THESIS REPORT

Xinyi GUO
1531026
Department of Urbanism
Faculty of Architecture
Delft University of Technology
# Contents and Introduction

## 0.1 Contents

<table>
<thead>
<tr>
<th>Part 1, Motivation</th>
<th>Part 2, Research</th>
<th>Part 3, Vision</th>
<th>Part 4, Design</th>
<th>Part 5, Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Motivation</td>
<td>2.1 Theoretical Research</td>
<td>3.1 Stakeholders</td>
<td>4.1 Overview</td>
<td>5.1 Products</td>
</tr>
<tr>
<td></td>
<td>2.2 Theoretical Essays</td>
<td>3.2 Shared Vision</td>
<td>4.2 Products</td>
<td>5.2 Evaluation</td>
</tr>
<tr>
<td></td>
<td>2.3 Context Analyses</td>
<td>3.3 Development Approaches</td>
<td>4.3 Sub-System “Streets”</td>
<td>5.3 References</td>
</tr>
<tr>
<td></td>
<td>2.4 Site Analyses</td>
<td>3.4 Partnerships</td>
<td>4.4 Sub-System “Neighbourhoods”</td>
<td>5.4 Acknowledgement</td>
</tr>
<tr>
<td></td>
<td>2.5 Research Questions</td>
<td></td>
<td>4.5 Sub-System “Student Housing”</td>
<td></td>
</tr>
</tbody>
</table>

## 0.2 Introduction

**CAMPUSS FOR CITY / CITY FOR CAMPUS**

Connecting, among university campuses & between campuses and the city of Shanghai

**GRADUATION LAB OF ‘URBAN REGENERATION’**

Mentor team:
Ir. John Westrik
Dr. ir. Frank van der Hoeven
Ir. Alexandra den Heijer
Ir. Esther Gramsbergen

**THESIS REPORT**

Xinyi Guo
1531026
06 47 219 580
x.guo-2@students.tudelft.nl

30 June 2010

Department of Urbanism
Faculty of Architecture
TU Delft
1 Motivation

1.1 Motivation
   1.1.1 Motivation for Design Studio 2
   1.1.2 Motivation for Design Topic 3
   1.1.3 Social Relevance 4
   1.1.4 Scientific Relevance 4
1.1 Motivation

1.1.1 Motivation for Design Studio

The design studio of Urban Regeneration is a great opportunity offering me new body knowledge not only well developed in Europe but also high applicable in China.

a, Urban regeneration as an well developed body of knowledge in the Western countries

Urban regeneration theories, emerged along with the process of urbanization in the early times and re-development of urbanized areas in the following years, have been a well explored topic of academia in the Western countries especially the European countries. The combination of long period of urbanization and even longer period of history together formed an understanding of cities started from not only spatial and visual points of view, but also social and historical.

b, China as one of the biggest urbanizing country among the developing ones

Looking from the European position, China is somehow going through a unique phase that combines the expansion of the 19th century America and the regeneration of 20th century of Europe. Constructions and demolishment are being carried out at the same time even in the same city. How theories and practices of urban regeneration can be used as vaccines as well as medicines would be a unique questions for me.

c, Shanghai as a cosmopolitan with a history of urbanization but bad examples of regeneration

Unlike other cities in China, Shanghai basically started her history along with her progress of urbanization. It is a pure urban area with all kinds of typical urban problems. Also unlike other cities in China, the urbanization progress was neither political oriented as Beijing, nor geographically oriented as Chongqing. Both these factors provide a larger freedom of practice of urban regeneration without interferences of higher powers. It must be the best starting point of introducing urban regeneration theories into China.

At the mean time, urban regeneration efforts are being made in Shanghai with the involvement of different stakeholders. But as the commercial developers being the leading power and as the absence of academic debates and democratic discussions, these early attempts are all “high-cost, elite-consumer-oriented and finance-targeting redevelopment” instead of “low-cost, public-resident-oriented and society-targeting regeneration”. The introduction of the true urban regeneration theories is not only necessary, but also urgent.
Motivation

1.1 Motivation for Design Topic

In the north part of the urbanized area of Shanghai, lie four of the top universities. They are located nearby each other, forming the well-known university zone of the city.

From personal experiences as a college student in this specific area, I have noticed that it might be a perfect location for Urban Regeneration researches in Shanghai, China.

Firstly, this area was the former industry area of Shanghai, especially the rather heavy industries. Along with heavy industries areas were the slums of war and disaster refugees. The industries lasted from 1890s till 1990s, with short time regeneration attempts before the Pacific War and after the Civil War. The first attempt resulted in the major urban fabric and the main infrastructure for the proposed new city administrative center. The second ended with massive low quality social housing. From the 1990s, the decline and removal of the industries on one hand strengthened the image of abandoned area of Yangpu, but on the other provided the chance of developing a “Knowledge Yangpu” as an urban policy. Meanwhile, commercial areas are also filling up where the industries have left.

Secondly, this area was also one of the major residential districts of Shanghai. During the development of industries in the early ages, slums for workers emerged along the way. The slums were demolished and redeveloped into postwar housing units. But the postwar living qualities have again became out-of-date. This area now holds the biggest amount of old housing.

Meanwhile, ss the basis of the “Knowledge Yangpu” policy, the four major universities and other several colleges have been in this zone for scores. During the development of recent decades, all of the four universities gained new campuses by acquiring other minor independent colleges. This led to the situation of campuses of different universities puzzled together. Recently in the new millennium, all four universities finished the new campuses projects in new but faraway locations in the suburban, as the city policy required. All new locations are designed to be adjacent to center new urban programs.

It is obvious that this could be a location for possible Urban Regeneration attempt. What promoted it more to me is that the potentially contributing aspects of knowledge centers in the area.
1.1.3 Social Relevance

a, From a student’s point of view
As a former student in one of the four universities in this area, I have experienced quite a lot of inconvenience travelling among the several campuses. On one hand, the separation of educational & housing facilities in several campuses contributed most of my commuting time. On the other hand, the close social connections among students in different universities, especially among local students, were difficult to be maintained with universities cut off with each other.

b, The cooperation among universities
As the change of higher educational institutes from ivory towers to service providers, the four universities are considering more cooperations. Exchange students, inter-campus free choice courses and the new inter-university bicycle lane are the examples of this attempt. But while the cooperations are still at policy and educational level, the spatial connections are so poor that the well planned academic integration programs were not welcomed.

c, Larger scale: new campuses
The development of universities and construction of campuses in China nowadays has one main topic: university city. The typical 1950s European suburban campuses are warmly welcomed again in Asia from 1990s on. As for the four universities I mentioned, new suburban campuses are located in different part of the city with poor infrastructural and social connections to the old campuses and the city center. The discussions about the locations of the new campuses, and even the development strategy of having new campuses are arising not only in the academia.

d, Larger scale: old industries and housings
On the contrary of development of new campuses, the old part of Shanghai hosting the four universities are facing empty industry areas and poor housing neighbourhoods. The regeneration and renovation of the area is becoming a precious potential not only for itself along, but also for the development for Shanghai in the new century.

1.1.4 Scientific Relevance

a, Exploring urban regeneration
The notion of urban regeneration has never been more popular in China, along with the phase of urbanization. In Shanghai alone, urban renewal projects in industrial or housing areas are welcomed, as profitable opportunities by developers, as life-changing chances by residents and as fashionable events by press. But there's obviously a lack of attention from the academic circle. Theories are missing, guidelines are misleading and purposes are misunderstood. My research and design would be a nice chance of apply the well developed European theories and well examined European experiences in to a modern China context of cosmopolitan.

b, Exploring knowledge city
Shanghai has always been a higher educational center for the country. But in the new era, these institutes are facing the challenge from the city for better service as innovation centers and knowledge think tanks. The new knowledge city discussions in Europe would provide a new vision for the city.
2 Research

2.1 Theoretical Research
  2.1.1 Theoretical Research Questions
  2.1.2 Theoretical Framework
2.2 Theoretical Essays
  2.2.1 Lesson Learnt
  2.2.2 Essay on Urban Regeneration
  2.2.3 Essay on Campus-City Relationships
2.3 Context Analyses
  2.3.1 Shanghai Factsheet
  2.3.2 Yangpu Factsheet
  2.3.3 Yangpu Timeline
  2.3.4 University Factsheet
2.4 Site Analyses
  2.4.1 Overview
  2.4.2 Ownerships
  2.4.3 Traffic
  2.4.4 Programs
  2.4.5 Facilities
  2.4.6 Urban Pattern
  2.4.7 Public Spaces
2.5 Research Questions
2.1 Theoretical Research

2.1.1 Theoretical Research Question

What are the general Urban Regeneration guidelines from an European experience?
What changes could be made on these guidelines for a Chinese context?
How can theoretical findings of Urban Regeneration be applied on physical design tasks?

What are the general argument on Campus-City Relationships?
What are the new angles on Campus-City Relationships?
What is the uniqueness of a urban area with multiple universities and campuses?
How can theoretical findings of Campus-City Relationships be applied on physical design tasks?

2.1.2 Theoretical Framework

For my design topic, several research fields are involved during the year. These different fields will contribute to different part of the theories behind the intended outcome as an urban design.

a, Urban regeneration

As the name of this graduation lab, urban regeneration is the key issue in the theoretical network and the future design project. As one of the theories dealing with existing urban situation, urban regeneration includes physical intervention on public spaces, housings, industrial areas, etc (Roberts and Sykes, 2005). Moreover, it also includes nonphysical interventions on neighbourhoods, policies, crimes, inequality, etc. The combination of different aspects of this topic provides a wide range of theories.

For my topic, the regeneration on public spaces, housings, industries areas are the most important physical aspects. Meanwhile, the influence of these physical interventions on social issues as sense of neighbourhood and segregation would also be interesting (Stouten, 2004).

b, Knowledge city

Change of economy focus has been and is still happening in many countries. The services and knowledge sectors are taking the dominant place of agriculture and industry (OECD website). The EU has reached a consensus on the future vision of knowledge economy, to become the most dynamic and successful

knowledge economy in the world, according to Lisbon Agenda (Lisbon agenda. 2000).

c, Campus-City relationships

Universities, being the leading knowledge institutions of our modern society, have been more than organizations for education only. All the changes of technology, economy, politics and urbanism have influenced their role in the society, especially their role in their hosting cities.

The issue of the relationships between universities and cities was already a major discussion during the post war revolution of higher education (Kerr, 1972). In the recent decade, more attention has bee paid to the discussion again. After the rise of the creativity as a new economy sector (Florida, 2004) and the change of attitude towards universities as businesses (Pinck, 1993), there are new angle of look at these relationships.

During my review of researches on this topic, I exclusively focused on the non-physical aspects of the relationships, as the soft links, which includes the history of campus locations and planning, the notion of university as a community of students, a base of knowledge and an entity of business and a partner of developments.

The research will explore the social, economical and management of urban campuses, which will eventually lead to certain physical and spatial interventions in my design project.
There are two major theory essays attached to my design topic. Each was concentrated on different angles of the topic.

The essay on Urban Regeneration focused on how to translate successful European Urban Regeneration guidelines within a Chinese context. A case study on several existing Urban Regeneration attempts in Shanghai consisted the main body of the essay. The comparison among Chinese projects showed similarities and differences. The result then was checked against European theories and arguments. The final conclusion would be applicable to a bigger range of locations in China.

The essay on Campus-City Relationships looked into not only the traditional relationships under traditional social and economical background, but also the new findings and conclusions in this time of changes and progresses. The new ideas about the links between campuses and cities would influence the physical outcome the design tasks.

2.2.1 Lesson Learnt

Urban Regeneration

The simple approach of full privatization is not the best way. Neither is the simple approach of demolishing and rebuilding. These two approaches are often combined together for their convenience to the developers.

A partnership among residents, developers and the authority would ensure that the government still holds the power to adjust and amend when the market interests no longer satisfactorily correspond to social needs.

A Urban regeneration project should serve the city both in lower scale physical strategies and in higher scale non-physical strategies.

Involuntary removal of residents have been proved to be destructive to existing social structures. Furthermore, it would worsen the problem of segregation. This method simply move urban problems from one part of the city to another.

Upgrading spatial and economical conditions may be a better way. It may not only solve some of the urban problems that are related to spaces and economics, but also motivate the residents to a self-conscious contribution to their neighbourhood.

Campus-City Relationships

A campus is not only a collective of physical lands and buildings. It is also a non-physical collective of students as a community. Like any other neighbourhoods, it interacts with the rest of the city, despite of its uniqueness.

Under a new economy, the student neighbourhood should be considered a business opportunity, a precious work force, a way of representation of the city and simply tenants.

Like wise, a university is not only an educational institution. It is also a business, sometimes a huge one. Unlike any other businesses, this business focuses on both financial and social benefits.

Thus, university could be highly contributing to the society together with its own development. It could help surrounding neighbourhoods while expanding. It could combine its own strategies with the urban strategies. And it could become the leading political power in a negotiation.
2.2 Theoretical Essays

2.2.2 Essay on Urban Regeneration

Good Money, Bad Money
Economic issues in urban regeneration process, comparison between two Shanghai projects

1 Topic: Money and Urban Regeneration

Urban regeneration is not only a complex process in the real world but also a theory with different explanations and discussions in the academic area. Among the various aspects of the hot discussion on this issue mentioned and listed in the handbook given and other materials, there is a word that is always mentioned in the Introduction and detailed in certain chapters. “Economy”, in other words, “Money”, is considered a basis as mentioned in “the importance of economic success as a foundation for urban prosperity and quality of life” (Roberts and Sykes, 2005); is included as part of the principals of urban regeneration as “be aimed at the simultaneous adaptation of the ... economic base ... of an urban area” (Roberts and Sykes, 2005); is identified as one of four main elements of the processes involved in urban change as “industrial restructuring in pursuit of maximizing returns” (Robson, 1988) and is argued as one of the “two principal goals, economic efficiency and social equity” (Kuklinski, 1990).

Appeared so many times in different part of the books, the idea of “money” and the owner of the money, the use of the money, the target of the money, the advantage and disadvantage of the money, really drew my attention.

The economic factor influences all along during an urban regeneration process. In some cases, to restore a bad economic environment for a region or a city may be the starting point and cause of an urban regeneration. These examples can be seen in old and shrinking inner cities with declining industries. In other cases, an economical view might be significant because of a large investment may be needed. This is the most common reason why a partnership is established. There are some extreme situations in which profit is considered the first and only priority of an urban regeneration. There projects are mostly conducted single-handedly by market-oriented developers.

Specifically for me, the connections between the influences of money at different time spots of an urban regeneration intervention draw my attention. In most cases, fully market-orientated projects do not always have positive impacts on the surrounding area because of the single-minded profit orientation. But there are possibilities that similar negative input may reach a certain level of positive output on a larger scale, not only economically alone.

In the following part, I would like to look into, in common words, why some bad money ended up with bad result while the others resulted with good outcome. The study will be based on the comparison of two urban regeneration attempts in Shanghai, China.

2 Context: Metropolitan of Shanghai

There are lots of issues than I can mention that can affect an urban regeneration process. On a higher scale, I would like to address the uniqueness of the metropolitan of Shanghai in which the cases are embedded in.

Shanghai is one of the major cosmopolitans in China. Lying on the east coast facing the Pacific Ocean, she has a population of more than 18 million in an area of 6340 square kilometers. The urbanized center covers more than two thousand square kilometers with residents of 14 million, making it one of the most populated and densified urban areas in the world. Besides her size, Shanghai is the economical, financial, trading and shipping center of China. It’s safe to say, that’s the most developed and still most rapidly developing city in China.

On history level, Shanghai is rather a young city compared to most Chinese, European even American cities. It became a concession, a certain type of colony, of several western countries in 1845, which is the starting point of its growth from a tiny fishing village to the “Paris of the East”. Shanghai saw a hundred years of development with several of its golden ages before the overall outbreak of the Pacific War in 1941. After the WWII followed by the Chinese Civil War, it went back to the track of development but disturbed by almost 20 years of political movements.
and instability. But during the last three decades, it met its newest and strongest
boom. Accordingly with the history timeline, there’s a change of political ideology and
economical system. The process could be briefly grouped as three phase: the
“Free Port” phase during the concession times with a liberal market economy, the
Maoist Communist period with a planned economy system controlled by national
authorities after the Civil War and the Reforming and Opening-up era along with
de facto a Capitalist market from the 1980s.

The urban development process was greatly influence by the history course and
economical change. During the “Free Port” years, the city gained its basic structure
without a major planning or strategy. Industry and commerce were main econom-
ies and housings were provided mostly by private developers at a low quality. In
the following Communist time, commerce was suppressed while industry became
the main sector. At the meantime, post war housings were built in a collective,
characterless and densified way by the authorities. In the recent 30 years, com-
merce became again the main engine of the economy boost with a strong decline
in industries. New housings of better quality and identity are provided by private
developers at a rocketing price while old housings are still crowded with middle
income class.

3 Cases: “Xin Tian Di” versus “1933”

For my discussion about Urban Regeneration attempts in Shanghai, two cases
were picked to form a parallel comparison on various issues. Case one is called
“Xin Tian Di”, which is a reconstruction and redevelopment of a pre war housing
neighbourhood into a commercial and recreational location in the city center. Case
two bears the name of “1933”, which was the renovation and renewal of a pre war
slaughterhouse into a creative industry incubator within a residential district. The
following comparison will draw light on the characters of each.

3.1 History

Both of the sites of the two projects were prewar residential areas. The “Xin Tian
Di” site was developed in the 1910s as a residential area of row houses for mid-
dle income families. 1910s was one of the quick booming ages of Shanghai. The
situation of Shanghai being the colony of western countries made it the highlight
of Chinese capitalist development. The residential areas were built to meet the
huge requirement of housing. The “1933”, as its name shows, was building in 1933
by the colony authority of Shanghai. 1930s was the last golden age for Shanghai
before the overall outbreak of the Pacific War when the statue of colonization
stopped the Sino-Japanese at its gate. Major urban facilities were constructed to
modernize the daily life of citizens. But the area in which “1933” embedded was
from the age of 1910s, just like the “Xin Tian Di”.

The reconstruction of these two projects was carried out in the new millennium.
“Xin Tian Di” was renovated in 2000 into a commercial and recreational area. Be-
fore the renovation, this area was used as residential, as it designed, for nearly
eighty years. But the average living conditions were seriously degraded. On one
hand, the growing population and changing politics has greatly increased the den-
sity. A house for three or four ended up with more than ten tenants. On the other
hand, the pre war standards of housing environment, especially sanitation stand-
ard, were not sufficient for current times. And for the “1933”, its renovated was
finished in 2008 as new and cheap loft-style offices for creative industry. Before
that, it had been changed several times in program, from meat industry to phar-
maceutical industry, and to fully abandon in the last.
3.2 Location

Both of the projects were located in the city center of Shanghai. The “Xin Tian Di” project was situated towards one of the major commercial streets of Shanghai with its back towards the residential area. It was extremely close to the city center with a distance of 1 km. The “1933” project was farther to the center with a distance of 3.2 km. It was the gateway from nearby main road into the residential area.

3.3 Size

The two projects are similar in size. The project of “Xin Tian Di” covered an area of 160 meters by 110 meters, with rather small scales renovated old row houses. The “1933” project is a single block of architecture, with a size of 80 meters by 80 meters.

4 Discussions

4.1 Financing and partnership

The process of urban regeneration would never be achieved without a viable financing plan. An economic success is an importance foundation for “urban prosperity and quality of life” (Roberts and Sykes, 2005). I would start the discussion with the comparison between the financing of both projects.

The project of “Xin Tian Di” was proposed originally as an example of urban development in new context, privatization, just as the new context in the Netherlands (Stouten, 2004). The government was weak financially to renovate or redevelop. So a partnership was formed between a private developer and the government. The land was privatized to the developer with its promises of building new housing for the former tenant of government housing. The partnership ensured a strong financing for the project.

This partnership was further developed in the “1933” project. In this case, since the building is a listed historic heritage, full privatization was not illegally allowed. Thus the building, and the land, was “rented” to a developer which would pay for the full renovation cost. The developer gained the management and rent rights for a certain period of time.

In the first case, the developer proposed urban regeneration instead of a full demolish and redevelopment for a better social effect to preserve a piece of the city which was losing. But as Professors Hulsbergen and Stouten noted, Even if
the market parties are willing to adopt a “social” role, it is uncertain whether the vulnerable communities will profit (Hulsbergen and Stouten, 2001). Especially when the property was full privatized and the government lost most of its controlling powers over it. It was a better situation in the “1933” project in which the authorities still owned the site. The fact that the project was dedicated for incubators for starting-up creative industry showed the guidance of the government. It’s not fare to suggest that individual sector’s initiatives are unwelcomed (Roberts and Sykes, 2005), as the “Xin Tian Di” project are welcomed. But it is naive to expected an isolated property-led solution to address the full range of economic, social and environmental problems that would be encountered in urban areas (Roberts and Sykes, 2005).

On the contrary, the project of “1933”, although providing a new program to the area, was a part of the non-physical structural reform. The district in which the project was embedded had adopted a strategy of transferring itself from a declining old industry economy into a knowledge economy. The strategy was backed up by the several universities in this district with their base of knowledge and creativity. And the regeneration of “1933” from industry facility was one of the incubators for young entrepreneurs. Meanwhile, the location of this project showed the intention of regarding knowledge economy as not only an economic sector to develop, but also the change to develop other sectors. This creativity center in the old neighbourhood is providing spill-off effect to the locals, such as job opportunities and public space improvement. The project has illustrated the notion that present day regeneration of urban “problem” areas need repositioning the area on the urban and regional scale (Stouten and Hulsbergen, 2008).

4.3 Residents and neighbourhood

Both of the two projects were located in residential areas, but were different in their own respective programs. The “Xin Tian Di” project was but no longer a residential site while the “1933” project was never residential. But to my point of view, the later project contributed more to its hosting community.

During the regeneration process of project “Xin Tian Di”, the local residents were relocated to make room for the commerce. Although a much better living condition and a much lower density were provided, the residents weren’t provided with enough alternatives. They were forces and seduced to remote locations. The involuntary removal of residents have been proved to be destructive to existing social structures (Hulsbergen and Stouten, 2001). This was coursed by the overwhelming financial power of the developer, which was the single dominant player in the decision making process. The lack of the precipitation of local residents led to a destruction of social infrastructure (Stouten, 2009). Besides, the problem of segregation was also worsened by the project. The former community was not grated chances of improving their living conditions. The relocation has kept the
same community in the same spatial concentration, which is the definition of segregation (Stouten, 2004), without giving alternatives or solutions. This unsolved unbalance was definitely unsustainable (Stouten, 2004).

As contrast, the “1933” project, although non-residential at all, was an improvement to the community. Firstly, the project included not only the renovation of the building, but also the surrounding public spaces. As the gate way of the area, the renovated public spaces built a new and positive image of the area. The better image had extended the positive feelings to the community. Secondly, one renovated building more meant one safety hazard less. The reuse of the former empty building had greatly increased the sense of security in the area. Thirdly, as discussed, the economic influences had been a new promotion to the area. Finally, the regeneration of the building without the relocation of the residents had spread a sense of confidence in the community. The residents felt the authorities’ intention of improvement instead of demolishment. Evidences could be seen from feedbacks such as redecoration of houses and new shops. The project had great positive influences on the neighbourhood.

5 Lesson learnt

As comparisons and discussions shown above, the money factors appeared in not only the construction phase of a regeneration process, but also involved in the process of decision making and future influences. It is obvious that money from single party or for the single party could not cover all the economic, physical, social and environmental problems.

The simple approach of full privatization is not the best way. Neither is the simple approach of demolishing and rebuilding. These two approaches are often combined together for their convenience to the developers.

A partnership among residents, developers and the authority would ensure that the government still holds the power to adjust and amend when the market interests no longer satisfactorily correspond to social needs.

A Urban regeneration project should serve the city both in lower scale physical strategies and in higher scale non-physical strategies.

Involuntary removal of residents have been proved to be destructive to existing social structures. Furthermore, it would worsen the problem of segregation. This method simply move urban problems from one part of the city to another.

Upgrading spatial and economical conditions may be a better way. It may not only solve some of the urban problems that are related to spaces and economics, but also motivate the residents to a self-conscious contribution to their neighbourhood.
1 Introduction

Universities, together with local authorities, business companies and the churches, constitute in various ways the modern urban society (Wusten, 1998). Few would question the contribution they made to the society. From the urbanism point of view, the relationships between universities and the cities in which they are embedded are far more interesting. Indeed, existing universities are either the products of past urbanization or mini cities on their own. These relationships, addressed as “mutuality” (Bender, 1988), are well discussed in several different but overlapping academic circles in the past decades. The recent changes coming along with the new millennium and the technological advances have again shed light on the contemporary importance of urban universities to cities and vice versa (Wusten, 1998).

According to Clark Kerr’s argument in his influential book (Kerr, 1972), the period following the Second World War constituted a “second great transformation” in higher education. He placed the first transformation in the last quarter of the nineteenth century. The courses of Kerr’s second great transformation were partly governmental, partly market driven and partly political. It was a time of major changes. When taking a look at the river of time he is standing in, one could definitely make the conclusion that it is another era of changes, changes including the rise of new technologies, new economies and new ideologies. These changes have influenced and will go on influencing the physical and non-physical aspects of relationships between universities and cities.

In my following review, I will draw attention to several aspects of this “mutuality”, specifically the non-physical ones. Starting with a very brief history of the development and evolution of university campuses, I’ll move on to the soft elements the student population/community, which is becoming new competitiveness for cities (Berg and Russo, 2004). Then turn to one of the nature of universities as being a knowledge base, which is the foundation of knowledge economy (Heijer, 2008). The last part would be dealing with the development of universities in senses of real estate and management, since campuses are referred to as “800-pound gorillas” considering its land ownership.

For the physical elements in the relationships of campus and city, they would be possibly a part for my thesis plan and final report considering their design relevance.

2 A brief history of campuses

Instead of the time line of education, organization and notions behind universities, this part of investigation into university campuses will be focused on where, why and how campuses were located to the cities throughout the history. The trip will take us from England to US and back to Europe again in the end.

Founded in the late twelfth and mid-thirteenth centuries, the University of Oxford and Cambridge are the ancestors of nowadays campuses. The campuses the two universities occupied, and still occupying, were surrounded by great nature environment. Another similarity lies in the monastery-like layout as closed courtyards, with key elements of churches, halls and libraries. The isolation of campuses in a nature context suggested a self-sustain society, if not a city, for brilliant minds living together for knowledge and protection (Hoeger and Christiaanse, 2007). This English model was inherited by the founding fathers of the Harvard University in early 1600s to foster community spirits.

This tradition of closed green campuses went on till after the Second World War when a preference for more open and free plans for universities. Example as the plan for MIT, where different buildings by different architects stand side by side like art objects (Hoeger and Christiaanse, 2007). Same time in Europe, students’ desires were taken into consideration. This led to even more free campuses and mostly embedded in city context.

3 Universities: a students’ community

Physically, a campus consists of all of its buildings and lands. But in a new economy
2.2 Theoretical Essays

where human capital is considered crucial to development, a university is truly made up of people, most of which and most important of which are its students. This community of students may be described as a population of the city, with distinct patterns of organization and habits (Berg and Russo, 2004). On one hand, they make use of the city’s services and facilities, interact with other residents and provide business opportunities. On the other hand, they are not tax payers, they gather in certain part of the city more and they have a certain level of isolation in their daily life from the rest of the population. It is because of these contradictories that many cities are hardly aware of the opportunities produced by this group for urban developments, and the necessity of taking strategic moves to take full advantage of it. On the contrary, students are always considered as a disturbance in daily life by local residents because of the different “way of life”. Sometimes they are even blamed for the rising prices of commodities such as housing, recreational facilities and consumption goods. Moreover, without dedicated physical facilities, nice meeting places and cultural understandings, the confrontations and conflicts between the two communities are numerous (Parsons and Davis, 1971). These confrontations and conflicts are definitely harmful to establish the appropriate synergies in the city. It is evident that conversations are needed between universities and cities to apply instruments and process to solve the problem, which will help the city to understand the value of this education asset and establish an identity preferred by highly-skilled young citizens. The starting point is to understand the relationship between students and their hosting city, in several aspects.

3.1 Students and economy

No doubts, the education and research activities conducted in universities by students produce direct economic effects as jobs, profits and services. But there are more precious but less easy to quantify effects, generally referred to as “knowledge spillover” (Berg and Russo, 2004). To facilitate this effect and the students (or alumni) producing this effect, initiatives such as science parks, knowledge transfer organization and incubators are organized.

Another character of universities and student communities is that they could be considered counter-economic-cycle organizations. During a time of recession, more people go to universities for better skills to make them more competitive in a tougher job market. Instead, during a booming economy, people tend to access the job market as soon as possible. This makes students a valuable asset to economic regeneration strategies in transforming regions.

3.2 Students and facilities

Students have a large consumption of cultural and recreational facilities. Places like sports centers, campus theaters, music clubs and pubs, bars are highly dependent on students as their target market. It is widely recognized that adequate provision of these facilities significantly increase the quality of daily life of students, and thus ensure the attractiveness of the city as working and living location for students and young working forces.

During student-targeted regenerations, facilities are planned and built for them. The risk of this strategy lies in students’ identities as non-tax-payers. Therefore, the burden of these facilities is borne by local citizens. It is then important to achieve a consensus among the locals on future benefits of short term (reduced price when using these facilities) and of long term (more jobs providing services to students).

Because of the nature of young and educated students, the facilities for them could easily be converted into tourist attractions targeting an international and energetic audience. In a local scale, student-run programs and events could be important venues to promote the city. In a higher scale, the climate of a lively and fun campus adds to the attractiveness of the urban environment (Berg and Russo, 2004).

From the university point of view, because of its annual timetable of vocations and weekends, on campus facilities could look at a more outward share use with local communities, generating extra revenue and benefiting the communities. This would also prevent the competition of lands between universities and cities, which could lead to the relocation of historically “urban” universities to suburban locations (Hall, 1998).

3.3 Students and housing

Student communities have enormous influences on housing market in their host cities because of their different spending patterns and life standards with a much faster rent cycle. In the end, these factors may likely to push up the price level at certain part of the city (Berg and Russo, 2004). In the case of English “campus formula” solution, the housing prices could be controlled by limiting the encounter
2.2 Theoretical Essays

between students and host communities (Vassal, 1987). Other solutions as “cities of studies” try to solve this dilemma by creating “academic communities” of only students and staff from universities (Dubet and Sembel, 1994).

3.4 Student and strategies as a conclusion

It is apparent that universities and higher education institutions are important elements for urban development strategies. But how to form strategies consisting student communities still varies. As Pallares and Feixa suggested, there are two extremes for these strategies. One in which students are categorized as any other city users, simply consume the city but never become a part of it. This is the case in which the connection is only one way. The other end implies students find themselves totally belong to the city in which they are comfortable and considered of high values. In this way, the interaction is established (Pallares and Feixa, 2000). The latter scenario will also prevent the outflow of students from their hosting cities after finishing the education. This outflow are considered as an “opportunity cost” by Felsenstein which will produce no local return in terms of human capital (Felsenstein, 1995).

As Indovina stated, universities are good for cities and vice versa. But this relationship is never automatically established (Indovina, 1998). A comprehensive strategy for a student-friendly city as following is proposed (Berg and Russo, 2004),

Attracting students: building a friendly community;
Helping students: offering good and enough facilities to achieve integration;
Housing students: settlement appreciated by students to meet their requirements but also indentified by locals to minimize the impact on housing market;
Recognizing students: providing certain rights to students in local decision making process;
Increasing chances of interaction: integrating students in a network of relationships;
Linking the students: creating emotional bonds to keep human capital.

5 Universities: facing creative economy

Change of economy focus has been and is still happening in many countries. The services and knowledge sectors are taking the dominant place of agriculture and industry. The EU has reached a consensus on the future vision of knowledge economy, to become the most dynamic and successful knowledge economy in the world, according to Lisbon Agenda (2000). With the globalization process, individuals, especially educated creative class, are facing global choices. This fits Friedman’s claim of Globalization of individuals is the current trend after globalization of countries and companies (Friedman, 2006).

Research shows that creative class tend to choose cities with more liberal atmosphere, better cultural facilities and more other creative class as their living and working locations (Florida, 2004). The same conclusion also applies to knowledge institutions and personals. The nine case studies of EU cities highlighted the contribution of universities in attracting and retaining knowledge workers. This effect helps the city to create knowledge, apply knowledge and create clusters of knowledge-based economy (Berg, 2005).

As Ms. den Heijer argued, knowledge bases as universities are critical foundation to stimulate knowledge economy. Furthermore, the existence of a university also generate student population and employment, which also add value to other factors of a successful knowledge society, such as economic base, life quality and urban diversity. Both European research(Perry and Wiewel, 2007). And US context (Wiewel and Knaap, 2005) shows the economic spin-off of a university in a region and the profit of university-city interaction.

4 Universities: a business to manage

While the overall impact of universities on cities and the feedback from cities has been much discussed, there is another aspect of to be addressed, which is the role of university in real estate development (Pinck, 1993). Despite being an educational and service organization, a university is indeed a business. Evidence lies in the fact that universities often rank among top employers in urban areas and they are also among the most significant and permanent land and building owners (ICIC, 2002). And they are also major consumers of private goods and public services (Perry and Wiewel, 2005). But unlike other public stakeholders, the development and expansion of universities are often practiced in a relative institutional isolated way (Muthesius, 2000). The decisions made by universities regarding their real estate properties were mostly only responsive to their core mission of knowledge (McDowell, 2001). Universities are mostly interested in their faculties, student,
and increasingly their alumni and donors (Dober, 2000), but not their neighbors and hosting cities.

5.1 Campus and neighborhood

The most common tension between universities and cities is about campuses and surrounding communities. But there is a worldwide trend in apply community development protocols into campus development scenarios to achieve a university-community real estate development relationship (Perry and Wiewel, 2005). In the case described by Sabina Deitrick and Tracy Soska, an almost century-long confrontation between the University of Pittsburgh and its adjacent Oakland neighborhood was introduced (Perry and Wiewel, 2005). The result of this struggle changed the university’s dependence on traditional campus planning practices, led to the ending of a “unilateral” decision making process. The description of the incident went on went both of the parties transformed from “reactive modes during the period of conflict and confrontation” to a time of collaboration between the university and community. This movement was mediated with the help of local political power of city hall and professional opinion of state planners.

The same partnership of university-community was also the heart issue of one study of Columbia University (Perry and Wiewel, 2005). Columbia being the third largest owner of land in New York City, has “acted no differently than any other landowners; it has invested in real estate for its financial return.” But its prestigious reputation as a university still affected its decision in the location of Audubon Center. The requirements of a research and development facilities replies also to the demands of requiring the facility to meet the needs of close-by troubled communities of African American and Dominican. Three points have been drawn from the case by the author to other universities,

Providing housing and faculties first to meet institutional needs and then providing spaces for university-related economy;
Involving students and staffs in the issues concerning university’s roles in communities; and
Paying attention to the reactions from the poorer communities to the university’s activities.

Researches also show the university’s change of attitude towards improving surrounding communities and the change of reasons of this effort, in a time span of fifty years (Perry and Wiewel, 2005). The first attempt to renovate campus-bordering communities could be understood as maintaining attractiveness to students and teachers. From this point of view, despite the generally successful outcome, the process was mainly demolition and land clearance for urban renewal. As most urban renewal projects, these actions met resistance from the community being destroyed. This approach in 1950s and 60s changed into a more engaged strategy of improving commercial and residential conditions in the 1990s. Webber concluded a comprehensive pack of initiatives of “making neighborhoods attractive to potential residents by ensuring good schools, safe streets, good transportation and attractive housing choices.” These measures are believed to be also attractive to users on campus.

5.2 Campus and city center

When real estate development of universities became a part of the changing strategies for urban renewal and community development, universities also involved themselves in the process of inner city and central business district development. The decline of city centers during the last half of 20th century was specially concentrated in CBDs and the directly linked troubled residential areas and shrinking industrial zones.

Brian Coffey and Yonn Dierwechter described a new model of campus design in their research of campuses in a urban setting of vacant warehouses, low-income housing and old port facilities (Perry and Wiewel, 2005). The new modal, contrary to a traditional campus of greens, carries the principle of a group of education facilities that “mix in seamlessly with commercial, retail and service functions.” A different approach was discussed for the campus to become a “major reason for the re-urbanization of the inner-city.” In the discussion, the following factors were pointed out,

University’s impact on historic preservation;
University’s position in promoting economic regeneration;
University’s decision on land use for the development of its site; and University’s role in development of community in social welfare and equity.
The development of a multi-institutional campus “from community college to graduate research institutions” in Denver was introduced by one of its master planners of Robert Kronewitter (Perry and Wiewel, 2005). The project involved a large scale financial investment in infrastructure for not only the physical need of 33,000 students, but also for “a functional and visual contribution to the revitalization of the Denver CBD.”

Kronewitter’s report suggested that this kind of university real estate development requires public-private partnerships among commercial, tourism and education leadership, leads to a mixture of academic and community uses. In the Denver case, this led to a campus as a part of Denver’s urban master plan with buildings and land shared by institutions and communities, becoming a physical link in the new inner-city.

5.3 Campus and politics

Apart from the former discussions, there is another aspect in campus real estate development which is a collaboration among a full array of public and private actors (Perry and Wiewel, 2005). This collaboration is indeed a practice of negotiation involves leaderships and politics.

Recent research and practice developed the possibility of a city without a city center master plan benefited from a university that took over the planning process and became the leading actor in city center redevelopment process and still kept up to its own agenda (Perry and Wiewel, 2005). They addressed this process as a result of many factors,

Politically active university leadership;
Focused strategic planning; and
Mobilization of public and private resources.

Of the three, they argued the first comes first.

Another research involving three universities was carried out by Scott Cummings. He highlighted the crucial role university real estate development plays in building campus facilities and in rebuilding cities themselves. These two roles may be achieved by imbedding their institutional development into large city level regeneration based on the arts, entertainment, sports facilities and tourism (Perry and Wiewel, 2005). In the three cases, Scott noted that educational administrators acted as “major political players in the urban regimes and coalitions promoting re-development.” This process requires an involvement of a city wide range of stakeholders including private investors, national government, local municipal and the university.

6 Conclusions

Much attention has been paid to the university-city relationship by many researchers, with the strong belief “in a university of, not simply in, the city. But that does not imply that it ought to be or can be the same thing as a city” (Bender, 1988). From my process of reviewing the theories and debates, as important as the physical layouts and spatial qualities matter, the soft aspects of the relationship play a more crucial role. The understanding of a university as a combination of a community, a knowledge institution, a business partner and a political power helps to achieve an overall perspective of the problem.

From the community angle, serving and preserving the precious community of students and profit-generating consumers and highly-skilled employees benefits the city in both short and long terms. From the knowledge angle, expanding and spreading the knowledge generated inside campus buildings has become a new engine for economical growth in the time of creativity. From the business angle, the acknowledgement of universities as major employers, landowners, financial entities and political powers helps to start and finish a partnership among actors.
2.3 Context Analyses

2.3.1 Shanghai Factsheet

Shanghai is the largest city in China, and one of the largest metropolitan areas in the world. Located on China’s central eastern coast at the mouth of the Yangtze River, the city is administered as a municipality of the China with province-level status.

Shanghai Data

- GDP: 136.98 billion euro
- GDP per Capita: 7312.4 euro
- GDP Growth: 9.7%
- Area: 6340.5 km²
- Area of Center: 2057 km²
- Population: 18884600
- Population of Center: 14250000
- Density: 800.7 /km²
- Density in Center: 3848.1 /km²
- Universities: 61
- University Students: 598398

Conclusion

• Demographically, Shanghai is a big city with a large population. But the density of Shanghai is quite similar compared to Europe. And the population of Shanghai is greatly concentrated in the city center;
• Economically, Shanghai as a whole is a strong and still growing city. But the wealth of residents is not comparable to European cities;
• About higher education, Shanghai is a center of universities with a number larger than most European cities. Thus the population of students is also giant.
2.3 Context Analyses

Methodology

The analyses on Shanghai is carried out through comparisons.

By comparing Shanghai with some European or developed metropolitans, it is easier to understand the similarities and differences that I would encounter in applying European experiences of Urban Regeneration to a developed mega city in a developing country.

The comparison includes European cities of Berlin, Hamburg, Amsterdam, Rotterdam, London, Paris and Milan together with one example from Asia as Hongkong.

Fig. 16: Location of metropolitans
2.3 Context Analyses

Comparision

Fig. 17: Metropolitans to compare GDP Growth

Fig. 18: Comparison of GDP Area

Fig. 19: Comparison of GDP Growth

Fig. 20: Comparison of GDP per capita Area of Center

Fig. 21: Comparison of area

Fig. 22: Comparison of area of center
2.3 Context Analyses

Population

Fig. 23: Comparison of population

Fig. 24: Comparison of population of center

Fig. 25: Comparison of Density

Density

Fig. 26: Comparison of Density in center

Universities

Fig. 27: Comparison of Universities

University Students

Fig. 28: Comparison of university students
2.3 Context Analyses

2.3.2 Yangpu Factsheet

Yangpu, one of the 19 districts in Shanghai. It is located in the northeast of Shanghai, which is a major residential area. By comparing Yangpu with other 18 districts and the average level of Shanghai, a unique vision could be proposed to this specific location of Shanghai.

**Yangpu Data**

- GDP: 68.03 billion euro
- GDP per Capita: 5693.7 euro
- GDP Growth: 12.7%
- Area: 60.7 km²
- Population: 1194800
- Density: 19674 /km²
- 1st Industry Percentage: 0.83%
- 2nd Industry Percentage: 55.78%
- 3rd Industry Percentage: 43.39%
- Foreign Investment: 511 million euro
- Retail Sales: 1.86 billion euro
- New Housing Price: 803 euro/m²
- Unemployment Rate: 2.25%

**Conclusion**

- Demographically, Yangpu is of the average population and density of Shanghai;
- Economically, Yangpu is weak because of the shrinking industry and unattractive commerce;
- About higher education, Yangpu is the center of Shanghai with more than ten universities, including four of the top ones with outstanding reputation and great influence.
2.3 Context Analyses

Methodology

The analyses on Yangpu is carried out through comparisons.

By comparing Yangpu with other 18 districts and the average level of Shanghai, a unique vision could be proposed to this specific location of Shanghai.
2.3 Context Analyses

**GDP**

Fig. 32: Comparison of GDP

Fig. 34: Comparison of GDP growth

**GDP per Capita**

Fig. 33: Comparison of GDP per capita

**Density**

Fig. 36: Comparison of density

**2nd Industries Percentage**

Fig. 37: Comparison of 2nd industry percentage

Fig. 35: Comparison of population
12 Research

2.3 Context Analyses

1st Industries Percentage

Foreign Investment

Retail Sales

Fig. 38: Comparison of 1st industry percentage

Fig. 39: Comparison of 3rd industry percentage

Fig. 40: Comparison of foreign investment

Fig. 41: Comparison of retail sales

Fig. 42: Comparison of new housing price

Fig. 43: Comparison of unemployment rate
2.3 Context Analyses

2.3.3 Yangpu Timeline

Universities

Housings

Industries

Policies
Conclusion:

Fudan has only one campus and is facing major growth in the coming years. Tongji’s growth in recent years came through acquiring and building new campuses. SISU is growing in its new campus with old campus stable. SUFE is at a stable time due to limited campus.

Old Linong housings are of small quantity and considered worth protecting. New Linong housings are of small quantity and considered worth protecting. Slums are of small quantity and considered suitable for new developments. Workers housings are of low quality but considered having ideological value. Public housings are of large quantity and low quality. Old highrises are of small quality but with difficulty of demolishing. Market housing are the mainstream of nowadays and built on demolished areas of all kinds.

Paper industry was shrinking before 1990s but developing afterwards. Textile industry was shrinking after 1990s. Steel industry was shrinking after 1990s. Ship manufacturing industry was shrinking after 1990s. Power industry was stable after 1990s due to residents’ need of electricity. Machinery industry was shrinking after 1990s. Medicine industry was shrinking after 1990s.

The main ground infrastructures were the heritage from the only ahead-of-time planning of the Big Shanghai Planning. The elevated roads were constructed within this structure as improvements.

50 years after proposed in the Big Shanghai Planning, the Five-Corner Square is growing into a main sub-center of the city.

Demolishing and rebuilding are still the mainstream of urban renewal.

The shift from industries to housings and now to knowledge bases is established in the official planning.
2.3 Context Analyses

2.3.4 University Factsheet

There are four major universities in Yangpu,
• Fudan University;
• Tongji University;
• Shanghai International Studies University (SISU);
• Shanghai University of Finance & Economy (SUFE).

Fudan is strong in science, literature and art. Tongji is strong in architecture, urbanism and engineering. SISU is strong in foreign languages. SUFE is strong in finance, economy and management.

![Fig. 45: Four major universities]
2.3 Context Analyses
All these universities have multiple campuses in Shanghai. These campuses include old/main campus inside the city in the district of Yangpu and new campuses built in suburban area during the last decade.

These new campuses were located in new suburban development zones. Some campuses were located nearby a specialized industrial zone to provide knowledge spill-outs. Some campuses were located together to form a new “University City”. All these new campuses are considered and proved to be crucial for the expansion of the universities, but not necessarily successful for the development.
2.3 Context Analyses

Zoom in to Yangpu district, the urban campuses of the universities in the inner city, always referred as “old campuses” or “main campuses”, also are comprised of more than one location.

This puzzled situation was due to the merge of small independent collages into the major universities in the last decades. Recent exchanges and sales between universities has re-organized the ownership. Most of these campuses are of an age of half to one century.
### 2.4 Site Analyses

#### 2.4.1 Overview

I limited my area of intervention as the area around the main urban campuses of the four major universities.

Within the site area, there is a total of seven semi-linked campuses. These campuses cover an area of more than 250 ha and a student population of around 61,000. They are the cores of the education and research of these three universities. Their concentrated presence in this small area made Yangpu the center of higher education of Shanghai, even China.

The site covers more than campuses. It also consists of residential areas of more than 400 ha, including a certain amount of industries and public facilities. There is a population of roughly 130,000 living in this area.

In all, the site has an area of around 650 ha and a population of around 200,000.

---

*Fig. 48: Site with university campuses*
2.4 Site Analyses

2.4.2 Ownerships

By comparison of campus vs city and universities-owned vs non-university-owned, several conclusion may be drawn,
• Education is high strictly on campuses, indicating a strong physical and emotional border between campuses and city;
• But city facilities are also found on campus. Moreover, universities also own several pieces of land next to campuses with programs of housing, offices and business. These suggest a buffer zone around campuses are highly shared by the university and the campus; and
• The universities were searching ways of development for profits.
2.4 Site Analyses

2.4.3 Traffic

For the traffic infrastructure of roads, following conclusions are drawn,

- The site is well linked to the other parts of the city (three elevated express roads and five ground main roads);
- South-north links to the city center are weak (three links out of five in total); and
- Disorienting local roads system.

For the public traffic including Metros and buses,

- Only two metro lines are close to, not thought, the site with three stations;
- Sufficient bus stops are used by multiple bus lines;
- Bus stops are located well in the neighbourhood, but poorly on the campuses; and
2.4 Site Analyses

2.4.4 Programs

• The main programs of the site are: housing, student housing and university faculties;
• The majority of housing and student housing are referred to as “old housing”, built between 1950s and 70s as post war housing.
• Offices are rear on the site;
• There are a large amount of commercial facilities including several local shopping centers and shopping roads;
• But commercial facilities are mostly concentrated off campus;
• There are a small amount of culture and sports facilities; and
• Culture and sports facilities are mostly limited on campus.
2.4 Site Analyses

2.4.5 Facilities

The dots on the map shows locations of local scale services. These shops and stores are embedded in the ground floors of all kind of buildings.

- Facilities are located along roads and streets;
- Facilities are located along roads around the residential areas;
- Very few facilities are located either on campuses or around campuses.

Fig. 57: Spots of services
2.4 Site Analyses

2.4.6 Urban Pattern

There are three factors that set the baselines for the morphology of the site, orientation, urban planning and campuses.

Because of the cultural and environmental emphasis on orientation, the city part is mostly north-south oriented. This is the best layout for maximize sunlight, but resulted in a homogeneous arrays of buildings which is boring.

At a larger scale, neighbourhoods are arranged according to the urban planning and road orientation. The partially carried out urban plan indicated a radial pattern. Most neighbourhoods aligned to this pattern.

For universities which externally followed the pattern, the north-south orientation is not dominant. They contains axes together with certain freedom.

Fig. 58: Urban pattern
2.4.7 Public Spaces

There are no major open spaces serve as public spaces. The most used spaces by the residents and students are the roads. Thus, the roads are the main body of public spaces.

There is a street system connecting the university campuses. But the system is more recognisable on map. There are no visual indications along the streets.

In this system, there are pieces of streets that are considered dangerous. These streets are rarely used by anyone and totally closed by walls.

For all the streets along campuses and neighbourhoods, there are fences alongside. Although visually transparent, these fences highly restrict the interaction between two sides.

The elevated road system going through the area usually measured 10 meter high and 20 meter wide. These elevated roads are conceived as cutting objects, disconnecting people flow and blocking sights.
2.5 Research Questions

Main research question
At the university zone in central Shanghai, four universities are located nearby each other, surrounded by old industry areas and low-quality postwar housings. There are no enough infrastructural, functional, spatial, or social connection, neither among the universities nor between the universities and the city. How to solve this problem of disconnection in this area by regenerating the inter-university public spaces and surrounding industries and housings?

Sub research questions

Vision
1. What is the shared vision about good connections between campuses and the city accepted by all stakeholders?

Partnerships
2. What are the possible partnerships involved in the regeneration process in this specific context?
3. How to apply the partnerships in the design tasks?

Interventions
4. What are the possible interventions for streets as public spaces, towards a better connected campuses?
5. What are the possible interventions for regeneration of the neighbourhoods?
6. What are the possible interventions for student housing for better qualities?
7. What are the possible interventions for direct campus-city connections?
3 Vision

3.1 Stakeholders
3.1.1 Overview
3.1.2 City Side Stakeholders
3.1.3 Campus Side Stakeholders
3.2 Shared Vision
3.3 Development Approaches
3.3.1 Traditional Approach
3.3.2 Visions vs Approaches
3.3.3 Stakes vs Approaches
3.3.4 Partnerships
3.4 Partnerships
3.5 Partnership 1: Renovation of Student Housing
3.5.1 Overview
3.5.2 Financial Calculation
3.5.3 Location
3.6 Partnership 2: Renovation of Student Housing
3.6.1 Overview
3.6.2 Financial Calculation
3.6.3 Location
3.7 Partnership 3: Renovation of Faculty Buildings
3.7.1 Overview
3.7.2 Financial Calculation
3.7.3 Location
3.8 Partnership 4: Sharing of Facilities
3.8.1 Overview
3.8.2 Case Study
3.8.3 Financial Calculation
3.8.4 Location
3.9 Partnership 5: Re-Designing of Public Spaces
3.1 Stakeholders

3.1.1 Overview

With the inspiration from Ms. den Heijer’s structure of stakeholders on campus, I could mirror the table and create an overall list of stakeholders of city and university respectively and correspondingly. Meanwhile, a extra list of visions harboured and stake controlled by each stakeholder was also added. Based on this list, a shared vision could be described.

<table>
<thead>
<tr>
<th>Perspective</th>
<th>In General</th>
<th>In specific</th>
<th>Visions</th>
<th>Stakes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical</td>
<td>Infrastructure</td>
<td>City engineers</td>
<td>Easier maintenance</td>
<td>Infrastructure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>City managers</td>
<td>More funding</td>
<td>Infrastructure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Private companies</td>
<td>More profits</td>
<td>Infrastructure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>More subsidies</td>
<td>Infrastructure</td>
</tr>
<tr>
<td>Functional</td>
<td>Users</td>
<td>Residents</td>
<td>Cheaper/more/better housing</td>
<td>Housing market</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better accessibility</td>
<td>Potential business</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better public spaces</td>
<td>Labour force</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>More/better daily services</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better identity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>More/better jobs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Employees</td>
<td>More/better jobs</td>
<td>Services</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better income</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Visitors</td>
<td>Better accessibility</td>
<td>Potential business</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better public spaces</td>
<td>Jobs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better social experiences</td>
<td>Taxes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Entrepreneurs</td>
<td>Cheaper/more/better space</td>
<td>Services</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better accessibility</td>
<td>Jobs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better public space</td>
<td>Taxes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better identity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better connection to campus</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>City tax dept.</td>
<td>More jobs</td>
<td>Money</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>More tax</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Business owners</td>
<td>Cheaper/more/better space</td>
<td>Services</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better accessibility</td>
<td>Jobs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better identity</td>
<td>Taxes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Housing companies</td>
<td>Build new housing</td>
<td>Money</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Higher rent</td>
<td>Housings</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower land price</td>
<td>Jobs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>More lands available</td>
<td>Taxes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better accessibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better public spaces</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better identity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>City housing dept.</td>
<td>Build new housing</td>
<td>Housings</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Renovate old housing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower rent</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Higher land price</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better accessibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better public spaces</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Better identity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>City planning dept.</td>
<td>Residential area of the city</td>
<td>City plans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>District planning dept.</td>
<td>‘Knowledge Yangpu’</td>
<td>District plans</td>
</tr>
</tbody>
</table>

Fig. 60: Stakeholders of the city, their visions & stakes
### 3.1.3 Campus Side Stakeholders

<table>
<thead>
<tr>
<th>Stakes</th>
<th>Visions</th>
<th>In specific</th>
<th>In General</th>
<th>Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infrastructure</strong></td>
<td>Renovate old housing&lt;br&gt;Renovate old academic facilities</td>
<td>Technical staff</td>
<td>Technical managers</td>
<td>Technical</td>
</tr>
<tr>
<td></td>
<td>More funding</td>
<td>Managers</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Potential business</strong></td>
<td>Cheaper/more/better housing&lt;br&gt;More/better academic facilities&lt;br&gt;More/better daily services&lt;br&gt;Better social experiences&lt;br&gt;More funding</td>
<td>Students</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Potential business</strong></td>
<td>More/better academic facilities&lt;br&gt;More/better daily services&lt;br&gt;Better social experiences&lt;br&gt;More funding</td>
<td>Academic staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Potential business</strong></td>
<td>Better accessibility&lt;br&gt;Better public spaces&lt;br&gt;Better social experiences</td>
<td>Visitors</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Services</strong></td>
<td>Cheaper/more/better space&lt;br&gt;Better accessibility&lt;br&gt;Better public space</td>
<td>Entrepreneurs</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Jobs</strong></td>
<td>Cheaper/more/better space&lt;br&gt;Better accessibility</td>
<td>Shop owners</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Taxes</strong></td>
<td>Cheaper/more/better space&lt;br&gt;Better accessibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Campus plans</strong></td>
<td>Better security</td>
<td>Planning &amp; control dept.</td>
<td>Business</td>
<td>Financial</td>
</tr>
<tr>
<td><strong>Services</strong></td>
<td>Cheaper/more/better space&lt;br&gt;Better accessibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Jobs</strong></td>
<td>Cheaper/more/better space&lt;br&gt;Better accessibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Taxes</strong></td>
<td>Cheaper/more/better space&lt;br&gt;Better accessibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>Renovate old buildings&lt;br&gt;Build new buildings&lt;br&gt;More funding&lt;br&gt;Better identity&lt;br&gt;Better flexibility</td>
<td>Executive board</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lands</strong></td>
<td>Renovate old buildings&lt;br&gt;Build new buildings&lt;br&gt;More funding&lt;br&gt;Better identity&lt;br&gt;Better flexibility</td>
<td>Executive board</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.2 Shared Visions

- New and renovated housing will be provided to both residents and students, at reasonable prices.
- Better infrastructure will be constructed while academic facilities will be upgraded.
- Business will emerge and better daily services will be organized, in better working spaces.
- With the regeneration of the public spaces, the identity of this area as a knowledge/university community will be established to achieve better social experience.
- The connection between campuses and the city will be improved, both socially, spatially and economically.
- With the stimulation of all those above, economic and financial benefits will be gained by every stakeholder.
3.3 Development Approaches

3.3.1 Traditional Approach

As a parallel study, an traditional approach to achieve the proposed vision was described in the form of a flow chart. The flows represent the financial traces of money.

There are three major actors that are financially strong enough to make physical changes, namely as the universities, the city and the developers. They are represented by their money, university funding, city tax and private profits.

3.3.2 Visions vs Approaches

By comparison the visions of stakeholders with the flow chart, it is obvious that in a traditional development process, the three powers would be acting totally independently with the only connection being financial. Thus some visions, basically the visions of the non-financially influential ones, would be unable to be fulfilled. In addition, some visions would take too long to be finished.

![Diagram showing stakeholders' visions in a traditional approach](image-url)
When comparing the development process with stakes held by stakeholders, it is more obvious that each actor needs something from another. Even with a separation of financial flows, there would be vertical interactions among actors to achieve their goals respectively.

Normally in the process, these interactions would be through money as well. One stakeholder would buy a certain property or power from another. This action would be hard for actors with less financial power, like universities or city. This would lead to a situation that most developments would be done by private companies and the visions achieved would be the ones of themselves.

3.3.4 Partnerships

On one hand, partnerships are necessary in which situations one partner could not handle alone. In this sense, a partnership is an approach of cooperation.

On the other hand, partnerships are crucial in guiding projects to an end which actors with both strong and weak power could appreciate. It is thus a tool of control.
3.4 Partnerships

For the sake of establishing an approach to support the regeneration process, several partnerships are proposed.

These partnerships concern not only the financial feasibility of the project, but also the social benefit as well.

In each partnership, there are stakeholders that serve and stakeholders that benefit. Hopefully, the serving ones are always compensated in a certain way. And some of the weak actors will always benefit.

Each partnership will be applied in one design task, to fulfil one or more design goals.

For illustration, each partnership is shown as a calculation chart. Empty boxes represent input stakes from each stakeholders. Full box represent output revenues or losses. Colors are used to indicate different type of stakes.
3.5 Partnership 1: Renovation of Student Housing

3.5.1 Overview

In this design task, the main aim is to find solutions for renovating old student housing, especially financial solutions.

Nearly half of the student housing on every campus were built 20 years ago with the standard of “dormitory”. In a dormitory building, rooms of 3 m by 6 m are arranged on both sides of the corridor. Rooms of this size host 4 to 6 students with two main bathrooms on each storey shared by all the rooms on this floor. During the past 20 years, universities have managed to renovate or rebuild half of all the student housing into up-to-date ones. But with limited funding and controlled rents (50 euro a year per person inclusive), it will be a long time for the other half.

The partnership proposed mainly borrow funding from private developers to help the renovation of old student housing. This is possible because of the high percentage of land price in a development process. The university provides land on which new student and market housing are built by a private developer. The private developer will build the new buildings with a certain amount of student housing free for the university and a certain amount of market housing for sale or rent. The revenue from sales and rents will be used to compensate the cost of construction with a certain amount of profit. The city authority is also involved for their change of land use permit and construction permit.

Besides the benefits, there are some downsides as well. The city will give up charging taxes on this development, the university may found it different to manage a campus of both students and residents, and the residents may find the new housing to be expensive.
3.5 Partnership 1: Renovation of Student Housing

3.5.2 Financial Calculation

By demolishing an old 4 storeys dormitory building and building a new 10 storeys one, the former students could gain an 100% improvement in living condition. Meanwhile, the 2 storeys that are not occupied by the students could be for the market.

Since land price composed of the most of housing price, with universities offering the land for free, the revenue from the 2 storeys of market housing could compensate the cost of the construction.

Cost Data
Construction cost: 200 €/m2
Renovation cost: 100 €/m2
Sales price: 1200 €/m2

Old Building Data
Storeys: 4
Area: 1600 m2/floor
Rooms: 44 /floor

Old Quality Data
Density: 4 persons/room
9 m2/person

New Building Data
Student housing storeys: 8
Market housing storeys: 2
Housing apartments: 16 /floor
Student rooms: 44 /floor

New Quality Data
Market housing density: 3 persons/apartment
33 m2/person
Student housing density: 4 persons/room
18 m2/person

Balance
Construction:
10 floors*1600 m2/floor*200 €/m2=3,200,000 €

Sales:
2 floors*1600 m2/floor*1,200 €/m2=3,840,000 €

Revenue: 640,000 €
3.5.3 Location

Criteria for the locations for this intervention is as following,

• Campus locations with a large amount of old student housing,
• Close to campus borders for easier management, and
• Northern to no other housing to avoid blocking of sunlight.
3.6 Partnership 2: Renovation of Resident Housing

3.6.1 Overview

The old housing in the city comprised of mostly the post war housing built from 50s to 70s. These housing are still the main part of housing stock. Built in a hurried schedule with low quality, these housing are in a rather bad functioning condition, including leakage in water and sewerage system, absence of heat insulation, worn interior and outdated plan layout.

The renewal and regeneration of housing started in early 90s mostly concentrated on residential areas built pre war with even worse conditions. After near 20 years, it’s time to move on to post war housing.

This second partnership is derived from the first one. It focuses on combining the renovation of student housing with the renovation of city housing.

The university and the company jointly renovation student housing and expand this renovation to city housing. The extra cost comes from more market housing built by the developer. And the university use a part of the renovated housing as student housing off campus to provide a variety of housing choices for students.

The downsides include a loss of a certain amount of housing and the forced leaving of local residents.
3.6 Partnership 2: Renovation of Resident Housing

### 3.6.2 Financial Calculation

Similar to Partnership 1, by demolishing an old 4 storeys dormitory building and building a new 10 storeys one, the former students could gain an 100% improvement in living condition. Meanwhile, the 3 storeys that are not occupied by the students could be for the market.

Instead of 2 storeys, there would be 3 storeys for sale. The extra revenue could be used on renovating the old residential.

After renovation, the residents would take 2 out of the 6 storeys with better living condition. The other 4 storeys would be used by students, still with an 100% improvement in living condition. This could be an extra choice of student housing.

**Cost data**
- Construction cost: 200 €/m2
- Renovation cost: 100 €/m2
- Sales price: 1200 €/m2

**Old Building Data 1**
- Storeys: 4
- Area: 1600 m2/floor
- Rooms: 44 rooms/floor

**Quality data**
- Density: 4 persons/room
  - 9 m2/person

**Old Building Data 2**
- Storeys: 6
- Area: 440 m2/floor
- Apartments: 8 apartments/floor

**Quality data**
- Density: 3 persons/apartment
  - 18 m2/person

**Building data**
- Student housing storeys: 7
- Market housing storeys: 3
- Housing apartments: 16 /floor
- Student rooms: 44 /floor

**Quality data**
- Market housing density:
  - 3 persons/apartment
  - 33 m2/person
- Student housing density:
  - 4 persons/room
  - 18 m2/person

**Building data**
- Student housing storeys: 4
- Market housing storeys: 2
- Housing apartments: 8 /floor
- Student apartments: 3 /floor

**Quality data**
- Market housing density:
  - 3 persons/apartment
  - 18 m2/person
- Student housing density:
  - 3 persons/apartment
  - 18 m2/person

**Fig. 78:** Use of a dormitory

**Fig. 79:** Use of a post war housing

**Fig. 80:** Mixed development of a dormitory

**Fig. 81:** Mixed renovation of a post war housing

**Balance**

Construction:
- 10 floors*1600 m2/floor*200 €/m2=3,200,000 €
- Purchase:
  - 4 floors*440 m2/floor*1200 €/m2=2,112,000 €
- Renovation:
  - 6 floors*440 m2/floor*100 €/m2=3,200,000 €

Sales:
- 3 floors*1600 m2/floor*1,200 €/m2=5,760,000 €

Revenue: 184,000 €
3.6 Partnership 2: Renovation of Resident Housing

3.6.3 Location

Criteria for the locations for this intervention is as following,

• City locations with a large amount of old housing,
• Close by to campus borders for fast commute, and
• On campuses with a big insufficiency of student housing.

Fig. 82: Possible locations for design task 2
3.7 Partnership 3: Renovation of Faculty Buildings

3.7.1 Overview

On one hand, universities are facing a uncertainty in future enrolment, on the other hand, Chinese universities have been building new faculties for the last 10 years. These together led to a certain level of vacancy of classrooms. With the estimation of college students in declining, it would be necessary for universities to manage their properties for better profits.

On the other hand, the fact is that these four universities is that two of them are 60 years old and the other two are 100 years old. The buildings from early and middle 20th century really need renovation, including physical renewal just as housing and technical upgrade for the new ICT equipment.

Because of the similarities between normal classrooms and usual offices, the faculty could be flexible for both programs.

A private developer will provide the renovation and upgrade of faculty buildings into suitable conditions to both classrooms and offices. The university can use a certain amount of rooms for education, and put the others in the control and management of the developer.

A certain percentage would be provided to start-ups as incubators according to a mutually agreed contract, with a half price. The rest could be market-oriented offices.

Each year, based on the number of students and future enrolment, new contract could be made concerning classroom-office ratio.
3.7 Partnership 3: Renovation of Faculty Buildings

3.7.2 Financial Calculation

The renovation of faculty buildings into flexible working spaces enables multiple scenarios of mixed use.

According to the scenarios proposed here, the building gradually change from offices/incubators into classrooms. During the time spam of 4 years, the rent revenue may compensate the renovation cost.

Cost data
Construction cost: 200 €/m²
Renovation cost: 100 €/m²
Office rent: 0.2 €/m²/day
Incubator rent: 0.1 €/m²/day

Balance in four years
Renovation:
4 floors*800 m²/floor*100 €/m²=320,000 €

Office rent:
0.5 floors*800 m²/floor*0.2 €/m²/day*365 days*10 years=292,000 €
Incubator rent:
0.5 floors*800 m²/floor*0.1 €/m²/day*365 days*10 years=146,000 €

Revenue: 118,000 €
3.7.3 Location

Criteria for the locations for this intervention is as following,

• Campus locations with a large amount of old faculty buildings,
• Close by to campus borders for easier management,
• Close to city areas with a concentration of offices and business opportunities, and
• On campuses with a big redundancy of faculties buildings or a fluctuating enrolment.

Fig. 90: Possible locations for design task 3
3.8 Partnership 4: Sharing of Facilities

3.8.1 Overview

There are two types of daily facilities that could be shared between universities and the hosting city, the commercial facilities and cultural facilities. But the problem is just the contrary. For commercial facilities, although every university has a certain amount in different types, city commercial facilities are always attractive and interesting and the student community as consumers produces business opportunities for the city. For cultural facilities, universities have halls, lecture rooms and cultural centers for rear occasions while communities are having hard time finding spaces for gatherings and events.

From the case studies on the following page, one can conclude that inner-city universities tend to have the shared facilities on the border of the campuses, forming a transition zone between the campus and the city where both communities can use and interact with each other. On the contrary, green campuses tend to keep the facilities in the center for their own.

This partnership is represented by joint cultural/commercial centers on campus or on campus borders.
3.8.2 Case Study

From the case study, one can conclude that inner-city universities tend to have the shared facilities on the border of the campuses, forming a transition zone between the campus and the city where both communities can use and interact with each other. On the contrary, green campuses tend to keep the facilities in the center for their own.
3.8 Partnership 4: Sharing of Facilities

3.8.3 Financial Calculation

The construction of a new facility shared by students and residents, with both cultural and commercial programs, could reach a financial balance in 5 years on the rent of the commercial spaces.

Cost Data
- Cultural construction cost: 400 €/m²
- Commercial construction cost: 200 €/m²
- Commercial rent price: 0.3 €/m²/day

Balance in Five Years
- Cultural construction:
  2 floors*1600 m²/floor*400 €/m²=1,280,000 €
- Commercial construction:
  2 floors*1600 m²/floor*200 €/m²=640,000 €
- Rent:
  2 floors*1600 m²/floor*0.3 €/m²/day*365 days*6 years=2,102,400 €
- Revenue: 182,400 €
3.8 Partnership 4: Sharing of Facilities

3.8.4 Location

Criteria for the locations for this intervention is as following,

- Campus locations with a large amount of pedestrians,
- Close by to campus borders,
- Close to city areas with existing commercial facilities, and
- On campuses with a insufficiency of commercial facilities.
- On campuses with a redundancy of cultural facilities.

Fig. 99: Possible locations for design task 4
3.9 Partnership 5: Re-Designing of Public Spaces

3.9.1 Overview

In all the design tasks I set for myself, the regeneration of the public spaces is most appreciated by all the stakeholders, according to the shared vision. Yet it is less welcomed as financially unprofitable project. Basic, no one wants to pay.

Although the better public spaces are both socially and financially profitable, the initiative must be supported by the willingness of stakeholders. In my proposal of the fifth partnership, the willingness is stimulated by the former four partnerships in which the major stakeholders are promisingly to give profits. Of course, one player must take the leadership in the negotiation. This might be the city authority for its power and unbiased perspective. It also might be the university or universities in seek of a better identity to serve its mission as knowledge institutions and as student communities.

![Fig. 100: Partnership 5](image)

![Fig. 101: View of the public space with walls](image)

![Fig. 102: View of the public space with highway](image)
The public space as a border and a spine

The border between the university and the city is clearly defined by a continuous street. It serves as the main public space used by both the university and the city. It is also the controlling feature in the morphology of the area since the secondary streets are branches from the main and stretching into the university and the city.

Green gardens along the street

Gardens arraying along the main street forms a unique sense of a university city in the green. Moreover, all the gardens are of different sizes, different contexts and different layouts.

3.9.2 Case Study on Cambridge

- Changing but continuous spaces.
- Public spaces as a border and a spine.
- Green gardens along the street.
3.9 Partnership 5: Re-Designing of Public Spaces

LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Type: Small and specialised  
Context: Historical metropolitan  
Location: Center

3.9.3 Case Study on London

- A pedestrian area.
- A historical image.
- Squares for students.

A pedestrian area

This small campus fits into the traffic system of the busy metropolitan by creating a small zone of pedestrian area without disturbing the traffic flow of the surrounding.

A historical image

The building of the campus adopted a historical image by following the traditional scale, proportion and facade elements. The transition from the city into the campus is almost invisible.

Square for students

The several squares embedded in between the buildings form spaces of enclosure and intimacy. Although these spaces are exclusive for students, they still carry the urban sense.

Fig. 108: Campus & city in London

Fig. 109: Entrance of pedestrian area

Fig. 110: View of the traditional publics space

Fig. 111: View of the student square

Fig. 112: Pedestrian area
Multiple entries to the campus

The old campus of Harvard is total open without any walls. Furthermore, it is not strongly enclosed by architecture or urban design. Its openness is expressed by its multiple entry points and the inter-connecting passages linking the entries.

Twisting envelop of the public spaces

The envelop of the public spaces around the campus stands in a manner of zigzag, giving the public spaces more change, sometime dramatic but sometime gentle.

Boulevard with opening towards the waterfront

On the river side of MIT, the campus faces the water with a nice boulevard. Addition to the street, the campus has different openings towards the street and the river.

3.9.4 Case Study on Boston

• Multiple entries to the campus.
• Twisting envelop of the public spaces.
• Boulevard with opening towards the waterfront.
3.9 Partnership 5: Re-Designing of Public Spaces

Ceremonial square with activities

The university is right next to an important square with events. This creates a different relationship than a normal square. But this square is also used in daily activities, giving a sense of daily lift to this side of the building.

Green garden

Unlike universities in open green, small parks are precious in an urban context. The existence of only a piece of green could provide a great resource of relaxation.

Main street on an axis

The campus is next to a main street of the city with a strong direction. The street provides a variety of services and activities, and also a metropolitan side of the campus.

Casual square with facilities

This small and casual square is unique with its seats, trees, fountain and cafes. It is the perfect space for students and activities.
Based on the partnerships and their respective proposal, some buildings will be assigned with new programs. Possible locations are shown on this map.
4 Design

4.1 Overview 66
4.2 Products 67
4.3 Sub-System "Streets" 68
  4.3.1 Overview 68
  4.3.2 Structure 70
  4.3.3 Destination Network 71
  4.3.4 The Missing Links 72
  4.3.5 Missing Link 1: Open Street Market 73
  4.3.6 Missing Link 2: Pedestrian Shortcuts 76
  4.3.7 Missing Link 3: Local Commerce 79
  4.3.8 Typology of Green Streets 82
  4.3.9 Typology of Commercial Streets 85
  4.3.10 Typology of Neighbourhood Streets 90
  4.3.11 Typology of Campus-City Borders 93
  4.3.12 Materialization 96
  4.3.13 Products 97
4.4 Sub-System “Neighbourhoods” 98
  4.4.1 Overview 98
  4.4.2 Elements 100
  4.4.3 Structure 104
  4.4.4 Products 107
4.5 Sub-System “Student Housing” 109
  4.5.1 Overview 109
  4.5.2 Elements 111
  4.5.3 Structure 113
  4.5.4 Products 114
4.1 Overview

Elements: Four design sub-systems
- Sub-system of designing the streets
- Sub-system of designing the neighbourhoods
- Sub-system of designing the student housing

Structure: Interaction among sub-systems
- “Streets” + “Neighbourhoods”
- “Neighbourhoods” + “Student housing”
- “Streets” + “Student housing”

From the proposed partnerships, four different design tasks emerged to be solved. Each design task would be carried out alone. While at the end, all four tasks would be tested against each other to see confirmations or confictions.

In this way, the whole design is the result of the system. The separate design tasks are the elements in it and the interactions are the structure in it.
4.2 Products

The products of all three sub-systems are shown on one map. Some designs are shown in conceptual lines instead of specific details.
4.3 Sub-System “Streets“

4.3.1 Overview

Elements: 72 Streets

Structure: System and typology of streets

Products: New system of streets
- New design of typologies

In this design task, streets as public spaces for and between the campus and the city would be designed.

Some of the design would be location specific, deals with certain conditions of certain streets. Some of the design would be generic, deals with a type of streets with similar conditions.

These two types of design together form the structure of this design task. And each design would be a result of the system.
The 72 streets involved are described in parameters to explain the similarity and difference among them. The parameters used are,

- Length
- Width of lanes
- Width of sidewalks
- Open spaces
- Elevated roads
- Footprint
- Height of buildings
- Border type
- Border height
- Entrances
- Entrance ratio
- Traffic
- Facilities
- Plantation
- Programs
- Space syntax

Some of the parameters are described in absolute numbers, indicating the exact value of the parameter. The others are described in relative numbers, in which 3 means relatively the most while 1 means relatively the lest.
4.3 Sub-System “Streets“

4.3.2 Structure

The structure of this design task was made up of location specific elements, the three missing links, and the generic elements, the five typologies.

The three missing links serve as the connection among campuses, to bring users from one network to another, finally forming a continuous network of usage. In this way, the four campuses are better connected.

The five typologies improves the spatial quality of the streets, which provide a better public spaces for both the campus and the city. Some of the typologies also directly link the campus and the city through certain elements.
4.3 Sub-System “Streets”

4.3.3 Destination Network

By analysing how students from different campuses use the existing destinations, a network can be drawn to indicate the flow of people.

Indicated by different colors, students from each campus visit surrounding destinations with a center on the campus. The students tend to limit their travel with in a certain distance.
4.3 Sub-System “Streets“

4.3.4 The Missing Links

The simple network of destinations could be translated into the network of streets, which connect the destinations and are used by the students to get to there.

It is obvious from this network that there are three missing links that should have connected the system. The missing links are highly possible at the short cut locations.

Fig. 136: Usage of streets
4.3 Sub-System “Streets”

4.3.5 Missing Link 1: Open Street Market

Parameters

- Road = 11
- Sidewalk = 8
- Border = Fence
- Car = 3
- Bus = 3
- Bicycle = 3
- Pedestrian = 2
- Facility = 3
- Space syntax > 35

Fig. 137: Missing link 1
4.3 Sub-System “Streets“

Design

The first missing link, located on road No. 47, has a unique feature of luxuriously wide side. With its connecting location between two commercial destinations, the idea of the design is described as an open street market.

The commercial lines along the road are paved with “commercia pavement“ to indicate the program. Along the commercial lines, there are locations of rest with the material of “green pavement“. These resting places are shared by the street and the neighbourhood, forming gate ways to the community which has now been wall-less.

Fig. 138: Existing section of missing link 1

Fig. 139: New design section of missing link 1
4.3 Sub-System “Streets”

Fig. 140: Existing plan of missing link 1

Fig. 141: New design plan of missing link 1
4.3 Sub-System “Streets“

4.3.6 Missing Link 2: Pedestrian Shortcuts

Parameters

- Road = 13
- Sidewalk = 5
- Border = Fence
- Car = 1
- Bus = 1
- Bicycle = 2
- Pedestrian = 1
- Facility = 1
- Space syntax = 33

Fig. 142: Missing link 2
Design

This missing link, being a piece of Road No. 30, has rather wide traffic lanes for cars. This road was built to host major traffic flows. But the current situation showed a extremely low car traffic.

Being the connecting link between student housing locations of two universities, this link has a strong potential of changing from car domain into pedestrian domain.

The design is a representation of this idea. With car lanes out, pedestrian and bicycle areas are now located in the center. On one hand, the pedestrian line is surrounded by different gardens or programs, which are the extensions from the buildings around. On the other hand, the same line is cut through by multiple short cuts connecting similar programs on each side.
4.3 Sub-System “Streets“

Fig. 145: Existing plan of missing link 2

Fig. 146: New design plan of missing link 2
4.3 Sub-System “Streets”

4.3.7 Missing Link 3: Local Commerce

Parameters

• Road = 11
• Sidewalk = 4
• Border = Fence
• Car = 2
• Bus = 2
• Bicycle = 2
• Pedestrian = 2
• Facility = 3
• Space syntax = 14
4.3 Sub-System “Streets“

Design

Being also one of the commercial links, the design focused on promoting the local commercial atmosphere. This goal is achieved by expanding local business locations from the first row towards the second row of the residential area. Thus, a small scale commercial line is created between the buildings.

The inner commercial line is connected with outer sidewalk through gardens of green.

Because of the shopping habit, this intervention is only limited to one side of the road.
4.3 Sub-System “Streets”

Fig. 149: Existing plan of missing link 3

Fig. 150: New design plan of missing link 3
4.3 Sub-System “Streets“

4.3.8 Typology of Green Streets

The existing structure of green spaces included the streets with good green environment and major open green areas on campus.

The streets with good green environment is described as streets with Green streets with “Open spaces” parameter as “Yes” or “Plantation” parameter as “3”.

This green structure could be completed by several new elements. These new elements would repair the weak joints and expand the green.

These elements of existing and new green streets are described as the typology of green streets.

Fig. 151: Typology of green streets
Design

For the design of this typology, focuses are on the idea of integrating existing isolated green areas into the green structure.

For the example street, the side on which existing green area is located became the backbone of the design. Main pedestrian areas are located on this side, instead of on both sides. New green spaces are added next to the existing ones. And different materials are used to form zones of different walking speed.

Fig. 152: Existing section of the example

Fig. 153: New design section of the example
4.3 Sub-System “Streets”

Fig. 154: Existing plan of the example

Fig. 155: New design plan of the example
4.3.9 Typology of Commercial Streets

The typology of commercial streets is made up of three kinds of streets.

The existing main commercial streets, which fit the parameter of following,
Facility = 3
Width of lanes < 20m
are the main commercial streets existing.

The new main commercial streets, which fit the parameter of following,
Facility = 2
Space syntax > 15
are the streets of potentials to grow into main commercial streets.

The new sub main commercial streets, which fit the parameter of following,
Facility = 2
Space syntax < 15
are the streets of potentials to grow into commercial streets in more local level.

Fig. 156: Typology of commercial streets
4.3 Sub-System “Streets“

Design

With a strong commercial identity, some streets of this typology see the possibility of expanding the identity further. This design tried to meet the demand.

For the example street, the main commercial zones are located between the buildings instead of next to the road. New squares of good environment are added, which are shared by the street and the neighbourhood.

Fig. 157: Existing section of the example

Fig. 158: New design section of the example
4.3 Sub-System “Streets”

Fig. 159: Existing plan of the example

Fig. 160: New design plan of the example
4.3 Sub-System “Streets“

Design

Some streets of this typology are only secondary in their commercial values. The design on these streets is limited to peripheral area of the neighbourhood.

For the example street, commercial zones are created on the border of the neighbourhood, which slightly intrude into the neighbourhood.

Fig. 161: Existing section of the example

Fig. 162: New design section of the example
4.3 Sub-System “Streets”

Fig. 163: Existing plan of the example

Fig. 164: New design plan of the example
4.3 Sub-System “Streets“

4.3.10 Typology of Neighbourhood Streets

The typology of neighbourhood streets are the streets fit the parameters of following, Program = residence
Width of lanes < 20m.

Within this typology, some streets are considered fit for intervention for a more interesting design. Those are the streets of parameters of following, Border = Wall/Fence
Entrance ratio < 1.6
Facility < 3
Space syntax < 20.

Fig. 165: Typology of neighbourhood streets
Design

A typical neighbourhood street is considered boring and unlively. This is mainly the result of the existence of fences and the lack of open spaces.

Thus, this design focused on taking out the wall and introducing public spaces.

Walls are replaced by only a bump line on the ground, since walls do not carry security functions any more. The bump on the ground still gives the sense of entering a neighbourhood, with preserving the identity.

Public spaces are inserted at spots where connection between the neighbourhood and the street. It may be a location of green, or a location of space.

To solve the problem of privacy when taking out the wall and putting in the public spaces, a buffer zone is added along the buildings that are exposed. The zone is marked with rough materials, and could also be locations of some streets' facilities.
4.3 Sub-System “Streets“

Fig. 168: Existing plan of the example

Fig. 169: New design plan of the example
4.3 Sub-System “Streets“

4.3.11 Typology of Campus-City Borders

The typology of campus-city borders are the streets fit the parameters of following,
Program = education + residence.

Within this typology, some streets are considered fit for intervention for a more connected campus-city border. Those are the streets of parameters of following,
Width of lanes < 20m
Border = Wall/Fence
Space syntax > 15.v
4.3 Sub-System “Streets“

Design

The design is mostly on the campus side, for campuses are heavily guarded by walls.

By taking out the wall, precious green areas on the campus side are now available from the street side. Furthermore, a pedestrian line is created inside the campus, within the great environment. Links of squares are added then from the inner pedestrian to the outer one.

On the community side, interventions are similar to the previous typology.
Fig. 173: Existing plan of the example

Fig. 174: New design plan of the example
4.3 Sub-System “Streets”

4.3.12 Materialization

Three main materials are proposed for my design at various locations,

Walking pavement,
Green pavement,
Commercial pavement.

A walking pavement is composed of typical pavement bricks used in Shanghai. This material is intended to indicate a zone of fast passage. Thus a common and ordinary brick is used. The pattern is also seen daily in Shanghai. Despite of its normality, this pattern could create a sense of orientation.

A green pavement is composed of used traditional grey bricks. It is “green” in several ways. Firstly, it is a nice way to recycle the huge amount of old bricks from the demolition in Shanghai. Each brick could be cut into smaller piece vertically, covering twice the surface. Secondly, the pattern is organized similarly to the pattern of indoor wooden floor. It proves a strong sense of relaxation even when used outdoor. Thirdly, an area could be covered partially with the brick pieces, leaving intervals for the growth of grass and small plants.

A commercial pavement is composed of granite or sandstone with a tin of red color. The color differentiate it from the other materials and makes it recognizable as commercial squares.
4.3 Sub-System “Streets”

4.3.13 Products

All the interventions together would contribute to a street system with better quality.

Firstly, inviting images could be found at connecting point of different systems. Streets are not segregated into small clusters any more. One could always find a route, or multiple routes in the system.

Secondly, most streets could offer better pedestrian experiences. Areas of walking or staying could easily be found and differentiated. Multiple locations of great resting places will serve the users.

Thirdly, commercial atmosphere are promoted to meet the demands of residents/students. Both central big malls and local smalls shops exist within the system. Furthermore, a clear commercial structure could lead you to a desirable location with surprise.

Fourthly, pieces of green are finally connected together through open-up and build-more. Green spaces are visible, accessible and recognizable now.

Finally, communities and universities are all opening up to the streets. The streets are not only public spaces, but also a map to other public spaces.
4.4 Sub-System “Neighbourhoods“

4.4.1 Overview

Elements: 27 Neighbourhoods

Structure: Situations of neighbourhoods

Products: New densification solutions

In this design task, a generic solution would be proposed for the regeneration of the neighbourhoods to deal with their problems. The generic solution would adapt to each location based on the situation around and inside it.
The 27 neighbourhoods involved are described in parameters to explain the similarity and difference among them. The parameters used are,

- **Area**
- **Length of borders**
- **FSI**
- **Urban pattern**
- **Height of buildings**
- **Border type**
- **Border height**
- **Entrance ratio**
- **Traffic**
- **Facilities**
- **Plantation**
- **Distances to destinations**
- **Program**

Some of the parameters are described in absolute numbers, indicating the exact value of the parameter. The others are described in relative numbers, in which 3 means relatively the most while 1 means relatively the lest.

### Table: Neighbourhood Parameters

<table>
<thead>
<tr>
<th>Neighbourhood</th>
<th>Area (km²)</th>
<th>Length of Borders</th>
<th>FSI</th>
<th>Urban Pattern</th>
<th>Height of Buildings</th>
<th>Border Type</th>
<th>Border Height</th>
<th>Entrance Ratio</th>
<th>Traffic</th>
<th>Facilities</th>
<th>Plantation</th>
<th>Distances to Destinations</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighbourhood 1</td>
<td>0.5</td>
<td>1.2</td>
<td>3</td>
<td>2</td>
<td>1.5</td>
<td>2</td>
<td>1.2</td>
<td>1.5</td>
<td>2</td>
<td>3</td>
<td>1.5</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>Neighbourhood 2</td>
<td>0.6</td>
<td>1.3</td>
<td>3</td>
<td>2</td>
<td>1.5</td>
<td>2</td>
<td>1.2</td>
<td>1.5</td>
<td>2</td>
<td>3</td>
<td>1.5</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>Neighbourhood 3</td>
<td>0.7</td>
<td>1.4</td>
<td>3</td>
<td>2</td>
<td>1.5</td>
<td>2</td>
<td>1.2</td>
<td>1.5</td>
<td>2</td>
<td>3</td>
<td>1.5</td>
<td>2</td>
<td>1.2</td>
</tr>
</tbody>
</table>

The parameters are described in absolute numbers, indicating the exact value of the parameter. The others are described in relative numbers, in which 3 means relatively the most while 1 means relatively the lest.
4.4 Sub-System “Neighbourhoods“

4.4.2 Elements

The comparison between the 1970s, when the neighbourhoods were designed, with 2000s not only showed the problem statements of the neighbourhoods, but also suggested the intervention under this strict circumstance.

Although the already high density is generally considered as a problem, it is very difficult to reduce it under current economic and social conditions.

Furthermore, all of the other problems may have solutions in increasing the density even higher. New construction, which is the only way to increase the density, could provide areas for new facilities and revenues for renovation.

The restriction comes mostly with the Sunshine Laws. Instead of collective big buildings, distributive small blocks are the only possible densification without worsening the sunshine situation. The element of the intervention are new added 6m by 6m blocks for various programs.

The locating of the blocks may also become a method of re-defining and re-designing the homogenous and average public spaces.

Fig. 187: Comparison between 1970s and 2000s

Fig. 188: Elements of the system
4.4 Sub-System “Neighbourhoods“

The limited size of new block is only on aspect of enforcing Sunshine Laws. The locations at which the blocks are put also matter.

To pick out possible locations, calculations were made on the blocks' impact on sunshine.

In the existing sunshine condition, the red area is considered under the requirement of the laws. By comparing the experiments of putting blocks (one-storey and two-storey) at different locations (outer location and inner location) to the existing condition, it is possible to say at a certainty which location is allowed.

It is obvious that an one-storey block may be put at any placed while a two storey block may only be located at inner locations.
4.4 Sub-System “Neighbourhoods“

Among all the possible programs for the new blocks, housing is the least flexible, making it the best test for the size of the blocks.

A one storey 6m by 6m block could be used as an apartment for bachelors or newly-wedded couples. The plan included one bedroom with all set of kitchen, bathroom and living room. Considering the high housing price in the area, this small apartment would be rather affordable.

A two storey 6m by 6m block could be used as a house with two bedrooms. Together with both the living room and dining room, this layout could be attractive to families with one kid.

Other possible programs all have less strict requirements for plan layout. It could be assumed that they can all fit in.
The blocks themselves have been proved to be capable of different programs and acceptable by Sunshine Laws. They could also be seen as a tool to form a nicer public spaces in a typical characterless neighbourhood.

A typical postwar neighbourhood was designed to be a repeating grid with identical spaces. People tend to lose senses of location and orientation inside. The positioning of blocks at certain locations, as shown in the render, suggests the potentials of generic solution redefined the existing homogenise public spaces.

By grouping the blocks with the existing buildings new spaces could be divided from the grid. These new spaces could be a open/close garden, a passage, or a continuous space. Meanwhile, enough spaces was left to keep the spaces connected by traffic.

Fig. 198: One possible layout of blocks

Fig. 199: Grouping of the blocks
4.4 Sub-System “Neighbourhoods“

4.4.3 Structure

How many blocks to put in each neighbourhood?

Based on the different situation of the neighbourhoods, different numbers of blocks would be added respectively.

The number of blocks to put in is not described in amount, since each neighbourhood differs in size. The number is described in percentage. It means how many of all the possible locations could be occupied by a block.

Each neighbourhood starts with 25% of it possible location occupied by new blocks. This percentage increases if the neighbourhood has a criteria as following,

FAI is below average.
Urban pattern is homogenous.
Entrance ratio is above average.
Facility is below average.

Vice versa.

Thus a different percentage is assigned to different neighbourhood indicating the number of blocks.
Where to put the blocks in each neighbourhood?

Based on the different situation of the neighbourhoods, different locations for blocks would be assigned.

Blocks would be located closer to certain locations with certain criteria, as following,

Borders with more entrances.
Borders with more traffic.
Borders with less facilities.
More homogenise locations.
Open spaces.
Streets with interventions.

Thus a gray scale diagram is generated for each neighbourhood. Darker locations means more blocks while lighter locations means less.
4.4 Sub-System “Neighbourhoods“

What program in each block for each neighbourhood?

Two types of programs may be possible for new blocks. The public program (including culture, service, commerce and education) and the private program (including housing, offices and student housing).

Different program for each of blocks would be assigned based on the block’s location and situation. A block is more likely to be a public programs when situated near,

Less car traffic
More pedestrian
Border with more plantation
Border with more facilities.

Private programs are just the opposite.

Thus a gradient diagram is generated for each neighbourhood. Redder locations means more public programs while bluer locations means more private.
4.4 Sub-System “Neighbourhoods”

4.4.4 Products

Based on the discussion before, one scenario of new block is showed here. New blocks were added to all neighbourhoods.
4.4 Sub-System “Neighbourhoods“

One detail of the result is showed here with location sand programs assigned.

Fig. 204: New plan of the example
4.5 Sub-System “Student Housing“

4.5.1 Overview

Elements: 18 student housing locations

Structure: Urban pattern + public spaces

Products: Urban composition designs

In this design task, urban composition guidelines would be proposed based on an example location among similar locations.

Fig. 205: Student housing numbers
4.5 Sub-System “Student Housing”

The 18 student housing locations involved are described in parameters to explain the similarity and difference among them. The parameters used are,

- Area
- Length of borders
- FSI
- Urban pattern
- Height of buildings
- Border type
- Border height
- Entrance ratio
- Traffic
- Facilities
- Plantation
- Distances to destinations
- Program

Some of the parameters are described in absolute numbers, indicating the exact value of the parameter. The others are described in relative numbers, in which 3 means relatively the most while 1 means relatively the lest.
4.5 Sub-System “Student Housing”

4.5.2 Elements

By comparing student housing situations to surrounding resident housing, it is obvious the student housing locations are the best possible places for major densification in the area.

The densification would not only provide new households, it would also provide better living conditions for students.

---

**Student**

**Resident**

**Spatial quality**
- Campus pattern → City pattern
- More open spaces → Less open spaces

**Housing habits**
- Both orientation → South only
- Sunshine Laws → Stricter sunshine laws

**Economy**
- Low prices → High prices

**Demographics**
- Low density → High density

**Interventions**
- Mixed neighbourhood on student housing locations with higher density

---

Fig. 207: Comparison between student housing and resident housing
4.5 Sub-System “Student Housing“

A living unit of the size of 20m by 9m was proposed for both new student housing and resident housing. This size was the compromise between two housing typologies.

For student housing, one unit contains three dorm rooms. Each of them has south orientation and independent bathroom. Besides these two major improvements, the average space for each student has been doubled.

For resident housing, one unit contains three households with a space of around 50m². The two bedroom apartment with reasonable size would be suitable for a high housing price situation.

Fig. 208: Plan for a unit as student housing

Fig. 209: Plan for a unit as resident housing
4.5 Sub-System “Student Housing“

4.5.3 Structure

By forming a rectangular layout and facing the corner towards the south, the building could guarantee south orientation for all the rooms while increasing floor spaces and forming new urban pattern.

The different grouping of more than one of this buildings around existing open spaces proved its variety.
4.5 Sub-System “Student Housing“

4.5.4 Products

Locations of this densification on student housing areas were chosen based on the following parameters, FSI < 1.4
Old student housing >50%
Near other neighbourhoods

Four locations were designed under the same guidelines of matching campus/city patterns and maintaining public spaces. They also applied the same living unit and building layout. But due to the strong difference among locations, each design has its own character.
Existing Plan

Existing layout of a typical student housing location has some common shortcomings.

Firstly, the layout of buildings are as homogenise as a standard residential area. Buildings were arranged in a way lacking character and identity.

Secondly, open spaces are places accordingly to the grid. Some of the spaces around the building have precious green environment after tens of years. But the spaces were not enclosed by buildings, leaving the spaces more go-through rather than stay-at.

Thirdly, there were no pedestrian spaces for the students and their activities. The ground floor is mainly car orientated.

Finally, the green spaces were separated from the main green structure and from each other.
4.5 Sub-System “Student Housing“

New design Plan

To deal with the existing problems, the new design offers a new configuration of spaces on the ground level.

Firstly, the new building layout applied the proposed footprint and grouping principals. Each building has its difference from the other.

Secondly, the open spaces are kept but closed by buildings. The reversed relationship, from spaces around the buildings to buildings around the spaces, gives the open space a better quality.

Thirdly, the traffic system was reorganized. Several redundant streets were taken out, changed into pedestrian area. There is now a pedestrian zone within the area, kept each building accessed by car at one location.

Finally, the green spaces were connected to the main open spaces around and to each other.
5 Conclusion

5.1 Products  118
5.2 Evaluation  119
5.3 References  120
5.4 Acknowledgement  121
5.1 Products

Qualities

Sub-System of “Streets”
More connected street system.
Upgraded green structure.
New pedestrian routes.
Promoted commercial atmosphere.
Tax income or property income.
Shared use of spaces by campus and city.

Sub-System of “Neighbourhoods”
More facilities.
Better defined public spaces.
Campus programs in neighbourhoods.
Development opportunity for universities/communities.
(A little) Housing supply.
Revenues for developers/residents.

Sub-System of “Student Housing”
Better living conditions.
More facilities.
Better public spaces.
Pedestrian areas.
Neighbourhood programs on campuses.
Development opportunity for communities/universities.
(A lot) Housing supply.
Revenues for developers/universities.
## 5.2 Evaluation

Qualities against Partnerships

The evaluation was carried out in the following system. Each of the three sub-systems was looked at from the point of who’s paying and who’s benefiting. Three groups were proposed, as “works for”, “profit to” and “paid by”.

A sub-system is only successful when certain stakeholder appears on two out of the three groups. This makes sure that the stakeholder who pays do have the initiative to pay.

From this point of view, all three sub-systems are considered successful.

<table>
<thead>
<tr>
<th>Sub-System of “Streets”</th>
<th>Sub-System of “Neighbourhoods”</th>
<th>Sub-System of “Student Housing”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Works for:</td>
<td>Works for:</td>
<td>Works for:</td>
</tr>
<tr>
<td>Students/teachers.</td>
<td>University authorities.</td>
<td>University authorities.</td>
</tr>
<tr>
<td>Residents.</td>
<td>Students.</td>
<td>Residents.</td>
</tr>
<tr>
<td>Profit to:</td>
<td>Profit to:</td>
<td>Profit to:</td>
</tr>
<tr>
<td>Property owners.</td>
<td>City authorities.</td>
<td>Developers.</td>
</tr>
<tr>
<td>City authorities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paid by:</td>
<td>Paid by:</td>
<td>Paid by:</td>
</tr>
<tr>
<td>City authorities.</td>
<td>Residents.</td>
<td>Developers.</td>
</tr>
<tr>
<td>University authorities.</td>
<td>University authorities.</td>
<td></td>
</tr>
<tr>
<td>Property owners.</td>
<td>City authorities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Developers.</td>
<td></td>
</tr>
</tbody>
</table>
5.3 References


Conclusion

5.3 Acknowledgement

It has been a pleasantly challenging time. During the period of working towards a Master’s Thesis has been an important experience in my academic study.

Here I would express my thanks to, actually, a lot of people.

Firstly, I would thank Professor Westrik, for his devoted time and effort with me on my project. My biggest gratitude goes to his continuous and persistent urge of “Start designing”, especially during the time spam from P1 to P2. From P2 onwards, he has greatly helped on various aspects of the project.

Secondly, I would thank Professor den Heijer. I tracked her down quite early for her reputation of “knowing everything about campus”. She has not only provided materials and ideas for my essay and theoretical research, but also promoted my physical design dramatically.

Thirdly, I would thank Professor van der Hoeven. I came to him on a short notice and with strong need on the subject of public space design. He has so kindly helped me, even on my problem of presentation and representation.

Furthermore, I would like to thank Professor Stouten, not only for his organizing to the studio meetings, the excursions and the discussions, but also for his openness on the first day of the graduation process, when I was firstly rejected by the Graduation Studio of Urban Regeneration.

Finally, my thanks and also congratulations to my fellow classmates. You have been inspiring to me and my project And you have been friendly to me.

Thanks guys!