20.5.0 **BANGKOK** *beta*

a visionary scenario

Politecnio di Milano

School Of Architecture Urban Planning Construction Engineering
Master of Science - Architecture

Bangkok 20.5.50 beta

Supervisor: Riva Nicolo' Carlo Maria

JI YI

0 Contents

1 *Preface*

In this circle lives 60% of the global population and 55% of its urban dwellers.

Urban areas especially cities are now home to slightly more than half of the world's seven billion people. Current urbanisation trends indicate that an additional three billion people will be living in urban areas by 2050[1], increasing the urban population of the world's to two-thirds. However, the current era of rapid urbanisation has been marred with the inadequacy of capacity and sometimes resources to match urban development needs.

In many regions, urbanisation is characterised by the lack of adequate infrastructure, poor housing, inadequate plans, lack of effective legislation and financing mechanisms, etc., attributes that hinder shared urban prosperity. One of them is the Asian and Pacific region, in 2014, the Asia and Pacific region had a population of 4.3 billion, which represented 60 % of the world's total. While population growth in the region is often described by some as a "demographic explosion", its growth rate (1% in 2015) was actually lower than the global's one (1.2%) and it has been decelerating for some time. Yet, the absolute

growth remains highly significant with 676 minion people added in only 15 years.[2]

The speed and scope of urbanisation in Asia and Pacific is unprecedented. All sub-regions are experiencing urban growth at higher rates than overall population growth. While the region as a whole does not yet have the high urbanisation levels of other western regions (North America 81.5%, Europe 73.4% etc.)[3] By 2050, urban areas will account for nearly two out of three people.[4] Without doubts, the region faces an urban future for which it must prepare.

Megacities (cities exceeding 10 million inhabitants), once exceptional, are now increasingly commonplace. Today, the Asia- Pacific region is home to 17 megacities, three of them the world's biggest: Tokyo, Delhi and Shanghai. And, this number is growing significantly over the years. While economic growth in this region has generated large middle classes during the past two decades, particularly in North and North-East and South-East Asia, millions of people continue to work in the informal sector and depend upon informality for access to housing, land, infrastructure and services. Moreover, the rise of the middles classes is not an all-inclusive process. Those defined "middle class" in the region's cities range in income from USD 2 to USD 20 a day.[5]

An increasing number of cities are facing crises of liveability, characterised by problems as congestion, the inadequacy of public infrastructure, lack of basic services etc, inequality within social classes etc. In addition, this region is also characterised by its enormous size and multiple differences which make difficult to describe it in a univocal way. But what makes this region's urbanisation truly remarkable is the huge number of people involved.

What this research is trying to focus is not repeating issues and circumstances already well-known by the public, since cases like China and India have been analysed so far by many other researchers (probably well prepared in the discipline) and actually they had their major urbanisation trends between 2000 and 2010.[6] It brings attention to variant emergent realities present in Asia region, such as emergent Asian cities, the other megacities, fulfilling with their urbanistic storylines. Through the 3 selected cases, and in particular the city of Bangkok, it attempts to give a possible answer to the question that everyone of us owns, about the future of our cities.

[2] - Statistics derived from World Urbanisation Prospects: The 2014 revision, prepared by the United Nations Department of Economic and Social Affairs (UNDESA).
[3] - Statistics derived from Degree of urbanization (percentage of urban population in total population) by continent in 2018, prepared by statista.com (The Statistics Portal).
[4] - Statistics derived from World Urbanisation Prospects: The 2014 revision, prepared by the United Nations Department of Economic and Social Affairs (UNDESA).
[5] - The State of Asian and Pacific Cities 2015, Urban transformations shifting from quantity to quality(ESCAP).
[6] - Statistics derived from World Urbanisation Prospects: The 2014 revision, prepared by the United Nations Department of Economic and Social Affairs (UNDESA).

Current economic models are not providing a basis for inclusive and sustainable development - Shenzhen, China © Sim Chi Yin / VII

2 *Emergent Asian Cities*

The selection of the 3 cities was a result of personal experiences and an accurate comparison made of a larger range of cases, aiming in exploring more different realities in this limit research. Therefore they have lots of similarities, but at the same time, lots of differences too. The selection of the 3 cities was a result of personal experiences and an accurate comparison made of a larger range of cases, aiming in exploring more different realities in this limit research. Therefore they have lots of similarities, but at the same time, lots of differences too.

Shenzhen
China

Seoul
South

Bangkok
Thailand

Area: 1991.64 km^2

Population: 11 908 400 (2016)

Density: 5979/km^2

Area: 605.21 km^2

Population: 9 891 448 (2017)

Density: 16492/km^2

Area: 1568.73 km^2

Population: 8 280 925 (2016)

Density: 5300/km^2
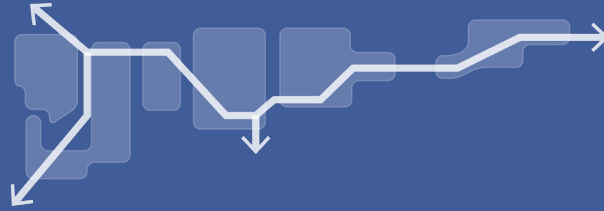
2.1 *Shenzhen*

Shenzhen represents a miracle for the whole modern era. In the 80s of the last century, due to its geographic proximity to Hong Kong (still British colony during that age), Shenzhen was desired to be the equivalent Chinese port to the world. In 20 years, the small fishing village of 20 000 inhabitants has become one of the most influencing cities of China, its rapid development went out of any kind of imaginations and beginning expectations. Today, with its 11 million population, it is the 4th most important city in China, truthfully a significant indicator from both demographic, economic and political standpoints for other young born Chinese cities.

Actually, the first plan made in 1982 forecasted a "bright" number of 500 000 inhabitants for the future population in 2000, providing it with all the standards of a big size city of that age. Shortly the plan was changed into an 800 000 inhabitants' triggering debates and contro-

versies in the country. Foreseeing the public pressure, city planners supplied a scientific method in enlarging pre capita indicator which is going to be the main factor for its unrealistic development without notable problematics. This transitional proposal was soon substituted by another one bigger and more ambitious, in the document published by team Zhou Ganshi[7] in 1986 Shenzhen was designed to host more than 1 million people, with all the necessary services and facilities for a megacity stabilising the polycentric structure for the general city planning.
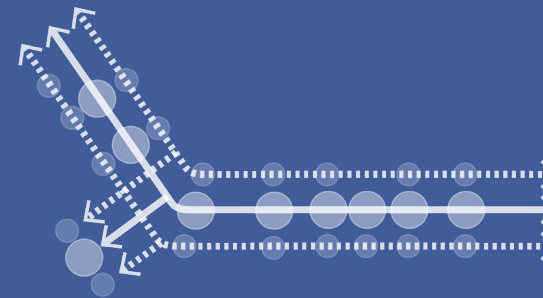
However in 2000 for the demographic survey, the city of Shenzhen registered a population of 7 million people, 7 times more the planned number. The flexible city structure characterised by its polycentricity allowed this "spontaneous growth" done in an almost harmonious way. Nowadays, based on the central axis provided by the first plans, there are other 2 parallel axes which born following the city's natural need. These lines grow simultaneously englobing all the city clusters, forming a huge belt extending to the infinite.

Although the uncertainty was one of the main characteristics of this unheard-of project since the very beginning, the entire direction was trusting in its fast development in the future, even there was not any real evidence which could prove this intrepid hypothesis. Partially, it is may be defined as the proof of political influences in promoting urban planning in large scale, especially in a country like China, where the central government has almost an absolute control in all the fields.

Unlike the other common cities in China or in the world, Shenzhen had no history before, therefore there was no analysis to be done. The flexibility of the starting city plan helped Shenzhen in capturing every single significant instance of Chinese fast blooming. As individual part of the city's structure grows in parallel, the city avoids lucky the phase of urban regeneration, consequently, it could invest more resources in its prompt expansion.

Today, in despite the fact that it is one of the most important economic core of the country, Shenzhen entitles "the most liveable city of China", thanks to its initial highly standardised per capita plan. The green area arrives at 40.92% of the total surface and on average each citizen shares 16,8 m2 of public green.

2.2 *Seoul*

Seoul, or officially the Seoul Special City, is the capital and largest metropolis of South Korea. The area where the city is found today first came into prominence as Wiryseong, capital of the Beakje Kingdom[8], and has maintained its role as the geopolitical centre of Korean ever since. Archaeological founds in the Han River basin show that this area was the most important region in the Korean Peninsula since the time of the prehistory.

Seoul has experienced continuous transformation in its over 600 years of history, the primary structure of the city was given based on Chinese " Feng-Shui " principles. The city was built with the proper balance between the 4 mountains and the grid form evoked the 4 blessed guardian animals, in the ancient believes they were messengers of

[8] *- Baekje (*백제; 百濟; *18BC - 660 AD) was a kingdom located in southwest Korea. It was one of the Three Kingdoms of Korea, together with Goguryeo and Silla.*
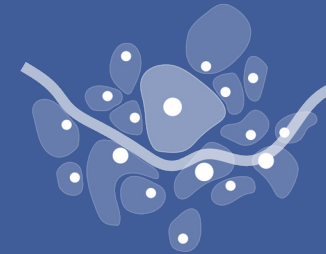
the harmony of the cosmo and would guarantee prosperity for people who live in this territory.

Afterwards, at the end of the 19th century, the country relinquished its "hermit kingdom" status. The arrival of foreign powers, especially Japan and China, brought radical changes to the spatial scheme of the city. For example during the Japanese annexation, occupying forces established the military base, administrative centre and commercial area in different districts of the city, this brought, therefore, a more precise diversification of urban function for each district.

During the 1960s, Seoul experienced a rapid urbanisation, the persistent flux of domestic migrants forced the city to expand its boundaries over the Han river, giving life to one of the most developed metropolitan areas nowadays, Gangnam. Later on, in the 70s, urban planners started to regulate this massive urban growth because of many issues related to the over-concentration. Significant measures were proposed to control the concentration in the capital and underwrite a balanced development for the entire country. Subsequently, sub-centres and small cities were built in the outskirts of Seoul city,

developing a dense framework composed of numerous satellite cities, a real sprawl phenomenon. These measures made ahead could justify partially the fact of being the only megacity in this region with population decline, what makes Seoul an interesting case study for the whole regional scale considerations.

The last turning point came in the 1990s, the urban development policy changed from the growth-oriented to the sustainability-oriented. For the first time, the restoration of the forest was proposed to substitute precarious apartments. It gave beginning to the era of culture and environment, where the quality of life comes before the city development. However, the city is planning to reach 16.9 m^2 of public green per capita in 2020, what is no longer different to the number that a Shenzhen citizen owns nowadays.
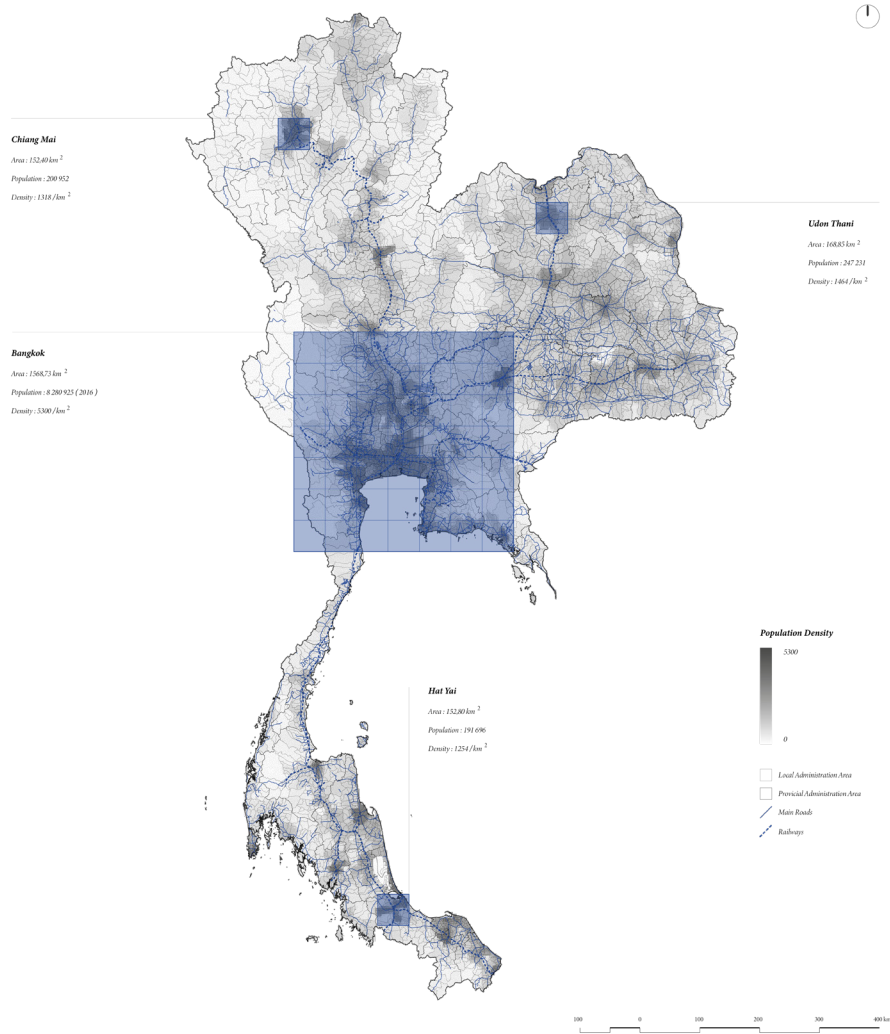
2.3 *Bangkok*

Bangkok is the capital of Thailand, it is known in Thai as Krung Thep Maha Nakhon or Krung Thep, the city of the angles. Due to the fact that the country has had a relatively un-urbanised past (in 1990, only 18.71% of the total population lived in urban centres. In 2000, the percentage grew to 31.09%, still much lower than most countries in this region. [9] Recently, the urban population rate increased to 52.7% (2017), which is quite close to the global average, but still lower than other 2 countries mentioned previously in this research (China = 56.1%, South Korea = 81.5%).[10] It is the nation's primate city and the administrative, economic, transportation, and education centre of the country in absolute. With its rapid demographic growth, the urban sprawl reaches into other provinces it borders, making alive the Bangkok Metropolitan Region (BMR), which refers to Bangkok city and the five adjacent provinces. Nowadays, Bangkok has over 8 million population which represents 12.6% of the country's. Besides, over 14

ded the throne. The city is in the Chao Phraya River[14] delta, most of the area was originally swampland, gradually drained and irrigated through the construction of several canals during the centuries for agricultural purpose. This intricate waterway system served ad the primary mode of transportation until the late 19th century, when modern roads began to be built, leading the city to be known as the "Venice of the East". Today, most of these canals are paved over, but part of them are still cross the city, serving as drainage channels and local transport routes.

However, Bangkok has had a "fragmented" planning pattern. The first socio-economic development was prepared in 1960, meanwhile, the urban planning one came only in 1992, which introduced land use control and other modern concepts. Therefore, in the case of Bangkok, the emergence of new land use, not the infrastructure development, has guided its urban growth. The explosive development in serious environmental problems including air and water pollution, lack of adequate urban infrastructure, whence Bangkok results as one of the most congested cities in the world, since the city's organic form, its streets do not follow an organised grid structure. In addition, due to the issues related to the land use, Bangkok owns an extremely low per capita public green area, even there are several green areas around the city, the park green is only 1,82m^2 per person, compared to the other megacities in Asia.

[14] - *The Chao Phraya is the major river in Thailand,with its low alluvial plain forming the centre of the country. It flows through Bangkok and then into the Gulf of Thailand.*

Chiang Mai
Area : 152,40 km^2
Population : 200 952
Density : 1318 /km^2

Udon Thani
Area : 168,85 km^2
Population : 247 231
Density : 1464 /km^2

Bangkok
Area : 1568,73 km^2
Population : 8 280 925 (2016)
Density : 5300 /km^2

Hat Yai
Area : 152,80 km^2
Population : 191 696
Density : 1254 /km^2

Population Density
5300
0

Local Administration Area
Provicial Administration Area
Main Roads
Railways

[11] - *The State of Asian and Pacific Cities 2015, Urban transformations shifting from quantity to quality(ESCAP).*

[12] - *The Ayutthaya Kingdom, also spelled Ayudhya or Ayodhaya was a Siamese kingdom that existed from 1351 to 1767.*

[13] - *Phra Phutthayotfa Chulalok, born Thongduang and also known as Rama I (20 March 1737 – 7 September 1809), was the founder of Rattanakosin Kingdom and the first monarch of the reigning Chakri dynasty of Siam (now Thailand).*

million people lived within the BMR at the 2010 census, almost 22.2% of the entire nation. All those numbers are not to impress but to remark the very peculiar situation of this special city [11].

The history of Bangkok dates at least back to the early 15th century, under the rule of Ayutthaya[12], a small village on the river bank at the time. Because of its strategic geographic location, it was selected to be the new capital of the empire in 1782, when King Rama I [13] ascen-

*Ayutthaya 1607*
www.ayutthaya-history.com

3 *Bangkok City*

What makes Bangkok different to other Asian megacities is properly its contrasts, results of a discontinuous, organic and prosperous urban development. Nevertheless, it was not only a simple outcome of an urbanistic storyline but an overlapped culmination of its particular political, geographic and religious background. In fact, Thailand has been a monarchy until 1932, its social structure is traditionally ordered by hierarchical oppositions, at the top there is a formation of nation/religion/king: the king is the father of the nation and head of the community; Buddhism is the national religion and the source of moral beliefs and merit. All forms of power, including military coups and democratic constitutions, need to honour the triumvirate to succeed. After the proclamation the constitutional monarchy following the bloodless revolution in the 19th century[15], the country has periodically alternated between democracy and military rule, which caused numerous crisis also during the recent time. Actually, Thailand is a unitary parliamentary constitutional monarchy under a military junta (the 20th). Despite its complicated political situation, Thailand has generally been very open to Western ideas and technologies, besides, its culture is characterised by a remarkable capacity to absorb new ideas without displacing the existing ones. not by chance, during the colonial empire ages, the arrival of Western powers was seen as a threat, a possibility to embrace the modernity by the King[16], as the modernisation was considered indispensable for the maintenance of the kingdom's independence. Therefore, through layering and juxtaposition, modern Thailand is a shape of both traditional and modern, Thai and Western, authoritarianism and democracy, inherited power and meritocracy.

15 - *The Siamese revolution of 1932 or the Siamese coup d'état of 1932 was a crucial turning point in 20th-century Thai history. The revolution, a coup d'état, was a nearly bloodless transition on 24 June 1932, which changed the system of government in Siam from an absolute monarchy to a constitutional monarchy.*
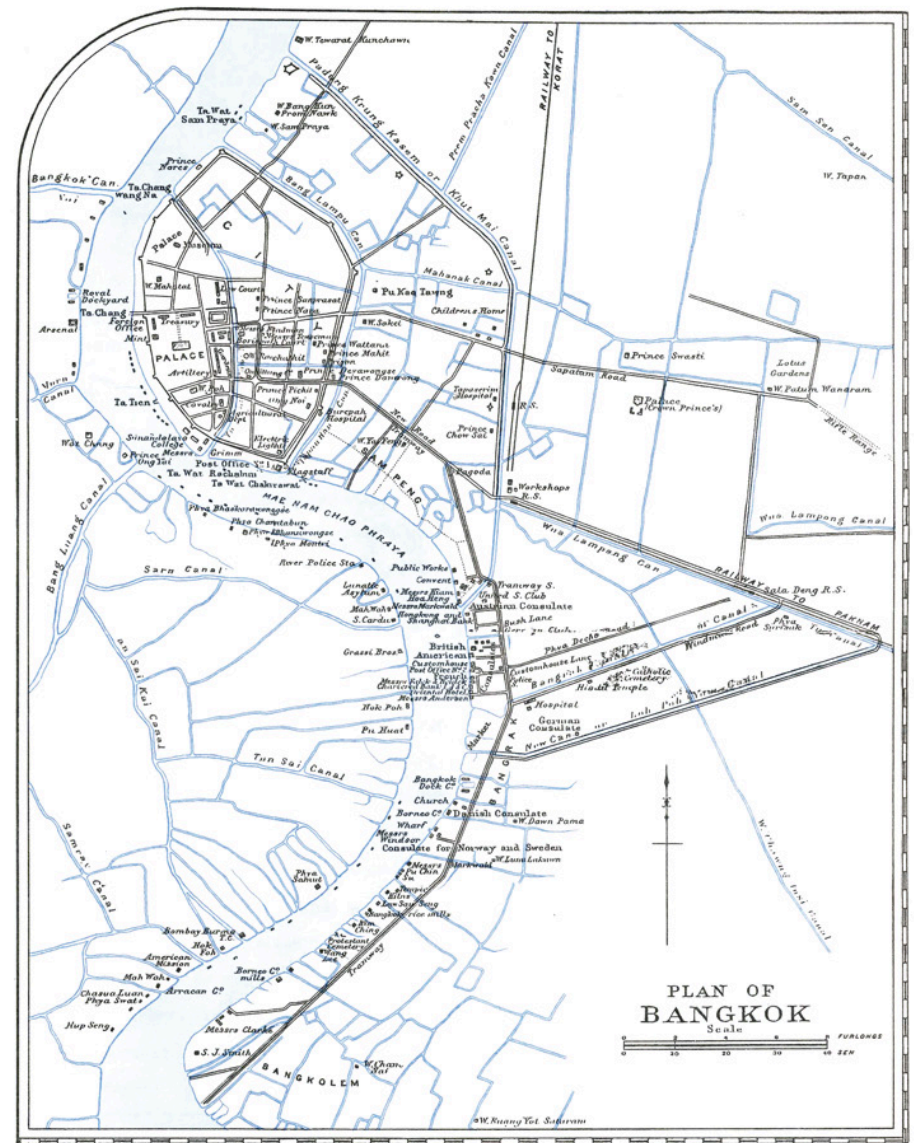16 - *King Rama V*

1870

The canal construction and the first phase of road construction were undertaken to connect one place to another as well as expand the city proper since the development of Bangkok started from a swamp. Since Bangkok relied on water transportation via canals for more than a century after its establishment, canal construction had defined the size of the city. Area of old Bangkok was 346 ha in 1785 and became 640 ha in 1851. Through this first phase of Modernisation, **a new typology of housing was introduced, it is called shop-house**. Therefore, until today, it remains the most common and characterising one along modern Bangkok's streets.
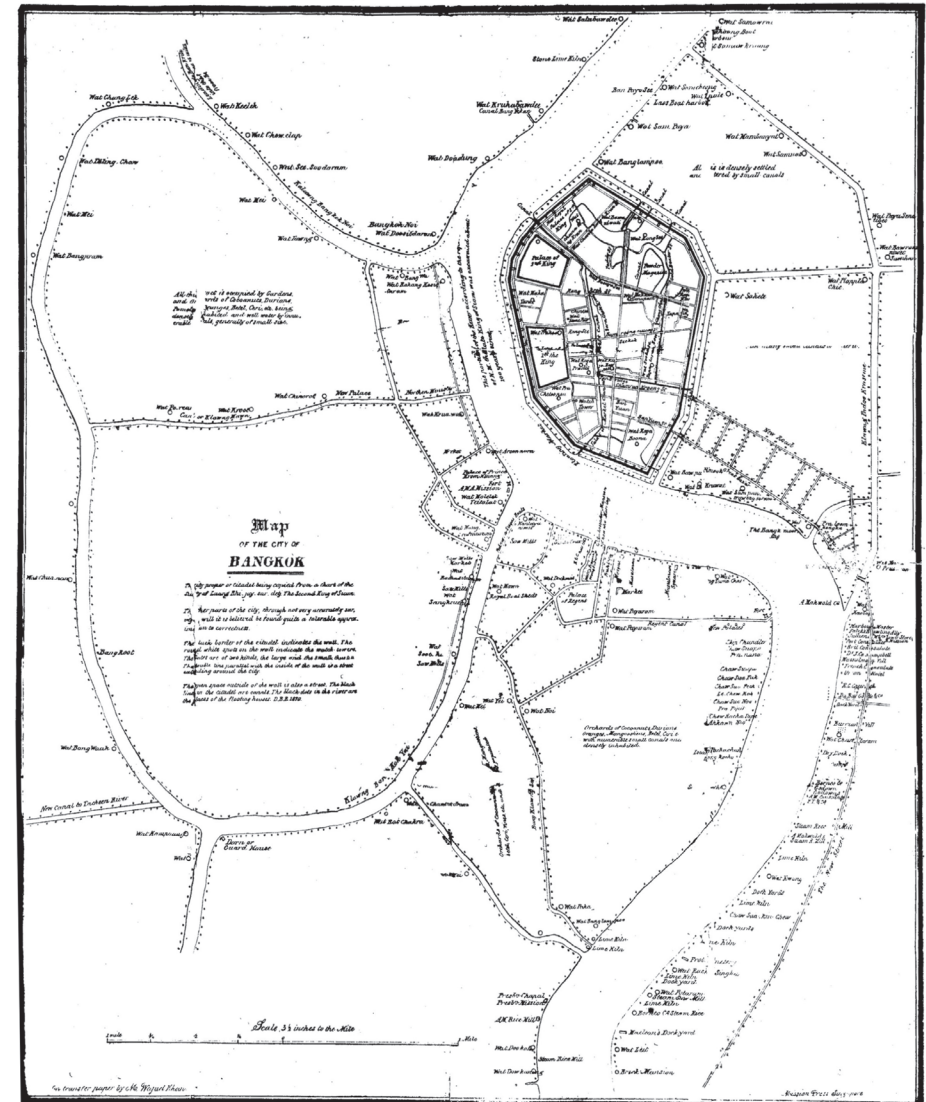
1888

It was in the middle of the 19th century that foreign firms were allowed to locate their offices in Bangkok. The emergence of foreigners led realised the necessity of land transportation in Bangkok and roads were simultaneously constructed along with canals. While **the construction and operation of railways established the status of Bangkok as a national trade centre.**

PLAN OF
BANGKOK
Scale

กรมแผนที่ทหารจัดพิมพ์ขึ้นใหม่ ตามต้นฉบับเดิมเมื่อ พ.ศ. 2527

Engraved & Printed by W&.A.K.Johnston, Edinburgh & London.

1917

King Rama V's tour in Europe in 1897 resulted in the emergence of **urban planning and westernised townscape in Bangkok**. After the decision of moving the Royal Palace to Dusit, a new network plan of 50 roads was made, the transportation infrastructure started functioning to guide the city's urban development for the first time. **The removal of the wall in Old Bangkok caused a first significant growth of its urban population.**
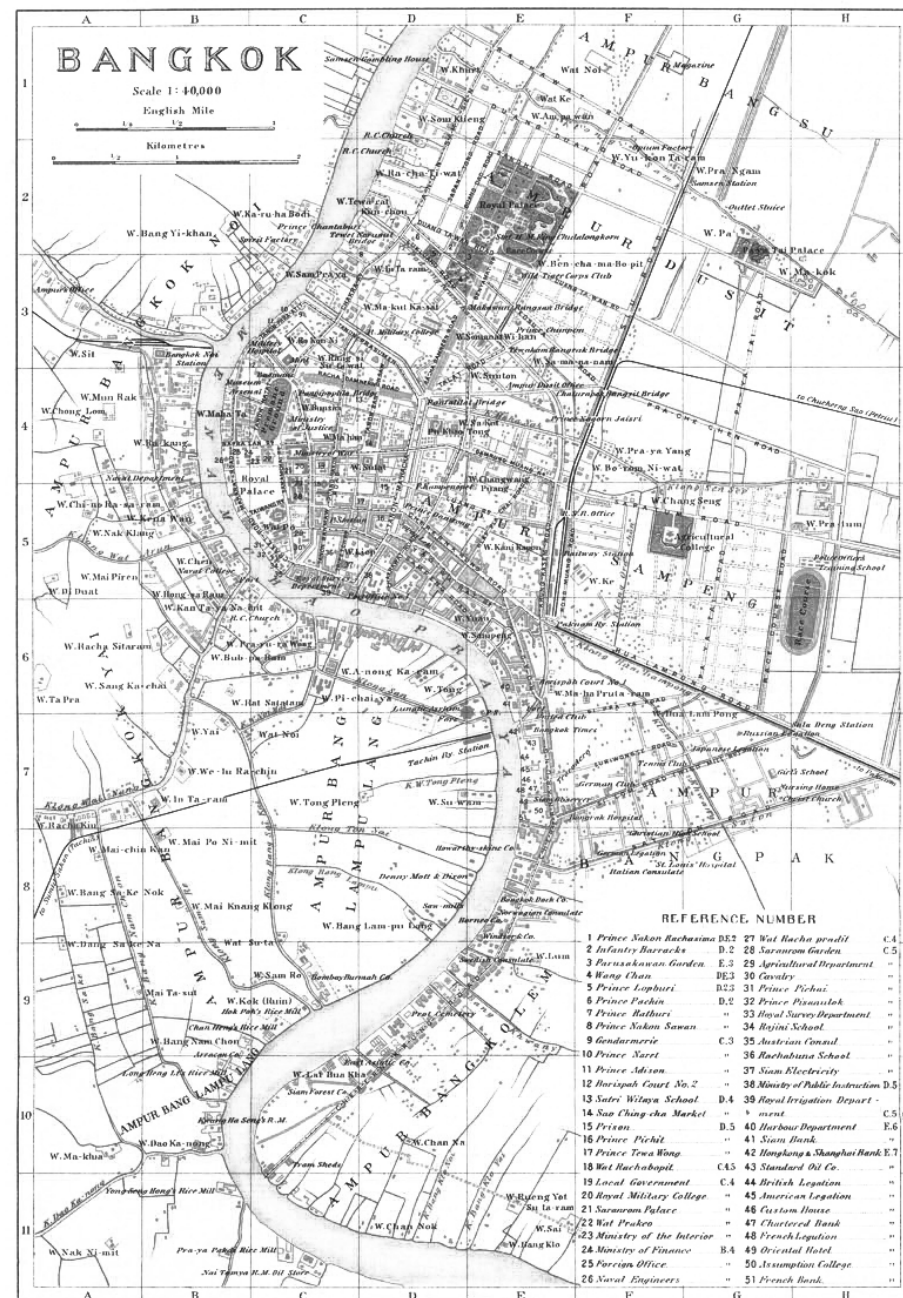
1950

The nationwide road network development started in the 1930s, it declined the role and function of canals in Bangkok. Afterwards canals remained mostly for irrigation purpose. Later on, the commercialisation of the railway affairs followed up with the **decline of railway business**. After W.W.II, Japanese firms started building their **offices along Silom road, and the land use of the area changed from residential to commercial**. Therefore, the first Socio-Economic Development was prepared in 1960, and the plan has been revised every five years.

KRUNG THEP (BANGKOK), THAILAND
AND VICINITY
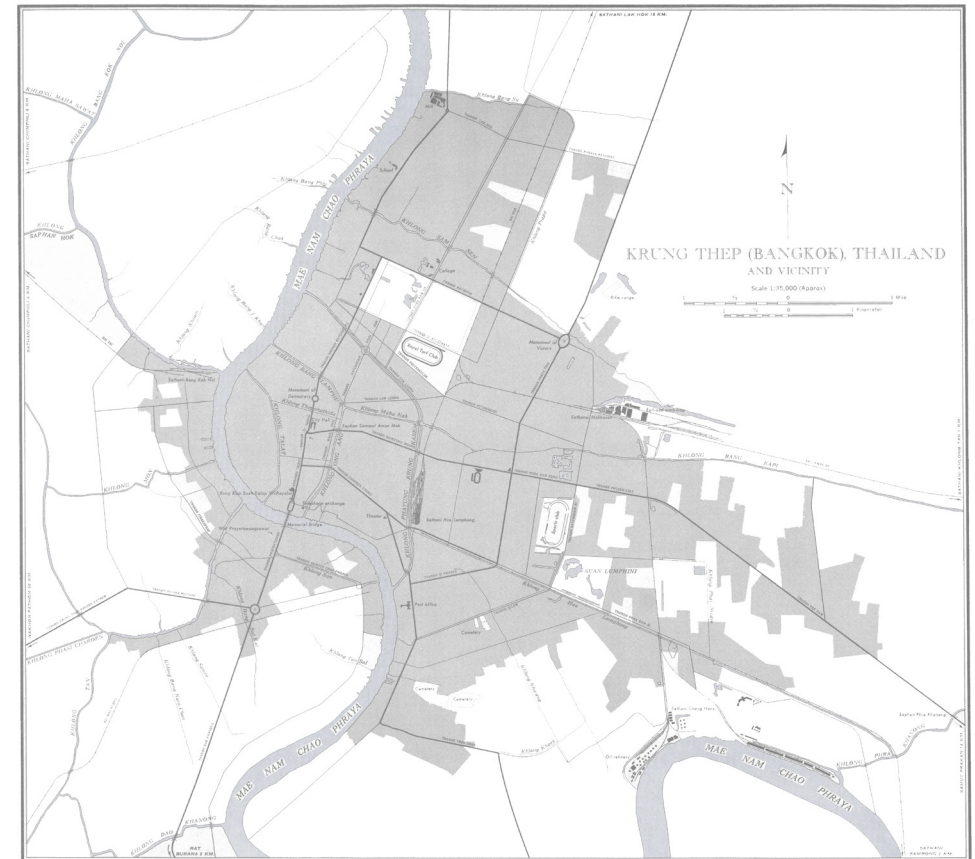
1984

The population has had an increase of 200% in less than 20 years (from 1957 until 1971), this first demographic explosion made the city's infrastructure to be obsolete, the construction of highways and circumferential roads was the new emergence. Therefore, the city of Bangkok started to testify a real **trend of urban sprawl**. While only in 1992 the concept of land use control was, for the first time, partially introduced for specific areas in Bangkok and produced the juxtaposition of totally **different land uses in the same plot** which represents one of the most characterising factors of its townscape.
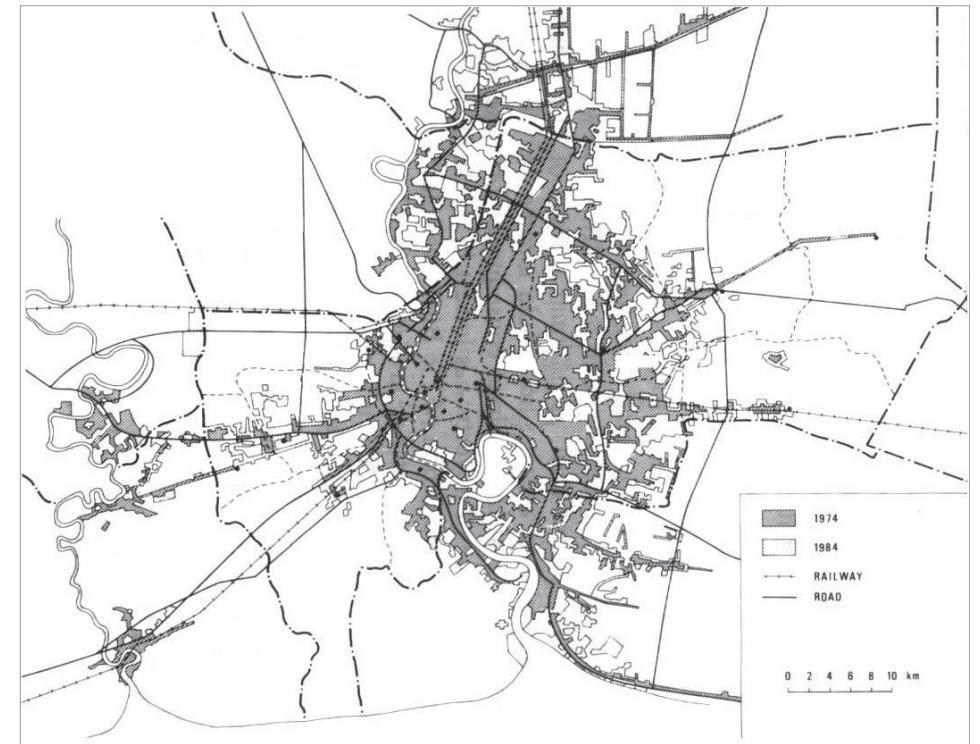
1985

According to the information above, Bangkok is a primate city. It is one of the oldest urban centres of the country. The others are either very small or developed lately. Actually, every urban centre in Thailand depends largely on Bangkok as all socio-economic and political activities are clustered in Bangkok. However, **its rapid transformation brings it into a city of Mubahnchatsan, the Thai version of the gated community**. One of the main issues is the huge presence of the slum population in the city. Statistically, **Thailand has in total 3% of its population considered slum, most of them (around 60%) concentrates in Bangkok**. As such, gated living is becoming the norm instead of an exception, while the public sphere is undermined because different social classes do not meet.
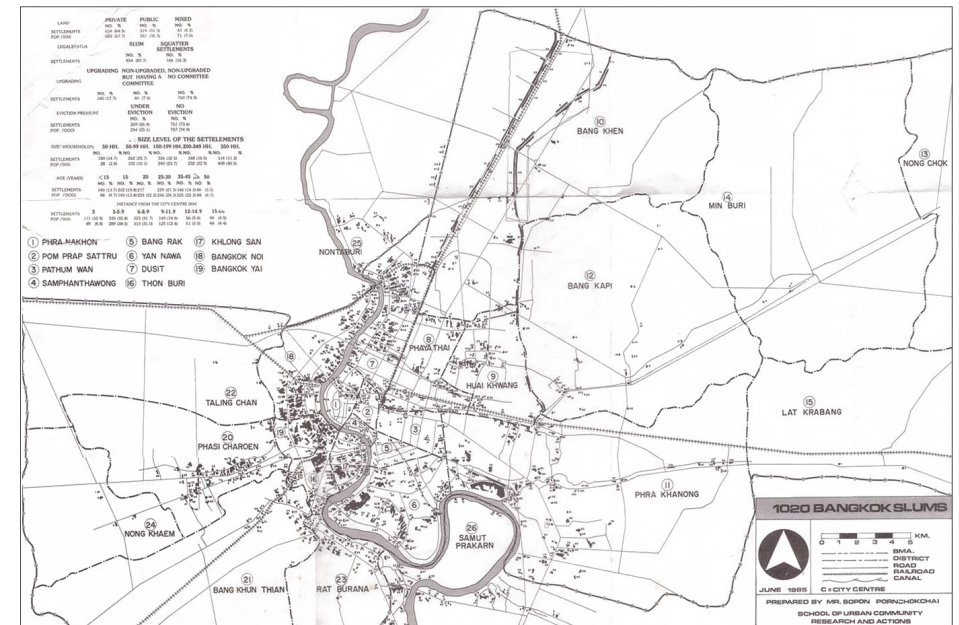
2030

Road-based transport is the primary mode of travel in Bangkok, city's rapid growth resulted in sharp increases in vehicle ownership and traffic demand, in front of a limited carrying capacity, causing **severe traffic congestion by the early 1990s**. While Bangkok's limited road surface area (8% compared to 20-30% in most Western cities), inadequate public transport system also play a role. Traffic issues have been also the main source of air pollution of the city. Therefore several **bypasses and extensive systems of highways, as well as new rapid transit systems were introduced to alleviate these problems**. However, Bangkok's traffic condition remains still poor, **new lines of both elevated and underground rapid transit systems are going to be constructed by 2030.**

BANGKOK

BTS Skytrain
Sukhumvit Line
Silom Line
MRTA Blue Line (Subway)
MRTA Purple Line
Suvarnabhumi Airport City Line

2017 © UrbanRail.Net (R. Schwandl)
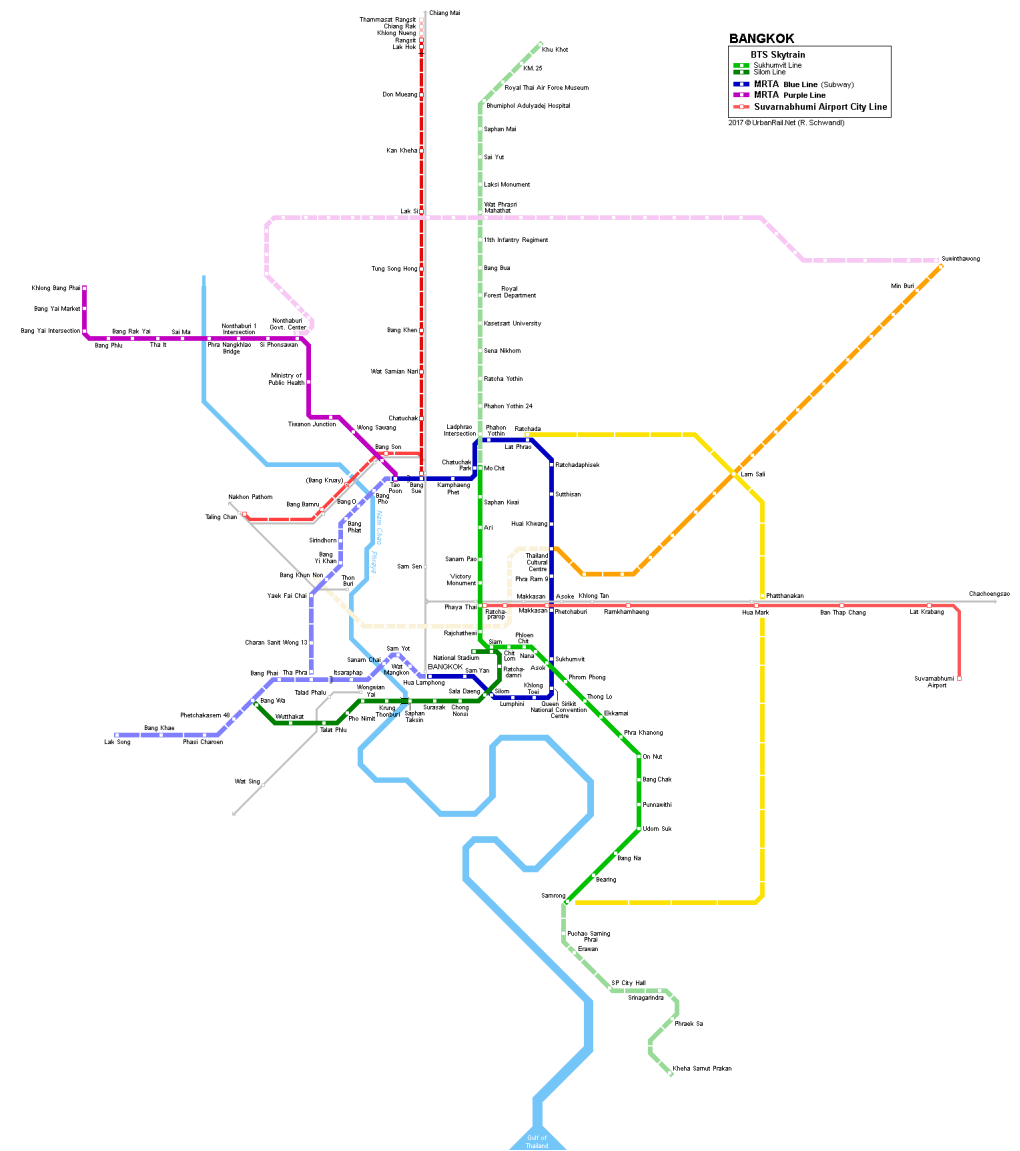
4 *Morphologic Overlap*

Bangkok's rapid growth accompanied by rearward and inefficient urban planning has resulted in a haphazard cityscape and inadequate infrastructure. Due to the limited road surface, different layers of infrastructure systems are overlapped one above the others, forming a merely rare phenomenon, the morphologic overlap. As the velocity of its urban growth is much faster than the interchangeable panning measures' all those layers are not well connected, actually, the newly built ones tend to overwrite above the pre-existent ones, as well as the messy land usage in every single plot of the city. In addition, the massive infrastructures are spatially invading the boundaries within architecture and themselves, smothering the private life, in particular, the poor's. On closer observation, Bangkok's urban field consists of a series of separated walled units that are selectively connected, what testifies the largely available reality of the slum issue. In this type of city the rich have disconnected themselves spatially from the poor, they have abandoned public space and are retreating in the pseudo public spaces of shopping malls, golf clubs and gated communities. This question seems especially crucial in Bangkok, a city full of walls and gates that surround a seemly endless amount of mono-functional and mono-cultural enclaves.

I

II

HOUSE
WATERWAY

HOUSE HOUSE
COMMERICAL MOTORWAY
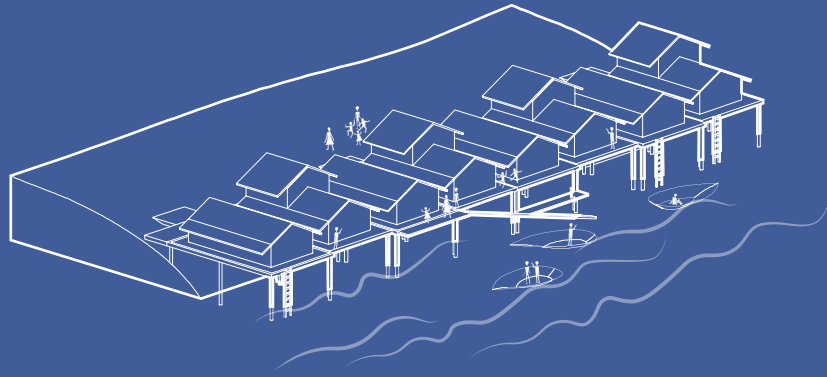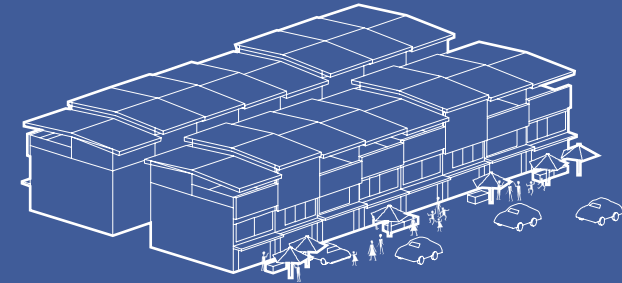
Bangkok was a water born city, the traditional living style was strictly depending on the water which holds transport, irrigation but also commercial purposes. Local people used to live in stilt houses, ruen in Thai, constructions made of bamboo or wood, raised on piles over the surface of the soil or a body of water, concerned primary as protection against flooding and help also to keep out vermin. The main accessibility was guaranteed by the waterways and a secondary one from the back side river bank. Different houses of the same family are usually clustered and a connected by collective pathways which represent the first form of public space. Actually, this typology of housing still remains the most common one in other less urbanised regions in Thailand, as well as the water-based transport system.

During the late 19th century, with the construction of roads in Bangkok, the city shifted to the road based transport system. Shophouses were largely introduced in the urban field and became the significant part of its townscape. Actually, it was not an invention of Thai people, shophouse is a vernacular architectural building typology commonly present in Southeast Asia and Southern China. Shophouses are mostly two or three floors high, with ground floor destined to commercial or public activities and the residential ones above. This could be considered the very first mixed-used building typology which characterises the historical centres of most towns in this part of this region. As it still occupies the greatest part of Bangkok's streets, it could be considered as the emblem of the mass's living style.

III
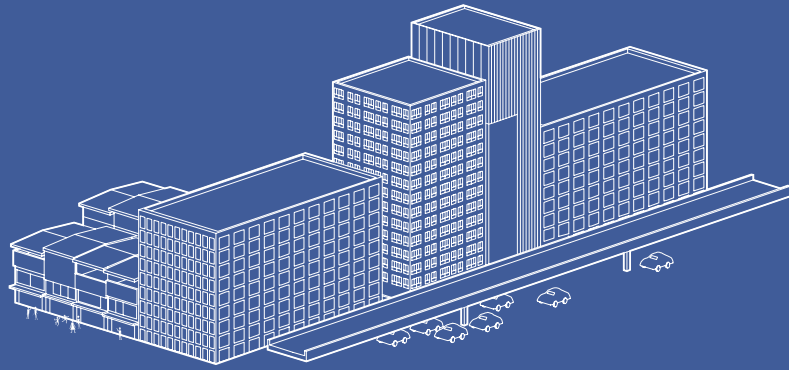
IV
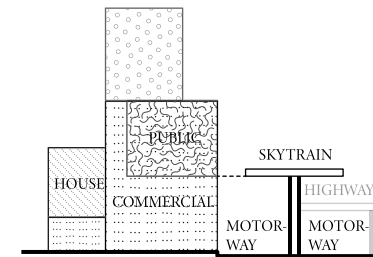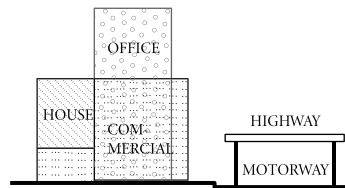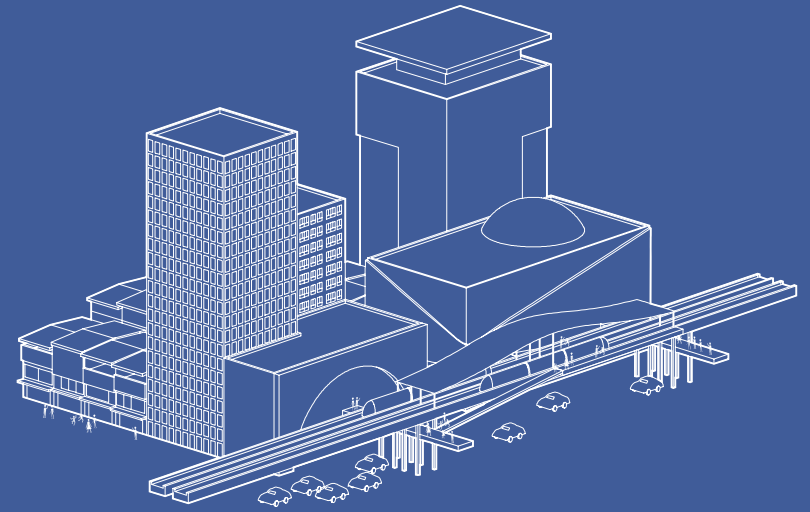
After the first demographic explosion, Bangkok firstly started to testify the consequences related to the inadequate infrastructure. Numerous bypasses and highways were constructed in order to solve these issues. The rapid growth was accompanied also by new forms of architectures, for offices and other newly concerned urban functions, their massive presence was taking over the traditional urban fabric in terms of size, scale and land usage. As there were no efficient urban planning measures about land use until 1992, more and more blocks became mixed used, while numerous walls were built within these architectures, to fence spaces owned by different social clusters. Therefore, it gave significant contributes to Bangkok's morphologic overlap phenomenon.

In the early 1990s, immeasurable traffic congestion forced the Thai government to provide new transport solution. The city entered in the era of public transport, physically above the pre-existent road surface, 5 lines of rapid transit systems were built in a few years, and an intense surface transport network was developed. However, these newly built systems were accessible only to a limited range of population because of their excessive prices. Therefore, numerous shopping malls were built along the rapid transit lines, especially in the intersection joints, as the gated community reality was becoming slowly a common phenomenon in the city, and the rich prefer closed commercial space instead of open-air public space without fences. Due to the fact of an inappropriate road surface and unsuitable block usage, both the new

infrastructure and new architecture are literally overwriting on the previous urban fabric emphasising the Bangkok's authentically remarkable cityscape.

Recent reports show that Bangkok still plays its important role as the national primate city in all the fields. As well as the continuously increasing population in the BMR[18], the city is facing newborn issues still related to the high density and urban sprawl phenomenon, in this specific case, also to its morphologically overlapped urban texture which replicates perfectly the social and urban living conditions in the city. In order to alleviate the never-ending traffic congestion problem and to compare with other international influencing cities, Bangkok freshly introduced the underground rapid transit systems, besides, also the extension of several extent lines is under construction. Probably they will not enough to carry the city out from its problematic situation, finding new solutions is an emergency, as the Rama V did centuries ago, open the mind and testify. Therefore, new forms of living, of urbanism, of architecture are extremely necessary in the crucial moment of history. Europe played its primate role in the past, then it turned to Americans, in the future it will be, as likely as not, rounded to the Asians.

The region is undergoing a profound urban transformation

© *Pisut Jarintippitack*

5 *Cases*

"If there is to be a new urbanism, it will not be based on the twin fantasies of order and omnipotence; it will be the staging of uncertainty; it will no longer be concerned with the arrangement of more or less permanent objects but with the irrigation of territories with potential."

Rem Koolhaas, Euralille Project

Actually, all those issues are not products just of the current age, they have roots came from early post-war years. In front of the biggest destruction during the modern times followed later on by all the circumstances associated with it, people started thinking, dreaming and proposing new forms of cities, or better, modern tales of Urbanism. Some of them more pragmatical, some more idealistic, or utopian. Within the best-known ones we could mention Le-Corbusier's totalitarian urbanism a plan with restrictive functional subdivision, containing probably his own political ideas matured during war times; Yona Friedman's early "moveable architecture" and later "megastructure" through existent architectures, or rather the restructure of society in a genuinely democratic way described by his book "Utopies Réalisables"; avant-garde group's Archigram with their "design of whole human environment" that emphasised "control and order"; more re-

Le Corbusier - Ville Contemporaine (1925) - The emphatically visionary panoramic renderings of Le Corbusier's Ville Contemporaine of the 1920s demonstrate perfectly an image abstractly imbued with a desire to connect disjointed fragments of the modern world – a desire perhaps fuelled by the idealistic (and egomaniacal) hope of re-establishing an order upon which a meaningful existence could be based.
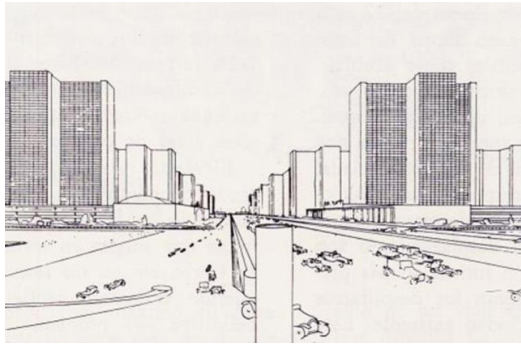

Yona Friedman - "Mobile architecture" (1975) - It described a new kind of mobility not of the buildings, but for the inhabitants, who are given a new freedom. The spatial city, which is a materialization of this theory, makes it possible for everyone to develop his or her own hypothesis. This is why, in the mobile city, buildings should :
1 - touch the ground over a minimum area
2 - be capable of being dismantled and moved
3 - and be alterable as required by the individual occupant.
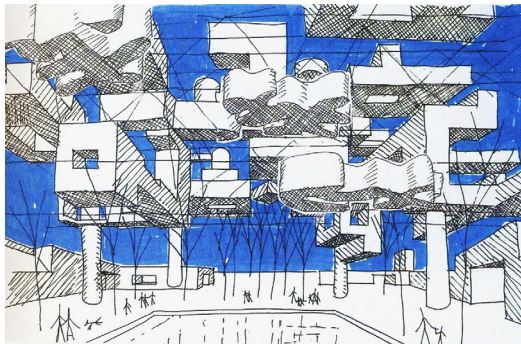
Archigram - The Walking City (1964) - by Ron Herron are 400 meters long and 220 high dwelling structures resting on eight legs, which allow them to move around. The huge mobile machines of Walking City that land in front of Manhattan, which stand out in the desert or emerge from the sea in front of an Algiers in which the Obus of Le Corbusier has been realized indicate that the architectural research can not stop, limiting itself to the management of the ordinary and feasible.
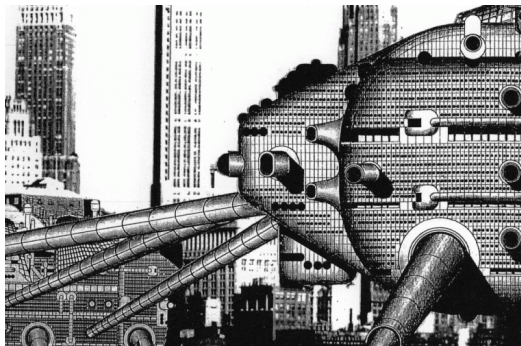
OMA - Book Cover (2001) - Mutations, a joint project of Rem Koolhaas OMA and the Harvard Project on the City, explores the unstable urban conditions around the world at the turn of the 21st century, a tipping point at which the world's city-dwellers began to outnumber those in rural areas.

cently OMA' s[18] researches in exploring the unstable urban conditions around the world at the turn of the 21st century.

As well as this modest research has demonstrated previously, it seems that this thematic belongs mostly to the developing countries, especially to the Asia and Pacific region. Truly, in these specific circumstances, the issues emerged are not faithfully about an imaginary future anymore, but about the everyday living of billions of people. For them, the "great future" has so far arrived, and it is continuously ongoing, more precisely, it has to be better defined.

Moreover, there are interesting cases that could be considered merging with Bangkok's extremely peculiar context, with the intent of having a synthetic overview, this report lists 4 of them: some of them already constructed, some of them will probably remain on paper forever; some of them are in Bangkok, some not. However, it is important that they all own notable characteristics that might be useful for the prototype that this research will be offering.

[18] - *Office for Metropolitan Architecture*

West Kowloon Station

Hongkong (China), Aedas, 2018

The high-speed rail terminus station connects Hong Kong to the Mainland with the largest rail network never existed for mankind. Located centrally within the city's urban realm and equipped with fifteen tracks, the facility will probably be the largest below ground terminus station in the world. Because of the site's proximity to the future West Kowloon Cultural District and to Victoria Harbour required a design which was highly influenced by civic demand. Adding to the challenge there was also the planning of a 294,000 square meters of topside commercial development. As the future "gateway" of Hong Kong city, it was important to connect the station with the surrounding urban context and make one aware of the city's character whether arriving or departing. In order to do this, the design efficiently compacted all of the supporting space to allow for a large void down into the departure hall below, with added apertures going down to the track platforms, creating a real urban landscape with its sinuously curved and layered rooftop.

The new station forms a new urban landscape
© VCG

Shinjuku Station

Tokyo (Japan), continuously on going

Shinjuku Station is one of the major railway stations in Tokyo, serving as the main connecting hub for rail traffic on inter-city rail, commuter rail and subway lines. The station was used by an average of 3.64 minion people per day in 2007(registered with Guinness World Records), making it, by far, the world's busiest (but not the most congest) transport hub. When the station was opened in 1885 as a stop on Japan Railway's Akabane Shinagawa Line, it was not heavily trafficked. After numerous additions of new railway lines and following subway service, it became with leaden steps nowadays' dimension englobing over 200 exits, 51 platforms, 17 of them can be accessed through hallways to 5 directly connected stations without surfacing outside.

JR_Shinjuku_Miraina_Tower

© Edomura no Tokuzo

BTS Siam Square Station

Bangkok (Thailand), BTS, 1999

Since Bangkok's complicated transport situation, the first rapid transit system began to operate only in 1999, although its proposals have so far been discussed for decades. Today the city of Bangkok is currently served by 3 rapid transit systems: the BTS Skytrain, the underground MRT and the elevated Airport Rail Link. The BTS consists of two monorail lines built in the same years, Sukhumvit and Silom, joining the busiest newborn commercial area of the city, Siam Square. Actually, on the planning level, the Siam Square Station nothing special to be mentioned as it is the most common public transport hub like billions around the world. But from a physical point of view, it is extremely singular as it fully embodies characteristics of Bangkok's morphological overlap phenomenon. Different transit systems are overlapped, surrounded by massive blocks of commercial buildings connected by elevated pedestrian pathways.

Skytrain over Sala Daeng Intersection
© Paul_012

Hyperbuilding

Bangkok (Thailand), OMA, 1996

Hyperbuilding was a commissioned study done by OMA in 1996, with the hypothesis that possible advantages of hyper-concentrated structures and programs may be visible in societies undergoing or under modernisation phase at full force, while it is less credible in the almost "completed" urban conditions such as western countries. Bangkok was chosen to test this hypothesis because it is a city on the edge of the tolerable, from its traffic to its haphazard urban development. To preserve the environment and the necessary proximity between home and workspace, it was imagined to be a self-contained city, but not disconnected from the surrounding urban dynamics. Besides, it has multiple transportation systems, functionally divided and shaped. The Hyperbuilding can be read as the integration of several buildings into a larger whole where different elements support the others in every sense, architecturally, technically and urbanistically.

Hyperbuilding, study model
©OMA

6 *Bangkok 20.5.0 beta*

The selection of the 3 cities was a result of personal experiences and an accurate comparison made of a larger range of cases, aiming in exploring more different realities in this limit research. Therefore they have lots of similarities, but at the same time, lots of differences too. The selection of the 3 cities was a result of personal experiences and an accurate comparison made of a larger range of cases, aiming in exploring more different realities in this limit research. Therefore they have lots of similarities, but at the same time, lots of differences too.

General Strategy

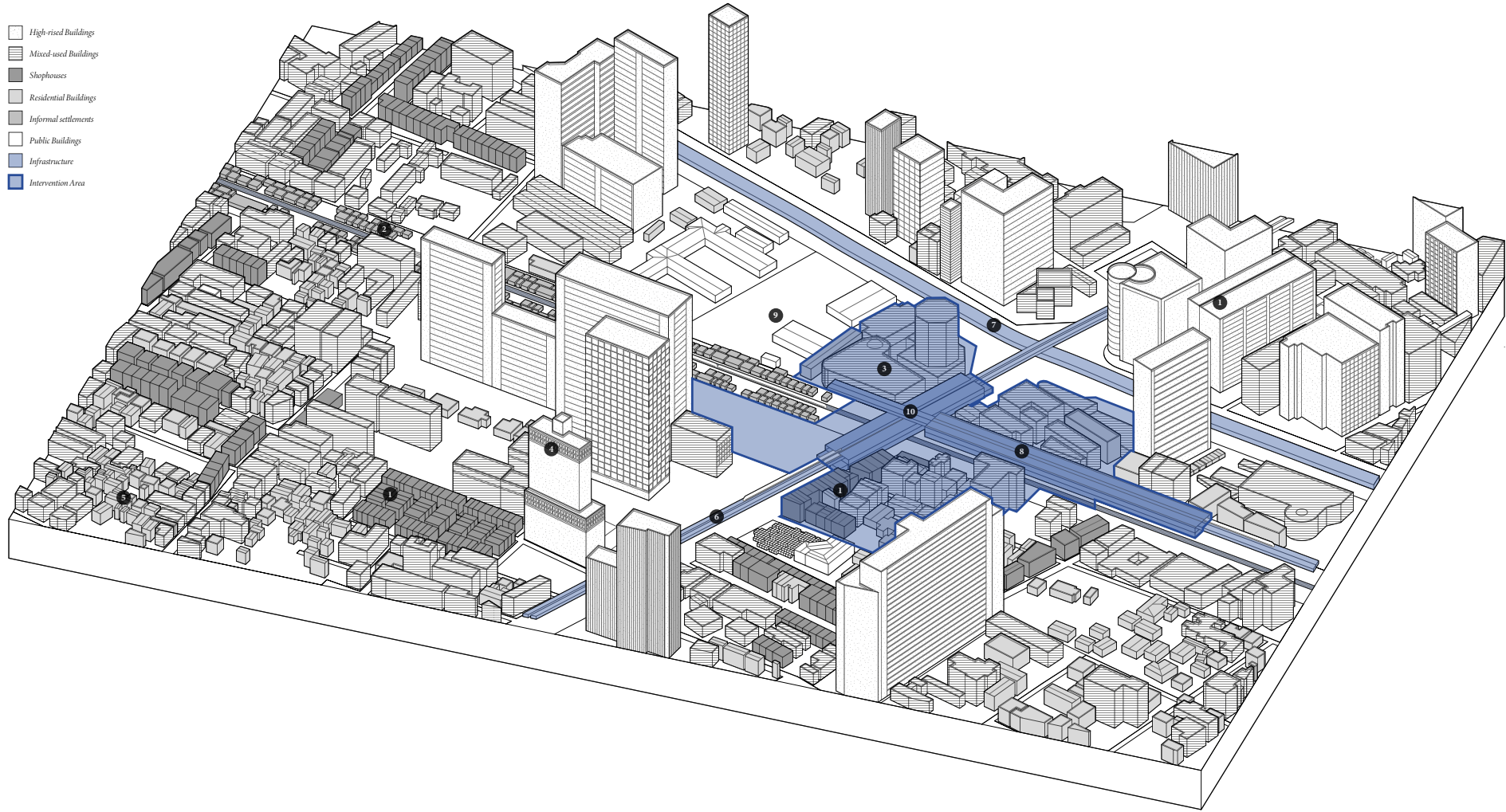

A

B > A

C > B > A

X = A + B + C + D
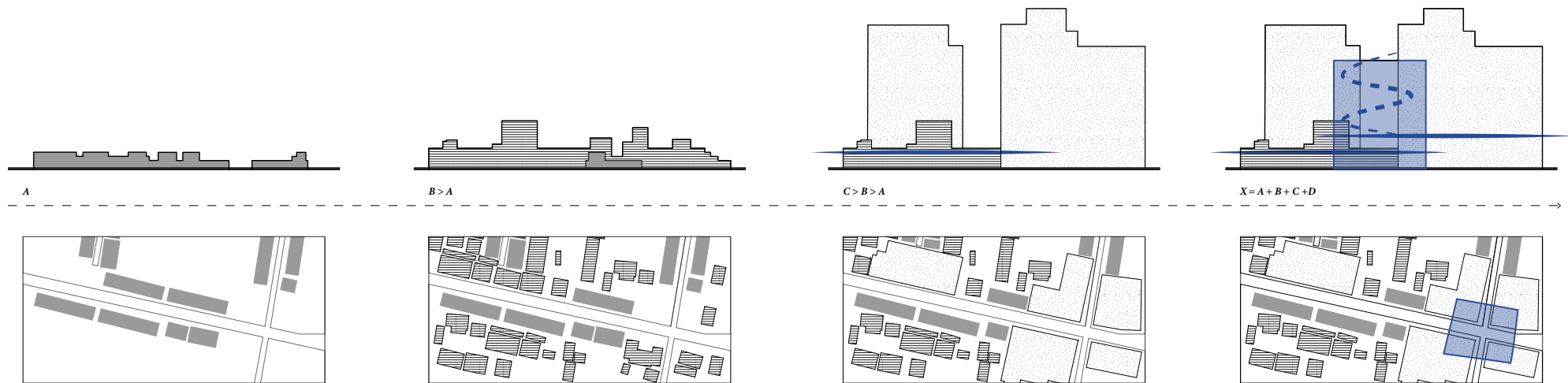
What this research brings to us is to better understand variant emergent urban realities, such as cities mentioned previously, through their urbanistic storylines. In the specific case of Bangkok city, this topic seems to be fulfilling from every point of view. As OMA said 20 years ago, it is the city on the edge of the tolerance, with its endlessly congested traffic, its haphazard urban textures, its morphologically overlapped infrastructure systems. Moreover, the social-economic situation that led the city into its gated community actuality with a city full of fences and its social classes disconnected, lack of communication, public facilities, especially the public green spaces, makes the situa-

tion really challenging from both an urbanistic, architectural, social perspective. As the city did receive efficient urban planning devices in time during its historical development, the new built architectures and infrastructures have overwritten above the previously happened ones, leaving almost no space for the public purpose. Even the various parts of the city are close to the others, they not functionally well jointed because of the problems related to the social issues. The proposed prototype is trying to merge Bangkok's different layers, functional needs, social classes using the public space, the actual missing puzzle, as the key tool.

The selection of the site aims to show possibly all of the issues mentioned previously in order to have a more general vision of the whole process. It is a huge infrastructural joint with an intersection of 2 rapid transit lines (one urban one inter-airport), a train line, the main road intersection and an elevated highway. Besides, the urban fabric is fully representative of Bangkok's haphazard cityscape, with the presence of highrise modern towers, vernacular shophouses, randomly built mixed-used buildings and a series of informal settlements along the rail tracks. The gigantic accumulation of infrastructures is asphyxiating the citizen's daily life as there is no space for pedestrian circulation, for public purpose etc.

Site Analysis

Legend:
- High-rised Buildings
- Mixed-used Buildings
- Shophouses
- Residential Buildings
- Informal settlements
- Public Buildings
- Infrastructure
- Intervention Area

1 - Shophouses
During the late 19th century, with the construction of roads in Bangkok, Shophouses were largely introduced in the urban field and became the significant part of its townscape.

2 - Slum
As it is one of the oldest urban centres of the country, with gated community issues, most of the slum (around 60%) concentrates in Bangkok.

3 - Shopping mall
Numerous shopping malls were built along the rapid transit lines, especially in the intersection joints,

as the gated community reality was becoming slowly a common phenomenon in the city, and the rich prefer closed commercial space instead of open-air public space without fences.

4 - Huge Blocks
Due to the fact of an inappropriate road surface and unsuitable block usage, both the new infrastructure and new architecture are literally overwriting on the previous urban fabric emphasising the Bangkok's authentically remarkable cityscape, while numerous walls were built within these architectures, to fence spaces owned by different social clusters.

5 - Mixed Used Blocks

As there were no efficient urban planning measures about land use until 1992, more and more blocks became mixed used.

6 - BRT
Due to the fact of an inappropriate road surface, the new infrastructure is literally overwriting on the previous ones, like in this the new elevated rapid transit lines (BRT) over a main street.

7 - Highway
After the first demographic explosion (from 1957 until 1971), the city's infrastructure began obsolete, numerous highways were built to alleviate the situation.

8 - Airport Rail Link
The line provides an airport rail link from Suvarnabhumi Airport, via Makkasan Station, to Phaya Thai station in central Bangkok. It is part of 3 main rapid transit systems: BRT, MRT, ARL.

9 - Public Green
Bangkok owns an extremely low per capita public green area, even there are several green areas around the city, the park green is only 1,82m2 per person, compared to the other megacities in Asia.
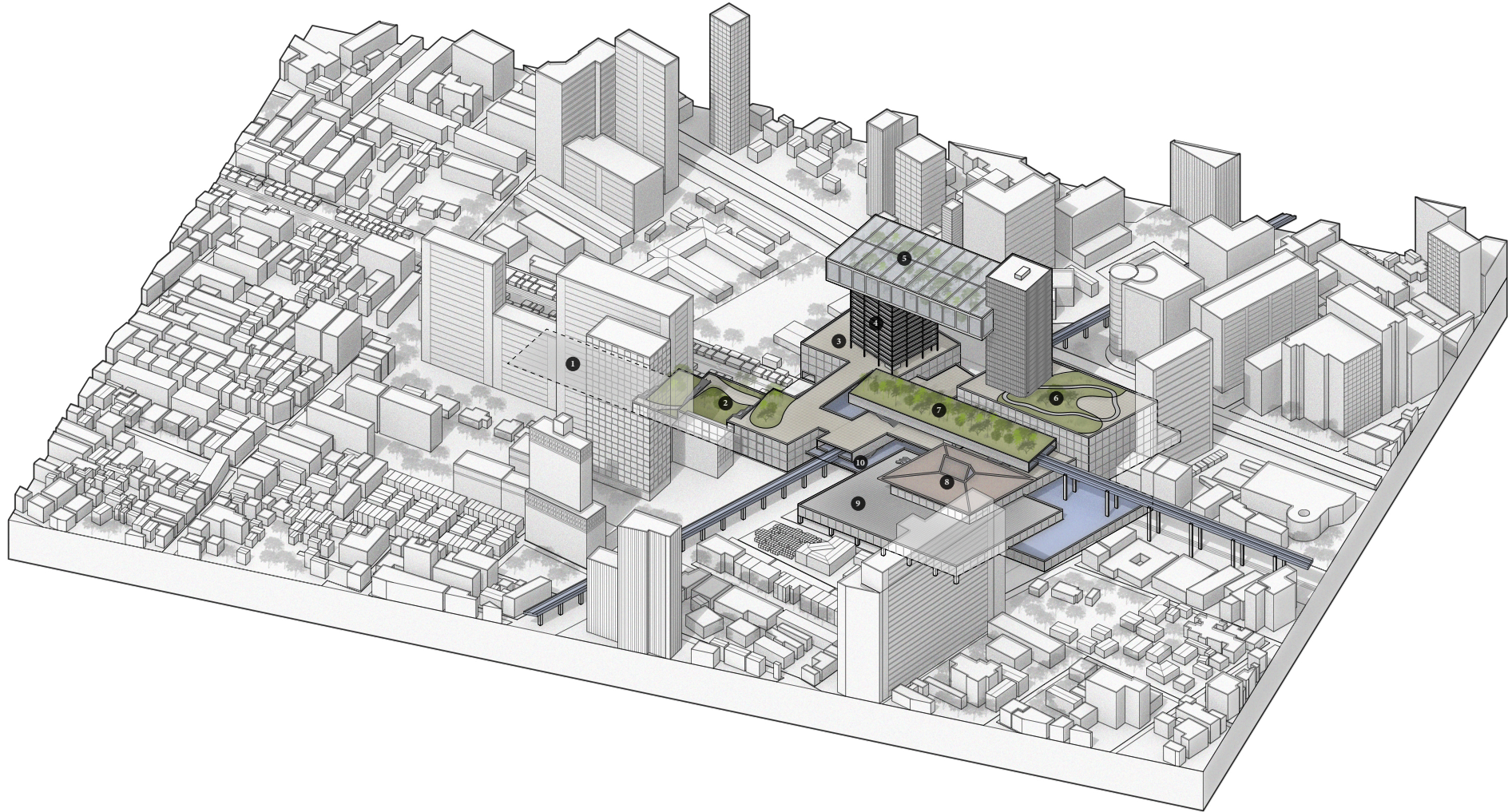
10 - Intersection
As the new ones are overwritting the previous ones, here is present a intersection with train rail, highway, elevated rail, airport rail link and important urban roads.

Site Strategy
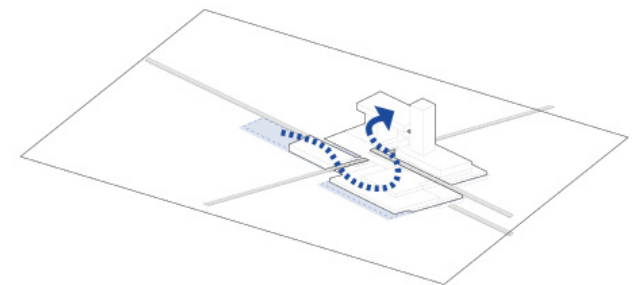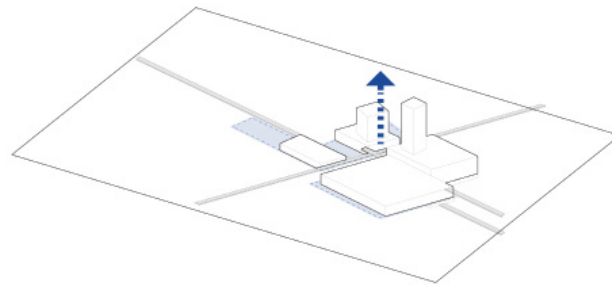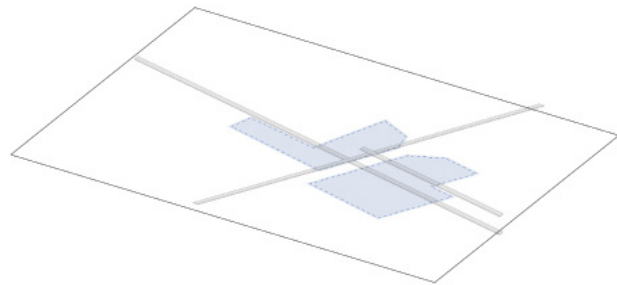
Proposal

1 - Night Market
Night markets in Bangkok are among the easiest and most enjoyable ways of getting up close and personal with local life. As the site is close to the slum settlement, a space destinated to Night Market usage is placed at the beginning as the key access to revive the neighbourhood in a tangible way.

2 - Urban Jungle
As the gated community issues are quite relevant in the city, a direct connection between functions traditionally belonged to different social classes could too much invasive. A stepped urban park distributed in 3 levels is introduced in order to filter and join those groups in an enjoyable way.

3 - Mini Market Piazza
Both the shophouses and night markets are including commercial function, a smaller market space is desired to be the welcome point before access to the most monumental part of the project.

4 - Urban Escalator
As the public space is the main tool used to join all different parts together, a huge escalator goes through the core of the residential tower, holing the building in a series of points and ends into the fascinating Skay Garden above.

5 - Sky Garden
It is the biggest attraction of the project, a city-scale greenhouse in the air, as the lack of the public green is one of the main issues present in Bangkok's past city plan.

6 - Ring Park
As it is located between the hotel and business centre, it remains a controlled public space, so a more qualified green space is designed to leave people to have more breathing breaktimes.

7 - Green Oasis
Above the actual highest level, the arrival station of ARL, there is the Green Oasis, the only layer never touched by human flux and the wildest point of the project.

8 - Grand Buddha Patio
This point is not part of main suggested path lines but accessible from both of them, so it ends like the religious part offering an enormous patio space with a big Buddha to evoke passengers' spiritual peace during their stops.

9 - The Big Plaza
Bangkok, with its billions of population, is missing sufficient public space, not only for a joyful free time but also for big events, so plazas with significant dimensions become necessary elements in its urban design.
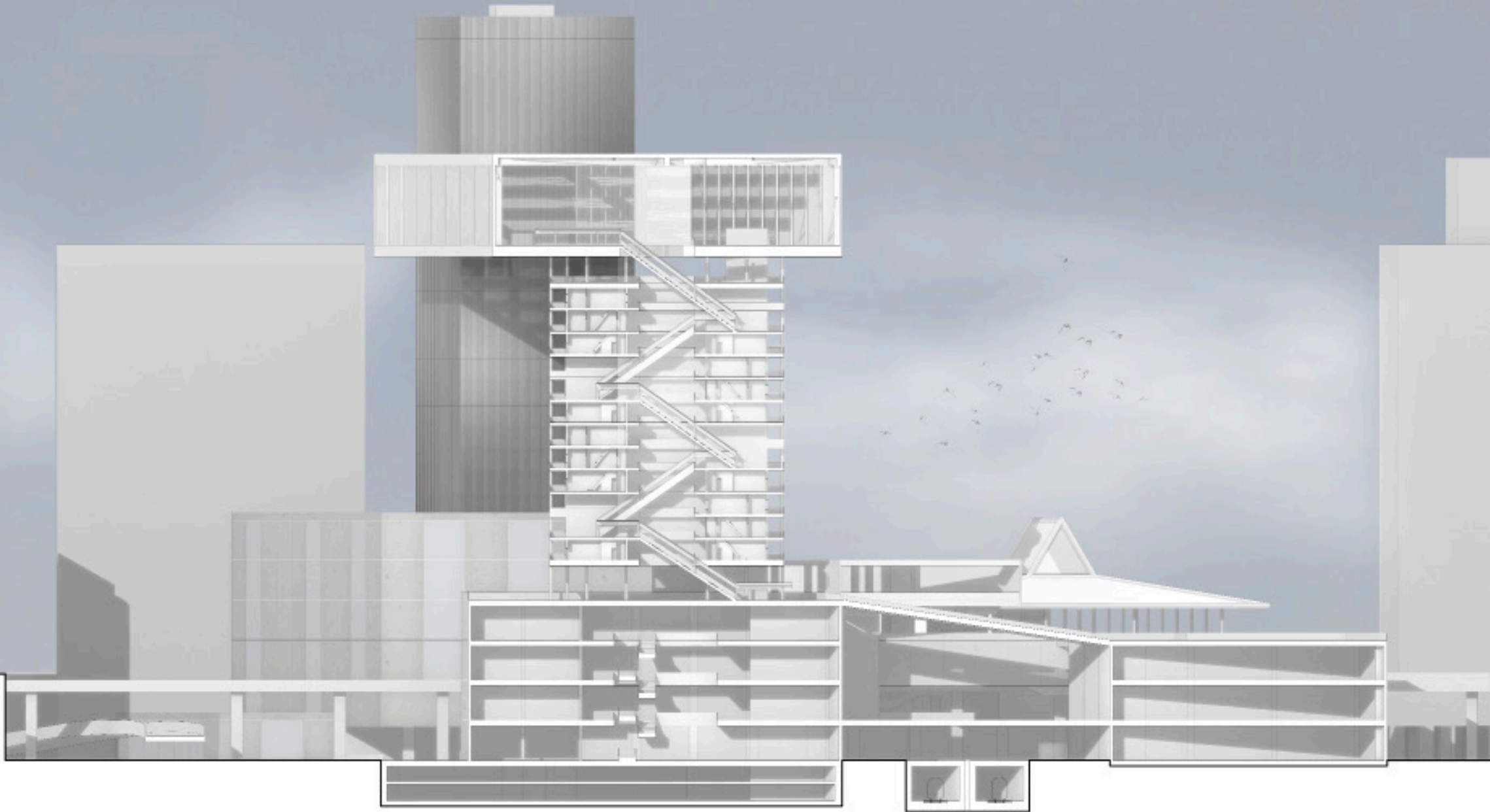
10 - Transport Platform
The city's characterising morphologic overlap phenomenon is more visible in its infrastructural part, a high efficient transport platform with a connection to all different transport lines makes the citizen's daily movement easier and faster.

Ground Floor Plan
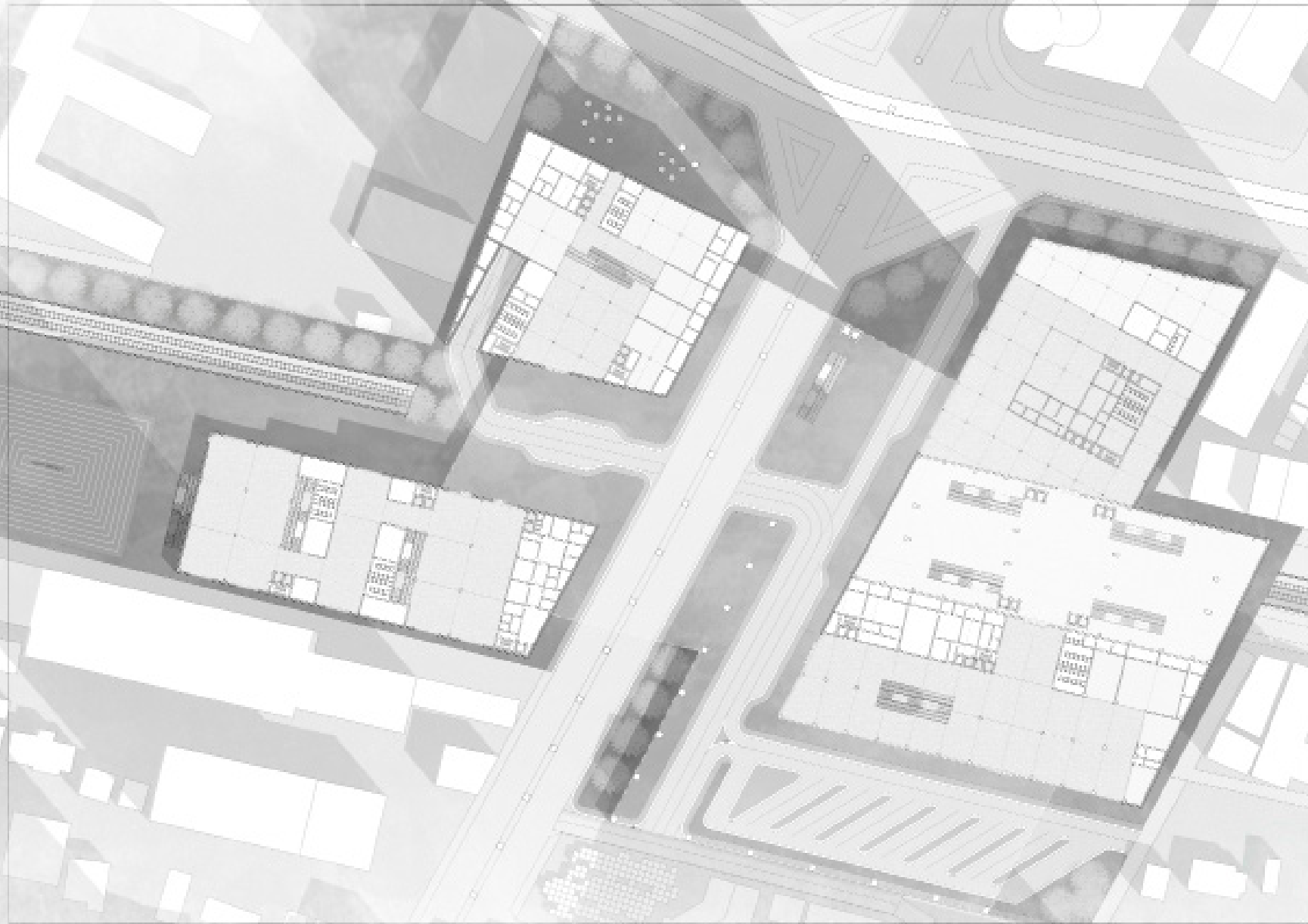
Section Sourth-Northen

7 *Conclusion*

Back to the issues mentioned at the beginning, this research aims in discovering still largely unknown territories, already well-developed or fully under the developing process, megacities with billions of population facing real and tangible crises of liveability. The huge amount of people involved the task makes it more "human" in various aspects. The topic of urbanisation has been endlessly discussed since the birth of the modern age.

The case of Bangkok has been an interesting occasion to understand and to configure another possible way to solve issues related to the fast urban growth in this particular region of the world. The diversity and the complexity have been the leading keys to read these social contexts, lack of adequate infrastructure, poor housing, inadequate plans, lack of effective legislation and financing mechanisms, etc., attributes that play a role in this huge game were so many and intrinsic. What the project, or better call it a prototype, brought is not a solution that tries to only alleviate the site-specific problems, but to demonstrate the validity of a general strategy that could help the city in its every problematic point. And more general, an approach that could be useful in all other different but similar circumstances in the next future. Although it seems to be a generalised subject with universally extensive tools, the prototype proposed was including local peculiarities and margins of flexibility that allow reaching some uniqueness for every different site.

Moreover, it is not about utopian or unrealistic visions, it is about extraordinarily that comes true, as statistically showed, the urban growth in this region tends to proceed with a high speed at least for another significant time span.

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