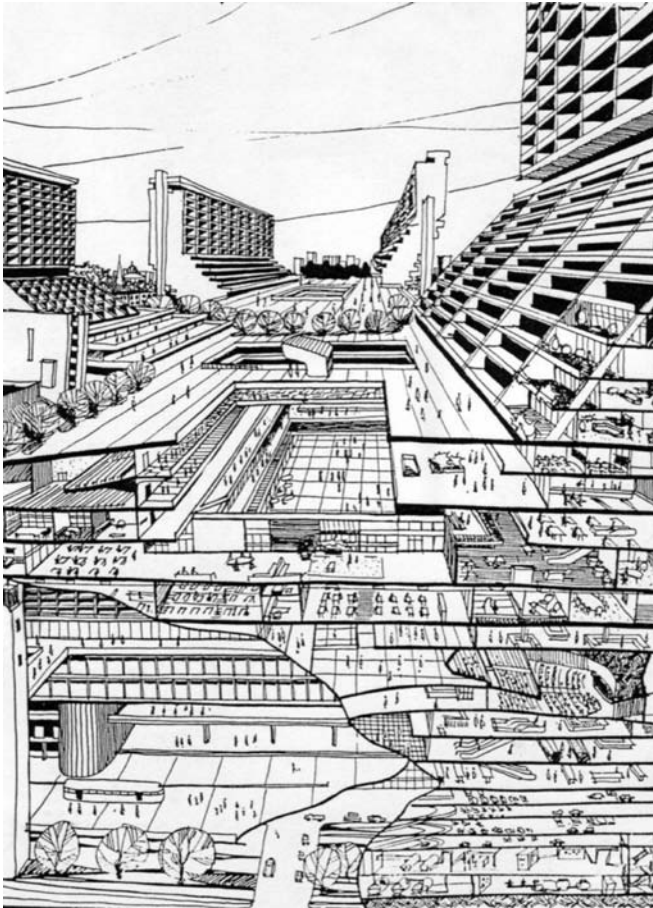


Columbia University  
GSAPP  
Spring 2015  
Advanced Studio VI

Critic: Jeffrey Johnson

## Megablock Urbanisms

Transportation Hub/Exchange  
Beijing-Tianjin, China



SPUR – Singapore, 1969

### Intro

The world continues to urbanize, in many regions at an astonishing pace, and we as architects, urban designers and planners must find ways to intervene in its physical metamorphosis. We are for the first time in history more urban than rural. Existing cities are expanding and new ones are being formed without historic precedent. How we continue to urbanize is of huge consequence. The contemporary Chinese city can, in many ways, provide us with a portal, or more than likely, multiple portals, into how the world's future urban landscape might be formed. How we understand these phenomena is critical to our ability to participate in the future urbanization of the world. This means we must invent new ways of thinking about cities and be agile enough to continually adapt and/or discard even the most recently developed theories and strategies.

## Urban China

China has a total population of almost 1.4 billion, with over half living in cities, equaling about 700 million urban inhabitants. This compares to an urban population of 80% in the US, equaling only 250 million.<sup>1</sup> In the past 35 years, China's urban population has ballooned from roughly 150 million in 1978 to the nearly 700 million today. This growth is chiefly due to the booming economy since Deng Xiaoping's Open and Reform in 1978. With an average annual increase in GDP of about 8%, and with double-digit growth in many of the past years, millions of migrant workers have left the countryside for more gainful employment opportunities in cities and industrial regions. Never before, at this scale and sustained pace, has the world experienced such rapid urbanization. It took America an entire century to accomplish what it has taken China a single generation. Since 2001, the growth of urbanization has been equivalent to building a new Chicago each month for the past 13 years.

Even more striking is that this trend is expected to continue. The goal of the government's modernization plan is to fully integrate 70 percent of the country's population, or roughly 900 million people, into the city by 2025. This translates into moving 200 to 250 million rural residents into newly constructed towns and cities over the next dozen years. This is largely in part an effort to strengthen the national economy by generating more domestic consumption, which occurs most efficiently in cities by urban populations. According to McKinsey Global Institute, this would create more than 220 cities with 1 million or more population (the United States currently has only 9 cities of 1 million or more and Europe 35). 170 new mass-transit systems could be built to support 40 billion sqm of new floor space, 50,000 of these buildings could possibly be skyscrapers – equivalent to ten Manhattans.<sup>2</sup>

Without dispute, the world has never experienced an urban project of this scale and magnitude. How do existing cities and even new cities confront the pressures of rapid urbanization? Existing cities are transformed almost instantaneously. What is to be done with the existing fabric and cores? What possible socially sustainable solutions can be invented for accommodating the rapid urban growth?

## China Megacities Lab

### Superblock to Megablock Urbanisms

For anyone who has flown into China, what is clear from the air is that the default solution for accommodating the millions of new urban inhabitants is large-scale superblock development, a carry-over from the Soviet-era *danwei*-type urban development planning, and the Modernist's utilitarian social housing block. According to Harrison Fraker, Jr., superblock developments are constructed at a rate of over 10 completed each day,<sup>3</sup> housing populations that

<sup>1</sup> McKinsey Global Institute <http://www.mckinsey.com/insights/mgi>

<sup>2</sup> Published by McKinsey & Company - McKinsey Global Institute *Preparing for China's Urban Billion*, March 2009. [www.mckinsey.com](http://www.mckinsey.com)

<sup>3</sup> Fraker Jr., Harrison. *Unforbidden Cities*, California Magazine, Volume 118, No. 5, September/October 2006

range from the thousands to hundreds of thousands. These large-scale residential enclaves, which can reach sizes of 40 hectares<sup>4</sup> and larger, are taking over the fabric of Chinese cities. This trend is not only prevalent with new developments at the expanding periphery of cities, but also in existing city centers at times highly contrasting their historical urban fabric.

The 'Megablock' is China Megacities Lab's most critical topic of research and its first long-term intervention into the processes of urbanization in China. What we hope to accomplish with our research is to redefine these superblocks--or 'Megablocks'—as laboratories for the consequences, opportunities, and potential global proliferation of Chinese urban models, reconsidered through the filters of ecology, economics, and ethics. We hope to discover through our research unique and emerging urbanisms that can be deployed in other rapidly urbanizing areas around the globe.

### **Superblocks as spatial instruments**

Superblocks are spatial instruments with social, cultural, environmental, and economic implications, operating between the scales of architecture and the city. When the Chinese government relinquished its responsibility of providing social housing for its population, a new commodity-based real estate market formed in 1997. Private developers, first from Hong Kong and Singapore, then from Mainland China, quickly stepped in to fulfill the market demands. The superblock was a perfect model to adapt.

Today, land policies in China encourage the development of large isolated residential/commercial districts and compounds, mainly in part through their methods of parceling large tracts of land into a collection of big blocks. These superblocks are then in-turn individually auctioned off to a select group of developers – placing much of the burdens and responsibilities of urban development in private hands and at the whim of the market economy. The larger the development, the more the developer is responsible to build.

In addition to 'building' large portions of the contemporary city, private development is also responsible for filling the municipal government's coffers. As part of the decentralization of government, China's Central Government has pushed the majority of the responsibilities of revenue earning on to the local municipalities. Because there is no annual property tax, the municipal governments levy a one-time land sale tax on developers when they purchase the rights to land to develop. This tax might amount to as much as 50% to 75% of the municipality's annual revenue, in turn necessitating a climate of pro-development. Cities need to continually make new land available for development to assist them in raising funds to pay for much needed infrastructure, schools, security and safety, hospitals and cultural facilities.

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<sup>4</sup> See Monson, Kjersti, *String Block vs. Superblock Patterns of Dispersal in China*, in *Architectural Design*, Volume 78, Issue 1 (2008), pp 46-53.

## **Spatial Consequences**

### **Urban Islands**

Each superblock, with rights owned by a single developer, is designed confidentially as an autonomous enclave, usually by a single design office or design institute. Communication between developers and designers seldom occurs and is neither mandated nor suggested by the government creating isolated islands of urban development. Often, the master plans seem as though they are designed in a vacuum with little consideration of context – existing or what is planned. They take no part in an overall urban narrative turning their back towards the city around them.

### **Walled Enclaves**

Due to China's dominant mandate for the built environment—that new housing developments be self-contained gated communities—almost all new superblocks are enclosed by walls with controlled access placing emphasis on an introspective planning approach. Although this interior-focused strategy can create a localized spatial sense of community, the negative consequence is that it inhibits continuity of public and semi-public spaces between blocks. This creates long expanses of impenetrable street walls unfriendly to pedestrians and the urban public as a whole. Additionally, in most cases, very little consideration is given to the self-contained semi-public spaces and building functions that are to form the collective component of the development.

### **Mono-functional**

In regard to functions and building uses, the contemporary superblocks are a far cry from their ideal socialist predecessors. The majority of superblock development is mono-functional, and predominantly residential. Whereas with the socialist *danwei* planning, at least in its most ideal form, in contrast it provided all daily functions to its inhabitants within the walls, including employment, housing, recreation, education, dining, etc. The result has been that many of the large-scale developments, at times making up large sections of the city, are 'bedroom' communities that lack in urban vitality and that promote commuting – often by automobile.

### **Tabula Rasa**

Perhaps the most destructive consequence of superblock development is the clearing of the site to accommodate the new planning. Almost all new superblock projects begin with a tabula rasa, seldom incorporating or considering existing urban structures and scales, even tragically those with historical significance. The superblock is most effective when it is deployed on a flat and cleared site with little or no obstructions. This has obvious social consequences as well. In almost all cases of new development in city centers, whole communities are relocated and the structures that accommodated them (some with historic significance like the Hutong in Beijing) are razed to accommodate the new superblock development.

## **Social Consequences**

### **Housing the New Urban China**

For the new elite, the superblock caters to their new lifestyle demands by providing both centrally-located and suburban locations, with exclusive, luxurious

and secure housing estates. The walled and gated superblock is a perfect model to market. Learning much from their recently unified neighbors in Hong Kong, developers and architects found that the superblock could offer their new middle-to-high-income clientele with all of the security and luxuries offered to the elite around the globe. The exclusive gated enclave coveted by the newly formed middle and upper-classes could now be attained in the form of a superblock, in urban and suburban areas throughout China.

As much as the superblock has responded to the needs and demands of the affluent, it has also exposed some of the challenges of social stratification that has been occurring since the economic reforms of 1978. The superblock has proven in many cases to be the perfect instrument to enable and maintain this stratification. This is especially the case for the newly arriving migrants from the countryside who have little money for housing other than living in urban villages or at their place of employment in dormitories or temporary on-site facilities such as prefabricated trailers.

For the lower-income population that the middle-class began to replace in the city centers, and for the large quantities of people moving to the city, the peri-urban superblocks have offered for many a more liveable and hygienic environment. However, the location at the outer edges of the city has proven to be very isolating and disconnected from the city center that, for many, has been their home for their entire life, and their families for generations. Families and communities have been separated and broken apart, and the massive scale of the new developments makes it very difficult for many to form new communities and support networks.

### **Superblock Bubble**

As is clear from the above, the commoditization of housing plays a significant role in perpetuating the construction of superblocks. China is arguably experiencing a massive real estate bubble. Due to limited opportunities for investment, real estate became a lucrative investment for the affluent. Until recently, investing in real estate was a sure thing, proving much more reliable than the volatile stock market. Motivated by an insatiable appetite for wealth, this investment craze fuelled the construction of thousands of developments that often sit dormant and unoccupied like *ghost towns*, yet on paper are fully "sold-out." This not only runs the risk of a real estate 'bubble' that could burst at any time, but also escalates property prices, where in many cities double-digit increases occur annually. These price increases create challenges for many of China's urban inhabitants who cannot afford the escalating prices, further increasing the gap between the wealthy and the poor.

### **Mega Opportunitites**

China's dominant mandate for the built environment—that new housing developments must be self-contained gated communities—does embody potential benefits for integrating commerce and services, maintaining and/or increasing density, and localizing infrastructure and governance. We hope to discover through our research unique and emerging urbanisms that can be deployed in other rapidly urbanizing areas. The studio provides the 'speculative'

and 'projective' component to the research, where the design of the 'Megablock' is the experiment.

## Project: Mega-Hub

Paralleling China's urbanization is its commitment to expand its infrastructural network connecting the new urban populations through new airports, super-highways and high-speed trains. These new transportation infrastructures often radically transform existing urban contexts, both positively and negatively. When they are introduced into existing dense urban areas, they often demand drastic clearing and demolition. At other times, the introduction of new infrastructures transforms under-utilized urban zones into productive ones encouraging new development and investment. When it proves infeasible and cost-prohibitive to build within existing dense urban areas, they are often constructed at the perimeter, where land is more plentiful and affordable. Frequently, new transportation centers/hubs are built entirely in the countryside creating nodal development ringing the city and connecting to others along the network. Isolated completely from its surroundings, yet linked to millions through a high-speed network, these islands of urbanity are cities unto themselves. Are these nodal x-urban developments the future of urban development in China? Can they inspire a radical new urban form? With a de-prioritization of the traditional 'center' of the city, how will these new urban forms radically change the way we think of the city?

The studio project will be to conceive a Megablock as a nodal transportation hub. It will be sited along the high-speed train corridor between Beijing and Tianjin. Rejecting conventional mono-functional development, the program will combine a high-speed train station, bus depot, commercial (retail, entertainment, office, hotel, etc), cultural, educational and residential functions. Discouraging the usual low-density suburban development models, the project will maximize density with a minimum FAR of 8.0. The site will measure 400m x 400m.

### Site

Beijing - Tianjin, China

The project will be located along the high-speed train corridor between Beijing and Tianjin, China. The exact project site will be selected during the first half of the semester and confirmed during the Kinne trip site visit in March.

### Program (preliminary)

Total Area: 1,280,000 sqm

High-speed train station  
 Bus depot  
 Retail  
 Entertainment  
 Office

Hotel  
 Culture  
 Education  
 Residential  
 Parking

## Research

The studio will undertake research on the following topics at the beginning of the semester. Each designer/team will be assigned one or two topics to research and present to the studio during week two (see schedule).

- User groups / demographics – migrant populations/flows
- Megablock precedents
  - Walled Cities / Courtyard Structures / Danwei Factory Compounds / Social Housing / Contemporary
  - HK precedents
  - Soviet precedents
- Policy / market factors / Local zoning laws
- History of China Housing
- Community / family unit in china (past, present) / social networks
- Beijing / China
- Transit Oriented Development (TOD) Precedents

## Deliverables

- Presentation quality color computer generated Floor Plans (one floor plan for every unique floor) to a scale necessary to communicate design.
- Presentation quality color computer generated Building Sections to a scale necessary to communicate design.
- Presentation quality color computer generated Site Plan at a scale necessary to communicate design.
- Presentation quality physical model. Scale to be determined.
- Presentation quality computer generated renderings of the project.
- All of the above drawings + images of the models will be formatted in a booklet form at the end of the semester (PDF format).
- End of Year Show: all students in the studio are required to present their work in the End of Year Show. It is the task of the studio to collectively design and install the exhibition.

## Schedule (Preliminary)

Jan 23	Studio Introduction
Jan 30	Pin-up 1: research
Feb 6	Pin-up 2: research + concepts
Feb 13	Pin-up 3: site analysis + building concepts
Feb 20	Pin-up 4: site analysis + building concepts
Feb 27	Pin-up 5: building concepts
March 4	Midterm review – conceptual building proposals
March 9-16	Kinne Trip March 9-16 Beijing

March 16-22	Spring Break
April 3	Pin-up 6
April 10	Pin-up 7
April 17	$\frac{3}{4}$ Review
May 1	Final Review

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