Young, 2008, 730), (Harris, 1994, p. 332).

Photo of bike lane in new towns, taken by Anthony Dionigi

Photo of an area model of the metro station in Jiading, taken by Anthony Dionigi

One example that can be drawn from a Chinese context is the importance of bicycle infrastructure as a localized form of transport. During our time in Shanghai, there was not a significant amount of visible bicycle infrastructure in the city center but a significant amount of traffic congestion. Alternatively, one can notice that resurgence seems to be taking place in new suburban developments around the city like Wuxi and Lingang where there is a clear consideration for bicycles. Not long ago, Chinese cities were flooded with cyclists who used the bicycle as their primary mode of travel. In the 1980's, Beijing was referred to as "The Bicycle Kingdom" in China until economic growth and per capita income increased at incredible rates (Fong,2013). As this happened, vehicle ownership rates for urban dwellers in major cities, like Shanghai and Beijing, continued to rise and still does today. Professor Dong Hongzhao explains, "It's true that China was a relatively poor country in the past, and it has grown richer in recent years. Everyone dreamed of having a car 10 years ago and they've wanted to realize their dream" (Fong, 2013). With the majority of low-income residents in Chinese cities spending the least amount on transportation in contrast to other groups, it becomes important to examine if future transportation systems will accommodate such a large portion of urban China (Peng & Zhu, 2010, p. 161).

Transportation for Whom?

In a city where such a significant portion of the population are migrants and "floating" members of society, is it possible to plan transportation systems that are better geared to accommodate the urban poor? The difficulty in characterizing the urban poor begins with the hukou system, a system of two classes where some are entitled to certain privileges of urban life and others are not (Friedmann, 2005, p. 90). It was only until the 1990's when poverty was considered a problem outside

of rural China (Peng & Zhu, 2010, p. 161). Although estimates do exist, many migrants who live and work in urban areas may not actually be counted as urban dwellers simply because they are not registered as part of the urban population. As Friedmann explains, one of the fundamental reasons that precise estimates of the number of migrants are flawed is due to the difficulty in determining their mobility patterns. The same migrant could be counted numerous times based on their travel patterns, and it is nearly impossible to know the length of time and distance of their migration as many move constantly in search of suitable work and better living conditions (Friedmann, 2005, p. 65).

In the Greater Toronto Area region, a data gap also exists with immigrants who recently arrived to Canada. In Markham and York Region as a whole, it is difficult to pinpoint areas that are specifically transport disadvantaged because of hidden poverty and hidden homelessness (York Region, 2014). The city of Markham is an interesting case to observe as it is a destination for many new immigrants into the global city with a considerable percentage being of Chinese descent. Professor David Hulchanski, who has provided us with useful data on growing income polarization in the City of Toronto, has now found that growing income polarization also exists in suburban regions like York Region (Hulchanski & Maaranen, 2015). Markham and other cities in York Region (Newmarket, Richmond Hill, and Vaughan) have become pivotal locations for new transport infrastructure in the form of Bus Rapid Transit (BRT). The vivaNext Rapidway offers cross-regional travel in the form of new bus technology different from Viva's original service, and a premium experience geared to the removal of drivers from congested roadways. With income polarization rising not just in the City of Toronto, but also in surrounding regions, it becomes difficult to ignore the challenge to accommodate those with limited mobility options. As larger-scale transportation infrastructure projects remain a priority in the name of economic competitiveness at the regional, national, and international scale, issues related to transit equity and accessibility remain largely misunderstood (Graham, 2001, p. 667). "Pan-regional rapid transit offers a potential infrastructure fix, yet the introduction of new transportation must negotiate a complex array of required uses and scales of mobility – local movement with frequent stops and fast, regional trips with limited access – if it is to avoid reproducing the marginality of many inner suburban communities" (Addie & Fielder, 2013).

New Town Development and Transportation

Similar to how North America built the urban built landscape for the automobile, the increase of income has allowed many more people in Shanghai the ability to own and drive a car. With the high population density in Shanghai, and roads built before the automobile, it is easy to see how the increase of private automobiles will cause major congestions on the road networks in China. To accommodate the increased number of automobiles on the roads, Shanghai invested heavily into its road infrastructure with the World Fair as an impetus to continue to develop both road and public transit infrastructures (Peng, 2005). However, unlike other Chinese cities where the municipalities promote the consumption of cars, Shanghai is the only city in China to limit the numbers of licenses granted to new cars (Peng,

2005). The development of the subway in Shanghai was a plan to combat and lessen the amount of congestion on the roads. Similarly, the subway was also an opportunity for Shanghai to develop its suburbs. New towns developed in Shanghai were linked with subway stations using a transit oriented development approach.

Photo of Jiading's new metro station, taken by Cara Chellew

New towns such as Lingang, and Jiading, are examples of transit-oriented development where the metro line is extended out into the suburbs. High-rise condominium development surrounds the metro station, anticipating its new residents. In Jiading, we were guided on a tour of their condominiums and the sales rep explained that the targeted market for their condominium apartments were young professionals and one of the major selling points was the quick travel (an estimated half hour metro ride) to downtown Shanghai. Within these new towns, several bus lines serviced it. As these new towns have low population density, there were only a few bus routes in operation. Furthermore, it could be argued that because many of the residents in these new towns either drive, or ride their bicycle, whether it was electric or motorized, that there are only a few bus routes in operation. The metro station made developing new towns more attractive as the metro allows a cheap and quick method to travel to the city proper and back.

Resiliency

This report has described the evolution and the growth of Shanghai in becoming a global city. The global city as any other city is concerned for the city's economic viability and the safety of its inhabitants. These qualities can also be attributed to the city's resiliency. In other words: the "ability of a system to absolve, deflect, or resist potential disaster impact and the ability to bounce back after being impacted" (Pedcock, 2010). This concept can be further broken down by examining sub-categories, vulnerability, adaptability, resources and funding structure. Each of these sub-categories helps to understand the future prospect of a city in the event of any unfortunate forthcomings. The following section will compare Toronto's and Shanghai's resiliency in relation to floods and fires.

Flood

The impact of climate change on our planet has been associated with greater occurrence of flooding in many countries. In the case of Shanghai, its presence on the Pearl River Delta brings out flooding concern from both the sea and the river. These higher flooding occurrences are attributed with increased storm surges, accelerated sea-level rise resulting in elevated tidal inundation, and increase frequency of cyclones (Fenster and Dolan, 1996). The undesired inundation threatens the Pearl River Delta in its complex economic system. While measure are in place, to protect against flooding such as the 1,700 m long flood-control wall (or lover's wall) by the Bund or increasing storm water retention (Shanghai Water Planning and Design Research Institute, 2010), these measures might not be sufficient to label Shanghai as a resilient City. Instead, Shanghai has much work to do as it is ranked in the 10 least resilient world cities (Grosvenor, 2014).

Photo of Flood Control Wall by Denize 64, Tripadvisor

On the opposite extreme, Grosvenor (2014) identifies Toronto as the most resilient of the world cities. While Toronto does not have the same threats as Shanghai, it is also feeling the impacts of climate change. It is predicted there will be a greater frequency of thunderstorms and "more winter precipitation, along with faster melting in the spring", leading to higher risk of flooding (ICLR, 2012). While the flooding risks in Toronto differ to Shanghai, it is a great concern for this global city. Toronto became aware of the devastating impacts of floods on October 15, 1954 with Hurricane Hazel. The passing through of the hurricane lead to the flooding of the Humber River, washing away neighbourhoods and

killing 81 people (Keller & Blodgett, 2008). From this unfortunate event, one the Conservation Authority's (2013) objective has been to "develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion", an essential attribute in promoting the resiliency in Toronto.

Fire

While Shanghai does not have strong flood resiliency, it does on the other hand have a strong association to fires. While walking in Shanghai an abundant number of informative materials or fire safety devices can be found indoors or outdoors. An example of such an area is the underground transportation system. In this environment, there are comic strip posters and television commercials informing of safety procedures in the event of a fire; as well as, clearly labeled signs identifying the location of fire extinguishers or fire hoses. The reason behind the constant reminder of fire safety is due to announcement made by the Municipal Public Security Bureau and China Insurance Regulatory Commission Shanghai Bureau (2006) to implement a pilot work of public liability insurance against fires. In other words, they were to promote the public liability of fire, strengthen fire control, and risk management. This greater level of awareness contributed to building the community's resiliency towards fires.

Photo of a comic strip poster in the Shanghai Underground Transportation System, taken by Priscilla Lan Chung Yang

While Shanghai might not be ranked as the most resilient global city, they are criteria that can assist Toronto in strengthening its resiliency. Shanghai's fire safety awareness is a great example. By providing constant awareness of a hazard, an individual is knowledgeable in the event of this hazard. In addition, the individual might be less affected or less traumatized had they not know what to do in such an event. Providing constant awareness to the public, demonstrates a useful tactic in promoting resiliency.

Sustainability

Food Security

Urban Agriculture presents itself in two most obvious ways in Shanghai:

(1) as a remnant of traditionally agricultural societies/areas and
(2) as part of a modern, foreign lifestyle.

Agricultural activity can be seen on the outskirts of Shanghai, along the highways and in-between high-density development. The scale of this agriculture ranges from backyard/front yard gardens to large-scale greenhouses and farms. The WWF reports that Shanghai produces more than 55% of its vegetables and 90% of its green-leaf vegetables, according to the municipal government.

Photo of a street side food, taken by Victoria Ho

The food options in Shanghai are vivid. Our morning breakfasts were supplied by small shops that lined the streets near the subway entrance. A full meal was conjured up in a snap with a misting of rice flour and the crack of an egg, for the cost of a Canadian- priced coffee. Access to a variety of freshly made foods at all hours was a welcome way to punctuate the day. Chinese-style egg pancake, stuffed rice buns, and congee are just a sampling of our morning treats, accompanied by fresh fruit. Informal food vendors also offered anything from melons, to popped rice, to noodle dinners. These vendors avoid paying rent to make a living, however, their activities are not legal, and your favourite noodle hawker may disappear upon sighting a passing police car. According to the Government of

Photo of a truck selling fruits, taken by Victoria Ho

Shanghai website, some 10,000 food vendors exist in Shanghai. The government is currently looking to regulate vendors to meet food safety regulations, and the process is ongoing (Shanghai Government, 2011).

Our visit to Lingang demonstrated an effort on the part of the planning department and local government to secure land for agriculture. While the Lingang New Town advertisements emphasized modern infrastructure, traditional agricultural land sat on the edge of the New Town development. Other suburbs of Shanghai did not seem to have an emphasis on the protection of agricultural land and activity and procured food from cities close-by and further inland. Agricultural land has been increasingly appropriated by the government for urban development, raising questions about the future of

Photo of garden plots at V-Roof Garden in Minhang, taken by Dilya Niezova

food and the cultural meaning of agriculture for those who see farming as a way of life. This question is therefore

Photo of advertisements at V-Roof Garden in Minhang, taken by Dilya Niezova

critical not only out of concerns regarding food security and access to food, but for farmers for whom agriculture is a source of cultural identity. Moreover, the livelihoods of former farmers whose agricultural land has been expropriated for urban development are altered suddenly, and with mixed reception. As mentioned in our discussion of urban villages, according to our guides, some farmers welcome the move to urban hukou, whereas others resist this imposition. Some former farmers find wealth in their new urban settings, while others become relatively poorer, now having to pay for utilities and food.

Despite challenges in farming such as economic precarity, access to markets, and disappearance of land, we observed some examples of how farmers connect to clients in the urban and peri-urban areas. During our visits to some suburban areas, a form of 'farmer's market' appeared in neighbourhoods with fruit and handmade snacks available from vehicles or mobile stands.

Our visit to V-Roof farms in Minhang, a province of Shanghai, departs from both the formal and informal agricultural land use we have seen from the train and tour bus. This project is case in urban agriculture. With initial funding from the 2010 Shanghai Expo, V-Roof farms claims to be the first urban rooftop farm in Shanghai. Its development was triggered by the following factors:

(1) Increasing food safety concerns
(2) rapid urbanization in the 1980s
(3) aesthetic concerns
(4) positive environmental effects (curbing urban heat island effect and reusing wastewater)
(5) potential for job creation

V-roof farms have patented a self-regulating container for growing organic food. The farm uses a CSA model whereby families can rent or buy a box and grow their own food with support from V-farm employees. The rich soil used is imported from old-growth Manchurian forests. These also serve as an educational component to schools where they may come and learn more about food production and healthy eating on field trips.

The marketing of this farm is of particular importance as all the advertisements on site are of non-Asian, often Caucasian families enjoying gardening and eating fresh produce. Using this particular marketing strategy, V-farm developers are selling urban agriculture as a western leisure activity, creating distance between the Chinese history and understanding of farming and a modern, western ideal of urban farming.

Energy and the Low-Carbon City

Energy has a significant impact on the urban experience since reliable and inexpensive supply of energy often facilitates urban development and growth (Rossa 2005). No different than other cities in the world, from transportation and construction down to heating and lighting provision, energy consumption will continue to increase as Chinese cities, such as Shanghai, continue to expand. This continual increase in energy usage is demonstrating to be a major contribution to environmental pollution that will hinder the sustainability of urban development, especially in terms of carbon dioxide emission among other problems such as poor air quality and water pollution etc. in China. This could be attributed to the country's heavy reliance on burning fossil fuels (mostly coal, but also oil and gas over the past two decades) as its major energy source (U.S. Energy Information Administration, 2015). From 1971 to 2011, China's energy consumption grew from 465.52 kilojoule per capita to 2029.36 per capita, and in consequence, the country's carbon dioxide emission also increased from 1.04 metric tons per capita to 6.71 metric tons per capita (World Bank, 2015). This steady increase in carbon dioxide emission has attracted pressure from the international community for reduction and in response, the Chinese central government has committed to aggressive policy plans and reduction targets.

With respect to urban planning, strategies to reduce energy consumption and carbon dioxide emissions have been integrated into a new movement of urban development. Local governments have taken initiatives in creating "low-carbon eco-cities", which are generally defined as a special type of new town that incorporates certain technological and ecological features to achieve ecological targets. For instance, green buildings and technologies are applied to the physical construction of the town to reflect the country's mission to reduce carbon emission (Wu, 2015). During our visit to Shanghai, we were able to visit two eco-cities: Wuxi Taihu New Town located northwest of Shanghai in the Jiangsu Province and Lingang New Town in the southeast corner of Shanghai's Pudong District.

Wuxi Taihu New Town is designated as the 'national demonstration zone of low-carbon eco-city from the Ministry of Housing and Urban-Rural Development. It is a Sino-Swedish pilot project within a much larger new town that aims to integrate alternative infrastructures and technologies, including extensive solar panels, combined power and heating system, regional energy supply, and a pneumatic waste collection system (Wu, 2015). Unfortunately, we were not introduced to the above mentioned projects during our visit. Nevertheless, we were assured that Wuxi New Town is planned with maintaining ecological integrity and low-carbon emission in mind. One example of strategy to reduce carbon emission and improve the overall energy efficiency of built environment is by erecting buildings that will accommodate high density in the town centre (Image 1).

The Lingang New Town, despite being an industry port city, is planned and designed as a "low-carbon eco-city". From our observation, environmental protection, and promoting a zero-carbon lifestyle and green technologies are essential to the planning of the Lingang New Town. With regard to environmental protection, the Lingang has intentionally preserved natural wetlands, green spaces and green corridors to improve the ecological well-being of the area, as well as contribute to the aspired vision and imagery of a "low-carbon eco-city". In order to achieve zero-carbon lifestyle, residential buildings are equipped with passive solar water heaters, street lamps are replaced by solar panel lamps, and public transit vehicles are mostly electric buses. In addition, the visible presence of solar panels and wind turbines (ex. in front of the subway station), electric vehicle charging stations in the town centre, as well as exhibits meant to educate citizens on recycling and waste management, further promotes the ideal of low-carbon living and bring Lingang one step closer to achieving its planning objectives of becoming a "low-carbon eco-city". Lastly, various industry complexes in Lingang are partially independent with energy usage. This is achieved through onsite generations, either with solar panels or district energy technologies such as combined heat and power.

Shanghai was one independent with energy usage. This is achieved through onsite generations, either with solar panels or district energy technologies such as combined heat and power.

Aside from these "low-carbon eco-cities", we have also observed other strategies and projects in Shanghai that aim to achieve more sustainable energy use and reduce carbon dioxide emission. For instance, we have learnt that in Shanghai all commercial and industrial buildings must comply with the Chinese Green Building Standard (中国绿色建筑标准), which is in equivalent to the rating of the Leadership in Energy and Environmental Design (LEED) standard; the difference is the Chinese system is rated by stars rather than levels. However there is a weakness with this system: while there is a requirement to achieve minimal of 3 stars (highest being 5 stars), detailed implementation of the standard is not regulated by planning policies, such as building codes, but by local architectural departments. Thus, it is difficult to confirm whether this standard has been complied with or not.

Furthermore, we have learned that there are two experimental projects ongoing in Shanghai that combines low-carbon concept and urban planning. The first is the core area in the Hongqiao Central Business District (CBD), located in the western part of the central Shanghai. This project proposes to create the first low-carbon CBD in Shanghai, which will feature (Yang, 2010):

- mixed density and mixed use;
- a green transportation system that focus on providing public transit and cycling infrastructures;
- a distributive energy system of combined gas and cooling/heating and electricity;
- and green building designs that improves energy efficiency, such as green roof

The second project is ongoing in the Shanghai Expo site, within Area B of the Expo and Commercial Core. As part of the larger renewal project of the Shanghai Expo site, Area B will be developed for business use in the future and it will have its own Energy Centre (Shanghai City Planning Institute, 2015). The Energy Centre will essentially be a district energy system, which generates heat and electricity on site from the combustion of fossil fuels; the main intention of this system will be for heating provision. Furthermore, similar to the Hongqiao CBD project, development of Area B will also aspire to achieve mix density, integrate green transportation system, and ensure all buildings comply with the Chinese Green Building Standard green and include as many green building designs as possible.

Overall, our experiences and observations show that Shanghai is indeed spearheading a new movement of urban development that integrates energy concerns into the city planning process in China. However, planning in Shanghai still has a long way to go in terms of improving the energy efficiency of built environments and realizing the low-carbon goals through concrete actions. As of now, it seems the existing projects and eco-city developments are largely driven by economic profits and place promotion rather than a shift in value towards sustainable development. From an optimistic point of view, these projects and eco-cities are nevertheless the first step towards a different model of planning in Shanghai and in China. Hopefully, their existence will propagate the ideas and practice of a more sustainable approach to planning in the future.

Recommendations

Way-Finding

Shanghai excelled in its land-marking and way-finding initiatives through the usage of signs and that is something where Toronto can learn. From our experience in Shanghai, navigating throughout the city was easy as there were numerous street signs and metro signs. On the road signs itself, it has both the Chinese road name as well as English-name derived from pinyin. What is unique about these street signs were how the street signs incorporated cardinal directions signs (North, South, East, West), were large in size, and positioned strategically so that they were easy to find. The addition of the cardinal directional symbols allows those with a poor sense of direction the ability to easily reorient themselves, making the city easy to navigate. Furthermore, with the signs large in size, as well as being placed strategically, they were easily visible.

Metro signs were also placed abundantly across the city. They were seen visible on street signs, and indicated which metro line the signs pointed to. In addition, there were signs just for the metro placed across the city, making the metro easy to find. Outside of metro stations, entrances were tall columns with the metro logo on it. These columns were visible from a distance. Putting all these way-finding signs made navigating the city easy.

These two way-finding methods coupled with the user-friendly sign placement made Shanghai easy to navigate. There were many signs that indicated where the metro was, and street signs that had cardinal direction symbols were helpful for those with poor

Photo of street sign with Cardinal Directions in Shanghai, taken by Priscilla Lan Chung Yang

directional sense. Toronto can learn from this experience and upgrade the current signs. There are benefits to these way-finding methods. By incorporating more way-finding signs into Toronto, it allows those that are new to Toronto to navigate the city easily. Even for the residents of Toronto, upgrading the signs to incorporate cardinal direction symbols and increasing TTC signage will help people find new entrances into the subway and travel to new parts of the city.

Street Food

Shanghai's vibrant food scene is an inspiration to those of us who delighted in having a wide variety of fresh offerings at different hours of the day, and in close proximity. Shanghai's street food was a welcome break from the sterile monotony of tourist traps in some cosmopolitan cities. Though the legal status of the

informal food vendors is an important consideration, the tolerance we observed of these vendors by law enforcement and the line ups by hungry customers indicates that mobile food vendors play a role in the daily functions of Shanghai residents. Removing barriers to mobile food vendors would be a welcome shift to Toronto's food landscape.

Photo of a crowded alleyway in Shanghai, taken by Dilya Niezova

Conclusion

Shanghai's historical development and economic accomplishments have provided a different perspective of the inter-working of one of China's fastest growing cities. Our visit to Shanghai provided a rare opportunity to observe such an interesting and in many ways extreme example of urban transformation. Seeing obvious mistakes being repeated on a grand scale by Chinese authorities highlighted anew the necessity of adherence to strict environmental standards, the importance of historical preservation and the relevance of fair social balance. On the other hand, it allowed us to glance at possibilities of a different, more centralized, approach to planning prompting thoughts about potential innovative changes to our system that would help us – future Canadian urban professionals - create a better city. While the environment and setting differ to those in Toronto, the methods in Shanghai provide various learning opportunities.

Transportation

The undeniable benefit of Chinese central planning and the decisive role of its Communist Party is Shanghai's excellent public transportation system. It is modern, it is efficient, it is clean, and it is relatively cheap. Shanghai's Metro has 16 extensive lines covering the whole city and its suburbs. A ride on one line from the beginning to end can take up to 1.5 hours. The most amazing fact is that the Metro was built in less than 20 years in such a densely populated megapolis. There is a Maglev (magnetic levitation) train to the airport, and bullet trains linking Shanghai to other major cities. According to several forum presentations, the grand scale and pace of Shanghai's transportation system development was possible due to strict goals and generous funding from the Chinese Central Government. An important lesson for Toronto: subway is possible in a populated urban area, and it is undoubtedly a very efficient mode of transportation, but it critically depends on federal and provincial support.

Photo of an intersection near Baoshan Metro Station, taken by Justin Fok

Planning System

Urban planning is still relatively new in China. During the early 1900s, leading up to the 21st century, economic planning has been at the forefront of planning in China, evident in the numerous planned industrial city. It was only in the last few decades that urban planning has caught up to economic planning in China. Planning has

a paramount importance in the current Chinese economic and political environment, hence it has the privilege of having the power to plan and execute according to the specified plan. Since development is dominated by state led initiatives and all urban land state owned, planners can produce grand ideas. However, it is evident in Shanghai that the use of foreign planning consultants still exists (for example the planning of Lingang New Town, Lujiazhu - the Pearl Tower). Obviously, as we learned from the conversations with various planners and scholars, Chinese urban professionals are susceptive to 'whims' of state and local government leaders. This makes our planning systems surprisingly similar. In both planning systems, urban planners have to fight for their professional beliefs and ideas against political and corporate pressures. Nevertheless, Chinese planning professionals have more say and power than their counterparts in Toronto who face constant destructive pressure from all kinds of political and private (development etc.) industry lobbies. That intense pressure typical to our Canadian reality stands in a way of creating more inclusive, more comprehensive, and more exciting environments.

Canadian planners have to prove themselves, have to win over the city again and again, while Chinese planners enjoy authority granted by the state. We, as professionals, have to challenge the Canadian status quo and push for more authority for urban designers and planners. Moreover, our system needs to be amended in order to detach planning process from myopic political influences.

Panorama view of both sides of the river, Lujiazhu and the Bund – Photo by Justin Fok

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