BANGKOK SYNERGY BANGKOK

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BANGKOK
SYNERGY

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A synergetic spatial vision to preserve Bangkok heritage, integrated with rapid mass transit system

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DEVELOPMENT THAT PEOPLE MATTER

"The nature and shape of the future urban world is complex. Large and complex as it is, this is the arena where spatial planners and designers should contribute to with their understanding of the way urban space is produced. It is their task to formulate tools and strategies to intervene and organize space in order to mediate disparate interests. "

(Complex cities studio guidebook 2011)

For decades, city plans of Bangkok have been the prerogative of a few influential interest groups. Interests of the middle to upper class and more powerful groups have been protects and carelessly neglected the needs and interests of the lower- income majority or other vulnerable groups, particularly those who live in unprofitable areas. The consequences of this approach can be seen in places, where a high proportion of population live in isolated areas lacking provision for basic infrastructure and services. In other words, when the city prioritizes global development towards efficiency and attractiveness, this exclusive approach results in segregation and fragmentation on the local level.

Without being integrated to the urban tissue, this undesirable truth has triggered the author's interest in seeking for the way to change the paradigm in which local level especially the vulnerable groups will also be able to participate and benefit from global interventions by the government. Therefore, it is very significant to promote urban vitality that enhances not only their living quality, but also economic viability and social cohesion.

Thanks to the mass transit system (MTS) expansion plan of Bangkok launched by the government in last few years, the hypothesis of integrating global (infrastructure) into local dimensions (urban tissue) will be experimented. The thesis starts with a serious problem of the city brought by the MTS (elevated level) implemented on a fragmented and unorganized urban spatial structure (ground level) of the city due to a rapid urbanization. Without any coordination to urban development, when the market begins to intervene, losers are local residents seen via gentrification, segregation and inequity. However, in accordance to the expansion plan, it covers the historic core of the city, which is crucially needed to be preserved. This is a high time to reconsider and integrate not only global and local planning, but also urban and infrastructure development towards sustainability.

By planning for local inhabitants, the inclusive approach aims to prepare for the undeniable infrastructure development to meet local demands and basic services before it comes and to make use of it when it finishes to improve spatial quality and to enhance socio-cultural dimensions together with economic conditions. To conclude, the author will focus on the local level and search for an appropriate linkage with the global planning by using the MTS network expansion and the historic core of Bangkok as the study case.

Due to the limitation of the study time at TU Delft, a year of the graduation project has been come to a close. However, the author and the mentor team hope the thesis project, Bangkok Synergy, is a starting point to change the way of thinking in planning between global - local dimensions and urban and infrastructure development especially in Bangkok or other similar developing countries. With a support by the graduation lab "complex cities", the report consists of both research and design process. It deals with a challenge of complexity and uncertainty in planning and seeks for an opportunity to test the hypothesis, in this case is integration between the MTS network expansion and the historic core of Bangkok.

By sharing my discovery, this project is just a start of a new way of thinking. The author hopes if the project helps shaping the society more or less, the thesis has already accomplished its mission. Lastly, wish readers enjoy reading this book and inspire readers to contribute positively to your own city too.

Tridti Patarakiatsan
17-06-2012

CONTENT

Chapter 1
INTRODUCTION AND PROBLEM FIELD

Source :'www.skyscrapercity.com

Mode of transportation : the rail transport system

Nowadays, in the rapid urbanized period, the development of the rail transport network, stations and transit nodes become a crucial strategy to develop city areas. To make it function effectively, the rail transport should be accessed easily. Particularly, it should be possible to get to by multi- modes of transport, such as, by car, bus or walk. At the same time, the service facilities should be provided, i.e., parking spaces and sub public transport stations (APA, 2006). Moreover, the development also magnets new activities into the areas, such as, new functions, people and so on. The consequence is that the role of the areas would be redefined. New infrastructures developments would be created in order to serve those activities, which make the areas livelier as Bertolini and Spit name the station as place (1998). However, the way city build the rail transport is limited by space, particularly in the case of elevated rail tracks leading to negative effects to the nearby areas (see illustration 1).

The character of Bangkok is that it was planned on the elevated level, plugging in to global functions like department stores and high class hotels and disengage to the lower world functionally and physically.

The threat of historic areas

A historic city has organically developed through several decades. Their physical conditions are composed by fine-grains in terms of small plot sizes, passageways and the connection to local economic areas. The character and identity of historic areas will change dramatically from the past when new mode of transport has been implemented. Although, a number of optional modes of transport will increase to serve modern needs, such as new functions, the rapid change might negatively affect old living patterns and activities leading to a lost in “place” (Bertolini and Spit, 1998). The most explicit structure is local streets (see illustration 2). In the past, it functions responding to small areas, but when the accessibility has improved, it has to serve an increasing number of traffic as well. Consequently, when the size is not in a proportion with demands, which requires more spaces, it causes an expropriation in areas both along local roads ,connecting to stations, and around stations (transit area services).


Illustration 1.1 the current condition of rail transport in Bangkok, Thailand,Source : www.flickr.com


Illustration1 .2 the current condition of local streets in Bangkok, Thailand ,Source : www.flickr.com

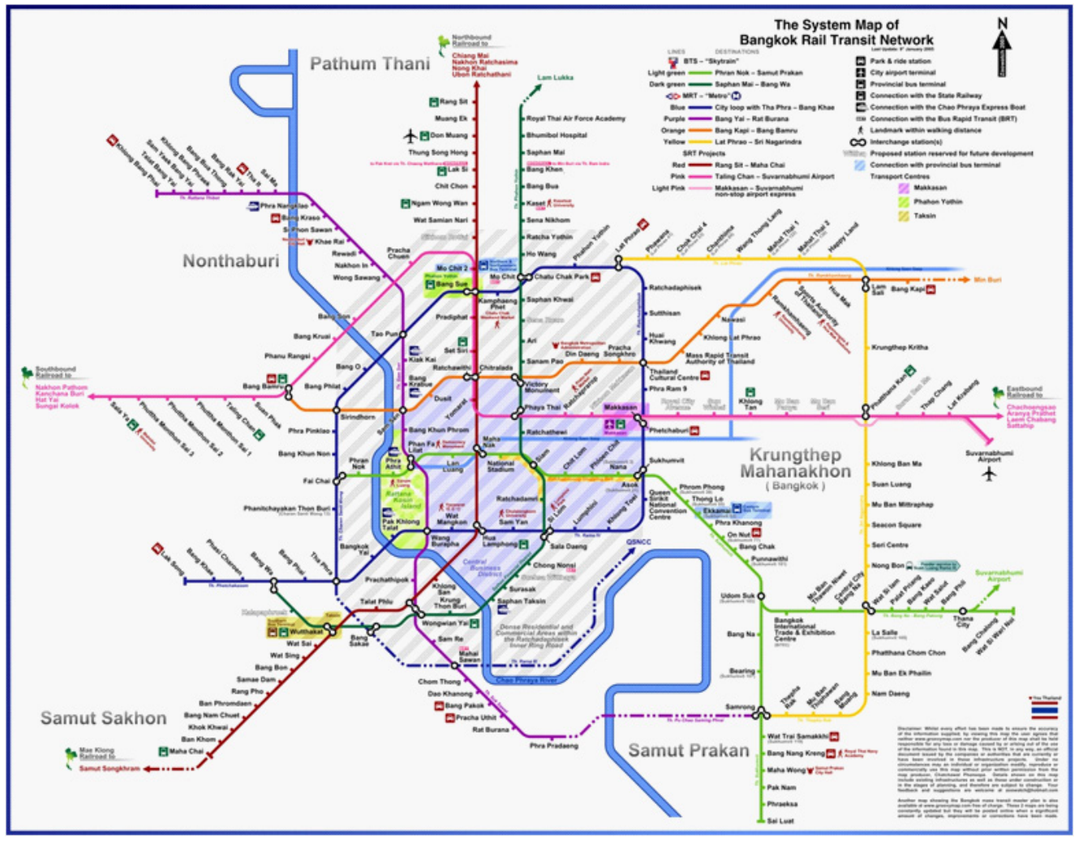


Illustration 1.3 the plan for the mass transit system expansion of Bangkok in 2030 (the officially preserved area of Bangkok is in the light green color) ,Source : www.bts.co.th

Conflicts under the inevitable infrastructure expansion

Many cities conceptualize the idea to develop the rail system to create a node and, at the same time, still maintain “place” for the areas. Bertolini and Spit add as the renewal of existing fabric with a reason to deal with future demands with the notion of Transit- Oriented Development (TOD). However, the historic areas are not on the list. Generally, TOD or the station plaza is applied in suburb or redeveloped areas.

In the case of Bangkok, the capital city of Thailand, especially, the rail systems are built on the upper level through urban communities. In particular, in 2030, government have already planned for the elevated rapid mass transit system (MTS) throughout the city, which will definitely cross the historic core of the city (see illustration 1.3).

Although the MTS plan has been announced, there is no in-depth research on how this big infrastructure plan will affect the vitality of the city, particularly historic areas, where their economic status and quality of life are low. The MTS, currently, could solve traffic problem, but there is still lacking of integration between MTS and urban fabric. As we have learnt a lot from the past experiences and many theories about problems of scale and rapid development in that it causes spatial fragmentation (Graham, Marvin 2008) and can tear the city apart (Read 2001), with this rapid development, if we do not do it properly, it will be more likely to harm than benefit.

However, it also provides a crucial opportunity and a big challenge to create a more sustainable transport mode, and at the same time, to prevent negative effects to the historic core of the city.

The symbiotic relationship between MTS and heritage described in the previous section is the backbone of this thesis. From the MTS perspective, it requires a supporting network to integrate with other means of public transportation. While the economic position of nearby areas has to be improved by making use of an easily accessible rail transport network. From the historic area perspective, the long- time historic values and cultural identity will maintain. Furthermore, the heritage places would contribute to urban vitality in terms of socioeconomic dimensions to guarantee that they can still last and continue.

Relating to the hypotheses mentioned before, the symbiosis relationship, and the general objectives are demonstrated.
1.We have to generate mutual benefits to the both sides, heritage and the new development, when they meet.
2.We have to mediate the conflicts between the two as well.
3.We have to transform current spatial fragmentation into coherent urban space.
4.All of the objectives have to cope with the uncertainty of the future and develop towards a sustainable manner.

<u>The relation with Urbanism</u>
The problem definition demonstrates an amount of urban-related dimensions. The issues of planning for heritage places and a transit-oriented development can be a city scale thinking. Moreover, the worldwide sustainability movement has created the new developments in a more compact way. It is a way to do historic revitalization in order to response to the urbanization process. With a global force, the issues go broadly to a regional scale. There are many reports about planning for TOD at the regional scale by the centre for transit oriented development and many government documents. For the heritage, it draws an attention in a global scale from many international organizations, such as UNECSCO, ICOMOS and so on. However, this thesis will not do like that.

This thesis will focus on the district and local-scale option, particularly on the living heritage areas, in which local people have been using them from the past until nowadays, not on legally registered city's heritage. The objective is to help them survive and make use of consequences of the infrastructure expansion.
The interest of the author is made by three reasons. The infrastructure expansions can enormously change the existing urban fabric. These change offer opportunities to redefine the role of the city and its spatial strategy leading to sustainability. The second reason lies on the spatial implications of the heritage issue in order to preserve and maintain its value. The last reason is that many studies usually focus on either TOD or heritage itself. The conservation model mostly put more efforts on an area with a potential for economic exploitation and leave the locally unlisted area away. (Steinberg 1996). Thus, this research deals with integration of the two aspects on the local scale. Relating to Urbanism, those three aspects require spatial interventions that can influence positively socioeconomic structure on the local level.

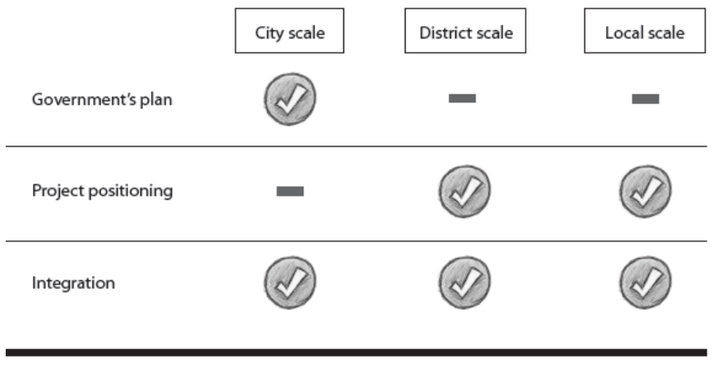


Illustration 1.4 the diagram showing project position which takes a stand on the district and local scale, combined with the government plan. Finally, it creates an integration for Bangkok in 2030.

The historic core of Bangkok, Thailand, has been developing through the history for more than a hundred year. From the government vision, however, in 2030, the expansion of the MTS will go throughout the city, which will pass the historic core of the city (see illustration 1.4). To impose the MTS on the historic core, negative consequences will occur to local people in the heritage sites as it happened after the city built two lines of the MTS in 1999, which are secession, confliction and displacement. In the case of secession, it takes place when the new development is not oriented towards locality, such as gated communities and condominiums that causes changes in the traditional community life. The second reason is confliction in different ways of uses of space between formers and new comers, stemming from, such as, a different perception, background and comprehension. The worst case is displacement. When the market is strong enough in the decision-making process (the Bangkok case), it can cause an intended economic eviction to the local living in the historic core.
All of the three aspects lead to spatial fragmentation and a decay in heritage places in terms of socioeconomic dimensions, historic values and cultural identities. Besides, these phenomena can make Bangkok become just a generic city. The MTS spreads generic urbanity as it scatters soulless places(Richardson & Jensen 2008). The sustainable attention is not about to go against the new developments following from the MTS, but to search for how to protect the repeated-negative consequences from the MTS and make use of it. To conclude, with a low integration between urban fabric and the MTS, when the infrastructure development has been implemented on the historic core, it results in fragmentations, a lost in urban vitality and stimulates social segregation.

Illustration 1.5 the map showing the current MTS and in 2030 which will pass the historic core comparing with the existing condition.

Mutual benefit and sustainable approach

The aim of the project is to propose a strategy for the historic areas of Bangkok while integrating it with the expansion of MTS. The future vision of the project does not replace the old with the new developments, but takes a stand on that both processes have their own dynamics. Thus, the strategy would combine two developments and create a vision that the two are complementing each other. For the historic areas, the heritages need to be preserved and given a framework towards social and economic sustainability. The optimise uses of MTS to link unconnected areas and to create better living environment with improved public amenities would be proposed. In terms of the new development, new comers will benefit from the proposal and help strengthening the local economic and social viability. Eventually, the synergetic spatial vision will fill in the gap from the government plan and provide a solution to solve this widespread problem of the city and work as a pilot project reflecting on the improvement of urban form, socioeconomic issues within a sustainable manner(see illustration 1.6)

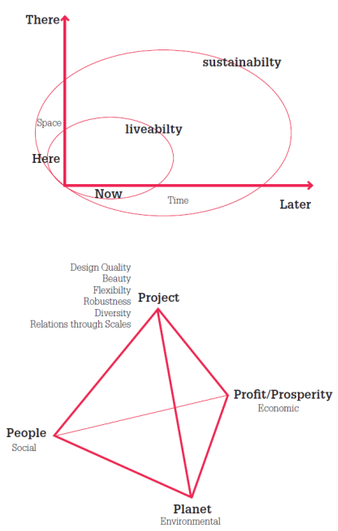


Illustration 1.6 a sustainable model from triple P to Quadruple P (Duijvestein 2008)

Fact	Consequence	Opportunities
Identity		
Used to be the capital city of the country	The areas with richest cultural and historical values in Bangkok	→ Spatial uniqueness in urban form
Historic value		
Not using full potential	Well preserved heritage Living heritage still remains in use	→ Strong identity
Social status		
Lagging behind areas	Insufficient public transportation Lack of public amenities Low economic status	→ Improvement of living quality
Economic status		
Priority of the development given towards economic attractiveness	Risky to be destructed Inevitable confrontation with the MTS	→ Yield economic development from tourism and new investments

Illustration 1.7 an approach summarized from the current conditions of Bangkok

How to preserve the existing historic core of Bangkok when the mass transit system implementation, at the same time enhancing social cohesion and economic viability?

What kind of the strategic plan and spatial interventions can be applied on the historic core of Bangkok in order to deal with potentials of spatial quality improvement and integrate it with the MTS in 2030?

Due to Bangkok has been formed by a market led development; an intervention usually is made from the top-down level, which always gives a priority to infrastructure development. The integrated approach is missing in a connection with the existing urban form. Therefore, the research questions arise from socioeconomic and spatial dimensions. This integrated model, between old and new developments, creates two challenges. The first challenge is to exploit the new development by the MTS towards sustainability. The second challenge is how to protect living heritage from the negative result. The aim is to achieve them both.

In order to be able to understand the key elements of the main research question, six sub research question need to be formulated.

1. What are benefits and conflicts of the combination of historic and new developments?
2. What is the collective network of these two developments? (to define: what kind of co-using spaces and sharing functions? Which corridors need to be strengthened?)
3. What are strategies for urban heritage conservation in relation with the infrastructure expansion?
4. What is the role of the heritage places in 2030, when the mass transit comes?
5. What kind of spatial design tools are able to integrate physical linkages between the heritage and new development in a sustainable way?
6. How to transform the heritage sites towards socioeconomic viability ?

Ethical Problems

The problem related to ethical issues arises in two cases. In heritage sites,the first is the limitation of conservation areas, “enclave tourism” (Healy 1992). It occurs when the type and location of facilities are not oriented towards locality. As a result, money will not benefit the local economy. This leads to an increase inflationary pressure on local economy. Price of land, products are neither affordable nor responsive to local needs .It leads to a loss of sovereignty for locals, which translates, into loss of control in decision-making and benefits. Every area is different so that it will experience uneven distribution in conservation efforts. The outsider gains less favours and will see a rise in economic decay and fabric deterioration, while focused areas receive priority aids.

The second reason is observed in the style of approaching areas. From the policy level, it usually takes action on improving physical projects rather than social and economic dimension of the areas. From the past experiences of Bangkok, when the city faces with new infrastructure development, the project generally gives priority to land development and new construction rather than the conservation of the existing historic communities. Therefore, this thesis aims to not only create mutual benefits two new development and heritage places, but also try to mediate negative effects to locals, such as an expropriation and gentrification.

Societal relevance

The relevance of the thesis lies in the fact that we have to deal with societal challenges of the current condition of Bangkok to prepare a solution when the MTS meets the historic core. Nowadays, there is a demand from local people to protect their communities from the market that wants to develop the areas around the MTS. However, the market also can financially support the existing area by improving connectivity, public amenities and living quality. For that reason, this research tackles with the general-unsolved problem of Bangkok. It provides an integrated approach, which works as a pilot project, in order to generate mutual benefits and minimize social problems of the city.

Scientific Relevance

This research will reflect on academic debates on the spatial intervention and strategic planning for both the rail transport expansion and heritage conservation planning. In academic field, many researches have been done to sustainably preserve heritage. However in the developing countries, when market becomes more dominant, preservation plans cannot be enacted successfully as plans. Besides, to assure positive results, this research contributes to urban vitality, which, in this case, is an integration of living heritage and the MTS as a main component. Based on the different context of each city, another contribution of this thesis will stimulate a new approach to other cities to rethink and search for a new way to preserve its heritage to cope with an urbanization process.

Images showing recent social protests against an expropriation,resulting from interventions by the market, influenced by the MTS expansion, which invaded into traditional commercial communities in 2011, Source : http://www.prachachat.net

The selection of the study case and the limitation of the research

The historic core of Bangkok is chosen as the study case. Thailand is one of the developing countries in Asia that is facing the spatial and socio-economic transformation. It displays characters of urban problems in developing countries, which are facing with negative consequences from the infrastructure development, such as interventions from the market and infrastructure breakdowns on a local level, urban planning and governance failure. Although the city has been developing for hundreds years, it still does not plan to coordinate and integrate between infrastructure and urban development.

The city of Bangkok has many heritage and high historic value. A number of local people and traditional communities still live in the historic core of the city. The research recognizes the different types of heritage that the city has. Due to its complexity and character individuality, a different type of heritage sites deserves a specific approach, which suits their situation.

The thesis focuses on the producing a set of strategy and recommendation that will be able to help planner and decision makers to tackle with the MTS in the historic core. The result also paves the way to an integrated strategy to different individual case of heritage site. However, the research will focus on only one types of heritage, living heritage, to be demonstrated in the thesis. By narrowing down to only one case, the author can do analysis in detail and deeper levels.

The research focuses on the case of living heritage that will face with the MTS expansion based on certain reasons.

1. Living heritage, in the historic places, containing historic value, is still in use, has a certain degree of maturity as a social, cultural and economic entity. It possesses certain qualities that best signify the dynamics of characters of the historic core.

2. Living heritage settles heavily along the former mode of transportation, mainly water, and usually close to new development areas, mostly high-rise and a gate community. It is an example of urban polarization of the city. With its historic value, it is a challenge by the contemporary economic pressure by the market interests came with the MTS.

3. The configuration of function reflects the type of activities, which are commonly found in every old districts of the city, characterized by a large percentage of economic activities run by informal sectors.

4. Living heritage is not protected by laws as officially registered ones. Besides, in the area itself, it still has traditional characters like low income, high density, and lack of accessibility to public amenities. The thesis aims at seeking for a sustainable way to develop the living heritage of the city.

The method of empirical research
The research model is created in a relation to the research question. Various steps of the research model contribute to the challenges from research questions. The first step represents the research part of the thesis. It consists of three independent parts and the results will be combined in order to design in the design phase later on.
The design phrase will start from the sub research question four to six by proposing spatial intervention for the living heritage in the area of historic core of the city of Bangkok. The research model contains four separate parts to be explained, but the time phrasing will overlap. The relation and design phrase is not one-way direction, but it is woven and can be changed over research(see illustration 1.8). However, time schedule will be explained later on.

A COMPREHENSION: THE RELATIONSHIP BETWEEN THE URBAN DEVELOPMENT AND INFRASTRUCTURE EXPANSIONS OF BANGKOK.
The first part of research will focus on the relation between the two developments. It describes the issues from the history, because it will give a better understanding as they are currently. The historic development will be analysed since the city has formed as the capital city in a form of maps. Another reason is to know the benefits, conflicts and driving forces which already happened, and at the same time where has a high chance to be preserved and the risky one to be destructed. In relation to the design phrase, the purposed intervention will be done in terms of living heritage conservation, which is necessary to anticipate threats and potentialities.
Methods
A review through the history in a relation between the urban and infrastructure development, and at the same time searching for the consequence of the current MTS after an implementation in 1999
-Literature review
-Mapping
-Historic research
Products
-Theoretical underpins for the aspect related to the issue
-A historic overview for the city of Bangkok
-Developing criteria for choosing strategic locations

MAPPING THE CURRENT CONDITION ON THE LIVING HERITAGE IN THE HISTORIC CORE OF THE CITY
The second part of the research will study the existing conditions of the two fields. From the heritage field, it will study on the local network of the core, which needs to be kept and enhanced in terms of spatial, economic and social dimensions. The second one is from the MTS. It will link to the first field in term of optimise uses and minimized unwanted results of the MTS. The thesis provides a synergetic vision for 2030, so a review on their potentials is necessary. The result will build an approach to deal with the project and design tools in the design period.
Methods
-Mapping on current social, economic and spatial condition
-Interview local residents in order to know the local network and how they use space
-Space syntax in order to discover spatial condition and level of integration of the city and the area
-GIS to analyse and calculate data and statistic
Products
-An understanding on the MTS impact
-An overview on the existing social, economic and spatial issue of the living heritage expressed in built environment
-A toolbox that can be used in the design phase

POSSIBLE SCENARIOS IN THE RELATION OF THE TWO DEVELOPMENTS
The purpose of this part is to search for successful strategies that can apply to the city of Bangkok. Besides the MTS takes twenty years to function, 2030, which the situation can changes. Particularly, in the city that the market is most powerful among the other sectors, the scenario will be set up based on the possible conditions between the market and conservation planning. By dividing into two scenarios, the first one is extreme case, while the second is the moderate case.
Methods
-Case study of the car based cities in order to know the possible strategy to be applied to Bangkok
-Literature review
-Research by design
Products
-Vision and Strategies base on probable scenarios

AN INTEGRATED PLAN BETWEEN HERITAGE AND THE MTS
Based on previous research, a design will be created for the project area. The design will redefine the role of heritage places in 2030 and improve the current situation towards the long-term development. The aim is to make use of the MTS and its consequence and maintain the historic value of the city and current fragmentations solved. The result of this thesis can be seen via a design on spatial intervention on the local scale as a pilot project that will create a sustainable future.
Methods
-Drawing
-Design research
-Mapping
-Visualizations
Products
-Specific intervention proposals based on the toolbox and criteria
-Integration of the existing situation of the historic core with the MTS to create mutual benefits
-Master plan for the area

Main research questions

Research

How to preserve the existing historic core of Bangkok when the mass transit system implementation, at the same time enhancing social cohesion and economic viability?

Design

What kind of the strategic plan and spatial interventions can be applied on the historic core of Bangkok in order to deal with potentials of spatial quality improvement and integrate it with the MTS in 2030?

Sub research questions

What are benefits and conflicts of the combination of historic and new developments?

What are strategies for urban heritage conservation in relation with the infrastructure expansion?

What is the collective network of these two developments?

What is the role of the heritage places in 2030, when the mass transit comes?

What kind of spatial design tools are able to integrate physical linkages between the heritage and new development in a sustainable way?

How to transform the heritage sites towards socio-economic viability?

Result

The relationship between the urban development and infrastructure expansions of Bangkok.

Mapping the current condition on the living heritage in the historic core of the city

Possible scenarios in the relation of the two developments

An integrated plan between heritage and the MTS

Outcome

An overview on History and theory

Context research
Case study

Vision

Strategy

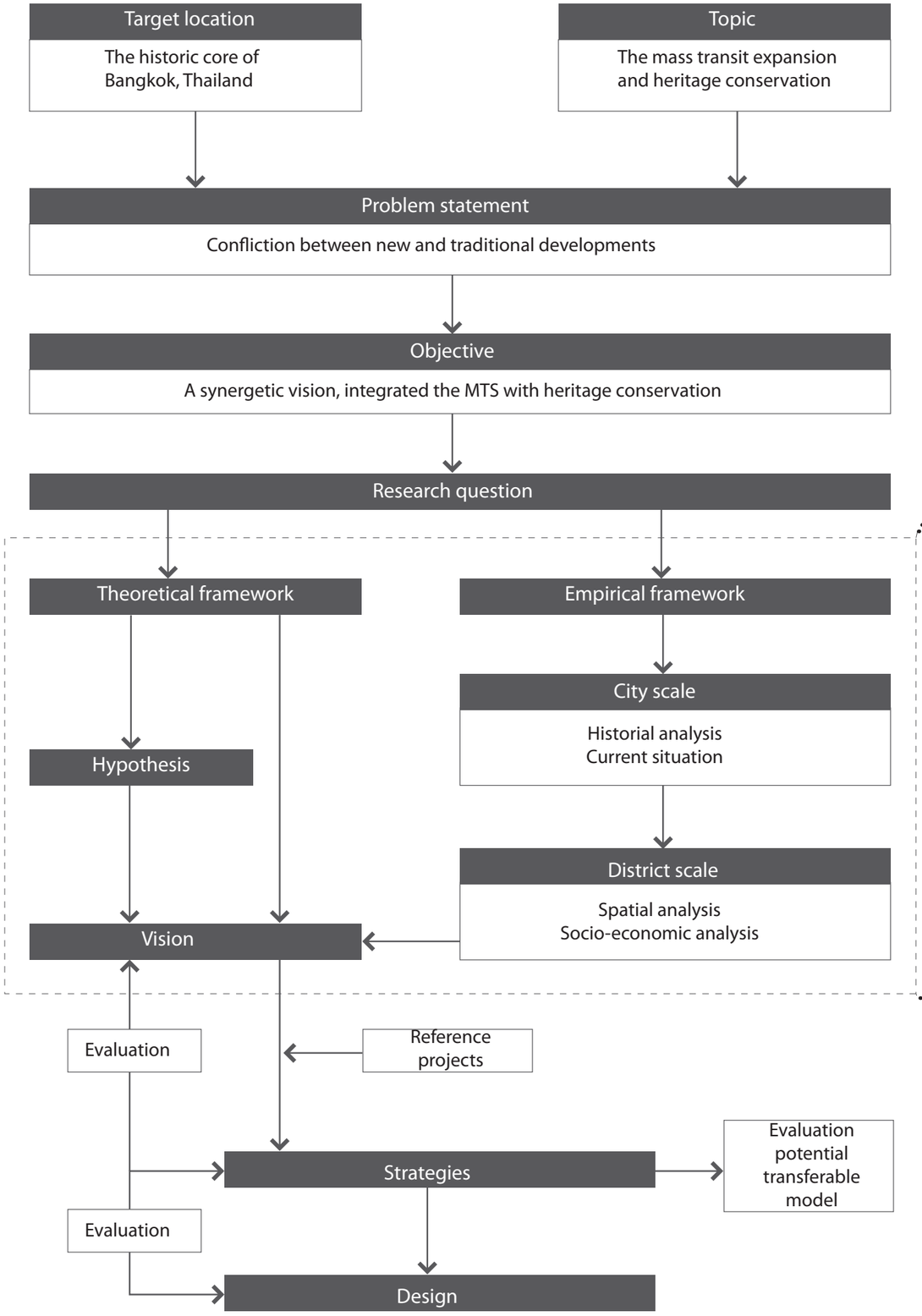
Design tools

Design criteria

Intervention

An integrated model for Bangkok in 2030

Illustration 1.8 am empirical research model



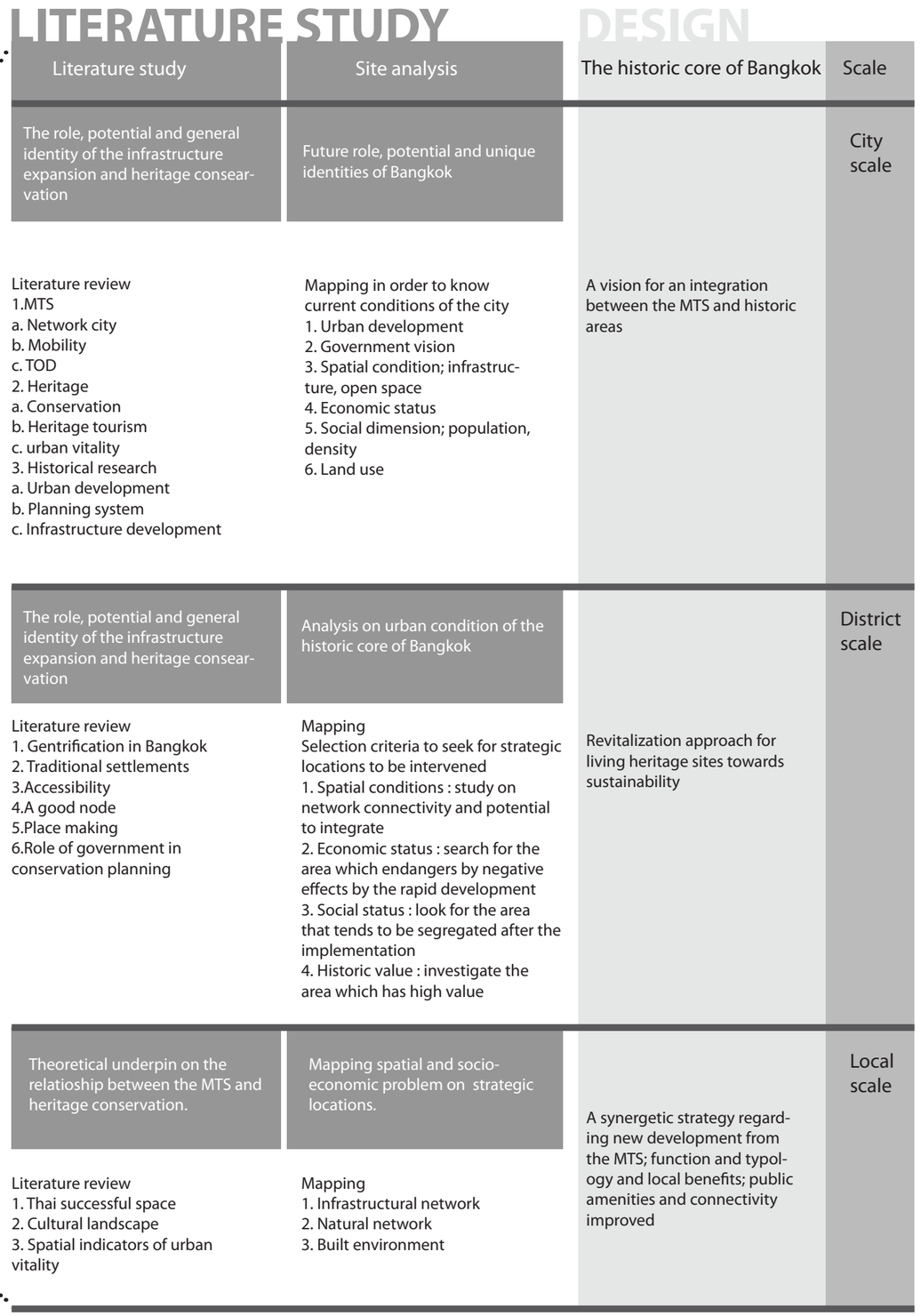


Illustration 1.9 the research model

The phasing of this project was defined by two angles; one is the presentation-based time (P1, P2, P3, P4 and P5), while the others base on which should be done during the research process. The actions are defined as follows; research, theoretical framework and design task. Besides, there are some important in-between products already defined and positioned in the time-line process. The outputs are the preliminary thesis plan, outline of review paper, final thesis plan, conference paper and final thesis.

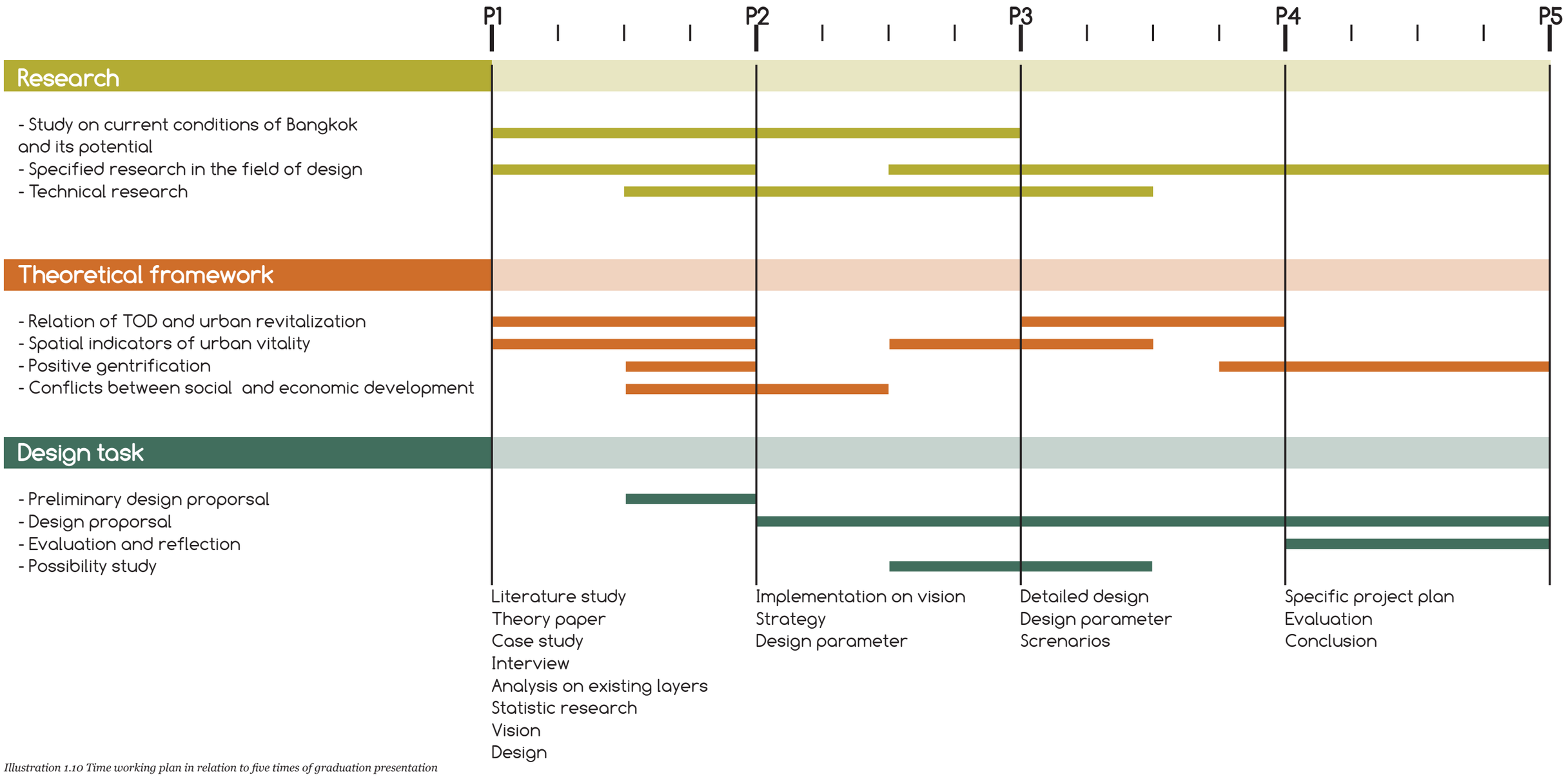


Illustration 1.10 Time working plan in relation to five times of graduation presentation

Chapter 2
THEORETICAL RESEARCH

Source : www.skyscrapercity.com

The diagram showing the framework of theoretical research in relation with the objectives

To seek for a synergetic vision between the MTS and the living heritage, the thesis involves in several fields. The two main different fields relate to heritage and the MTS.
The first field connects to new development from the MTS. The first notion is about the network city relating to the improvement of mobility when the MTS comes. As a consequence, the station of the mass transit becomes crucial. The concept of transit oriented development (TOD) offers an exploitation of the strategic location of transit stops as a node by developing areas along transit corridors and prevents gentrification. Finally, urban vitality can be achieved by linking network and mobility with land use accessibility.

For the heritage field, it links to firstly, the theory about living heritage. The second one is about how to make use of the heritage conservation. In this globalized era, cities call for economic attractiveness and competition. The heritage commercialization becomes an approach, which has tourism as a main player to support financially. The last urban related theory is about urban vitality, which will guarantee that heritage will not only be kept, but also function sustainably in the long run.
The last past embodies on the combination of the two dynamics, the MTS and heritage, towards urban vitality. The spatial indicators will be unfolded and will be applied for the design part later on.

Network City
Nowadays with a technological advance, the lives of people are increasingly independent from urban physical and administrative boundaries. Cities become a network effect rather than geographical surfaces, which extensive webs of interaction are supported by fast transport and communication (Read, 2001; Bertolini and Dijst, 2003; Read and Rooij, 2008). The network city, proposed by Dupuy (1991), is recognizes the existence of three level of operators of networks shaping urban places. The three levels are firstly, in charge of providing the physical network; infrastructure, secondly, the suppliers of functional networks – services production and consumption, and lastly, personal networks. The personal networks lay on a subjective level, which relates to personal activities, spaces, services, needs in a personal behaviour. As David Harvey (2006) mentions about relational space in which nodes, places are products of the networks. Although, the network is scale-free, linking through all scales, it does not mean that there is no hierarchy in the network. Salingaros (2005) argues that the presence of hierarchy is a crucial element for vital networks. We can see it though the way that it was constructed and used, which becomes a part of human organization and action (Read and Rooij, 2008). Therefore, the network forms the fabric of the city in terms of social and cultural experience by interweaving patterns of people everyday activities (Read, 2001). Salingaros (2005) summarizes that an urban coherence and vitality of place is a product of inter connectivity on different levels of scale. It refers to the distribution of activities are not based on an historical narrative of decisions and events, but it is fundamentally based on a spatial pattern, which impacts on the ways of everyday people life processes, their patterns and movement, especially related to mobility (Read, 2001).

Mobility
With a growing proportion of population, it has led an expansion of the range of actions, resulting in a growth of mobility network. Mobility refers to the movement of people and goods. As Graham and Marvin (1996) describe as it allows time constraints to be overcome by minimizing distance constraints. However, due to its single concern, it of course generates new opportunities for human interaction, but also threats. Mobility lead to an increasing disentangling between human activity patterns and the physical city. Each individual may increasingly create his own virtual city, which has no physical and administrative boarders, but is rather a specific, changeable combination of activity places, connected by transport networks within definite socio-economic and behavioural constraints (Bertolini and Dijst 2003). This process causes a change in the relationship between the social and spatial dimensions of the city. In the contemporary world the two dimensions can be separated, for example, human interactions can be developed without any apparent spatial support (Castells, 1996). When the spatial network and uses become separated layers, it can create inequity. According to Graham and Marvin (2001), infrastructures give access selectively, which will show how effects of local disconnection; functional islands, location and users bias, may be produced. Moreover, to improve mobility, there is no guarantee not only that people will interact with each other, but also a node will be no more than a transfer machine or spatial collections of functions that have no relation with each other(Bertolini and Dijst 2003).

Transit-oriented development (TOD)
The idea of TOD is an idea to develop land use plan in relation with transport system by the density and functional control in an appropriate proportion (APA 2006). It aims not to allow dispersed developments, but allow only in focused areas around stations. The concerning elements cover types of transport in focused area, stations themselves and the area along. The TOD involves not only rail transport, but also sub mode of transport connecting to the stations. As American Planning Association (APA) demonstrates that the central of focused areas are given to high-density developments with lower density in the outer.
According to APA, the key factor of TOD is to design pedestrian priority, which helps to reduce a number of automobile traffics. The pedestrian supported mode of transportation should be promoted as well, i.e., foot path, bike route or trams, within 400 m. - walking distance. Besides, types of development should be controlled as Calthorpe (1993) illustrates that place, commercial, housing, jobs, parks, and civic uses within walking distance of transit stops. Secondly, it should create pedestrian friendly street network directly connecting local destinations. The third reason is to provide new mix of housing types, densities and costs, at the same time, protect sensitive habitat zones and high-quality open spaces. Lastly, TOD should encourage redevelopment along transit corridor within existing neighbourhoods(see illustration 2.1).
APA also defines areas, which are suitable for TOD. The first is the neglected space or low density to revitalize. The second is the place with a high potential, which locates at the edge of existing communities or suburb. The result of TOD can improve the living quality by reducing private vehicles and spur slow traffic to link between local transport nodes. Furthermore, it enhances local economic along pedestrian networks resulting in new activities and places becoming more attractive to use. To put an effort on slow traffic, it will positively become a place's identity, such as a harbour city or an airport city (Bertolini and Slit, 1998).

A good node
As APA gives a definition that a good node concerns with not only the station, but also transport-supported network, i.e., park and ride, pedestrian network and service functions. Simpson (1994) illustrates impact of the development and station areas on the city's fabric. It can cause both positive and negative results.
The positive aspects are firstly, the area of development will be accessed easily, which causes changes in density and urban grain. From a good accessibility, it draws attention of people to come and use that will be able to improve the economic status of the existing area. The third reason is that it increases more transport options to residents, which will reduce numbers of privately owned vehicle.
On the other hand, a node can generate negative consequences too. For example, existing activities and programmes will decline, due to new development from traffic nodes. It is easy to access, which will make areas denser, mainly being occupied by new economic functions. All of new developments can replace the traditional living pattern so that it loses its role to the city and "place". Many conflicts will happen if there is no effort to blend within the context. For example, new developments do not meet demands of existing people in terms of functions and uses.
From above mention, a node can cause unwanted effects to the existing fabric. To be a good node, it should maximize positive outcome and minimize the negative one. In other words, as Graham and Marvin (2001) mention that a mix in uses, functions and density are key solutions. Diversity can serve different demands from every social status, which leads to centrality of the area with a mix in land use and activities. It provides options to all ranges of social status and finally, enhances an effective transport network.

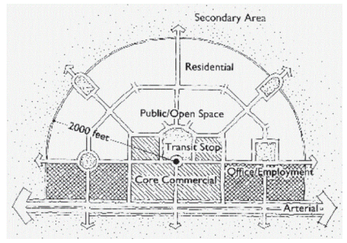


Illustration 2.1 The concept of TOD by Peter Calthorpe(1993)

Gentrification
The literature review on gentrification is studied in order to seek for conditions of positive gentrification. This process is inevitable and usually happens in the context of Bangkok and around the world. The research focus not only on the process of gentrification in general, but also gentrification in relation with conservation planning. The theoretical review aims to protect demographic changes and unintended economic eviction in the heritage sites.

Causes and results of gentrification
The first study lies in a relationship of gentrification and community. As Devies and Herbert(1993) attribute that the physical conditions of communities are adaptable and changeable all the time, which relates to the communities' life span. Similarly to their residents' life span, the two factors make the process dynamics that need to serve new demands, such as economic and social changes. That will create a zone of transition, which is explained in terms of causes and results. Devies and Herbert demonstrate the first cause as the commercial change. It takes place with an aim at boosting economic dimensions by using low land-price areas. The second factor is to intensify. Generally, this phenomenon can be seen via high-rise and compact buildings. The two factors create negative consequences. It happens when low income people are threatened by higher income residents, who see an opportunity to develop and densify areas. This process will generate conflicts in different ways of uses and attitudes against the existing residents, who are poor (Devies and Hebbert 1993). Eventually, unlisted people are push to an outsider, enclave area and finally the area become ghetto. However, many theorists look at this phenomenon as a selective lost, which contributes to long-term development. An area should be developed as its full potential and land price, but the heritage sites are not on the list.

Gentrification and conservation
The relationship between gentrification and conservation is the second part. Appleyard(1979) explains difficulties in gaining support to finance conservation plan. However, when an area, mainly heritage sites, draws a large attention from tourism industries, which come up with money, the market starts to intervene. Job rate and economic status of the area will increase by tourism industries. Local people will also benefit from the development of transport systems and public amenities to serve an amount of newcomers. However, the intervention from the market will change places' characters, identities and socio-economic status of the area. The issues will be explains more in the next section , aspects related heritage.

The framework of Gentrification
Gentrification generally knows as a pattern that middle class takes up the working neighborhoods. It restricted in territory and process has physical, economic and social aspects as well (Hamnett 1991). However, in the last century the concept of Gentrification has changed. The quality and quantity of the state intervention are the difference from the past. It can be explains in many reasons. Firstly, gentrification is not limit only in inner areas. Outer areas of a city are concerned. Secondly, the market, mainly real-estate industries, initiated gentrification, which can be only seen after changes have started to realize (Nagy 2010). It causes the working class to outer territories. The purpose of gentrification always involved with an explicit economic interest. Lastly, the state capital is more involved that before, attached to privatization projects which encourages gentrification as regards the pace and quantity (Smith 2002). He also adds that not only a relation of public and private supports the process, but global capital as well. The integration of political sectors causes alternation in new areas such as safer living environment. It leads to positive gentrification, which are the transformation of neighborhoods and landscape complexes. Smith explains as"a global urban strategy" that can minimize oddity and develop into a systematized objective. The displacement, relating it, is socially organized and has enlarged in scale and diversity (ibid). Besides, Crump(2002) conceptualize gentrification as a process to break up the concentrated poverty, by promoting concepts of mixing diversity and balance.

In relation with the thesis, in 2030, the Bangkok has planned the expansion of the MTS throughout the city, which as planned it will pass the historic core of the city. Therefore, the strategy to revitalize the project is not only about economic aspects, such as a good node and TOD, but also a positive gentrification. Instead of the displacement of the original dwellers, an integrative approach is needed. On the one hand, mixed social groups are introduced to the area to provide possibilities of encounter with the segregated and stigmatized local dwellers. On the other hand, the local will exploit from opportunities by newcomers.

Accessibility a key towards sustainability

"The ultimate goal of most transportation is "access," people's ability to reach desired goods, services and activities" (Litman, 2008).

The definition of accessibility covers beyond mobility, because it includes not only improved mobility, but also improved land use accessibility, which reduces the distance between destinations. The objective refers to the ability to reach desired goods, services, activities and destinations so-called opportunities (Litman, 2008; Walker, 2011). Accessibility tends to optimized with multi-modal transportation and more compact mixed-use, walkable communities, which reduces an amount of travel required to reach destinations. This concept is similar to mobility environment or sustainable mobility by Bertolini and Dijst. They term mobility environments as an anchoring human interaction in network cities, which mean that in a boarder connotation accessibility is not just a feature of a transportation node (" how many destinations, within which time and with which ease can be reached from an area") but also of a place of activities ("how many and how diverse are the activities that can be performed in an are? "). Bertolini (1999) also widens it in that a place where many different people can come, but also where many different people can do many different things: it is an accessible node, but also an accessible place. Read and Rooij (2008) emphasize in this issue by adding qualities brought to place by the connections. Houben (2003) in A Room with a View contributes that mobility are not only space for traffic ,but also public space, space to spend time in that being able to positively changed society and daily lives of people.

ITE Smart Growth Task Force (2003) summarizes the effect between land use patterns and accessibility in various ways and these four aspects will be unfolded later on.

1. Density (number of people or jobs per unit of land area) increases the proximity of common destinations, and the number of people who use each mode, increasing demand for walking, cycling and transit.

2. Land use mix (locating different types of activities close together, such as shops and schools within or adjacent to residential neighborhoods) reduces the amount of travel required to reach common activities.

3. Non-motorized conditions. The existence and quality of walking and cycling facilities can have a major effect on accessibility, particularly for non-drivers.

4. Network connectivity (more roads or paths that connect one geographic area with another) allows more direct travel.

The theory, based on the idea of heritage, is presented in the form of a conference paper. It is used as a final product for the course theory of urbanism. The paper illustrates two aspects related heritage. The first part explains conflicts in conservation in terms of spatial, economic and social factors. To assure that heritage sites will function properly towards the long-term development, the paper uses the concept regarding urban vitality as indicators which are place making, functional approach and socio-economic security. The aim of the paper is to seek for criteria, which can be used as a checklist in the design stage. The criteria tackles with four aspects related urbanism field; a good city form, life span of heritage places extension, local benefits and the governance support.

Urban Heritage: Integrating tourism into conservation, planning towards urban vitality

Abstract – A historic city has its own history, which has been developing through several decades. Heritage reflects the image of a city and narrates stories of its society from its past leading through to its future (Karpati 2008). Nowadays, the trend in heritage conservation has shifted, which has resulted in the commercialization of heritage serving the demands of the tourism industries and the future generations (Jepson 2001). Besides, the relationship between heritage and tourism is paradoxical, which in fact the integration of the two, heritage and tourism, is the main objective for conservation (Urry 1990). The main focus of the paper is to seek for a symbiosis model for the long-term development in heritage planning and management. Therefore, the paper will firstly demonstrate current conflicts between heritage and tourism industries in terms of spatial and socio-economic problems. Secondly, the paper will look at solutions for the future development and link them with the ideas of urban vitality providing principles of good city form, socio-economic security with supporting policies . In terms of the study, investigating the conflicts between the two dynamics, heritage and tourism, the review literatures are selected from different angles, morphologic approach, heritage as a product and market-led development (Lankham, 1996; Ashworth and Tunbridge 1990; Butler 1997; Healy 1992 and others). In terms of the solutions, the four aspects relating to the contribution of urban vitality to long-term development are debated. These aspects are the principle of placemaking, functional, local economic and political approach, for all which are covered as the main criteria for conservation (Montgomery 1998; Nasser 2003; Lynch 1960; Jacob 1961 and others). The outcome of this review paper would help the author to build the theoretical underpin and a better understanding between benefits and conflicts towards heritage planning to create synergy model through the spatial intervention.
Key words – urban heritage; conservation; placemaking; tourism

1 The shift in conservation paradigm

Nowadays, due to the rapid growth in the size and the rapid transformation forcing by globalization, the first priority of city development has shifted towards economic attractiveness. Urban heritage becomes an economic asset. The condition of places of heritage is determined largely by their present function and use. The historic areas, which do not have a good potential for economic exploitation, for example through tourism, tend to decay rapidly. In contrast, areas with urban heritage, which are still in use, has a better chance to be maintained (Steinberg 1996).

Before the period of urban transformation for tourist consumption, urban heritage had needed to be given a definition. Generally, urban planners usually remarked on objects, for instance, religious buildings, castles, monuments and so on. The consensus often excluded the other features that help shape the society. Steinberg mentioned that historic residential areas and city centres equally represented the urban heritage as same as non-tangible elements, such as customs and beliefs, articulating the built environment. According to Nasser (2003), she also argues that historic context must be linked intrinsically to its past, not just in the continuity of the built heritage and urban space, but also in the living culture that characterizes heritage places.

However, the tourist consumption could cause a loss in local culture. With a commercial force to attract new comers, Berke and Conroy (2000) reveal that local culture is losing identities as global “cultural industries” asking for a redefinition and reinterpretation of their culture to be attractive and competitive. In the last decade, governments called

for “modernization” that only new modern housing was worthwhile and conversely anything old or in a traditional style was considered of little values and was torn down (Steinberg 1996). Moreover, spatial pattern of land uses and activities change, because of the new concentration from the government. Although, international funds have been invested in maintaining government owned and registered heritage, in the case of privately owned properties, however, the situation is different. Private owners would consider any extra work as a burden due to the unaffordable cost and no necessities to maintain. Steinberg adds that they are unable to establish other forms of use or innovative mechanisms, such as heritage “commercialization” for the financing of the required conservation. The consequence is that currently, these areas continue to generally decline, with their physical, social and economic functions.

The focus of this paper is to examine the concept of spatial, social and economic applications of conservation heritage. To assure that heritage could work properly, the paper also highlights the idea of a successful urban place from the notion of urban vitality as related guidelines for developing and managing tourism in heritage places. The principles of placemaking are suggested as selecting urban conservation processes in order to connect and control conservation with new spatial development. By focusing more on tourists, it proves that tourism can contribute to both conservation and development objectives, at the same time promote social equity and cultural values. Tourist industries act as a driver to yield economic development. Besides, foreign incomes can help support social dimensions on a local level. Every aspect is equally important with how to manage it sustainably not only to solve conflicts between conservation and tourism, but also to suggest a way towards long-term heritage development (see illustration 1).

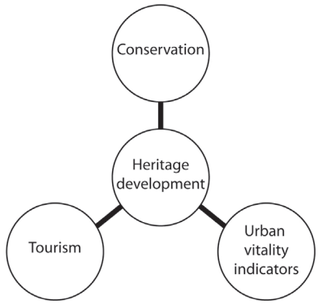


Illustration 1 The relationship in planning and management heritage conservation

2 The purpose of conservation

It is commonly known that the historic objects and places carry aesthetic values from time to time. However, Jekilehto (1999) argues that the importance of historic conservation was found on the respect for the original style, not anymore on purely aesthetic reasons, but by the building’s significance as a representation of achievements in the nation’s history. The idea goes beyond spatial configurations by suggesting the idea of authenticity and originality. He adds that ancient monuments represents certain historic periods only so far as their authentic material was undisturbed and preserved in situ; its original or correct place. The idea of conservation was widened, because architectural and historical quality would define an area, often denoting a significant historical and social relationship to the rest of the town (Nasser 2003). According to Feilden (2003), he links urban issue to socio-economic value. The purpose of conservation is to prevent decay and manage changes dynamically. Orbasi (2000) emphasizes that urban conservation has three interrelated objectives, spatial, social and economic. To prevent the threat of deterioration, therefore, these three aspects, related to heritage vitality, will be unfolded in the following sections.

2.1 Present as a part of the continuum

Urban aspects are prominent in the conservation of the city. Urban conservation is not just only about significant buildings, but its also taking in the whole ambience with its cultural significance. According to Jokilehto (1999), he explains a morphologic approach in conservation which historic and important architectures should be protected and at the same time, new buildings should respect the existing tissue too. As a holistic view, townscape could be a guideline for new development, so that townscape becomes a link between conservation and change (Worskett 1969). In terms of visual facets, townscape reflects a cities’ identity and presents recognizable places.

To keep a town’s identity, spatial components of the city need to be classified in terms of priority. This selection process is very selective which depends on interpretation value and taste. Larkham (1996) assesses this tension between heritage and urban form. “Conflicts also arise in the move in architectural fashions, with styles governed by the preference of leaders in architectural taste” (p.18). In the past, the ruling class or intellectual force drove this responsibility. Their attention always focused on the major monuments or high land values. However, the trend has since shifted. As Ashworth (1990) describes, that with an increase in academic pressure, vernacular heritage is considered as worthy as the heritage of social elite. Considering townscape as a whole, retaining the visual appearance of the holistic area introduces a new concept of preservation, “facadism” (Larkham 1990). He explains that the form remains, but adaptable functions behind are to be suitable for modern lifestyles. Although, this idea seems to negatively direct in the loss of townscape grain through plot amalgamation, Hubbard (1993), however, argues that local residents do not perceive this as a problem and acknowledge this as a good chance, which is much more important than authenticity. From the literature, The Tourist-Historic City, Ashworth and Tunbridges (1990) explain that authenticity as it is defined needs to be replaced by a more flexible concept. The idea is that existing old buildings could survive overtime by socio-economic forces. “If authenticity is the accurate reflection of the past through its architecture, then skilful reconstruction may be more authentic than scattered remnant relics. Most old urban structure is the result of much adaptive reuse. Restoration therefore facades the problem of choosing which past from many should be restored.”(Ashworth and Tunbridge 1990, p.24)

2.2 Heritage as a product

To help heritage survive, economic issues can stretch life span of conserved buildings. Theorists discuss that conservation must tackle both economic viability and efficient uses. As Nasser (2003) mentions that, these two are interdependent; the economic viability of a building depends on the use, which a building can be put. For a building to function efficiently, the conservation idea is to help buildings keep standing over time with new extentions at a reasonable cost. The reasons are that changing will not have an effect on the urban fabric and rehabilitating offers less economically and socially disruptive means of renewing cities (Fitch 1982).

For the time being, modern thinking pays attention to conservation differently from historical and cultural values. Based more on the economic activities, according to Ashworth and Tunbridge (1990), the idea is to provide “the link between the preservation of the past for its intrinsic value, and as a resource for the modern community as a commercial activity” (p.24). However, the approach has changed to market oriented, when economic issues become dominant. Heritage is looked as a “product” selected by consumer demands and managed through the intervention in the market, “exploitation” named by Ashworth (1994). That makes the problem of authenticity irrelevant in heritage planning anymore. Nasser (2003) adds that heritage is in the relationship with consumers, so, consumers can define heritage. Furthermore, some scholars believe

that heritage can be created just to give visitors pleasurable experiences (Newby, 1994), for example the idea of a copy, of which no original ever existed. Similarly, Larkham (1995) reveals "disneyfication" is the creation of an area based on a made up story to look authentic. As previously mentioned the shift in heritage conservation paradigm clearly shows the overall focus on the external dimension that tourism, being attracted by built heritage, could be an economic booster to local and national economy. Although, local residents can benefit from a wave of new comers, there is the other uncontrollable factor, which is "tourist area life cycle" (Butler 1997). He addresses that the destination is unknown and travelers come in small groups, because of a limitation in accessibility, supporting facilities or local knowledge. However, after more tourists head to the area, it results in over capacity so that locals cannot handle it, which causes congestion, social and environmental problems on the way to historic resources degradation. The consequence is visitor decline and loss of satisfaction. Therefore, the problem relates to not only numbers of tourist in particular time, but also the consequence of tourist-related activities that stimulate negative changes in urban environment

2.3 The social conflicts between locals and tourists

To make heritage as a key component for long-term development, Jacobs (1991) defines an objective as the capacity to accept demands without unacceptable changes. Norberg-Schulz (1985) discusses that conservation is meaningless without referring to locality. The local residents are disappeared in the concept described before. To meet local needs, Orbasi (2000) suggests conservation elements could be damaged or replaced by equivalent elements to ensure constant asset. However, it is not as simple when tourists become the main players for conservation. In fact, money from tourism industries can spread to local businesses and industries too. When cultural heritage turns out to be a product depending on consumer markets, the consequence is that the market will choose strategically the one with high commercial values (Ashworth 1994). The selection process generates many problems in conservation.

Selectivity in conservation depends on who has a power to choose and where to be preserved. Consequently, when land uses changes along with conservation, it calls for transformation process. Jansen-Verbeke (1997) reveals that tourist activities cause an impact on the urban environments. He adds not only do tourist-related problems, such as, over crowdedness, traffic congestion or intrusion in private domains have a negative effect, but also local conservation bias does too. Moreover, with the number of visitors, finally the market starts to intervene. As Nasser (2003) illustrates that the introduction of fast-food shops, car park facilities and standardized hotel represents a distortion in what is required for local residents. Changing for the worse, "enclave tourism" (Healy 1992) occurs when the type and location of facilities are not oriented towards locality. As a result, money will not benefit the local economy. This leads to an increase inflationary pressure on local economy. Price of land, products are neither affordable nor responsive to local needs creating an "outsider zone" (Nasser 2003) She attributes a loss of sovereignty for locals which translates into loss of control in decision-making and benefits. Every area is different so that it will experience uneven distribution in conservation efforts. The outsider gains less favors and will see a rise in economic decay and fabric deterioration, while focused areas receive priority aids (Newby 1994).

Not only is this considered a problem, but also the different perception in places between tourism and living culture, as well. According to Larkham (1995), locals are in danger of becoming part of the spectacle of tourism or as "a market-oriented commodity". Orbasi (2000) elaborates more practically that the conflict between residents and newcomers takes place in altered use of space, such as private space, i.e., residential areas, as well as religious spaces, where they are the most sensitive to tourist intrusion. Tourism also causes changes in local lifestyles and cultures. An example, being that, tourism industries can destroy inherent meaning in devalued cultural items leading to a loss of local crafts (Furze et al. 1996).

3 Heritage conservation contributing to urban vitality

In the past, urban planners generally located their perspectives on spatial conditions, such as in visual aesthetic or cities' beatification. This was, until Lynch, in her book named The Image of the City (1960), mentioned physical reality resulting in the place-making concept. However, the idea of vitality is not complete yet, because of lot of failure cases show that lacking of aspects related to socio-economics make the city unsustainable. In The Death and Life of Great American Cities by Jacobs (1961), she highlighted a good city idea in relation with uses. To become a vital place, densely concentrated dwelling and economic units should be woven, providing comings and goings, which bring a place to life (Sternberg 2000). Particularly, Montgomery (1998), who reviewed on Lynch ideas, illustrated functional mixtures, diversity and adaptability as crucial ingredients for urban vitality. At the same time, local transactions, fair distribution and controlled density are also socially important at the local level. Moreover, a good city needs good governance. Jacobs also mentioned that although markets are essential in providing financial support, markets can also undermine or even destroy urban vitality. It is necessary to get a support from government level to ensure that urban vitality will not be negatively intervened by the market mechanism.

As already discussed in the earlier part, to solve the conflicts in conservation, the following sections show the four aspects are equally important relating to heritage (see illustration 2). It proves that heritage conservation is rooted in long-term

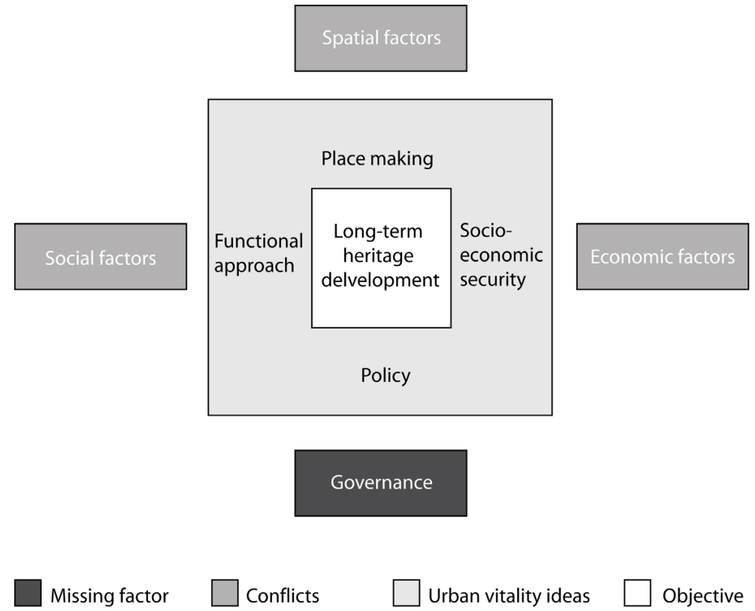


Illustration 2 Aspects related for the long-term heritage development

development in the sense that it contributes to urban vitality.

3.1 Aspects related to Principles of placemaking

The placemaking has introduced concepts that have influenced the selection of conservation. Physically, what makes every city different is its identity and image. In other words, conservation process should care for unique impressions received and collected about the place. As Spencer and Dixon (1983) give a definition of image that it is a combination of this identity with how a place is perceived as a set of feelings about that place. With a support from Lynch (1960), "imageability" is the extent to which the components of the environments make a strong impression on the individual. He describes the different elements of the city, which are the paths, edges, districts, nodes and landmarks that are organized into a recognizable pattern. However, some theorists do not agree with the knowledge of these five spatial elements. Appleyard (1970) claims whether it is paths and districts which serve as early learning frameworks. In addition, primary nodes and landmarks are the main building blocks in constructing an image of place (Golledge 1977). Montgomery (1998) concludes that paths are dominant for new residents, because visitors use landmarks as anchor-points in constructing route, whilst the mental maps formed from local residents have both the paths and landmarks. Hence, how people gain knowledge of a place, it derives from individual's perception, memory and society. At the same time, it is clear from buildings themselves in what sort of meaning is being conveyed. Norberg-schulz (1985) introduces symbolic meaning which is to explain the strong feeling aroused when the environment was threatened. People always consider an essential element in a city's identity when asked to draw a mental map of the city, people start with that element (Montgomery 1998). It does not grade by size or proportion of spaces, but it connects to cultural importance in life of cities.

From Lynch's (1981) work, he links a sense of place to the qualities. The word "fit" demonstrates how this might be achieved. A city with a good fit provides the buildings, spaces and networks paving for its residents to pursue their goals successfully. However, Montgomery (1998) adds that the city consists of living things and must allow flexibility for the city to grow organically and never be wholly predictable. From the physical form itself, although, it discusses on crucial elements for a place, it would not be able to cover all the aspects related to urban vitality, because as mentioned above, the three aspects are interconnected, therefore, socio- economic values can signify the role in defining places as well.

3.2 The functional approach to prolong the heritage life span

According to Furze et al. (1996), conservation and local development is bridged together with the idea of small-scale and locally owned activities. The profits will give local businesses instead of foreign organizations, so that they can have a higher input in local products, materials and labor (Cater 1994). This is compatible with concepts of the physical conditions for making a city provided by Montgomery (1998). Mixed use, adaptability in functional diversity and secondary activities support can help heritage

areas last longer. Places continue to succeed with changes in economic conditions, because its form is highly adaptable, so it can adapt in changing demands (Montgomery 1998). The reason is that generally, the life of buildings last longer than their original functions. Moreover, Tourists are not attracted only by primary functions, but also secondary activities. Jacobs (1961) suggests that there are two types of mixed functions. Primary uses will bring people to specific places and act as an attraction for people. Montgomery adds that city diversity is only achieved where primary uses are combined. Secondary functions refer to services that respond to primary uses and serves people who are attracted by them.

The other factors that will extend the life span of a place, are time. "On successful city streets, people must appear at different times. This is time considered on a small scale, at different times throughout the day" (Jacobs 1961, p. 152). All ranges of society can use a place. The all-day activities are an overlapping of every users group, which provides services to any users to perform diversity of activities. Therefore, in order to prolong the life span, the functional approach emphasizes on the local economic activities to all participants and the way to help improve it efficiently by time extension and secondary programmes.

3.3 Promoting local benefits

The essential condition for conservation is to have a sufficiently dense concentration. Though the number of tourists are uncontrollable, for the place to be self-sustainable, small-scale businesses and open space in its proportion are necessary (Jansen-Verbeke 1997). With myriad networks of firms, small and medium enterprises are involved in a domestic consumption and can increase job opportunities as Jacobs (1969) calls "growing a fine grain city economy". The transaction base is not only in a monetary form or in all about economic, but she also adds that urban areas provide space for social and cultural transaction. Bianchini(1990) adds that in the public realm, such as, streets and squares, both local residents and visitors act as drivers in this process. To protect neighborhoods from unexpected activities, they would have a clearly delineated edge and separate identities between each zone (Montgomery 1998).

To revive the local economy, Rees (1989) describes that it is important to increase local involvement, because the local population's time is longer than investors who are concerned with benefits. The involvement should see through the replacement of optional economic livability. To meet current demands, new economic activities will be welcomed, if the traditions are removed from the community (Cater 1994), however, traditions and lifestyles must be respected. The location, figure and quality of new development should be controlled under spatial design guidelines by the existing context stressing the continuity between periods (Tiesdell et al. 1996). By replacing structurally and functionally obsolete buildings, the quality of new development reinforces the sense of place and supports community identity and attachment (Berke and Conroy 2000).

3.4 Role of the government in conservation

None of the ideas mentioned above can achieve anything without supporting policy. Without any help from government, dwellers themselves cannot intervene in the market. It causes an imbalance in the share of incomes and profits from tourism (Nasser 2003). To limit these effects, Cater (1994) argues that governments would need to intervene in the market and manage an integration of planning and implementation to ensure sustainable tourism. According to his idea, to let the market control freely is not contributing to long-term development. The reason is that when visitor numbers increase, tourism organizations get more benefits causing environmental degradation. He suggests that government can monitor through fiscal measures and taxation on tourism organizations together with incentive for environmental protection as a method of subsidizing heritage places. For example, some areas gain less attention leading to receive lower financial support. Revenues generated from tourism should feed back through cross- subsidization to local community such as revolving trusts to refurbish and reclaim buildings or enforced entrance fees to tourist attractions (Nasser 2003). Therefore, money will operate to improve local incomes, savings and enhancing whole areas of towns.

The process discussed above calls for an integration of tourism planning with city, or even national, development plans in general. It also concerns with sector targets in particular. To meet mutual agreement between public and private sectors in tourism, the role for the government is to set up the conditions and business environments, which both benefit private and public sectors and especially private local business can gain reasonable profits (Rees 1989). This approach emphasizes on the tourism industry to take responsibility to the heritage financially and environmentally towards a long-term maintenance.

4 Conclusions

Conservation and Urban vitality are compatible and complementary, though there is still a lack of an integrated approach that maintains the typical and essential parts of the historic areas and the life of resident communities, which can adapt physical structures and economic activities, based on current needs (Steinberg, 1996). This paper has examined the problems and potentials of heritage conservation. When tourist activities are more dominant over local society, the conservation conflicts result from the transformation of land use, disruptive use in space and the ruined local economy. However, with an integrated conservation planning, making use of urban vitality ideas, the long-term development can be seen via townscape strengthened by spatial conditions for place-making. The functional approach could offer local benefit and extend life span for historic areas. Together with political powers, heritage would be maintained and local residences could acquire reasonable profits (see illustration 3).

In summary, the review paper plays a crucial role in my graduation thesis, which tackles with urban development from the expansion of rapid mass transit in the historic area of Bangkok, Thailand. It helps to build a strong theoretical framework for my project when the conflicts are unfolded and then, the solutions are created based on urban vitality, it helps shape the results by creating a new model towards sustainability. At the same time, to know conflicts and benefits, an overall understanding could support the author to build a strategic intervention. Additionally, spatial indicators are constructed as a guideline to create a synergy scenario and mutual benefits for different social groups, local residents, private investors, tourists, new comers and government in the design period.

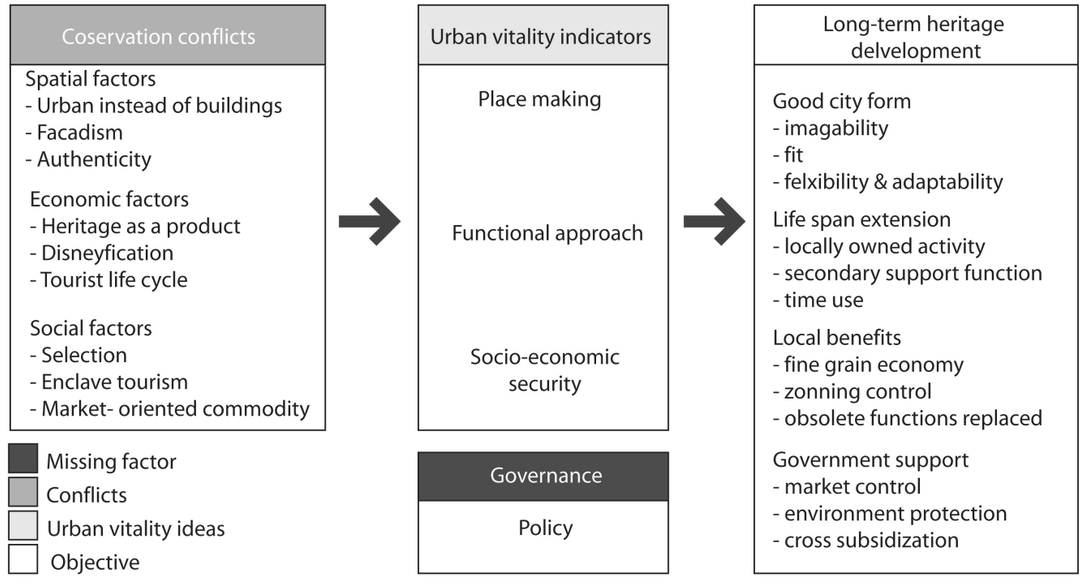


Illustration 3 A new model integrated conservation and tourism in heritage development

Diversity

Diversity is a part of the provision of local facilities. The provision of local facility and services clearly reduce travel distance and increase a number short trip. Land use is therefore important in favouring different types of accessibility and also people's needs. A higher level of land use mix is positively correlated with lower level of motorized travel. From this perspective, it creates more choices for residents at the same time diversity promotes creativity (Jacobs, 1961). Winden and Van Den Berg(2004) proposes that diversity of inhabitants and activities facilitates the interactions ,which trigger new ideas. Finally, the place will attract diverse groups of people, ethnicity, nationality, gender, sex and age. However, on the one hand, diversity tends to create freedom, but on the other hand, it spurs problems of segregation between different groups. Therefore, promoting diversity must be done in the way that shrinks the gap of poverty and inequality for the society.

Density

The density development is commonly known as population density. Read and Rooij (2008) describe that agglomeration is understood as involving factors like face-to-face, creative economy and urban amenity, which incorporate with density. Statistically, it shows that double population size increases level of productivity for six percents (Ciccone and Hall, 1996). Stead and Marshall (2001) point out the reason why density is an important linkage to travel patterns of people. It firstly widens the range of opportunities for the development of local interaction and activities without requiring a distanced travel. The consequence of an increasing number of residents calls for supporting services too. The average distance for personal trip will be reduced as a distance from homes, services and workplaces are shortened. In terms of public transport, high densities are more amenable to public transport operation and less amenable to car ownership and use which have implications for modal choice. Modal choice is associated with population density in that according to Litman (2008), the proportion of trips by car decreases with increasing population density while conversely public transport and foot both increase. Walker (2011) adds that to create denser communities, less mobility is required.

Non-motorized conditions (multi mode)

As the access aims at ability to meet users' needs, and does not necessarily favor longer trips or faster modes, it therefore considers shorter trips and slower modes if it provides adequate access (Litman, 2008). Different modes play diverse roles in giving mobility and accessibility, for instance, some modes are more suitable for people with physical disabilities or low incomes. Some modes are particularly important for industrial activity. It provides opportunities to all social classes. From many studies, it also helps reduce negative effects from the only one dominant mode, particularly automobile in terms of traffic congestion, car exhausted fume and time consumption on the road. As we all know that slow traffic is environmental friendly, but according to Nordahl (2008), riders can get richness experience from slowing down speed as well. The aspect related experience is important, because it relates to riders' perception, which nowadays people spend longer time on moving from places to places than in the pass. Houben (2003) illustrates that mobility route are not only space for traffic, but also public space and space to spend time in.

Proximity of Network Connectivity

Proximity of network connectivity in terms of more roads or path connected one geographic area with another, allows more direct travel. One of the way that land use influence travel pattern is that people tend to travel based on time not distance (Litman, 2008). He also adds that a short walking trip often replaces a longer automobile trip, for example, walking to a local shop rather than driving across town for a supermarket. The proximity to transport network is able to represent connectivity to the network as a whole and of course the proximity influences travel pattern too. The more dwellers live close to the transport network, the more they use it. As Stead (1999) mentions that better access to major transport networks, increases travel speeds and the distance, which can be covered in a fixed time. The network can generate the dispersal of development in both residential and employment. For the spatial configuration, Ewing (1996) notes that grid-like patterns can be more transit friendly to the extent that they may allow greater penetration of an area. Among the essential characteristics were short to medium length blocks (see more in permeability) and continuous sidewalks relating to pedestrian network connection, while grid-like street network was considered highly desirable as well as in terms of legibility, which Walker (2011) names as conceptually available with simple co-ordinates. Stead and Marshall (2001) concludes that it promotes short and direct routes for pedestrians, including access to public transport, but not for car traffic.

Quality of Space

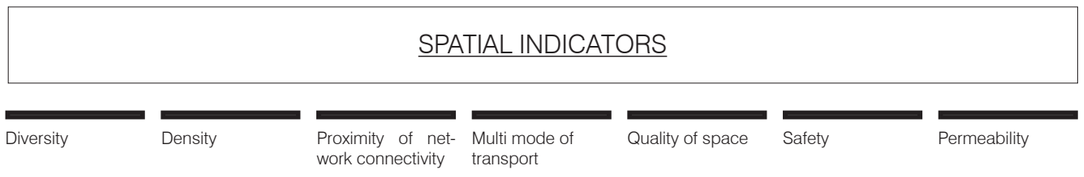
In order to be a successful place, Winden and Van Den Burg (2004) mentions that urban amenities and quality of life are the key factors. This agglomeration of public facilities covers built environment, public services, recreational and institutional activities. Bertolini and Dijst (2003) propose that urban qualities are produced in places by what network brings to place and on the characteristics of the visitors. To assure a good quality of life, according to Florida (2002) therefore, talent attracts talent, place-based characteristics can attract talented people. This group of people tends to live in a city where they can enjoy their life and work, and also have people they can communicate and interact, which result in positive effect to the place. Cultural aspects is a key towards a good quality of space, not only by city images and residents' memory, but also culture itself provide a specific dynamic of socio-cultural activities. In particular, for places with cultural richness, educated and creative workers are attracted and gathered to places of cultural vibrancy and variety, because these places provide them outdoor activities and amenities to establish new businesses (Florida, 2002). Clark (2003) divides amenities into two types to fit with different age groups. Young people tend to enjoy more on the constructed amenities whilst elderly will be satisfied on natural one.

Safety

Conditions of safety have an impact on vitality of place. According to Van Nes (2007), there is a relation between a perceived fear of a street and the actual condition of the crime figure in the area, especially on level of visibility of the street net. Well-known scholars like Gehl (1996) and Jacobs (2000) also consider that entrances and windows facing a street is one formula to guarantee urban liveliness. Van Nes and Lopez (2007) elaborate more on this issue by saying that the degree of street safety is in line with topological depth between public and private space and visibility on streets. They conclude that in terms of typological depth, the more typological step between street and private space (housing or building) seems to increase segregated urban areas from the main routes and gives neighborhood a desolated atmosphere. In contrary, urban area, which located close or adjoining to main routes, tend to have entrances directly connected to public space. Residents participate in being a part of street life and enable to keep an eye on what is going outside. For visibility, social surveillance is created where the presence of other people generates more eye on the street (Jacobs, 1961). Montgomery (1998) summarizes that the successful place will have users on it continuously, watching and being watch with well-defined edge; private and public realms (Jacobs, 1961) and a quality of transparency or visibility.

Permeability

In spatial planning, permeability is usually known as a layout of urban forms enables people or vehicles to move in different directions. Marshall (2005) differentiates among connectivity and permeability in that connectivity refers to numbers of connections, which form a place. However, permeability defines as a capacity of connections to carry people or vehicles. Therefore, permeability tackles with both physical networks and urban tissue (MOX, 2009). It aims at creating spatial democratization, which allows freedom of choice in selecting optional routes (Bentley, et al. cited in De Shiller, 2006). With a low permeable network, spatial fragmentation on a local level is a result of problematic road systems influenced by an idea to promote traffic separation, despite society acquires a definite and recognizable spatial order (Hillier and Hanson, 1984). When the scale of movement is not supported by urban structure, spatial segregation and low permeable have an impact on a limitation of access of people to their needs, amenities, common resources and so on (Hillier, 1996). Besides, Hanson and Zako (2007) describe the level of permeability in that it can create potential for urban life and encounters since the configurational properties influence patterns of movement and co-presence.



The diagram showing spatial indicators of urban vitality, being used in the design part

The literature study, relating to the thesis, will support the author to build a theoretical underpin. In relation to the approach mentioned in the first section (see illustration 2.2), the strategy is divided into four issues for Bangkok. The first one is to maintain an unique urban quality of the historic core of the city. To guarantee the long-term development in the areas, the author links the issue with spatial indicators of urban vitality as criteria to revitalize the heritage sites. The following issue is the improvement of accessibility. By achieving multi mode of transport, superblocks, characterized historic areas, will be opened-up. It helps local residents fully make use of provided options of transport means. Investments from the developers, attracted by the MTS, can upgrade public amenities to local dwellers.

By creating open space network as district and local scale recreational and flood mitigation areas, the result helps make heritage sited survive. The city can benefit from strengthening its image and identity. The last issue is to exploit new developments. Functional and typologies controls regarding local demands will contribute to positive gentrification, and at the same time local socio-economic dimensions will be increasingly developed towards sustainability.

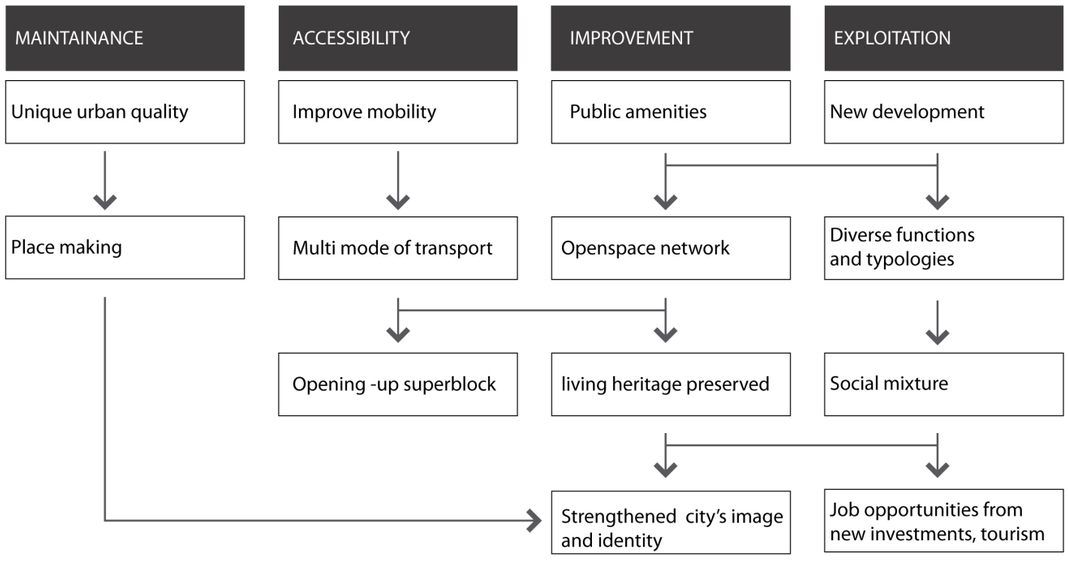


Illustration 2.2 The strategy extracted from the literature review

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Chapter 3

CONTEXT RESEARCH AND ANALYSIS

Source : www.skyscrapercity.com

In this section, the context research and analysis are organized logically with research questions. It starts form an introduction about Bangkok, and then studies on how the city develop by the historical research. Lastly, it links the theoretical study to Bangkok by showing up two issues, which are the change of Bangkok transport means and gentrification in Bangkok after 1999 (the MTS construction)

Bangkok, the capital city of Thailand with the history of over 200 years, is located in the delta area of Chao Phraya River (see illustration 3.1). The city is in an urbanized triangle of Thailand covering five provinces, called Bangkok Metropolitan area. Two airports and three lines of rapid mass transit serve the city. Almost all developments of infrastructure, occupation, functions, and economic activities are focused highly in Bangkok (World Fact Book, 2009). Comparing with the whole country (see illustration 3.2)., Bangkok is one of the smallest cities in Thailand. However, with its economic position, the role of Bangkok as a capital city makes Bangkok more important. A high-tech airport, mass transit transport, the stock market and CBD are laid in the city producing 50 percents of the whole countries' GDP. In terms of population, it shows that the city is extremely dense. Twenty percents of the countries' residents live in making Bangkok denser than other cities for 350 percents.

For the city itself, as above mentioned, Bangkok is a high dense city. When looking at the population of the city, it shows that the city has more than a half of urban population of a whole country. However, about thirty percents of the whole population are commuters (see illustration 3.3). The given budget from the government and resources in the city are not in an appropriate proportion. That is why the market become dominant in the city and the conservation planning is not so effective (Askew 2002).

Bangkok was divided into 50 districts. The dense areas are clustered around the inner city and the historic core. Conversely, in suburban areas, mainly agriculture areas, the density is lower. With a car based infrastructure development, most of the areas in Bangkok are reachable only by car. Moreover, without a good traffic planning from the past, many superblocks take place (see illustration 3.4). The effect is that currently Bangkokians are highly suffered from the traffic problems.

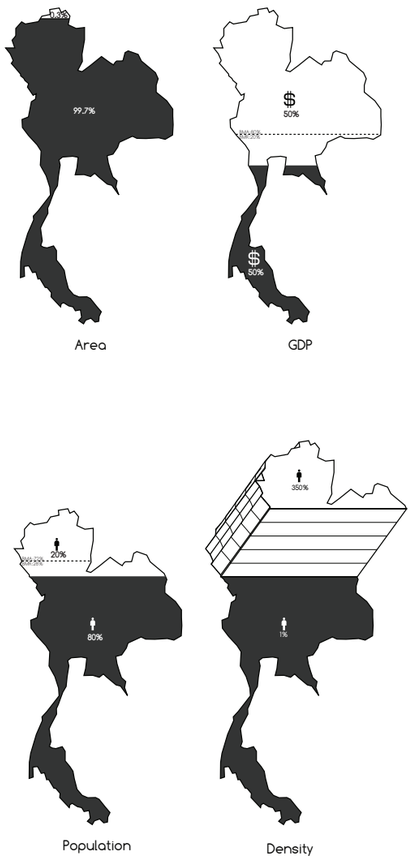


Illustration 3.2 general information of Bangkok in comparison with the country, Thailand

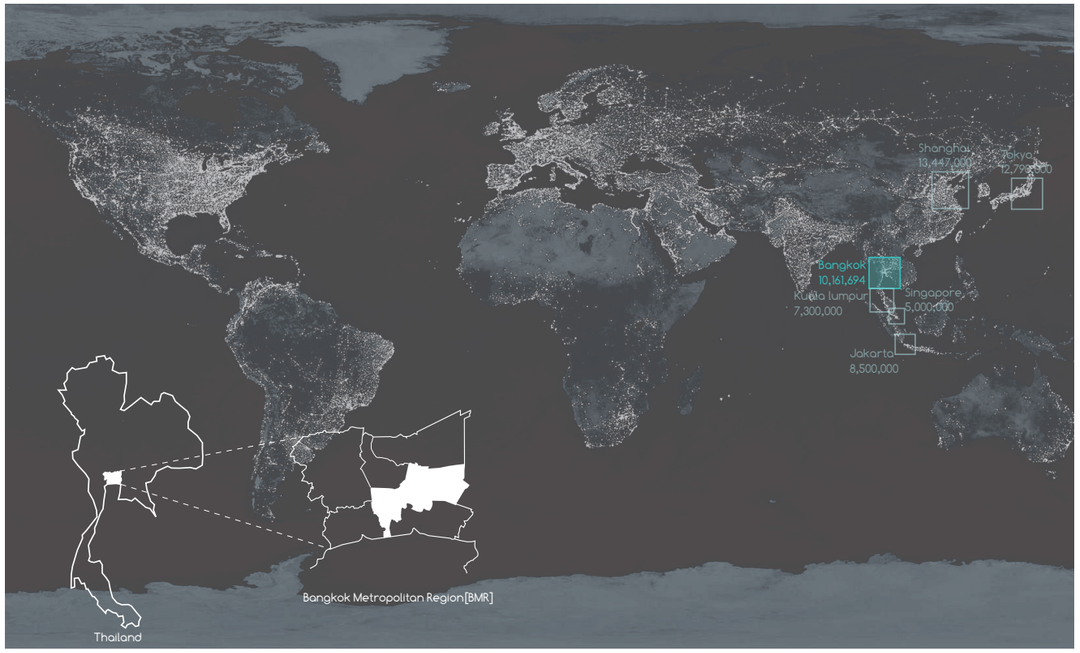


Illustration 3.1 Location of Bangkok ,Source : www.mapofworld.com

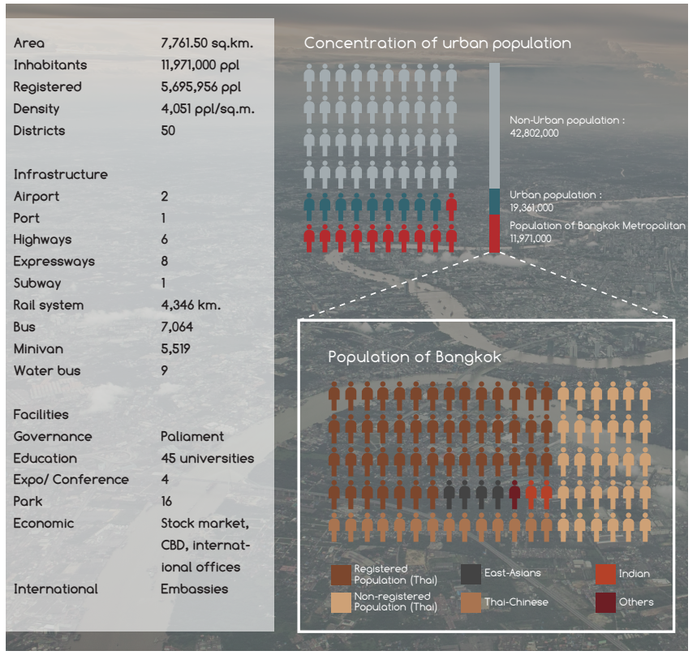


Illustration 3.3 Concentration of Bangkok population , Source : Department of Interior(website)

Illustration 3.4 Summary of Bangkok infomation Source : Department of Interior(website)

City icons

City images , Source : www.flickr.com

1. Siam paragon
2. Khaosan road
3. Traffic congestion
4. The grand palace
5. Jatujak outdoor market
6. Food vendors and motorcycle taxi
7. Skyline
8. Suvarnabhumi airport
9. Bangkok rapid mass transit system

Portraits of the city

The photos of the current condition of Bangkok are selected not only to give an impression about the city, but also to elaborate the topics more practically. Together with the pictures, the current condition of MTS is always built on top of the road. The elevated rail system usually, plug in to the prestigious functions, such as high-class hotels and luxurious huge department stores (Mcgrath 2009). He adds that the lower level, in where more dynamic functions located with informal economic sectors- street vendors and food stalls, is left to bad conditions by the very congested traffic. However, city has many high-valued heritage items, in a form not only places or temples, but also unique opened-air local market, which draw big attentions from tourism industries generating big money flows to the city. However, the condition of the historic places, when the mass transit comes, it still uncertain.

Bangkok's government vision

Bangkok is a monocentric city. From the regional level, it was designated as the first city surrounded by second and third cities respectively. With its high economic position, every logistic route passes Bangkok (see illustration 3.5). It acts as a stepping stone connecting north to south and east to west. In the city 2030 vision (see illustration 3.6), the government has defined a new economic ring surrounded the central business district (CBD) of the city, and together with a plan for mass transit expansion, which will finish in 2030(see illustration 3.7). as well.
Along with the vision, it gives us a big chance to think about how to balance the long-time spontaneous development with the new mass transit expansion. The connection between each area, which recently connects by private vehicles, needs to be re-established and the spatial development needs to be re-considered as well as the role of the areas need to be re-identified.

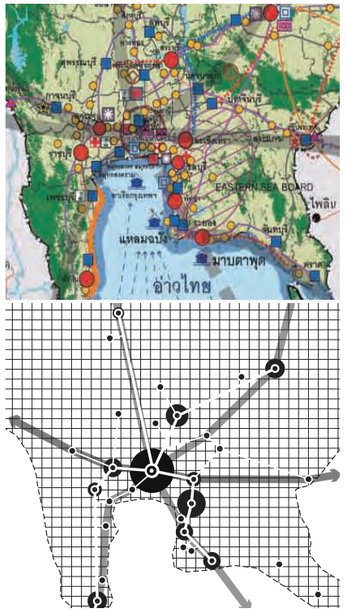
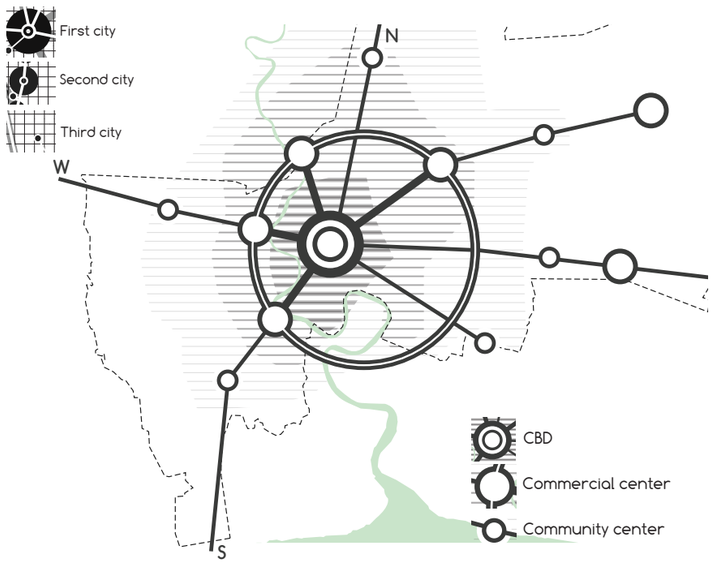


Illustration 3.6 The MTS of Bangkok in 2030 in comparison with the current condition, Source : Bangkok planning standard(2010)



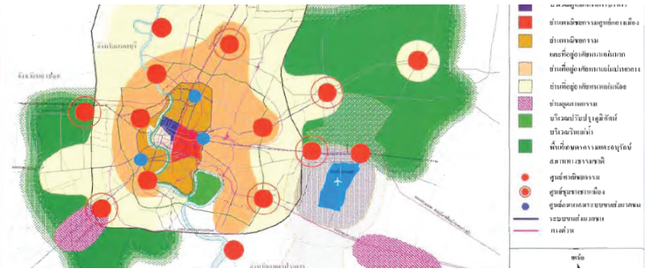


Illustration 3.5 Bangkok from the national vision, Source : Bangkok planning standard(2010)

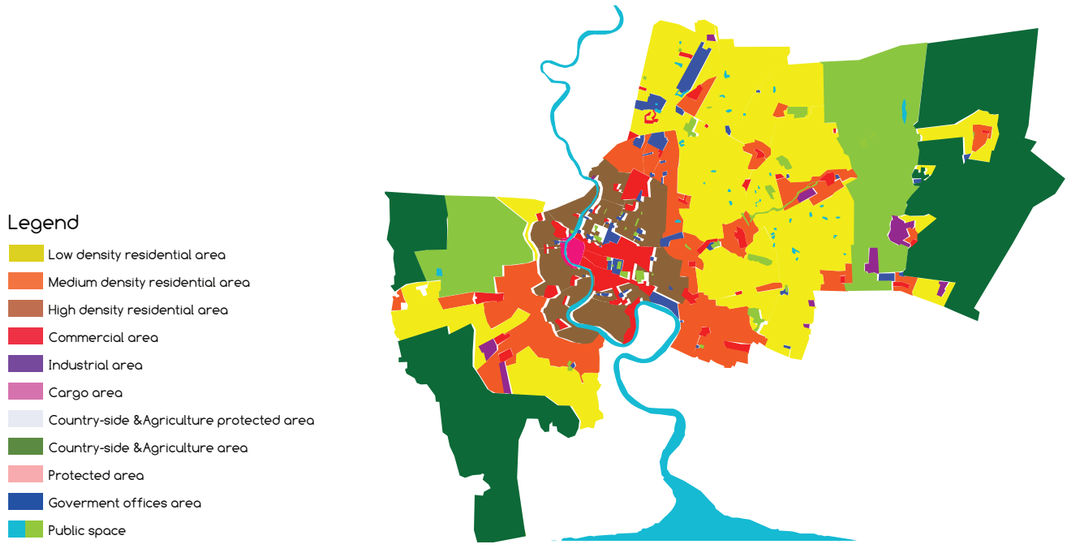
Land use

The distribution of land use shows that more than a half of the land has been occupied for residential reasons. The most dense area clusters around the centre and less dense areas respectively gradient far away towards periphery. Businesses and other facilities are more dispersed in the outer area as same as green open spaces. As a car based city , it makes difficult to the local people to move freely throughout the city. In particular, the preserved area has a highest density of population and locates far away from the other functions.

City urgencies

According to the city vision in 2010, BMA has already stated the urgent problems in their development plan of the city.
It aims to...
1. mitigate the water problem.
2.expand the capacity of the city and its facility as a metropolitan region
3.increase access to green areas
4.provide equal access to public transports throughout the city

Although, the project will not confront with the city scale like BMA does, the proposed strategy will not only take these urgent issues into account, but also function in line with the government intervention and help solving the ongoing issues.



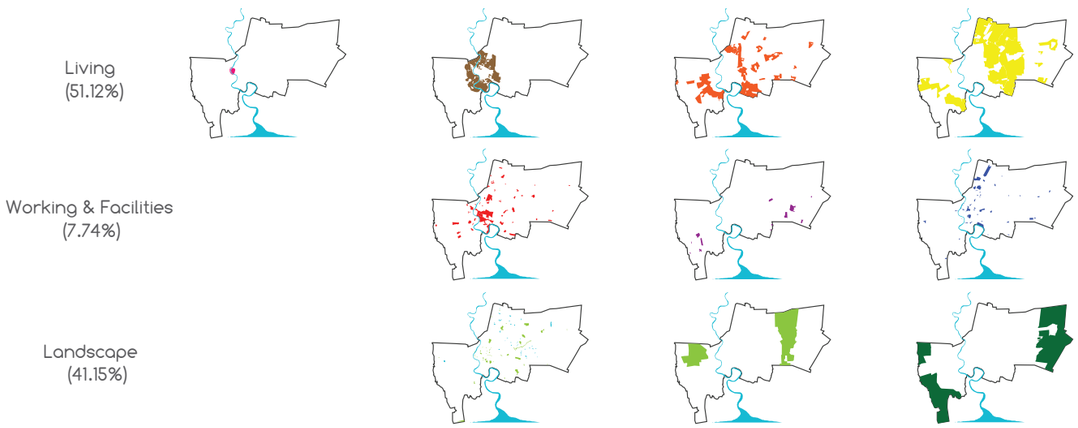


Illustration 3.7 Bangkok land use, Source : www.bangkok,go.th

Role of Bangkok districts

From the development plan 2004, the government already divided Bangkok into twelve areas. The role is different based on their potential and characters(See illustration 3.8). The historic core of Bangkok covers two groups. The first group is named as Ratanakosin group. It situates on the east of the riverbank. The area consists of historic areas (Ratanakosin Island in Phra Nakorn district), institutional and government offices (Dusit district) and traditional commercial district (Pomprab Sattuprai and Samphantawong districts). The second group is the Thon Buri group. It covers five districts(Thon Buri, Bangkok Yai, Bangkok Noi, Khlong San and Bangplad). The area is designated as cultural and heritage tourism sites with the diversity in traditional communities. It locates on the west bank of the Chao Phraya River and used to be a first-established area of the city. The historic value of the area is high, because its location, architectures, arts, traditions and traditional community life. Moreover, the Banngkok Metropolotan Administration(BMA) names the combination of the two groups as the arts and culture preservation and the tourism promotion zone. The thesis will locate within this zone as a testing site for the context analysis on the following section.

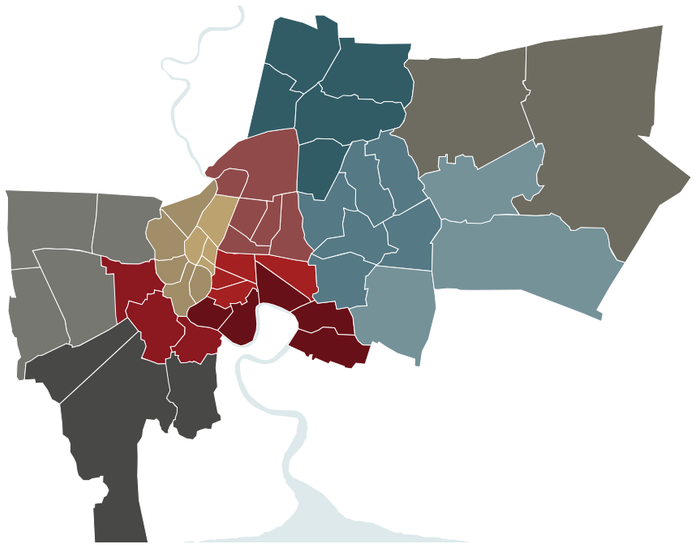


Illustration 3.8 The difference in development focuses of Bangkok's districts, Source : Bangkok planning standard(2010)

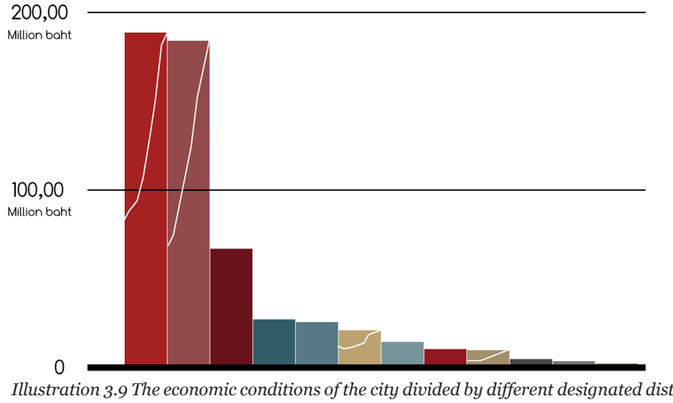
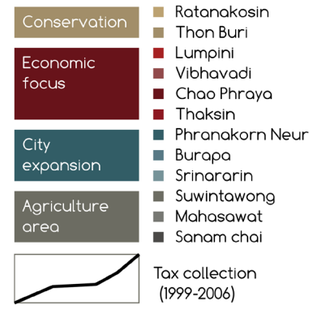
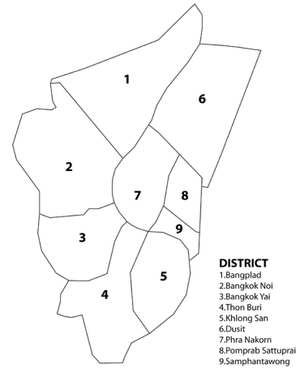


Illustration 3.9 The economic conditions of the city divided by different designated districts, Source : Bangkok planning standard(2010)

The economic status of the two zones

The economic status of Bangkok is separated by the twelve areas. Information used is the tax collection between 1999(the first two lines of the MTS opened) to 2006(See illustration 3.9). The existing lines of the MTS run mostly within three zones, which are Lum Phini, Vipavadee and Chao Phraya zones. After eight years of the first implementation of the MTS, the tax collection of three areas increases enormously – more than 100 percents. Conversely, with the others, particularly in the two focusing zones (Ratanakosin and Thon Buri), their economic status increases less comparing with the others. To know the economic consequence by the MTS, it gives a chance to the focusing area what the existing condition and a challenge is in terms of economic viability. Before zooming in to the analysis of nine districts within two zones, to be better understood about Bangkok fabric, historical research is needed.





In order to understand the mechanisms and anticipate effects, the historic analysis aims at seeking for the relationship between infrastructure developments and the city growth from the past. The transformation of urban space and patterns of development are studied. It unfolds the history of the city from the origins and driving forces triggering changes. In this analysis, the history is divided into five significant periods.

1.Establishment of original Bangkok(1782-1852)

Before establishing a new capital, King Rama I determined to plan and rebuild the new capital city as close as possible to the Ayutthaya prototype, the former capital city (Warren, 2002). Canals were enlarged on the east side to link with the main river, Chao Phraya River, making city surrounded by water. It was called Ratanakosin Island nowadays. The city was built with hierarchical order. In other words, inner areas were highly important (see illustration 3.10). Within the wall, the Grand Palace represented the highest order surrounded by temples. The temples for Thai society were everything, for example, they function as public school, library, hospital, garden and community centre. The city was fortified by wall and river, which was as not only a defensive component, but also a main mode of transportation. Canals network indicated the pattern of urban development in early Bangkok. Based on its location as a port city, Bangkok continued its role as a successful trading city of the east. In this period, a number of new canals were dug and widened while many existing canals were deepened to facilitate shipping (Yantrasast, 1995). Although most urban development activities were carried out through the King's vision and aspiration, existing physical condition, politics and socio-culture seemed to play significant roles in defining the urban space (ibid).

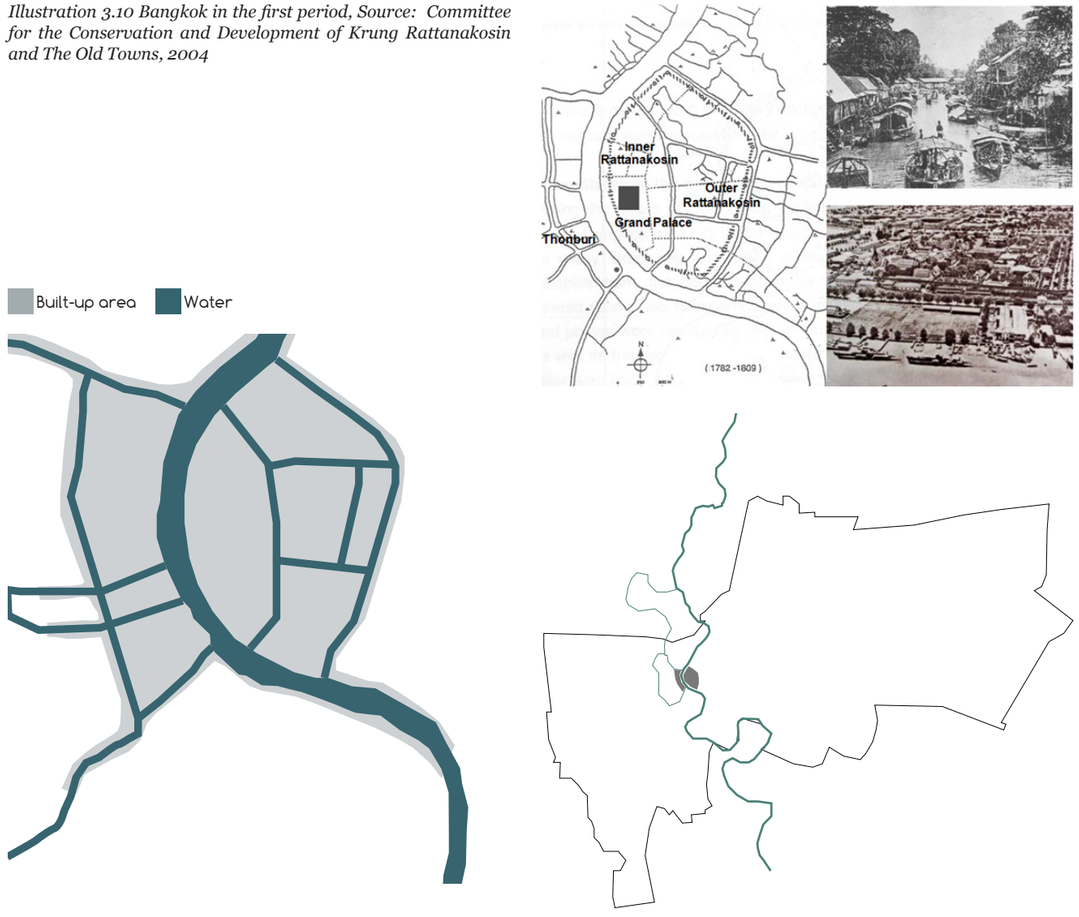


Illustration 3.10 Bangkok in the first period, Source: Committee for the Conservation and Development of Krung Rattanakosin and The Old Towns, 2004

2. 1st Modernization wave(1852-1885)

Western people influenced the urban development in this period. The two main significant events transformed the city in both social and physical terms. First, Thailand signed the Bowring Treaty with UK. It led a dramatic change in the socio-economic process of the country. The contract allowed the westerns to engage in the local socio-economic structure (Yantrasast, 1995). The city expansion served for trading and business demands. Besides, more and more Westerners started settling in the city that created a big impact to Thai society. For the second reason, the strategy to avoid the threat of colonisation was to present the country with a spectacle of civilisation and progress (Askew, 2002). Lot of projects concerning modernization were elected such as road construction and infrastructure improvement (see illustration 3.11). Thailand preserved the formal sovereignty of its monarchs together with the realm's hierarchical structure (Askew, 2002). With these two strategies, many roads were built to facilitate commercial expansion paralleling with the Chao Phraya River. It routed to commercial districts and foreign consulates whose land was royally granted to establish foreign relations (Office of Natural Resources and Environmental Policy and Planning, 2004). Bangkok became land-based settlement. The building of shop houses and markets along new roads adjusted vastly the urban scene (see illustration 3.12). However, the indigenous structure remained. Five temples were built and more than twenty were restored. Heritage started to draw attention from the rulers in this period. King Rama IV used modern technologies to renovate heritage from King Rama II.

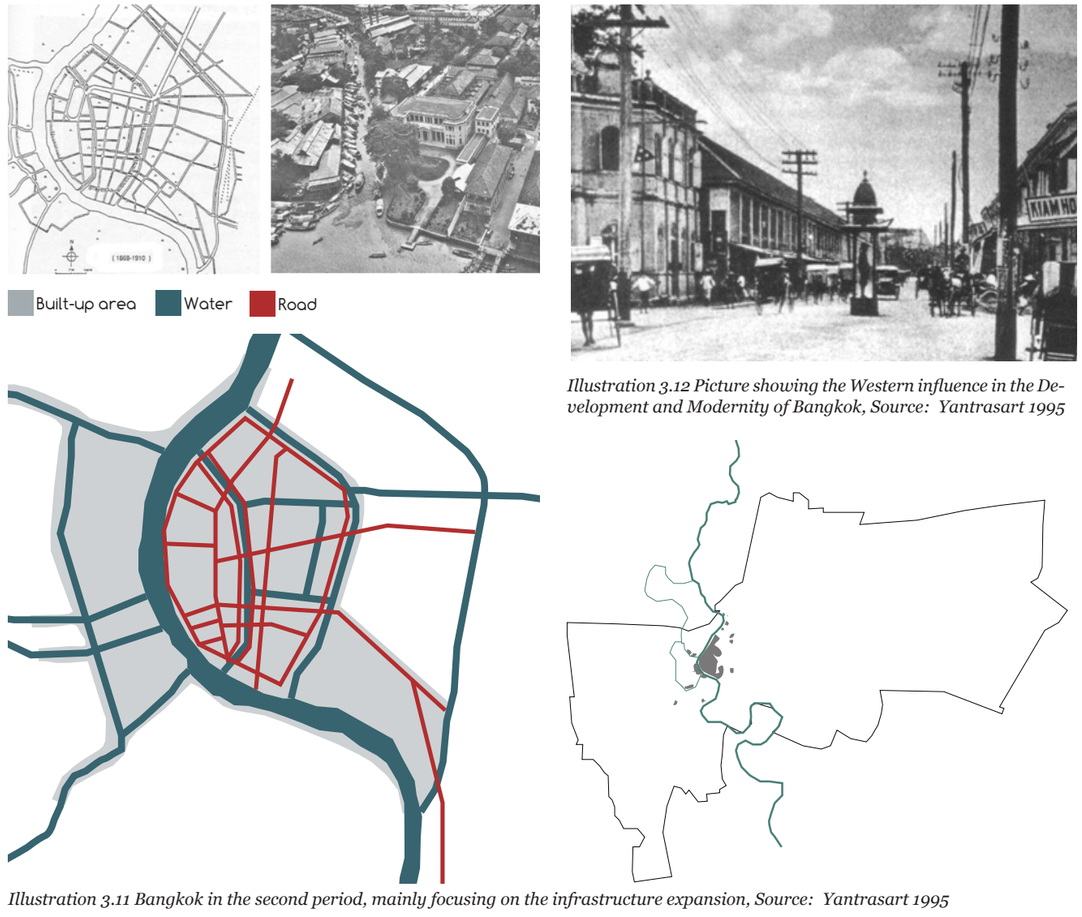


Illustration 3.11 Bangkok in the second period, mainly focusing on the infrastructure expansion, Source: Yantrasart 1995

Illustration 3.12 Picture showing the Western influence in the Development and Modernity of Bangkok, Source: Yantrasart 1995

3. City expansion by the transportation revolution(1886-1934)

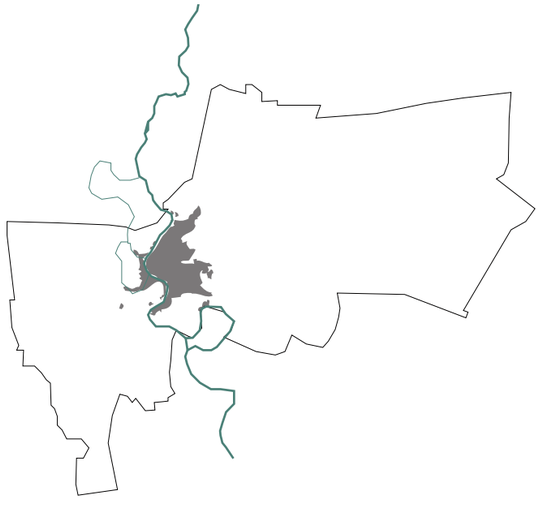
As same as King Rama IV's period, shop houses were a main function to stimulate economic activities. With this development, commercial communities provided places for local people to live and job opportunities too. To relate to a strong will to modernize the city, beautification was set as a main concept to shape Bangkok. It was a big change in this period that visual aesthetic of the city's physical appearance had materialized in planning issues (Askew 2002). Additionally, the development of Bangkok reflected the urban design concept, which was the city in the park. King Rama VI took the policy from his predecessors. He started to build more roads and bridges. Unlike the two previous Kings, instead of expanding the urban area, most of the sixth King's works paid more attention to the addition of amenities in order to modernize city. For instance, hospitals, universities and public Park were created. Especially, the first and biggest public park in Bangkok, Lumpini Park, became the most important of his work and still being used nowadays (see illustration 3.13). Not only had he produced spatial configurations, but he also did a change in reformation of land law . Though Bangkok had continued to change, it occurred with slower pace during this period. Because of the reformation of the land law, there was an increase in the involvement of private landowners and developers within urban development.

NOTE

Based on the ancient laws, the King was officially the owner of all the lands. With the shift in economy after the Bowring Treaty and the canal excavation, there was a reformation of the land law. In order to encourage the canal excavation company to engage in land development, the land title was systematically established to end the disagreement over landholding and profit (Askew, 2002).

Illustration 3.13 Lumphini Park; the biggest public park of Bangkok, Source: www.flickr.com

Built-up area Water Road - - -Train

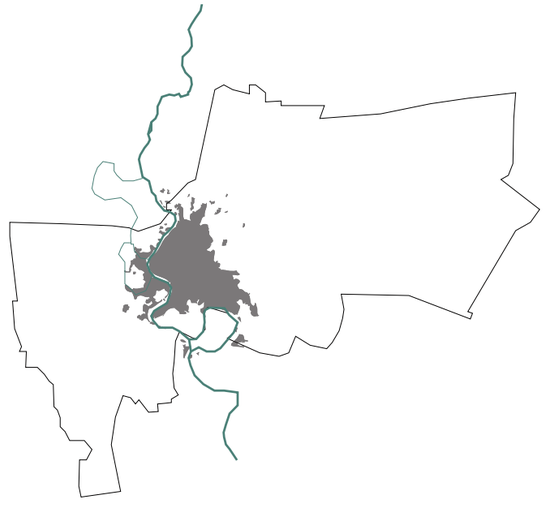


4. Road network development (1935-1959)

The Second World War played important role in development of urban structure in this period. Population grew rapidly, and a number of urban migrations and the political power changed towards democracy in 1932. Unsurprisingly, it triggered a new urban phenomenon. With ending of the absolute monarchy, military government was appointed as a new leader (Yahtrasast, 1995). To response to a large amount of population, this period infrastructure drew a main attention. Bangkok was still building road network and bridges that connected to the other side of the river, one-fifth of city's population relocated. As a chain reaction, the governance system was divided into two administrative municipalities, east and west side. This system let them participate more in local government (Askew,2002). According to Askew (1994) while the monuments and architecture of the fort city of Rattanakosin were historicized through monument preservation legislation, many royal palaces and royal residences were modified to become government offices. With their new function, these buildings resulted in land use change (see illustration 3.14).

Illustration 3.14 The change in built-up areas, Source: Beek 1999

Built-up area Water Road - - -Train

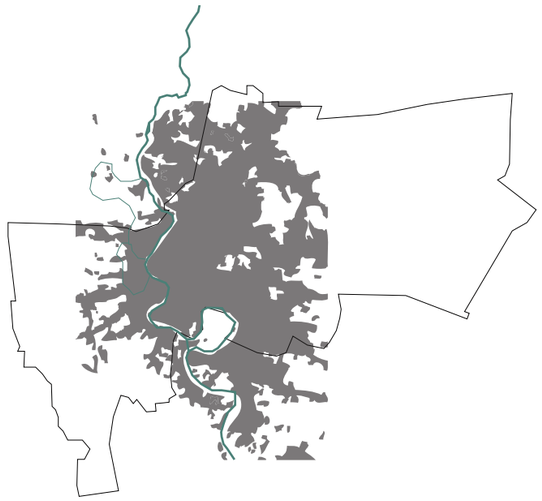


5.Urban development and land use change(1960-1990)

The city had a rapid growth of population from one million to five millions in three decades. While the demand of housing of the middle-classes Bangkokians increased, many slums also raised ten times than the last period. The city was unable to provide affordable shelter for low-income people. Therefore, the clearance of some major slums represented the direct intervention of the government through the means of urban development (Askew, 2002). In the late 1950s, concerned with the rapid increase in the city's population, the Thai government commissioned the American consultant team to create a development plan for Bangkok. After three years of study, the first proposal 'The Greater Bangkok Plan 2533' (A.D. 1990) was submitted to the government in 1960. However, the plan was criticized and not being implemented. The next city's plan was produced in 1971. The Department of Town and Country Planning brought the first revision of Plan for the Metropolitan area. The second plan aimed at solving environmental problem in Ratanakosin Island. In 1976, the Committee for the Conservation of Valuable Historical, Archaeological, Cultural, and Architectural Buildings within the Bangkok Metropolitan area was appointed to define policies and measures for the renovation of significant buildings in Bangkok for the Bicentennial Anniversary of the city in 1982(Yahtrasast, 1995). This was the first committee about urban design that was under the control of government agency.

However, with an unavoidable reason of the blooming population, new roads and freeways were still constructing resulting in 30 percent of size expanded (see illustration 3.15). The development surged outwardly as a low and medium density, at the same time the inner are adapted to be apartments, condominiums and very expensive single houses. Private land ownerships and the dynamics of the urban land market were a key influence on the appearance of the architecture and urban space of the city (Asker 2002). Entering the new era of global city in 1990s, numerous projects were planed contributing to compete nearby regions, economic growth and tourist's attraction, for example, a new international airport, fast trains and new business districts. However, these projects were driven by private sectors and the market rather than urban planning and the design system of the city itself (ibid).

Illustration 3.15 An origin of compact buildings to serve population booming, Source: Beek 1999



This section discusses on the relationship of infrastructure and urban development from the history of the city of Bangkok.

Canals as the first mode of transport

The infrastructure construction of the city was built with a purpose to connect one place to another. Bangkok relied on water transportation via canals for more than a century after its establishment. Canals became a boundary that defined the size of the city. The size of old Bangkok was 346 ha and became 640 ha in 1851(IER, 1989). With the absolute power of the Kings, big canals were constructed for the military purpose.

Requests for roads by foreigners

In 17th and 18th centuries, Thailand took the idea from the European colonial empires. Kings Rama IV and V considered modernization as a necessity. In the middle of 19th century, the Bowling treaty was signed that allowed international firms to locate their offices in Bangkok. Consequently, because of the emergence of foreigners, the land based transportation was created along with canal to serve their needs.

Infrastructure led urban development

Bangkok became a trading center in the late 19th century by the construction and operation of railways. Modernization through Chakkri revolution improved the transportation infrastructure facilities in Bangkok such as streetlights (Kishiue et al., 2005). There was a big change when King Rama V toured to Europe. Bangkok was framed by modernization and westernized townscape. The first development is to relocate the palace to the new area, Dusit, taken Hyde Park from London as a model. Secondly, Champ-Elyeese of Paris was an ideal of the widest road in Bangkok, Rachadamnoen. More than 50 roads were prepared and transportation infrastructure started functioning to guide the development (ibid, p.4312). Due to a convenient accessibility, high class residential areas took place in the new constructing roads, Sathon, Surawong and Si Phraya, which at that time located in the suburban area of old Bangkok.

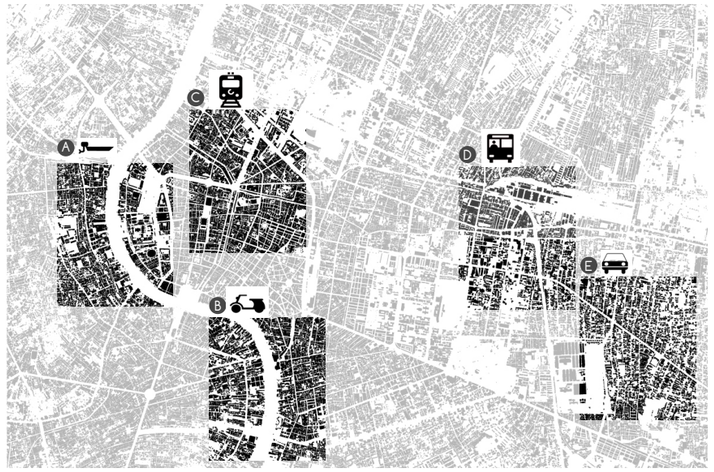
The declination of canals

In a consequence, canals went less important conversely with the nationwide road network development. Until 1936, the enactment of building code controlled townscape of Bangkok. From 1951-1975(Vietnam War), Bangkok got a financial aid from U.S. by offering as a base camp. The transportation infrastructure was upgraded throughout the city.

An introduction of elevated expressways

After World War II, planners started to act in 1960. Greater Bangkok Plan was produced along with U.S. consultants, but not entire strategy has been implemented. Bangkok took and built an idea of expressways from the U.S. vision. The expressways caused changes in land use, when it spurs new developments, mainly in suburb. This process accelerated urban sprawl in Bangkok. Furthermore, it also affects to increase in traffic volume.

To conclude, in the past, infrastructure followed urban development. People started to settle before thinking about transport. However, nowadays infrastructure planning becomes an activator in urban transformation.



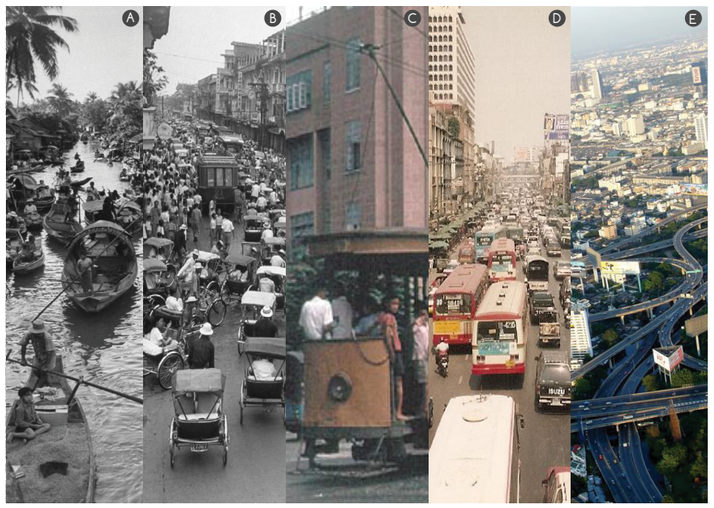
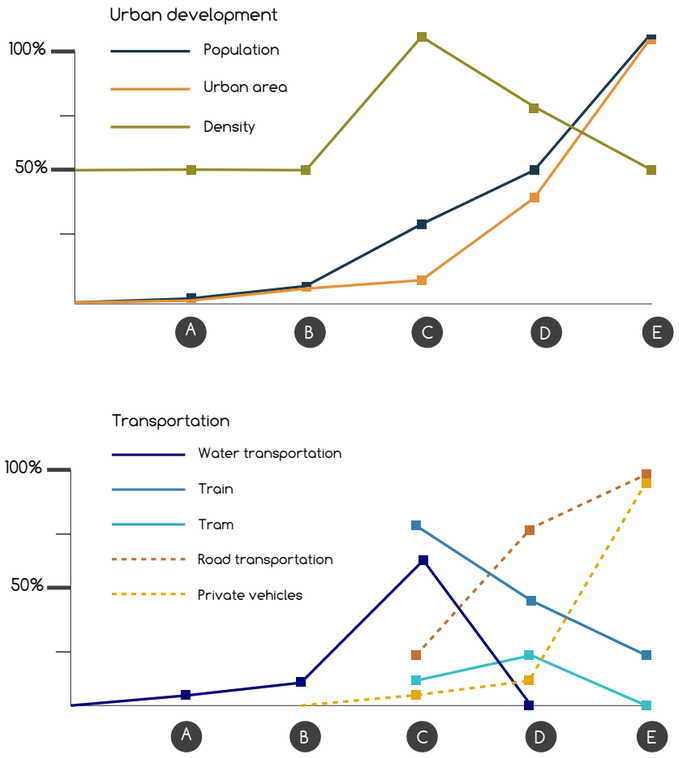


Illustration 3.16 The different focused modes of transport of Bangkok through time, Source: www.flickr.com



The tables showing development focus in each period

This section will provide an overall understanding of the planning system of the city of Bangkok. It is divided to six main issues, which are decision-making, master plan, vision, scope, planning tools and revision of plan respectively(see illustration 3.18).

1.Decision making

All of the urban planning projects and implementation of infrastructure projects was activated by Thai governments led by Kings. In case of urban planning, it was accelerated strongly by King Rama the fifth in the period of Modernization of Bangkok. When urban planners were elected., Bangkok is fully responsible for creating its own city plan. Nevertheless, its general planning process is based on the same principles and regulation—Town and Planning act 1975— as the urban planning system of the country. The plan has been created under the Department of City Planning of the BMA, and public participation has been recognised as an essential procedure in the development of a Comprehensive Bangkok Plan.

Illustration 3.17 The summary of the relationship between urban and infrastructure development

		Water-Based Transport and Walking Period (Rama I-IV)		Transport Modernisation Period (Rama V-VIII)		Modernisation Period (Rama IX)
		Establishment of Original Bangkok(17821852)	1st Modernization wave (18521885)	City Expansion withTransportation Structure(18861934)	Road Network Development (19351959)	Suburb Development and Land use Change(19601990)
	King RAMA (I-IX)					
	Year (1700s-1900s)					
	Population (200000 ppl)					
	Built-up area (1000 ha)					
	Density (25 ppl/ha)					
	Canal length (150 km)					
	Road length (400 km)					
	Bus/ 100 ppl					
	Trams/ 100 ppl					
	Rail route length (10 km)					
	Rail route length (1km/10000 sq.km)					
	Motorcycle/ 10000 ppl					
	Car/10000 ppl					

2.Master plan

Urban planning emerged in Thailand under King Rama V in 1892. The avenue plan, the road network and design control were included in the plan for Dusit area (Kishiue et al., 2005). Before the era of King Rama V, there is only a purpose for beautification. The road widening, height control and façade design were carried out during 1870s. The Greater Bangkok Plan (GBP) brought the district plan and single component plan to the city in 1960. Nevertheless, the GBP did not have any enforcement power and implementation (Tasaka, 1998). At the same year, national economic development plans were prepared and transport infrastructure projects were carried out with the multi-component plans. However, law supported no plans. Until 1992, the comprehensive urban plan with legal based became available.

3.Vision

In 1782, the establishment of Bangkok aimed at rebuilding the former capital, Ayuttaya. After that, Bangkok had no clear vision, but every development paved the way for modernization of the city until 1960. The GBP helped by U.S. planners, suggested new road system. Two ring roads and an expressway resulted from the GBP. Not until 1992, the Bangkok comprehensive plan emerged which would be revised in every five years.

4.Scope and coverage

The plan, made before 1960, was limited for specific areas. Project based development was taken part in road, canal construction and streets beautification. The first plan that called for public participations and covered the whole area of Bangkok was the GBP in 1960.

5.Planning tools

Panning tools utilized in Bangkok during the 1800s were designation of date and temple for cremation and the regulation of factories with stream engine to control smoke(Kishiue et al., 2005). Height and design control were implemented in Bangkok around 1870s. After five decades, building code was enacted in 1936 including sanitation and environmental concerns. In the period of resolution of Bangkok in 1941, based on building code 1936, minimum open space ratio(OSR), height control and road width, building materials were added. During 1992, zoning control and land use plan became available and used until nowadays.

6.Frequency of Revision of Plan

Before 1990,as above mentioned, none of plans were officially accepted. The National Economic and Social Development Plans (NESDP) was agreed by law and reproduced every five years.

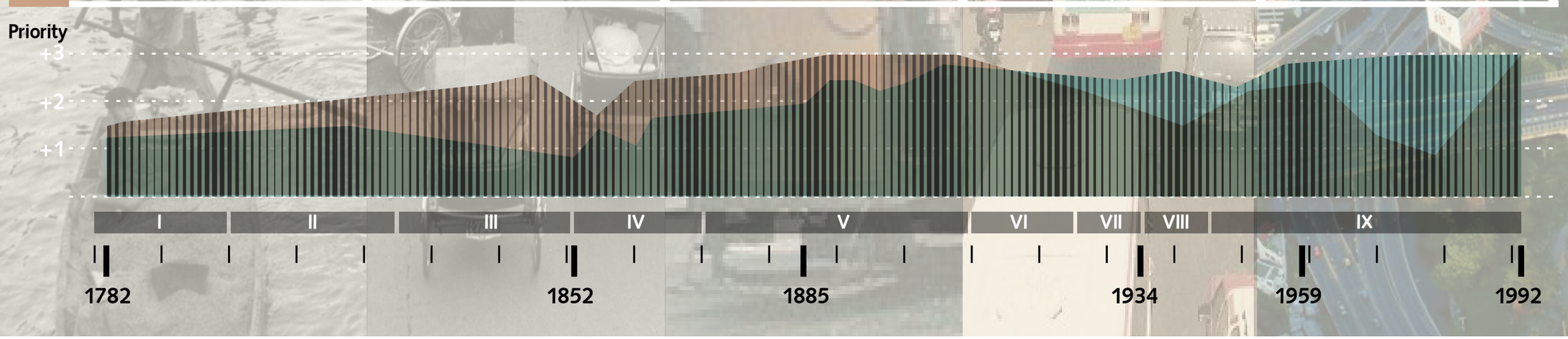
Illustration 3.18 The summary of Bangkok's planning system

Governance
Stratigies
Areas
Outcome

		Water-Based Transport and Walking Period (Rama I-IV)		Transport Modernisation Period (Rama V-VIII)		Modernisation Period (Rama IX)
		Establishment of Original Bangkok(17821852)	1st Modernization wave (18521885)	City Expansion withTransportation Structure(18861934)	Road Network Development (19351959)	Suburb Development and Land use Change(19601990)
	Governance	Absolute Monarchy			Constitutional Monarchy	
	Implementation/ leader	Kings, Royal Government of Thailand	Kings, Royal Government of Thailand	Kings, Royal Government of Thailand	Kings, Royal Government of Thailand	Kings, Royal Government of Thailand
	Master Plan /Plans	-	Chakri 's Dynastry Revolution	Plan for Dusit Area	Road network development plan	Greater Bangkok'90 Social Economic Development Plan 1960 General Plan'92
	Vision	Rebuilding of Ayutthaya	Modernization of Bangkok	Modernization of Bangkok	-	-
	Scope and Coverage	Old castle	Bangkok	Dusit Area	Nationwide	Bangkok
	Planning tool	Smoke control (temples and factories)	Height control(partially)	Height control(partially)	Building code, Minimun open space ratio, Material control, Height control	Zonning
	Developement	Built of temples along canals, Military service for the construction of general infrastructure	Foreign residences in BKK, Infrastructure, shophouses, Open route to China, Public facilities, Slave liberation	Interest of EU on SE Asia, King Rama V tour Europe, New political system, Import Dutch and Uk planners	Financial from U.S.A, Public housing, Building code, Commercial buildings for immigrants	Industrailization, Greater Bangkok Plan, Urban plan code, 1st socio-economic development plan, FAR, Condominium, Zonning

The illustration showings a relation between infrastructure and urban development in that during different periods of time either urban or infrastructure got priority over the other one depending on situations and intention of the government sometimes lead sometimes follow.

	Establishment of Original Bangkok(1782-1852)	1st Modernization wave (1852-1885)	City Expansion withTransportation Structure(1886-1934)	Road Network Development (1935-1959)	Suburb Development and Land use Change(1960-1990)
Transportation and Intrastructure Development	1782 - 3 Canala and Chao Phraya river as transport means 1852 - Pradung Krungkasem canal	1880s - Private sector in Infrastructure 1853 - Rama IV road, canal 1861 - Silom canal 1862 - Charoen Krung rd., request from Westerns	1886 - 1892 Railway 1888 - Sathon rd., canal 1897 - Surawong rd, canal 1894 - 1934 Tramway, Streetlight 1889 - Ratchadamnoen rd. 1906 - Road network plan 1990 - First automobile 1903 - Emerge of 4S area 1934 - First bridge	- Infrastructure development - Road network built - Canal for irrigation 1951 - Commercialization of Railway	1976- Inner ring road 1981 - Expressway
Uban Developmetn	1782 - Define the Palace, walled city(7.23 km length) 1785 - 346 ha for BKK, built temples, emerged of commercial district 1840s - BKK double size 1853 - Wall destruction along canals	1880s - trading firm, embassies 1851 - Urban area 640 ha 1854 - Population 400,000 1855 - Foreign firms from Bowring Treaty 1882 - Open trade to China, 370000 migrants	1887 - Class A residential area by private investors 1890s - Hub of cargo 1897 - Palace moved to Dusit 1919 - Removal of wall (527,000 ppl)	1936 - urban area 4300 ha, Control of Townscape in BKK 1947 - Lost of role of commercial district - 1950s - prohibition of trade between China and Thialand - 1957 - pop. 1831000 ppl, Landuse of 4S changed to commercial aspect	1960s - Large shopping center constructed 1971 - population double, suburb development 1979 - BKK sprawl, 1992 - 4S became hish rise bd.



The phenomena of changing from water based to land based development

The city of Bangkok was firstly characterized by water. Particularly, for the historic core, water played an important role in the city development. Water is the first mode of settlements of the city. It reflects how the city develops in terms of community life, production, consumption and how people transport. In the period of the city modernization, during King Rama the forth and the fifth, roads, rail transport and diesel trains were built. However, during that period, the relationship between the land and water based transport still balanced. Water was a key factor of Bangkokians' life. It influences in size of lands and accessibility, which makes the city fruitful by using water transport for trading and riverside economic activities. However, in 1932, the policy to develop the city focused on the land based infrastructure development. As a chain result, the city lost in water orientation. Many canals were filled up and replaced by roads. Small plots along the water network were combined to be a big plot with a new compact function, such as a condominium, gate communities or department stores, served by road connection. The six factors, causing changes in this phenomenon, are unfolded(see illustration 3.19and 3.20).

1.Traditional settlements always oriented towards water by turning their front side to the water and their backyard to be used for agricultural activities.

2.The urban form of Bangkok usually grows along the main roads, which was built to connect to the central areas of the city with the suburb. The BMA was responsible for building main roads, while local dwellers had to build small roads by their own to connect from main roads to their properties.

3. When a number population increased enormously, Investors look at this phenomenon as a chance to build gate communities and some industrial functions. The result is that local residents began selling their plots by cutting out their agricultural areas, but still kept their living areas in place.

4.When the selling lands along new roads were used as a gate community, its orientation was laid paralleling with roads. Moreover, functional changes can be seen via commercial activities clustered along the roads. It led a negative consequence to the water enormously. The investors not only replaced canals with roads, but also used some as a sewage disposal. Besides, gate communities also spatially blocked local people to public services, because outsides were not allowed to access in private land.

5. The more gate communities were built, the more water was polluted. Consequently, riverside activates decline regarding water quality. Finally, traditional riverside communities become slums for a reason that residents cannot get to main roads. It makes properties owners, mostly pioneers, had to move out.

6.Small roads, which were cut by private owners to connect with main roads, are used over their capacity. The private-made roads cannot meet new demands, which result in

Illustration 3.19 The change from water to land based development in Bangkok through time, Source: Yantrasast 1995

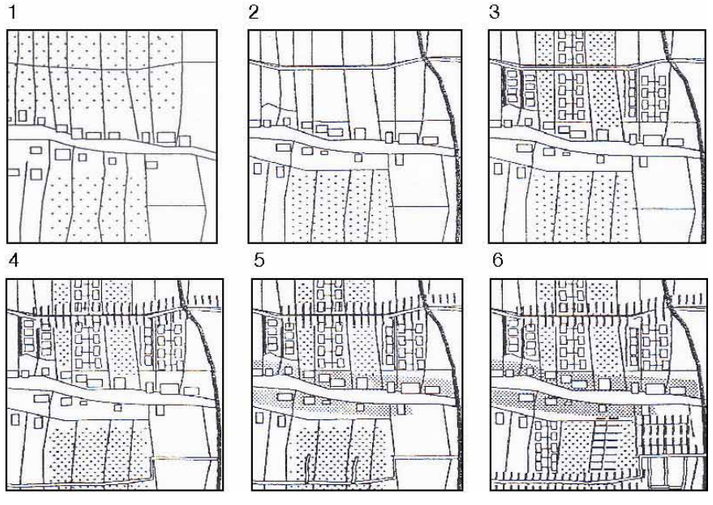


Illustration 3.20 The picture showing different modes of transport in different period, Source: Yantrasast 1995

severe traffic problems. Although diversity in functions can be seen in the area as a whole, it was spatially divided by gate communities. With its wall-surrounded character, it generates many urban voids. Lively commercial functions are limited along the roads. Areas without access to the main roads become unused and neglected. These all factors lead finally to a loss of traditional riverside communities and activities.

The phenomenon of changing water based to land based development is a widespread action in relation with an urban expansion. It gives the author better understanding not only on historic value of the heritage site, but also on the city's expansion when the mode of transport changes. The traditional community life, local economic activities and historic identity can be destructed if there is no sophisticated plan. The two zones, in the past, are heavily charzterized and symbolized by the water. Nowadays, this problem still remain in the areas. Many superblocks also locate in the area, because of the change. It leaves outside areas, close to the road, functioning very well, while the inside areas cannot even access by car and become unused or slums.

The characteristics of Thai public space

According to Atipothi(2005), a Thai experienced urban planner, Thai successful public space consists of five physical aspects, which all aspects also relate to the ideas from many theorists. Firstly, space should be small, but being linked as a public space network (Whyte, 1980). Secondly, the space should allow visitors to sit permanently and temporarily, especially on ground as same as idea from Gehl (1996). Thirdly, due to the hot weather of Thailand, the space must provide shade for all day activities and should be facilitated by secondary functions such as food (Jacob, 1961). Lastly, the successful space acts as natural amenities for local people (Clark, 2003), which in Thai context, it is located close to the water and has water access.

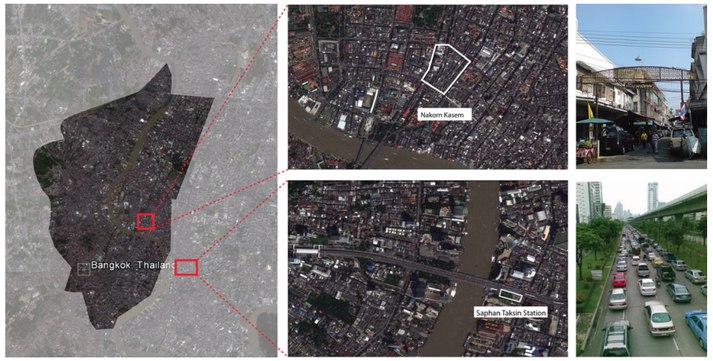


Illustration 3.21 The picture showing the cases caused negatively by the MTS, Source: www. google.com

In order to generate positive gentrification, this section displayed the phenomenon, which already happened to traditional communities in Bangkok.

In Bangkok, the development of the rail transport has been increasing from the government policies. However, they do not give an importance enough to historic values of the designated areas, in terms of land use and transport network. These cause many conflicts between the existing uses and new top-down development. For instance, Saphan Taksin Station locates on Charoen Krung road (see illustration 3.21). Before the mass transit came, this historic area function as a link between water and land based mode of transport, between West (Thon Buri) and East (Phranakorn), with mostly being used locally(fine grain). After an implementation of the mass transit, the area changed enormously. For example, it is accessible easily with various modes of transport, resulting in many daily traders coming every day. This phenomenon conversely generate without a long-term vision, so that currently, this area severely faces with a heavy traffic congestion . Furthermore, with new investments in property business, high-rise condominium and hotel, resulting from the rail transport, degrade the historic values. For example, local opened market and old buildings were replaced by new architectures. There are still many cases that the historic ones were beaten by interventions of the market and finally, local people are forced moved out. The lately one is Nakorn Kasem. It is a traditional commercial district, which situates within the two zones in Pomprab Sattuprai District. The case happened after the master plan of the MTS had announced. The landowners, the aristocratic family from the past, did not want to lease it to the local people anymore. They sold their land to the market whereas local residents, staying there for several generations, try to buy their land back. Investors, who bought the land, have planned to replace all the traditional communities with high-rise building. It will result in a big change to urban fabric and grain of the city. The role of the area and the district will change. In particular, city of Bangkok has lost one of the high-valued historic community already. Without any strategic intervention and strategies together with a support from the government, in 2030 Bangkok will experience this repeated phenomenon again and finally become just a generic city.

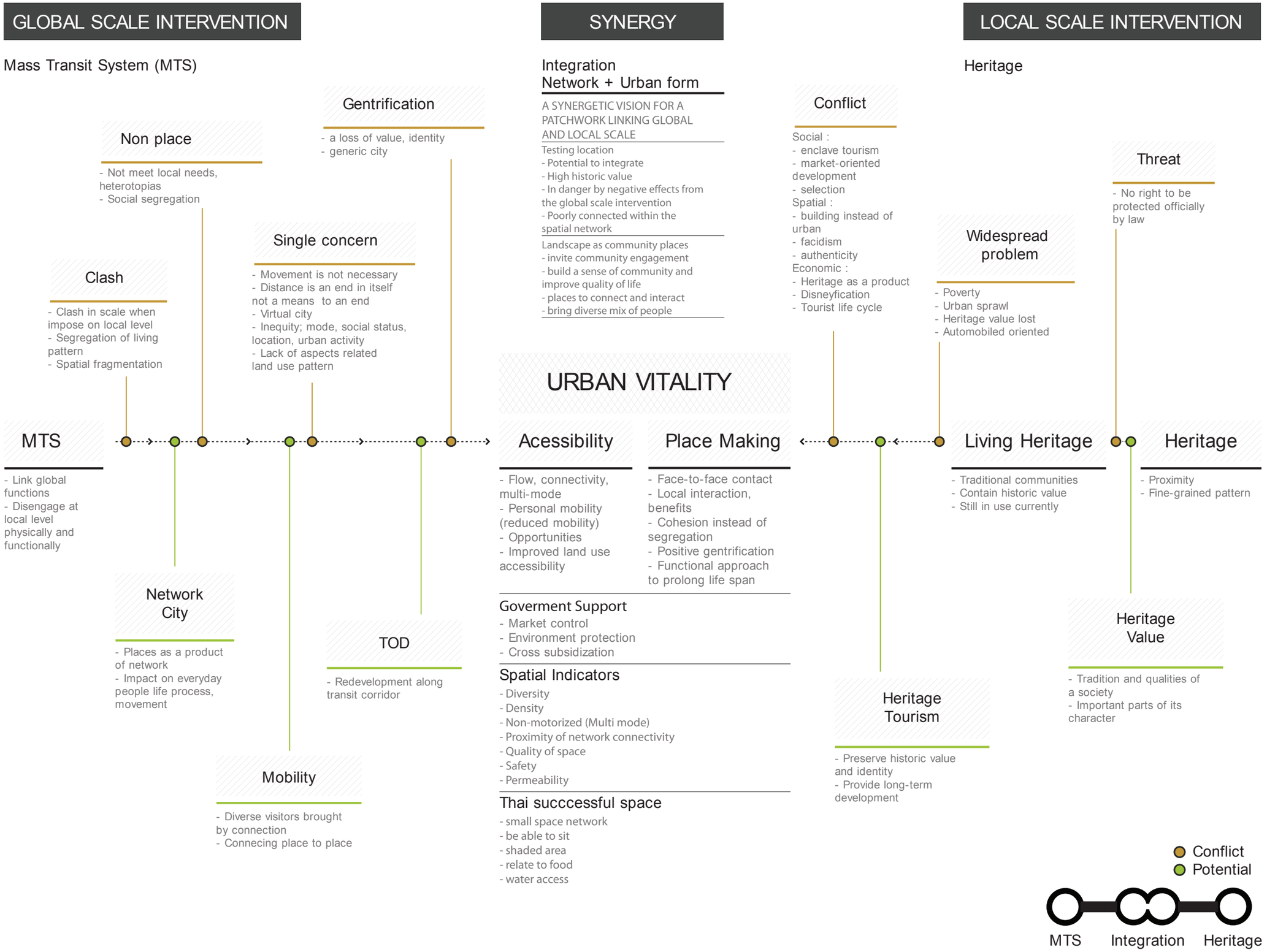


Illustration 3.22 The diagram showing the framework of the whole project

The conclusion of this chapter is that the urban and infrastructure development of Bangkok always rely heavily on each other. Due to the plan of the MTS, It brings positively a big opportunity to the city to solve traffic congestion, which its dwellers are struggling with nowadays. However, this development also generates a big threat. Because of a transformation of urban fabric of the city especially in the historic core of the city, a conflict between the two dynamics base on not only spatial conditions, but also social and economic differences. Therefore, this project aims mainly to provide a synergetic vision and mutual benefits between the two in order to complement in harmony.

Chapter 4
EMPIRICAL RESEARCH

Source : www.skyscrapercity.com

In the first part of this section, it aims at choosing strategically the testing location, which highly needs to be intervened. The selection criteria have been developed based on four issues, which are spatial conditions, economic status, social dimensions and historic value. Therefore, the condition of the testing location is spatially fragmented and poorly connected, but has potentials to integrate within the network. It must contain high heritage value and still be in use nowadays. Lastly, the area is endangered by negative consequences from the rapid development and will get worse causing by segregation after the implementation. The second part will provide in depth research on the current conditions of the strategic location and define the desirable goal, which will contribute to the next section in which the strategy will be proposed.

Illustration 4.01 showing general information of the nine districts classified into three crucial issues.

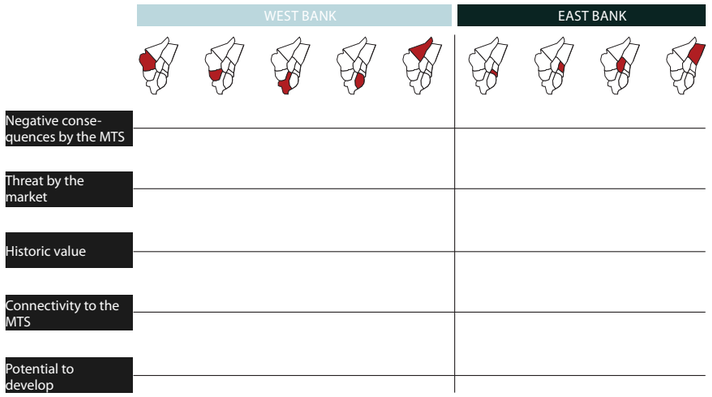


Illustration 4.2 showing the selection criteria searching for vulnerable areas that highly need interventions

West bank : unregistered heritage

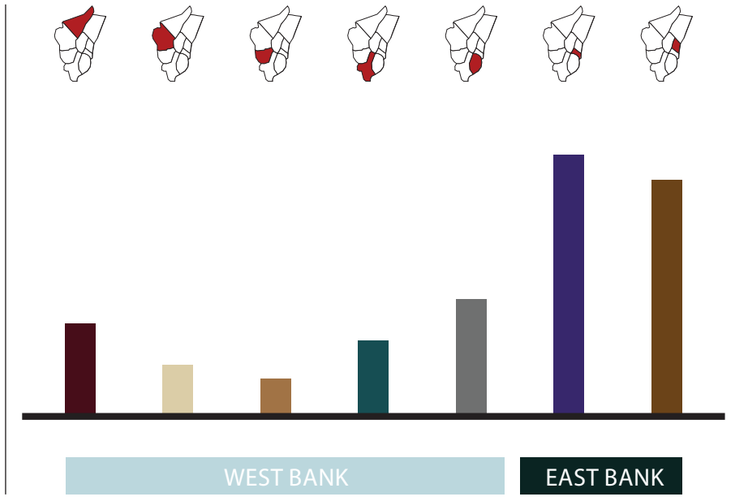
East bank : registered heritage

Illustration 4.3 showing significant buildings on both sides of the river

Selection criteria

In order to know where is the strategic location that needs an intervention, the selection criteria has been developed. According to the previous section, BMA already specifically defined the development area as art, cultural preservation and tourism promotion zone, which are separated into nine districts along two sides of the river. The East and the West of the riverbank have different characters, whereas they share similar historic components, which they both used to be capital city of the country of Thailand. The city settled on the West bank before moving to the East for military reasons. Therefore, both of them have strong historic values and important buildings (see illustration 4.3); for example, on the East, the grand palace, the national museum, the throne hall and many old temples are located and on the West, there are more traditional communities and living heritage.

Fortunately, the East bank already registered as city heritage sites, which literally means they have been protected officially by laws. Moreover, Bangkokians have learnt from the first implementation of the MTS in 1999 in that the market initially intervened in the area, in which the land price was lower(see illustration 4.4). It represents that the land price on the West is five times lower than in the East. To conclude, the West bank is in danger to get a threat by the MTS and requires more research to prevent and keep it maintaining in 2030. The following part will focus spatial analysis on the west bank in order to know current conditions of the area.



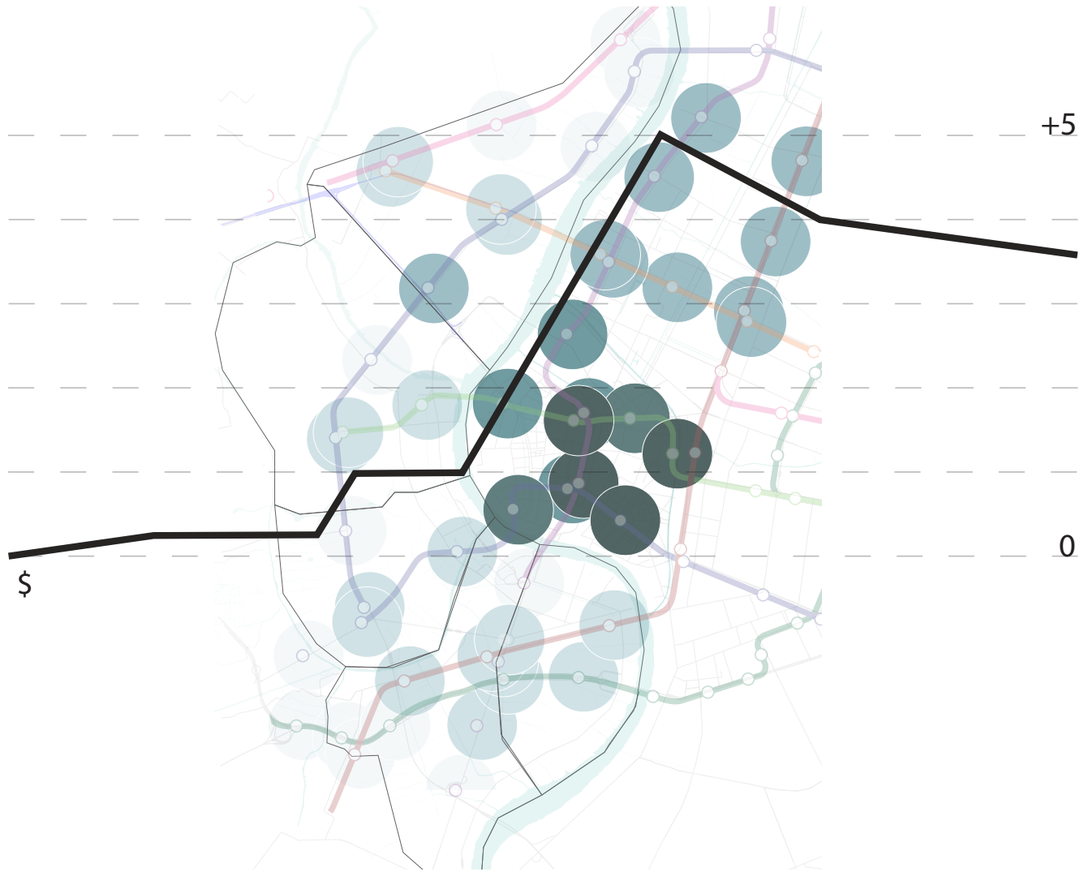


Illustration 4.04 showing land price on the catchment area of the historic core, Source : the Treasury Department

Spatial conditions

Zooming in to the West, the illustration 4.5 shows an axial analysis on the network of streets and avenues that organize the area. Warm colors indicate areas with more street-level integration; this means streets that intersect a greater number of other streets of the network. We can see the area has a small role in the global level only on the north south connection from the warm colors ,and it integrates more on the local level. The map also represents fragmented areas. The fragmented areas can be seen how hard people getting to the area are.

The illustration 4.06 reveals the three steps analysis, which shows the inner areas from the main road need complicated ways to reach. Moreover, together with the public transport catchment, it displays that the far away areas can be reached only by private transport (see illustration 4.7). Besides in 2030 (see illustration 4.8 & 4.9), when the urban network improves enormously, there are still some remaining voids,especially even combined with the privately owned transport like the motor cycle taxi (see illustration 4.10).

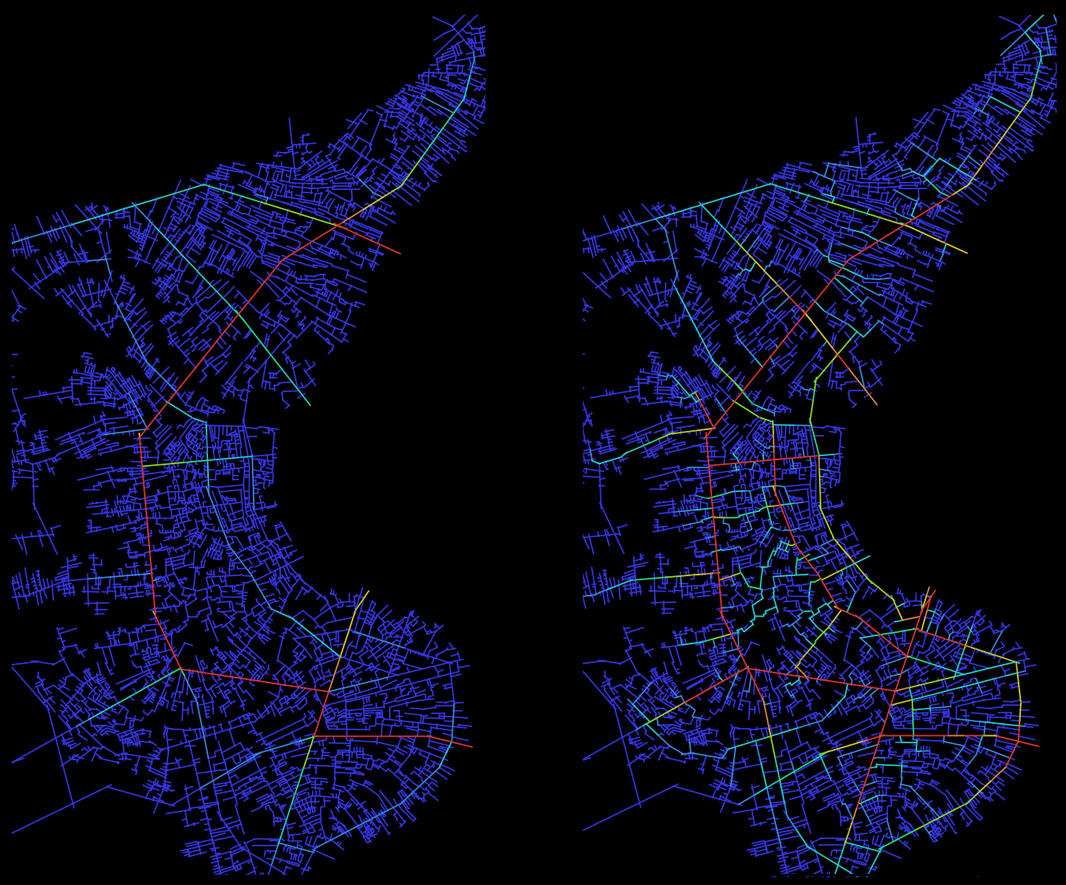
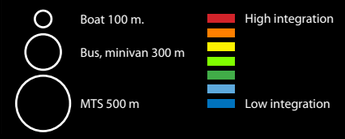


Illustration 4.5 showing spatial connection : Global and Local Integration

Illustration 4.6 showing current condition of accessibility of the area

Illustration 4.8 showing spatial accessibility to the MTS in 2030

Note: The motor cycle taxi is the basic mode of transport of Bangkokians. With the long time car based development, it is widely acceptable and has been considered as pre transport mode for a short commute within two kilometers radius.



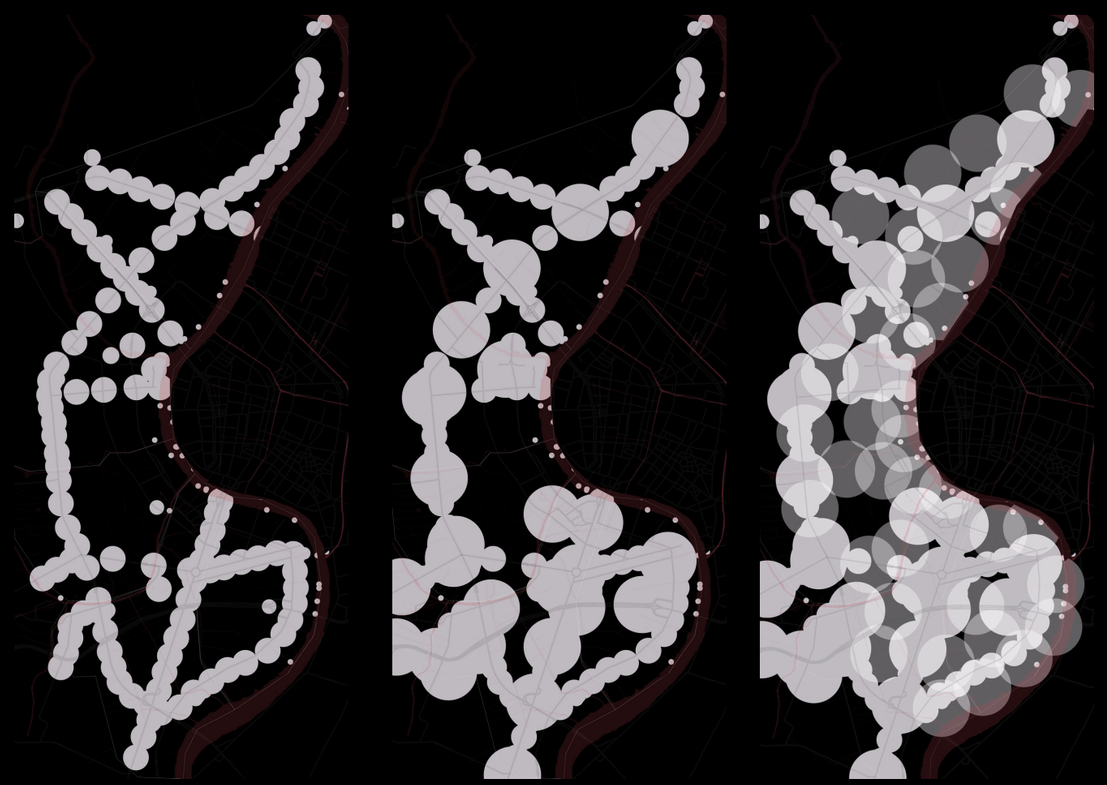


Illustration 4.7 showing current condition of public transport catchment

Illustration 4.9 showing transport catchment in 2030

Illustration 4.10 showing catchment area of the complementary mode of transport in 2030

Consequences of spatial fragmentation

The poorly connected network also effects the distribution of functions. From the illustration 4.11, cultural facilities locate in the historic area along the river, while business activities and catering enterprises cluster along main roads, which leave the in- between area as a mono functional zone which is only residential. The illustration 4.12 reveals clearly the void in the area with no public transport and functions, but according to the spatial analysis by space syntax, it reflects a high possibility to develop in the future (see illustration 4.13). The light blue color inside the void shows that the area can be developed to be vital streets.

Therefore, as previous mentioned, this strategic location has historic value, endangers by the negative consequences from the MTS, poorly connected to the network, but has a high tendency to integrate within the spatial network and the historic core situated on the opposite side of the riverbank. Moreover, the strategic area matches with the government plan on a necessity of preservation on nearby area of the city heritage sites (see illustration 4.15).

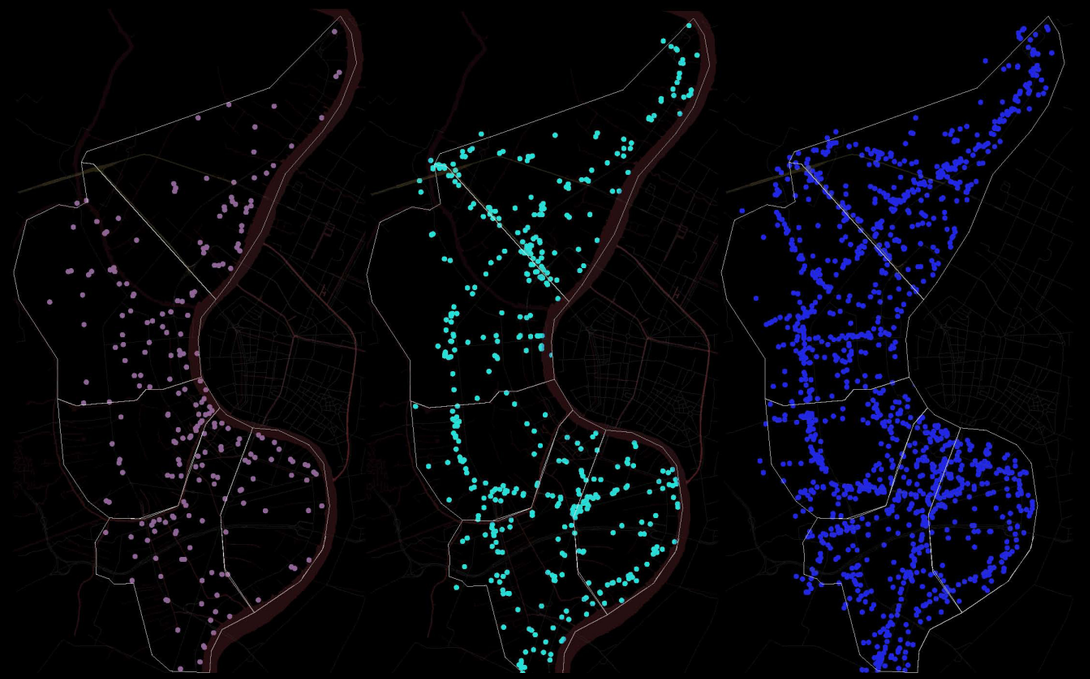


Illustration 4.11 showing the distribution of function

Illustration 4.12 showing the relationship between the distribution of function and public transport catchment in 2030

Illustration 4.13 showing spatial accessibility with low metrical radius

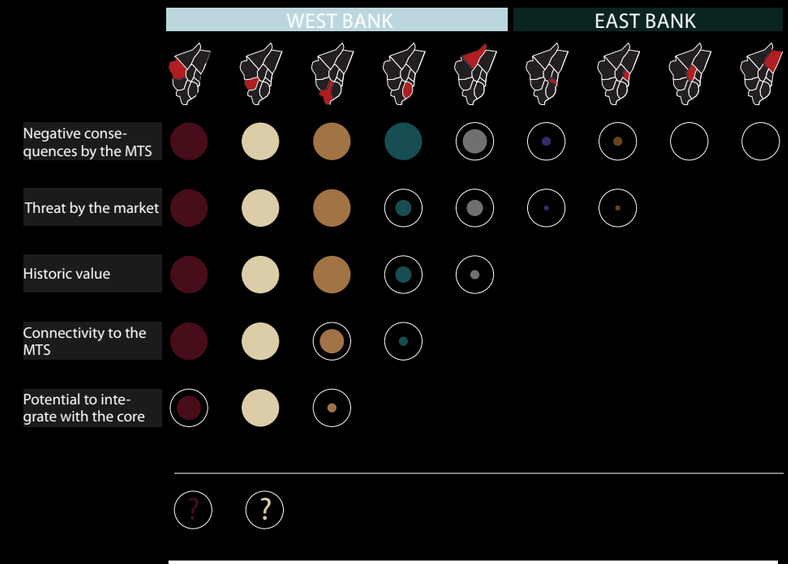


Illustration 4.14 showing the conclusion of the process of site selection, which two districts are taken into account

Illustration 4.15 showing the government plan on preservation on the nearby area of the registered heritage sites, Source : Department of City Planning

The next part will underline on firstly, the general condition of the area and then, the current problems of the strategic location, which has been categorized into three crucial issues, which is the mobility issue from the fragmented network and its consequences. The next one is the landscape issue relating to how the area has been formed. From the phenomena of changing from water based to land based, the area used to be fruit gardens transformed to the dead void. The last one is the problem of built environments. The effects of the network causes adversely on how people use space nowadays.

General condition

The area covers two ,districts named Bangkok Yai and Bangkok Noi. In 2030, there are two lines of the MTS passing the area on the main roads (see illustration 4.16). The spatial network of the area directly connects north to south, while the east-west connection is fragmented(see illustration 4.17). It indicates on the social attribute of the area, which demonstrates different typologies and economic status. For example, shop houses are more expensive, grounded along the main road as similar as modern living units, gated communities, whilst low income residents live in higher density areas or slums far away from the main road (see illustration 4.18).

Shophouses

Gate communities

Medium-density residences

High-density residences

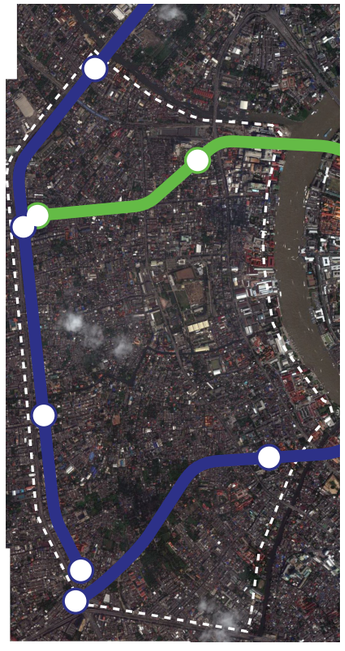


Illustration 4.16 showing the MTS lines passing the area in 2030, Source : Bangkok Rapid Mass Transit Authorities

Illustration 4.17 showing road networks in the area

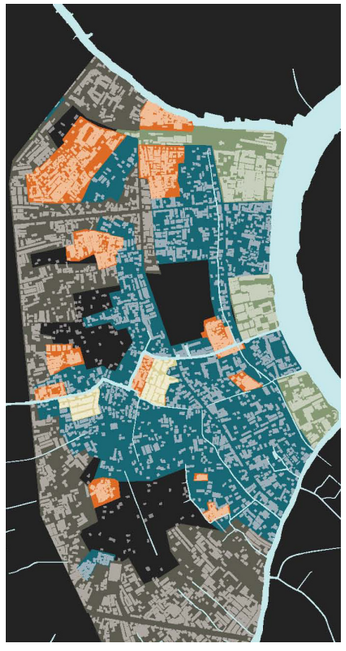


Illustration 4.18 showing social attribute

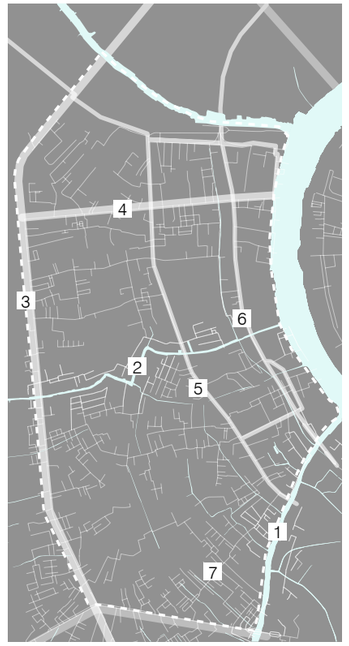
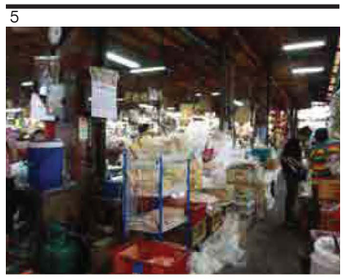


Illustration 4.19 showing images of current conditions of activities along each road

1. Bangkok Yai Canal
2. Mon Canal
3. Jaran Sanitwong Road
4. Pharn Nok Road
5. Itsaraphap Road
6. Arun Ammarin Road
7. Alleys

2



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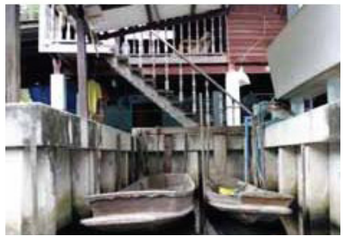


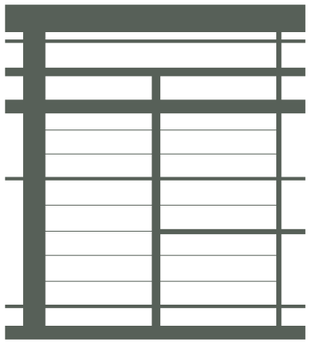
Existing problems

To integrate the MTS into the historic core, there are three keys issues that might cause conflicts when impose the global infrastructural network on to the fine-grained fabric of the historic core.

Spatial network fragmentation

In terms of mobility, the problem of the area results from the fragmentation of spatial network of the area. The illustration 4.20 exhibits on role of each road. The warmer color reveals the traffic pattern connecting to the road network throughout the city, served by public transport. In contrast, the cooler color represents local streets, which can be reached by private vehicles. According to the historic development (see illustration 4.21), it becomes clear that the spatial network is fragmented since the city has cut the roads. In the past, road systems were created by local seen from a set of very short and small streets around local areas. However, when the city constructs the roads in the period of population booming it was planned to facilitate quantity of vehicles with straight, wide and long road systems. This action makes all functions and facilities concentrate along the roads. Consequently, the remote areas from the main roads have not been drew any interest to be developed.

Illustration 4.20 showing network hierarchy



A simplified version of network hierarchy

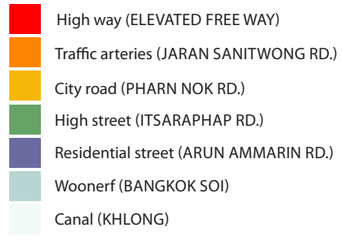
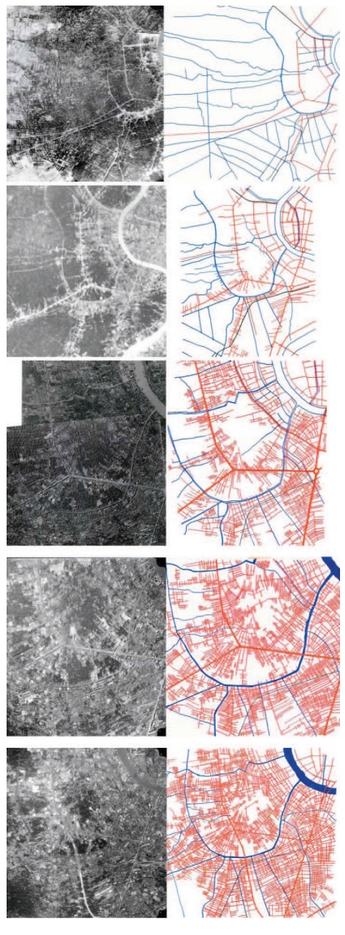


Illustration 4.21 showing the historic development of the area starting when the city built road systems, Source : K.Wongtimarat(2003)

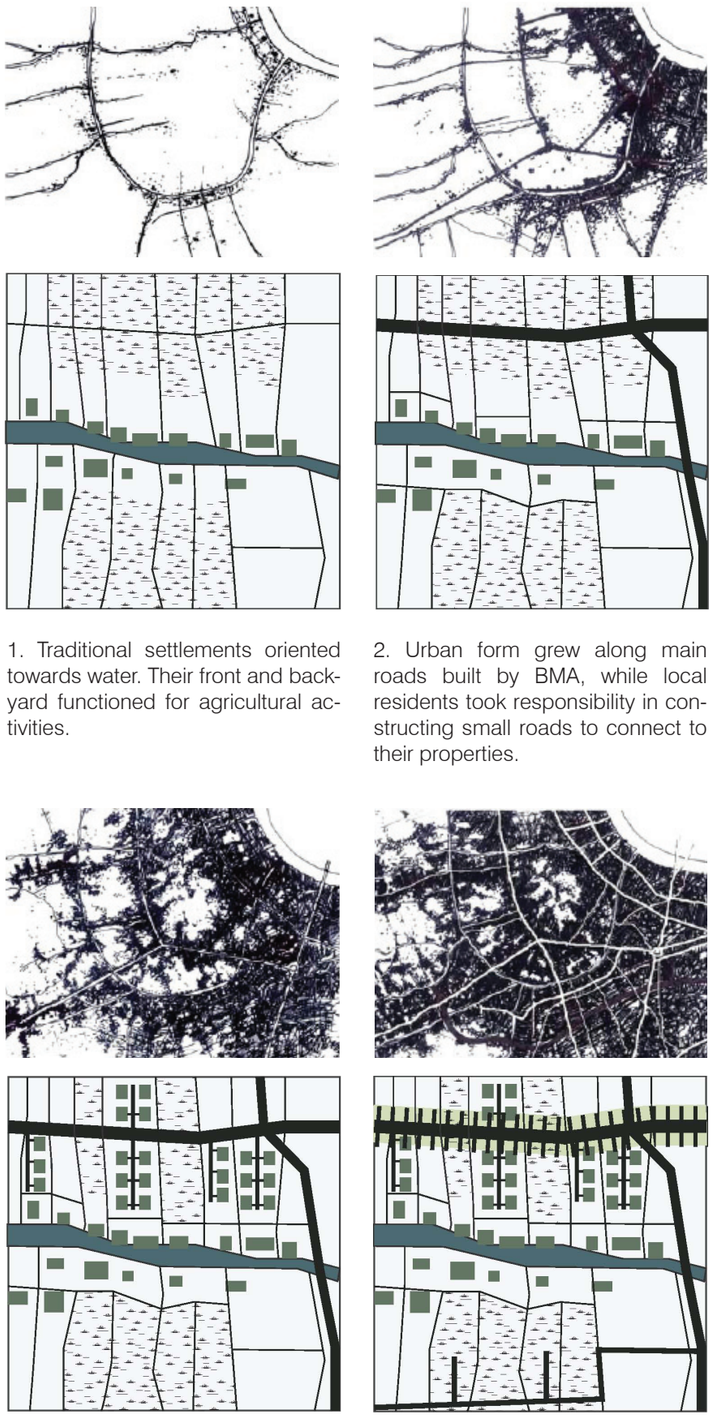


From orchards to barriers

The illustration 4.22 expresses the location with rich green quality. The area was used for agricultural activities before the construction of road systems and the urban development (see illustration 4.23). Relating to the previous section, it reflects on how the green void exists.

Illustration 4.22 showing green quality of the area, Source : www.googleearth.com

Illustration 4.23 showing historic development of the area, Source : Royal Thai Survey Department



1. Traditional settlements oriented towards water. Their front and backyard functioned for agricultural activities.

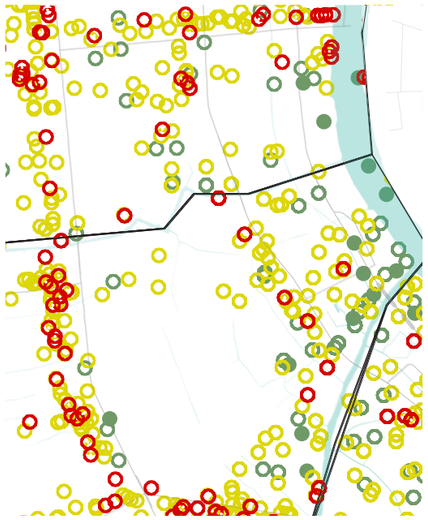
2. Urban form grew along main roads built by BMA, while local residents took responsibility in constructing small roads to connect to their properties.

3. Investors bought lands from the local in order to develop mostly as gated communities in the period of population booming. The orientation turned towards new roads.

4. Gated communities turned to barriers blocking locals from public services so that riverside areas unfavorably became slums and ghetto.

A limitation of local movement

The illustration 4.24 tells a result of an interview 40 local people from four crucial areas, which are local fresh market and traditional communities. The answer shows that residents of the area have no connection to newly developed roads. As shown in illustration 4.25, local dwellers, who live in the historic area, are more likely to go to the other side of the river and ones, who live along the main traffic arteries, limit themselves along the main road. These two sides are not connected to each other functionally and physically .Due to effects of the network fragmentation and spatial barriers, it leads to a limitation of local movement.



The diagram showing distribution of function

Illustration 4.24 showing results of the interview on where local residents tend to commute such as fresh markets, religious places and social spaces.

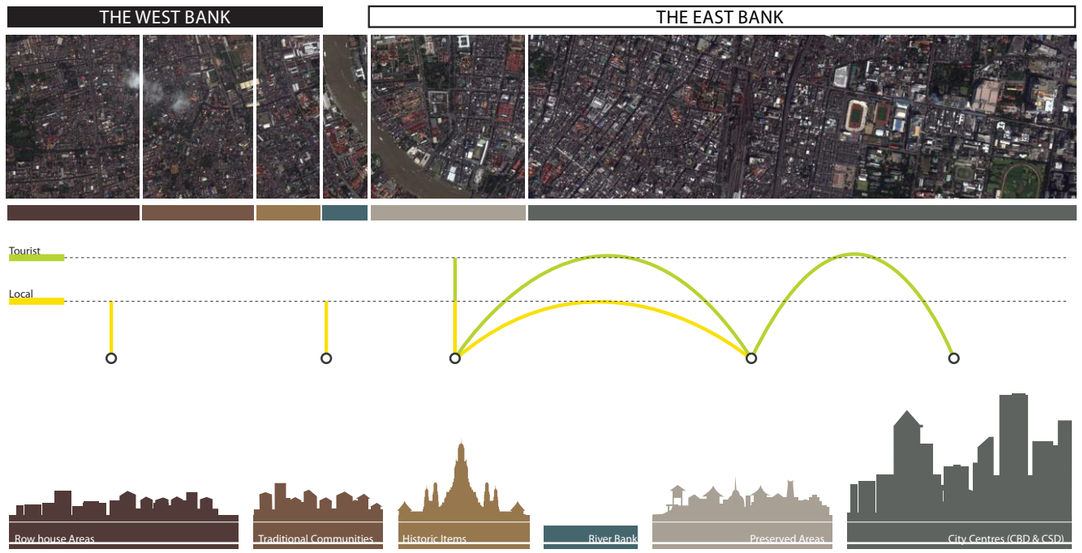


Illustration 4.25 showing the relationship with spatial structure and local movement

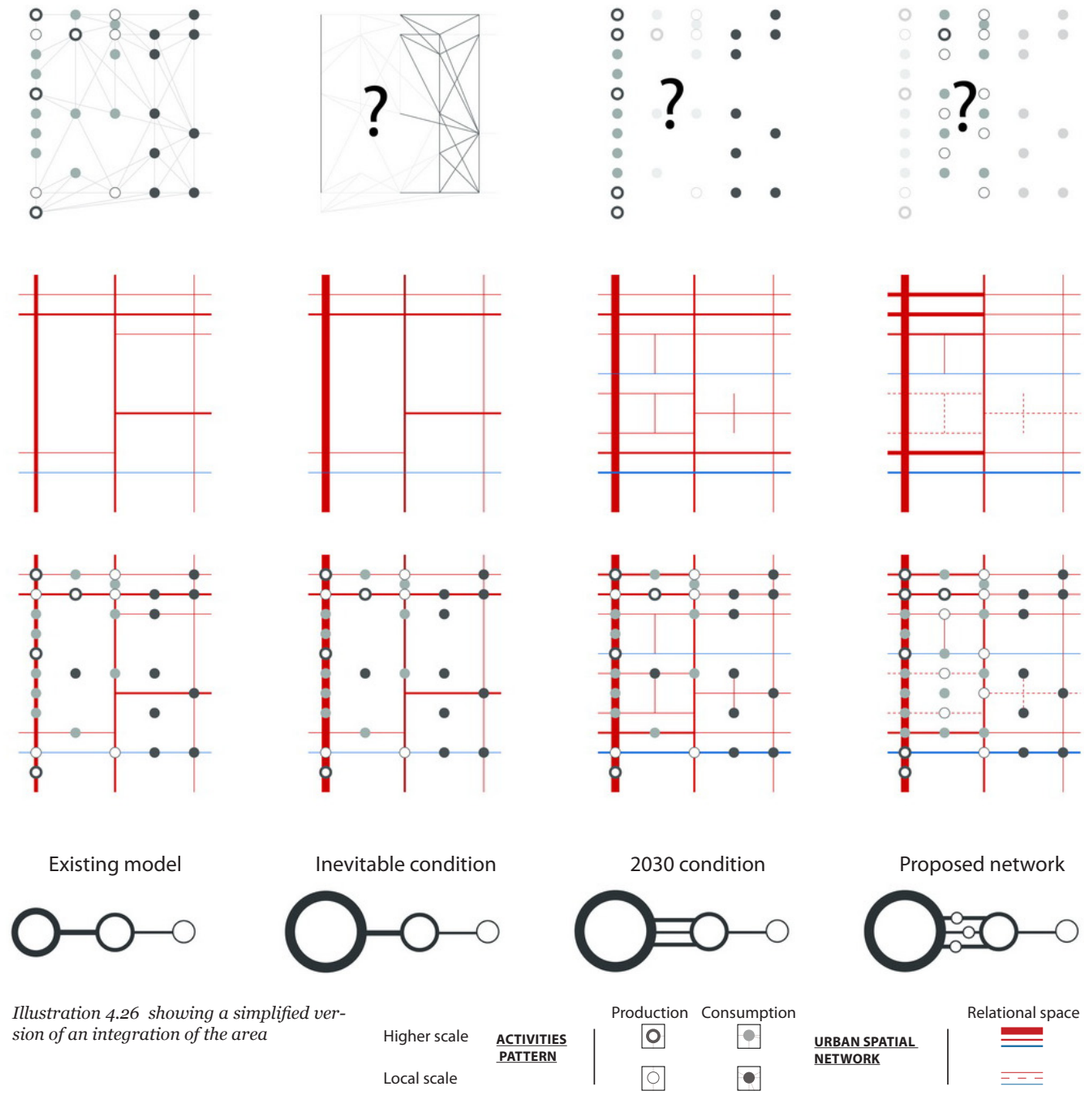


Illustration 4.26 showing a simplified version of an integration of the area

Conclusion : The consequence of spatial fragmentation and Goals of the project

Making a linkage between two dynamics

1. The current condition of the area, in which social relation bounds together in terms of production and consumption

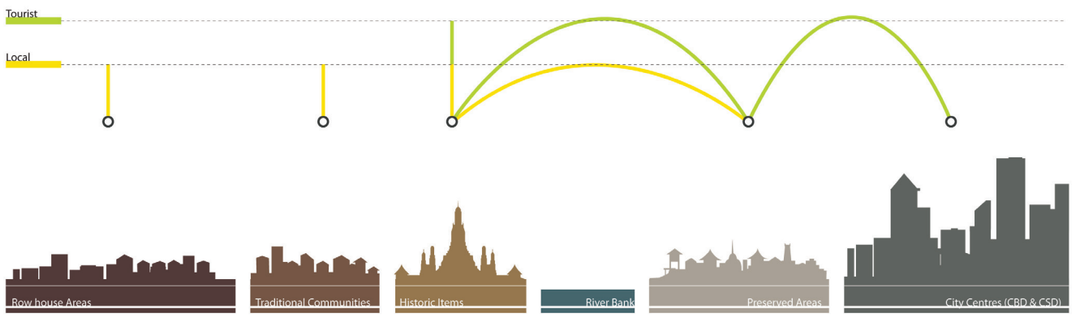
2. In 2030, an inevitable condition will change the area, when the MTS comes on the main road. The hierarchy and capacity will increase, while the local form has to be kept. Therefore, the interface area in between both global and local patch becomes a crucial spot.

3. The interface acts as a bridge to link them and creates mutual benefits in terms of new spatial network connection, transform positively barriers and make use of mobility improved to enhance social and economic dimension towards urban vitality.

4. To be more concrete, the interface helps increase local access and reorganizes the hierarchy of road systems. Finally, an integration between heritage and the MTS is achievable.

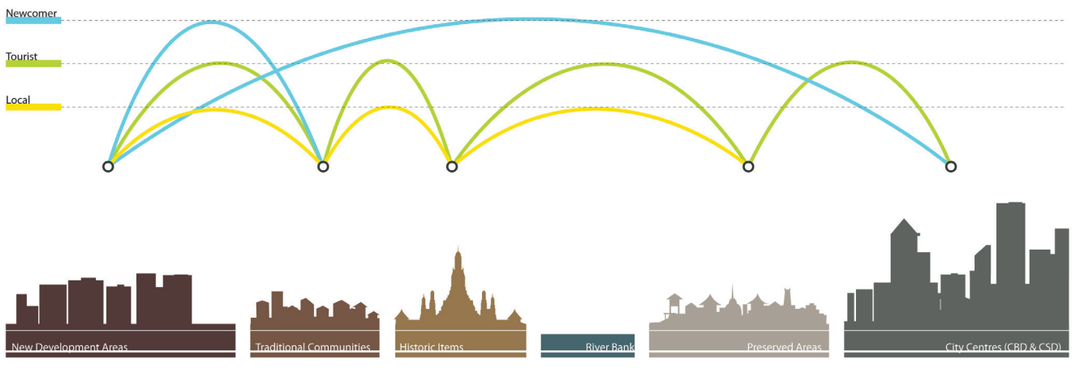
2012

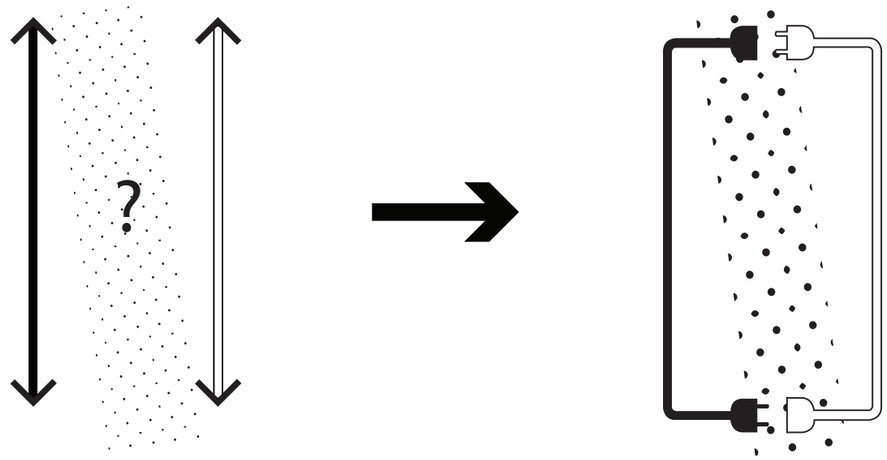
Problems : Spatial fragmentation loading to a limitation of local movement



2030

Potentials : Spatial transformation providing a good living quality and an improvement of mobility





VISION : MAKING A LINKAGE BETWEEN TWO DYNAMICS

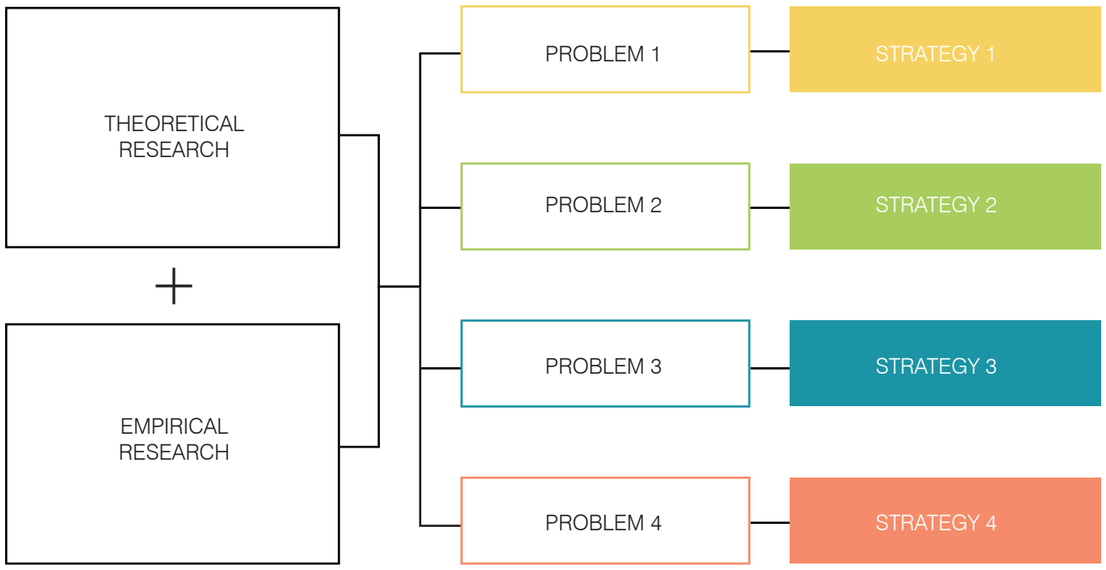
1. Mobility issue : to strengthen network connectivity and achieve multi- modal transport
2. Landscape issue : to transform spatial barriers and fragmentation to be a place with cultural richness
3. Built environment : to exploit from tourist industries from heritage tourism notions and to make use of the infrastructure development to improve local access.

Chapter 5
STRATEGY

Source : www.kabegamilink.com

From the analysis in the previous chapter, it ended up with the proposed vision for the historic core of Bangkok. To achieve the vision, therefore, this chapter will develop the strategy, which will be extracted from the framework of the project in the previous chapter theoretically and empirically. The strategies have been separated into four significant issues, which are the infrastructural network, natural network, tourist industries and human network respectively.
It starts with an exploration on related strategies from the selected case study of car-based cities. Secondly, the strategic location will be analyzed on its current condition and an anticipation of problems in 2030 in relation to the four earlier-mentioned strategies, and then the strategies will be unfolded. Consequently, to realize that the proposal fits within the government framework on the city scale and will transfrom the city towards sustainable manners, the combined strategy will describe positive effects of an integration between infrastructure and urban tissue of Bangkok in 2030.

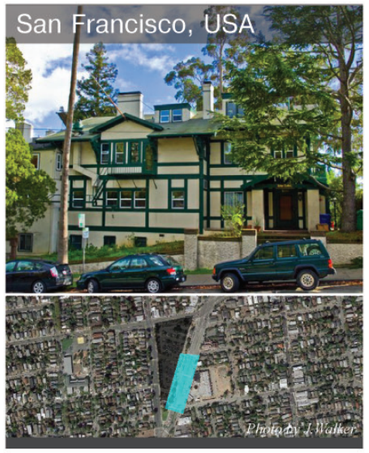
The diagram showing the structure of the strategy part based on the analysis on the former parts

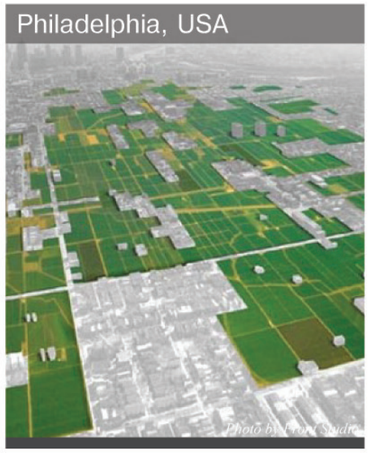


Case study
The five selected case studies were chosen from the similar case, based on the idea of car dependent cities mostly from the US. The first one from Seattle is a development of trolley buses. This idea help to ensure a number of raiders on the public vehicle by sharing it with tourists, which is relevant to Bangkok to prevent the failure of tourist supported transport like we were confronted on the last decade. The second one is social housings, which can replace slums in order to firstly, increase the land value from the proximity to the transit stop and secondly, support local from an expropriation. To get a sustainable bus system, Transmilenio is a good practice. It can be applied to Bangkok in the far away area from the MTS to facilitate local mobility and at the same time, with its conditions, it brings a big chance to develop areas along. Fourthly, an example of reorganize urban void with a landscape mixture of farmlands and open spaces fit perfectly to the strategic area to open up the dead void. Lastly, the form of the MTS on the elevated level leaves many unused spaces under the huge structure. The case of New York shows a positive transformation of the potential neglected space by adding functions and turning it to be an open space.

Illustration 5.1 showing the five-selected case studies

CASE STUDY





Theme	local buses stimulate development	Shared housing help increase density without zoning change	Transmilenio Bus Rapid Transit (BRT) : to deal with increasing population and developers' attractiveness	Farmadelphia : integrated open space and farming into urban landscape	Underline : infrastructure as urban opportunities, to mediate different scales, speeds and programs
Relevance	With the fine-grained pattern of development in the historic core, a local bus or other locally owned transports could be a good choice for both local people and tourists to hop off easily.	To seek for a type of social housing, a collective living place, which is suitable to be served for slum-living people, it helps increase density and protects them from interventions from the market.	BRT is not another bus system, it should be integrated to a mobility strategy and a land-use planning process	Used to be an agriculture land (orchard) with good soil, urban farm can be created as well as serve poor people in slum	An intervention to activate urban voids ,created by the fragmented transport system, to benefit local residents as amenities, their needs, public realm, making them more legible and less obtrusive to contemporary patterns of land use
Urban Form	It helps create some locally needed function along the corridors. It includes a mix of apartments and townhouses, organized around a grocery store facing the street.	Using shared housing to increase neighborhood density offers a solution for low density areas where economic constraints or zoning limits the ability to build new housing units.	The BRT system aims at high accessibility and mobility. It also involves in the Intelligent Transportation Systems (ITS) improving performance, attractiveness to passengers, image, and identity.	Urban farm : Changing unused void to be an asset (vacant as opportunities) ; open space and urban farm (non permeable space)	The transportation systems are scaled to the city generating urban void underneath. This unused structure has a potential to organize public space to support a vibrant mixture of urban programs based on immediate local needs and conditions.
Network	Local trolleybuses run through the neighborhoods. They have no local emissions and minimal greenhouse impacts assuming that the electricity comes from renewable energy. They are one of the quietest vehicles on any street.	Denser neighborhoods will have better transit service. When the service functions better, many new developments are created by a good connection. This leads to an increase of personal access to their desired areas.	BRT would be a flexible mode that integrates capital and operational improvements to create a faster, higher quality mode of travel than conventional bus service.	It created a new local network in terms of food production and security, which the urban farms are reachable and accessible in a walking distance for local level as well as employment opportunities increased.	An opportunistic repurposing of existing, functioning infrastructure to address the need for a vibrant and coherent public realm
Result	Local buses help some local-oriented happen along the corridor. However, this also causes conflicts too. Firstly, it is not local friendly in which no one want the buses to pass or be close to their properties. Secondly, it limits an expansion. With its strict form, size and have to share with car routes, it therefore will be problematic in the future.	It creates multimodal job access, because members of a shared house with long commutes tend to move out. Therefore, a location needs good access to members' existing jobs, and potential future ones. The Ashby area community acts as a catalyst to the others and creates clustering effect to nearby existing community, mainly a lot of purchasing power.	The opportunity to integrate the Transmilenio's corridors with the regeneration of existing public space was not successful as was expected, the bike path that goes parallel to the BRT increased the bike users but the car is still more attractive to move due the distance and conditions of the journeys.	A renewal strategy addresses the issue of vacancy at a city scale, referencing Philadelphia's waterways, soils, and geology, as well as the city's physical adjacencies. Lots could include former industrial ("brownfield") sites as well as sites that have been treated transitionally through cleaning and greening.	Underline offers four potential modes of intervention: the creation of flexible space for public assembly; precast concrete decking hung from above on steel rods as a public landscape "ribbon;" pure infill at ground level; and adaptive reuse of, or interface with, existing adjacent structures.
Applied to BKK case	The concept tends to function in less dense areas. In Bangkok, poor dwellers have to use motor cycle taxis when there is no public transport. Constraints occur in which although the price is acceptable, but not for a long distance. Besides, an activity pattern of hopping on, off freely make nearby areas livable, and stimulate locally economic activities.	This development can be applied to the thesis, because co-ops can cope with local poor people who are willingly evacuated from slum. Moreover, they will live in the same area, which their living pattern will not change and can benefit not only from newcomers from the MTS, but also a transformation of their sacrificed land into public amenities.	The BRT system is an intervention on the city scale and is very successful in terms of mobility improved. Even though, the thesis is not tackling with that scale, but the way it was planned in relation with land use is crucial. Bangkok can apply the way that it help improve the quality of space dramatically as well as a cooperative planning among stakeholders.	This relates particularly to the area in that landscape heritage from the past (used to be orchard) needs to be preserved. With a poor connectivity and accessibility, it is a benefit to generate an open space, quiet, private own and sense of belonging, which is missing in the newly settled area like sprawl and slum.	Activating urban voids can maximize local benefits by adding new mixed function into neglected and unused space. This intervention can also stop urban sprawl and systematizes urban space making it legible and accessible.

From the long-term car oriented development, the city structure can be categorized by urban grid size into four types. Grid size displays not only how hard it is to get to the area, but also an opportunity to catch on public transports. The brown color represents the smallest grid size, which clusters mostly around the historic core on east bank of the river (see illustration 5.2). However, on the west bank is not coherent. It has more mix of colors and, especially in the strategic area has 3x3-grid structure, which leads to a limitation of movement and spatial fragmentations.

Illustration 5.2 showing the urban grid structure of the city of Bangkok, Source : R.Kanjanapanyakom(2010)

Zooming in to the area, it illustrates that there is no secondary roads to connect. Besides, when it has been compared to other cities or even the area on the opposite site of the riverbank, the coherence of spatial connection is very low and much more fragmented (see illustration 5.3).
In terms of public transport, when there is no spatial connection, there is no public transport too. It results in travel distance constraints. Local residents rely mostly on private vehicles, while public transport has been served only along main roads (see illustration 5.4). Therefore, the mode of transport of Bangkok is special in that it requires a complementary mode. This mode considers privately owned transport as a pre transport within a short distance (R=2km.) before riding on public transport for a long distance (see illustration 5.5).

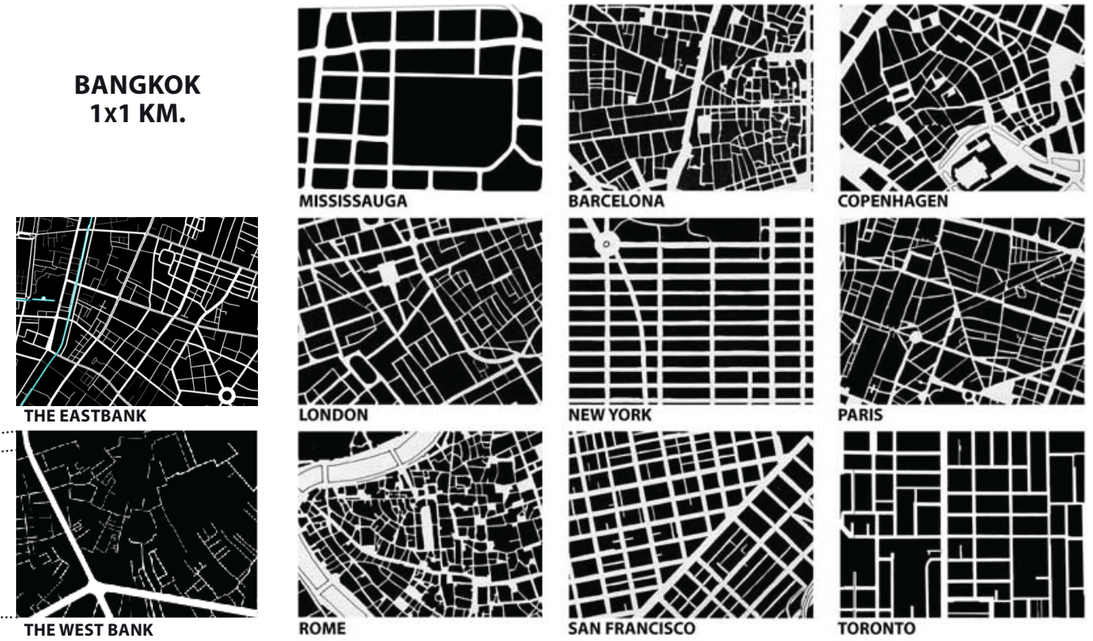


Illustration 5.3 showing a comparison of urban grid structure among other cities, Source : www.doobybrain.com

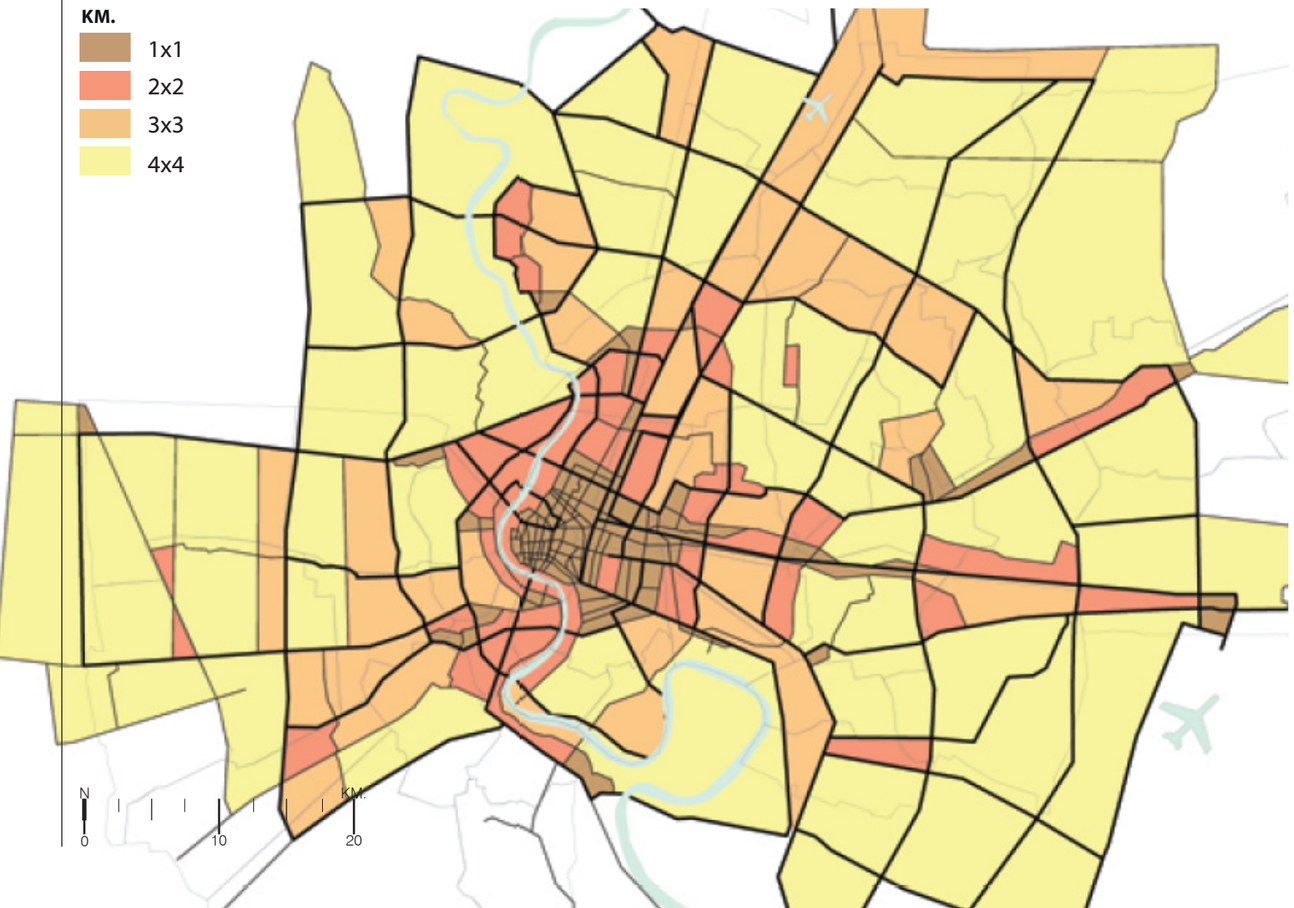
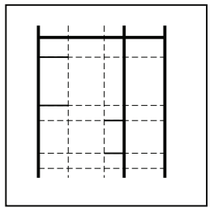
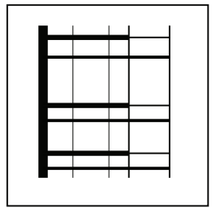


Illustration 5.5 showing complementary modes of transport in Bangkok.

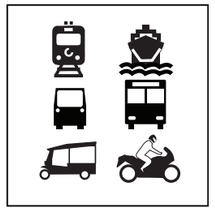
Illustration 5.4 showing different mode of transport served in 2012



Connect potential existing road



Reorganize the hierarchy of the road system



Multi - modal transport achieved

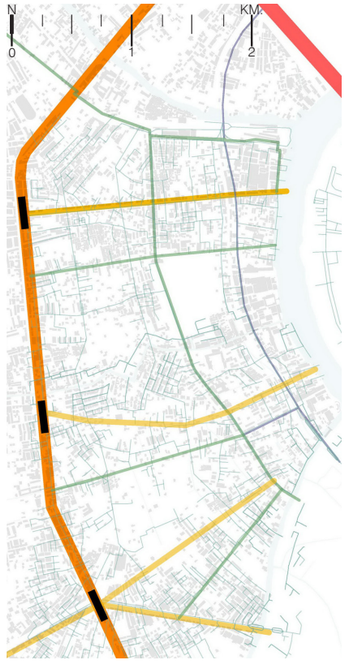


Illustration 5.6 showing desirable road network hierarchy in 2030

Proposed strategy on infrastructural network

The goal of this strategy is to connect and reorganize the spatial network hierarchy in a systematic way. First of all, according to the space syntax analysis, it shows the potential streets to be developed to vital streets in terms of spatial connection. The strategy will focus on those streets and next reorganize spatial fragmentations of road network hierarchy. When the street has already been organized (see illustration 5.6), it reflects a big tendency to accomplish multi-modal transport by emphasizing on the contemporary modes, which privately owned vehicles are used within short distance, while public transports are able to serve long journeys (see illustration 5.7).

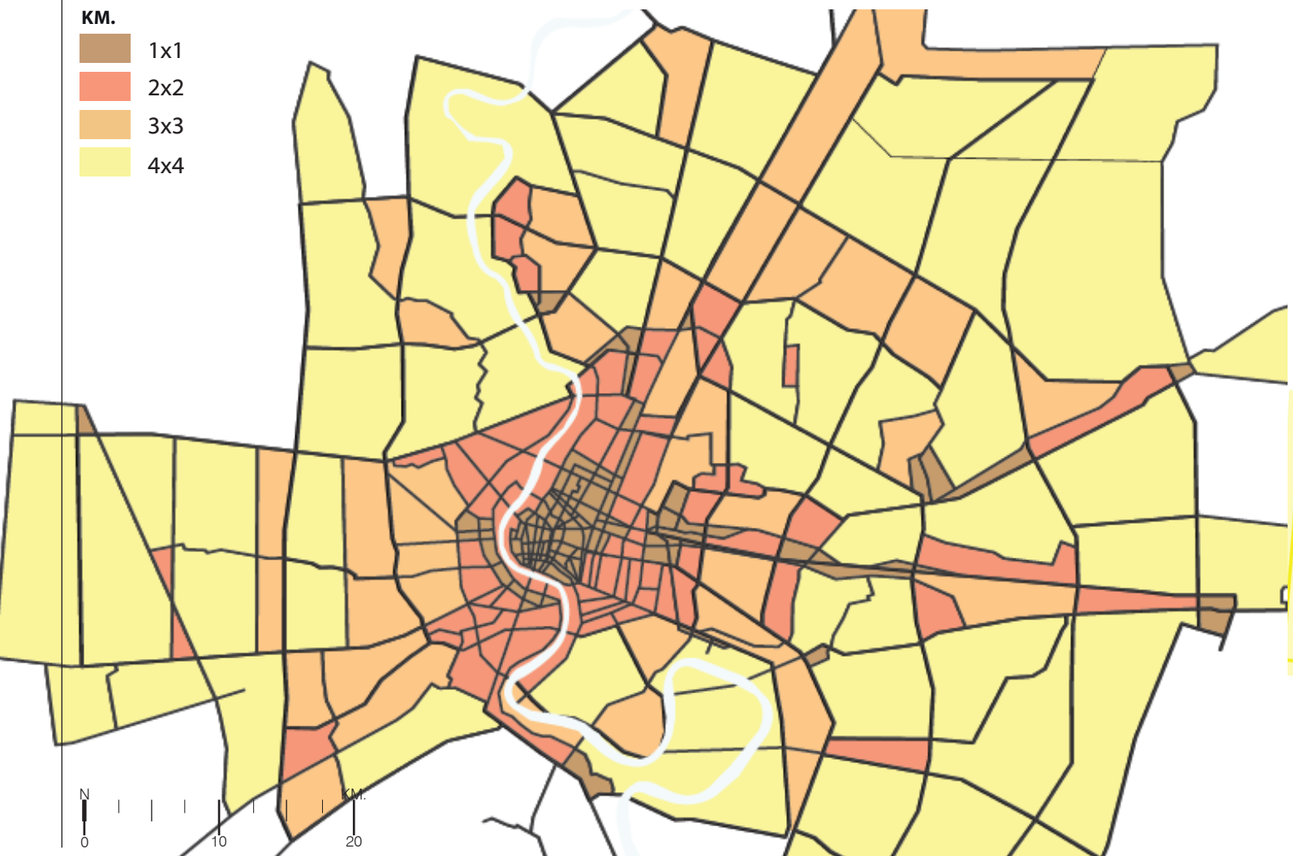


Illustration 5.8 showing a coherent grid structure from new connections

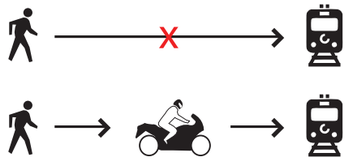


Illustration 5.7 showing proposed public transport modes in order to achieve a complementary mode

The effects of the strategy reveal a new coherent grid system by making new connections. The illustration 5.8 shows that the existing spatial structure has been undersized especially in the historic core of the city characterized by small grid structures.

Therefore, for Bangkok in 2030, a co-operation between private and public transport leads to large choices of transport and provide access to all ranges of people (see illustration 5.9). Eventually a five-minute city is achievable, which means within five minutes one can get into the transport system and travel freely throughout the entire city.

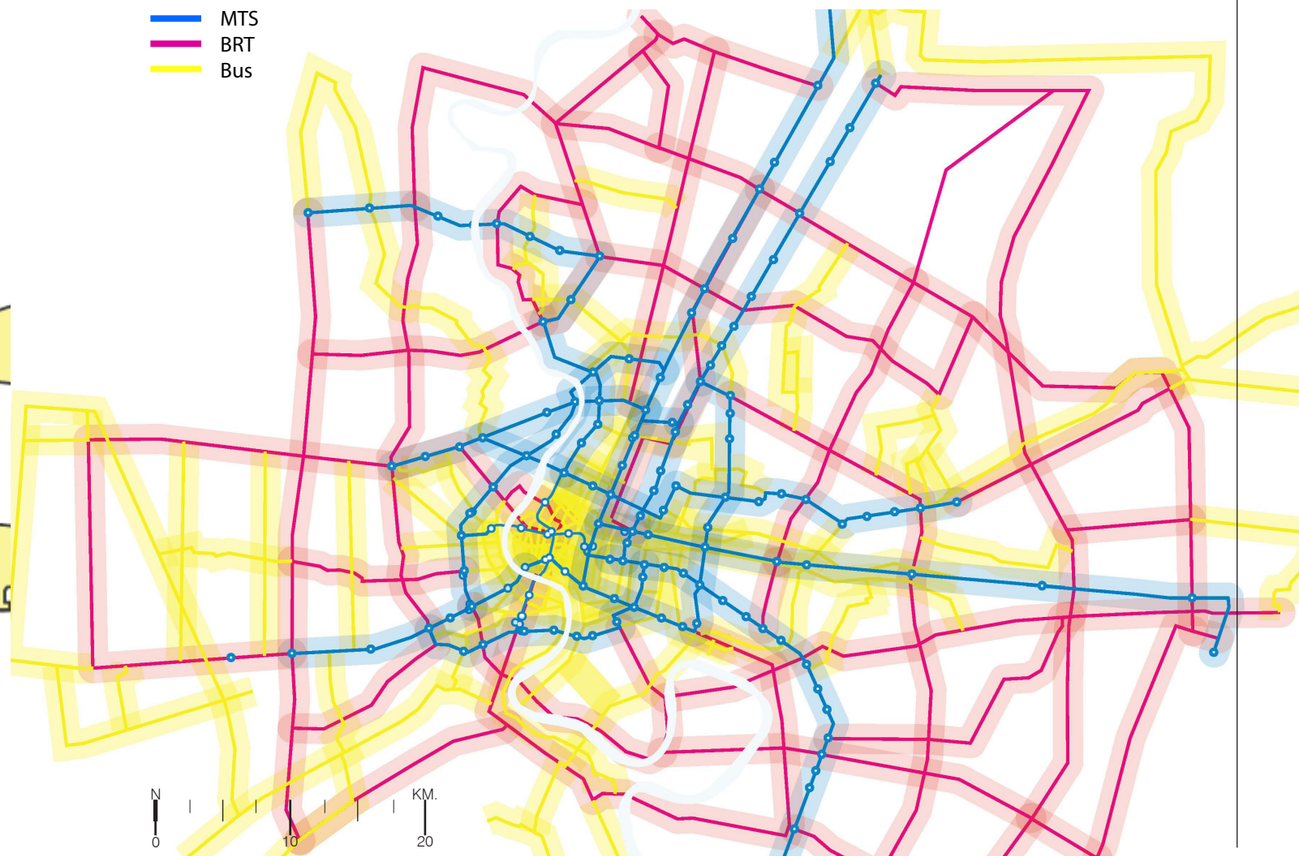
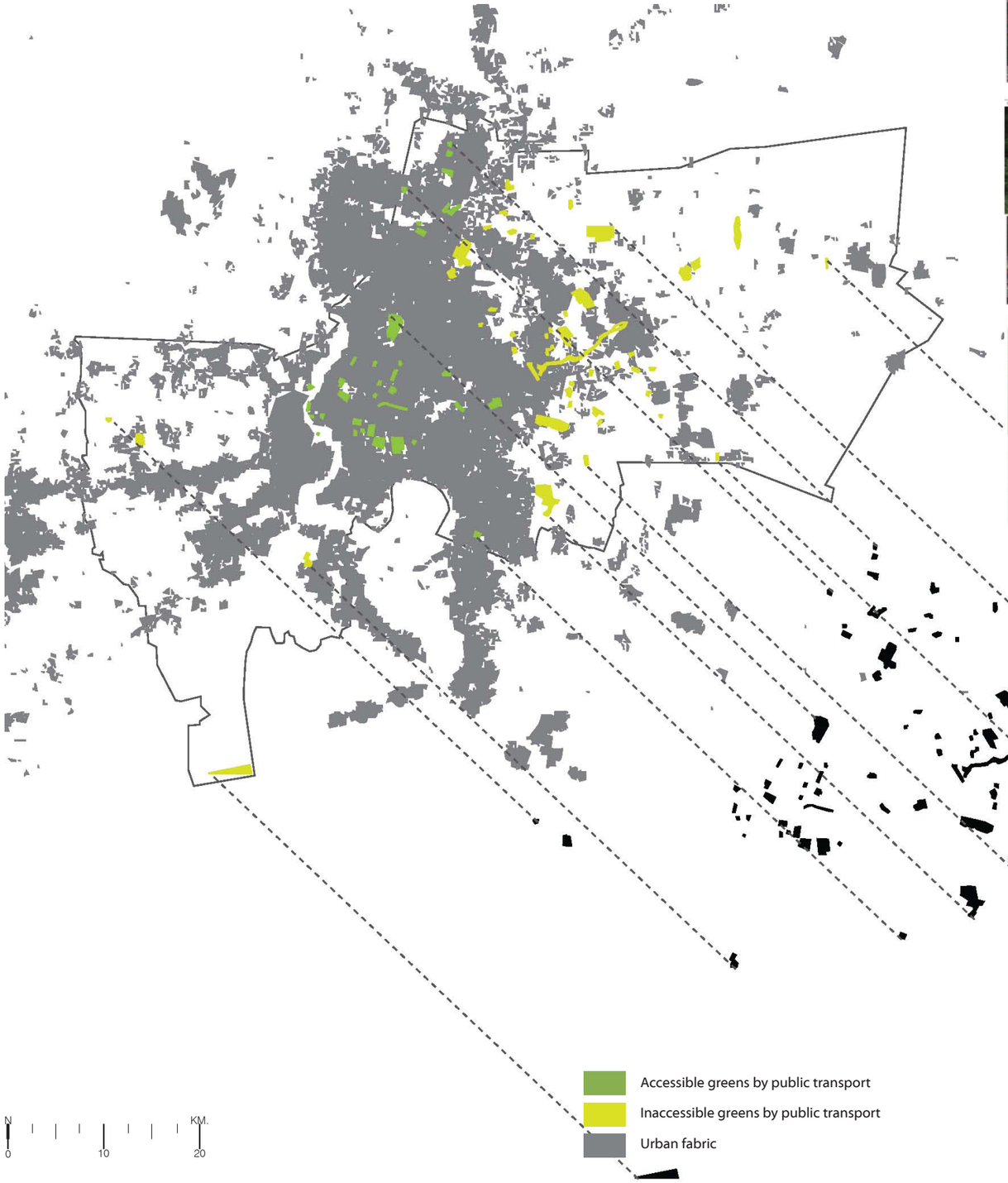
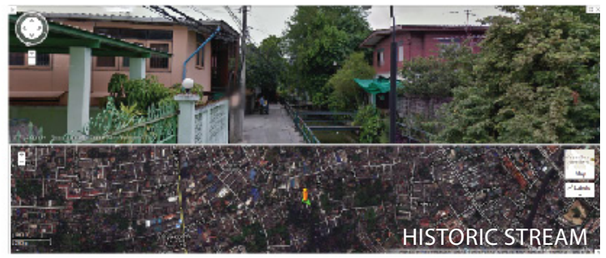


Illustration 5.9 showing spatial network of public transport of Bangkok in 2030

Illustration 5.10 showing a dispersion of green network in Bangkok, Source : R.Kanjanapanyakom(2010)





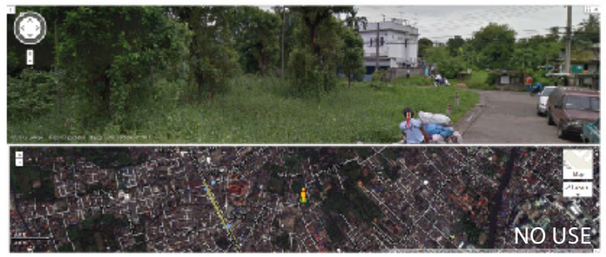
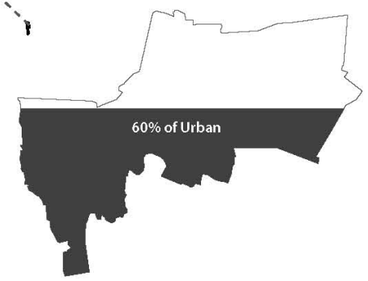


Illustration 5.11 showing current condition of the urban void, Source : www.googlee-arth.com



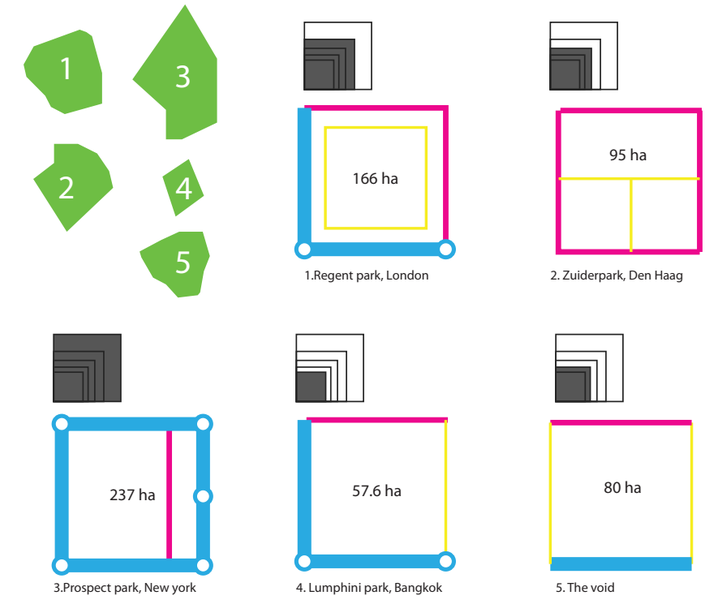
Looking at the green network of Bangkok, it is much dispersed. Literally, it shows 0.25 percentages of green areas per person. Unfortunately, most of them are not accessible that in particular on the west, there is no public open space designed for local residents (see illustration 5.10).

To zoom in to the strategic location, the urban void represents the fact that the rich green quality still lasts seen via existing fruit gardens and historic stream run through, which exhibits great potentials to intervene. However, when no one uses it, it turns to be barriers (see illustration 5.11).

In order to know the physical features of the park, the case studies have been selected based on the similar size to understand what type of spatial network and activities will happen in the transformed void (see illustration 5.12 & 5.13).

Illustration 5.12 showing a study on road networks classified into 3 categories surrounded parks

Note : In the case of the urban void, images are used as references




Urban farm


Biking


Jogging


Feeding


Cafe


Grey water


Kid playground


Playing


Schulpture


Info. center


Solar energy


Picnic


Bird watching


Public fruit


Temporary market


Water storage


Sport field


Aerobic


Festival


Meditation

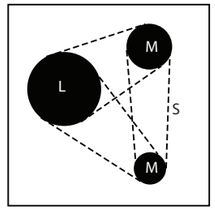

Land art


Water related activities

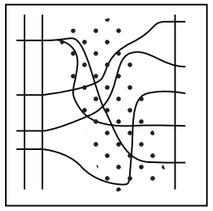

Water feature

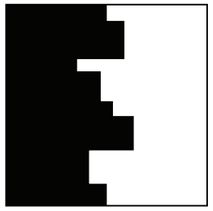

Amphitheatre


Skate park



Linear green connectors and slow traffic


Tranform grid to curvilinear pattern


Maximizing interactions on the border

<u>Proposed strategy on natural network</u>

The strategy revolves around three scales of open space networks with an objective to transform urban fragmentations into coherent urban spaces. The city scale aims at connecting green areas into a network by using linear green connectors and slow traffics. Second, a gradient from grid structure to curvilinear pattern is proposed on the district scale. Areas along the border are used to maximize interactions and avoid abruptness of territory.

The strategy creates spaces for residents as cultural landscape. The linear green can be perceived from the roads as open rooms and accessible gates guiding to the heritage areas (see illustration 5.14). Due to its cultural richness, this urban park reflects cultural values and can make use of soil quality. Besides, by connecting existing streets, it results in slow networks throughout the area. The park generates new accessible public spaces and introduces new cultural functions and living environments.

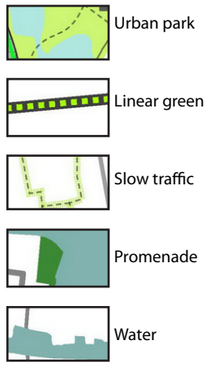


Illustration 5.14 showing proposed natural network strategy

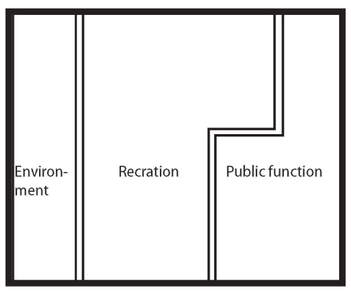


Illustration 5.13 showing possible three types of activities (Environmental, recreational and public) happening inside the new transformed void

The effects of the strategy provide access to the west and together with an improvement of mobility, the percentage of green area per person increases to 0.95 in 2030 (see illustration 5.15). To integrate the green network with waterfront regeneration planned by the government, the strategy also proposes a plan to regenerate city's waterfront by defining the role of the area in relation to the character of the areas (see illustration 5.16), which helps keep historic identity and traditional districts functioning (see illustration 5.17).

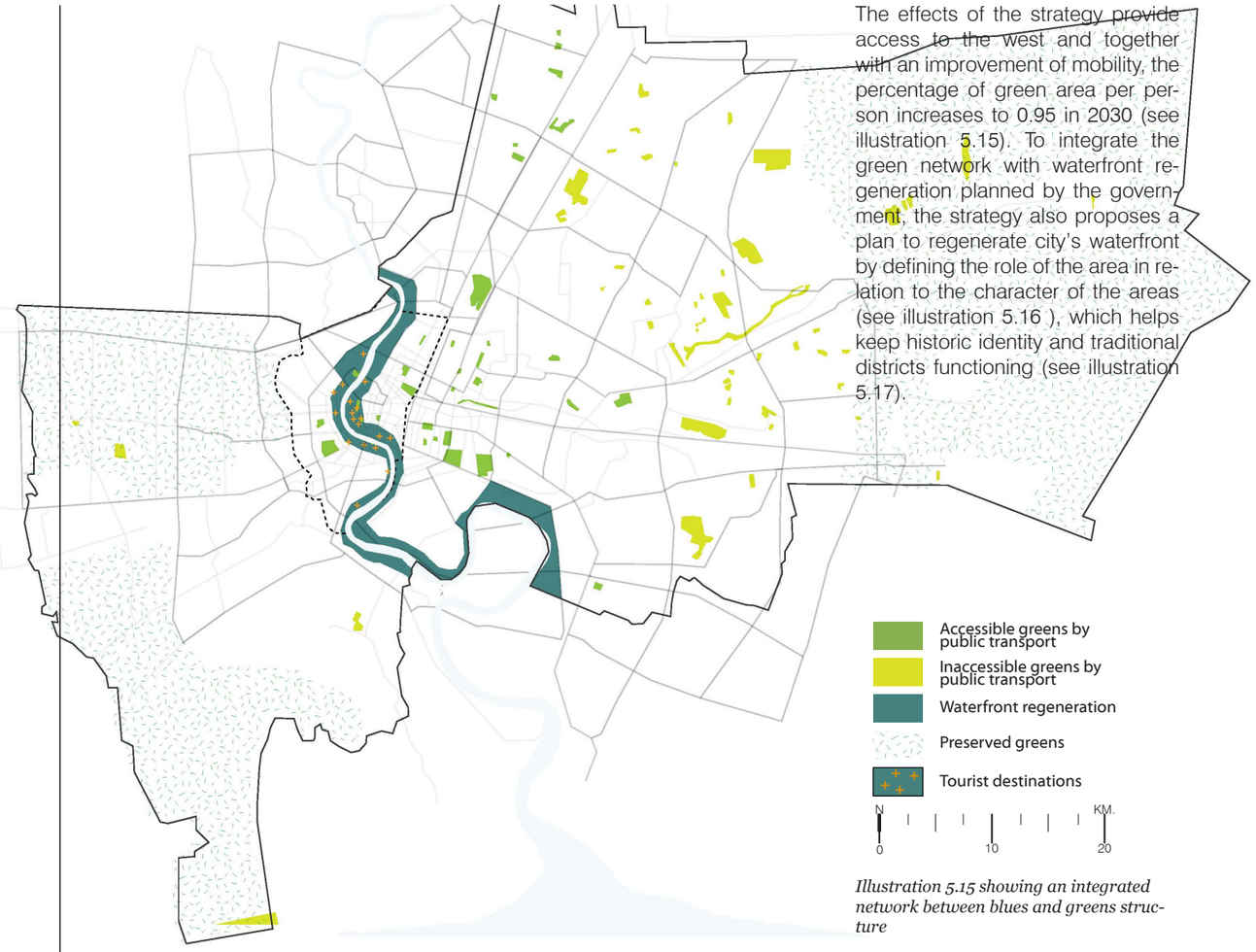


Illustration 5.15 showing an integrated network between blues and greens structure

Illustration 5.16 showing a guideline of different types of waterfront regeneration plan

Illustration 5.17 showing historic and traditional districts preserved inside the historic core

Heritage tourism is one of the strategies towards sustainability. In the case of Bangkok, tourist industry is an important sector that provides financial supports and helps trigger development. According to the tourist map (see illustration 5.18), the attractions cluster around the riverbank.

However, poor network connectivity makes the area hard and requires complicated way to reach. Tourists have to use water transport or private transport (taxi) to visit their desired destinations. Moreover, these phenomena also create an area of enclave tourism, where inaccessible areas are left out of the map. As a result, benefits from tourists have not been channelled back to local, but tourist companies.

Illustration 5.18 showing Bangkok tourist map, Source : thai.tourismthailand.org

Various experiences

Different time consuming

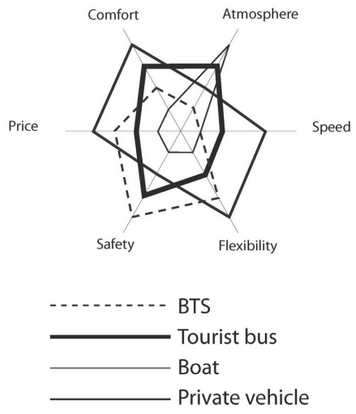
Shared transport with local to increase riderships

Proposed strategy on tourist industries

The goal of the strategy is to promote cultural and heritage tourism with local benefits. Visitors can enjoy specific characters of the historic area with various experiences of routes, which they choose. In addition, the strategy offers different options of time consuming with many modes of transport. To keep appropriate number of raiders, tourist bus will not be separated independently only for travelling purposes, but it will be shared with local resident to increase ridership.

Due to the earlier mentioned strategy, when the way to travel becomes more convenient by a large choice of transport. Tourists will be able to choose how to travel and what kind of experiences to be perceived such as, riverside communities, and traditional commercial district. Eventually, the route for tourists become a completed loop by not only focusing on one side of the river (see illustration 5.19)

Illustration 5.19 showing a Bangkok tourist map in 2030 (current tourist destinations colored in red)



The diagram showing different characters of area along the routes providing various experiences

The effects of this strategy bring much potential to connect and reorganize the existing fragmented network. Together with aforementioned strategies on infrastructure and open space network, the vital streets have a tendency to be connected, densified, added new programme and regenerated environmental quality (see illustration 5.20).

Illustration 5.20 showing potential areas to be developed

CURRENT CONDITION

PROPOSED CONDITION

Deadend : to be connected

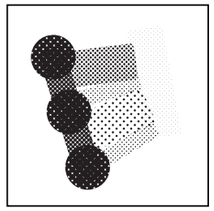
Woonerf : to be densified

Global road: to be added programmes

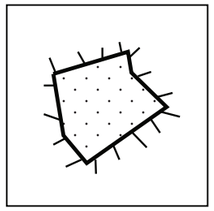
Water : to be regenerated

Local road : as references

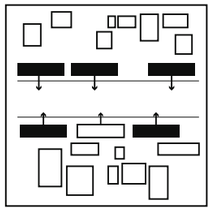
The strategy on human network is a result of a combination of the three strategies in order to use new connections as catalysts.



Density gradient



Programme clusters around the new open space



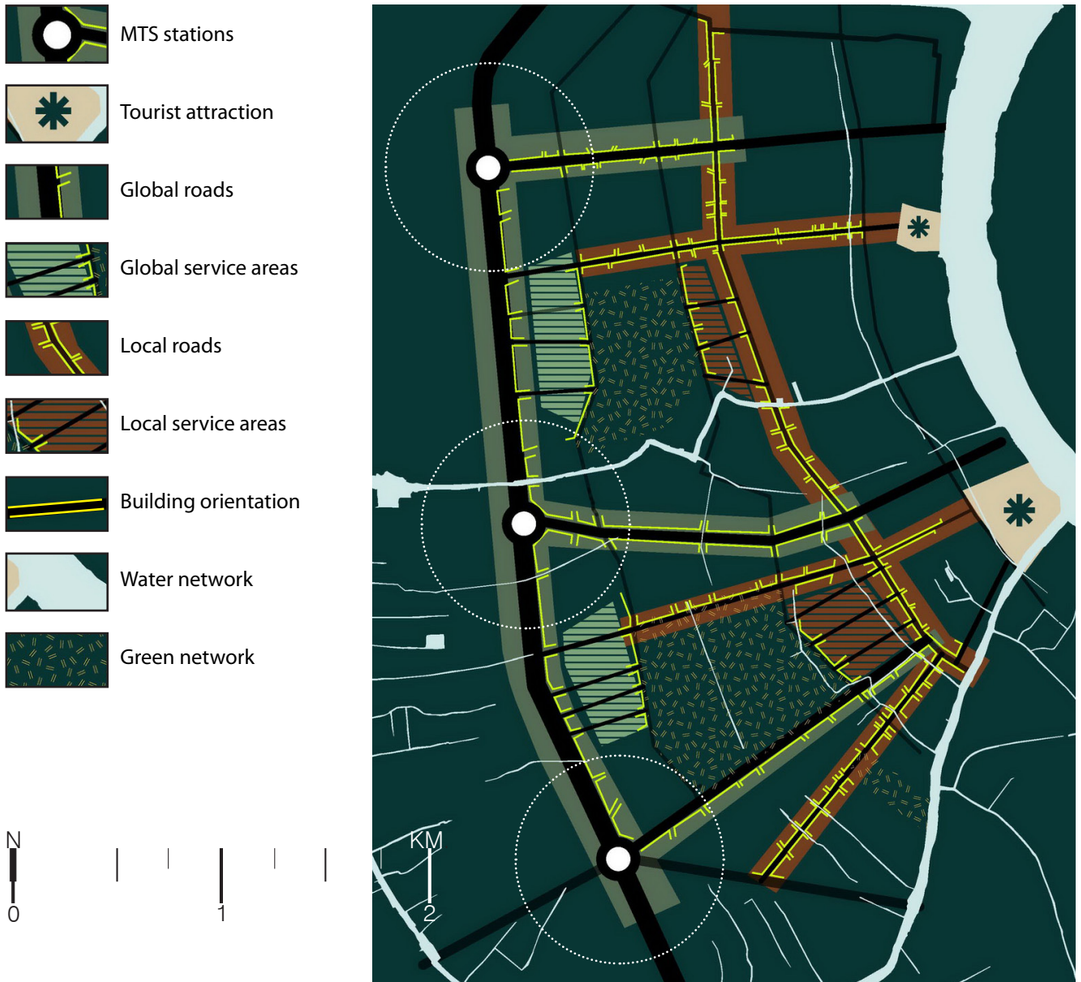
Densifying potential areas by exploiting new connections

Proposed strategy on human network

The proposal defines a density gradient, which high density concentrates along the transit corridor, while faraway areas have lower density. The new opened-up open space attracts new programmes. Lastly, the potential streets can be densified by exploiting chances from new connections.

The result of new connections bring a lot of opportunities to the area, which increase density along new road with mix functions served all social classes. It helps shorten travel distance and improve access for residents to create living and working environments. (see illustration 5.21)

Illustration 5.21 showing strategies related human network



An attachment of micro mobility

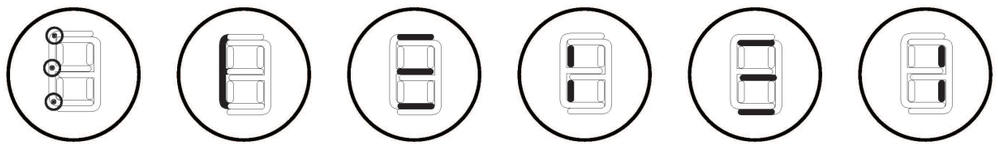
Daily functions **S**

Local businesses **M**

Global functions **L**

Linking to complementary mode from infrastructural network, motor cycle taxi, considered as pre transport mode with an aim to overcome congested traffic, is not like normal taxi that raiders can get on everywhere, but on a station. The station usually attaches to other functions with different scales. With this strategy, it helps increase a number of nodes that make people get to public transport more easily.

Images showing general locations where motor cycle taxis work, Source : R.Kanjanapanyakom

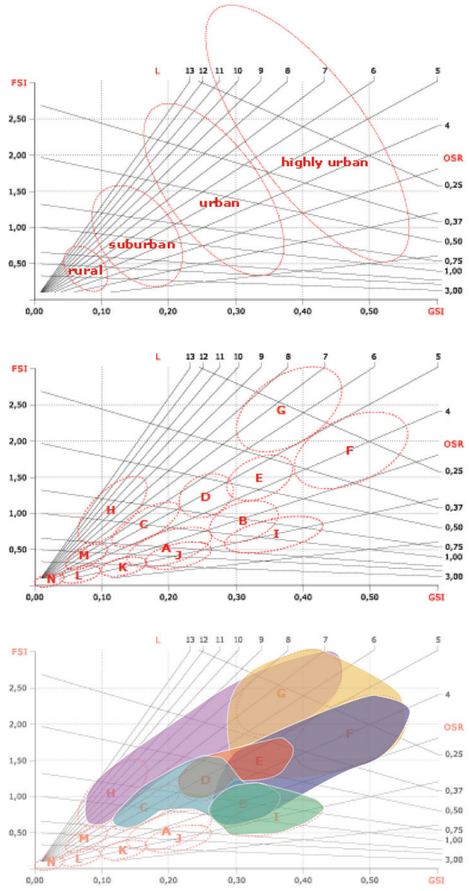


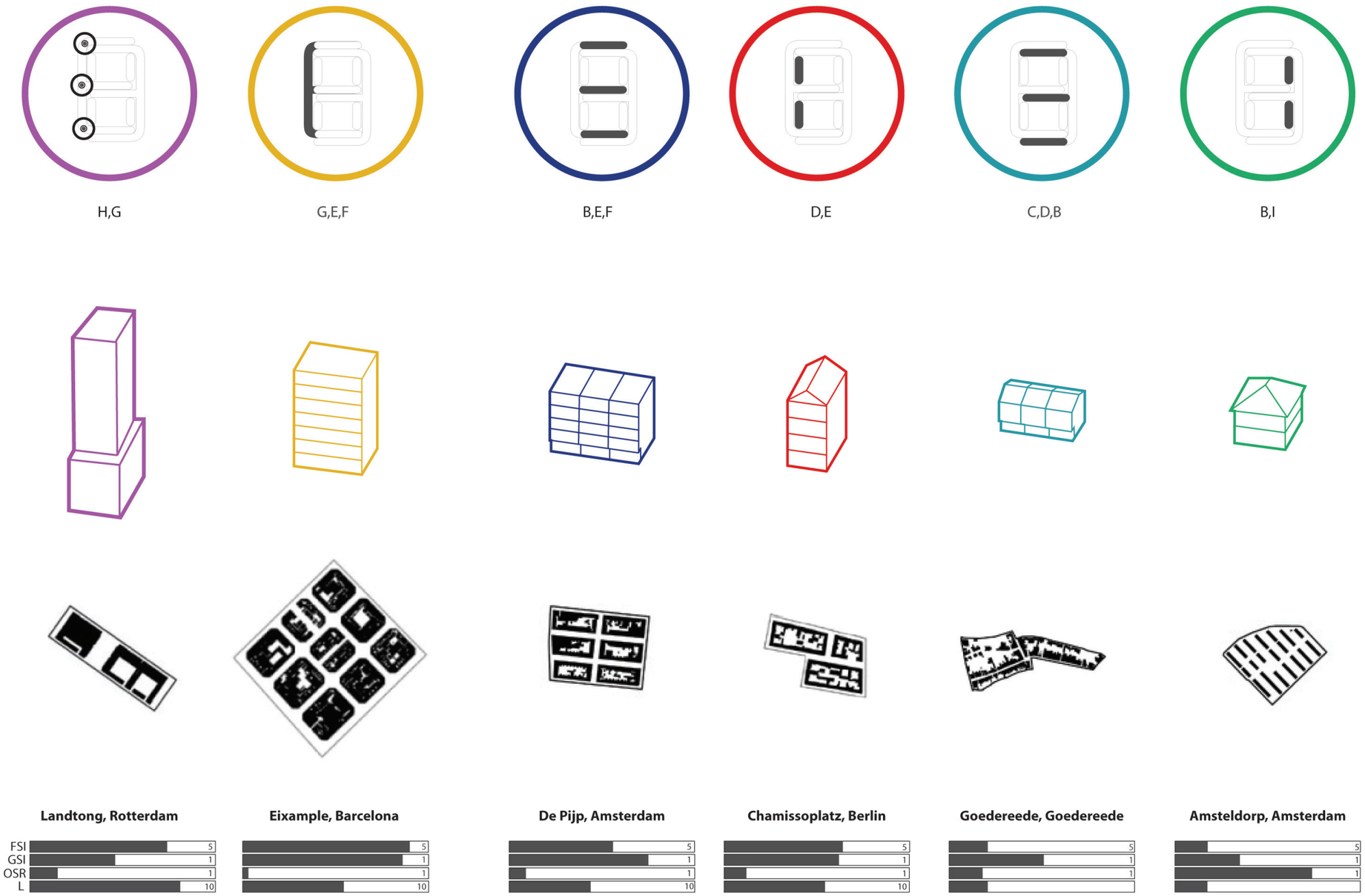
Programmes	Market decision	Market decision	Mixed use SME Commercial Living	Service functions Catering Daily used Living	Mix used Commercial Affordable housing Local business	Service functions Catering Daily used Affordable housings
Owners	Cooperative investments	Private investors	Private investors	Local (from expropriation)	Private investors	Local
Density	Maximun (special zone) FAR 1:10	Along with building codes FAR 1:8	Medium	Medium	Medium - low	Low
Target groups	Hi-end people	Hi-end people	Starters Hi - medium income	Local, workers in areas around and medium income	Medium - low income student and local people	Local Medium - low income
Height	Maximum	Along with building codes	4-8 floors	4-6 floors	2-4 floors	2-4 floors

Illustration 5.22 showing development principles of building density.

In terms of building typologies, the following table shows types of buildings, which can be used as a reference. To assume what kind of building is suitable for the urban fabric, a calculation is made, based on the PERMETA index. It reflects building density of the site. Along the transit corridor is the most dense area with living and office buildings, while the area close to the historic core has lower density.

Illustration 5.23 showing references of typologies (based on the index of urban use)





Spacemate (http://www.permeta.nl)

GSI (Ground Space Index)	Physical density of an area	=	Footprint / Area
FSI (Floor Space Index)	Compactness of an area	=	Gross Floor Area / Area
OSR (Open Space Ratio)	Use of open space in area	=	(Area - Footprint) / Gross Floor Area
L (Floor number)	Average Building Height		

A: Low-rise spacious strip developments
B: Low-rise compact strip developments
C: Mid-rise open building blocks
D: Mid-rise spacious blocks
E : Mid-rise close blocks
F : Mid-rise compact blocks
G : Mid-rise super blocks
H: High-rise developments
I: Low-rise blocks
J: Low-rise semi-detached buildings
K: Low-rise detached buildings
L: Low-rise spacious detached buildings
M: Mid-rise spacious developments
N: Low-rise rural developments

Effects of a combination of the proposed strategies

Instead of a replacement or conflicts between new and old developments, the strategies provide a crucial opportunity and mutual benefits between these two dynamics to function and complement each other in harmony.

Illustration 5.24 showing effects of a combination of strategies resulting in mutual benefits between the two dynamics

N KM.
0 5 10 15

Regional transportation hub

Regional transportation hub

Regional transportation hub

Regional transportation hub

CBD

New economic development

Periphery
Economic cluster
Dense communities
Buffer Zone
Historic core

A flexible ring(red) to preserve and support simultaneously

It creates a flexible ring, buffer zone, between the historic core of the city and outer zones in order to preserve the historic core and support nearby areas simultaneously (see illustration 5.24).

Together with the government plan on the city scale, the model of Bangkok will change from the single core city, mostly focusing on the east bang, to the multiple core city (see illustration 5.25). The proposed buffer zones will function and cooperate to other areas among different actors, which they share benefits with each other (see illustration 5.26).

Local

OPEN SPACE

HISTORIC VALUE

DIVERSE FUNCTIONS

COST

New comers

ACCESS

SERVICE

Tourists

Illustration 5.26 showing the three user groups retrofitting each others creating a cooperative relationsip among them

2012

2030

Illustration 5.25 showing a comparison of Bangkok's between probable and desirable model

The strategies use different types of existing quality (potential roads, urban void, heritage sites and the area along transit corridor) to revitalize the area. The synergetic vision between the historic core and the MTS has been provided, which integrate these two dynamics by starting with the infrastructure and open space development and then, develop on tourist industries and new mixed functions.

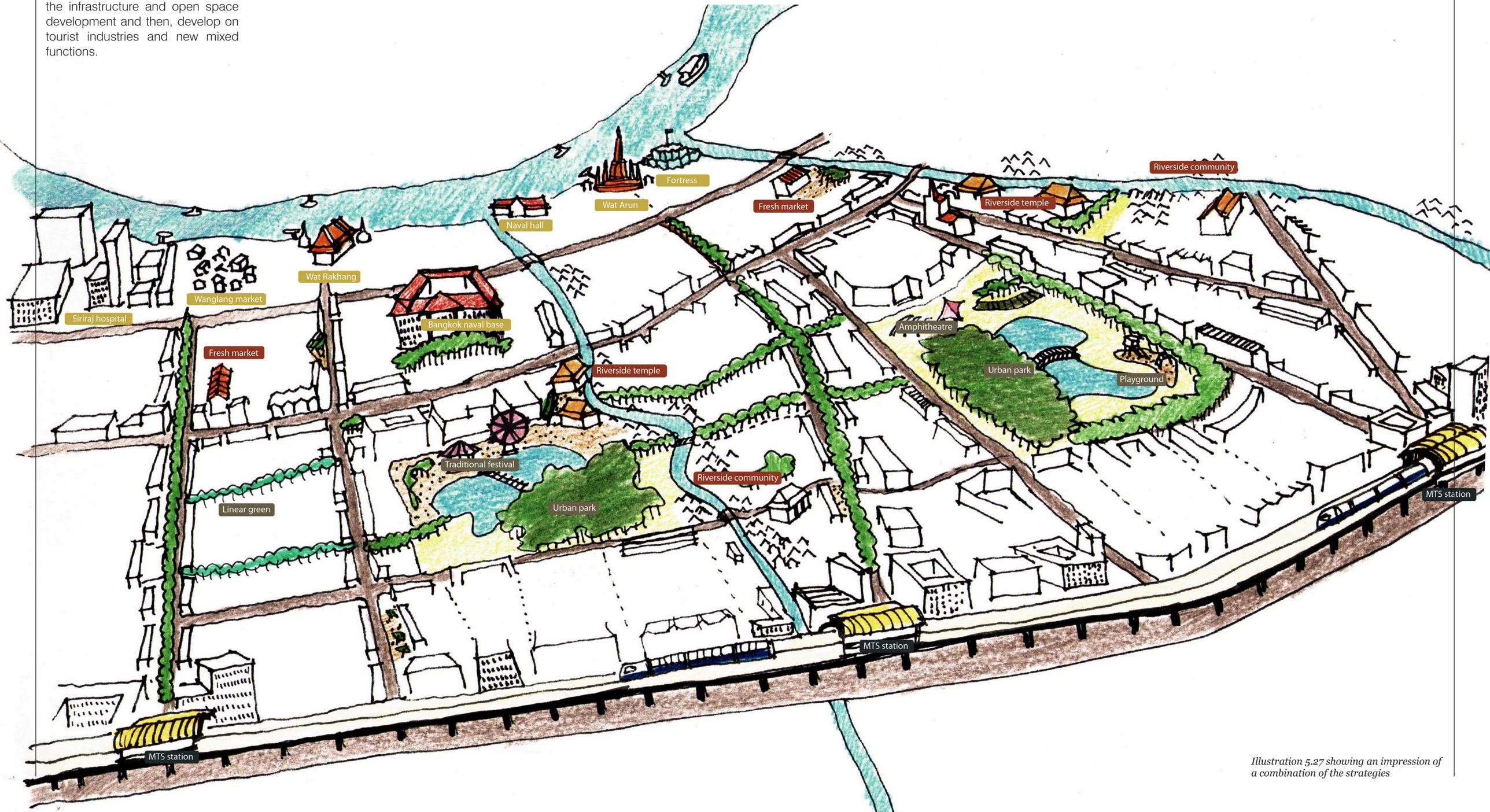


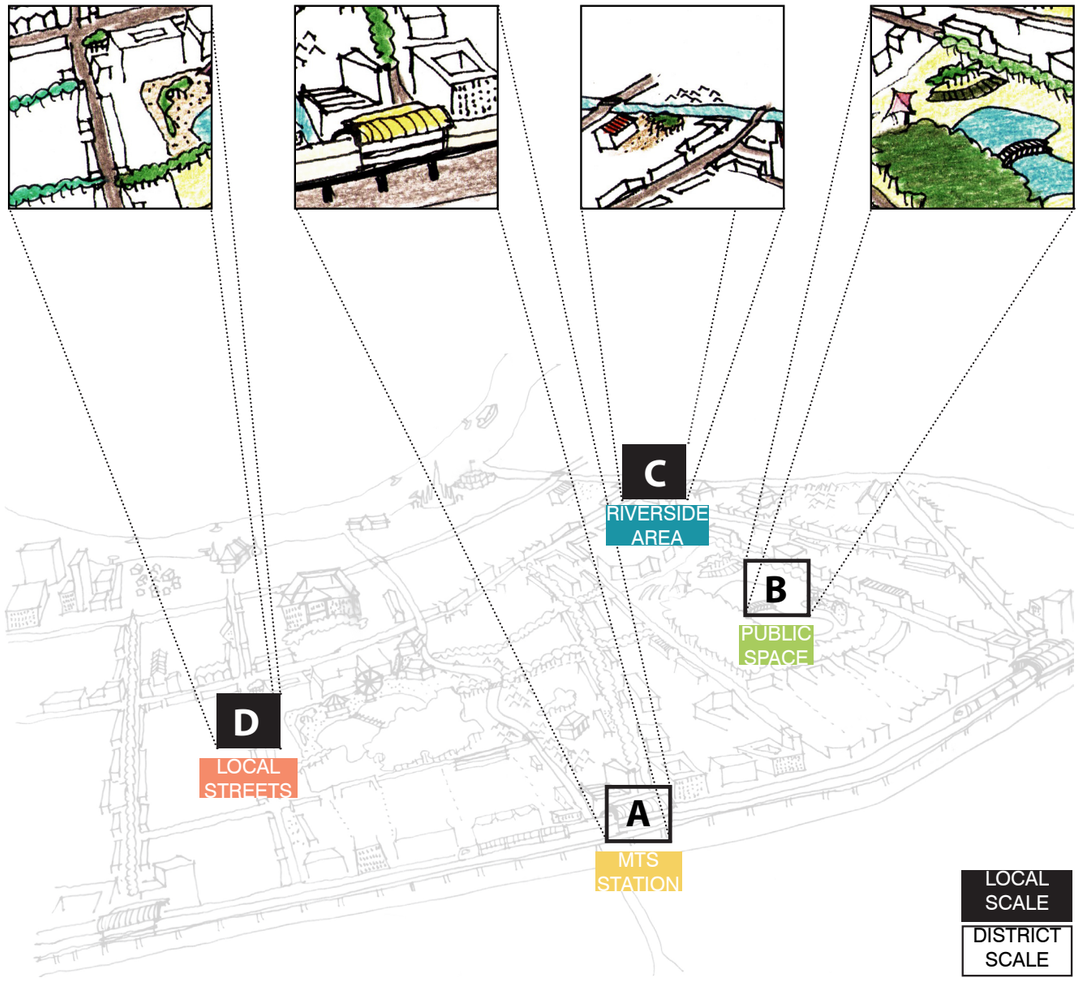
Illustration 5.27 showing an impression of a combination of the strategies

Chapter 6
STRATEGIC PROJECTS

Source : R.Kanjanapanyakom

In this part, several samples of strategic design implementation will be mentioned. The solution is not meant to be an end, but rather guidelines of the desirable results of an implementation of the strategic planning on the selected locations. The result may not be the best solution for implementing the strategies integrating the historic core with the MTS, regardless of any conflicts that might rise, such as the claiming of land or the demolition of buildings.
The part will start with design inventory of possible key projects in relation with strategies. Then, four design projects will be selected based on the idea of “from quality to quantity” . Finally, the development phasing of the project will be unfolded in order to create a better quality of life for people in the process of implementation.

Illustration 6.1 showing four selections of strategic location as pilot projects.



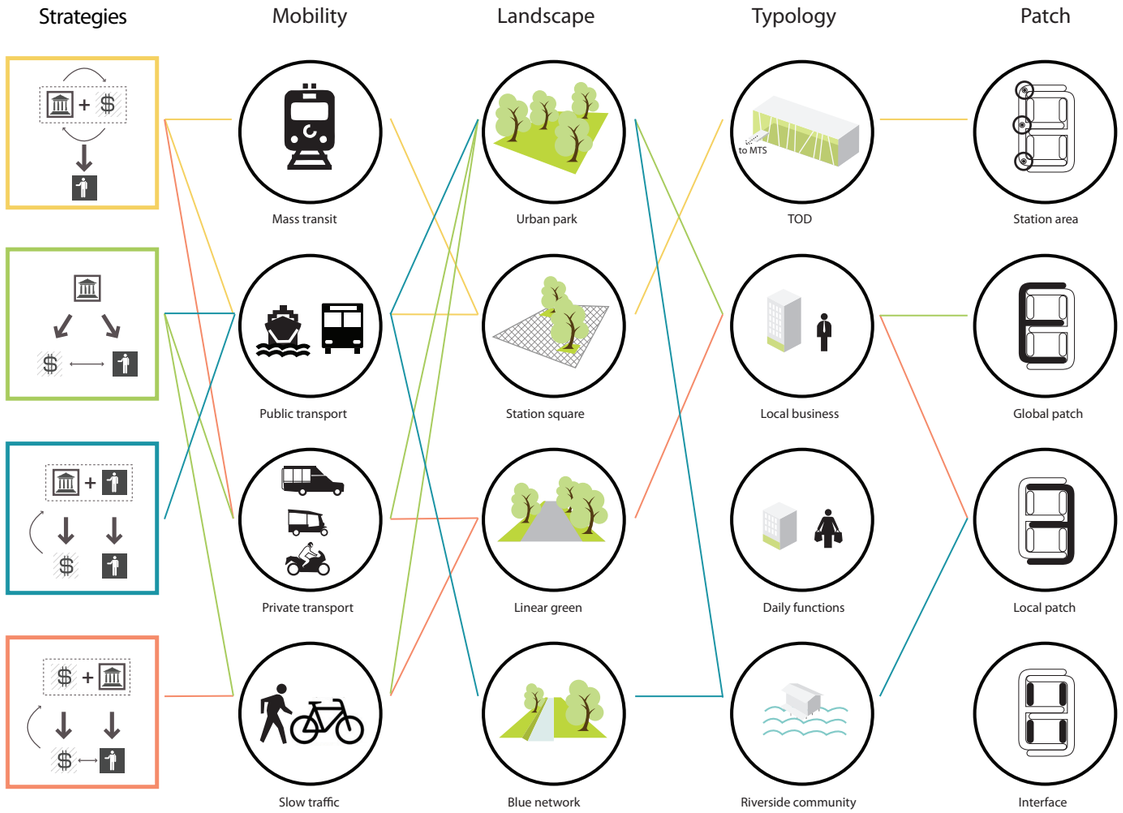
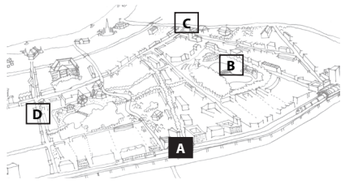


Illustration 6.2 showing projects inventory regarding to the four-mentioned strategies

A : THE STATION AREA
B : TRANSFORMED OPEN SPACE
C : RIVERSIDE AREAS
D : LOCAL CONNECTIONS

Tourists
Local residents
New comers

Illustration 6.3 showing user diagram along majors connections



A: The Station Area

Infrastructure development are very crucial for the new design. It strengthens the role of city, district and local positions of the geographical territory. With an improvement of mobility, the MTS, BRT, bus and privately owned transport stops provide connectivity within the city. The consequence of these developments will attract more diverse functions and activities due to the connected spatial network. Regulations and stimulants can help to create active and vital places connecting directly to the station, which bring residents to their desirable destinations throughout the city.

Strategy

-New stations and transport stops need to be gathered to create a convenient environments to get on and to be reachable by multi modes of transport.

- The new connections will be created in terms of fast and slow traffic in order to have a continuous traffic flow in every scale: locally and regionally.
- The new connections will restructure the existing streets, integrated pedestrian and pre-transport routes.
- Park and ride facilities will be placed along main roads and traffic arteries as well as special zones for developments, which develop by public –private partnership to make economically feasible.
- Connecting regionally to the other parts of the city, bus corridor will get priority over other means of transport and will be combined with pedestrian and pre transport routes.

Stakeholders

GOVERNMENT AGENCIES:
BMA, MTS station, Bus station, BRT station, Ministry of transport, MTS divisions, BRT Company, Motorcycle taxi organization
SOCIETY:
Land owners, Local developers, Local enterprises
INVESTORS:
Private developers, Private investors, Private transportation companies

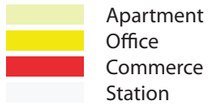
Actions

- Large-scale infrastructure projects combined station together with pre-transport modes and slow traffics
- Reorganizing existing streets and spatial network hierarchy
- Mix functions development with living and working environments

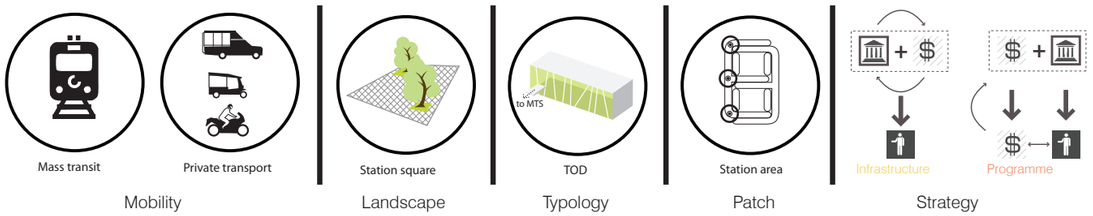
Key words

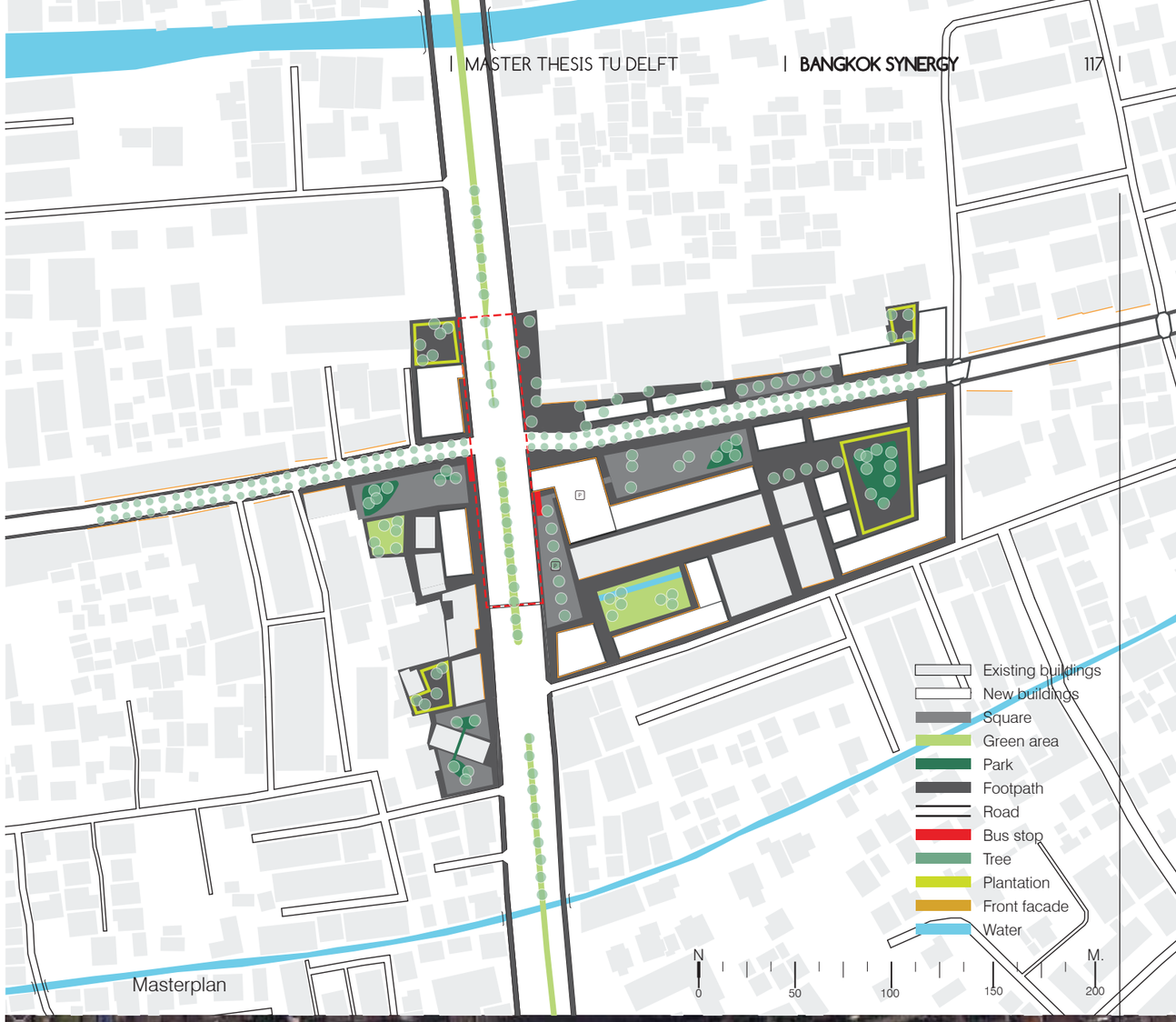
Equity in Mobility, Transport node, Multi-modal transport, Street life

Functional diagram

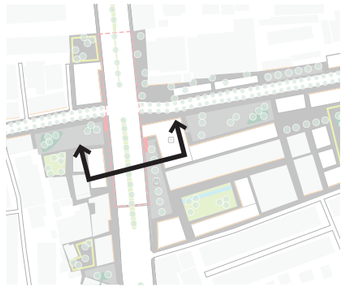


Inventory and Management strategy



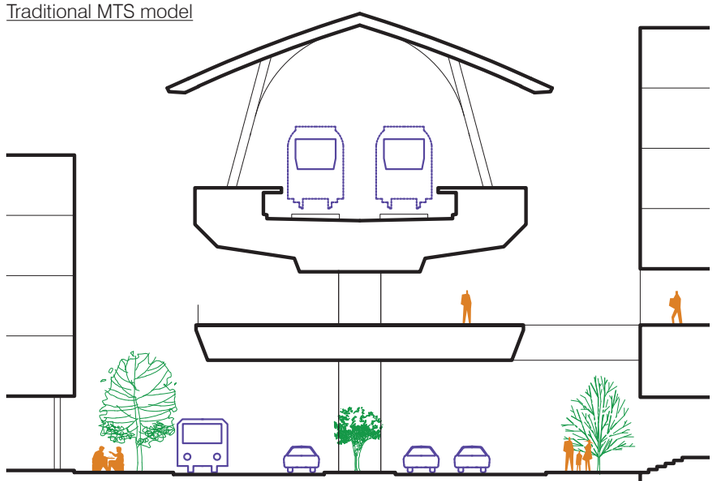


Masterplan

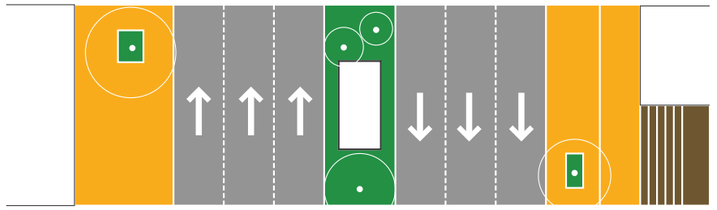


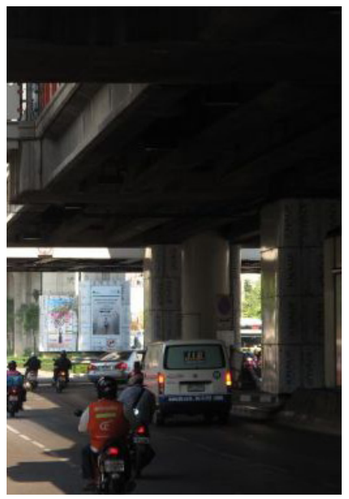
The section shows the location of the MTS stop. This crucial location provides firstly an equal condition to get to public transport for both sides of the road(both private and public transport on ground and MTS on the top). Secondly, road patterns are downgraded from 3 lanes to 2 lanes to give priority to the BMW conditions (bike, metro and walk) , which provides the mobility system to all ranges of people. Thirdly, it triggers new mixed function areas close to the transit stop with commercial functions and offices mixed with residences. Living and working conditions are created together with living quality and local job opportunities increased.

Traditional MTS model



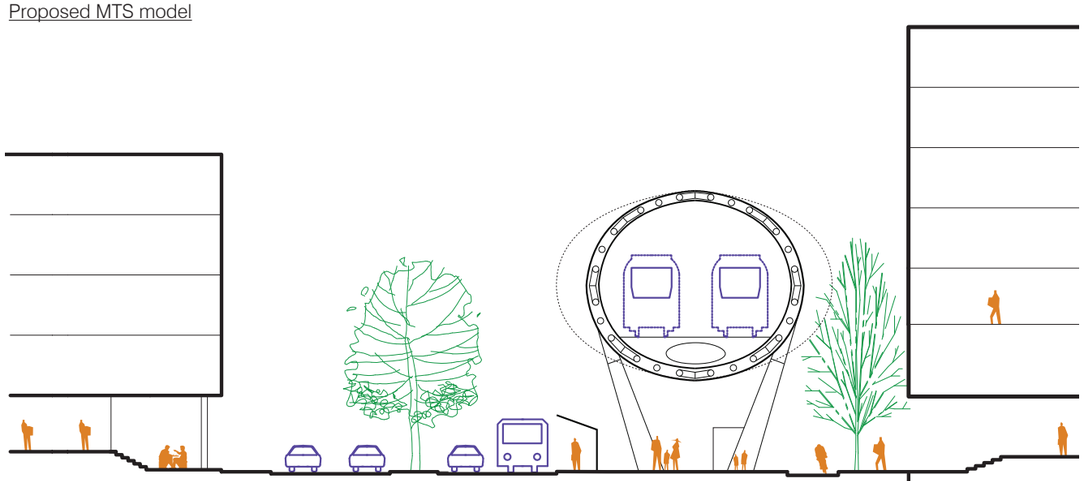
The traditional model of the MTS creates negatively to the urban quality. With its machine-like conditions, the huge concrete structure obstructs sun light and wind to penetrate through, which leaves the ground floor fully with dust and cars exhaust fumes. This produces uncomfortable walking environment (Jenk, 2003).



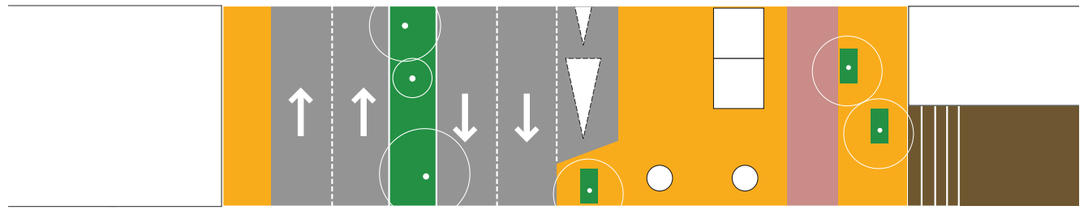


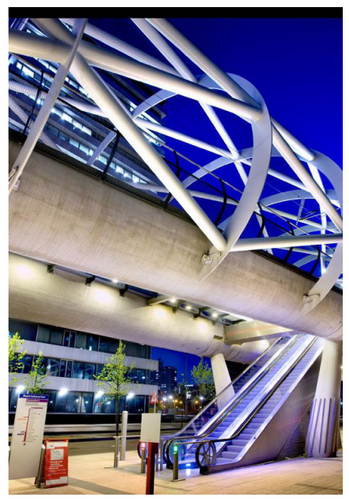
Images showing existing quality of areas under the MTS, Source : http://thinkofliving.com, www.mnn.com

Proposed MTS model

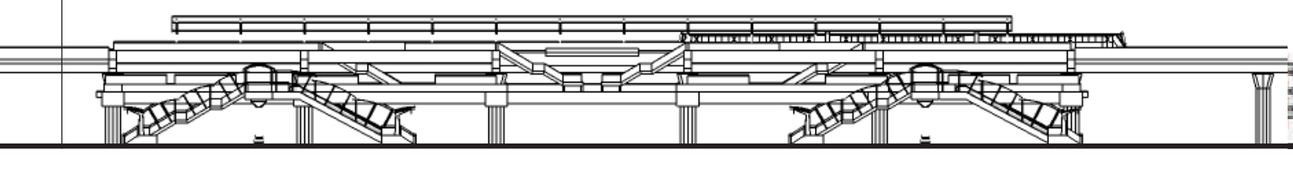


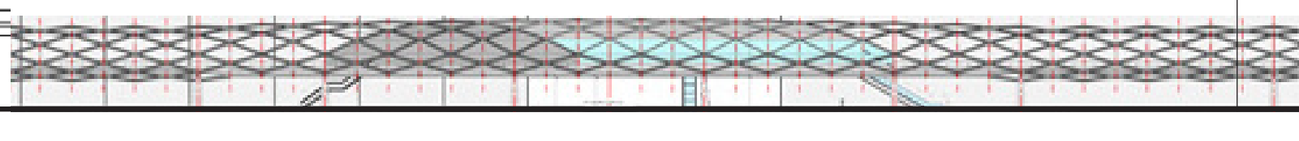
The new MTS model helps improve spatial quality of the area. The light structure requires less columns to support. In other words, there are more useful shading spaces on the ground in particular when the model separates pedestrian out from traffic. The ground level can be used dynamically in terms of recreation, commerce and so on. Besides, it also can get sun light and natural ventilation.

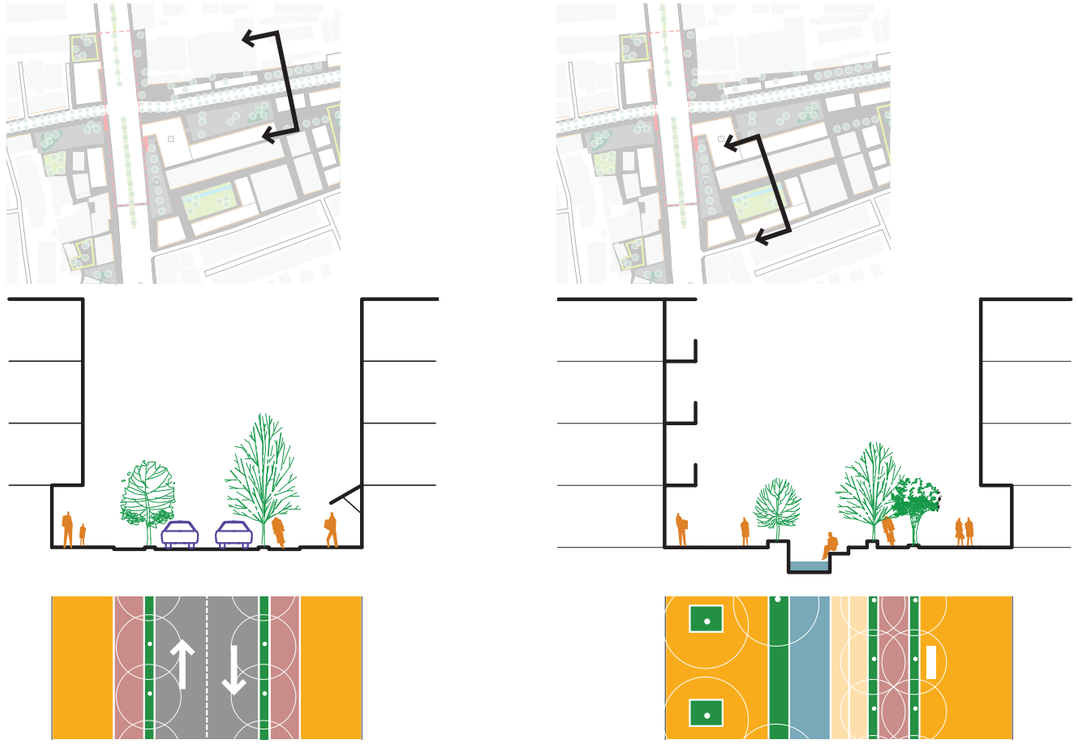




Reference images showing spatial quality brought by the MTS (Beatrixlaan, The Hague), Source : http://www.zwarts.jansma.nl

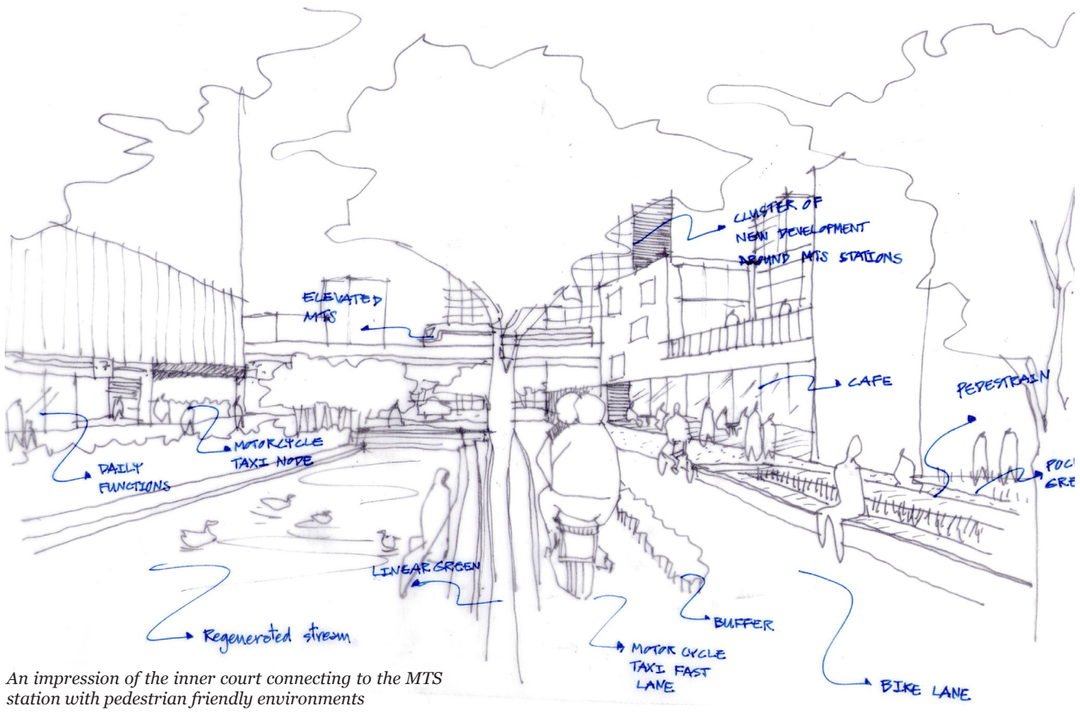






The section shows a new connection to the MTS station. Motor cycle taxi lanes are separated to get a fast and flexible link to the destinations.

The section shows a car free and pedestrian friendly zone. Street life with commercial activities and slow traffic are introduced to the area as well as historic streams.



An impression of the inner court connecting to the MTS station with pedestrian friendly environments

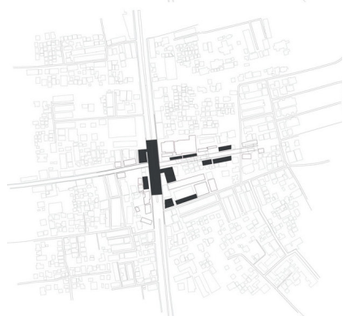
Phasing

1. Current condition of the area

2. It starts with a selection process , which dilapidated buildings and slum are demolished. Good and functioning buildings are kept and getting subsidy to renovate.

3. New connection has been constructed, which helps commuting more conveniently and reorganizes road network hierarchy.

4. MTS construction completes at the same time with offices and mixed functional buildings facilitating local needs and supporting the project financially.

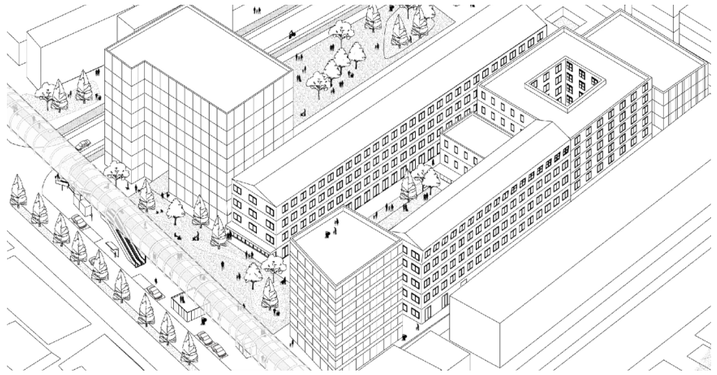


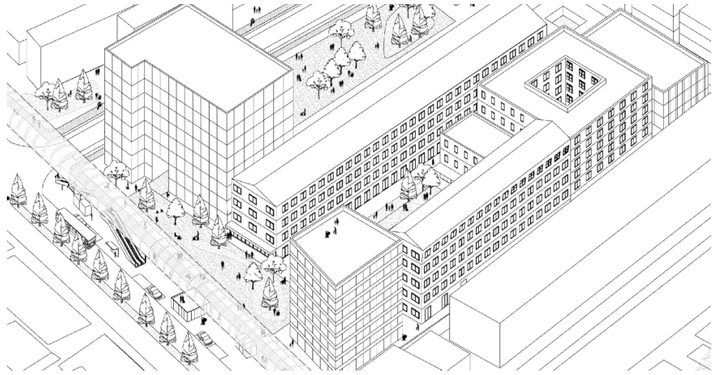
5. Apartment buildings are built to create working and living environment at the same time supporting new comers to the area and increase land value with a proximity to MTS nodes.

Isometric showing the new development areas adjacent to the transit stop (new buildings are colored in white)

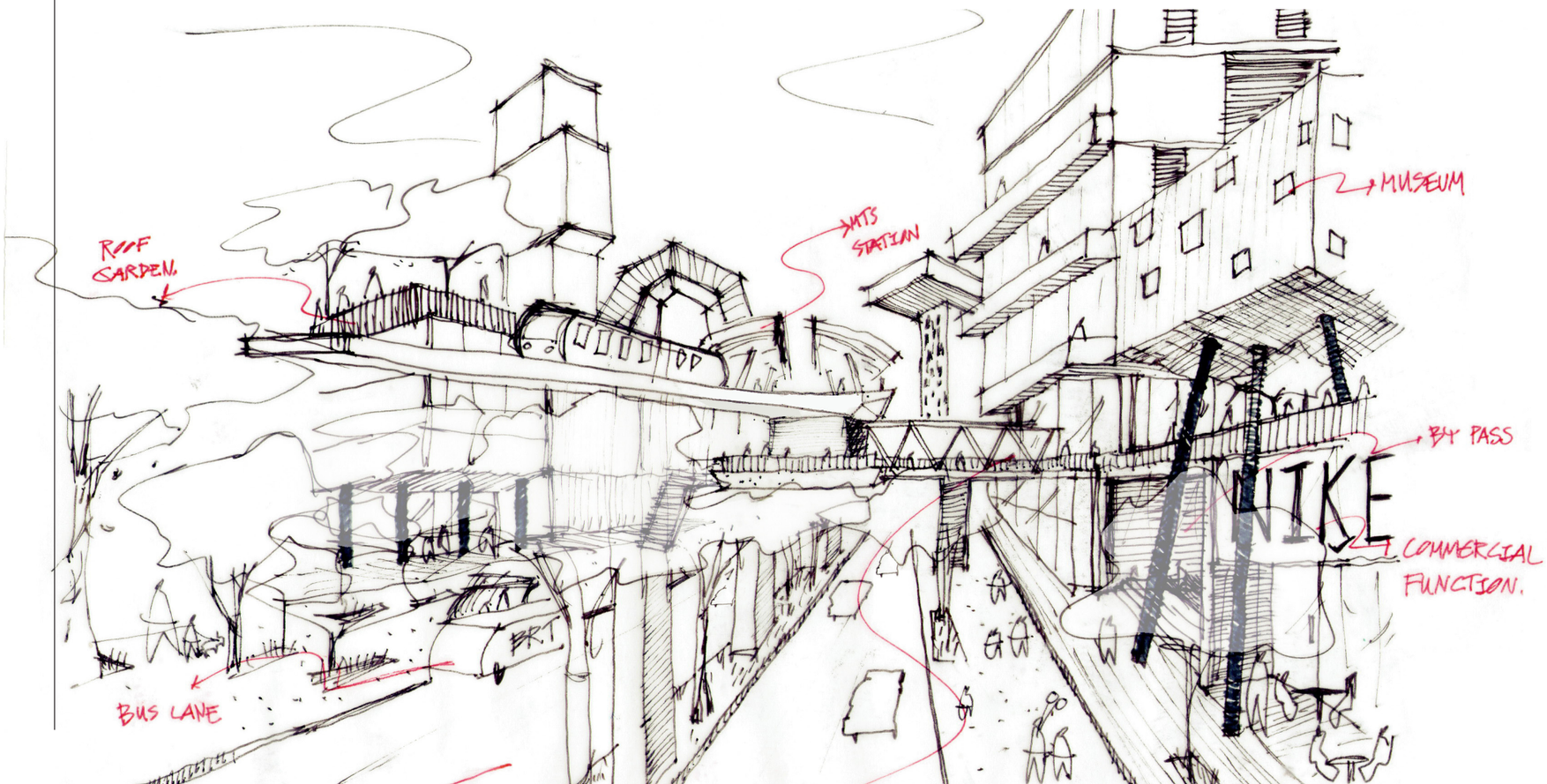
The captures of the movie showing sequences of activities in the area.

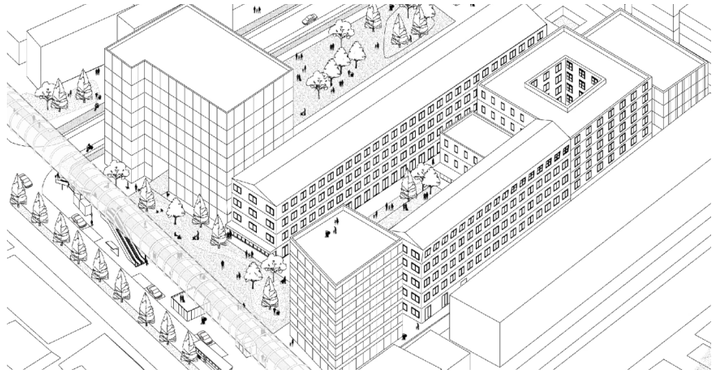
Full movie is available online at: http://youtu.be/ldDTdoQgUsc

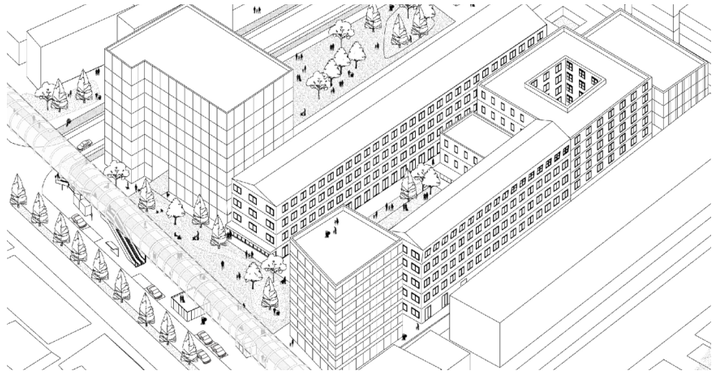




An impression shows the new developments along traffic arteries with mixed functions by using TOD concepts



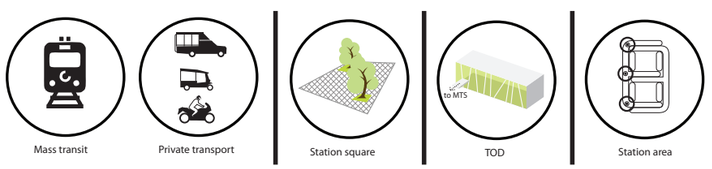


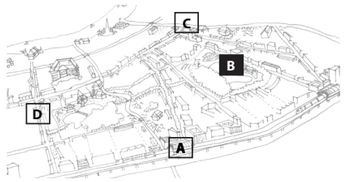


Current condition of the area, which as plan, the MTS is going to be implemented

EQUITY OF MOBILITY

a. All social classes will be able to get on the public transport system
b. The gradient of development from transit corridors to local areas together with an improvement of spatial quality
c. New functions will improve access and economic status regarding to demands





C: Transformed Open Space

Together with the mobility strategy, new connections help break trough urban grid, which can transform the barrier(void) to be an accessible open space for the area and the West bank. Slums will be replaced by social housings with retail functions on the ground floor to stimulate interaction and attract people. Urban farm is possible to maintain the green area. In terms of maintenance, private developers will get bonus to develop when they take care of green quality. For local people, local and park related functions are placed as well as mix functions handling financial supports.

Strategy

- New social housings help serve people who suffer from an expropriation process
- Flexibility of room types and various typologies make housing projects more sustainable
- Apartments are allowed to be built to support financially.
- Local functions are created to serve new communities and facilitate users of the park
- Public space is the key issue to blend local and new residents and stimulate interactions

Stakeholders

GOVERNMENT AGENCIES:
Local administration, BMA, Bangkok conservation divisions, Social housing authority
SOCIETY:
Local residents, Land owners, Local developers, public organisations, cultural organizations

INVESTORS:
Private developers, Private investors

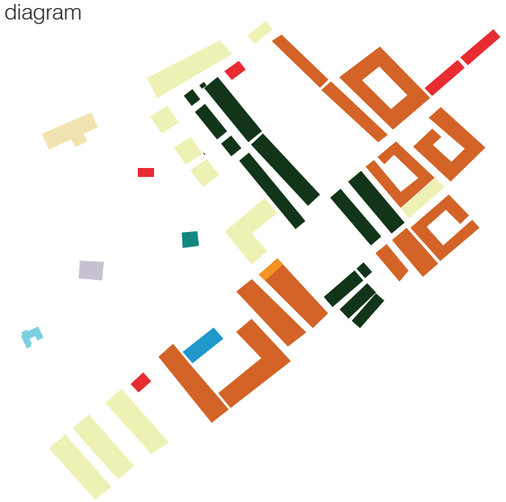
Actions

- Accessible greens on the west bank improving living quality
- Affordable and social housings with diverse typologies
- Economic activities are located on the ground floor of new buildings.
- Apartments are constructed for financial reasons, mix social class and value added.

Key words

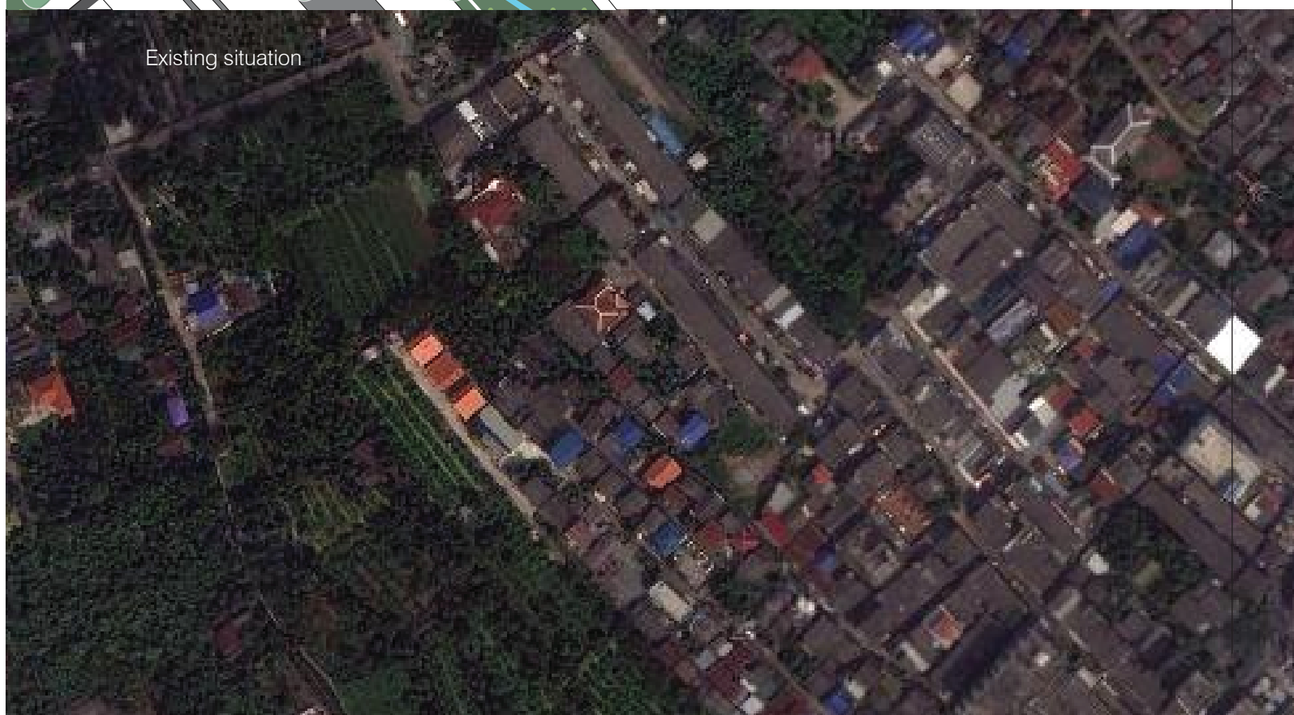
Flexibility, Diverse typologies, Financial support, Cohesion, Local and service functions

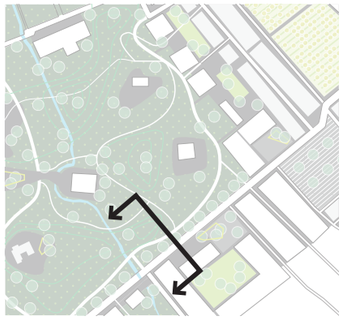
Functional diagram

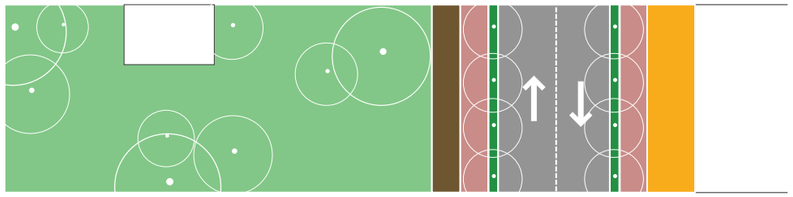


Apartment
Commerce
Service
Info.
Tea house
Library
Community centre
Gated community
Sport
Social housing

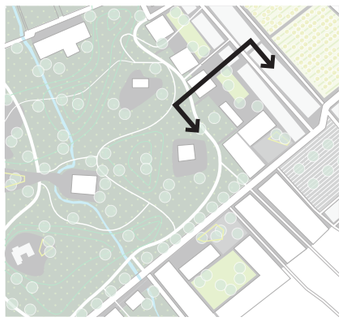
Inventory and Management strategy

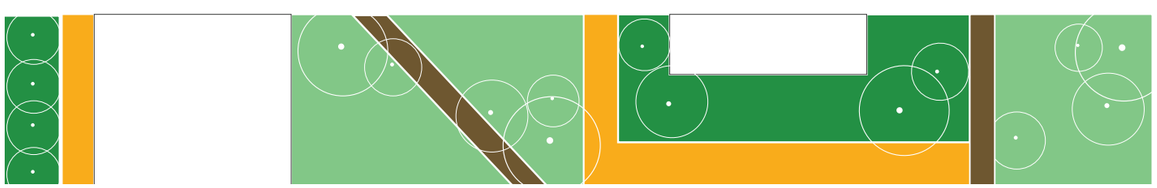






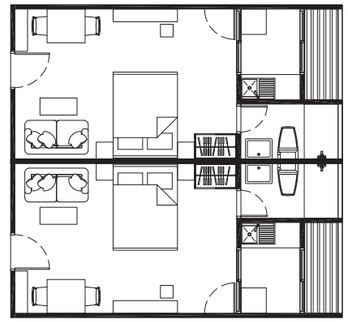
New park will increase local living quality. New connections transform spatial barriers to urban park. Slums are replaced by affordable housings with diverse functions and typologies making it flexible to adapt in the future. It increases local access to greens, services and communities functions. To be more safe for residents, slow traffics are separated from car roads.





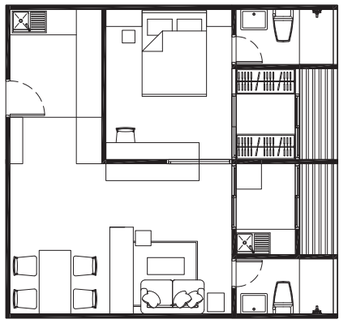
For financial reasons, this section shows apartment buildings built adjacent to the urban park. With its small footprint, it will not block a view to the park. Besides, it provides a clear role of the open space, which inner courts are used by local communities and the park are welcomed to all range of people. The permeability, resulting from its typology, is created that can help trigger vibrant atmospheres on the street level by mixed functions on the ground.

1



studio type

2



one bed room

3

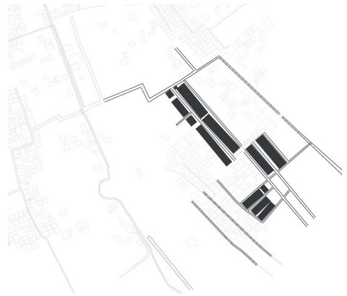
two beds room

The plan shows examples of flexible room types of social housings. It covers 30 sq.m., which can be changed from studio type (1), one bed room (2) or two beds room for a family (3). Therefore, this flexibility can cope with different needs of tenants without a demolition in the future.

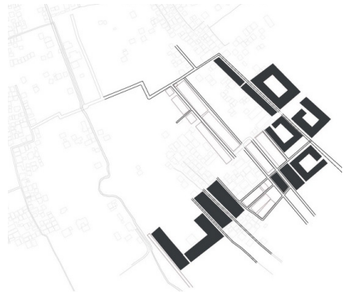
Phasing

1. Current condition of the area

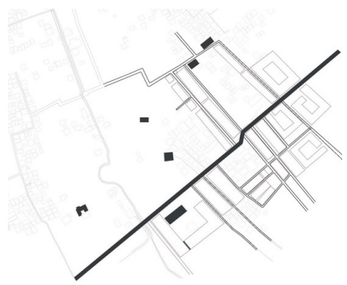
2. Gated communities are kept. At the same time, slums are removed.



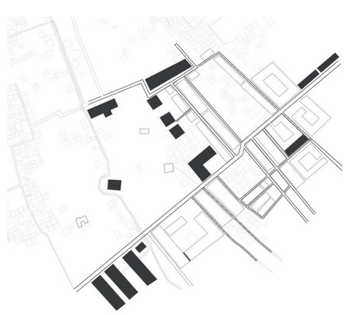
3. Social housings are constructed first with various typologies to accommodate different people needs.



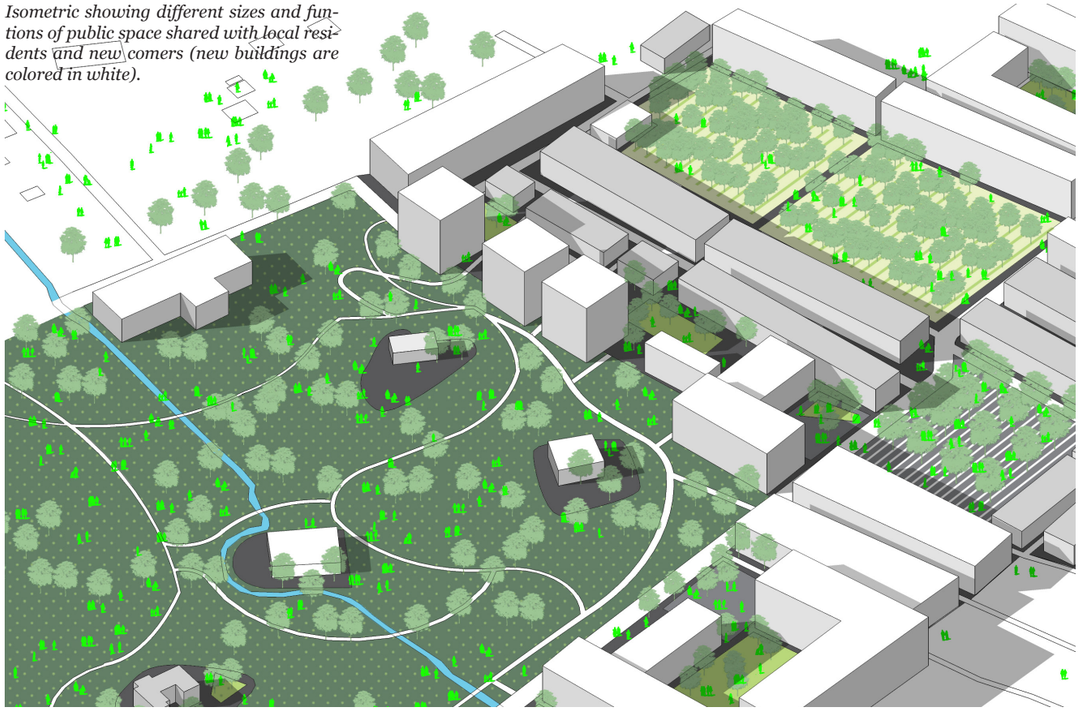
4. New connections are built to open up the void and to connect to the MTS stops. Simultaneously, when many people live in the area, it becomes a community. Communities supported functions are created.



5. As mentioned, for financial reasons and to update land value, apartments buildings are established together with park supported functions.

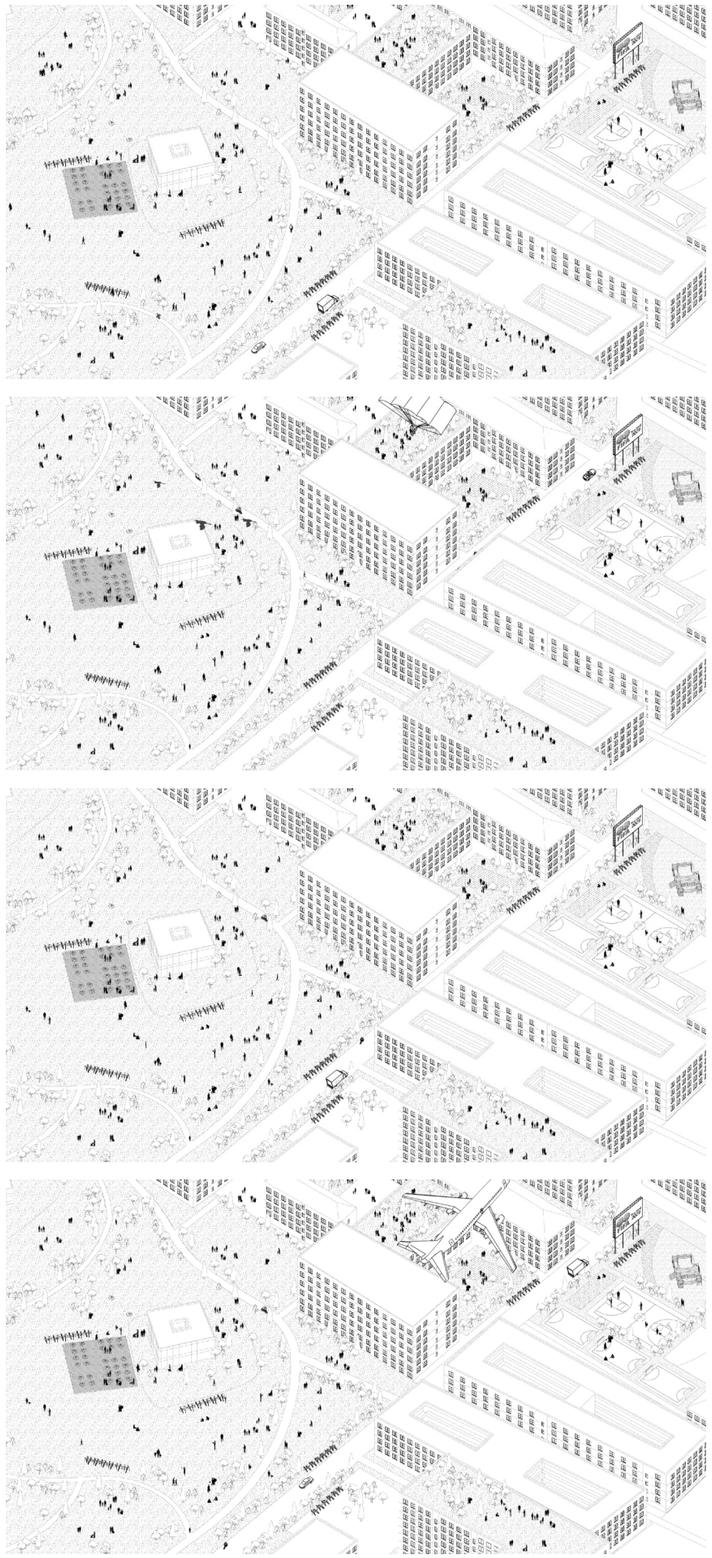


Isometric showing different sizes and funtions of public space shared with local residents and new comers (new buildings are colored in white).

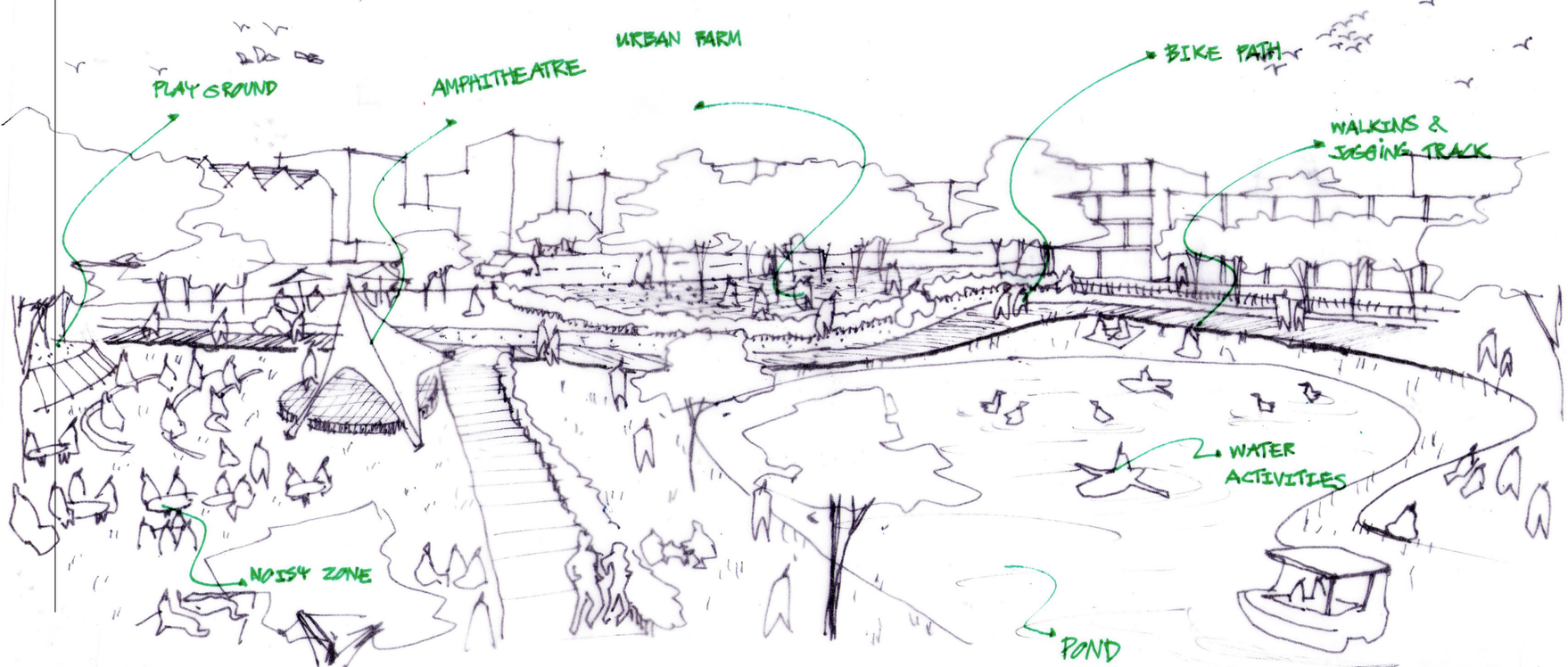


The captures of the movie showing sequences of activities in the area.

Full movie is available online at: http://youtu.be/BjBoV8oHwuo



An impression of the accessible urban parks with diverse activities



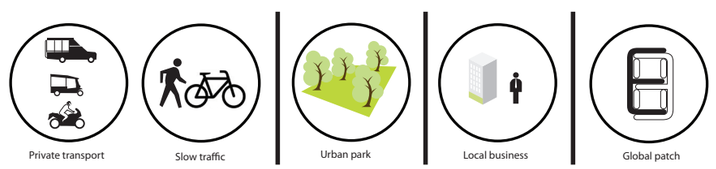
Current condition of the spatial barriers

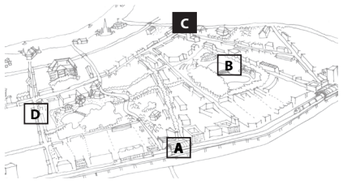
SOCIAL COHESION

a. Accessible green spaces particularly to the West

b. Public spaces stimulate social interaction

c. Proposed building typologies are designed aiming to blend new comers and local residents together by sharing the same social position





D: Riverside Areas

Dense communities, located along the river, are the character of the area from the past before roads were constructed. They hold historic value and identity. The strategy aims to preserve them and at the same time enhance living quality. New solutions provide exploitation from tourist industries when the area is posted on the tourist map, passing by tourist towards tourist attractions brings big opportunities to the area. This strategy can transform ghetto and low-income living area to be livelier. On the one hand, tourist can enjoy riverside atmosphere and be more convenient towards the attractions. With a support by the government, profits from the tourist destinations must be channelled back to local to improve the living quality.

Strategy

- New connections improve local access to open space; blue and green networks
- New open spaces can be used by all range of people
- New public spaces and local pocket space help improve living quality
- Local residents can benefit from tourist industries in terms of jobs opportunities and fiscal supports

Stakeholder

GOVERNMENT AGENCIES:
Local administration, BMA, Bangkok conservation divisions, Bangkok tourist division
SOCIETY:
Local residents, Land owners, Local developers, public organisations, cultural organizations
INVESTORS:
Private developers, Private investors

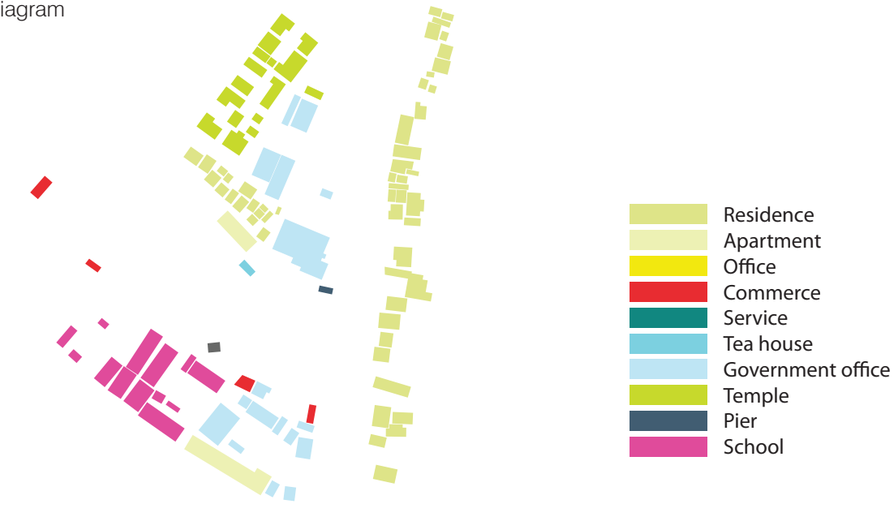
Actions

- Urban projects are proposed to regenerate the area along the river and to retrofit potential spaces in the communities as public spaces in order to enhance living quality.
- New developments done by local are possible to exploit from new comers and tourists.
- Public space will be regenerated and opened for public uses.
- Local residents will turn towards water oriented activities, which maintain historical continuity.

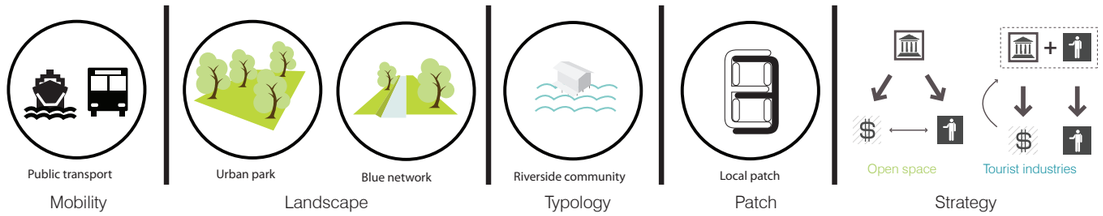
Key words

Tourism, Local access, Open space, Riverside communities, Historical continuity

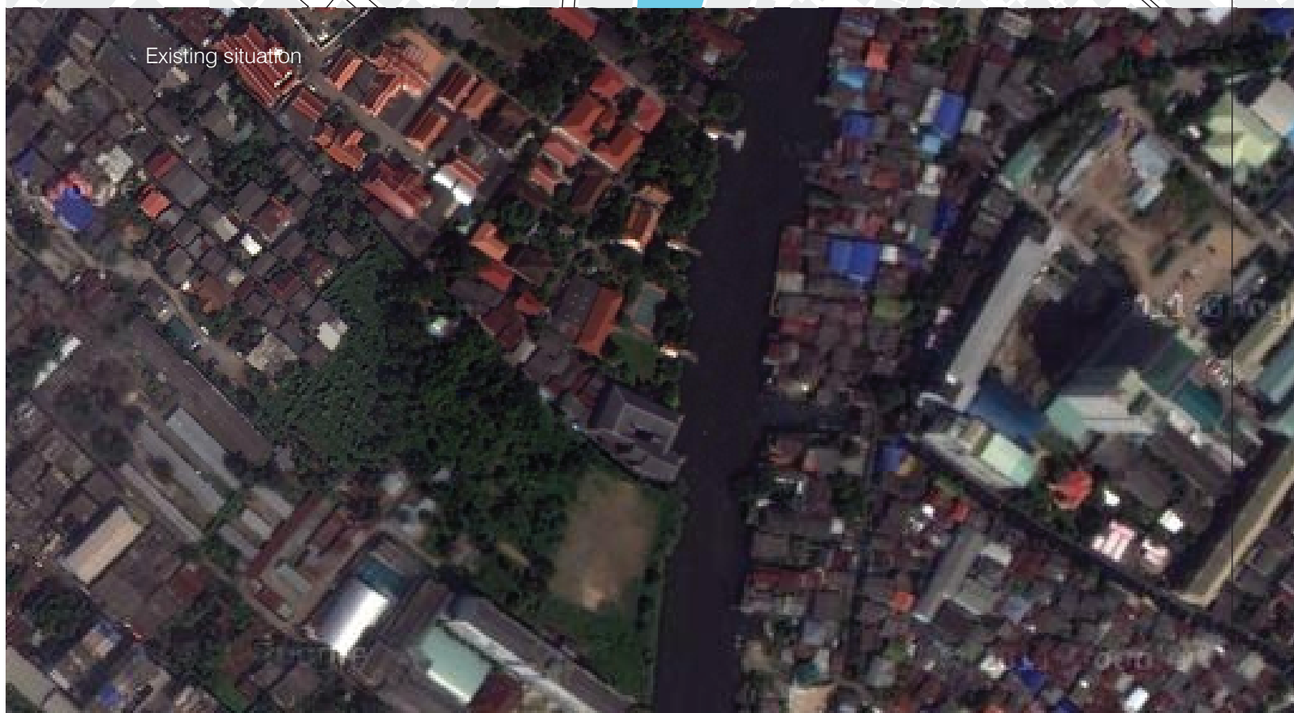
Functional diagram

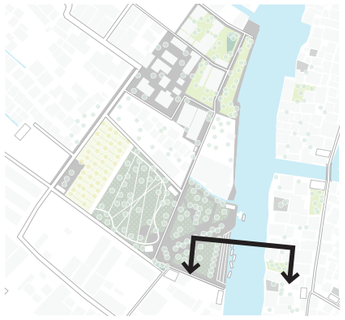


Inventory and Management strategy

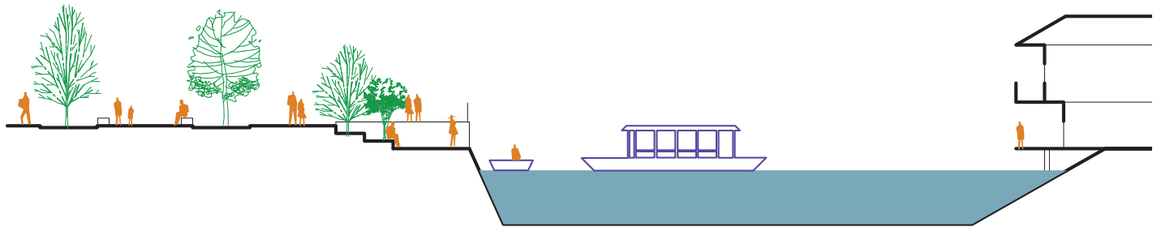


Masterplan





The green area has been transformed together with reorganized street patterns. It results in an accessible riverside open space. It helps regenerate a promenade along the riverfront connecting to public space in the nearby temple. The public can be used by both local residents and tourists. The consequence is not only to improve local living quality, but also job opportunities around the area along both side of the river.
Communities on both other side of the river are welcomed to use and get benefits from subsidy from tourist industries.



Phasing
1. Current condition of the area

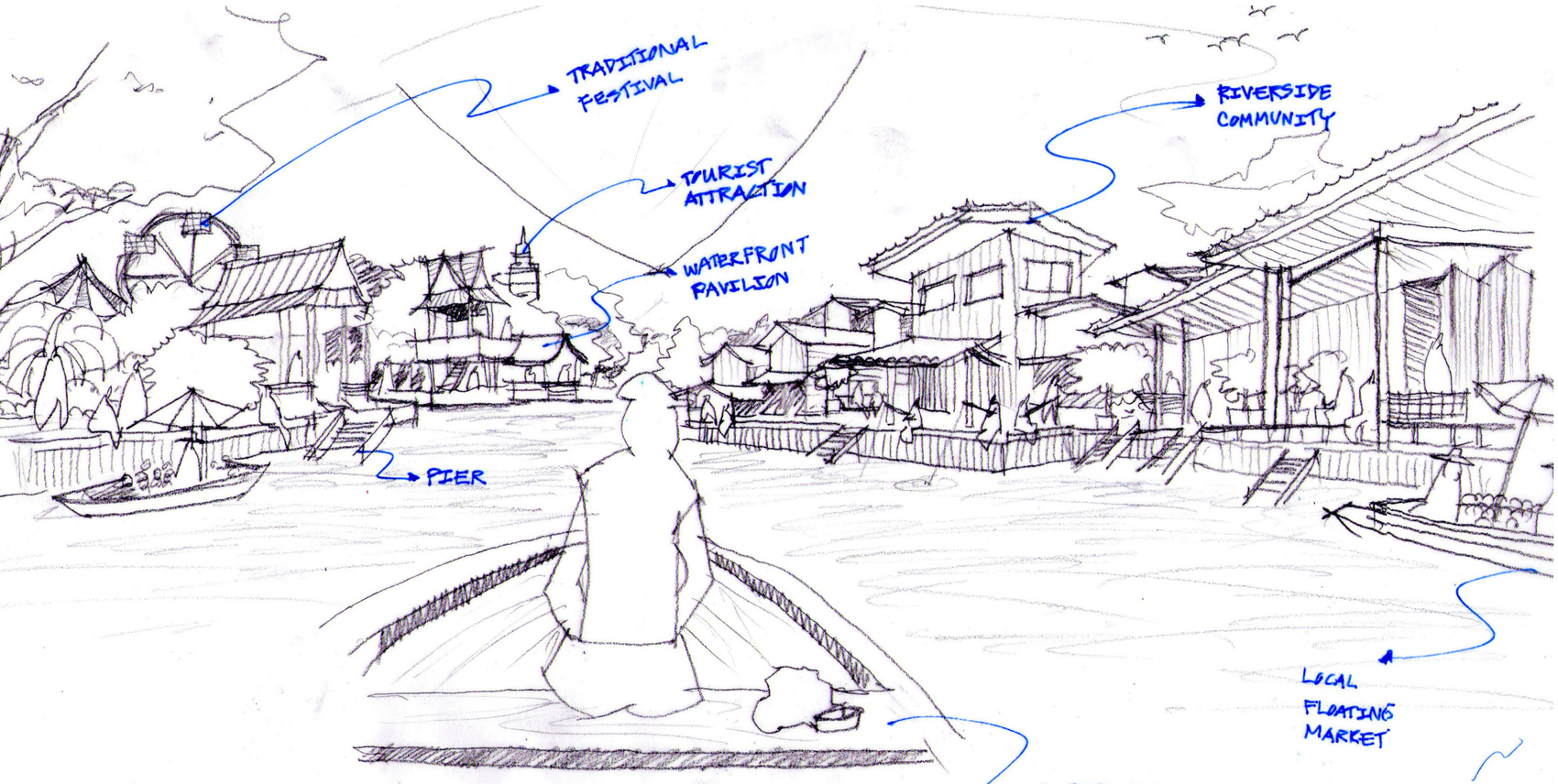
2. Almost all buildings are kept. They carry historic value with an orientation towards water. The street pattern are organized and connect to each other used by local.

3. Riverside communities initially benefit from financial supports from the government to increase living quality; squares and pocket spaces regeneration, in order to keep them stay in the area.

4. Local open spaces are constructed providing communities riverside parks for local. Moreover, promenades are connected to existing pedestrian walkways to complete the loop.

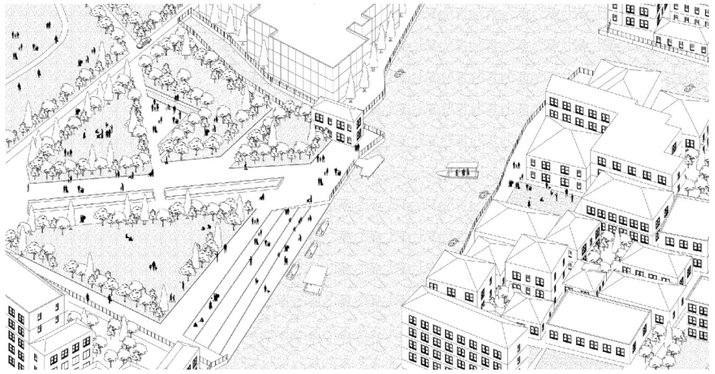
5. New functions are located to serve users of the park. It leads to local job opportunities increased.

Isometric showing the transformed riverside public space that stimulates riverside activities and identity (new buildings are colored in white)

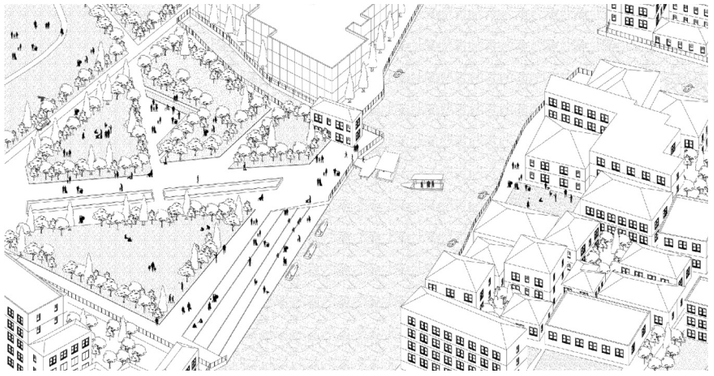


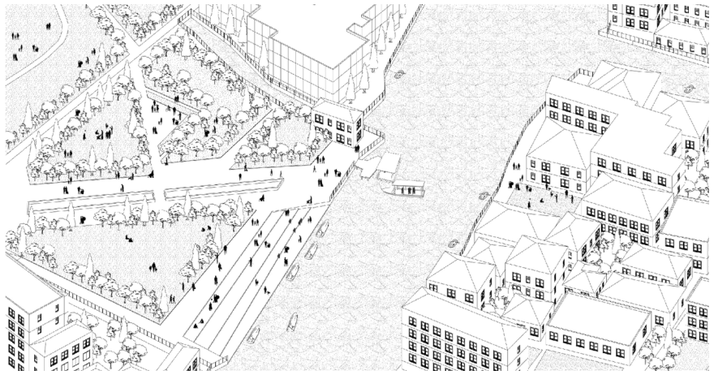
The captures of the movie showing sequences of activities in the area.

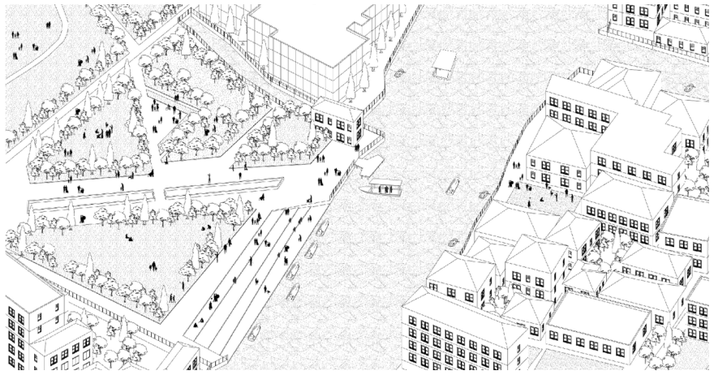
Full movie is available online at: http://youtu.be/BGn48FFIEFw



An impression of the riverside atmosphere from a point of view of tourists riding on the boat from the MTS station.



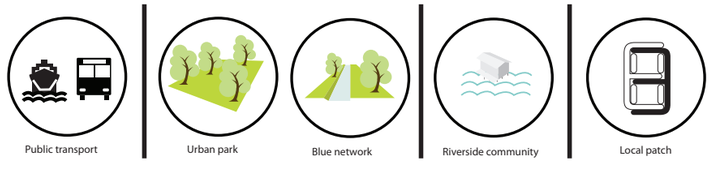


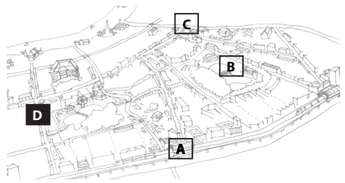


Current condition of the traditional riverside area, which connects the MTS station and the historic core

SOCIO-CULTURAL IDENTITY

a. Maintain historic value and social identity of living heritage
b. Keep physical form and local citizens historically continue
c. Improve local living quality of the riverside area





B: Local Connection

Local routes are the result of new connections. It will guide people from the MTS on the main roads towards local areas: market, communities and heritage sites. The routes will integrate new local businesses and mixed-use areas (starters, street vendors, adaptable buildings, retails and so on) in relation with the human network strategy. New functions will cluster along the streets. Moreover, to get vital streets, new buildings will turn their front façade to the streets. Local vendors will be put properly in pocket spaces, which act as local scale public spaces for different events or cultural activities. From potential to active streets, they create more diverse uses and opportunities to local dwellers.

Strategy

- The new local connections, resulting from the mobility strategy, will provide big potentials to transform mono-functional area to be more diverse reducing unnecessary travel distance for local.
- To avoid radical changes, the streets are chosen strategically to be upgraded or downgraded, which slow traffics and pedestrian paths are combined with safety conditions.
- The potential areas along the streets will be mostly developed by local people, who live there before. In other words, local residents get priority over private developers.
- Proximity of spatial connections to local fresh market brings more diverse users and intensity to the historic area.

Stakeholders

GOVERNMENT AGENCIES:
BMA, local administration, Ministry of transport, Conservation authorities, Municipal official (whose duty is to take care of cleanness)

SOCIETY:
Local residents, Land owners, public organizations, cultural organizations, Local investors, Local enterprises, street vendors organizations
INVESTORS:
Private developers, Private investors

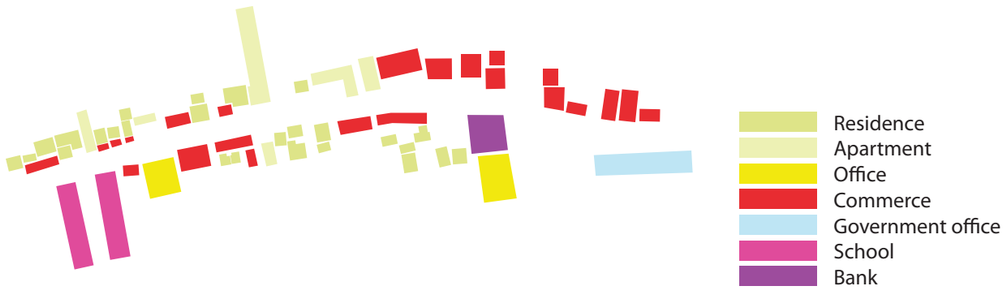
Actions

- Improvement of local access by new spatial linkages
- Stimulating local businesses and services to improve living conditions socially and financially
- Providing well designed pocket spaces for different activities to be placed orderly

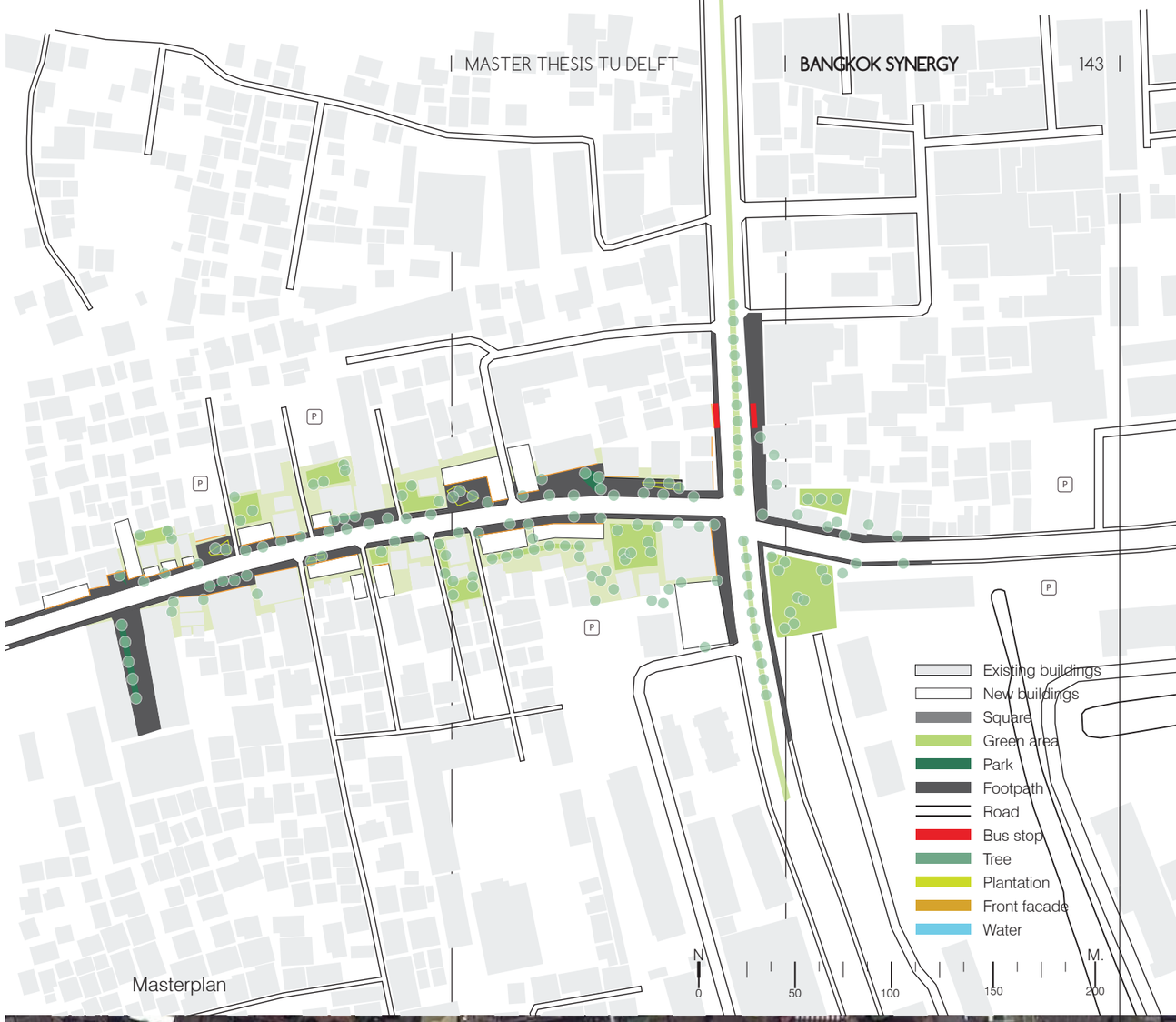
Key words

Local quality, Safety, Local priority, Commercial activities, Vital streets

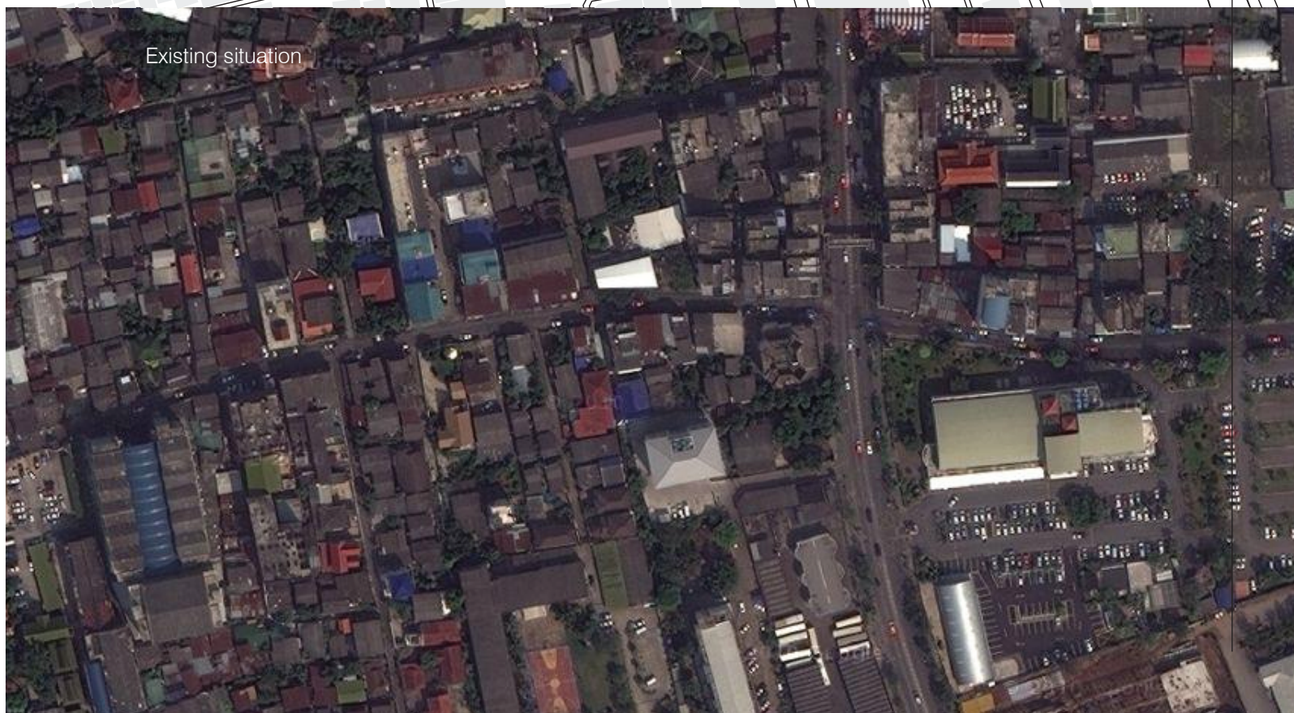
Functional diagram



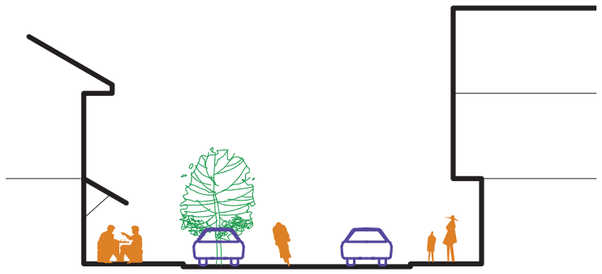
Inventory and Management strategy



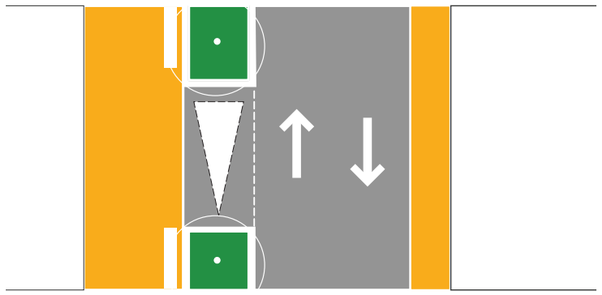
Masterplan

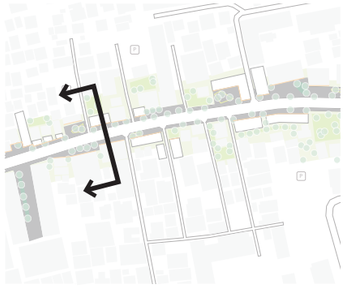


Existing situation



The section is made in the area of local connections. It describe a new street profile, designed as woonerf -like conditions, which streets are mostly used by local residents. Slow speed traffics are available in terms of car, motor cycle and bike. To encourage street life, pedestrian sidewalks are designed to provide safety for local. Parking is allowed temporarily along the street. New and existing adaptable buildings help promote mixed functions to the area, where commercial programmes locate on the ground floor.





The section shows the existing of a rich green quality on the street of the area. New buildings have to follow the urban rules to preserve street ambiences. Developers will get subsidy in a form of tax reduction and fiscal supports as same as local residents. This rule also includes nearby areas such as interiors, private green areas or pocket spaces. When the MTS completes, local will get a priority to develop in terms of an adaptability of functions, area extensions. However, parking is not allowed permanently on streets, but inner areas.

Phasing

1. Current condition of the area

2. Good quality historic buildings and housings are kept and developed to enhance street life with commercial activities and living quality. In terms of this adaptability, local dwellers get prior opportunities to invest over private developers.

3. New side walks are built in order to get a safe pedestrian conditions leading to the other road, where the MTS is located

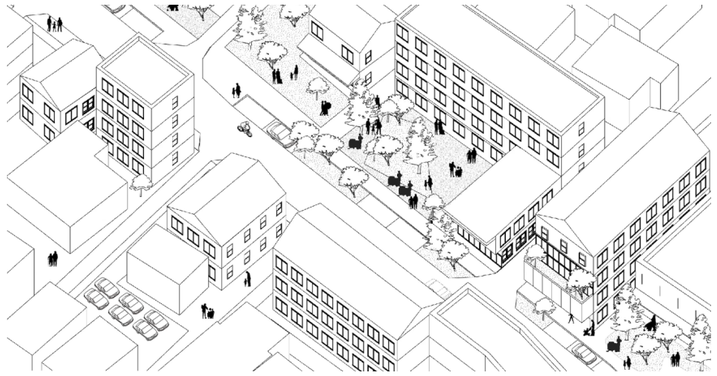
4. New buildings are inserted in vacant spaces with mixed functions. Commercial activities take place on the ground floors.

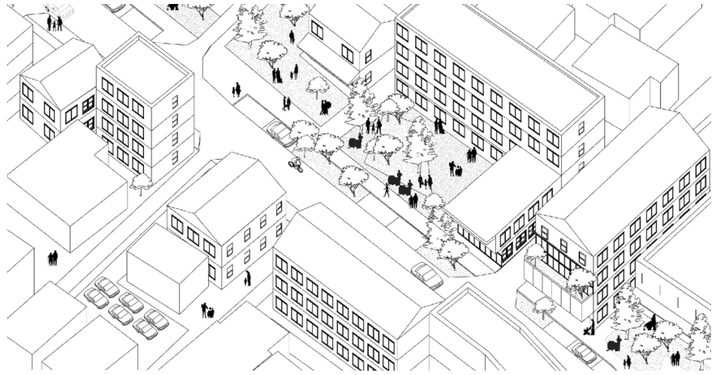
5. To keep a richness of existing quality, local residents will get subsidy to maintain their front facades and nearby areas (small pocket spaces, green areas and interior of their buildings).

Isometric showing the street atmosphere, which slow traffic get a priority in order to get vitality (new buildings are colored in white)

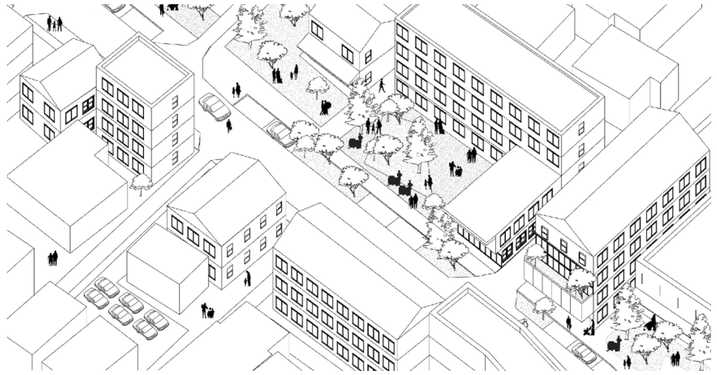
The captures of the movie showing sequences of activities in the area.

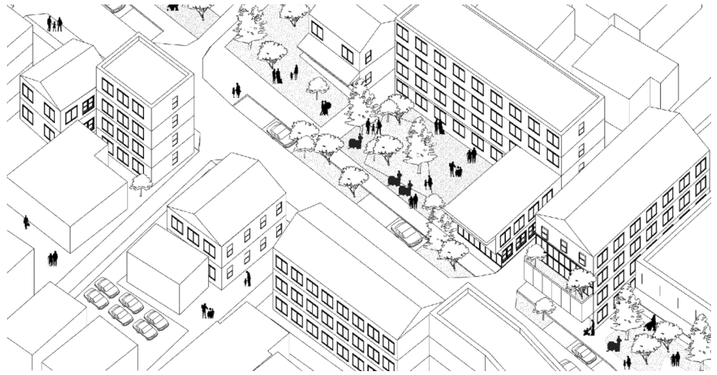
Full movie is available online at: http://youtu.be/mwJLXmfQTFc





An impression of the street life atmosphere along the vital street





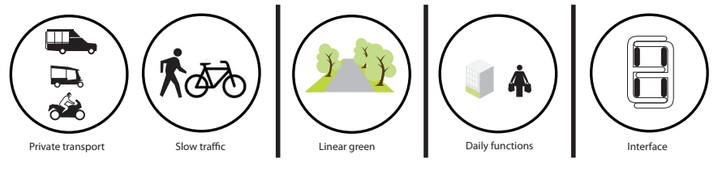
Current condition of the street directly linking to traffic arteries

AN IMPROVEMENT OF LOCAL QUALITY

a. Contribute to bottom-up development

b. Stimulate social surveillance

c. Create vital streets with pedestrian oriented conditions



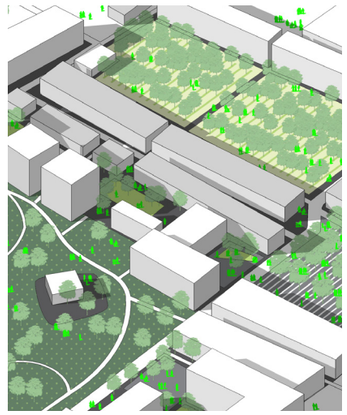
Chapter 7

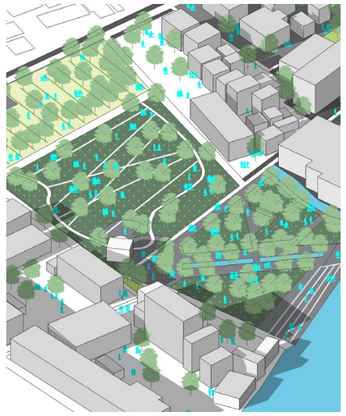
MANAGEMENT STRATEGY

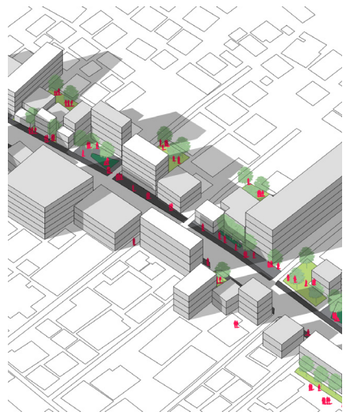
After testing the strategies on the four strategic projects, now this chapter will elaborate on how to realize the vision by keeping the core objectives of the project still. The first part will conclude all proposals regarding to the city plan. Then, a set of recommendations on management rules will be elaborated in terms of governance structure, phasing and stakeholders to guarantee acceptable outcomes of the project. In addition, the urban rules in the last part will be described crucial parts of the project and applicable to similar projects.

Illustration 7.1 showing conclusion as a meaning of integration: overall proposed strategies in relation with the government plan

Strategy and Reflection







		(Mobility)	(Landscape)	(Tourism)	(Programme)
CITY SCALE	City Urgencies	Public transport	Water management Open space	-	Metropolitan region
	Government Plan	MTS BRT	Waterfront Regeneration	-	New development areas
DISTRIC SCALE	Current Problems	Fragmented spatial network	Neglected open space	Out of the tourist map	Monofunction
	Proposed Strategy	Infrastructural network	Natural network	Tourist industries	Human network
INTEGRATION	Effects	Spatial connections - coherent grid - completed transport network - cooperative mode of transport	Openspace network - integrated blue and green network - waterfront regeneration - accessible green	Heritage tourism - expanded tourist map - financial support - maintained identity and historic value	New city model - polycentric model - diverse typologies and programmes - access increased

Inflexibility: Drawbacks of the traditional model

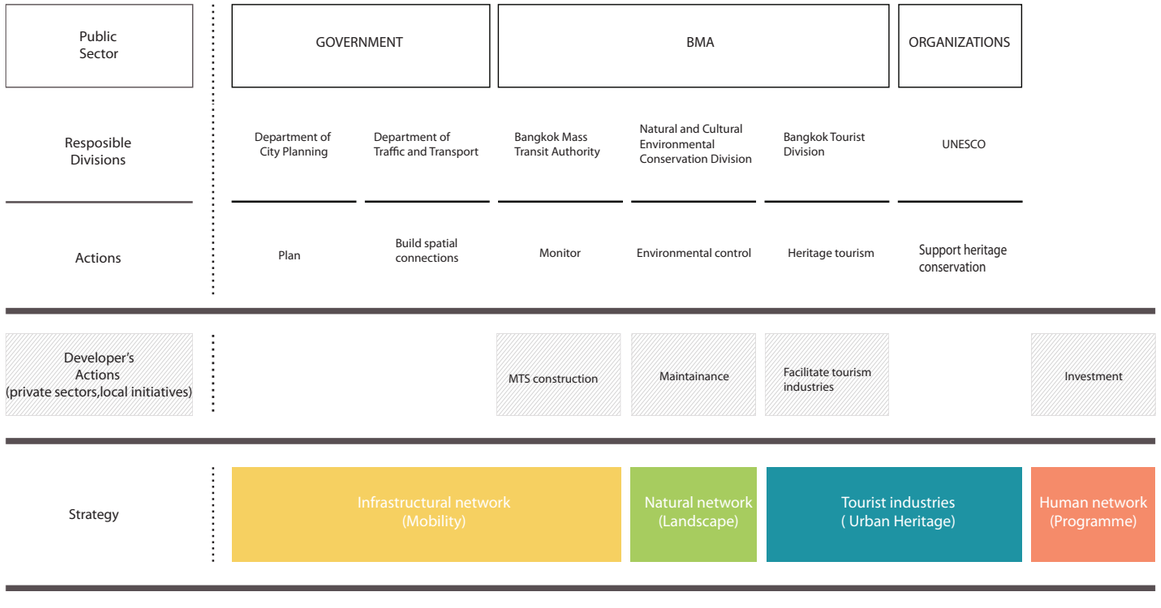
The current condition of the city management structure is that the municipal parties and other public sectors regulate city spaces through zoning systems, capital planning and other kind of regulatory frameworks. The intensity of control makes plans more inflexible and anti organic growth.

The thesis focuses on a potential of flexibility in planning, which is able to accumulate and cope with changes and demands of local inhabitants. By enhancing crucial aspects to facilitate local patterns in order to make city life continue and leave other parts still the same, these step-by-step changes can fulfil basic needs of local residents and give a chance for initiatives and individual decision making in reprogramming by civic parties. Therefore, public policies are highly needed, which will provide a regulatory framework regarding specific context.

Local participation

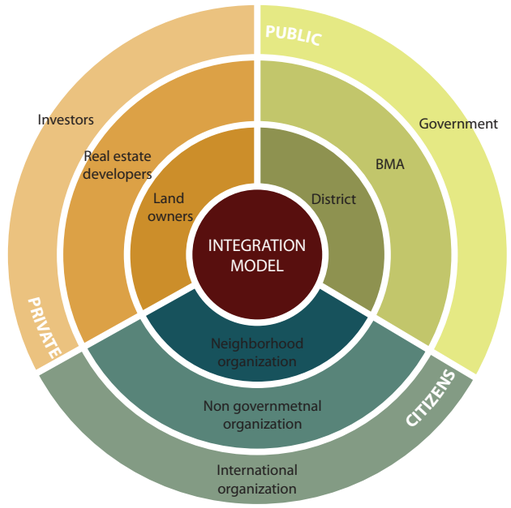
To deal with potentials of an improved spatial quality, which will be done better than the ordinary model, it is very important to reorganize the governance structure of the city. The new model welcomes local people to be in the planning process. The reason is that for the historic core, the historical continuity is crucial. Localness will be produced by local inhabitants. With this approach, it brings sustainability to the areas. Besides, many conflicts can be solved more easily, when the three parties are put together in a discussion, which leads to common interests and a balance in power relation among those groups. These vulnerable groups will be preserved and able to get reasonable benefits from global development. Therefore, as never happened, integration of the MTS and the urban tissue results from cooperation between global and local dimensions.

Illustration 7.2 showing responsible parties of the project in line with proposed strategies

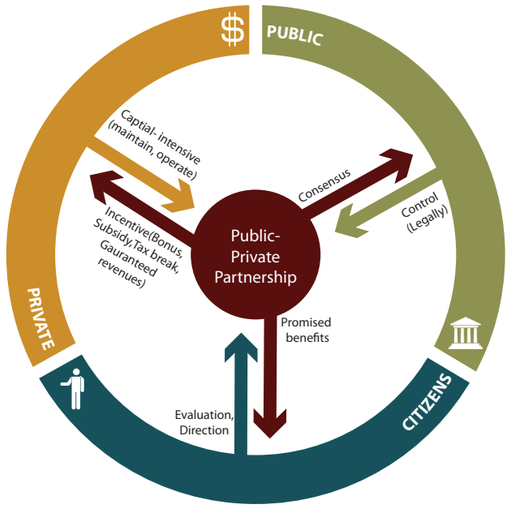


Involving parties

To realize the goal, the illustration 7.2 and the diagrams below shows involving sectors of the project.



The diagram shows different involving parties in three working scale.



The diagram shows inputs and outputs from different parties with the idea of public-private partnership.

Public sectors

The infrastructure development in Bangkok is usually done by public sectors. Responsible authorities also give a plan to cope with expected consequences, and then private sectors come in and take actions on the investment. Therefore, authorities need to be fair democratically in making decision and clear objectives. They should provide opportunities to invest for public interest and ensure to be safe that the core objectives will not change. Moreover, they should bring local into the process, because it is important for the area, which has historic value, to have local participation and raise their awareness. This management leads to a consensus and common interests of cooperation between these three sectors, initially done by the government.

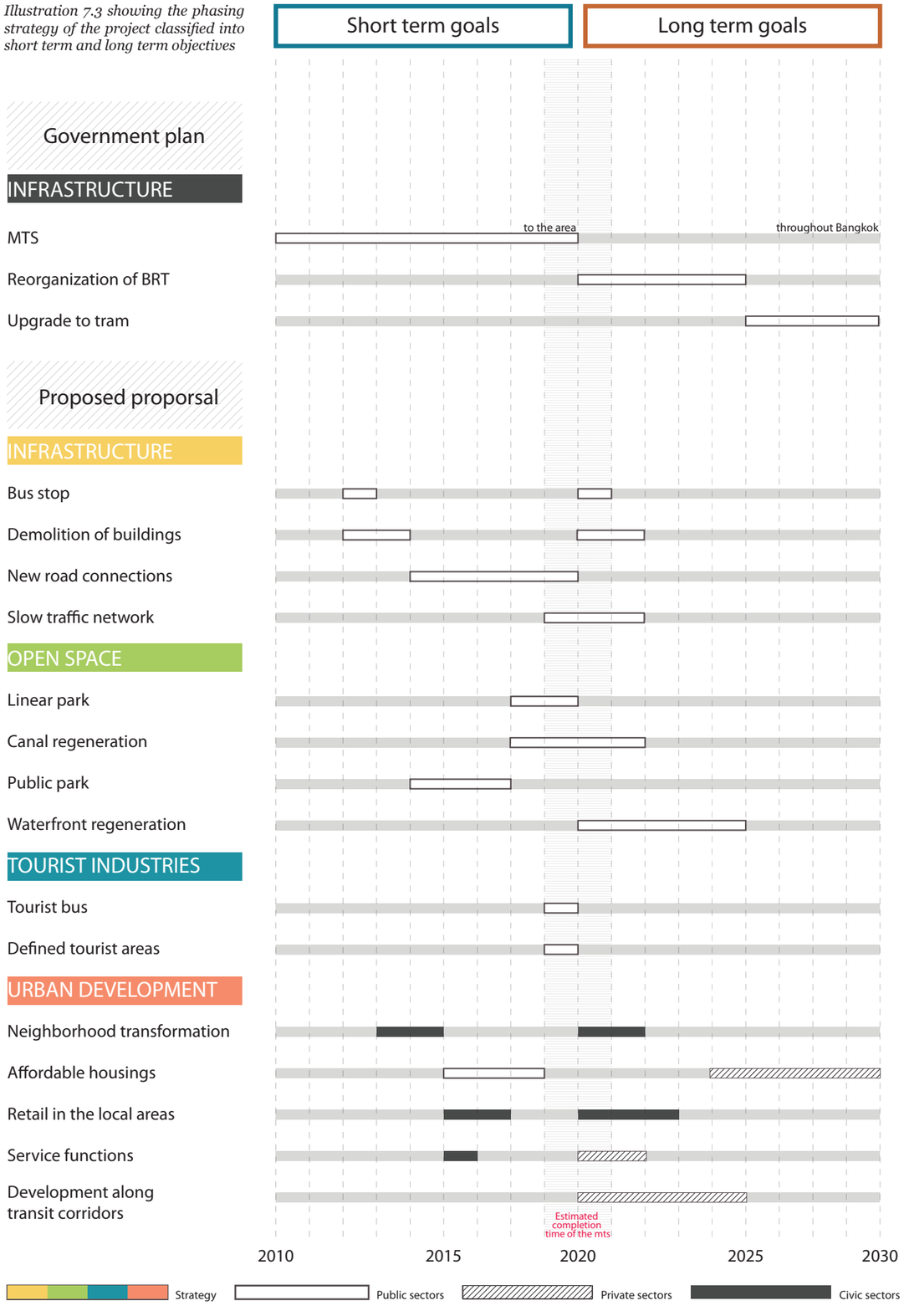
Private Sectors

Private sector is the main investor of the project to keep the project going more dynamically and flexibly. Several private sectors, who can join the project, are banking companies, transport related organizations, real estate developers and so on. Some private sectors may benefit directly from the project. One example is the MTS station along the main Road, where the adjacent building and real estate are connected directly to the MTS stop or new open spaces. The financial strategy for this condition is to include the adjacent building and real estate as the investor of the adjacent stop. In other word, the adjacent building and real estate need to maintain the MTS stop and open space with bonus and subsidy to get acceptable profits by maintaining and supporting the strategy.

Citizens

The role of citizens is to participate into the project. The main goal of the project is to improve integration between the historic core and the MTS, thus it is important to know the existing quality of life in affected neighborhoods. Local residents will get a higher priority to invest in the project and give a decision on the ongoing process. This is the reason why a variety of building typologies and scale is very important in mixing balance of functions and the provision (new housing and affordable housing) . In terms of local businesses, typologies provided are adaptable, which economic activities are possible to take place on the ground floor. Besides, pocket spaces are allowed to use by local temporarily such as open markets. As a result, it will preserve local quality of Bangkok

Illustration 7.3 showing the phasing strategy of the project classified into short term and long term objectives



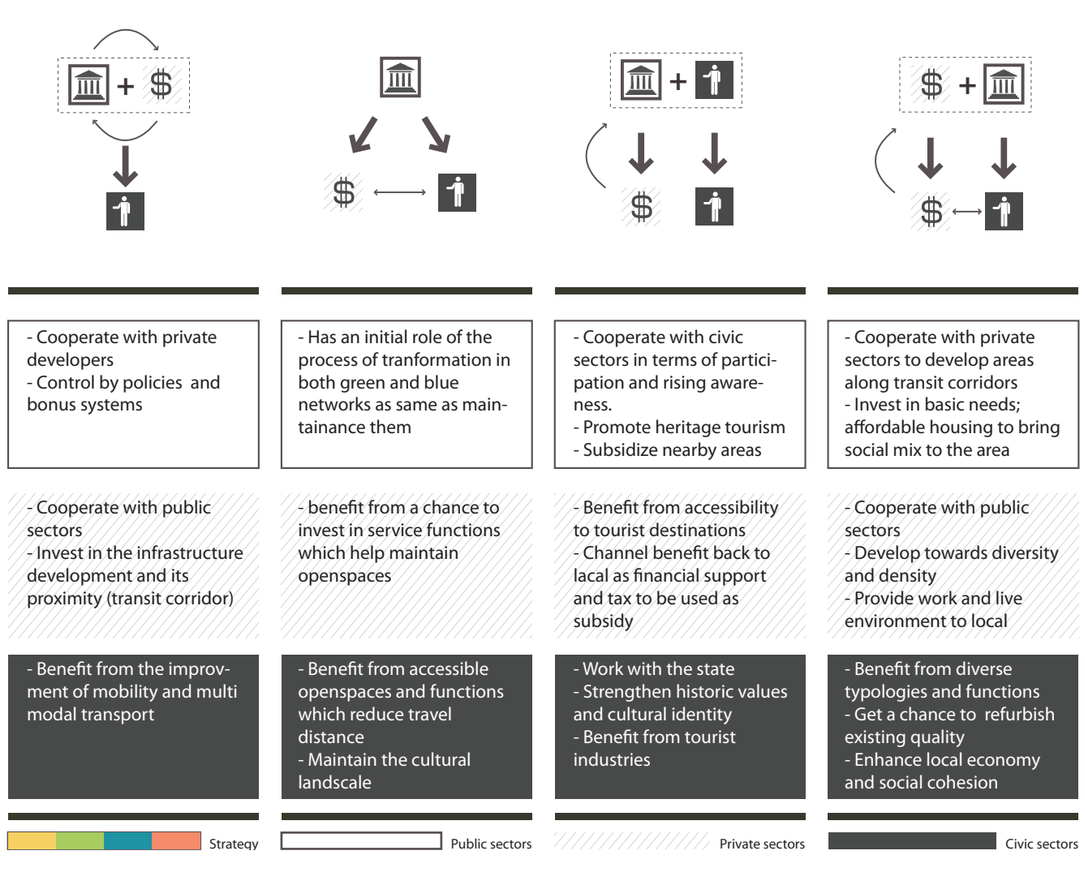
The flexibility of planning

In relation with the phasing strategy, this project is based around a set of guidelines to protect threats by the MTS towards local inhabitants. The expansion of MTS brings more people to a place that is once unconnected because of the increasing traffic and low mobility as well as the fragmented network will be reorganized and connected. Therefore, as mentioned before, the phasing strategy is divided into two parts, before and after the implementation of the MTS.

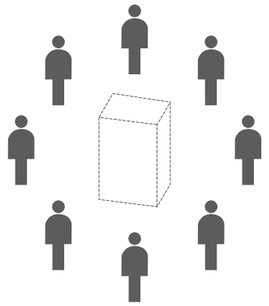
The illustration 7.3 reveals the relation between project phasing and actors. Public sectors are responsible for basic needs of citizens, which in this case, are infrastructure , public spaces and other local related facilities, considered as short term objectives. For long term goals, after the MTS completes in the area , interventions by the state encourage urban development mostly done by local initiatives and private parties. These actions aim to add value in sustainable ways by making use of potentials of integration of two dynamics.

It starts with an introduction of the integrated and connected network on potential areas to create a flow for the increasing people and transformed urban quality. The second phase is a refurbishment of the existing building into a compact mixed-use residential-retail development and the enhancing urban quality by transforming open space to create a more efficient land use of the area. In terms of quantity, after the completed MTS, the third strategy is the establishment of mixed-use functions and housings to create more space in order to increase value of the area and attract users to stimulate economic activities. Therefore, after the MTS completion in the area, the evaluation is needed in order to develop the flexible framework (see illustration 7.4).

Illustration 7.4 showing the roles of different stakeholders in accordance to the four proposed strategies

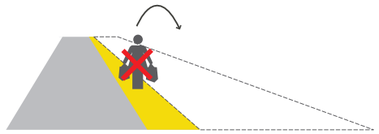


Selection of urban rules
In order to guarantee and control the outcome of the strategy, urban rules are developed.



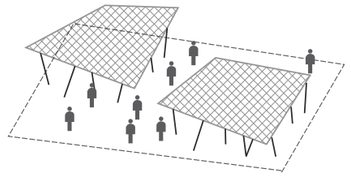
Bottom-up

Local collaboration is the optimal choice to develop. They get a priority to develop as well as participate in a making decision process.



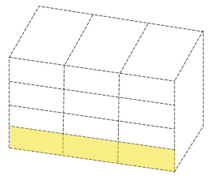
Street vendors

Street vendors are not allowed to occupied walkways, which will be returned back to city's residents. They will be put in pocket spaces situated along the local streets. This idea can be applied throughout Bangkok.



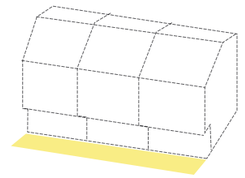
Temporary market

Squares can be used as a temporary market. Local residents, who live nearby, will get a right to work. Prefab and temporary structures or shading devices are permitted.



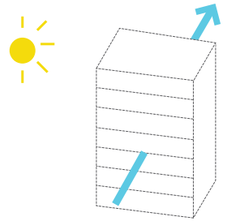
Continuity of front facade

New building must follow the existing historic building by creating a continuity of front facade. For existing ones, owners will get a subsidy to regenerate and preserve their architectural quality.



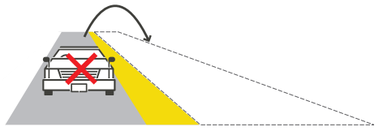
Continuity of shading devices

Due to the hot weather in Bangkok, similarly to the front facade rule, owners will get an incentive to construct shading devices to cover walk ways. The incentive can be formed as tax reduction, bonus or revenues.



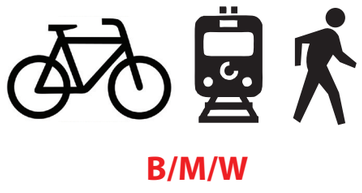
Natural ventilation and daylight

Developers must not only follow development principles and building codes, but also provide the condition that new architectures must get a proper amount of natural ventilation and daylight.



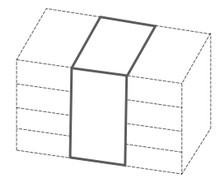
Parking

Alike vendors rule, parking is not allowed on the local streets except temporarily. Drivers need to find a place to park, such as their properties or any form of rental car parking spaces.



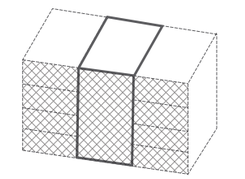
BMW Priority

Slow traffic and public transport will get priority. When new developments take place, slow traffic must be provided and at the same time, a convenient link to public transport especially mass transit has to be created.



Building height

New building must reach an agreement among the town preservation authorities in order to keep vibrant street feeling. In particular if it affects a sight line from the city heritage, building plans must be approved from the responsible parties.



Harmonic materials

Materials of new constructions should be in a harmony with the existing one. Investors will get a bonus to do in a proper way.

Chapter 8
REFLECTION

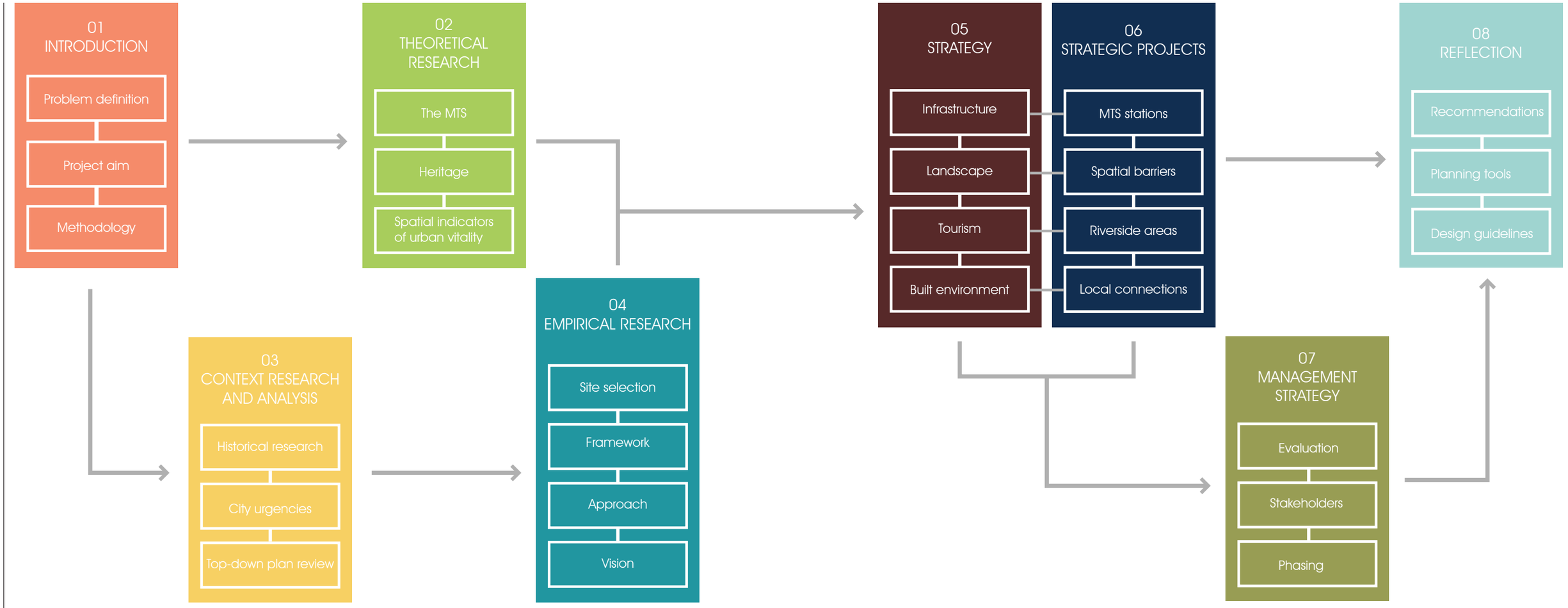


Illustration 8.1 showing the conclusion of the study of Bangkok Synergy; a synergetic spatial vision to preserve the historic core of Bangkok, integrated with the expansion of the rapid mass transit system network, including both research and design process

Introduction

In the evaluation part, the thesis will be summarized with the reflections and recommendations. The assessments have been developed in two levels: first, the reflection of the process of the thesis (research), and second, the assessment of the result of strategy.

As mentioned before, the main aim of the thesis is to provide a synergetic spatial vision for the MTS to integrate with the historic core of the city of Bangkok and strategies through the exploration of probable future in 2030. Secondly, to develop design instruments for planners, decision makers and related disciplines enables to translate scientific knowledge into an approach, which planners can cope with developing strategies for a sustainable future. The assessment will reflect the answers of the proposed questions on how the thesis responds to the aims. How the thesis relates to the research questions stated at the beginning of the process? What are the recommendations that the conclusion suggests?

Reflections

A significant part of the process is the definition of the thesis plan, as described in the thesis, Bangkok is challenged by the new infrastructure development, which passes the historic core, but unfortunately without coordinating with any preservation plan. Therefore, the definition of the approach and the methodology was decisive to formulate the thesis project to fill this gap by sharing the goal to make use of potentials by this top-down intervention and at the same time protect the city's heart.

The second part lies on a project framework by starting from theories. It provides a clear concept of both two dynamics (the MTS and heritage), such as spatial network, TOD and mobility for the MTS. Living heritage and heritage tourism are in line with the heritage related aspects. With a goal as urban vitality, integration definition becomes concrete and also spatial indicators to be used in the design process. The theoretical framework gives the author opportunities not only to construct concrete evidences and knowledge, but also to identify weaknesses and threats provided by academic research.

The part context research and analysis explains the main elements in order to have a better understanding of the context from the past shaping the existing urban form. It provides a comprehension of city dynamics showing opportunities and potentialities. The applied methodology allows the author to explore each layer that structures the society on the following section from the empirical research.

The forth chapter analyzes on the rapid process of city development. The effect of the process unfolds several spatial problems of the strategic location that needs to be intervened, classified in three issues (spatial fragmentation, environmental degradation and social segregation respectively).

The strategy part is the most explorative as the exercise of visioning concepts on different layers in order to create the desirable future. The four strategies tackle with different issues; mobility (to reorganize spatial network hierarchy and propose multi modal mobility), public space (to transform urban fragmentation into coherent urban spaces), tourism (to promote cultural and heritage tourism with local benefits) and built environments (to use organized network connections as catalysts for urban development).

The design part is a concrete product of the strategy of the project. It illustrates spatial impacts of the strategy with optimal solutions. The main components and projects will not define all elements, but identify and visualize the main ideas to respond to the objective of the thesis.

The strategy management part is evaluated the outcomes in relation to the top-down plan by the government. Additionally, the management strategy is defined in a way of both short-term and long-term goals to coordinate with different stakeholders, which define a success of an implementation of strategy.

Critiques on the government plan

Although the project is subject to fill in the gap and functions complimentarily in the same line with the government plan, it is crucial to point out the shortcomings by the top-down plan in order to optimize mutual benefits of integration towards sustainability of a synergetic vision.

Infrastructure aims to provide accessibility and connectivity to public transport for all range of people. Urban development aims to foster development to meet demands and avoid conflicts.

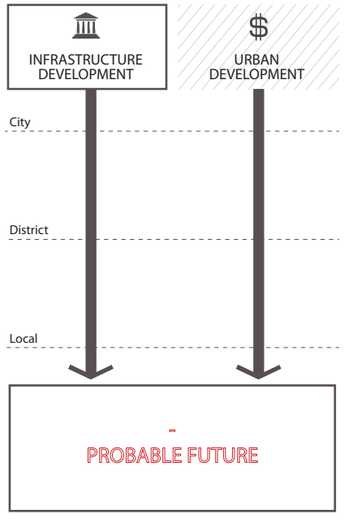
Based on Graham and Marvin (2001), Bangkok is a market-oriented city, which makes an infrastructure and urban development heavily dependent on each other ,influenced by the market, either leading or following. To elaborate this concept, relating to the city profile in the third chapter, the expansion of city development goes along crucial freight routes towards industrial clusters surrounded by second and third cities. Even in the BMA scale, the economic corridor becomes dominant in terms of city development. Due to those facts, Bangkok is structured as a mono-centric city.

Since the construction of expressways in decades, it had a great impact on the urban from of the city. The elevated expressed ways concentrated in the city centre and directly connected to the periphery areas, resulting in that real estate developments clustered around the exits supported by commercial activities and private residences. This phenomenon creates sub-centre areas around Bangkok called “The Bangkok Model”(BMA, 2010) with a road network directly linking to the centre, facilitated commuters from rural areas to reach the city core by private vehicles. It turned Bangkok to be an absolute car based city since then.

With conditions of market oriented and car-based city, market interventions introduced global facilities and housing projects by taking advantages of the proximity to the infrastructure development as well as it already happened recently after the first two lines of the MTS implementation. Consequently, while inaccessible areas had low economic profile, reachable and accessible areas by either mainly private or public transport make land price higher attracted certain types of facilities with generic urbanity and soulless places (Richardson and Jensen 2008).
To sum up, according to development trends, this spatial and socio-economic segregation will definitely take place again, when the city expands the MTS throughout the city. Therefore, without any coordination between infrastructure and urban development, guidelines for the historic core are highly needed to not only preserve a high value and identity from negative effects, but also provide a sustainable plan to handle with this rapid change.

The question regarding on how integration between infrastructure development and historic preservation planning will affect daily life of inhabitants? What kind of urban intervention can create synergy that improves spatial quality?
To give an answer, the crucial design interventions that has been done in the historic core on urban and infrastructure aspects are based on the strategy to both preserve the area and improve living quality in the strategic location. The core objectives of the strategy will be elaborated in the following part.

Illustration 8.2 showing the probable model of the city without interventions being made in the historic core



The negative effects from the government plan

Due to a lack of integration between not only urban and infrastructure development, but also global and local interventions, the unwilling consequences are

1. INEQUITY OF MOBILITY
a. New mode of transport will facilitate specific social groups (for Bangkok case : elite class)
b. Low profitable areas will get less public transport services, and number of private cars increased
c. Patch model is created and continue growing along transit corridor

2.SOCIAL SEGREGATION
a.The gap between rich and poor expanded between transit corridor and existing urban tissue
b.Lacking of bottom-up interventions to involve local inhabitants
c.It leads to less power and cannot participate in the process of decision making

3.FRAGMENTED OPEN SPACE NETWORK
a. Environment deterioration through pollutions with a number of car increased
b. Landscape degradation and invasion
c. Privatization of public open space by market-oriented development

4. BUILT ENVIRONMENT
a. Over production of urban built stocks
b. Over population from the countryside
c. Imbalance profits distribution between market and local residents

Integrated actions

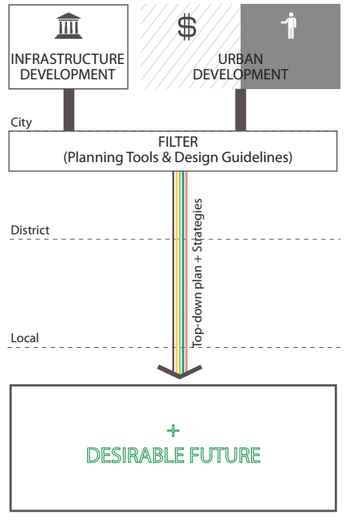
A: EQUALITY OF MOBILITY
The MTS increases connectivity of the historic core to other areas within the city. Besides, new connections bring a lot of opportunities to get through this top-down intervention more quickly and conveniently. This infrastructure development gives a condition for accessibility, which brings more people to the area and for local dwellers to get to public transport networks as well. With a completed service of public transport system, collective mobility will reduce a number of private vehicles. Therefore roads will be downgraded providing more space for pedestrians. For the urban dimension, this connectivity creates an opportunity to improve economic status that can respond to local demands and new development along transit corridor by taking those advantages from proximity to transit stops.

B: SOCIAL COHESION
Public space network designed in the area will increase connectivity and a number of accessible open spaces. It also provides an advantage for creating a new social and economic relationship. By creating social housings and medium-income residences, new comers will share the same social status and blend within the existing fabric. Public spaces and community environments will bring up social interaction among different users from all social classes and multi use of spaces through different time. Due to a transformation of spatial barriers, a good quality of living will be improved by new connectivity in terms of more convenient travel patterns, social control, new mixed functions and accessible open spaces.

C: SOCIO-CULTURAL IDENTITY
To maintain identity of Bangkok historic core, it is very important to enhance vitality, localness and public awareness of the areas. An open space network with water related activities has been rooted in Thai society from time to time together with specific typologies along the riverfront. It brings a sense of historical continuity. Taking an example, water tourism will enhance vitality along the corridor contributing to development through the area. It will draw an attention from the government to develop the area. Local residents will benefit from new developments in terms of living quality increased and opportunities to transform their properties for economic purposes like offering a home stay, service functions, floating market, building maintenance and so on. This will increase economic life of local residents along the corridor.

D: LOCAL QUALITY IMPROVED
Local neighborhood areas are characterized by a fine-grained pattern with an intimate characteristic such as narrow streets with high flexibility of uses and flow of behaviour. When car becomes dominant in planning ideas for roads development, streets become unattractive for local to use because of traffic flows or not in a pedestrian friendly condition such as unsafe and no designated spaces for them. The MTS development offers an opportunity to redesign and re profile potential pedestrian-oriented streets, which will facilitate local residents with comfort and safety for pedestrians. To bring people back to the street, it results in street vitality with various activities stimulating interaction among residents and social surveillance, which is classified as a main character of historic areas. As a result, quality of local environment will be enhanced as well as vital streets can trigger urban development with strong sense of belonging leading to bottom-up approaches.

Illustration 8.3 showing the desirable model of the city by taking positive aspects from the top-down interventions plus the four proposed strategies, which invite local residents participation into the planing process.



The effects of synergetic spatial vision

The proposed strategies(illustrated in chapter five) create an integrated outcome, which planners and decision makers can use as a design guideline, planning tools or common interest.

1. EQUITY OF MOBILITY
a. All social classes will be able to get on the public transport system
b. The gradient of development from transit corridors to local areas
c. New functions will improve access and economic status regarding to demands

2.SOCIAL COHESION
a. Accessible green spaces particularly to the West
b. Public spaces stimulate social interaction
c. Proposed building typologies are designed aiming to blend new comers and local residents together by sharing the same social position

3.SOCIO-CULTURAL IDENTITY
a. Maintain historic value and social identity of living heritage
b. Keep physical form and local citizens historically continue
c. Improve local living quality of the riverside area

4. AN IMPROVEMENT OF LOCAL QUALITY
a. Contribute to bottom-up development
b. Stimulate social surveillance
c. Create vital streets with pedestrian oriented conditions

Possible side effects of the project

This part aims to describe an uncertainty, affected the project. These uncontrollable factors might rise during the process of development. Possible side effects will trigger a discussion or a debate among responsible parties in order to accomplish the objectives successfully. It can be done by a set of solutions based on a common interest, regulation or other forms of control systems. In the project, they are three relevant issues regarding former problems happened to Bangkok.

1. A strong influence by the market leading to gentrification (see illustration 8.4)

2. Without cooperating, bottom up interventions might not succeed as expected (see illustration 8.5)

3. Effects by a boost of tourism(see illustration 8.6)

As aforementioned, Bangkok is classified market oriented. In the historic core, cultural value and identity have been maintained by local people from time to time. However, when the market becomes more dominant, the areas may start to be gentrified, which develops towards economic issues rather than try to preserve them. Consequently, bottom up process with local participation is hard to achieve, if the social structure has not been maintained. In other words, local citizens might not be able or interested to proactively engage in the creation of their cities. The other external factor is negative influences from tourism. These widely threats can be seen via an enclave tourism area and an increase of land price leading to an unaffordable condition for local residents. Finally, it becomes artificial, which results from no longer local dwellers living in the areas.

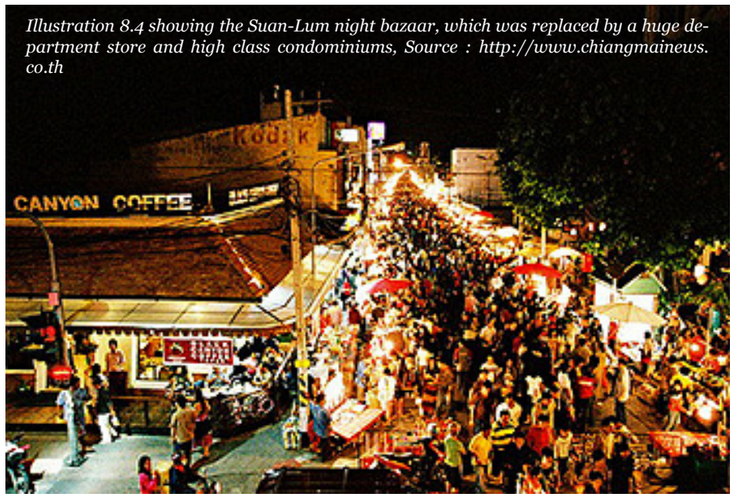


Illustration 8.4 showing the Suan-Lum night bazaar, which was replaced by a huge department store and high class condominiums, Source : http://www.chiangmainews.co.th

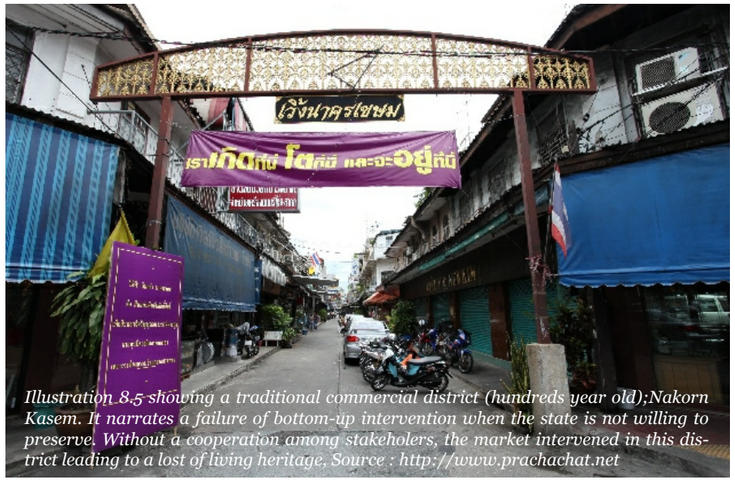


Illustration 8.5 showing a traditional commercial district (hundreds year old);Nakorn Kasem. It narrates a failure of bottom-up intervention when the state is not willing to preserve. Without a cooperation among stakeholers, the market intervened in this district leading to a lost of living heritage, Source : http://www.prachachat.net

Illustration 8.5 showing the atmosphere of Khaosan Road, which has turned to be tourist oriented development for decades resulting in an increase in land price and no longer local residents living in this historic district, Source : http://www.siamvision.com

Recommendations

The MTS network of Bangkok needs to be observed not only a solution to overcome automobile dependency, but also to integrate to spatial configurations of the city. The potential of integration will create a more compact city, which will transform fragmentations and at the same time revitalize existing neighborhoods. Due to an uncertain future, the project has been made flexibly in terms of implementation. Besides, it is important that all kinds of people can benefit from the project. Collaboration between designers, planner, market and politicians are crucial as well as local participation. The evaluation of the results allows observing a package of recommendations that have been considered as being essential to the strategy. All of them lead to a construction of the desirable future for Bangkok, which allows vulnerable groups to benefit from it.

Conclusions

The urban fabric of the city has a disorganized street network. Different strategies have to be developed in order to implement large –scale infrastructure projects (MTS). The main problem of Bangkok's transit and the city has a low integration on the micro scale between the two dynamics. To realize this, the strategy should provide a balanced strategic framework on both urban and infrastructure aspects together with an in-depth research before intervening. On the infrastructure aspect, the opportunity of equity of mobility must be created. On the urban aspect, spatial organizations need to be reorganized to meet demands for development and avoid conflicts

Illustration 8.7 showing the transferable disciplines to similar projects dealing with a crash in exploded scale of spatial development and a conflict between global and local level

TRANSFERABLE DISCIPLINES

SUSTAINABLE MOBILITY
: to provide a large choices of transport modes, affordable and convenient transit
: to increase accessibility by new connections and public transport
: to reduce car dependency and traffic congestion as consequential outcomes
: to reduce environmental impact
: to redefine social and spatial fragmentation

OPEN SPACE NETWORK
: to create accessible greens to increase a quantity of green per person
: to improve living quality of local residents
: to integrate open space into a network

SUSTAINABLE TOURISM
: to provide cultural and heritage tourism with local benefits

URBAN INTEGRATION
: to strengthen an economic growth through the integration of urban areas
: to shorten commuting pattern and travelling time through land use planning and zoning regulation

EFFICIENT LAND MANAGEMENT
: to allocate land stocks reserved and the land value for the future based on the objectives

GOOD GOVERNANCE
: to rebalance structure of governance in order to facilitate and support the process of spatial planning
: to manage and distribute resources efficiently and allow all stakeholders to get reasonable benefits

POLYCENTRIC CITY
: to transform dependent and independent areas into a complementary relation between the core and sub centres with an improvement of infrastructure and urban development
: to reinforce sub centres to promote identity and integration of urban areas

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Mass Rapid Transit Authority of Thailand: www.mrta.co.th
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