# STIMULATE UTILIZATION AND SOCIAL INTERACTION IN PHYSICAL PUBLIC SPACE THROUGH THE IMPLEMENTATION OF DIGITAL TECHNOLOGY

## THE CASE OF HONG KONG

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# MUTUAL DIALOGUE & DIGITAL TECHNOLOGY

Re-establishing a mutual dialogue between people & space: The case of hong kong

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## P4 Report

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# TABLE OF CONTENT


1.0 INTRODUCTION 04

1.1 Motivation 05
1.2 Problem field 11
1.3 Problem statement 19
1.4 Hypothesis 20
1.5 Research question 21
1.6 Aims 21
1.7 Methodology 22
1.7 Relevance 26
1.8 Time framework 27

2.0 THEORIES 28

2.1 Theories 29
2.2 Theoretical framework 35

3.0 CASE STUDY & PATTERNS 38

3.1 Case studies 39
3.2 Pattern library 70

4.0 CONTEXTUAL ANALYSIS & TESTING DESIGN# 74

4.1 Hong Kong 75
4.2 Site location - Mongkok, Hong Kong 79
4.3 Site analysis 81
4.4 Strategy 83
4.5 Testing design 84
4.6 Conclusion 105

5.0 VISIONS 110

5.1 Visions 111

6.0 REFLECTION 124

6.1 Reflection 125

APPENDIX 130

REFERENCE 134

# #INTRODUCTION#

## 1.1.1 #Public space as...#

"Public space" concept is not only reflected the changes in the western political values, but also mapping the history of urban space function changes and urban cultural connotation changes.

**Political stage**

1800s -1900s
Greece

**Social stage**

Since 1870s
The design of Central park in New York, Olmsted

*Left: Fig.1*
*Resources: http://afa.americananthro.org/wp-content/uploads/2016/02/Picture2.jpg*

*Right: Fig.2*
*Resources: https://www.nycgo.com%2Fphoto-galleries%2Fcentral-park-photos&psig=AOvVaw2vumMeLx0g0FqnlmtvNRtx&ust=1507099985722853*

The value of Public space in Western was first originated from the concept of public domain in the polis of ancient Greek, which refers to the political space which achieves the value of 'publicity'. Including squares, temples, bazaars as well as the public opinion and power (Fig.1).

From the 19th century to the early 20th century, the political public space declined gradually, and at the same time, the famous design of Central Park in New York marked the emergence of the new form of public space as the stage of leisure and social communication. Since then, public space has become a part of rational city planning, from which public domain and public spirit are regarded as important factors in building trust and civil society (Fig.2).

*Fig.3: Shot from Whyte's film ' The Social Life of Small Urban Spaces'*

The relationship of people and their public life to pubic space is dynamic and reciprocal and made up of many strands. (Slessor, 2001). As it is said, "people are tend to sit where there is a place to sit" ( Whyte, 1988), the de-

sign of public space could have greatly effect on the interaction of people who met in such spaces, and, conversely, the feeling in the circumstances, could in turn leads to the use of the spaces.

However, it seems that we are now facing the trend of privatization, globalization, and digitalization, that is generally re-shaping citizens' daily life, as well as the future demand and supply of our urban space. More and more social and political systems tend to encourage the privatization of public spaces; people are also more likely to live along, engage with smaller social circles and spend time or public life in private spaces (Hampton et al., 2011; Klinenberg, 2012; Lofland, 1998; Putnam, 2000); and even the intimacy of our society has changed from the traditional but efficient face-to-face interaction to a complicated networking system due to the fast advancement of digital technology.

### 1.1.2 #New type of public space in digital age#

As we are now all citizens of cyberspace and cybercommunities ("cyborgs," according to Mitchell, 1995) in the digital age, people are getting more and more obsessed with digital technologies, without any doubt, the digital network - the electronic agora today, has totally subverts and redefines our notions of gathering place, community, and urban life.(Mitchell, 1995)

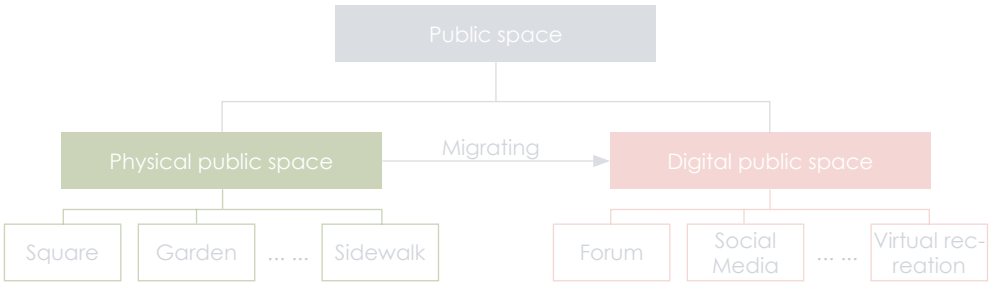


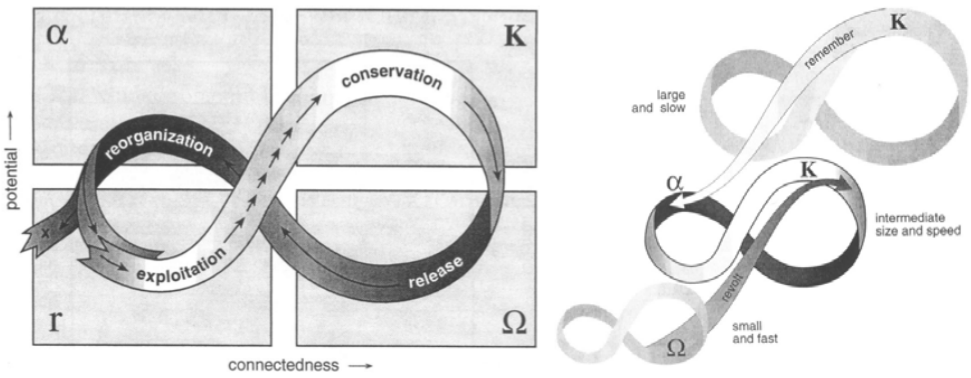

*Fig.4:*
*Source: http://www.vcg.com*

With the appearance and development of digital world, our living space has been expanded, and the existing organization and structure has also been changed. Now we have not only physical public space but also digital public space with more unrestricted access to an open resource (Fig.4). Due to the emergence of the digital spaces, our physical spaces and some of the urban functions are also gradually being transferring. It has bring us more freedom with provides a networked, immaterial public space, but inevitably causes the migrating from physical space to digital world, which declines eye-contact, and makes physical public space get less relevant.

### 1.1.3 #Complexity of Public Space developing system#

Based on the Complexity of Economic Ecology, and Social Systems Holling invented (Fig.5), a diagram showing complexity of Public space developing system was made (Fig.6). From which it could be seen that every time when it reaches the stimulation and evaluation, it could either continue updating within the original stable 'panarchy' or jump to the next level.

*Fig.5: Complexity of Economic, Ecological, and Social Systems*
*Source: Understanding Complexity of Economic, Ecological, and Social Systems , C. S. Holling*




*Hierarchies and adaptive cycles comprise the basis of ecosystems and social-ecological systems across scales. Together they form a panarchy. The panarchy describe show a healthy system can invent and experiment, benefiting from inventions that create opportunity while being kept safe from those that destabilize because of their nature or excessive exuberance.*

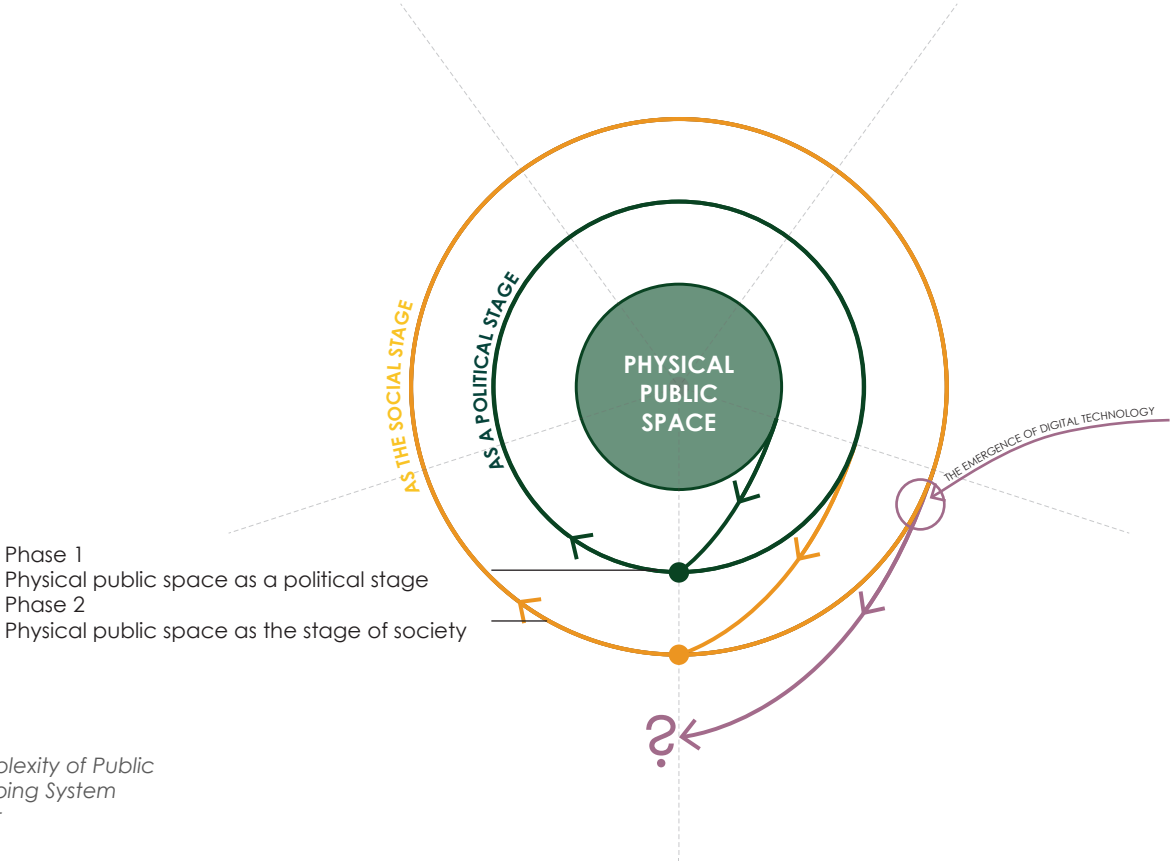



*Fig.6 The Complexity of Public space Developing System*
*Source: Author*

Now we are standing at the cross point, experiencing the high range of advantages and disadvantages Digital Technology has brought to us citizens and our cities, and at the same time, facing the challenge it gives, what question me are 'How the Digital technology will reflect on the cities as well as its physical spaces?' as well as 'How will our urban space transforms in the coming new period?'

## 1.1.4 #The case of Hong Kong: Digitization or Digitalization?#

How a city's urban public space is transforming depends not only on how the existing physical environment is, but also on some social aspects such as how inclusive and innovative the city is, how much the Digital Technologies are understood and accepted by citizens, as well as how much the citizens and government are involved and committed.

Hong Kong is well known for its high density population, concrete forests, financial center, and shopping paradise. It is one of the most distinctive, inclusive and culturally diverse city, where the culture of eastern and western, old and modern meet, mix and interact.

Considering with such an unique but extreme situation, how could the digital technology interact with Hong Kong's physical space? Is it going to be DIGITIZED and be subverted and replaced completely? Or is it going to be DIGITALIZED that the digital technology will change how we design and use physical spaces? Are we destined to give up our physical world? Could we find new ways that the digital and physical could come together to embrace the changing situation and create a better living environment? (Fig.7,8)

Based on those questions, in this project I will exclusively focus on the situation of Hong Kong, exploring the possibilities for physical and digital space to cooperate and interact, that could enhance physical public space and social interaction, in order to provide suggestions for the future development of Hong Kong's urban space, as well as other similar cases.

*DIGITIZATION: "THE ACTION OR PROCESS OF DIGITIZING; THE CONVERSION OF ANALOGUE DATA (esp. in later use images, video, and text) into digital form."*

*DIGITALIZATION: THE ADOPTION OR INCREASE IN USE OF DIGITAL OR COMPUTER TECHNOLOGY BY AN ORGANIZATION, INDUSTRY, COUNTRY, ETC."*

Fig.7 Digitization vs Digitalization
Source: http://culturedigitally.org/2014/09/digitalization-and-digitization/

*Fig. 8 Digitization or Digitalization?*
*Source: Author*

Source: http://www.flickr.com/photos/old-hk

## #1.2.1# The disappearing Hong Kong (Sense of belonging)

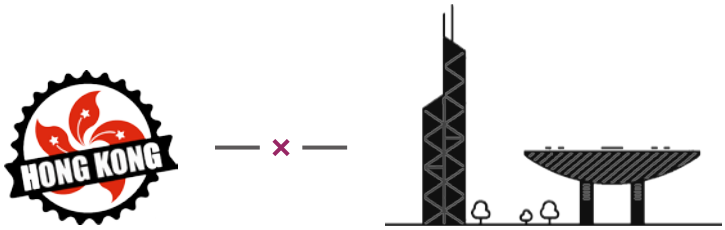



*Fig.9 The disappearing Hong Kong*
*Source: Author*

*"I was born in Hong Kong, and I love Hong Kong*
*Having witnessed the government and property developers have been destroying the trail of old Hong Kong step by step for years*
*Experiencing the halo of the distinctive and colorful Hong Kong fading to a dull metropolis.*
*I feel so much helpless in my heart*
*Thus, I determined to start taking photos, in order to keep some memories, as well as record some changes, even though I'm not a good photographer."*

Hong Kong is one of the most densified city in the world (Fig. 4), it is notorious for its limited living spaces and public spaces. Even nowadays, people in Sham Shui Po, Mongkok and Kwun Tong still live in 'cage homes' or cubicle flats.

Due to the development of Hong Kong, the land has becoming even rare, which causes the high land and housing price. Some of the land in the center area thus was transformed and developed into commercial or business district, and the citizens started to move to suburbs, many of which are far away or even separated from city center.

This generally leads to the broken of original social and spatial network. Citizens are separated from their familiar communities, and the new developed shopping malls and office buildings makes the urban public spaces of Hong Kong became less extraordinary (Fig.10). Citizens thus feel less sense of community and belonging and get less relevant from public both specially and socially.

*Fig.10 Comparation of Hong Kong public space*
*Source: http://www.flickr.com/photos/old-hk*

■ 七十年代生於香港，鍾愛香港，
痛心香港政府漠視地道文化、建築，
目睹港府拍伙地產商多年來不斷將舊香港痕跡使勁地消滅，
利益輸送，良心埋沒。
官員保育智慧低而不自知，相關知識落後於其他先進國家。

有感香港急速淪為泛味都市，光環退色已成事實，
心裡非常無奈。

本身不擅拍照的我，也決心努力去紀錄一些變遷。

關於　所有相片　相簿　最愛　博覽館　群組

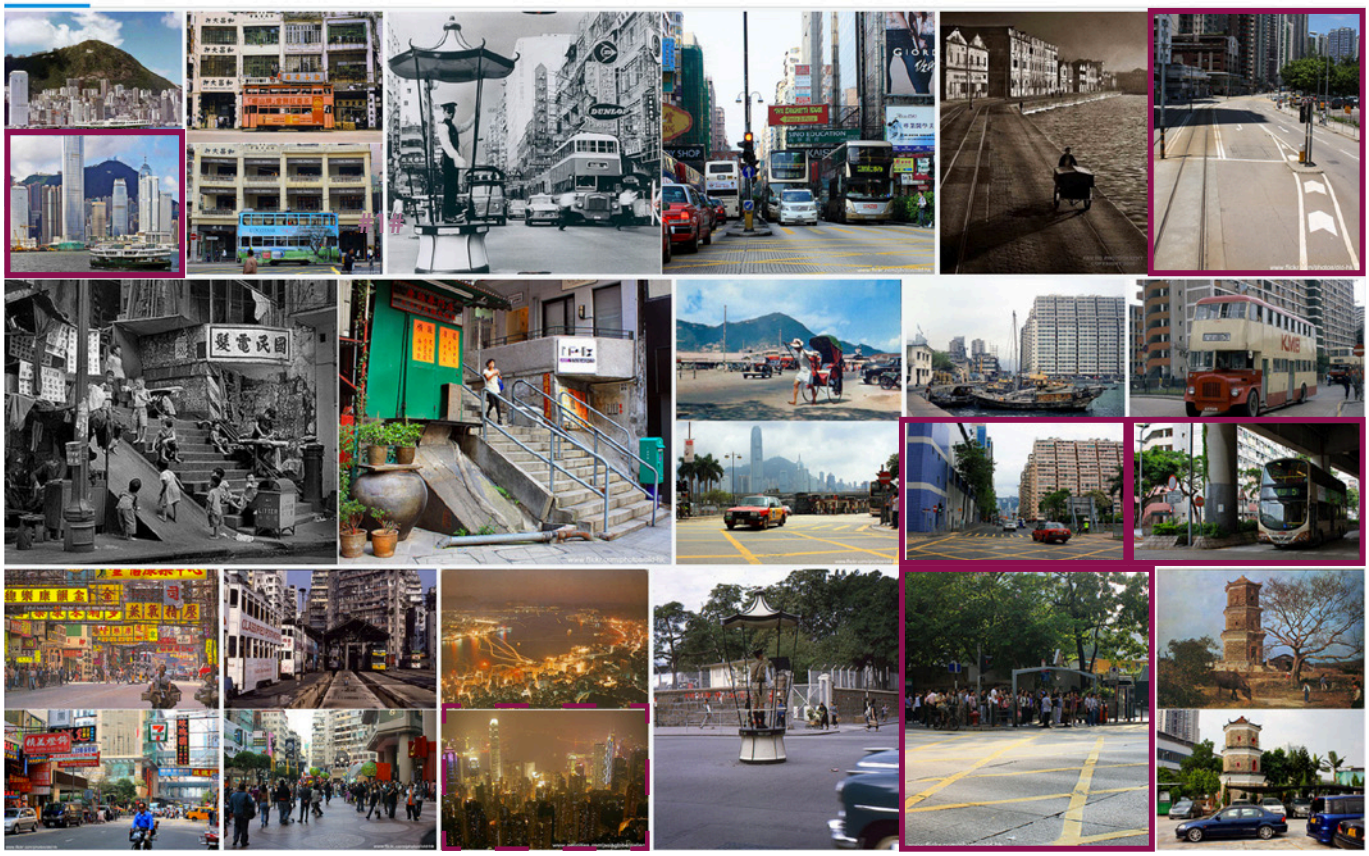


*Fig.11 Comparation of Hong Kong public space*
*Source: http://www.flickr.com/photos/old-hk*

## 1.2.2 #Mismatching of the existing physical public spaces in Hong Kong#

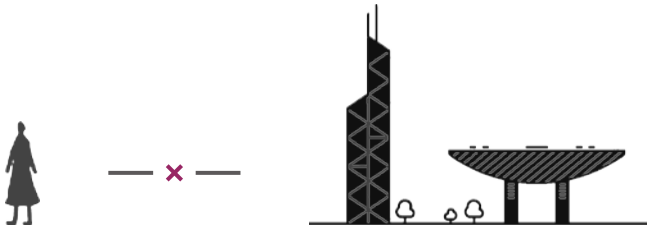


Fig.12: Mismatching of public spaces
Drawn by author

*"The use of public spaces has become an increasingly hot topic in Hong Kong.*
*Although there's only a small amount public spaces in Hong Kong, their main problem is not the lack of open spaces, but rather they were not planned, designed and created to fulfil local needs."*
*-Lai-Chong Au*

The public space HongKongers inhabit today was basically constructed prior or during the Industrial Revolution. However our new Society is now beginning to bring new principles and technologies, with which citizens start to have new demands and exceptions on the functioning and structure of the streets, avenues, squares and parks. Since the transform of physical space is a long term process comparing with the digital changing, this has caused some mismatches to the existing physical public spaces in Hong Kong.

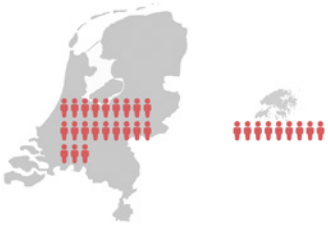


Fig.13: Comparison between NL & HK
Drawn by author

### A. Supply and Distribution

Hong Kong is one of the most densified places in the world. As it could be seen that comparing with Netherlands,

Fig.14 Overcrowded picnic area
https://www.shutterstock.com/

Due to the large population and limited construction area of Hong Kong,

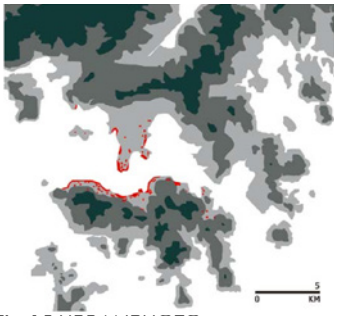


Fig.15 URBANPHOTO
http://www.urbanphoto.net/

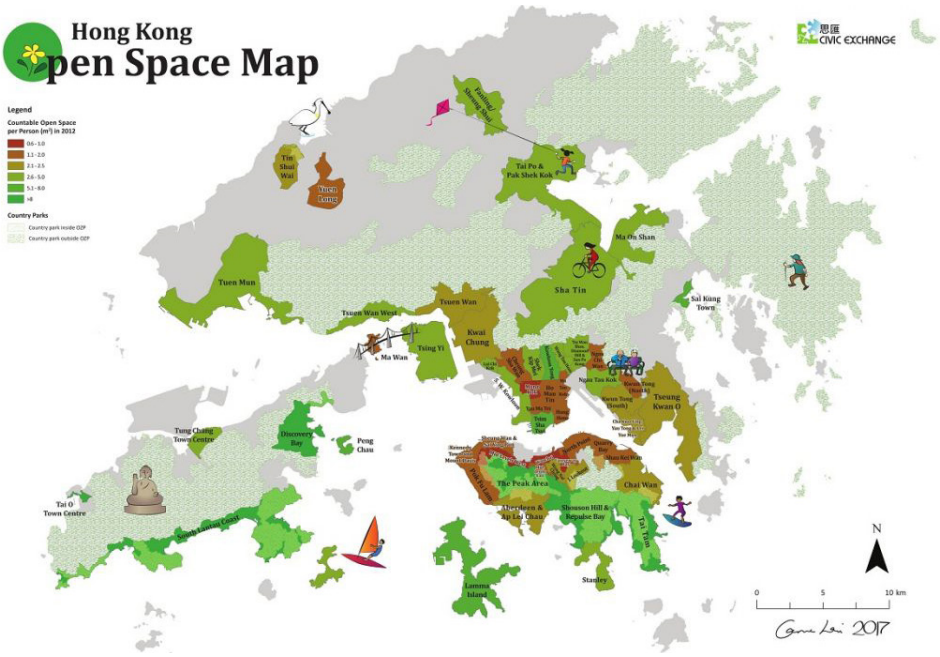



Fig.16 Hong Kong open space map
Source: Civic exchange

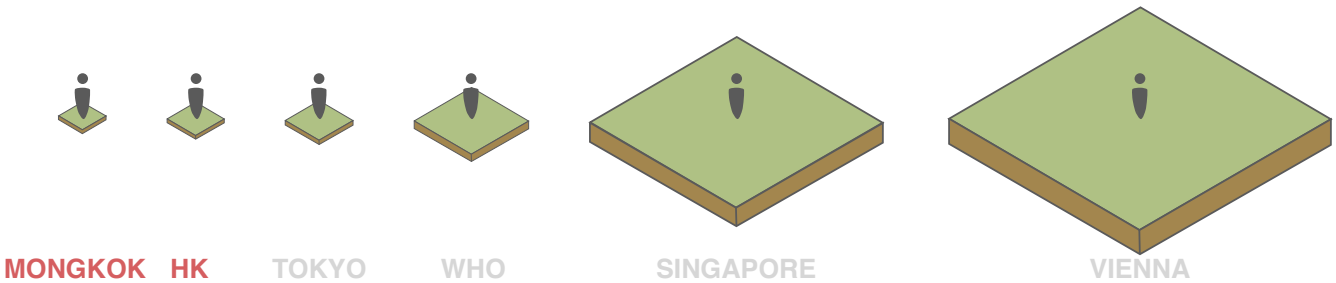



*Fig.17*
*Source: Baharash Architecture*

the government has to build the city as density as possible in order to satisfy the basic housing demand. This option automatically leads to the insufficiency of open public space (Fig.14). Hong Kong nowadays has almost the least per capita physical public open space - 1.5 - 2m$^2$/person, comparing with other Asian cities like Tokyo (3m$^2$/person) or Shanghai (7.6m$^2$/person), WHO (9m$^2$/person) and Vienna (120m$^2$/person)(Fig.17).

In addition to this, the distribution of existing public open spaces is inequality. As it's shown on the map, the oldest place like North side of Hong Kong island and Kowloon has the lowest standard for public open space - around 0.6m$^2$/person.

**b. Public and Private spaces,**

Apart from the insufficiency, the rising of capitalism also causes the privat-

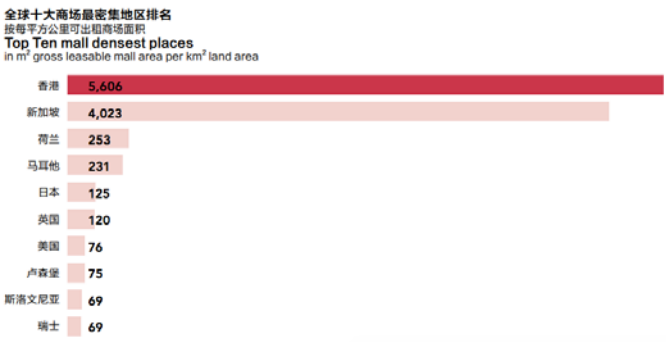



*Fig.19 Top Ten mall densest places*
*Source:*

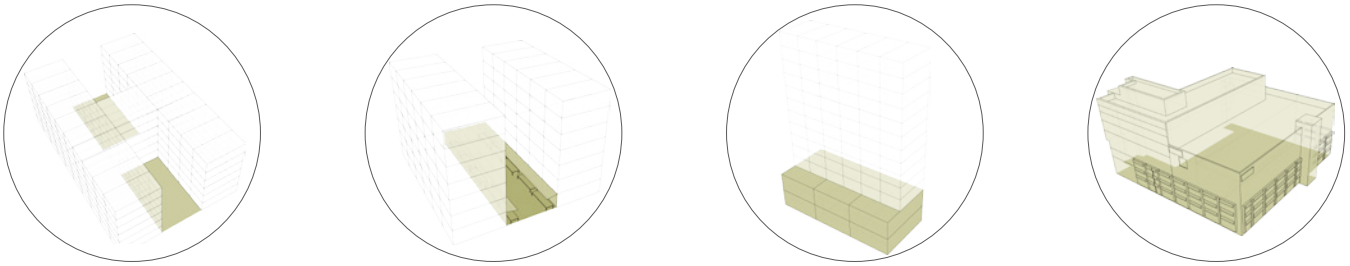



*Fig.20 Top Ten mall densest places*
*Source:*

*Fig.21 Photo of existing public spaces in Hong Kong*
*Source: Author*

ization of public spaces, which indicates the process of transferring from public space to private public space. This sometimes leads to the simplification of urban physical environment (rising of shopping mall, standardization or disappearing of street)(Fig.19, Fig.20), then might further decrease the diversity regarding on urban environment and society.

**c. Design and Use**

There used be a think-tank who has found that the urban Hongkongers usually enjoy less than half as much open space as residents of other Asian metropolises, such as Tokyo, Shanghai and Singapore. And the Civic Exchange study said that residents of affluent areas may enjoy more than ten times as much open space as residents of working-class Mong Kok.

Just as what was mentioned by Lai Chong Au, although there is such a limit-

*Fig.22 Hongkongers enjoy less than half as much open space than citizens of other Asian cities*
*Source:*

ed urban space, the most severe problem for Hong Kong now is not, or not only the INSUFFICIENCY, but the INEFFICIENCY, because of the mismatches between the design and use of existing public spaces. For instance, as it could be seen in the picture that some of the narrow streets are now being used as crowded market streets, whereas the designed public squares are actually non used.

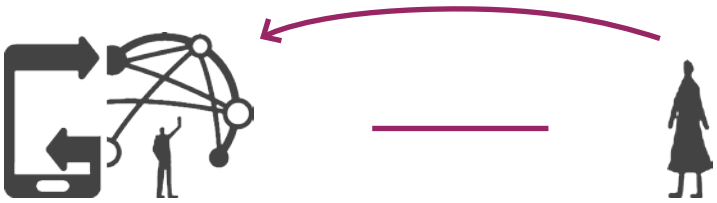
Diversity is one of Hong Kong's pronouns. Its unique history and development has decide the curious mixture of Western and Eastern culture that make the city so special. This in the meanwhile, also causes the diverse need for using public space. For example, people who has high intensity work might need public spaces to be relaxed and peaceful, whereas people who lives in small houses might need public spaces for outdoor activities. It could locate either inside building blocks, on the street, or next to the shopping mall. So physical public space has to be more diverse regarding on the location, time and functions, in order to satisfy the diversified demands.

**d. Conclusion**

Physical public space is the stage that shows citizens pubic life. It doesn't only provide space for social activities, but also provide possibilities for social interaction. All the mismatches that happening in Hong Kong's physical public spaces is actually weaning the connection between citizens and their public space, as it leads to the result of people appreciate and use public spaces less and  get less relevant to the society.

*Fig.23*
*Source: Author*

### 1.2.3 Digitalized society in the Digital Era: The Ubiquitous Digital Technology



Our living world has been totally subverted in the past few decades. Physical public space used to be the place for social interaction, transaction, and information exchange. Nowadays, with the development of technology and society, our social relation, way of interaction, as well as citizens' lifestyle has been changed. Some of the activities have been replaced or migrated, and some are appearing.

As it could be seen, Hong Kong has already nearly 90% of Internet penetration, and ranges from entertainment, commercial to communication. Digital technology has already expanded to almost everywhere of the city and every aspect of citizens' life (Fig.24,25,26).

Within such situation, digital technology has actually added an information layer that provides a possibility for citizens to overcome the geographical

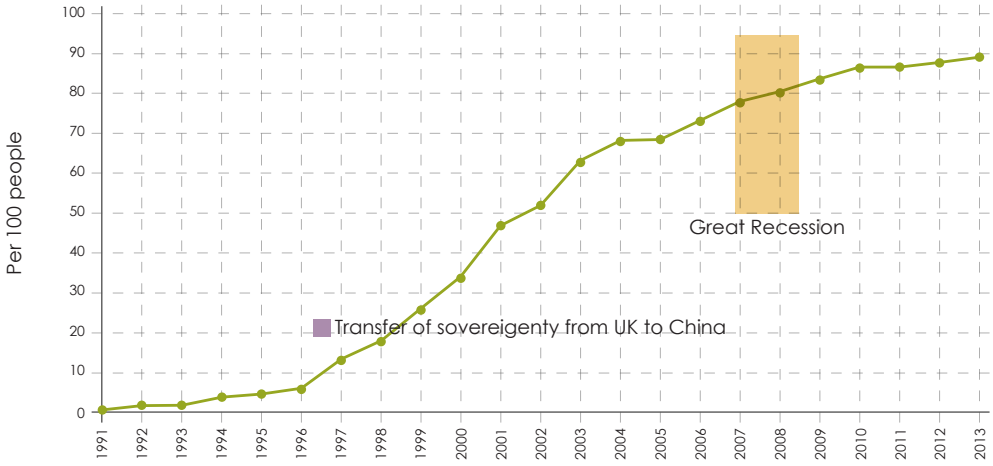



*Fig.24 Internet users in HK*
*Source: Worldbank*

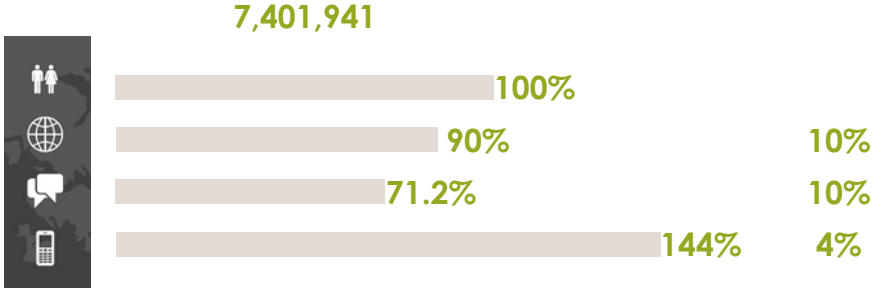



*Fig.25 From 'Digital in 2016'*
*From: http://wearesocial.com*

restriction and expand their daily life (Fig.27,28). It allows citizens to connect with the digital world. Citizens could thus, get rid of the physical restriction and have more choice through exploring the digital world. For example, you can now chat with a stranger who lives in another country, or get to know a place without being there. With the continues advancement of digital technology, the connection built between digital world and people is being improved. The dependency on this convenience has made using digital technology becomes ubiquitous and unavoidable, and it at the same time also acting as an attractive power that challenging the relationship between people and our physical environment.

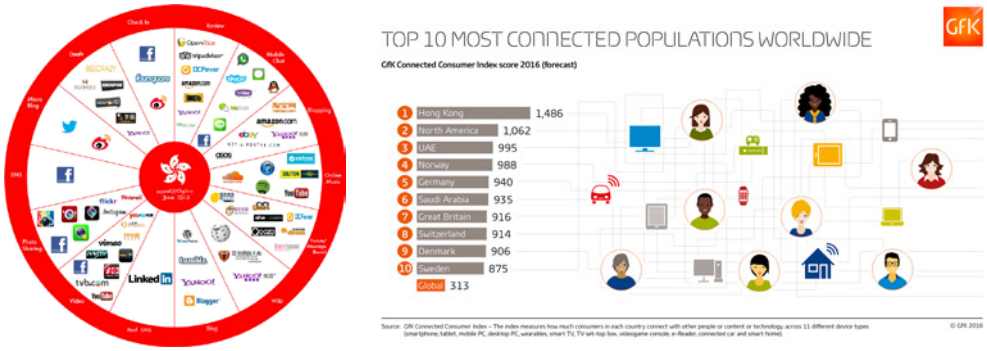



*Fig.26 Top 10 most connected populations worldwide*
*http://www.gfk.com/*

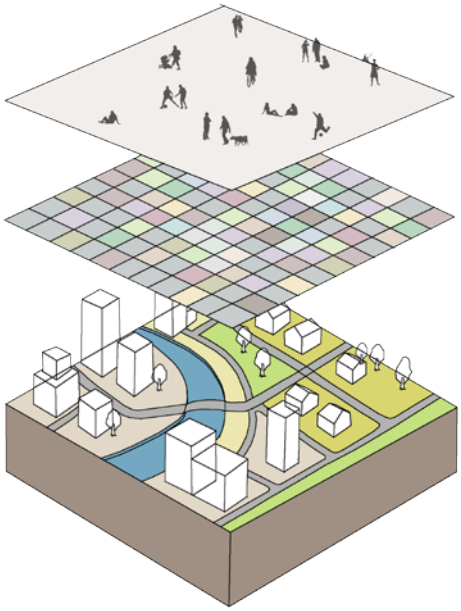



*Fig.27 Digital technology adding an information layer between physical urban environment and life*
*Source: Author*

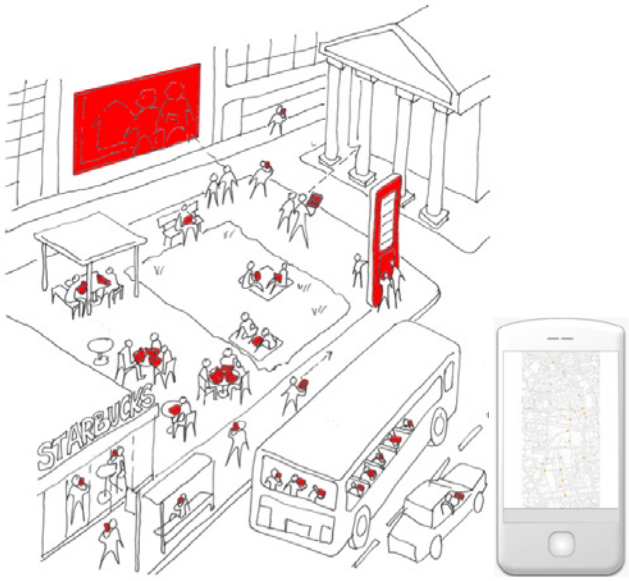
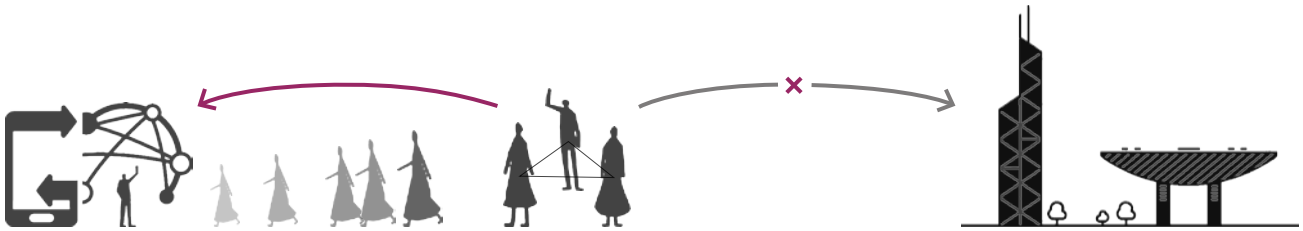



*Fig.28 Photo of gated public spaces in Hong Kong*
*Photo took by author*

# 1.3 PROBLEM STATEMENT

**MIGRATION and DIGITIZATION of Social Community and Social Interaction in Hong Kong's DIGITALIZED SOCIETY.**




*Source: http://www.getty.edu/museum/programs/lectures/digital_age_panel.html*

With all the thrusting from our physical world and pulling from the digital world, it is true that yet with every technological advance, both our social community and social interaction are gradually migrating from physical world to digital world: 'the digital encyclopedia marked the beginning of the library's decline, e-mail helped make the post office obsolete, Amazon is undermining the shopping mall, and Facebook and Twitter have taken care of almost everywhere else. Walk down any street in the Western world, and you'll find people lost in their smart phones rather than engaging with one another' (Is the digital age killing public space?).

Under this situation, our physical space seems to get a little less relevant. The investigation Prudential relationship index indicating that the condition of social interaction in Hong Kong was graded 58, which means there are only 58% of citizens satisfy with their social interaction they have. It ranks 8 out of 10 Asian areas (Fig.30). Besides, there are also more reports confirms that the social relationship in Hong Kong is becoming worse (Fig.29).

Hong Kong is a diverse city with high-mixed ethnic group, cultural background, and way of living coexisting. Based on the analysis, what could be seen is that Hong Kong's society is constantly becoming diverse during the process of development. However, due to the limitation of physical public spaces, the existing can not fulfill the dynamic expectations anymore, which leads to the mismatch of physical public space and society.
Within this situation, digital technology, who gives people more freedom, convenience, and flexibility could be expected to have a huge potential for implementing digital technology.

香港人 人際關係愈來愈差

大紀元

2007年03月30日

【大紀元綜合報導】一項調查發現，香港人的人際關係愈來愈差，傾向討厭別人的市民多了，寬恕別人的反而減少。學者指出，經濟轉好，港人反而更加不開心。

城市大學應用社會科學本月中訪問了600多名市民，調查發現有60%人都傾向容易討厭他人，較去年調查上升4個百分點。近40%人在最近1個月內曾與人衝突，較去年同期升6個百分點。只有32%受訪者願意與別人修補關係，比率較去年下降12個百分點，顯示人際關係欠佳。

調查又發現，港人最令人討厭的事情，就是不懂得尊重別人、講是非和推卸責任的人。另外，市民最普遍與人發生衝突的原因，是家庭及生活瑣事，其餘的是工作、價值觀及金錢問題等。

負責調查的城大應用社會科學系副教授黃成榮認為，雖然經濟好轉，但港人生活壓力仍然好大，休息時間少，導致人際關係欠佳。建議市民面對人際衝突時，應停下來想想有甚麼辦法可達致雙贏，亦應學習寬恕別人，這樣才可以令社會更加和諧。

*Fig.29 Photo of gated public spaces in Hong Kong*
*Photo took by author*

*Fig.30 Photo of gated public spaces in Hong Kong*
*Photo took by author*

# 1.4 HYPOTHESIS

***Why do we need PHYSICAL PUBLIC SPACE?***

***Health benefits:***
*- Space for exercise - better cardiovascular health, lower obesity*
*- Better mental health - less anxiety, depression, feelings of loneliness*

***Social benefits:***
*- Space for social interaction*
*- Better community relationships*

***Environmental benefits:***
*- Better air quality and ventilation*
*- Micro-climate and relieving urban heat island effect*

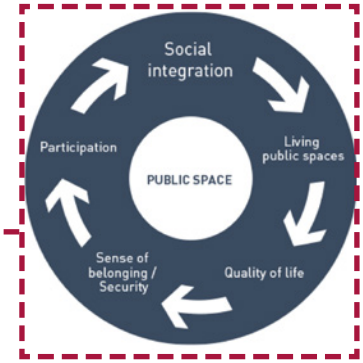



*Fig.32 Public space cycle*
*Resource: http://www.burri.world/en/content/public-space*

Research shows physical public space encourages people to exercise, facilitates social interaction, and improves mental health. On the contrary, "The lack of open space in Hong Kong probably promotes unhealthy life-styles and increases the effects of stress," researcher Carine Lai told HKFP. It might lead to the "loss of memory", lack of sense of community and the estranged from each other.

*Fig.33 Public space cycle*
*Unopened Space: Mapping Equitable Availability of Open Space in Hong Kong*

Considering with the migration of society and social community happening in Hong Kong, physical public space for not seems necessary as it provides not only health and environment benefits, but also social benefits including space for social interaction and better community relationships. Therefore, although digitalization is not the only solution for the future public space, I will take it as the Hypothesis in this thesis, and discuss the possibility.

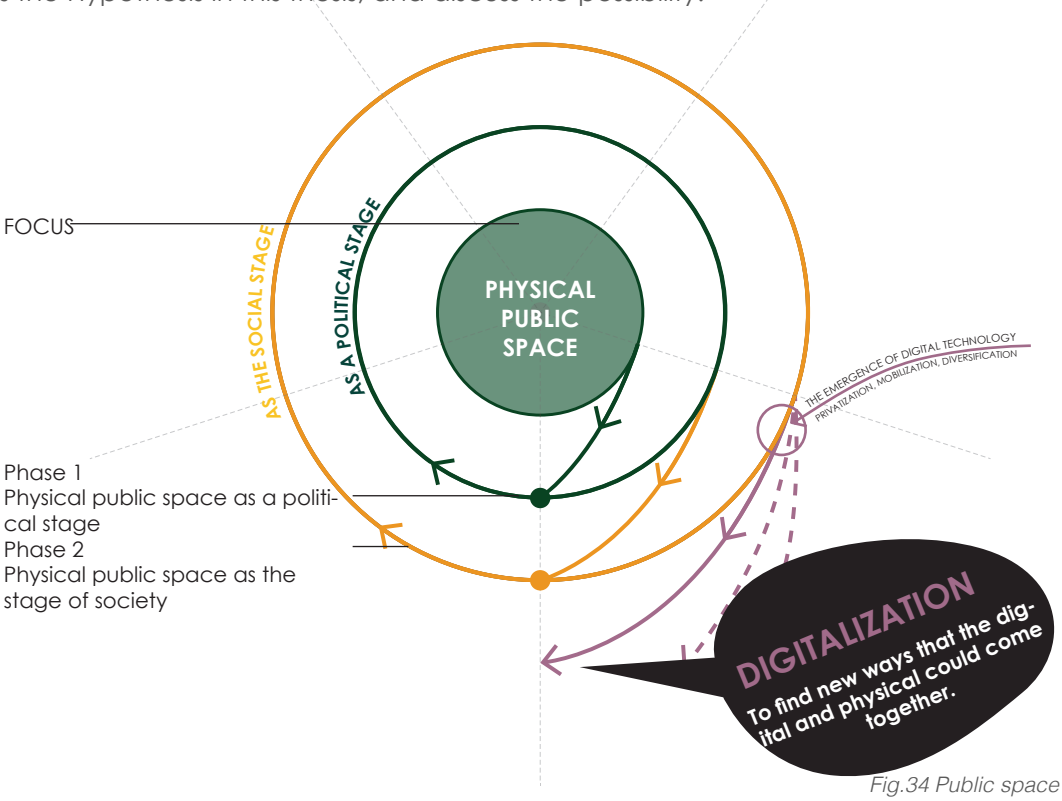



*Fig.34 Public space cycle*
*Unopened Space: Mapping Equitable Availability of Open Space in Hong Kong*

# 1.5 RESEARCH QUESTIONS

## Main research question

**Can Urban Design bridge the gap between fast-growing digitized urban society and the static dimension of physical public space in Hong Kong through the implementation of Digital Technology?**

## Sub research question

A. What are Digital Technology and Digitalized society?
B. What are the challenges for physical public space in the consequence of fast-growing digitalized society?
C. What are the public life and social interactions in physical public space and how can it be effected by spacial intervention?
D. How and in what ways can Digital Technology enhance physical public spaces in digitalized society?
E. What are the socio-spacial characteristic of Hong Kong physical urban public space?
F. To what extend can Digital Technology contribute, in order to reinforce physical public space in Hong Kong?
G. How can the design approach of Hong Kong be applied to other urban context?

# 1.6 AIMS

The project is taken as a starting point in finding solutions for the following aims:

**A. To figure out a possibility that spatial design approach and digital technology can coexist and cooperate, which enhances both citizens' participation to public life and their appreciation of physical public spaces;**

**B. To create dynamic public spaces through taking the advantage of digital technology, which thus reinforce the social integration and interaction between different users of public space.**

# 1.7 METHODS

This project is mainly guided by the research design method. In order to answer the research question and test the theory unambiguously, I divided the project into four parts: Research, Evaluate & Analyse, Hypothesize & Design, and Generalize & Reflect. (chart. 2)

## Research

The research part is aim to understand the situation of 'public space' and the causes and its effects in both larger and smaller scale. Therefore, in this part, site visit including interview and observation will be the main action for researching the situation of public space of Hong Kong, and literature study and mapping could help with problem analysis,  which could help with excavate the main issue and leads to the main research question for the thesis.

## Evaluation & Analysis

Evaluation and analysis is the connecting between Research and Design. Here in this part, the relationship between physical and digital public space will be evaluated and redefined. Mapping and site analysis will then help to point out the potential of existing public spaces in regarding of implementing and cooperating with digital technology.

## Design

Based on all the research and analysis, considering the historical development, it is possible to hypothesize a vision of how will the physical public space transform and how it could enhance the social interaction of Hong Kong.

## Reflection

In this part, the main task will be first to discuss and evaluate if the solution is reasonable and powerful enough to answer the research question. Then, to draw a guideline in order to give some suggestions for the further research while reflected to the generic cases.

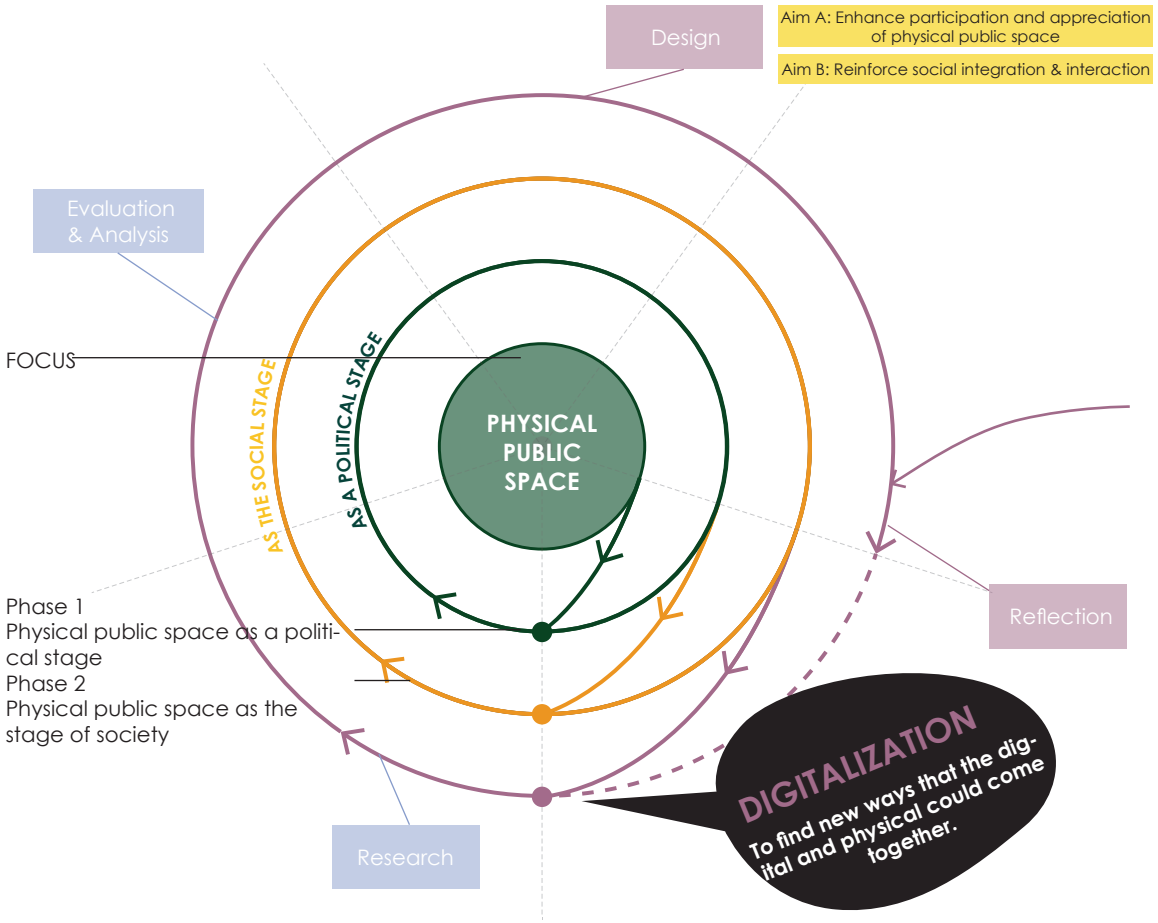



*Fig.35 Public space cycle*
*Unopened Space: Mapping Equitable Availability of Open Space in Hong Kong*

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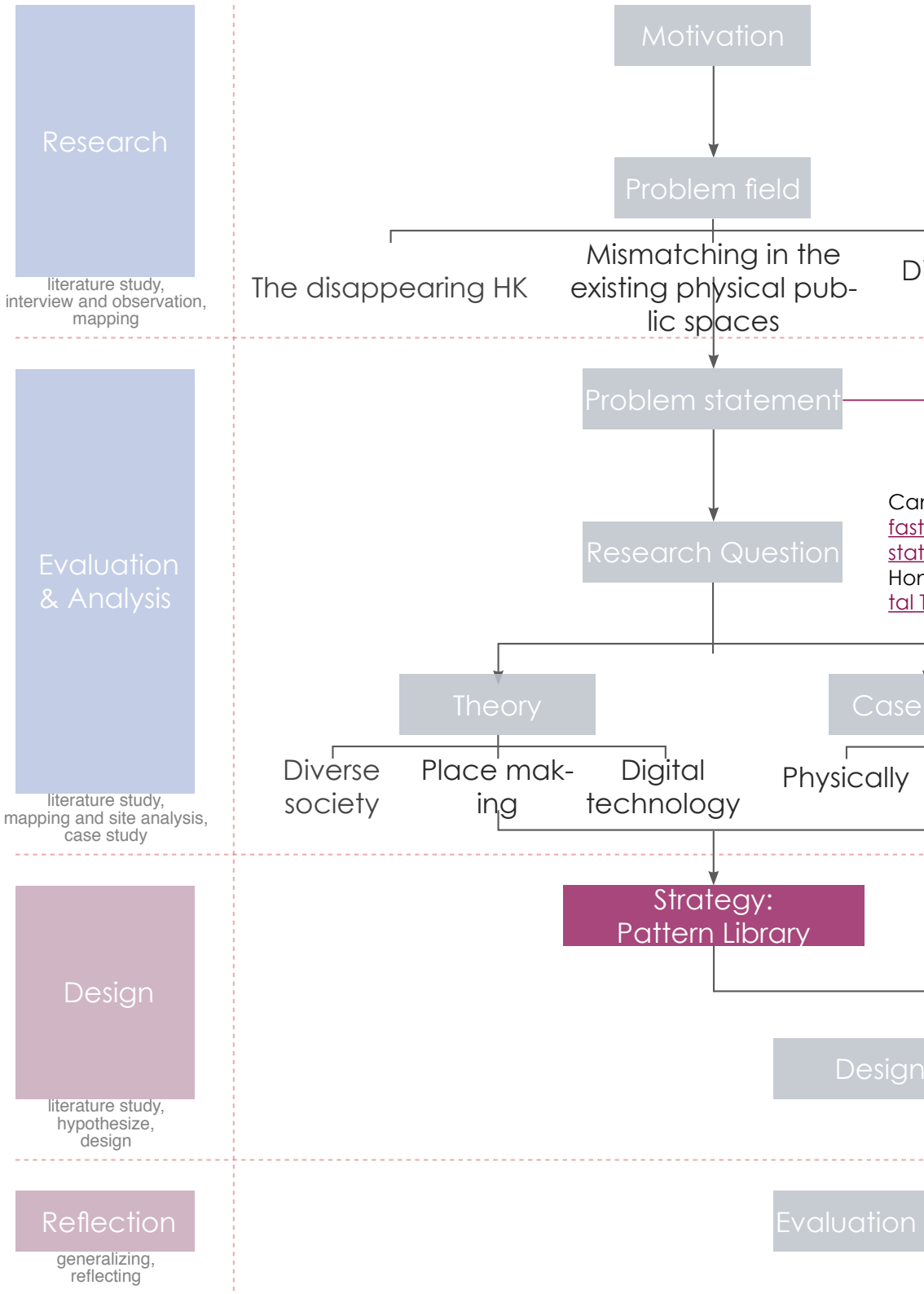

Research
literature study, interview and observation, mapping
Evaluation & Analysis
literature study, mapping and site analysis, case study
Design
literature study, hypothesize, design
Reflection
generalizing, reflecting
Motivation
Problem field
The disappearing HK
Mismatching in the existing physical pub-
lic spaces
Problem statement
Research Question
Theory
Diverse society
Place mak-ing
Digital technology
Case
Physically
Strategy: Pattern Library
Design
Evaluation

hod

igitalized society in
the Digital Era

n Urban Design bridge the gap between
-growing digitizing urban society and the
ic dimension of physical public space in
ng Kong through the implementation of Digi-
Technology?

study

Digitally

Site analysis

Spatial analysis

Social analysis

: Visions

& Reflection

SUB QUESITIONS

A. What are Digital Technology and Digitalized society?

B. What are the challenges for physical public space in Hong Kong in the consequence of fast-growing digitalized society?

Migration and Digitization of Social Community and Interaction in Hong Kong's Digitalized Society

C. What are the public life and social interactions in physical public space and how can it be effected by spacial intervention?

D. How and in what ways can Digital Technology enhance physical public spaces in digitalized society?

E. What are the socio-spacial characteristic of Hong Kong physical urban public space?

F. To what extend can Digital Technology contribute, in order to reinforce physical public space in Hong Kong?

G. How can the design approach of Hong Kong be applied to other urban context?

Fig.36 Research framework
Made by author

# 1.8 RELEVANCE

## Social relevance

The importance of public spaces for both the city itself (especially the metropolis and highly urbanized cities with huge population but limited public spaces, such as HK) and our social life has been valued by we citizens for a long time. Our cities are not only in need of public spaces, but also appealing for workable and successful public spaces. This continually challenges us to pay more attention to the constantly changing life style and demanding. As the digital technology has become increasingly popular over the past few decades, people are getting more and more obsessed with it. It allows us to be more interconnected through using cyberspace anytime, anywhere, but at the same time, also reduce the in-person interaction in public spaces that might be negative for public sphere. Therefore, it is necessary and worthy to discuss the relationship between the two spaces.

## Ethical paragraph - Privacy, safety and netiquette

The advanced digital technology and internet technology allows everyone of us to communicate and exchange information with others quickly through the broad cyberspace. However, it could at the same time, post a threat to our privacy. The spread of information through digital technology is more invasive, wider audience, and can be done by anyone at anytime, anyplace, but it also brings a greater threat to our public safety and causes negative influence with improper use. Thus, it is necessary for us to be aware of the private information posted online, and raise the whole safety concern while implementation.

# 1.9 TIME FRAMEWORK

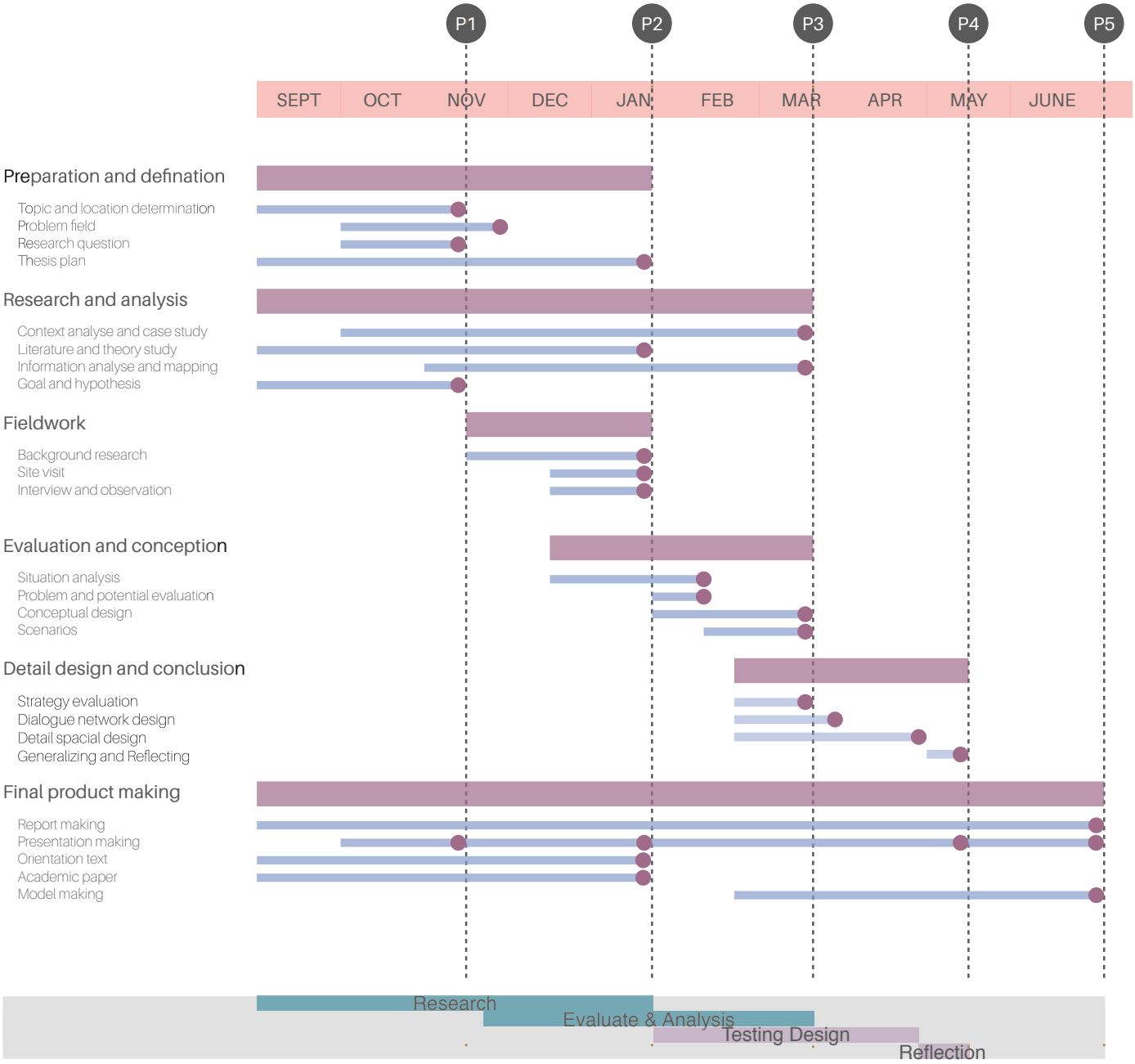
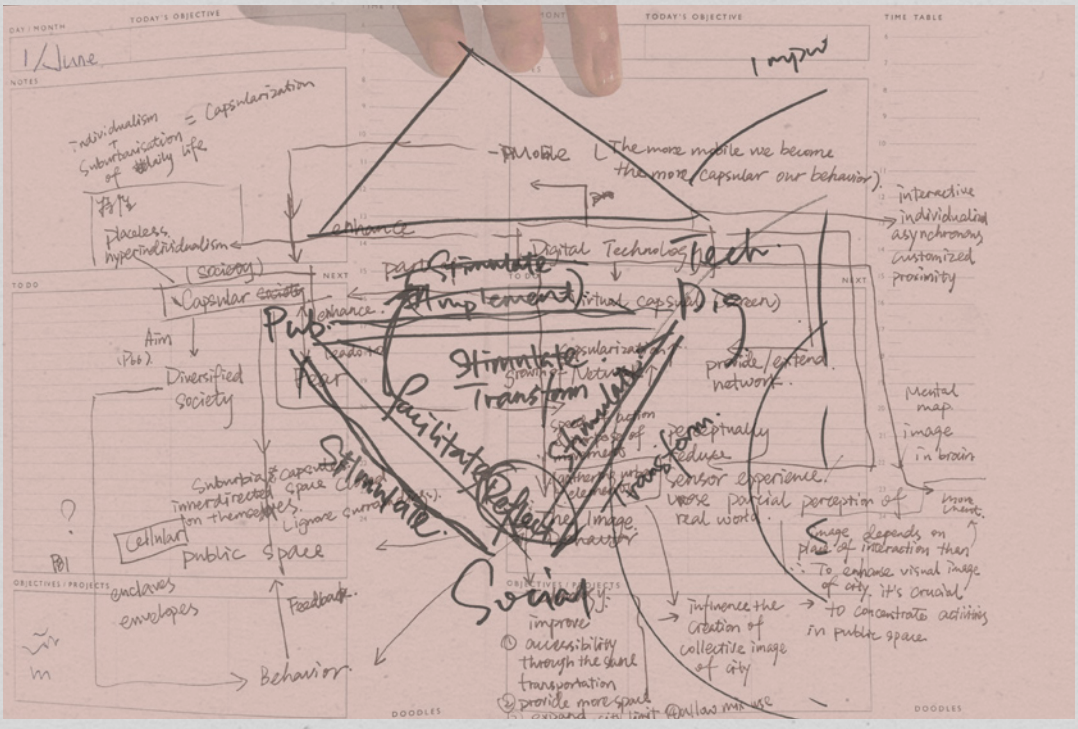



Fig.37 Time-work schedul
Source: Author


1/June
Individualism + Suburbanisation of daily life = Capsularization
placeless hyperindividualism
Capsular
Aim
Diversified Society
Cellular
public space
enclaves
envelopes
Feedback
Behavior
Digital Technology
Stimulate
Implement
Pub.
Pear
Stimulate
Transform
Facilitate
Reflect
Stimulate
Social
Tech.
Dig.
provide/extend network
perceptually reduce
sensor experience
Mental map
image in brain
more chaos
Image depends on place of interaction than
To enhance visual image of city, it's crucial to concentrate activities in public space
influence the creation of collective image of city
improve
① accessibility through the same transportation
② provide more space
interactive individualized asynchronous customized proximity
The more mobile we become the more capsular our behavior
Mobile
enhance
Lignore surrounding
Suburbia & capsular
innerdirected space
Lignore surrounding
DOODLES

#THEORIES#

## 2.1 PLACE MAKING - SOCIAL INTERACTION IN PUBLIC SPACES

*"Public spaces consist of open environments such as streets, sidewalks, squares, gardens and parks and sheltered spaces created without a profit motive and for everyone's enjoyment such as public libraries and museums. Both, when they possess a clear identity, can be defined as 'places'. The objective is that all public spaces should become such 'places'."*
*--Global Public Space Toolkit*

A space becomes a place when it has significance to the people who experience it . A space will allow people to do no more than just the essential things that are its minimum functional requirements, such as allowing people to move through it . A place can meet the basic functional requirements and, in addition, offer other qualities and opportunities, which contribute more to the quality of life of the people who experience it . By turning 'spaces' into 'places' we can take a step towards providing inhabitants with access to interesting, equitable and attractive settings to meet various needs and facilitate more interaction in the urban life.

### 2.1.1 Public space Pyramid

Public space is an integral element of a city. Its appearance and functions can very often reflect the life quality of a place at a certain time. The society's requirements on a public space are primarily based on whether it can satisfy the needs of the general public. While the definition of "ideal public space", for sure, varies among different people, below we would like to present the general framework of how a successful public space can be like, based on four main criteria HKPSI has identified (Fig.38).

**Accessibility**: Every single person, regardless of age, skin color or social status, should have the right to access to public space. Accessibility is the best measurement on this aspect.
Accessible could be categorized into physically accessible and mentally

Public Space Pyramid:
An ideal public space should possess four main qualities, of which accessibility is the first stage. People first need to gain access to public space in order to enjoy the environment and facilities, which is the second level.
The third level is public utilization which indicates the design of public space should be utilized by not only public, but also by different groups of users.
Going further, as public life is the spirit of public space, and social interactions are the best demonstration of public life, thus, sociability is the highest level for public space after reach the other three levels.
To summarize, no matter what elements and mediation is used, an ideal physical public space shouldn't lack any of these four qualities. Nevertheless, this is a step-by-step process; it must first possess the first quality in order to obtain the second, and so on.

Fig.38
Source: http://www.hkpsi.org/eng/publicspace/ideal/

accessible.
Firstly, an ideal public space should be as "open" as possible, including convenient geographical location, availability of transport links and the provision of barrier-free access, in order to ensure everyone in society can enjoy the public space without difficulty. Besides, Its connection to its surroundings and local movement network is another standard for accessibility, and the movement network of a space's wider area had impact on the density of use (Carmon, 2010).
Being mentally accessible includes the feeling of welcome, high visibility to the public, and being readable for every group of people, such as clear entrance and walkable spaces. It is the basement for people to use a public space.
As such, the design and management of a public space should be more welcome and more connected both physically and mentally, instead of locking it up, locating in a remote location or designing an entrance that is concealed by other features.

**Environment & Facilities:** Public spaces, in which many people's daily activities take place, should provide good-quality facilities. Features such as seating, lighting, running paths, shading and water are all good examples of what would make a public space reasonable for people to visit and use. Appropriate recreational facilities can also help attract people to stay for a longer period of time. In contrast, a public space that is empty, too dark, isolated, or unsanitary might deter people away. In fact, function, safety, hygiene and comfort are all important factors that people pay attention to when deciding whether to visit a public space. Therefore, in order to help facilitate people's activities, appropriate facilities and comfortable environment should be provided in public space.

**Public Utilization:** Public space, as the stages for public life, one of the most measurement is its utilization. Therefore, it should be able to facilitate users' intended activities, thereby becoming a "place" instead of merely a "space". Furthermore, besides of being well used, public space must also be well utilized by the public, instead of a particular group of people. Achieving these requirements, the design and management of public space should be flexible and people-oriented. An ideal public space does not have to be filled with thousands of people, nor be extremely big in size, but it is normally vibrant, well utilized and free of intervention.

**Sociability:** From the historical perspective, public space is often the social stage for the public to voice out opinions. Sociability is the realization of public life, and as such we can determine the success of public space by measuring the level of social interactions all around. A successful public space should facilitate social interactions among people through accommodating voices of people from all walks of life, eliminating obstructions that discourage interactions, providing possibilities for activities that encourage sociability.

## 2.1.2 Creating ideal public spaces for interaction

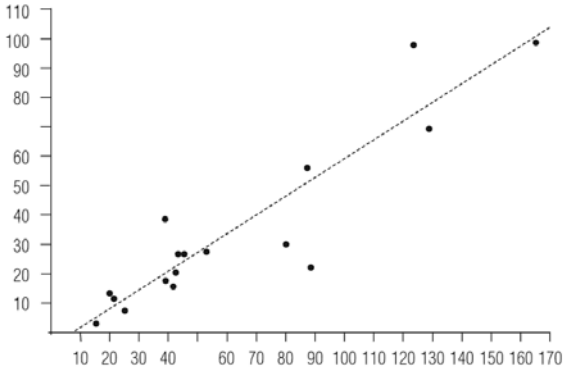
*'Public space is a place where people come together, face-to-face...The city centre is the place for news and gossip, for the creation of ideas, for marketing them and swiping them, for hatching deals, for starting parades. This is the stuff of the public life of the city—by no means wholly admirable, often abrasive, noisy, contentious, without apparent purpose. But this human congress is the genius of the place, its reason for being, its great marginal edge.'*

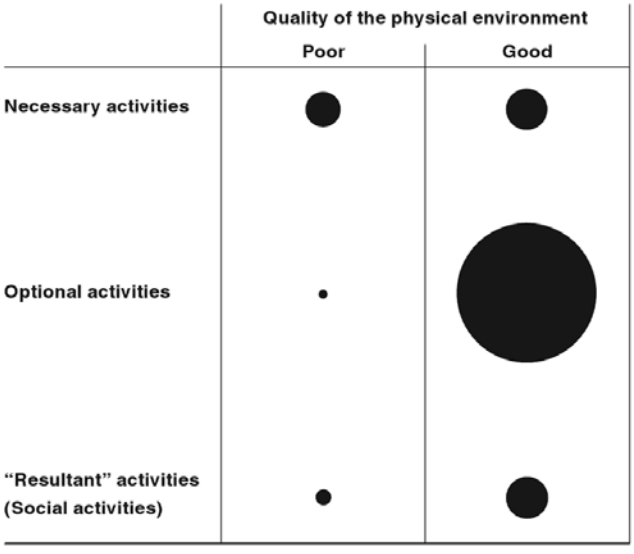
*- William Whyte, 1988*

The concerning and discussion of 'public space' in the area of urban study started from 1960s. It was proposed by Jane Jacobs as one of the key factor in promoting sociability and vitality of city. Since 1970s, the importance of public space as a social space of city has been valued and, gradually became an key thought. Public space is a place where people can come together, face to face (Whyte,1988), which could provides the opportunity for huge amount of human contact and interaction. As what is said, 'the city is a theater, space is the stage, and the scenery oth it is always the scenery for urbanness: everyday life.' (Cauter, 2004)

The discussion about what is exactly public space is a lot, but most of them

*The more time people spend outdoors, the more frequently they meet and the more they talk. Chart plotting the relationship between the number of outdoor activities and frequency of interactions. (Street life sudies in Melbourne [20]. See also page 191.)*




*Graphic representation of the relationship between the quality of outdoor spaces and the rate of occurrence of outdoor activities.*

*When the quality of outdoor areas is good, optional activities occur with increasing frequency. Furthermore, as levels of optional activity rise, the number of social activities usually increases substantially.*

Fig.39
Source: From Jan Gehl's book 'Life Between Buildings: Using Public Space'

reach an agreement on the role of public space in forming of public life and interpersonal relationship. It's shown in Jan Gehl's graphic that the quality of outdoor space do have a great effect on the rate of occurrence of activities, which furthermore, will determine the frequency of meetings and daily activities in the public spaces. (Fig. 39)

"Opportunities for meetings and daily activities in the public spaces of a city or residential area enable one to be among, to see, and to hear others, to experience other people functioning in various situations." (Jan Gehl)

There are various forms of interactions regarding on its intensity degree, from passive contacts with lower intensity to close friendship with high intensity (Fig.40). Successful public which provides opportunities for meetings and daily activities could benefit for not only familiars to meet and maintain the established relationships, but also for lower intensity degrees of interactions, which is in fact a key factor for social interaction and integration.

| Form of interactions | Intensity degree |
|---|---|
| **Close friendship** | **+++++** |
| **Friends** | **++++** |
| **Acquaintances** | **+++** |
| **Chance contacts** | **++** |
| **Passive contacts (see and hear)** | **+** |

Fig.40 Form of contacts
Source: Author

## 2.2 NEW LIFE: DIGITAL TECHNOLOGY, PUBLIC SPACE AND SOCIAL INTERACTION

There are already a lot of argument about whether digital technology is good or bad to our society. Available evidence shows that for now there is no relationship between the Internet use and the intensity of sociability. Researchers observed that, overall, the more sociable people are, the more they use the Internet. And the more they use the Internet, the more they increase their sociability on-line and off-line, their civic engagement, and the intensity of family and friendship relationships. (Castells 2001; Castells et al. 2007; Rainie and Wellman 2012; Center for the Digital Future 2012 et al.). However, what could be foreseen that the physical public space can be enhanced through the implementation of digital technology, and thus, further influence the social interaction and integration.

### 2.2.1. Definition of Digital technology in the thesis

Digital technology is a type of transfer that involves breaking a message or form of communication between two machines down into binary code. It uses digital code to transmit signals and information between different devices. This can be done with things like television programs or human voices. One of the most prolific uses of digital technology comes in the form of the

popular cell phone market. Cellular phones utilize digital technology to transmit voices and other types of information.

### 2.2.2. How can digital technology enhance physical public space

There was a giant advancement of Digital technology in the past few decades. It adds a new information layer to our urban environment (Fig. 27), and provides a new way of communication, that brings us as much as possible the information and convenience through navigation software, social media, E-shopping, and allowing us overcome the geographical barrier, makes interaction becomes increasingly dis-embedded from time and space, (Giddens, 1991; Meyrowitz, 1985). Nowadays, the Internet user worldwide is almost half of the total population, and will still remains 10% growth rates in the near future. Due to the fast advancement of digital technology today, our notions of gathering place, community, and urban life had been totally subverted and redefined.

**a. Create more possibilities for using public space:** Comparing with the physical world, virtual world is more flexible and personalized regarding on time and space, the using of digital technology can boom physical public spaces through accommodating the virtual interaction. It provides possibility for citizens to get to know our physical world, which invisibly increases the possibility for using public space.

**b. Increase the attraction by reinforcing the physical public space itself:** Digital technology is diverse, the implementation of digital technology can increase the attractions of public space through enhancing its function, such as adding entertainment or education uses, improving its planning and design, or emphasizing its cultural and artistic meaning. For example, a project led by several ICTs experts including Anthony Townsend, equips public spaces in business districts with wireless Internet and electricity in order to attract people to work there. This initiative had a great impact, luring people out of their offices and encouraging them to work in a more open environment.

### 2.2.3. How can digital technology reinforce social interaction & integration

**Provides more layers of relation and contributes to different social activities and interactions:** The ongoing transformation of communication technology in the digital age extends the reach of communication media to all domains of social life in a network that is at the same time global and local, generic and customized, in an ever-changing pattern.

In that case, location becomes less important. The using of digital technology breaks up the boundary between absence (disconnected) and presence (connected) by constitute a new resource for constructing a kind of connected presence even when people are physically distant. As we have different levels of social interaction in our society (Fig.40), this on one hand,

might help with maintaining the intense social interaction, and on the other hand, increase the passive contact, chance contacts, that might in the end turn into a stable intense interaction. Therefore, it can be imagine that our social interaction could be facilitated and dynamized by permanent connectivity and social networking in the virtual world.

Besides, there is also changes on our mind that brought by the digital technology - independence and sharing. Comparing with the past, our new digital era is more various and personalized. The on-line social media  is having an increasingly influential. It is opened to every single person to share and comment, which contributes to the forming of new communities, and thus, brings the diverse activities from the virtual world to our physical world.

# 2.2 THEORETICAL FRAMEWORK

All the theories referenced in this thesis could be categorized into three aspects: Physical public space, Social interaction and Techniques (indicates digital technology in the project).

Each aspects are not independent in this thesis, instead, they are related and have influence on other aspects. For example, based on Jan Gehl's theory, it could be confirm that the degree of social interaction could reflect the public space, and physical public space have the power on stimulating social interaction.

Based on that, the theoretical framework of this thesis could be get.

**Relation & Organization**

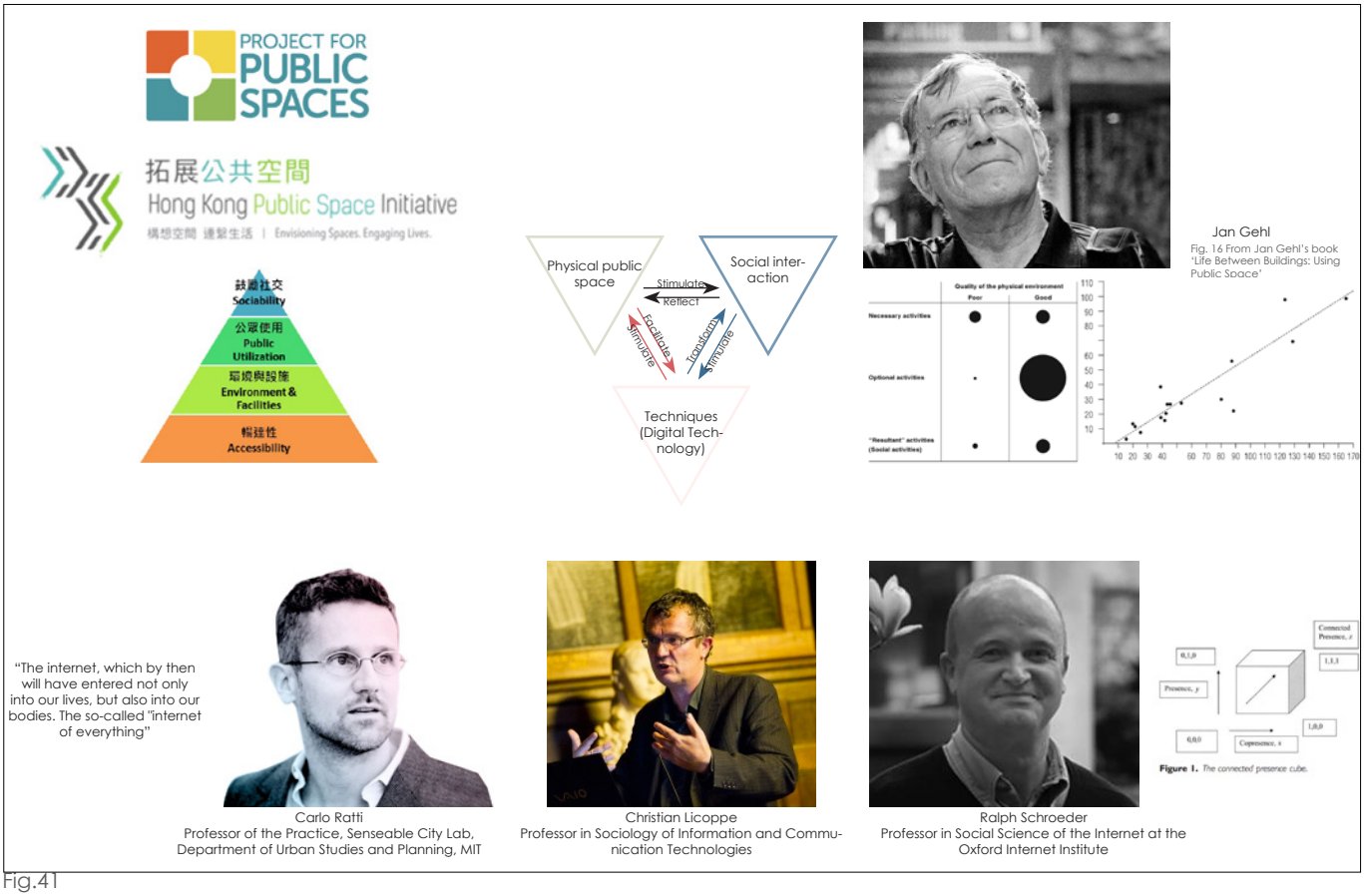
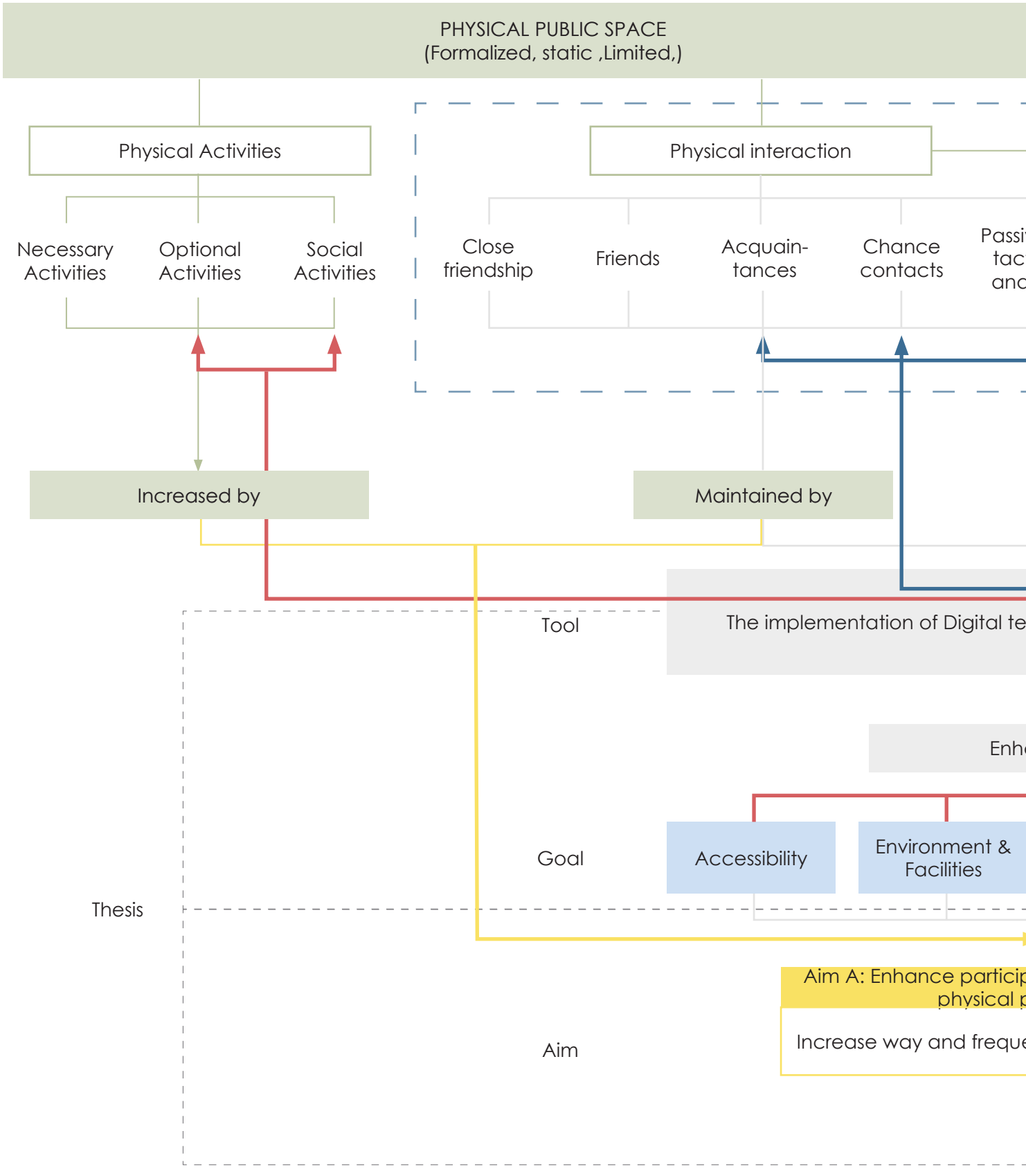



Fig.41
Source: Author


PHYSICAL PUBLIC SPACE
(Formalized, static ,Limited,)
Physical Activities
Necessary Activities
Optional Activities
Social Activities
Physical interaction
Close friendship
Friends
Acquain-tances
Chance contacts
Passi
tac
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## Framework

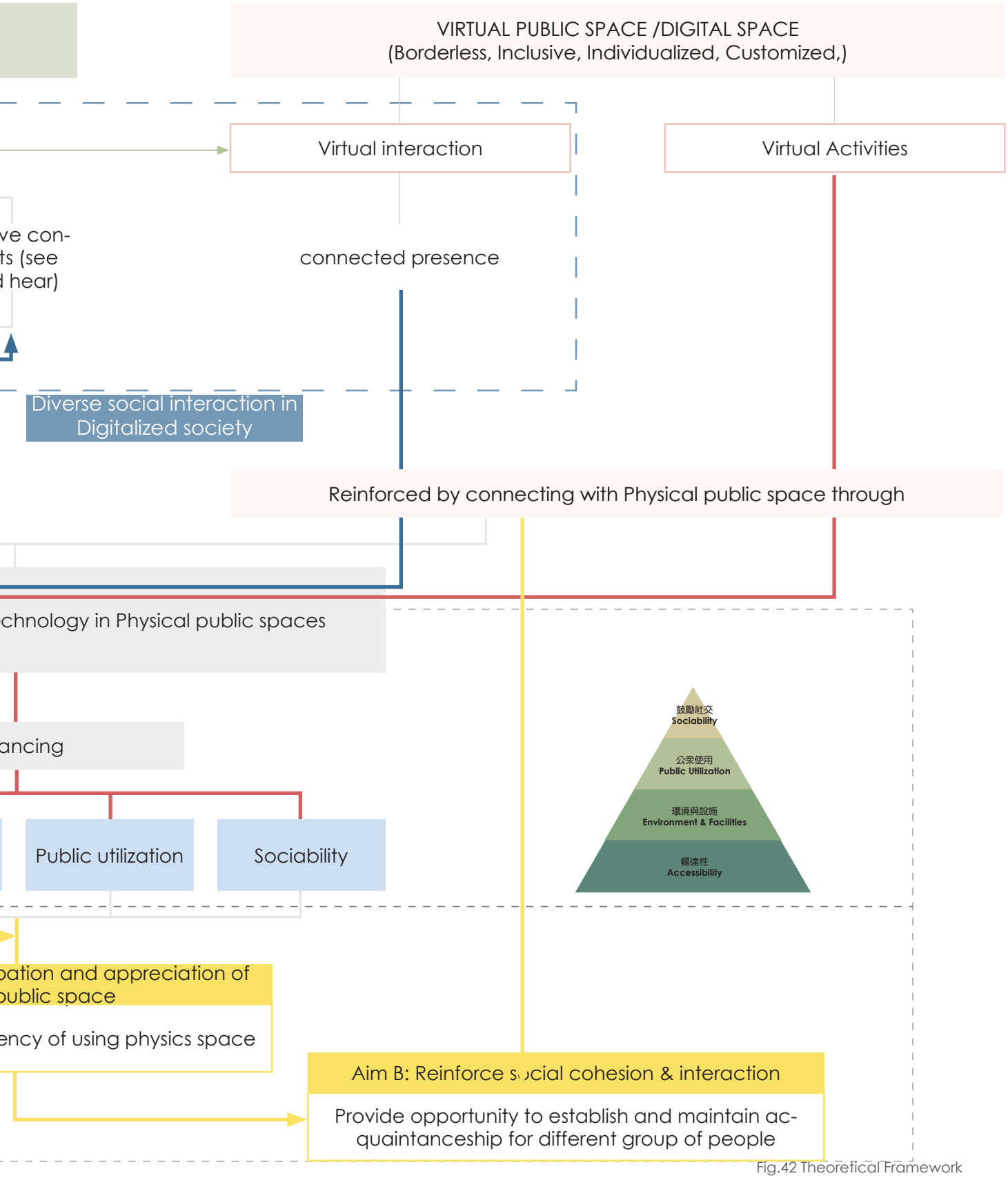
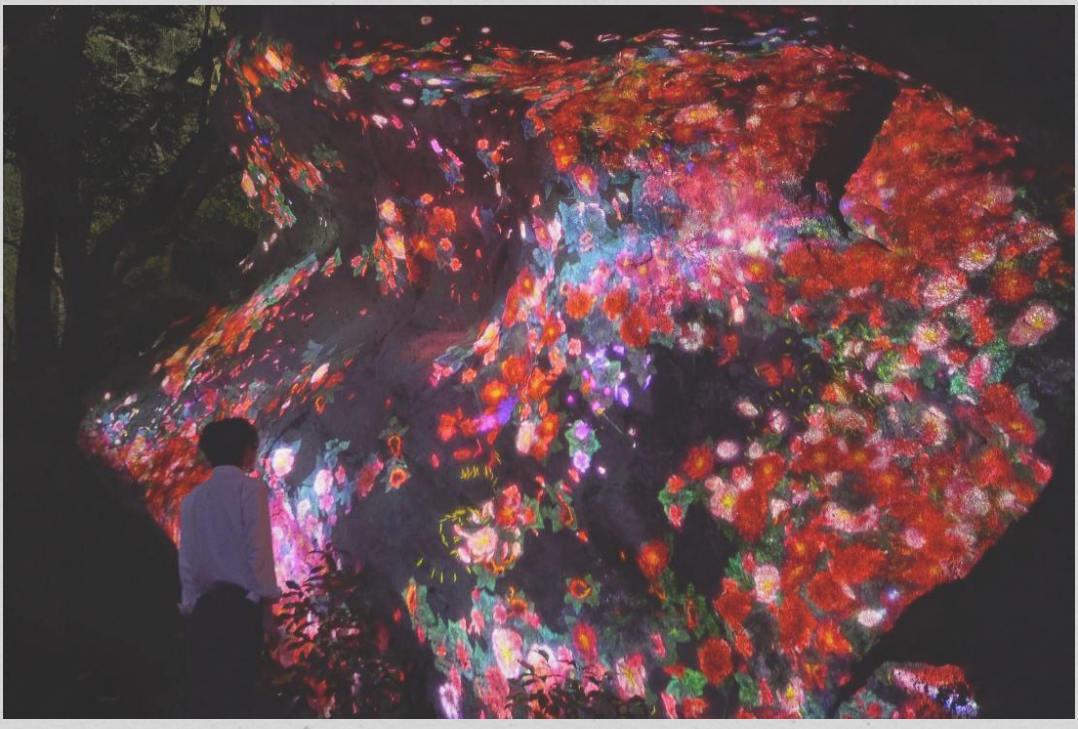



Fig.42 Theoretical Framework
Source: Author



#CASE STUDY & PATTERNS#

# 3.1 #CASE STUDY#

Based on the created theoretical framework, the process of implementation mainly consists of three parts: tools, goals and aims. Among them, the 'tools' and 'goals' have to be concluded from the existing cases (Fig.43).

Over the past years, there are already a lot of attempts on creating good public spaces, as well as some research and developments on the implementation of digital technology.

The case studies in this chapter is based on a wide range of practical cases.

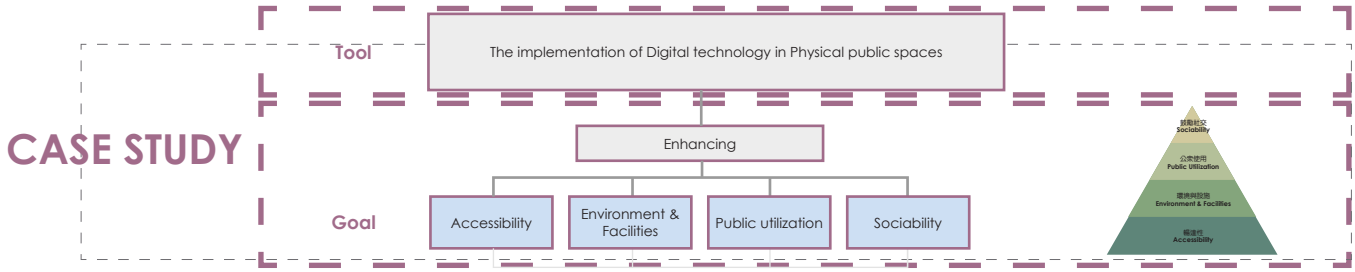
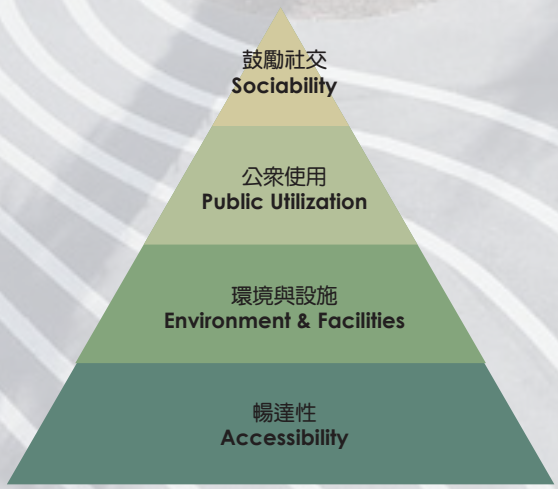



Fig.43 Theoretical Framework
Source: Author




Accessibili

Environmen
Facilities

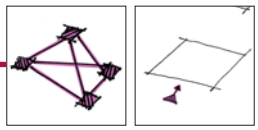
Public utiliza

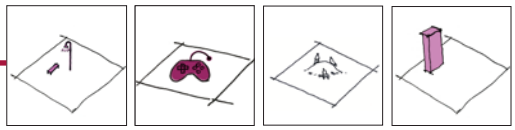
Sociabilit

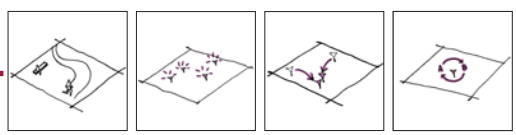
https://streetswithoutcars.files.wordpress.com/

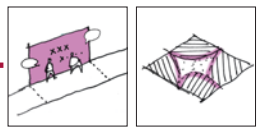
### 3.1.1 CASE STUDY: GOOD PUBLIC SPACE & SOCIAL INTERACTION:
Researching the standard for creating ideal physical public space

The case study of good public space and social interaction aims to find out the elements and attributes that could help with enhancing the physical public space as well as the social interaction based on the existing pyramid. Those, then could be use as the standards and goals for the following design in this thesis.









## Accessibility

### Make connections

VISION FOR PARKS AND PUBLIC SPACE, MIAMI, US

### Guidance & entrance

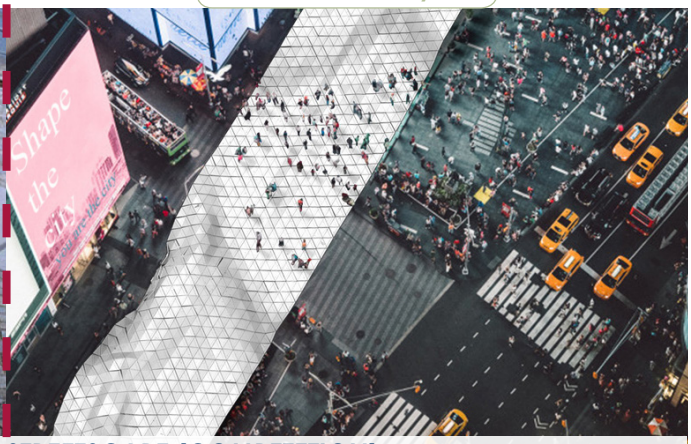
OLD MARKET SQUARE, NOTTINGHAM

## Environment & Facilities

### Safety & Comfort

OPEN SPACE IN HAFENCITY, HAMBURG GERMANY

### Create identity




STREETSCAPE (COMPETETION)

### Work with Landscape

DRAPERS FIELD

### Design for Art, Culture & History

STAIR CULTURE IN HONG KONG

## Sociability

### Design for Sharing

YALP FONO

### Design for Diversity

http://methleys.headstogether.org/homezones/images/DSC_0112a.jpg

THE METHLEYS HOME ZONE LAUNCH

## Public utilization

### Design for daily activities

STREETSCAPE (COMPETETION)

### Entertainment & Event

http://methleys.headstogether.org/homezones/images/DSC_0112a.jpg

THE METHLEYS HOME ZONE LAUNCH

### Mutipul Temporal & Spacial scales

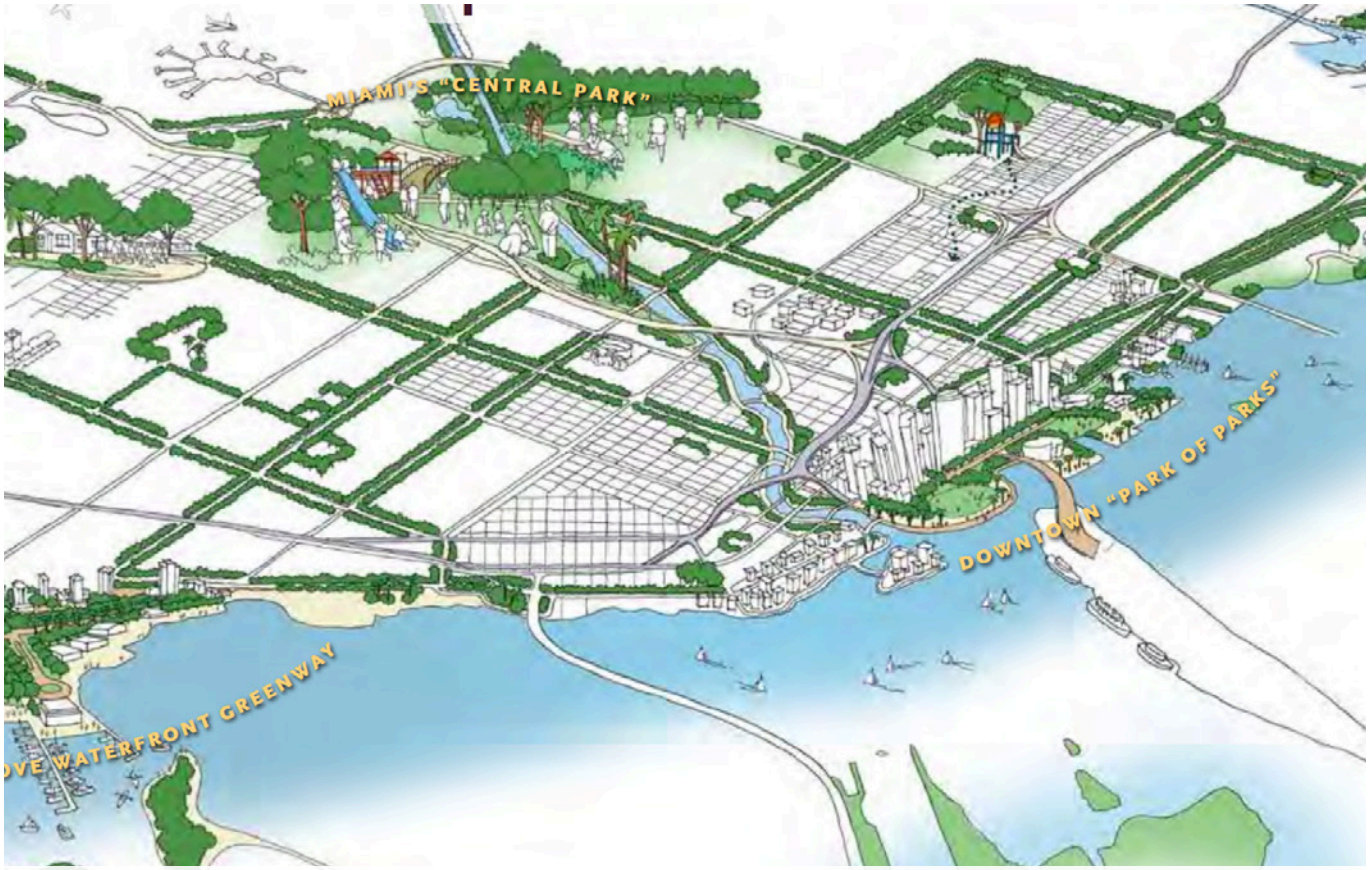
MOVABLE FURNITURE AND PUBLIC VITALITY

### Mixed uses and forms

LE INFINITE POSSIBILITÀ DELLE PIAZZE D'ACQUA

Fig.44
Source: Author

# Make connections




**VISION FOR PARKS AND PUBLIC SPACE, MIAMI, US**

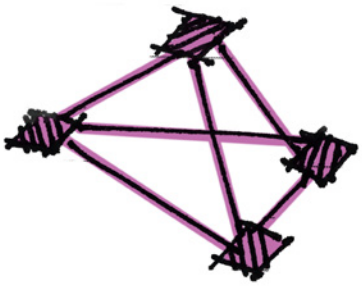


Fig.45
Source: Author

## Context

Miami's vision for the 21st century envisages 'a connected system of new and renewed parks and public spaces to meet the needs of its diverse citizenry, with more ways to experience water, more places to play, greener and safer routes for pedestrians and bikers, and more nature in the city. Every resident will be able to walk safely and comfortably to a park. An array of recreational programs and facilities will serve people of all ages and abilities. Public spaces will incorporate celebration of Miami's tropical and international identity. Design excellence, sustainable management, effective partnerships, and a high level of service to the community will be the hallmarks of Miami's parks and public spaces'.

A network of well-designed and well-managed spaces adds to the character of places where people want to live, work and visit. Public spaces should be planned and designed as a systematic network, as elements of a larger system where they establish relations of complementarity and inter-dependency. The urban network can be understood in two dimensions: a physical form and functionality. A network of public spaces is not composed only of each isolated space, but also by the links between the different spaces. It is these linkages that influence how people experience the spaces and how they move within the city and promoting urban cohesion. (ISOCARP)

# Guidance & entrance

**OLD MARKET SQUARE, NOTTINGHAM**

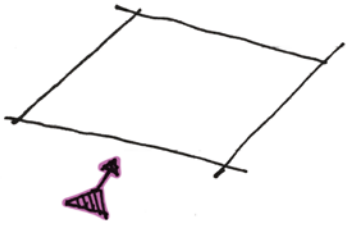


Fig.46
Source: Author

## Context

Nottingham's Old Market Square is one of the largest public spaces in the United Kingdom, with a long history as a focal-point for the city. In recent years, the square had declined in day-to-day use.
By studying the spatial layout of the square and observing patterns of movement and space use, it is able to show how the design of the space influenced human behavior. This could be further used to explain why the square was currently under-performing.
This project developed a redesign concept, based on the creation of two large-scale diagonal routes that intersected at the center of the square. It has simple, highly accessible routes that pass through the square from corner to corner, bringing pedestrian animation to the center.

http://www.landezine.com/index.php/2015/05/draper-field-by-kla/

## OPEN SPACE IN HAFENCITY, HAMBURG GERMANY

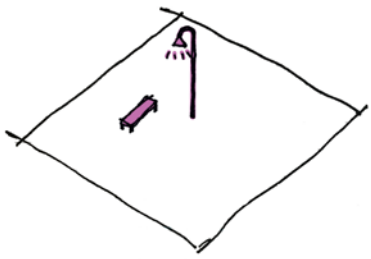


Fig.47
Source: Author

### Context

The open spaces of the western part of Hafencity are central components of the processes of transformation of the former harbor zone south of the historical Speicherstadt (waterhouse district) bordering on the inner city.
This area has changed continuously throughout its history, in keeping with various harbor and industrial uses. The alternating ebb and high tides characterize the typical appearance of the port basin.
As protection against storm surges, new mixed used construction surfaces for central inner city functions such as residence, work, commerce, culture , and leisure will be elevated by approx three meters in the course of the development.

“Our intervention is dynamic and flexible. A changing landscape on a human scale, moving partially with the floods, bringing people nearer to the water and its moods.

The new profile of the land has been studied thinking of human needs, so that people can feel relaxed here. The new urban planning brings the public in a fluid movement from the new housing blocks down to the water, making for everyone’s enjoyment a new artificial landscape that is inhabited by natural elements: water and plants. People can find water and trees on every level of the public space.

# Service & Function

http://adamkalinowski.com/home,33,park_of_colored_sand_2009.html

**"PARK OF COLORED SAND" 2009**

## Context

Artist Adam Kalinowski created an interactive space filled with coloured sand and sculptures for the H. Dabrowski Park in Poland. The installation encourages community members to use their creativity and play with the materials to recreat the environment around them.

The project envolved with the participants as a colourful expanse of sand which will never back to the starting point but layered sculptural elements resembling fragments of rock or outlines of clouds can also be used for resting.

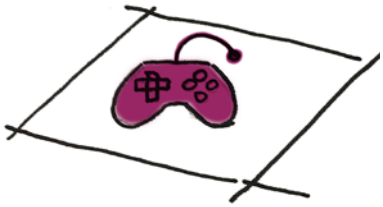


Fig.48
Source: Author

# Landscape & Identity

http://www.landezine.com/index.php/2015/05/drapers-field-by-kla/

## DRAPERS FIELD

Fig.49
Source: Author

### Context

Drapers Field, which was used during the 2012 Olympics as a service facility, sits at this intersection of new and old. Historically, Drapers Field was primarily used for football but was greatly under-utilised by the local community. Therefore, a main aim for the park was to create a place of sport and play on the route to school at Chobham Academy, which is located within the Olympic Village. In addition to improved sport facilities, the innovative landscape encourages informal play and other active uses such as a cycling route which can also be used for cycle training. The refurbishment of the pavilion – to become a key community hub and cafe – also has a new strong, physical relationship to the park. The new bold, large-scale corrugated landscape makes the whole landscape playable. The enticing corrugated forms, made of grass and concrete, enhance the play opportunities and challenges of the play equipment. Cutting through the corrugated grass plane, the playful route also encourages spontaneous activity on the trampolines and other play elements located along it. By increasing footfall into the Olympic Village, Drapers Field is now one of the main opportunities for the new and old community to meet and integrate.

# Design for Art, Culture & History

https://zolimacitymag.com/stair-culture-digging-into-the-past-and-present-of-hong-kongs-ladder-streets/

**STAIR CULTURE IN HONG KONG**

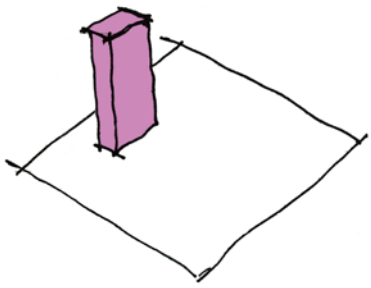


Fig.50
Source: Author

## Context

What is known is that the stairs were essential to Hong Kong's development as a city. When the British landed in 1841, they built their centre of administration on the shores of present-day Central. There was no flat land — at the time, the waters of Victoria Harbour lapped against what is now Queen's Road — so early town planners built space-efficient staircases to avoid the need for meandering hillside roads.
The staircases allowed the city to expand up the slopes of Victoria Peak. For years, they were the only hard-paved streets in Hong Kong. "It was dirt tracks connected by stairs," says Cate Christ. "They allowed more democratic access to areas that were previously inaccessible."

Cate Christ hopes that by understanding each of these stairways, their value can be made clear – and their future assured. Researching the stairs isn't easy. Many of Hong Kong's historic records are kept in London and Cate Christ still needs to pour over the handwritten 19th century log books that recorded each and every public project undertaken by the British colonial government.

"We have a lot of work to do," says Cate Christ. She finishes her coffee, packs up her bag and leaves Mana, walking down Pound Lane, Hollywood Road and Cochrane Street to Central MTR: 319 steps.

# Design for daily activities

http://www.fabricarchitecture.com/projects/oasis-project-omagh/

## OASIS PROJECT, OMAGH

### Context

It is a bright, modern, recreational space including outdoor gym and games equipment and a bandstand, with a pedestrian and cycle bridge linking to the town center through Old Market Place.

The OASIS project is a catalyst in transforming the local community by taking a previously segregated and inaccessible area on the banks of the River Strule and turning it into a vibrant public realm plaza, available to all and with a multitude of uses.

Fig.51
Source: Author

# Entertainment & Event

http://convic.com/projects/kwinana-skate-park/

**KWINANA SKATE PARK, WA, AUSTRALIA**

## Context

Located in one of the outer suburbs of Perth, the Kwinana Skate Park is a striking new addition to the Perth skate scene.

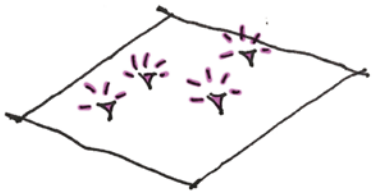


Fig.52
Source: Author

The park features a contrasting colored pattern which is adopted throughout the space and reflects the ocean, inlet, beach and industrial character of Kwinana. It's clever use across the mainly vertical surfaces represents an innovative approach to the design of skate parks and how they are perceived at the level and scale of the park users and passers-by.

Consultations with the community helped influence the varied features of the space and ensured the 1700m2 space had something for every-one. The park contains the following distinct areas: beginners skate area, street area, half pipe, jumps track, advanced bowl, basketball half-court and park our features with shade structures, water fountains and phone charging stations.

# Mutipul Temporal & Spacial scales

https://dnproulx.wordpress.com/2013/05/02/movable-furniture-and-public-vitality/

## CHURCHILL SQUARE, EDMONTON

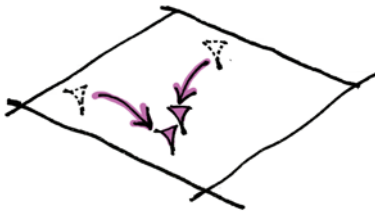


Fig.53
Source: Author

### Context

Movable chairs give people a sense of ownership of their public space. Have you ever noticed that when someone sits in a chair they will always move it, even it is slightly by an inch. People want to sit down just right.

When you really examined the chairs in Churchill square you could tell that someone had used them. Some seats were pulled together in a semicircle to suggest a group of people sat there. Visitors were able to impart their impression on the public landscape.

Memorial Park in Calgary provides another great example of movable chairs done right.

North American cities are so preoccupied with installing immobile and unimaginative benches. Why is there such a worry about seating being stolen? We need to take a risk and provide more movable seating in our public spaces. Give people more control over their public experience and help generate vitality.

# Mixed uses and forms

https://paesaggididecrescita.wordpress.com/2012/05/24/water-square-le-infinite-possibilita-delle-piazze-dacqua/

## WATER SQUARE. LE INFINITE POSSIBILITÀ DELLE PIAZZE D'ACQUA

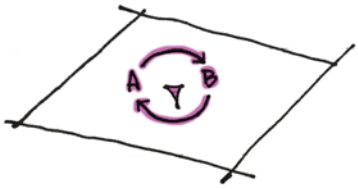



Fig.54
Source: Author

### Context

This is the case for the water squares project , an interesting idea conceived by the Dutch multidisciplinary group led by the urban designer Florian Boer of the De Urbanisten studio.
Florian Boer and his team have thus identified a possible solution in the water squares that function as playgrounds, floating meadows, as theaters, and at the same time can become places where to store water that would otherwise flood roads and basements.
A simple idea to effectively combine ambitions of resistance to climate change and improving urban quality.
In dry periods , water is obviously not there and spaces can be used as a playground or a sports field.
During medium-intensity precipitation , however, the square is partially flooded, and the water is sent slowly to the sewers.
In periods of heavy rainfall , the excess water is diverted to the square, which becomes a basin for gathering and decanting. After the storm has been completed and the absorption capacity of the sewage system is restored, the water is slowly reconnected to the water system.
In every circumstance and every season, however, some spaces remain available to citizens, and may be used differently depending on the water level present.
In addition to creating pleasant environments and prevent flooding, water squares are also effective in filtering and cleaning water, reducing the pollution of bogs and water basins.

# Design for Sharing

http://www.studio1500sf.com/work/market-street-prototyping-festival/

## MARKET-STREET-PROTOTYPING-FESTIVAL

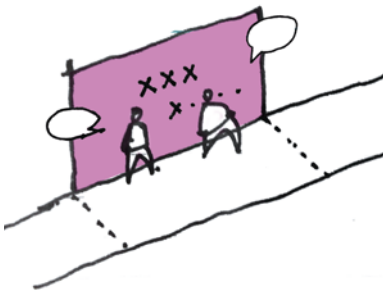


Fig.55
Source: Author

### Context

For three days in April 2015, San Francisco's Market Street was the site of the Market Street Prototyping Festival, which transformed the area into a public platform, showcasing exciting ideas for improving our famed civic spine and how we use it. Our design, Street Sketch, was one of 50 designs selected from over 200 entries from around the world.

The project was a partnership between the San Francisco Planning Department, the Yerba Buena Center for the Arts, and the Knight Foundation.

The core of the 12 x 12 ft. structure was a free standing wall. The wall's sidewalk-facing side served as the primary drawing surface, while the other three sides contained information about the project that encouraged people to be a part of the San Francisco creative community. This wall also created a barrier between the traffic along Market street. The chalk surfaces were devoted to drawing, generating a welcoming sense of place and made the area more conducive to social interaction.

The structure was constructed using volunteer work from peers and students from San José State University and California College of the Arts.

# Design for Diversity

https://www.archdaily.com/286223/superkilen-topotek-1-big-architects-superflex

**SKUPERKILEN NEIGHBORHOOD, COPENHAGEN, DENMARK**

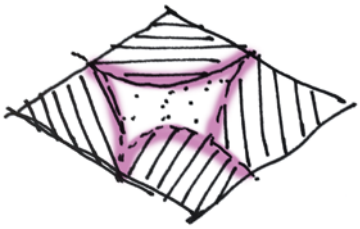
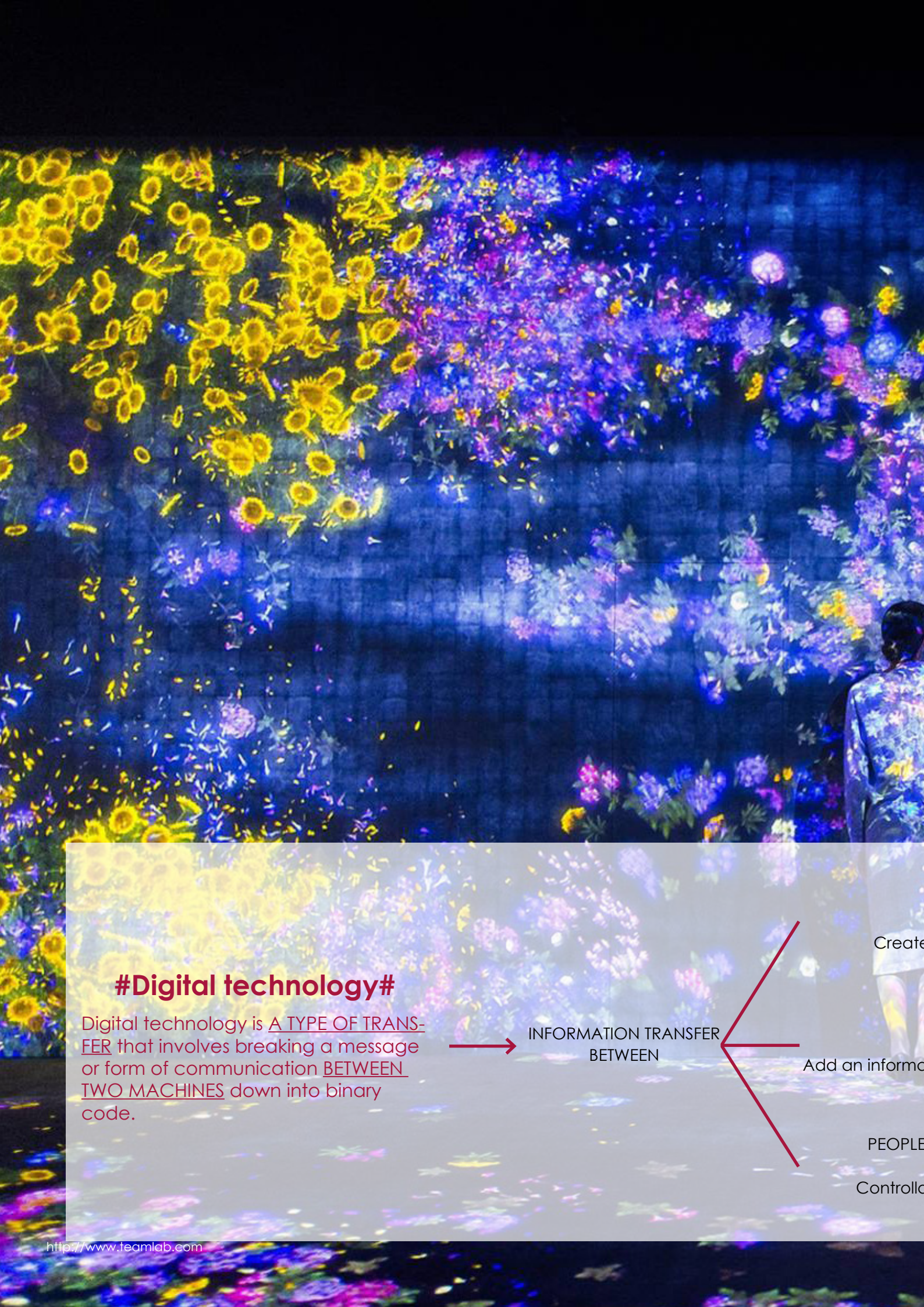


Fig.56
Source: Author

## Context

Superkilen is a half a mile long urban space wedging through one of the most ethnically diverse and socially challenged neighborhoods in Denmark. It has one overarching idea that it is conceived as a giant exhibition of urban best practice – a sort of collection of global found objects that come from 60 different nationalities of the people inhabiting the area surrounding it. Ranging from exercise gear from muscle beach LA to sewage drains from Israel, palm trees from China and neon signs from Qatar and Russia. Each object is accompanied by a small stainless plate inlaid in the ground describing the object, what it is and where it is from – in Danish and in the language(s) of its origin. A sort of surrealist collection of global urban diversity that in fact reflects the true nature of the local neighborhood – rather than perpetuating a petrified image of homogenous Denmark.

The park is divided into three main areas: The Red Square, The Black Market and The Green Park. While The Red Square designates the modern, urban life with café, music and sports, The Black Market is the classic square with fountain and benches. The Green Park is a park for picnics, sports and walking the dog.



## #Digital technology#

Digital technology is A TYPE OF TRANSFER that involves breaking a message or form of communication BETWEEN TWO MACHINES down into binary code.

INFORMATION TRANSFER BETWEEN

- Create
- Add an informa
- PEOPLE
- Controlla

http://www.teamlab.com

PEOPLE & PEOPLE

e network between people

PEOPLE & PLACE

ation layer between people & place

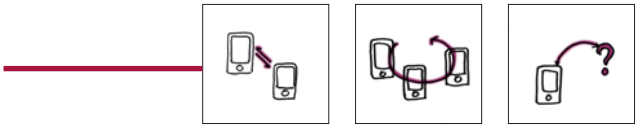
E & PHYSICAL ENVIRONMENT

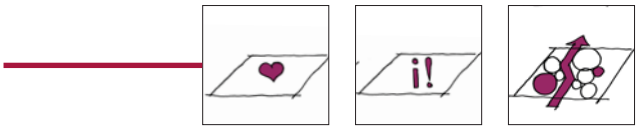
able & interactive installations

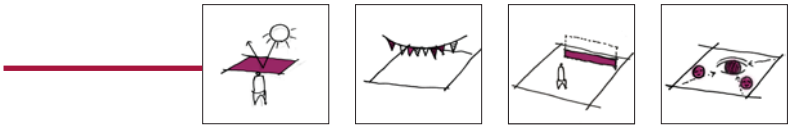
### 3.1.2 CASE STUDY: THE COMBINATION OF DIGITAL TECHNOLOGY AND PHYSICAL SPACE: Finding the digital tool to achieve the goal

Over the last years we have witnessed a boom in the development of mobile technologies, which favored the emergence of a high amount of new software and hardware tools aiming to increase the quality of urban spaces. Most ICTs tools designed for cities aim to rationalize the use of resources, promote local values and places (for example heritage values, meeting points, etc.) or grant citizens the access to information. Aside from mobile applications (for example shortest route applications), e-guides, digital screens and other products already used in and for the public space.

The case study on the combination of digital technology and physical public space mainly aims to find out the effective solutions through the analysis of existing products or projects, and take them as the possible tools in this thesis that might enhance the physical public space.



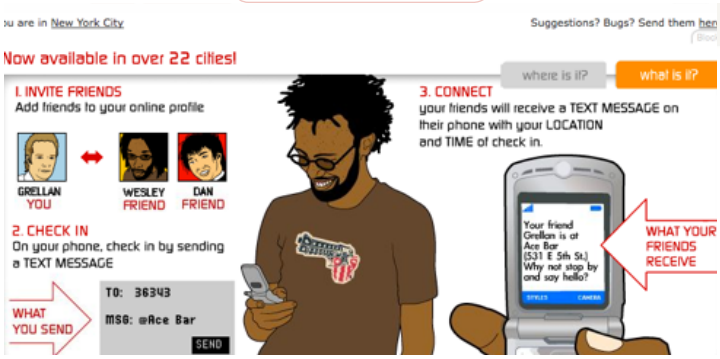




## Information transfer between PEOPLE & PEOPLE

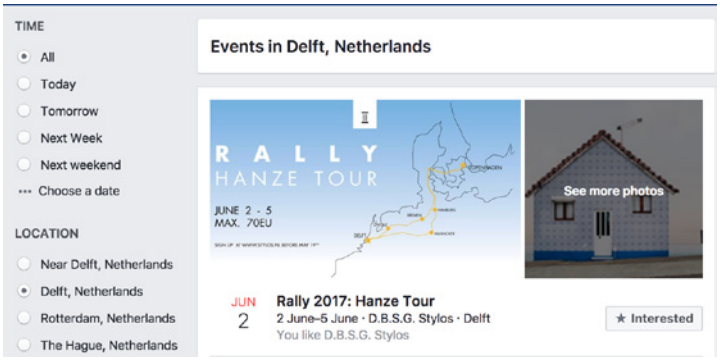
### Connection

#### Between familiars




#### Between communities

#### Between strangers

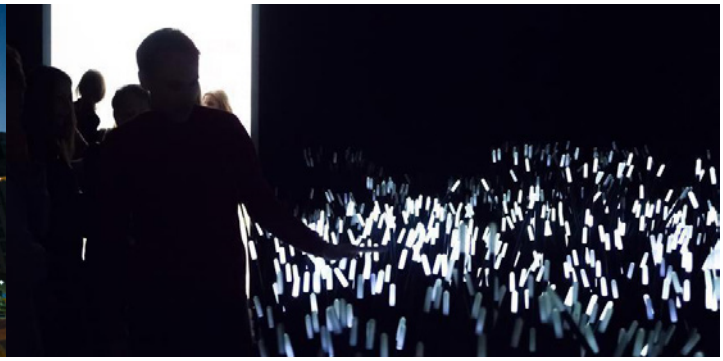



## Information transfer between PEOPLE & PHYCISCAL ENVIRONMENT

### Connection

#### Comfortableness of environment

#### Beauty & Enjoyment of environment



#### Service & Functional facilities

#### Feeling and perception of environment

## Information transfer between People and Place

### Add layer of Digital information

Spirit of place (Art, History, Culture)

Information & Notifi-cation of place

Experience of place

Fig.44
Source: Author

# Information transfer in between People

## Create social network & communication

Between familiars

http://www.technocrazed.com/10-mindblowing-google-projects-that-failed

**WARDE - DYNAMIC STREET INSTALLATION, JERUSALEM**

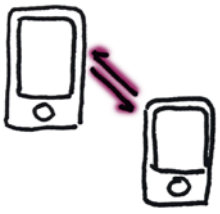


Fig.56
Source: Author

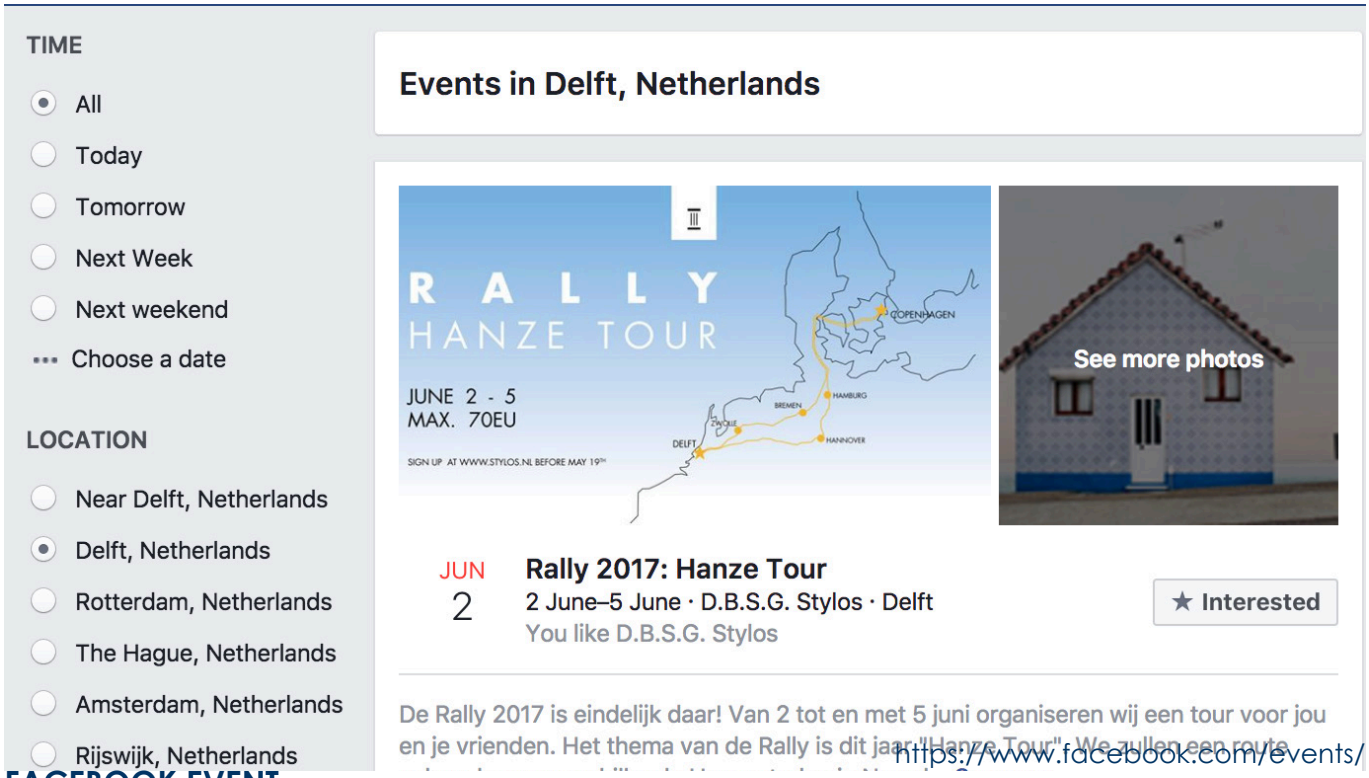
### Context

Google Dodgeball was a location-based social networking software provider for mobile devices. It allowed users to let personal networks of friends know when they were at their local bars and restaurants via their mobile phones. Rather than separately calling or messaging privately and individually, users could either sent 'check in' message to dodge-ball, to alerting their friend network where they were and that they were interested in meeting up, or texted their location to the service, in order to get the notification of crushes, friends, friends' friends and interesting venues nearby.

# Information transfer in between People

## Create social network & communication

Between communities




https://www.facebook.com/events/

**FACEBOOK EVENT**

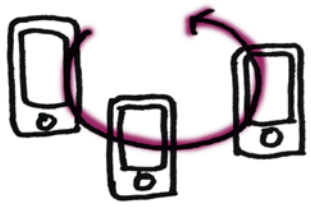


Fig.56
Source: Author

### Context

Facebook Event is a way for members to organize a social gathering or let friends know about upcoming events in their community or online. Events can be created by anyone on Facebook, and they can be open to anyone or made private, where only the people you invite see the event.

A Facebook Event spreads the word of an event quickly, potentially reaching many people in a short period of time. On the event page is an area for RSVPs, so you can judge the attendance size. If the event is public and someone RSVPs that they are attending, that information shows up on that person's newsfeed, where it can be seen by their friends. If the event is open to all, then the attendee's friends can decide if they would like to attend as well.

# Information transfer in between People

## Create social network & communication

Between strangers

## DOUBAN EVENT

Fig.56
Source: Author

### Context

Instead of a communication social network built for familiars, Douban is a social network for sharing things. It's a complete virtual world and community.

Different from Facebook event, the Douban event is mostly built up for strangers. It doesn't matter where you are or what you are interested into, only if you choose a city or topic, you will get the notice directly what and when the event related to the choice will happen. This is mainly because of the difference of social network.

# Information transfer between People and Place

## Add layer of Digital information

For Art and Culture

https://www.amymd.lu/en/news-and-blog/augmented-reality-perspectives-of-london.html

**MUSEUM OF LONDON WEBSITE**

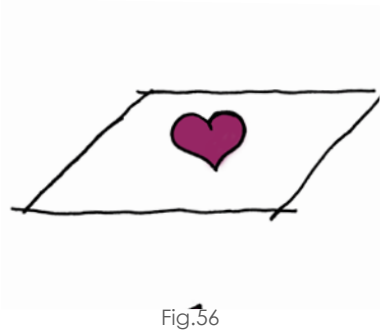


Fig.56
Source: Author

### Context

This application was developed for tourism in various cities across the world. It allows users to experience the story of a soldier (written as historic fiction) at the physical location of the story, providing a historical narrative of the site. The project overlays digital narratives over physical place, which enhance the meaning and understanding of heritage and the cultural significance of place. And the participants also proved that they had a better understanding of the place and its history as the result of the experience.

# Information transfer between People and Place

## Add layer of Digital information

Information & Notifi-cation of place

**TRAFALGAR SQUARE**

### Context

Hereby in the image is about South African football fan watches a giant TV screen in Trafalgar Square as his team plays Mexico in Johannesburg on June 11, 2010 in London, England.
The installation of LED gives a new life to this square that it brings a lot of different possibilities, not only the World Cup, but also festival, political activities etc.

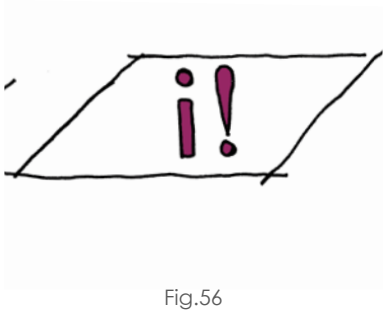


Fig.56
Source: Author

# Information transfer between People and Place

## Add layer of Digital information

Experience of place

http://www.carloratti.com/project/lift-bit/

**LIFT-BIT**

Fig.56
Source: Author

### Context

Pokémon Go is a free-to-play, location-based augmented reality game developed by Niantic for iOS and Android devices. The game utilizes the player's mobile device's GPS ability to locate, capture, battle, and train virtual creatures, called Pokémon, which appear on the screen as if they were at the same real-world location as the player.
When it was released, it quickly became a global phenomenon and was one of the most used and profitable mobile apps in 2016, having been downloaded more than 500 million times worldwide. It was credited with popularizing location-based and augmented reality technology, promoting the use of physical public space, physical activity, and helping local businesses grow due to increased foot traffic.

# Information transfer between people & Environment

## Connection

Comfortableness of environment

## WARDE - DYNAMIC STREET INSTALLATION, JERUSALEM

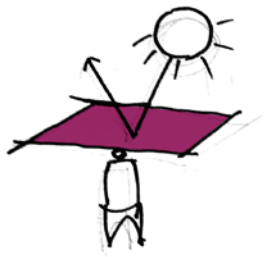


Fig.56
Source: Author

### Context

"Warde" is an urban installation located in Vallero Square, in the heart of Jerusalem, positioned at the entry of the main open market and a tram line station. It is composed of four 30-foot-high and 30-foot-wide inflatable flowers. This installation is part of the municipality's effort to improve the urban space of the city center.

The existing square is in poor condition. Divided by the tram line into two urban spaces, with no supported program around them, and filled with inevitable urban facilities such as a waste composter and electricity substation, which a patchwork of ongoing landscape attempts to fix the incoherent environment couldn't save.

Four giants flowers were carefully positioned to be viewed from all around the square, and from the market near by, each is separately inflated and reacts to the situation around it, so that whenever pedestrians walk by, the flowers inflate and open up, and then deflate and close as the people walk away. If a by passer is looking for a moment of shade during the hot summer days, the flower will inflate and stay open until the person leaves. When the tram is approaching the station all four flowers will inflate at once and signal the shoppers to hurry if they want to catch the tram. The result – the Urban space suddenly reacts to the people using it.

# Information transfer between people & Environment

## Connection

Beauty & Enjoyment of environment

https://www.prote.in/journal/articles/dune

**DUNE**

Fig.56
Source: Author

### Context

Dune is an interactive light landscape project that has been brought to life by Daan Roosegaarde of the award-winning Studio Roosegaarde. There are electronic grasses react to passersby, creating an otherworldly serene environment that lights up, offering an artistic alternative to traditional street lighting.

The installation has been crafted with the underlying intention of creating a sensual engagement between passersby and their environment. It responds to movement and tactile stimuli and so visitors have a direct influence on the artwork's character. The system can also be placed outside in dark settings, where it has the added social design value of enhancing the feeling of safety for pedestrians.

# Information transfer between people & Environment

## Connection

Product & Functional facilities

http://www.carloratti.com/project/lift-bit/

**LIFT-BIT**

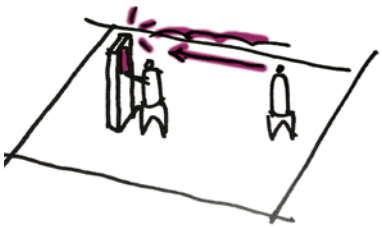


Fig.56
Source: Author

### Context

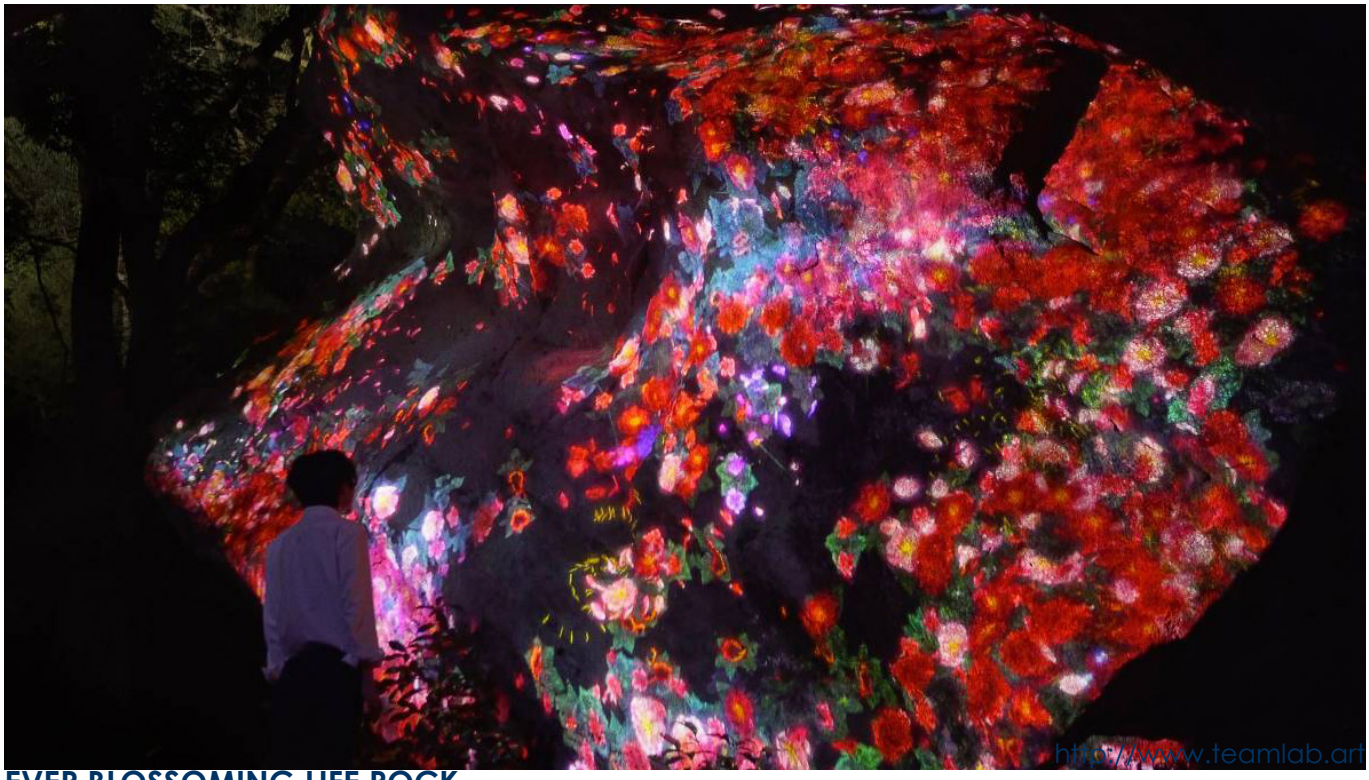
Lift-Bit is the world's first digitally-transformable sofa. It can reconfigure the space in a myriad of combinations designed by Carlo Ratti Associati with the support of Vitra. Lift-Bit consists in a modular, reconfigurable upholstered seat which employs the Internet-of-Things technologies to radically define a new living experience. The prototype of Lift-Bit stems from the combination of a series of single, hexagonal stools. Each of them is motorized using a linear actuator which allows every element to be raised or lowered.

Controlled remotely through a tablet app, each stool can double (or halve) its height in just a few seconds, reconfiguring the space in a myriad of combinations. Lift-Bit's responsive modules can seamlessly transform into a sofa, a bed, an ordered living room, a small auditorium, or a domestic landscape, according to the user's needs and wishes.

# Information transfer between people & Environment

## Connection

Feeling and perception of environment




**EVER BLOSSOMING LIFE ROCK**

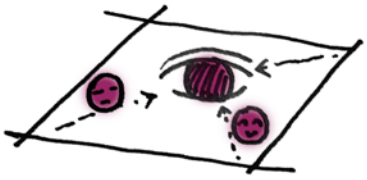


Fig.56
Source: Author

### Context

Flowers are blooming and scattering for eternity on a large rock (5.5m in height, 4.6m in width, and 6.5m in depth) that is covered in moss. A year of seasonal flowers from the area bloom throughout an hour, continuously scattering and changing. Flowers are born, grow, bud, bloom, and eventually scatter, wither and disappear. The flowers are in a continuous cycle of life and death, repeating forever. Our own existence is part of this continuity of life and death, repeating endlessly, for an overwhelming length of time, for billions of years. However, it is difficult to perceive this in everyday life. The eternal birth and death of the flowers on the large rock, causes us to realize that the existence of life itself is part of a continuous cycle of life and death. The artwork is rendered in real time by a computer program. It is neither a prerecorded animation nor on loop, it is continuously changing. Previous visual states can never be replicated, and will never reoccur.

## 3.2 PATTERN LIBRARY

With the analysis and categorization of the case study on Ideal Physical public space and Implementation of Digital technology, we could get the new pattern library (Fig.53).

As it could be seen, since the thesis is about implementing digital technology on physical public space, what we could imagine for now is that the standard and goal for public space is the same, therefore the conclusion of the case studies on physical public space are still took as the standard or goal for the new urban public space. In the meanwhile, the conclusion of case studies on  digital technology are used as the tool that could help with achieve the standards mentioned before.

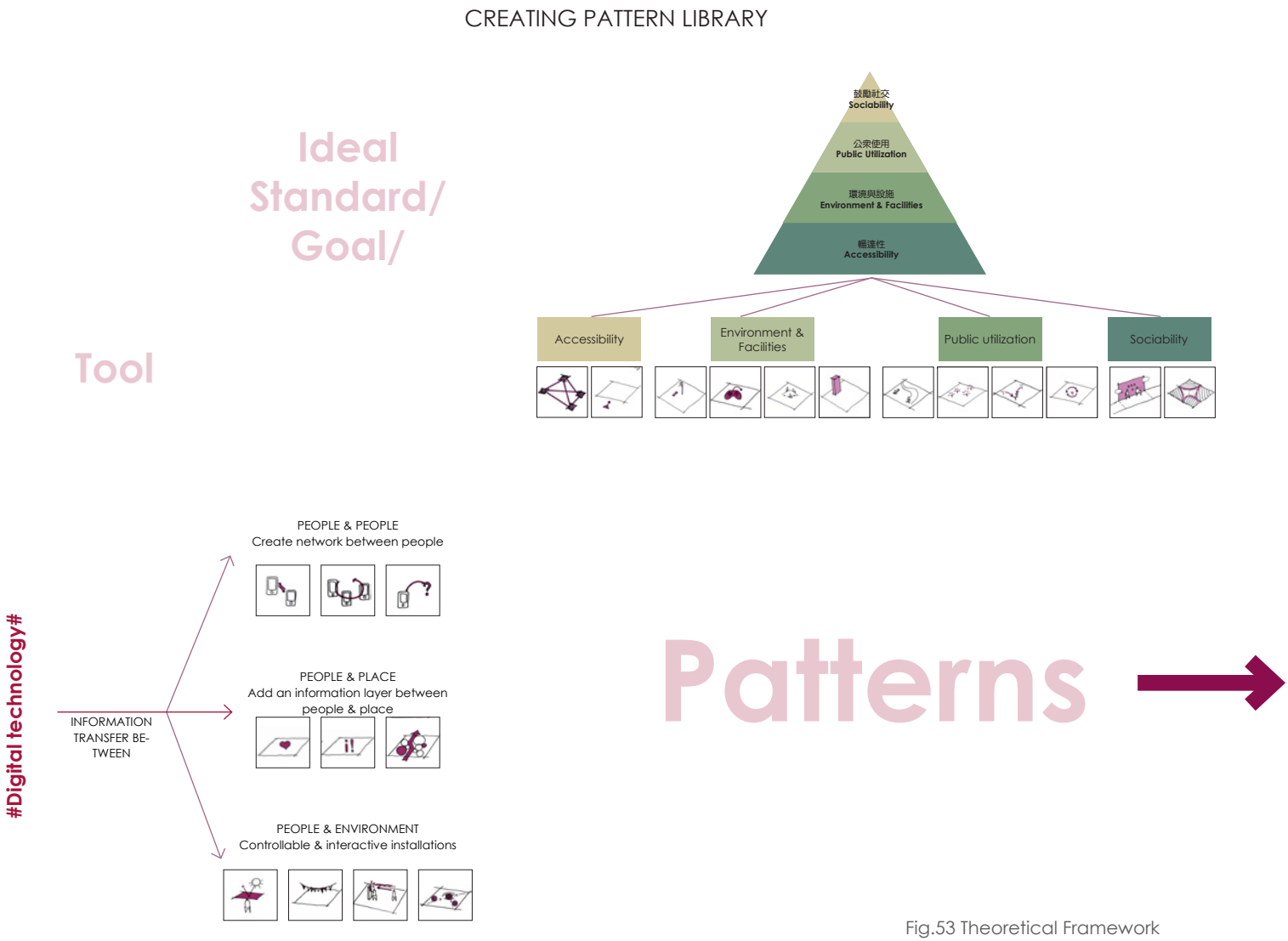



Fig.53 Theoretical Framework
Source: Author

The evaluation & strategy explains why and in which way can the 'goals' can be achieved by implementing the 'tools'(Fig.54), which gives the clues and guidelines for creating the patterns (Fig.55).

In Fig.55 every single can not only work separately, but also create new products by working with other patterns regarding on the pattern carrier.

## EVALUATION & STRATEGY

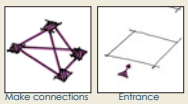
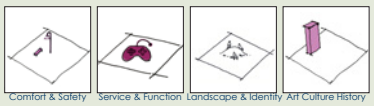
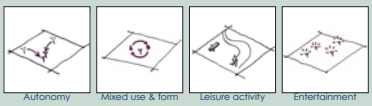
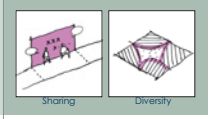
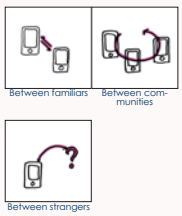
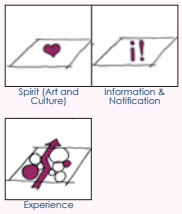
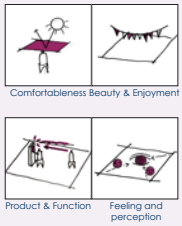
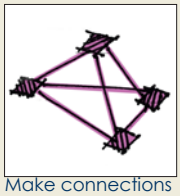
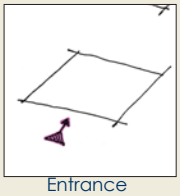
| | | Accessibility | Environment & Facilities | Public utilizations | Sociability |
|---|---|---|---|---|---|
| | |  Make connections Entrance |  Comfort & Safety Service & Function Landscape & Identity Art Culture History |  Autonomy Mixed use & form Leisure activity Entertainment |  Sharing Diversity |
| Digital installations | PEOPLE AND PEOPLE |  Between familiars Between communities Between strangers | Enhance the accessibility of physical public space by spreading notification and information to the existing social relations | - | Create more possibilities for people in groups to use physical public space. | Provide a platform for citizens to communicate with familiars, communities or strangers, which could bring and extend the digital social relation into physical spaces. |
| | PEOPLE AND PLACE |  Spirit (Art and Culture) Information & Notification Experience | Creating information layer could help with the navigation, as well as giving informatic characteristic to specific space, that could thus makes it easier for people to get to or use. | Creating information layer help to present the culture, history or even vision of physical public spaces, which could not be seen by users directly, as well as forming and emphasizing its identity. | Help people to get to the space, read the space, understand the space and use the space well. | Creating information platform to emphasize layer could help with the navigation, as well as giving informatics characteristic to specific space, that could thus makes it easier for people to get to or use. |
| Physical installations | PEOPLE AND ENVIRONMENT |  Comfortableness Beauty & Enjoyment Product & Function Feeling and perception Service & Function | Help with emphasize the entrance of physical public space, make it more NOTICABLE and RECOGNIZABLE, as well as WELCOME. | Improving the experience of an environment and the image of physical public space through implementing interactive installations, which could react and response to the situation at the present, including weather, time or users' movement and activities. | Allows variation and transformation for the static physical spatial form and facility regarding to different weather, time or users' movement and activities. | Manual controlled physical installations allows the entrance of physical public space be more flexible regarding to the location and form, thus to enhance the accessibility. |

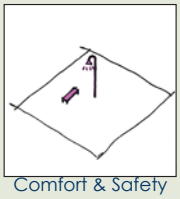
Fig.54 Theoretical Framework
Source: Author

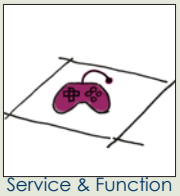
Accessibility

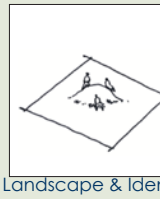
Environment & Facilit


Make connections


Entrance

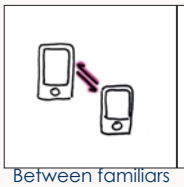

Comfort & Safety

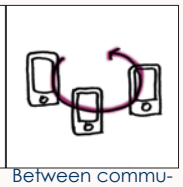

Service & Function


Landscape & Iden

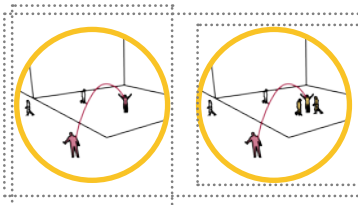
Digital installations

PEOPLE AND PEOPLE


Between familiars


Between commu-nities

Between strangers



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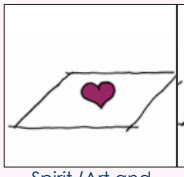
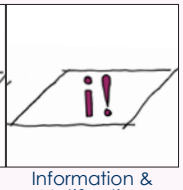
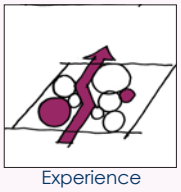
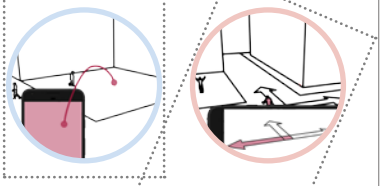
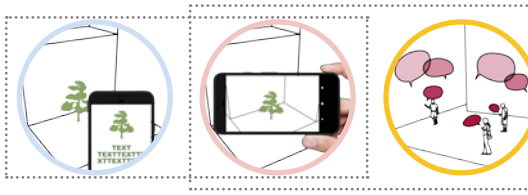
PEOPLE AND PLACE


Spirit (Art and Culture)


Information & Notification


Experience



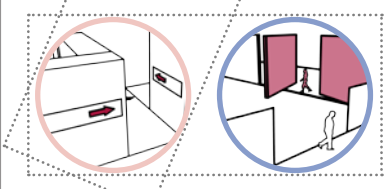


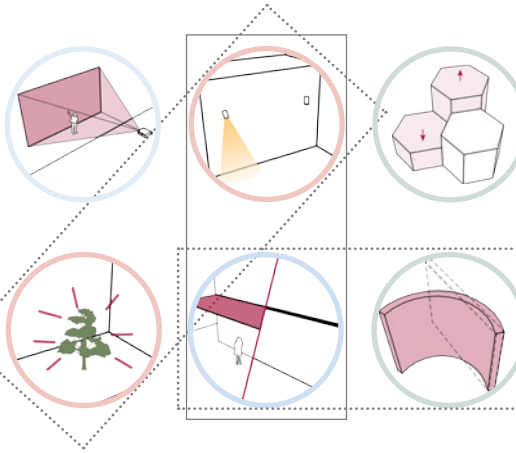
Physical installations

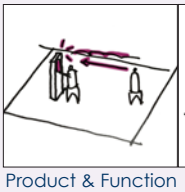
PEOPLE AND ENVIRON-MENT

Comfortableness

Beauty & Enjoyment






Product & Function

Feeling and per-ception

Fig.55 Theoretical Framework
Source: Author

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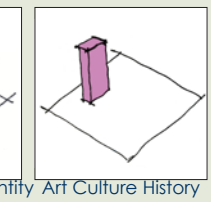
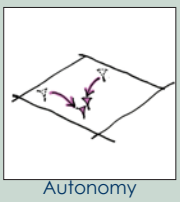
Public utilizations

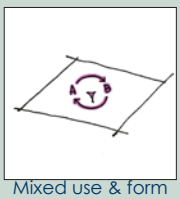
Sociability



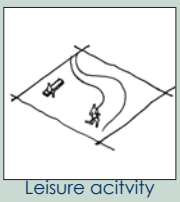
ntity Art Culture History



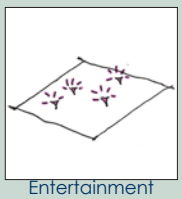
Autonomy



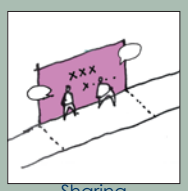
Mixed use & form



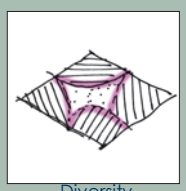
Leisure acitvity



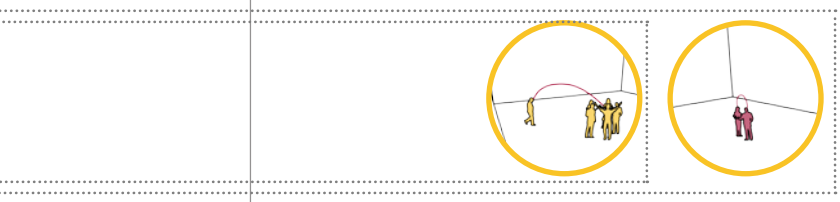
Entertainment

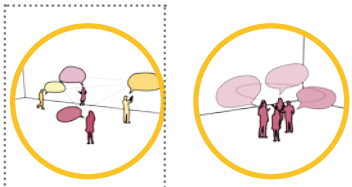


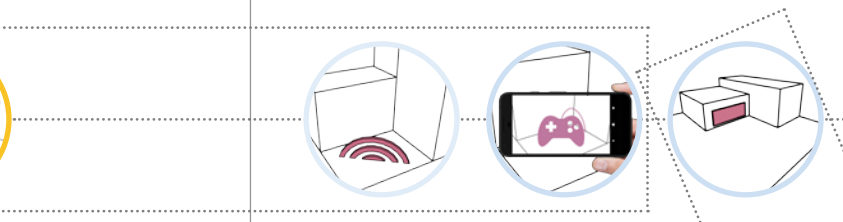
Sharing

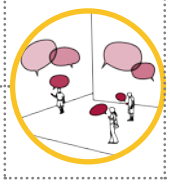


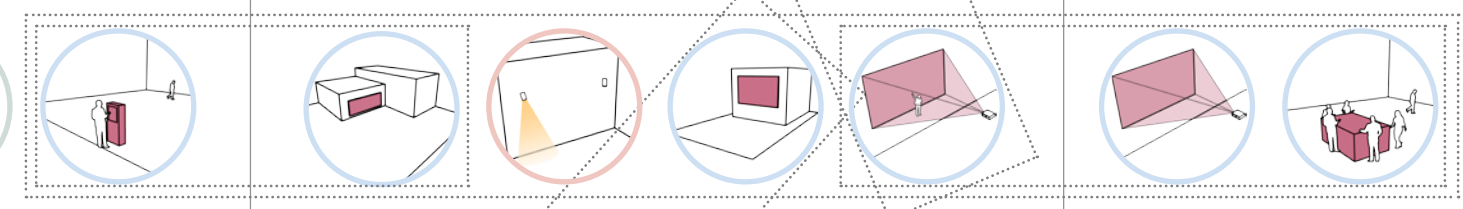
Diversity

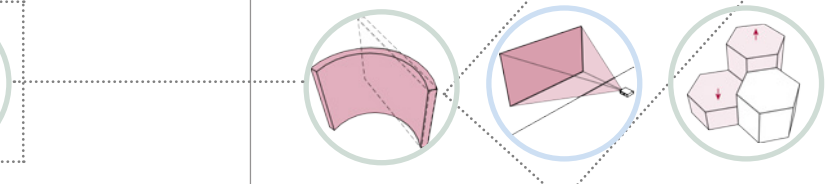












#CONTEXTUAL ANALYSIS AND TESTING DESIGN#

Fig. 56 Hong Kong location
Source: Author

Fig.57 Hong Kong (British Crown Colony) (1957)
Source: http://www.hongkong-buzz.coma

## 3.1.1 HONG KONG'S SOCIETY

Hong Kong locates in the Southern part of China, it has rich history, diversified tradition and splendid cultural deposits (Fig.56). These precious treasures should not be hidden in the background, but also be reflects in the construction and development of the city (Fig.57).

With the development of the society, Hong Kong has become one of the world's most significant financial centres, with the highest Financial Development Index score and consistently ranks as the world's most competitive and freest economic entity. Known to be "Asia's World City", Hong Kong is the world's most popular international traveller destination. If we look at Hong Kong's society today, the representative keyword that stands out the most is not only *Historic, but also Crowded, Shopping Paradise, diversed and multi-cultural.*

HISTORIC

CROWDED

SHOPPING PARADISE

MULTI-CULTURAL AND DIVERSED

Fig. 58 Key words of Hong Kong

## 3.1.2 SITE CHOOSE

In order to choose a site as the representation of Hong Kong, the keywords have to considered without any doubt.

**a. 'Historic'**

Hong Kong was originally grown from a small isolated military-cum-trading post on the north side of an inhospitable island 2km off the coast of China, and it was then founded as a city-state by British colonist since 1841.

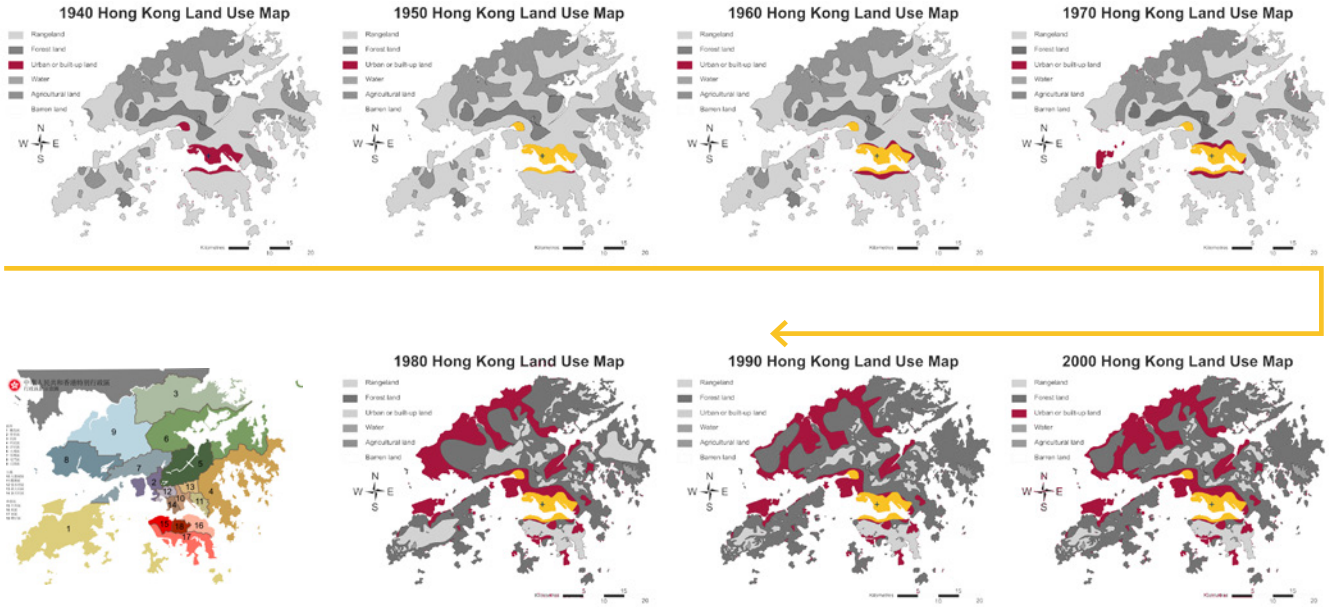
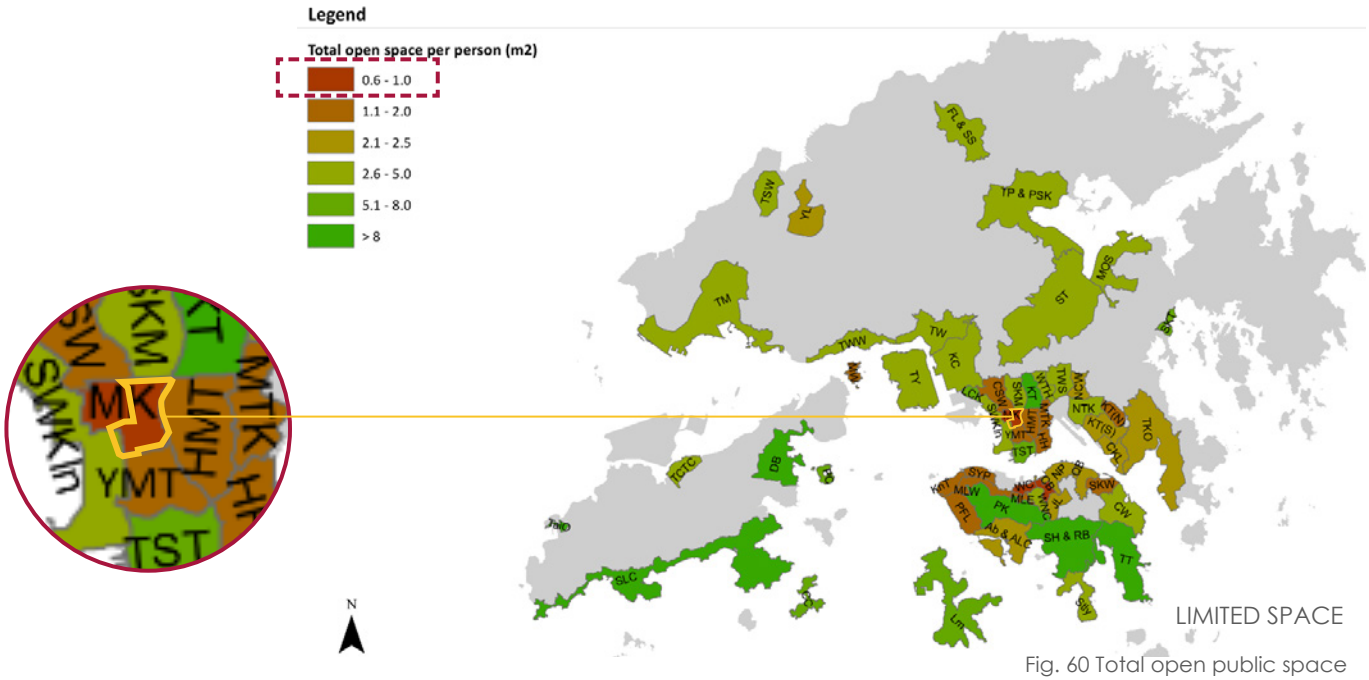



Fig. 59 Historical development of Hong Kong
Source:

At the time of British settlement, Hong Kong island, from which the metropolis grew, was famously referred to as a 'barren rock': it had an area of less than 80 km 2 whose landform rose steeply from the surrounding sea, and was devoid of any resource to speak of. Even when the Colony 'jumped' Victoria Harbour to occupy a fragment of the Asian mainland, with the acquisition of Kowloon Peninsula (adding a mere 9 km 2 in 1861), and further extended to embrace the New Territories in 1898, the territory remained small – just 1,070 km 2 in all – mostly mountain but also with extensive swamp (The making of Hong Kong).

Map H: Total Open Space per Person (2012)




LIMITED SPACE

Fig. 60 Total open public space per person
Source:

As it could be seen from the map that the area next to the Kowloon bay was the oldest part (including mainly part of Kowloon and a small part of Hong Kong island) built up at the very beginning, then the construction area spreads.

### b. 'Crowded'

Like what was mentioned in the former chapter, Hong Kong is one of the most crowded place in the world, with an average of 2m2 public space per person. What makes the problem even severe is, the distribution of public space is very much unbalance - from as much as 5m2 per person in the wealthy area to 0.6m2 per person in areas like MongKok (Fig.17, Fig.60).

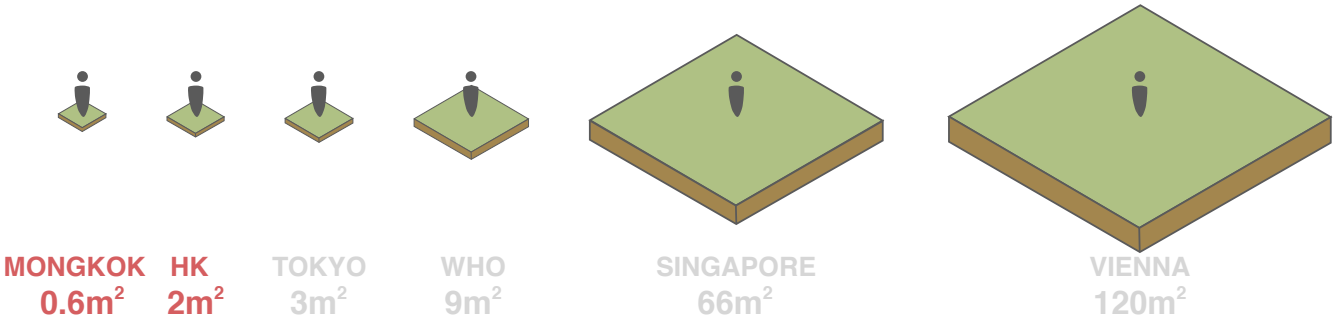



*Fig.17*
*Source: Baharash Architecture*

### c. 'Shopping Paradise'

Hong Kong is a travel and shopping paradise. Two of the first modern shopping centers were Ocean Terminal in Tsim Sha Tsui and The Landmark in Central, and as the economy improved during the 1970s and 80s, there was increasing demand for luxury goods in Hong Kong.

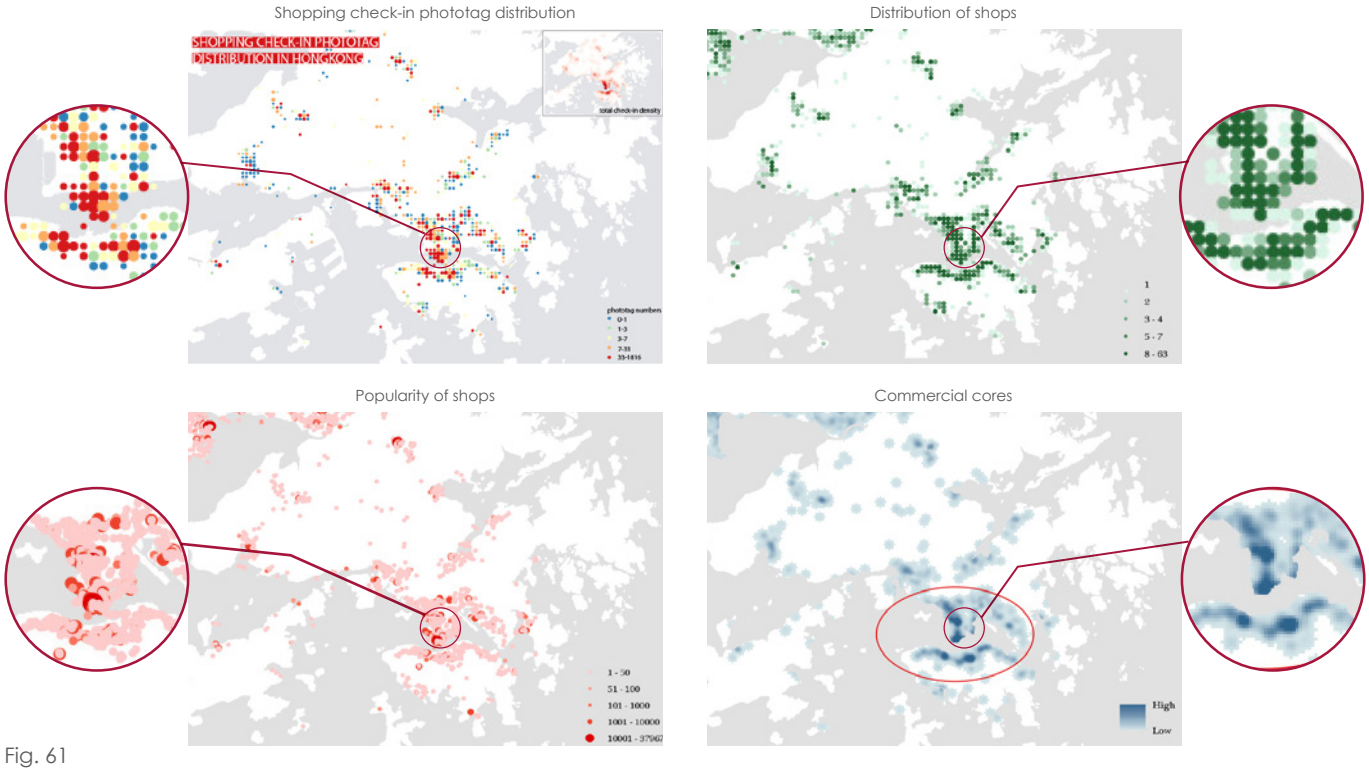



Fig. 61
Source: https://commons.wikimedia.org/wiki/File:Density_of_Hong_Kong_by_Districts.svg

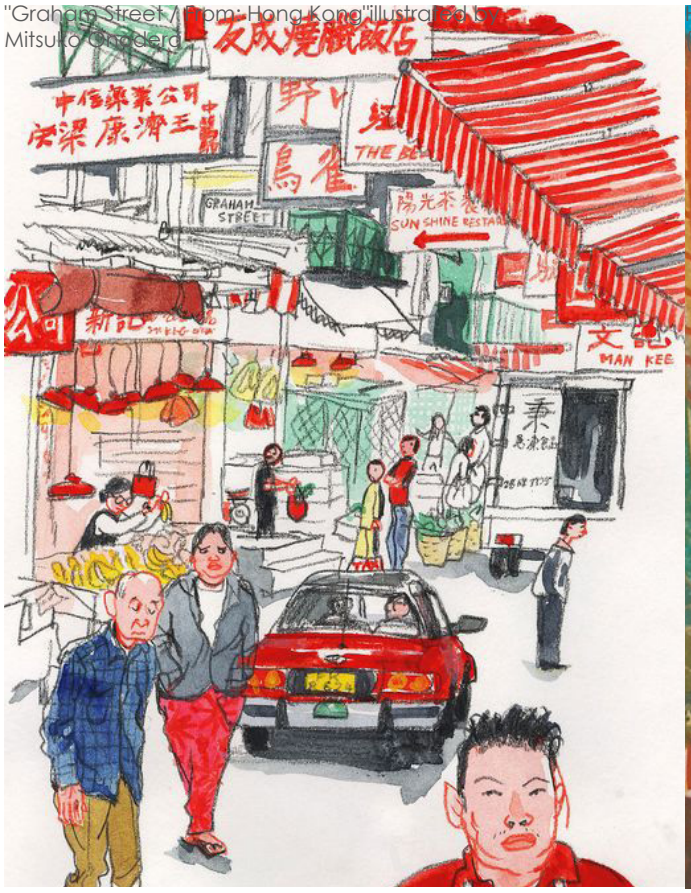
In 1984, Cityplaza in Taikoo Shing was redeveloped. A large architectural project at that time was also undertaken to connect Ocean Centre to the Harbor City shopping mall in Tsim Sha Tsui. It is the starting point of Hong Kong's shopping era. From then, many large shopping centers were also built in the new towns, including Tuen Mun Town Plaza, New Town Plaza, and Tai Po Mega Mall, and until 1990s, the Pacific Place, Dragon Centre, Time Square, Plaza Hollywood and Festival Walk were built up.
Now, there has already been formed several famous shopping districts in Hong Kong, including Tsim Sha Tsui, Causeway Bay, Mongkok and Sheung Wan.

**d. 'Diversed and multi-cultural'**

Hong Kong is a diverse and multi-cultural place, this diverse and multi-cultural is reflected not only on the way people talking, their everyday life, but also on the urban environment.

In Hong Kong, there are places with extreme modern city landscape such as skyscrapers, huge office buildings with full of cars on the street, but there are also 'old fashioned' places with traditional stores, market streets, where people always stand and talk (Fig.62).

"Graham Street / From: Hong Kong"illustrated by Mitsuko Onodera




Hong Kong (British Crown Colony) #tourism #poster (1957) http://www.hongkongbuzz.com

Fig. 62 From Jan Gehl's book 'Life Between Buildings: Using Public Space'

# 4.2 SITE LOCATION - MONG KOK, HONG KONG

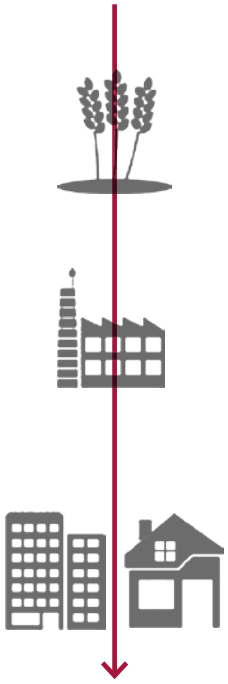


Fig. 63 History of Mong Kok
Source: Author

After all the analysis regarding on the keywords of Hong Kong, Mong Kok could be seen as one of the most representative and challenging are. Mong Kok locates in the western part of Kowloon Peninsula, it is one of the oldest and crowded place in Hong Kong, with 130,000/km2 and 0.6m2/person. According to the record of <Xinan Xianzhi> published in 1819, Mong Kok, at the beginning was a cultivated land with around 200 residents. People grow vegetables, flowers, or raise hogs and chickens and sold it to Hong Kong island for living. Since 1909, it comes to the light industry age due to the road and port construction, and in 1950s, this area was gradually transit to the commercial residential area like it is today.

Nowadays, Mong Kok has become one of the major shopping areas in Hong Kong. The area is characterized by a mixture of old and new facilities and buildings with shops and restaurants at street level and commercial or residential units above(Fig.).
Comparing with the area Central and Tsim Sha Tsui which are occupied with high level offices and shopping malls, Mong Kok is full of middle or lower level shops and offices.

Major industries in Mong Kok are retail, restaurants (including fast food) and entertainment. It has been described[1] and portrayed in films as an area in which triads run bars, nightclubs, and massage parlors. Mong Kok was described as the busiest district in the world by the Guinness World Records.

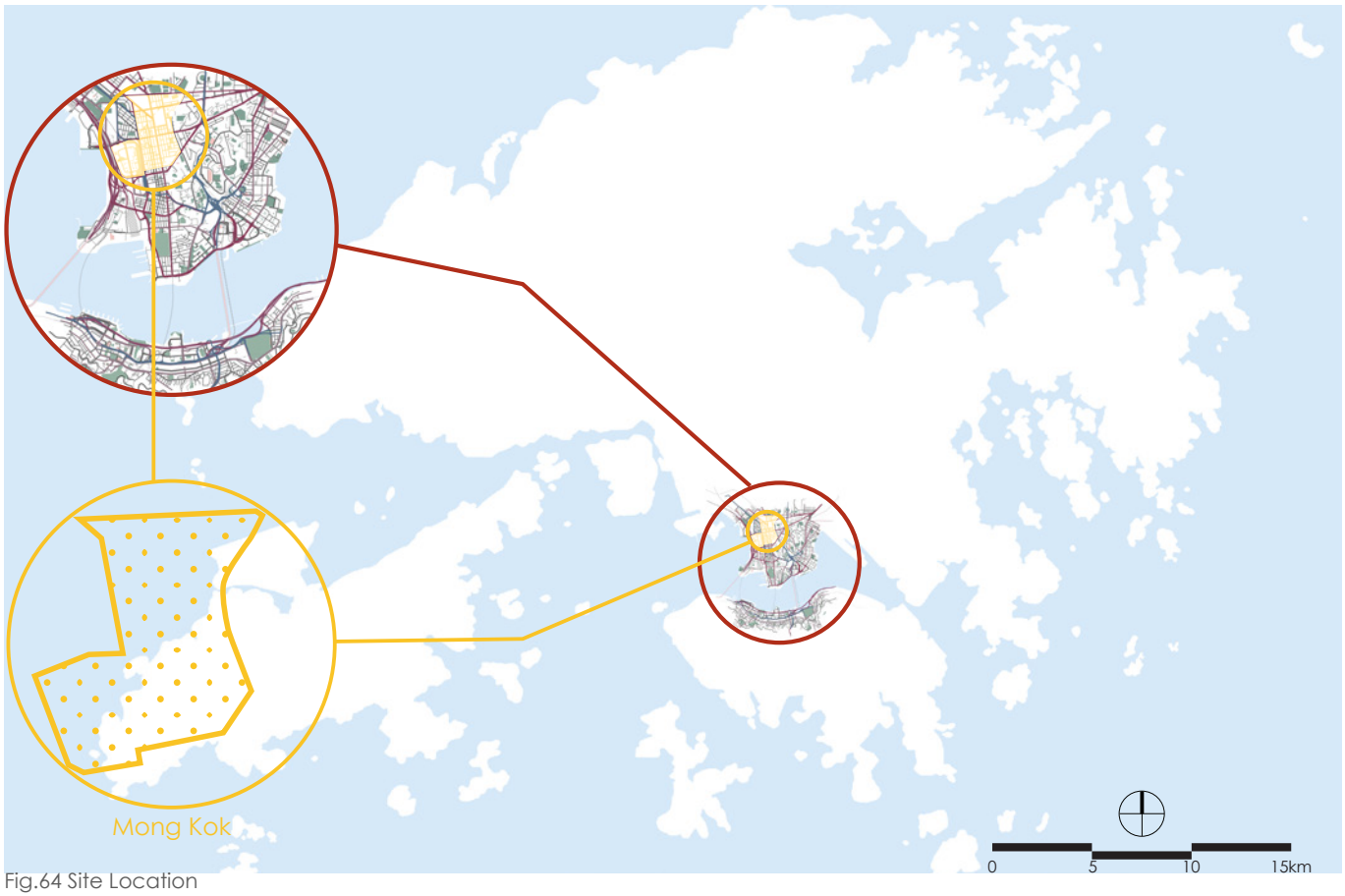



Fig.64 Site Location
Source: Author

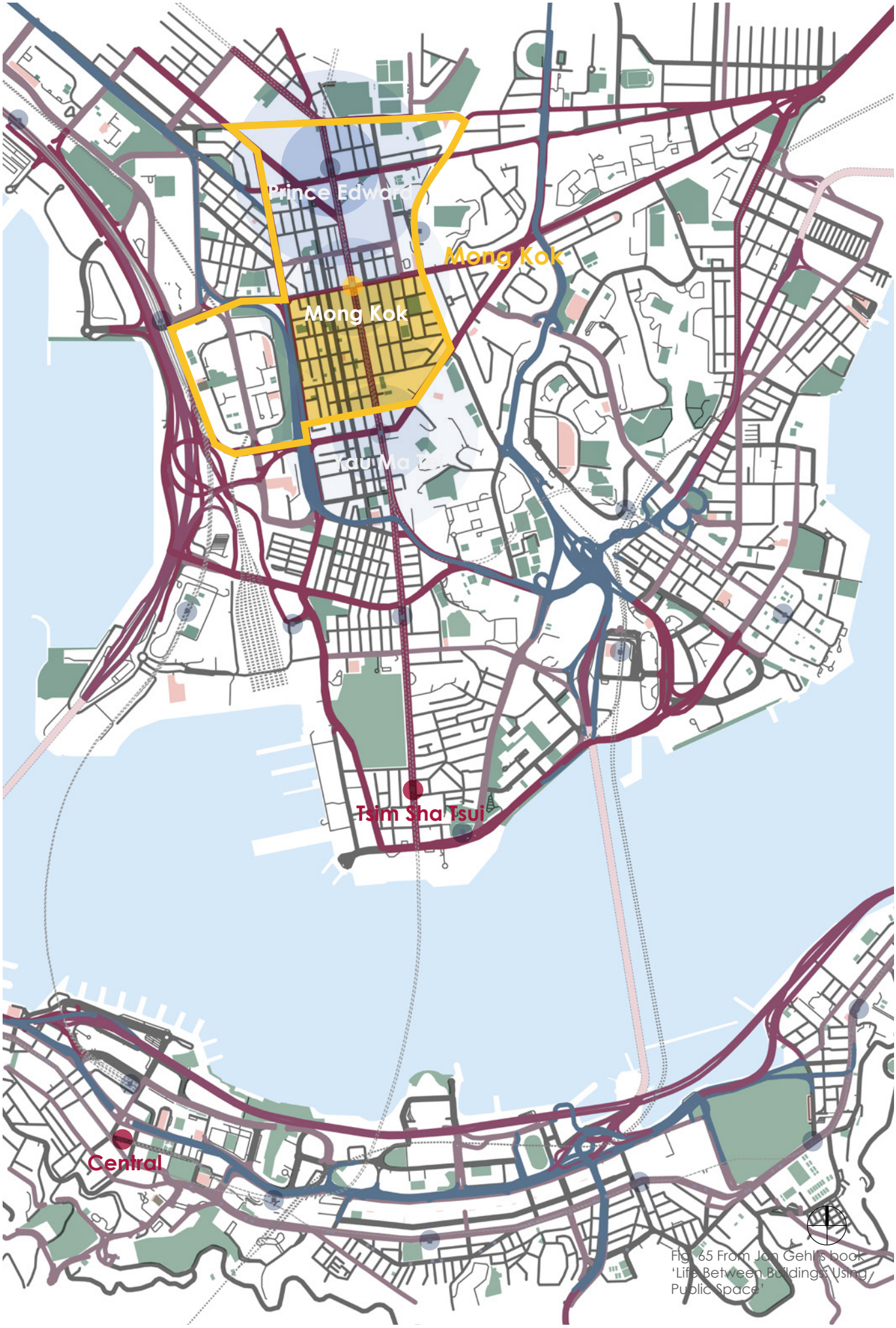



Fig. 65 From Jan Gehl's book 'Life Between Buildings Using Public Space'

# 4.3 SITE ANALYSIS

After all the analysis regarding on the keywords of Hong Kong, Mong Kok could be seen as one of the most representative and challenging area, as it is the aggregation of all the keywords.

Mong Kok locates in the western part of Kowloon Peninsula, it is one of the oldest and crowded place in Hong Kong, with 130,000/km2 and 0.6m2/person. According to the record of <Xinan Xianzhi> published in 1819, Mong Kok, at the beginning was a cultivated land with around 200 residents. People grow vegetables, flowers, or raise hogs and chickens and sold it to Hong Kong island for living. Since 1909, it comes to the light industry age due to the road and port construction, and in 1950s, this area was gradually transit to the commercial residential area like it is today.

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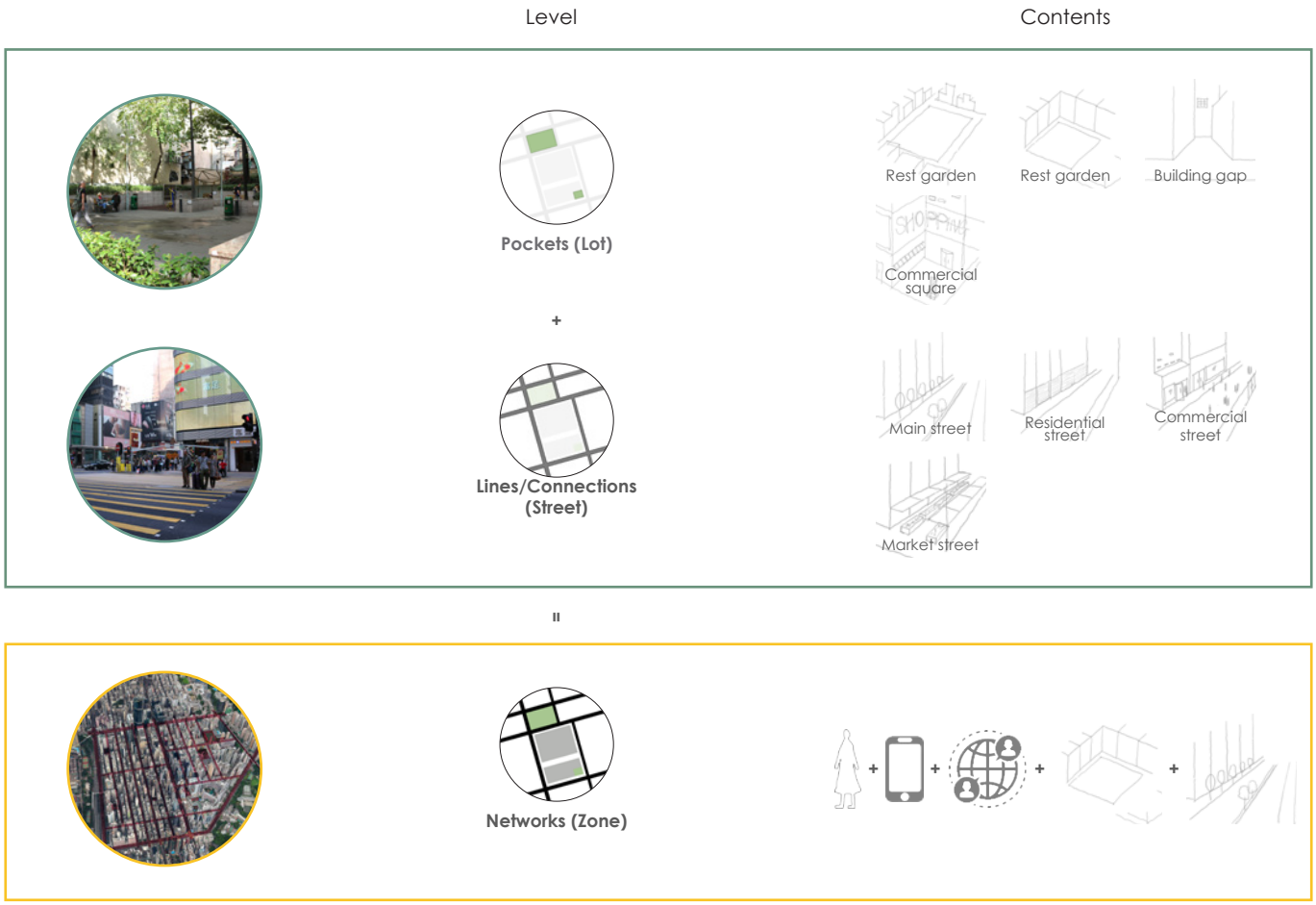
Fig. 66 From Jan Gehl's book 'Life Between Buildings: Using Public Space'

entertainment. It has been described[1] and portrayed in films as an area in which triads run bars, nightclubs, and massage parlors. Mong Kok was described as the busiest district in the world by the Guinness World Records.

Within Mong Kok, the area around Langham Place and Women street is chosen as the detail design testing area. It is one of the areas that have the most diverse functions and types of public space.

In order to make analysis and design, the public spaces are categorized into three levels: Pockets (Lots), Lines (Streets), and Networks (Zones). Among them, Level of pockets and lines are more relates about the specific physical public space and its implementations, whereas the level of network is more about the virtual connection.

PUBLIC SPACE REGARDING ON LEVELS



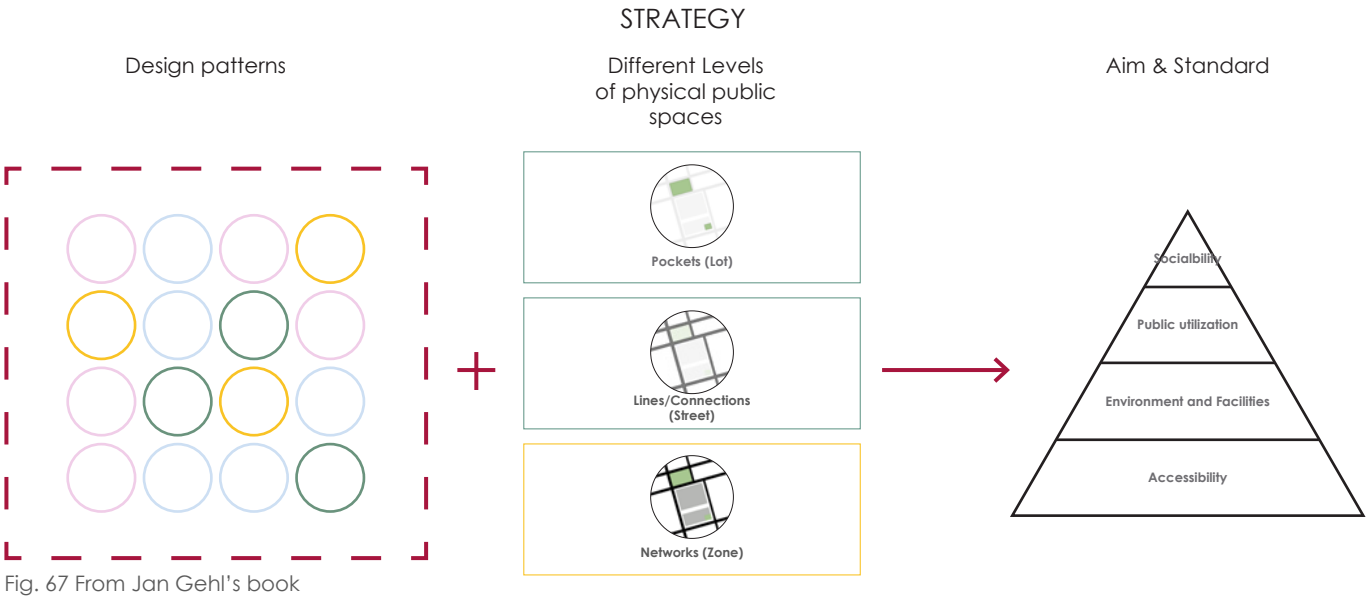



Fig. 67 From Jan Gehl's book 'Life Between Buildings: Using Public Space'

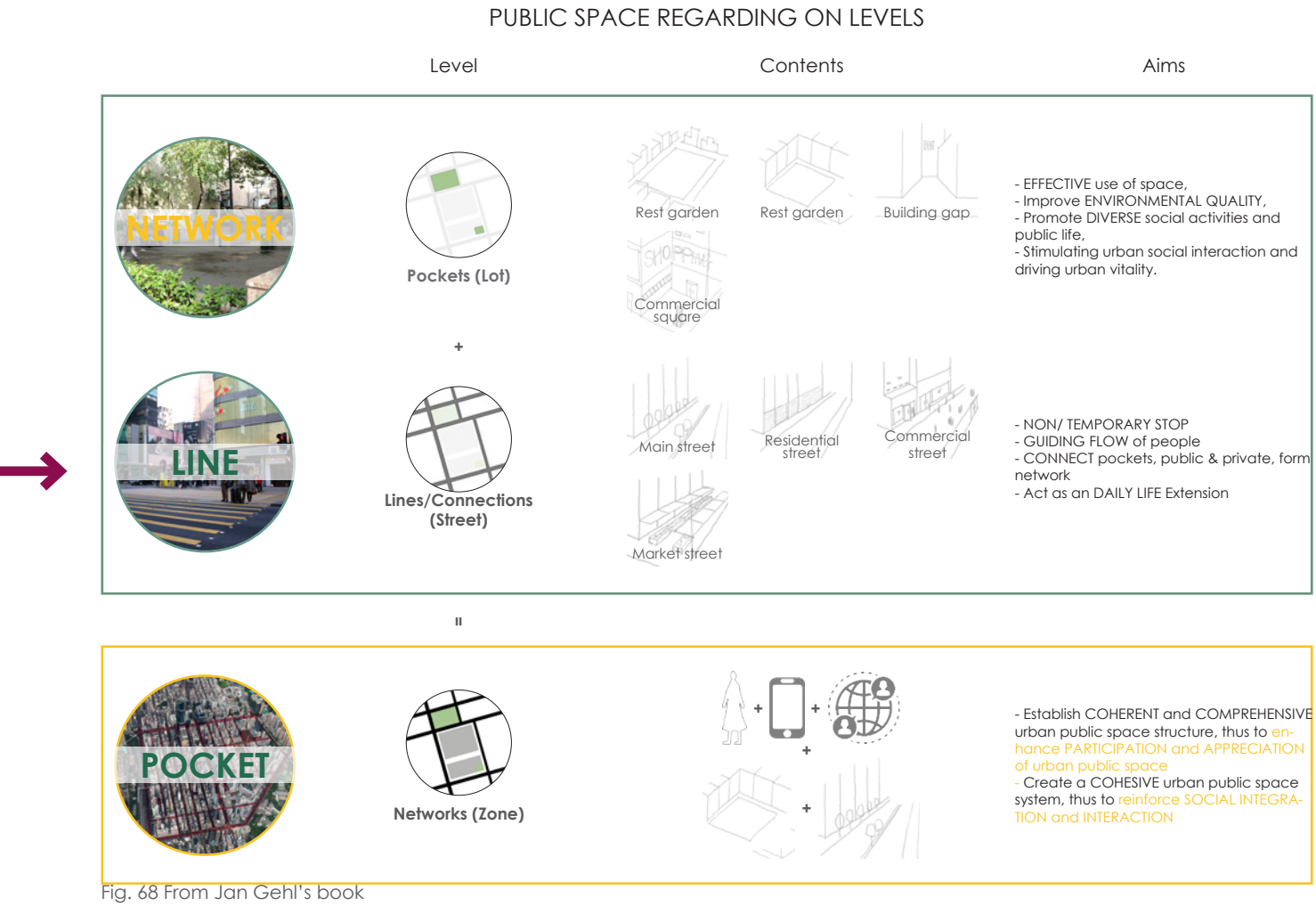



Fig. 68 From Jan Gehl's book 'Life Between Buildings: Using Public Space'

### 3.5.1 LEVEL OF POCKETS: RECREATION AREA & REST GARDEN

Pocket public spaces is one of the most normal, common and official type of public space in our daily life. There are different types of pocket public spaces regarding on different scales, location and functions. However, in Hong Kong, it might sometimes happen that the pocked public spaces are now well used, which leads to the waste of space. Therefore, it is very much necessary for the improvement on pocket public spaces.

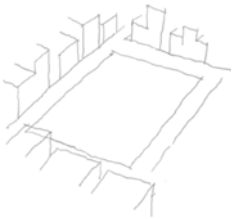
## Level of pockets: Recreation areas & rest gardens

Regarding the different scale, openness and its function, all the pocket public space in the site area could be categorized into four groups: Rest garden in district scale, Rest garden in neighborhood scale, commercial square and building gaps.
Rest garden indicates the official public space in larger scale. Comparing with the neighborhood scale, district scale has more function and services more citizens.
Commercial square indicates the 'private-public' square provided by the

Fig. 68 Site location

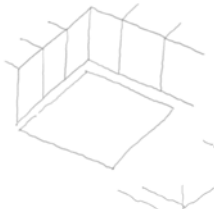
merchants. It mainly locates in front of the entrance of shopping mall.

Building gaps are the left over spaces in between buildings. It is ubiquitous in Hong Kong. For now, it is not in a good condition, but have a huge potential.



**Rest garden**
(District scale)

9 10 11



**Rest garden**
(Neighborhood scale)

5 6 7

**Commercial square**

1 2 3

**Building gap**

9 10 11

Fig. 69 Service condition of existing public spaces

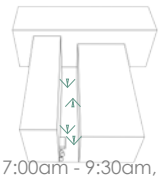
IMPLEMENTATION ON THE LEVEL OF 'POCKETS'

People

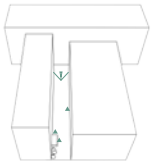
Community, Stranger

Short stay (Community, Strangers)

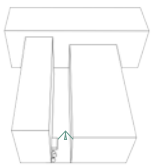
Pass by (Community, Strangers)



7:00am - 9:30am,
18:00pm - 20:00pm



9:30am - 18:00pm



20:00pm - 7:00am

Place

Left over space

Empty on experience

Environment

Narrow

Closed, deep and private

Lack of function

Fig. 70 Site location

Building gaps are the left over spaces in between buildings. It is ubiquitous in Hong Kong, but most of them are not well used. Building gaps in the residential areas are heaped with garbages, and those who locates in commercial are full of unused goods.

However, it is normal and ubiquitous, and easy for people to get. Since Hong Kong is lack of public spaces that a lot of activities have no space to facilitate, building gaps have a huge potential to be transformed into a place for daily leisure activities.

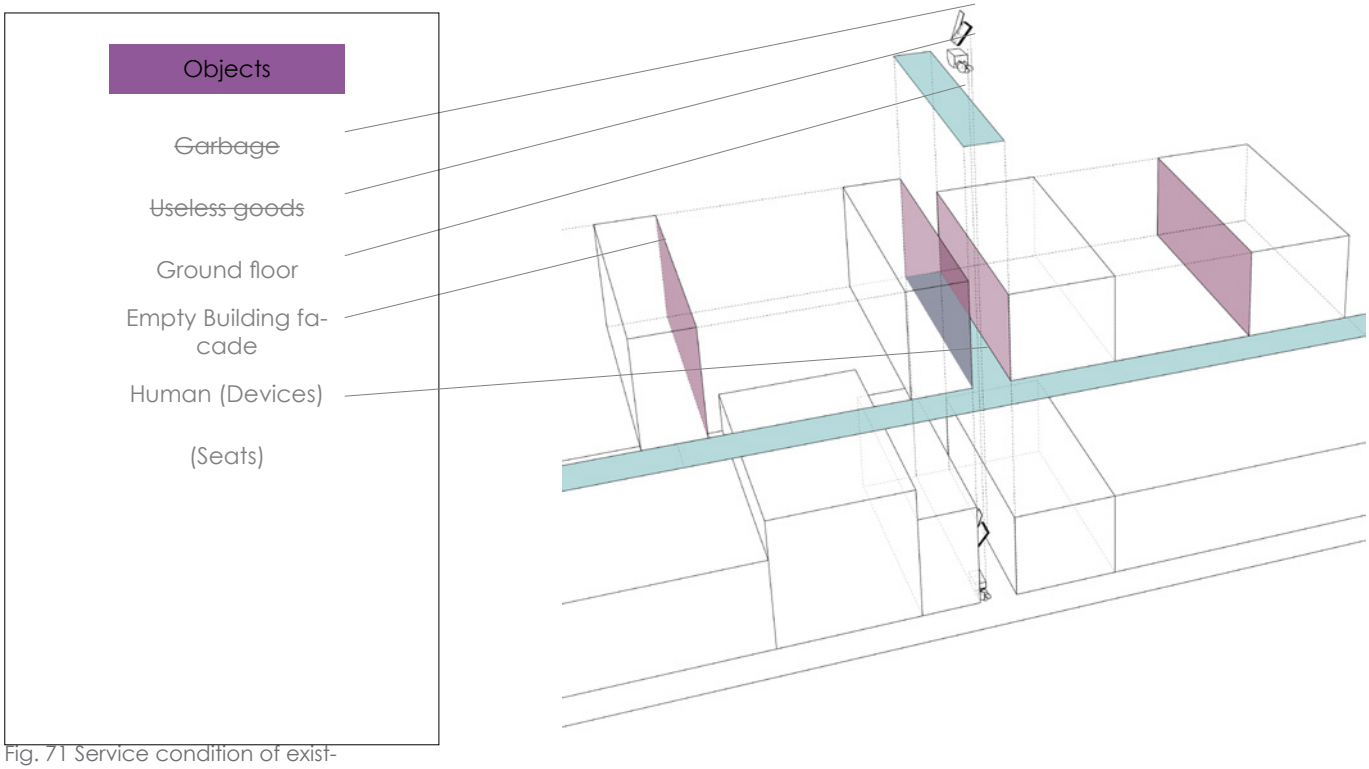



Fig. 71 Service condition of existing public spaces

Existing and possibilities

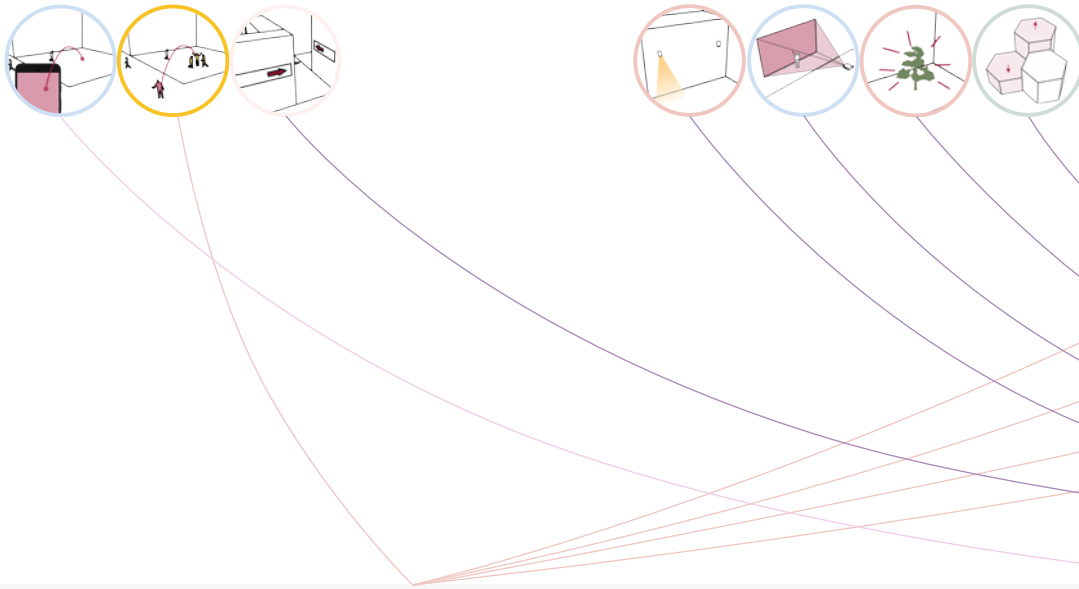
Accessibility

Ubiquitous and physically accessed but mentally unreadable

Environment & Facilities

Narrow with empty facade, people sometimes stand there or sit on the goods.

Existing and possibilities



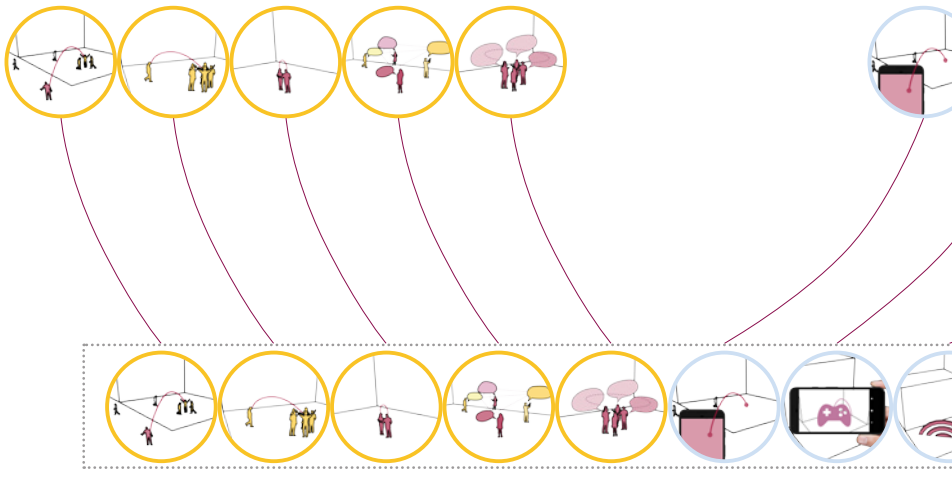
Potential tools

People

Community (Residents/ Neighbor)

Pass by strangers

Outcomes



Human (Devices)

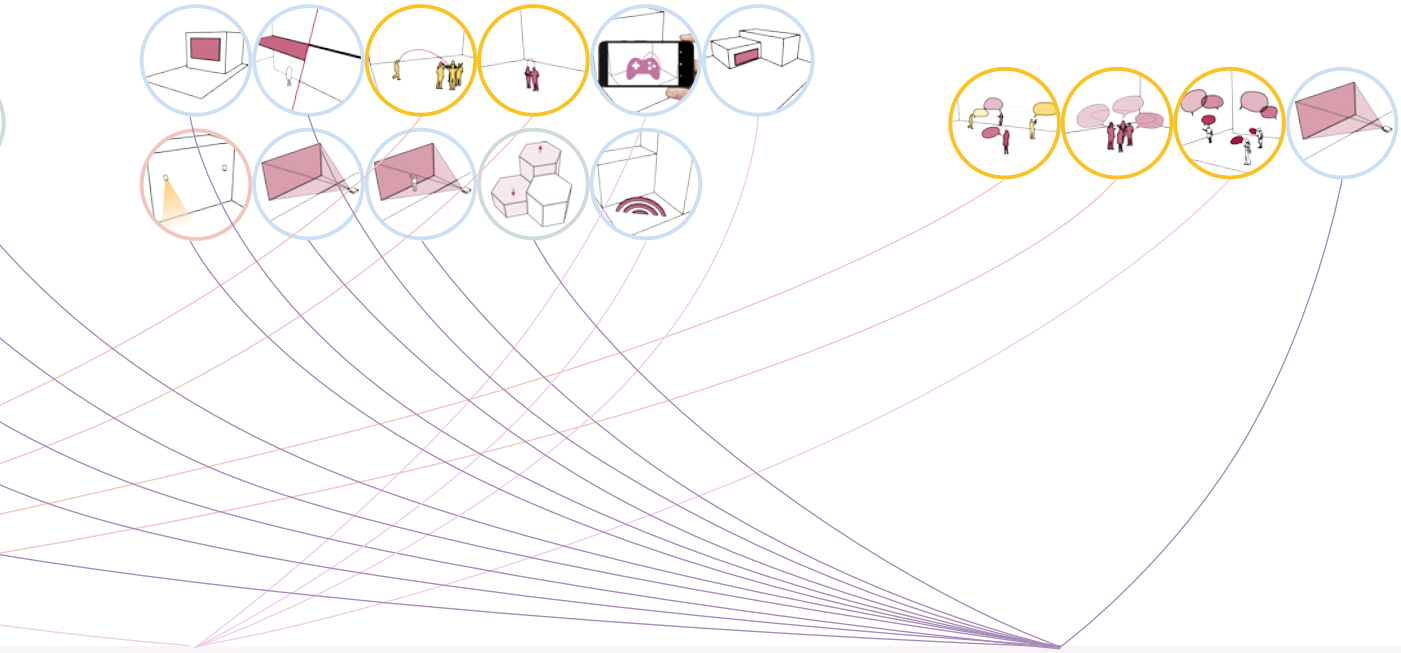
Fig. 72 Design process
Resource: Author

Public utilize

Empty in function, lack of usability

Sociability

Lack of sociability



Place

Left over space

Empty on experience

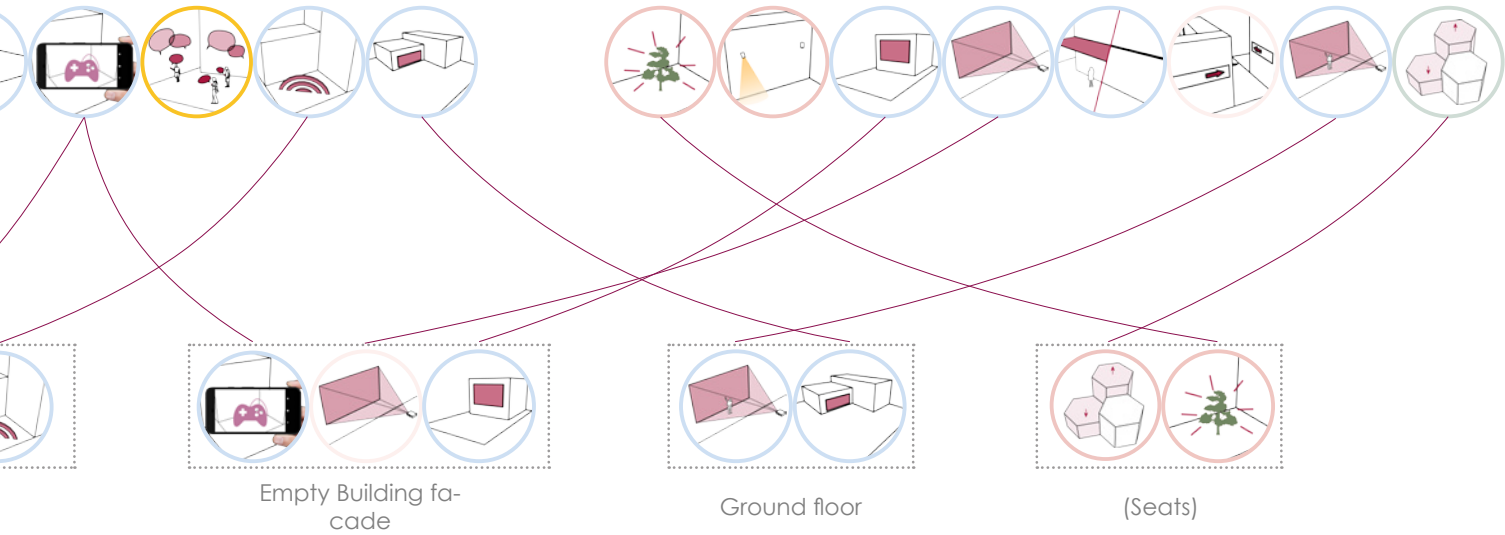
Suitable for daily leisure activities

Environment

Narrow and small scale

Closed, deep and semi-private

Empty on function and decoration



Empty Building facade

Ground floor

(Seats)

In the morning, while people are busy with commuting to work, the building gap could become a place for people to sit and have breakfast, wait for someone and say hi to their neighbors. The projection on the wall can be used as a news notification board or neighborhood BBS that people who sit and stay here can read and comment.

Fig. 73 Site location

During evening, after dinner time, the building gap could change into a leisure pocket space for neighbors to chat and amuse. Projection on the wall and ground will turn into screen for game and entertainment, and the light could be lighten to create different atomasphere.

Fig. 74 Service condition of existing public spaces

KEEP
CLEAR
請勿
停車

### 3.5.2 LEVEL OF LINES: DIVERSE STREETS

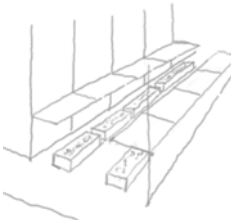
Streets are acting an really important role to both we citizens and our cities. It is on one side, resembles the blood capillaries of a city, connecting different parts of our city including home, work place, parks and shopping squares, as well as bringing nutrients to them. And on the other side, itself is also an important and frequently used public space for citizens.

## Level of lines: Diverse streets

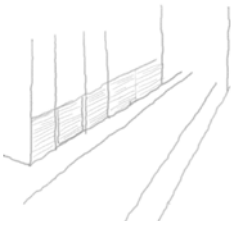
In the site area, there are all together four types of 'Lines' regarding on the scale and function: main streets, commercial streets, residential streets and market streets.

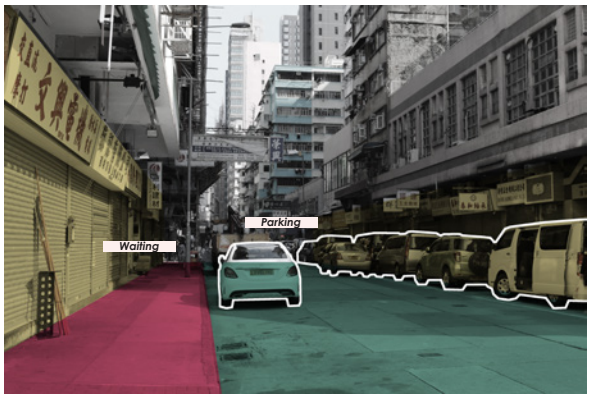
Main streets indicates Nathan Road in this area. It is a two-way six-lane road connects not only northern and southern but also western and eastern. Along the road, there are full of offices and shops with some traffic facilities intersperse.

Residential streets referring the streets inside the residential area. Considering with other types, it is more private and inactive with a lot of car parking



**Market street - Canton Road (Mong Kok market)**






**Residential street - Soy Street**

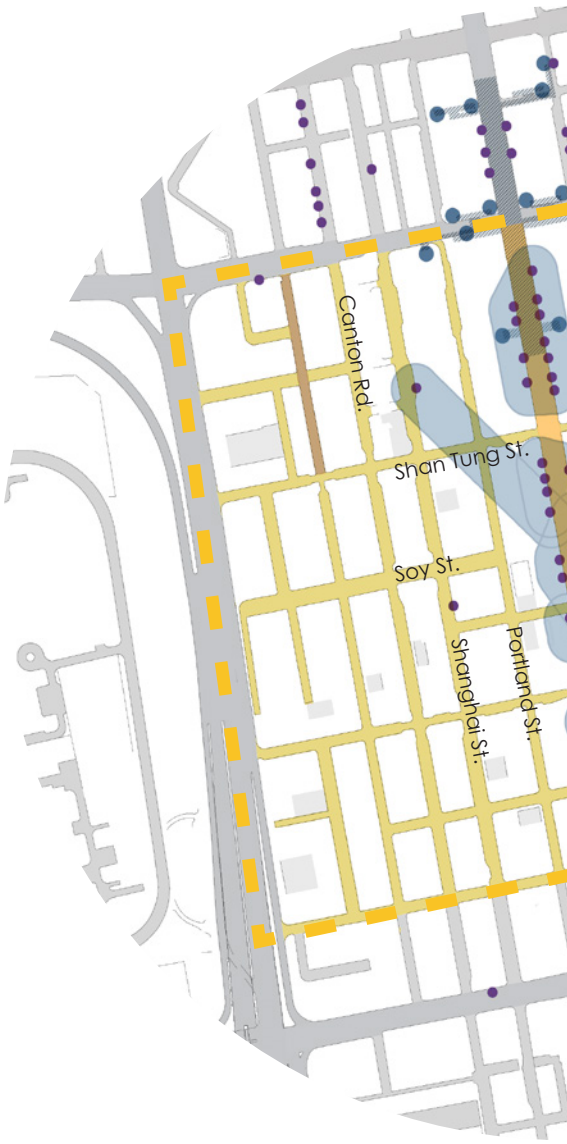
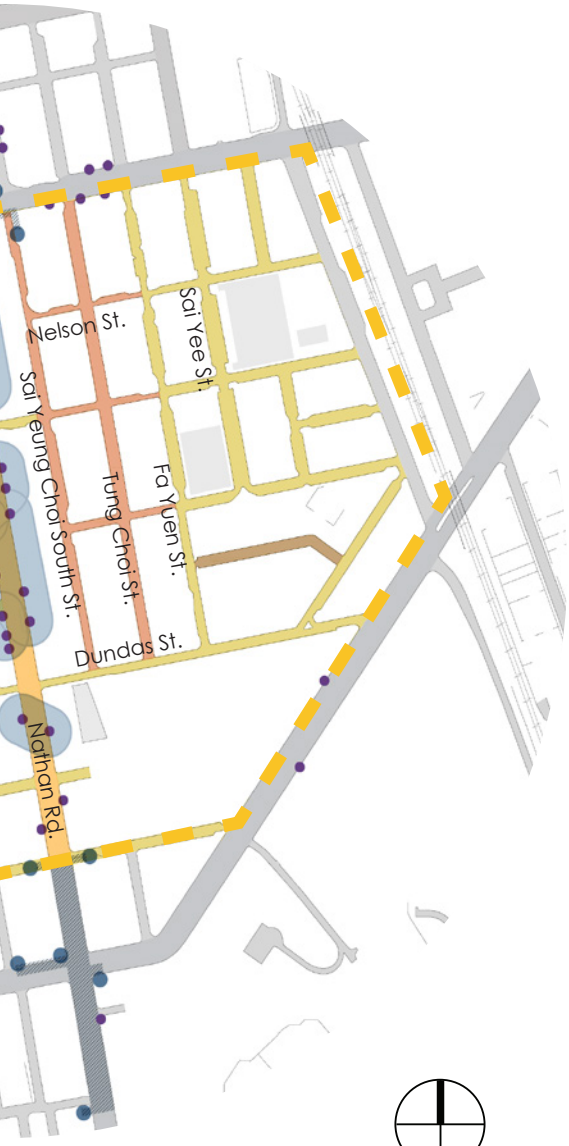



Fig. 75 Site

there at each sides.

Commercial streets are the streets that has shops, restaurants at each sides. Unlike the main street, it is full of shoppers instead of cars, even some of them are car free.

There are two market streets in the site area, one is  Mong Kok market, the other one is Lutian Wet Market on Yin Chong Street.

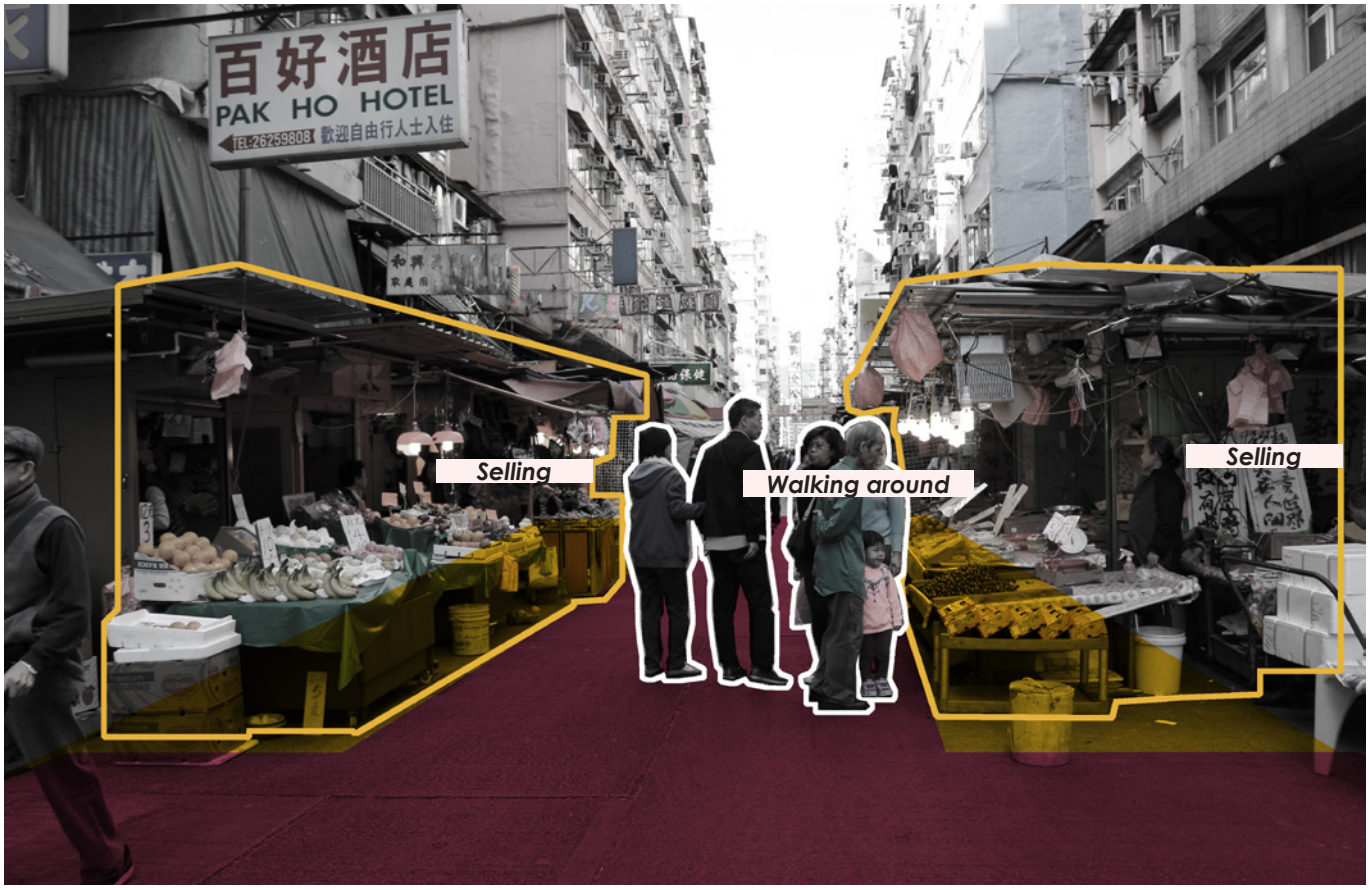



e location

**Main street - Nathan Road**

**Commercial street - Sai Yeung Choi Street**

IMPLEMENTATION ON THE LEVEL OF 'LINES'



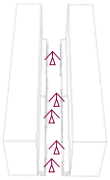

People

Community, Stranger

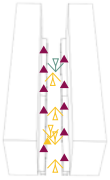
Market Seller (Community)

Customer (Community, Stranger)

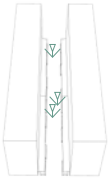
Residents (Community, Stranger)



Before 7:00



7:00am - 20:00pm



20:00pm - 7:00am

Place

Large movement

Noise and Dazzling

Environment

Narrow

Busy

Crowded

Fig. 76 Site location

Market streets are absolutely necessary for the residents who live in Mong Kok. As Mong Kok is one of the oldest and historical area. It is one of the most lively area inside the neighborhood and people always likely to meet and talk to each other here.

However, the markets only opens from 8:00 in the morning till 20:00 in the evening, and the rest of time, it is empty. Therefore, it could been foreseen that the implementation of digital technology might could help to make the space more multi-functional that even during the market is closed, the space could also be well-used.

Fig. 77 Service condition of existing public spaces

Existing and possibilities

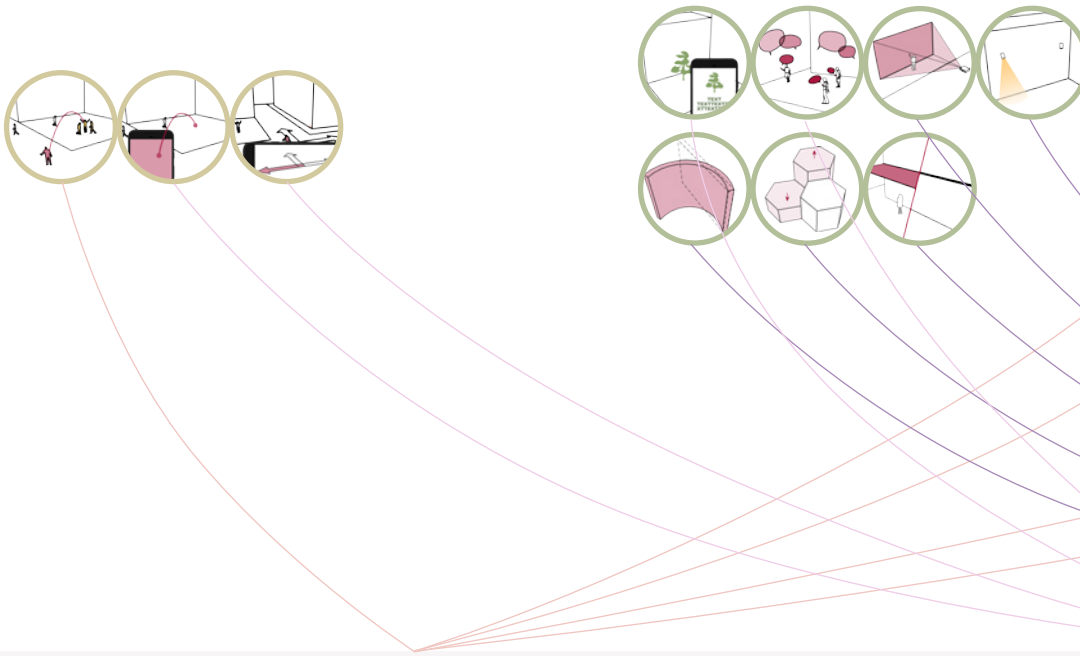
Accessibility

Left over space

Empty on experience

Environment & Facilities

Existing and possibilities



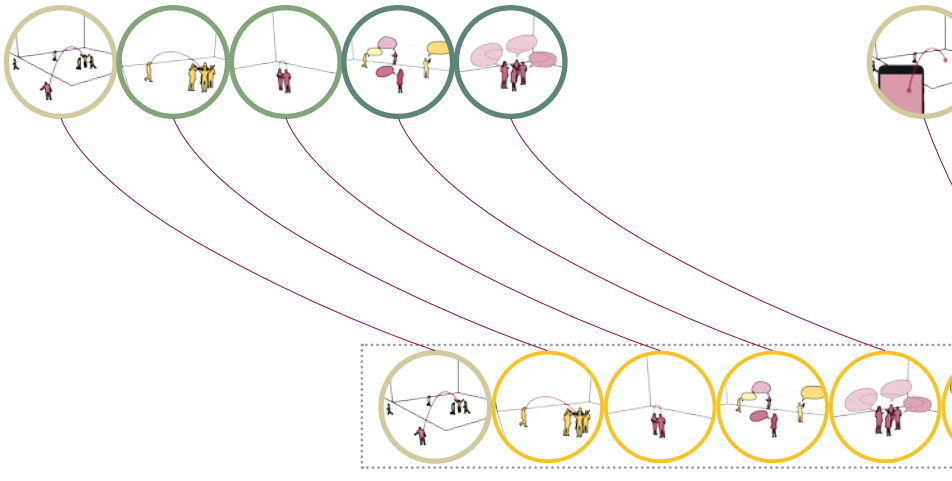
Potential tools

People

Community (Residents/ Neighbor)

Stranger

Outcomes

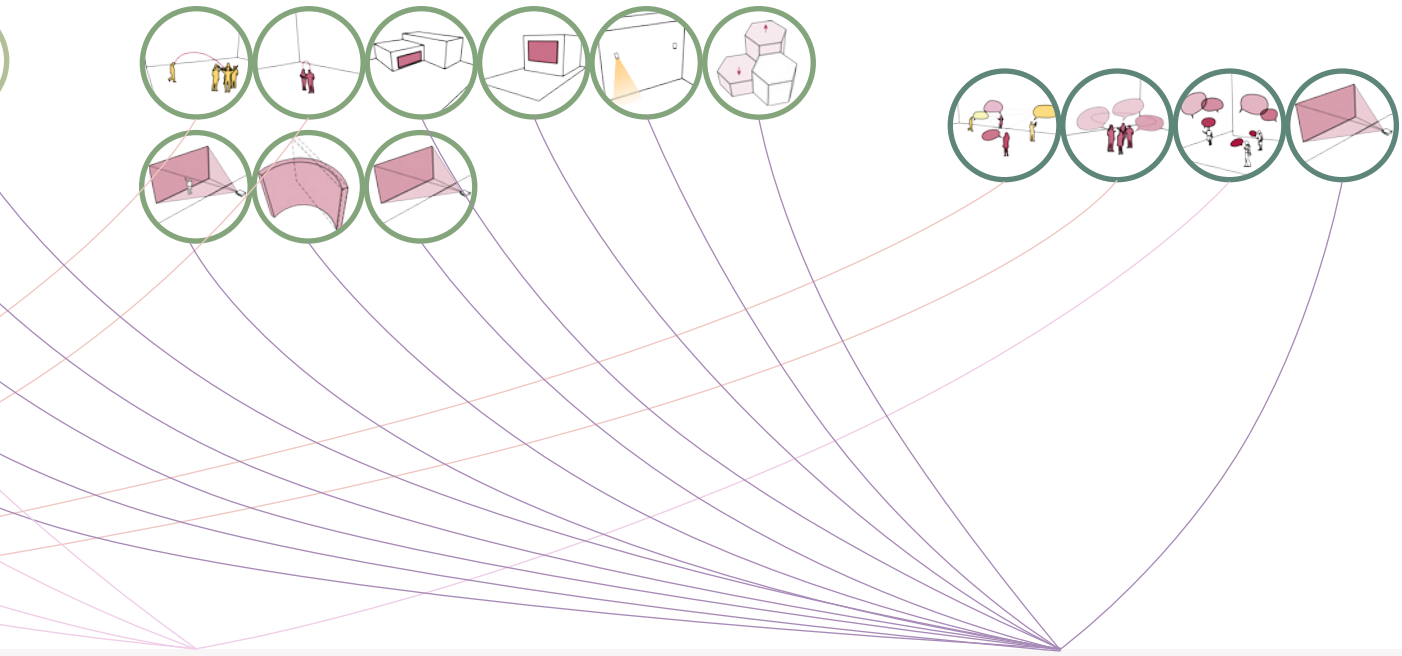


Human (Devic

Fig. 72 Design process
Resource: Author

Public utilize

Sociability



Place

A life style
Daily used/ pass by and necessary

Place for transaction

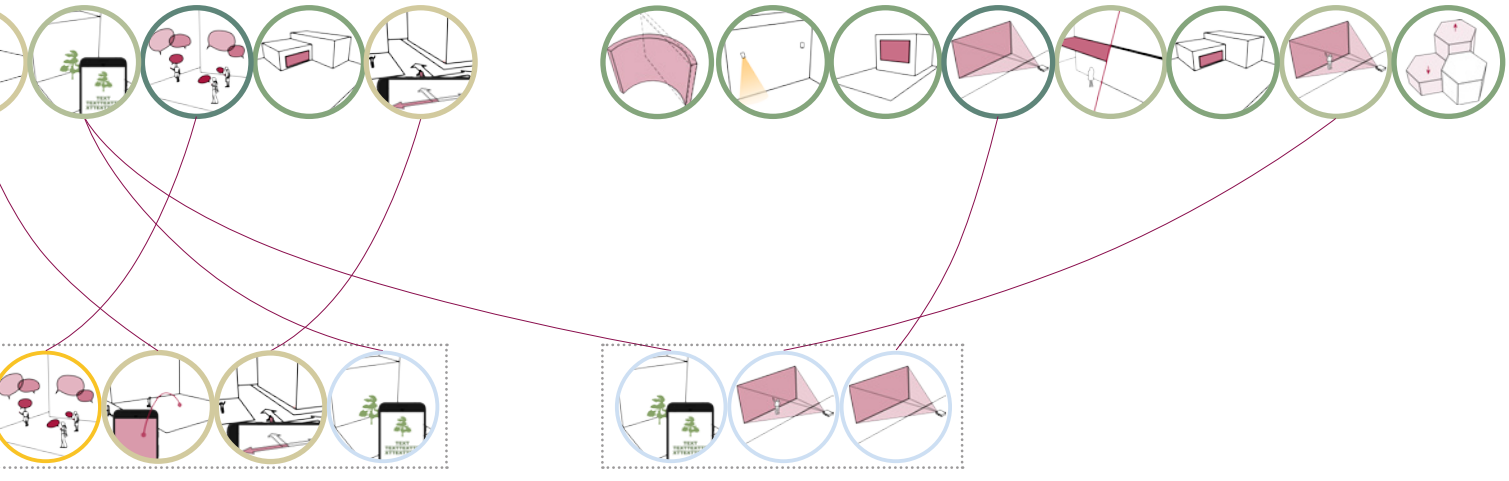
Noise and Dazzling

Environment

Narrow

Busy and crowded

Mono-functioned



es)

Ground floor

During the market is opening, the space will be used as a market street, windows will be opened, table will be put full of foods, and on the ground, the screen allows people to get to know where is selling what easily. Small screen on top of the window displays the QR code that people could pay through scanning them without cash, and there is also some spaces for the comment on the selling product.

Fig. 77 Site location

After the market is closed, the street will becomes a normal street that citizens and residents could still use it. The table will descend into a small stage for people to sit, and the closed window will becomes display window.

Fig. 78 Service condition of existing public spaces

Google

# 4.6 CONCLUSION

**Lines analysis - Streets**

There are all together two types of network, one is physical network, whereas the other one is virtual network. Without any doubt that after the implementation on the level of pockets and lines, the physical network will be connected, but what needs to be mentioned is it could also leads to the establish of virtual network.

Fig. 79 Site location

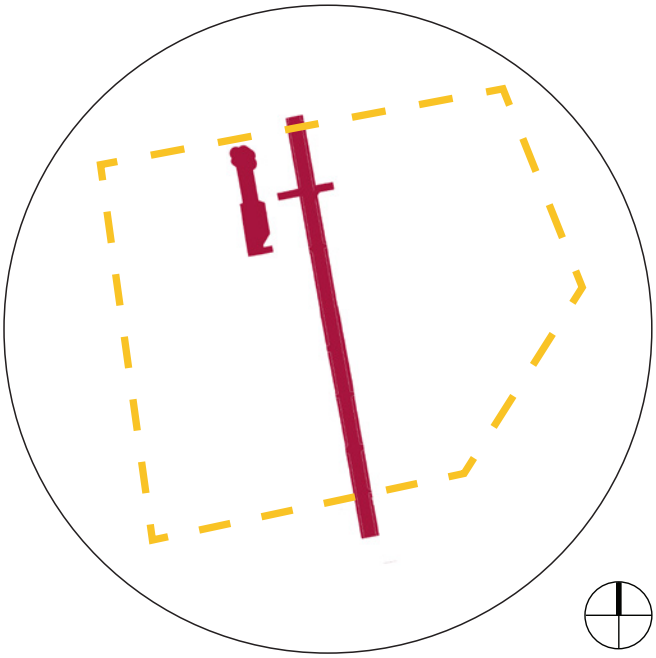


Fig. 80 The existing popular commercial area

Fig.81 Weak horizontal connection

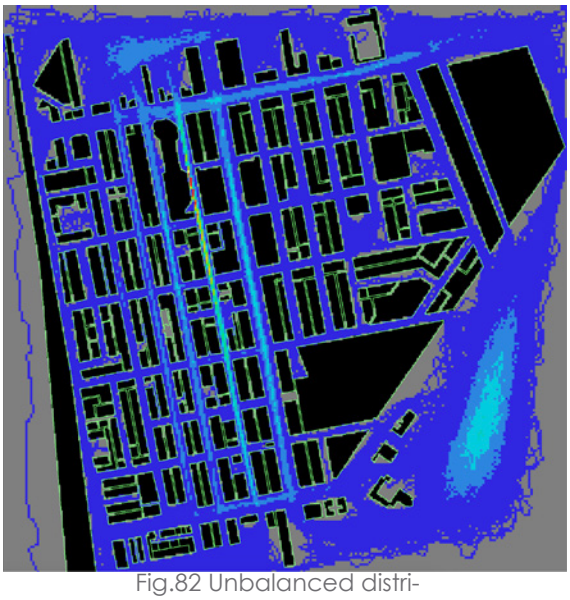


Fig.82 Unbalanced distribution on pedestrian flow

For now, how we are experiencing the physical world rely on our own eyes, and foot. If someone wants to know what's happening in a physical public space, he has to go there and have a look himself. This gives a lot of limitation that we might have missed a lot of interesting things happened nearby us because we didn't know it. And at the same time, it also causes some problems, such as the crowded in some place, weak connection and unbalanced distribution on pedestrian flow (Fig79-82).

Now with the implementation of digital technology, the information could be transfered through our digital technology. This thus creates a vitural network which helps us to open up our eyes, and overcome the limitation, that people could easily get to know what's happening or what will happen in a specific place without being there (Fig.83).

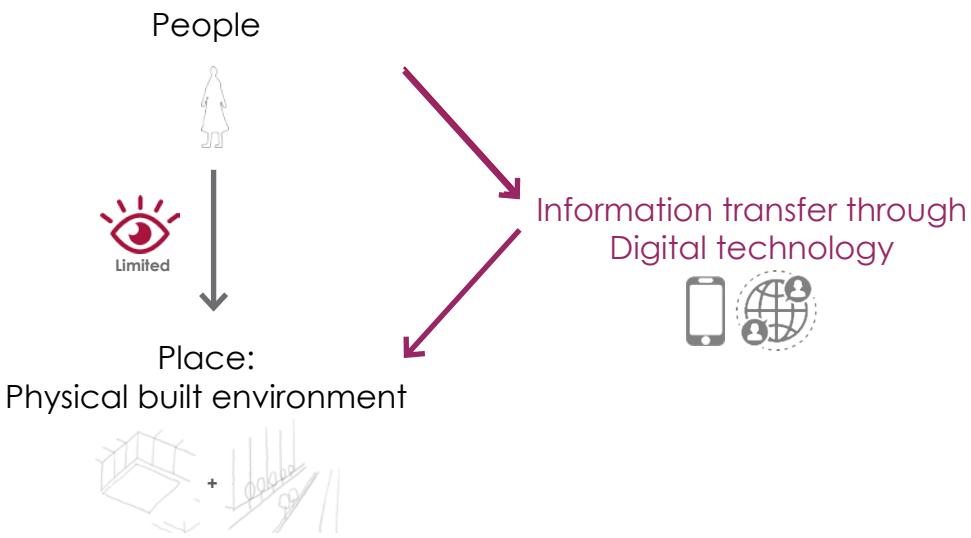



Fig. 83

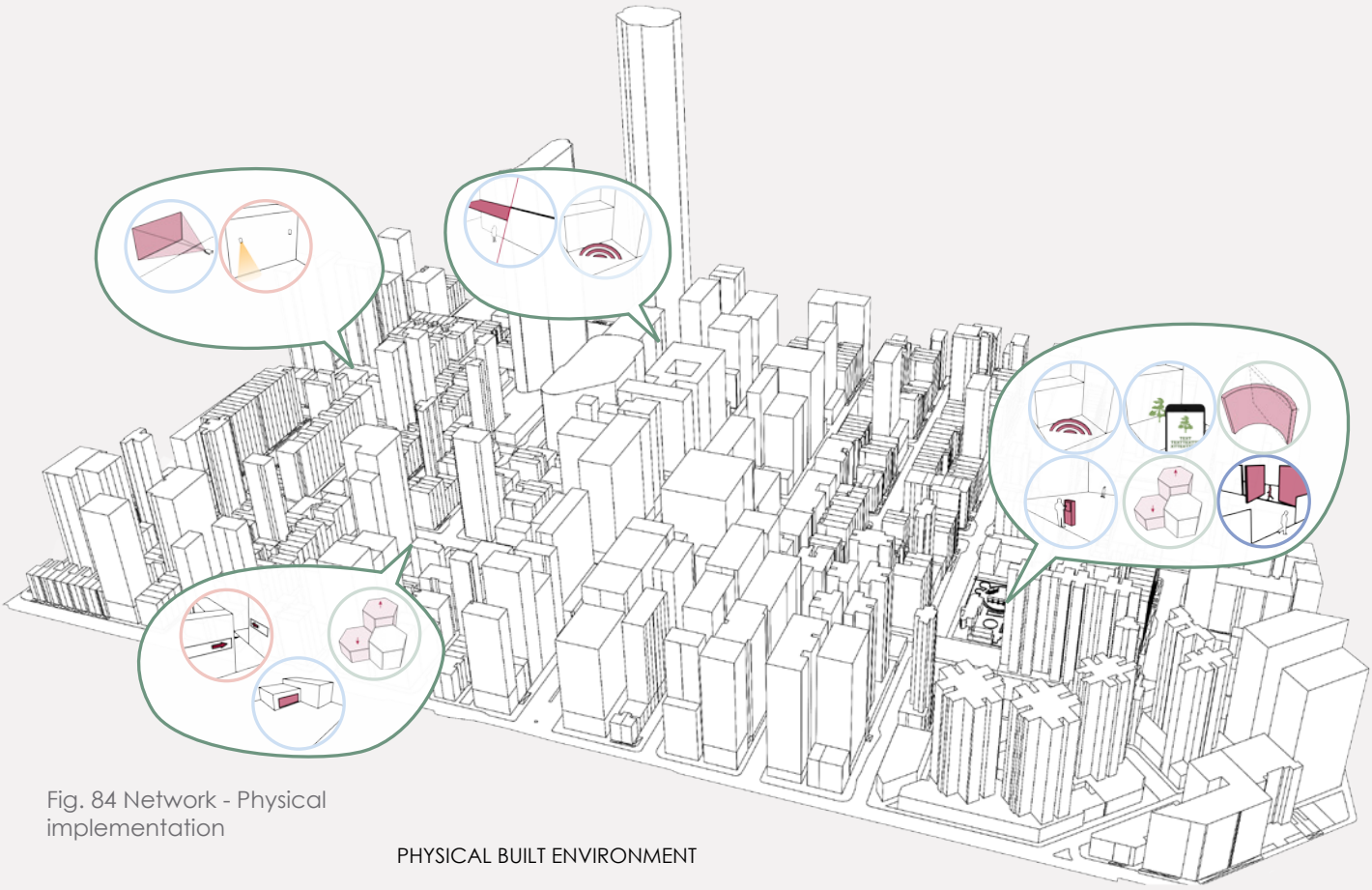



Fig. 84 Network - Physical implementation

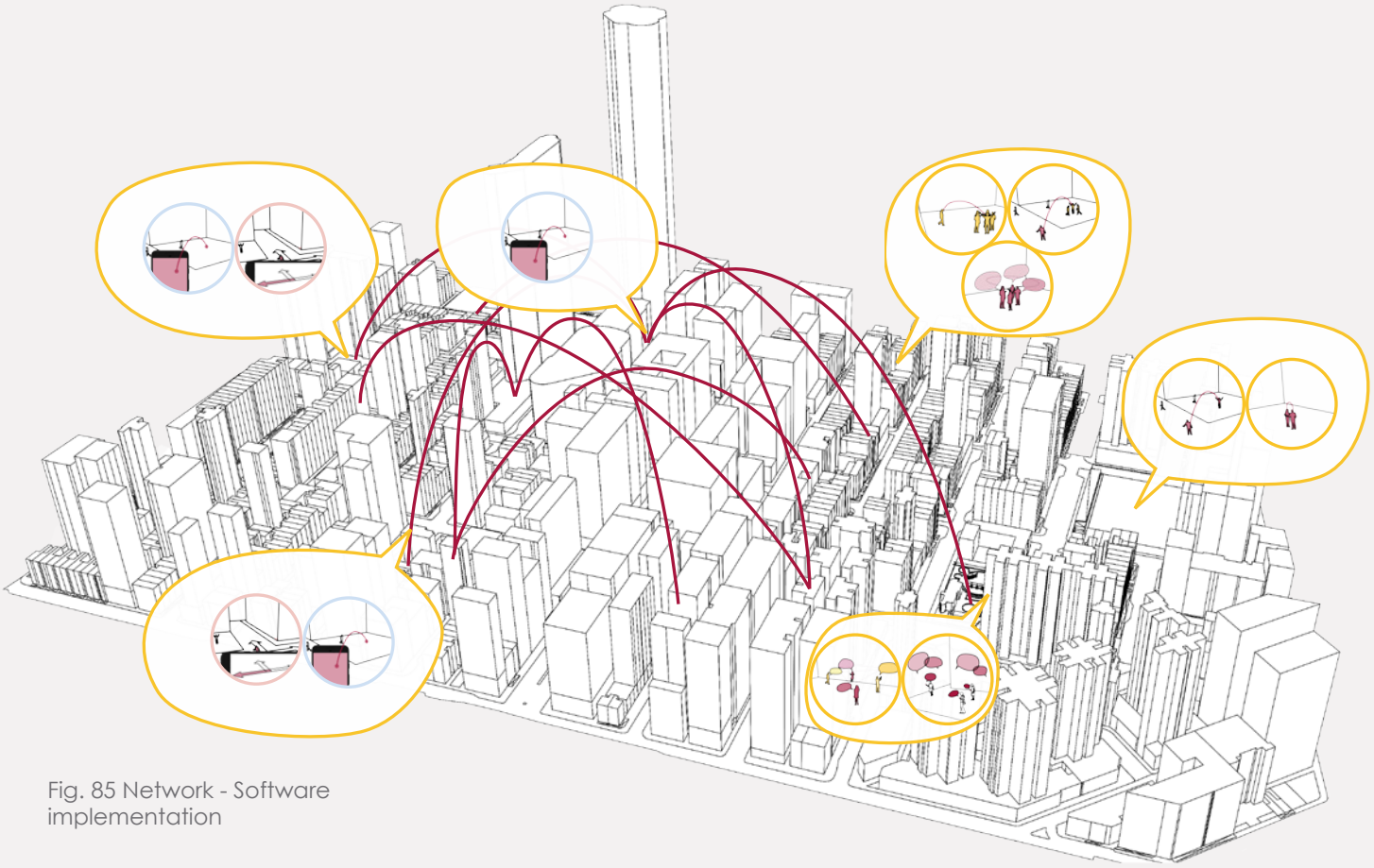


Fig. 85 Network - Software implementation

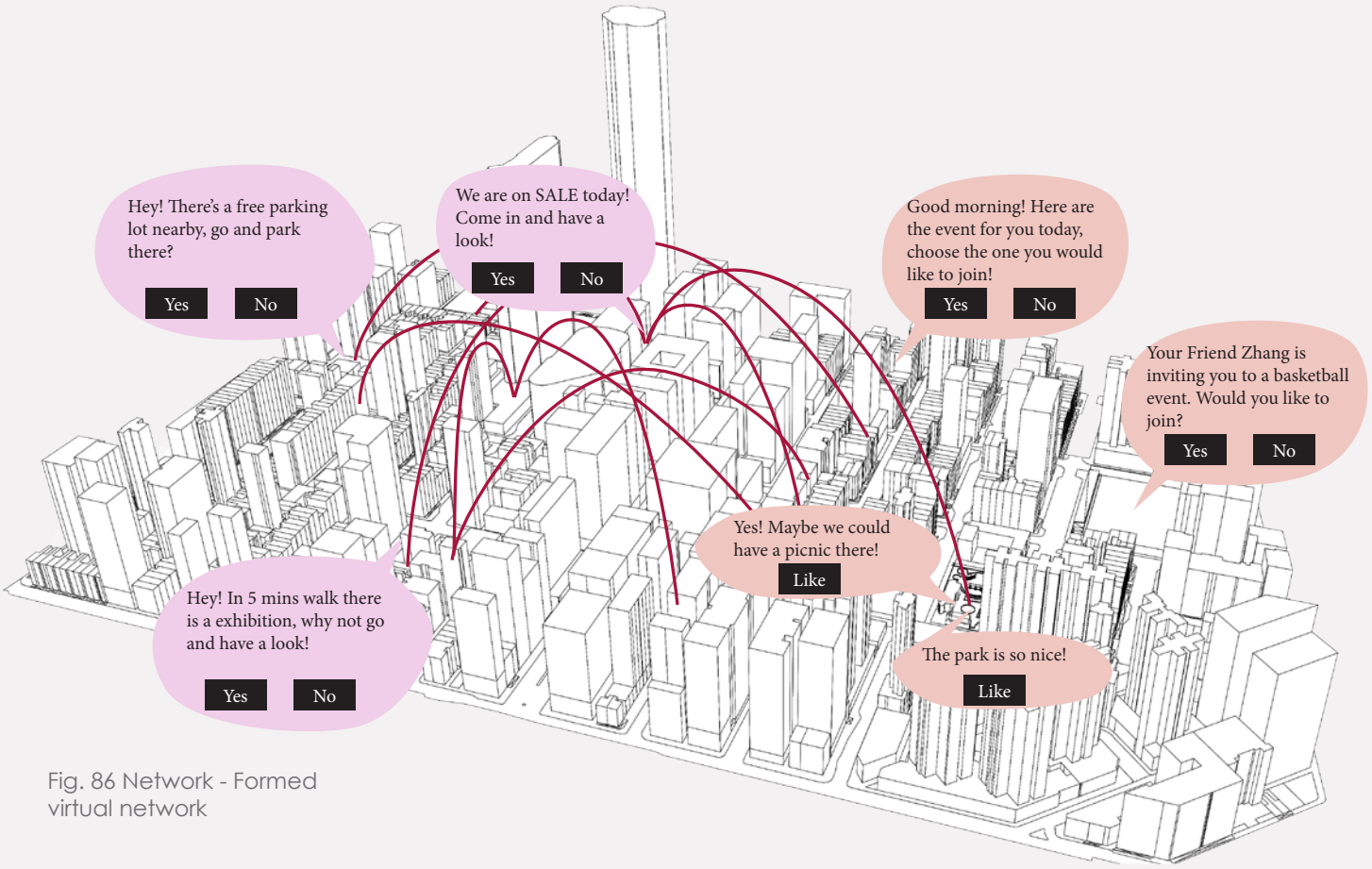



Fig. 86 Network - Formed virtual network

#VISIONS#

# 5.1 VISIONS

In order to explain how the project will act in the citizens daily life, hereby I use Mr. Wong's everyday route as a reference to show when and where will the different vision will appears and how it will enhance our use on physical public space as well as the social interaction.

Mr. Wong
Lives in Mong Kok
Works at Sheung Wan

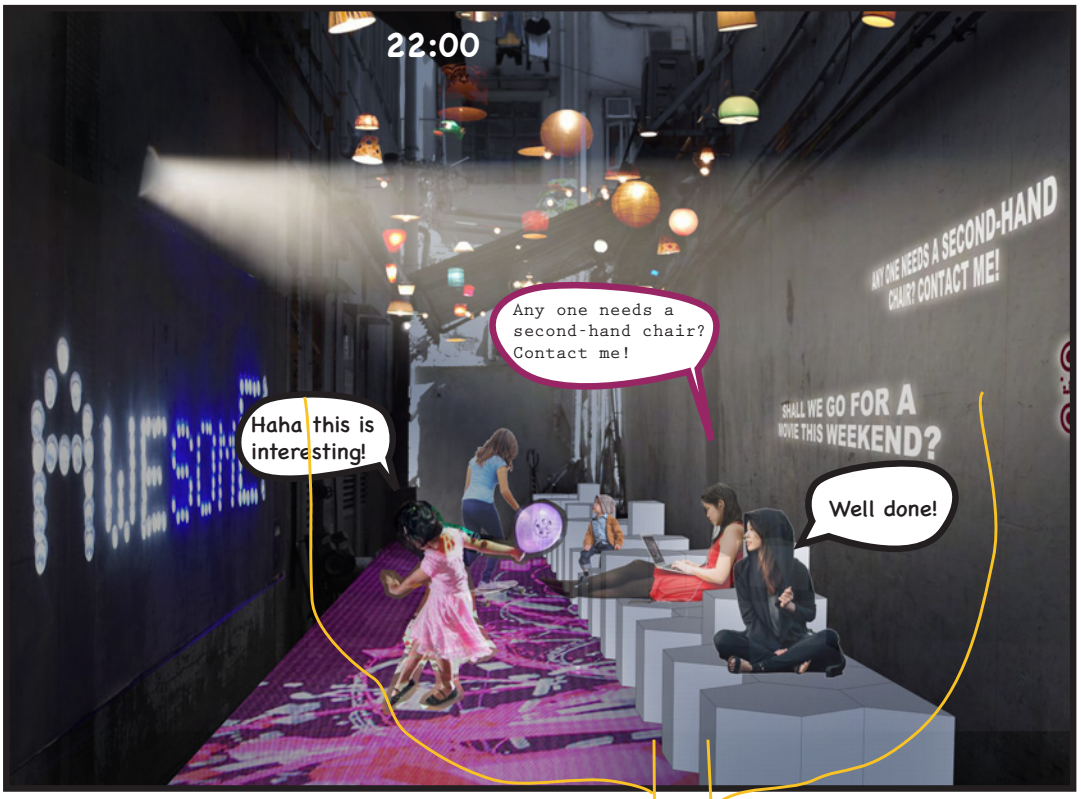
**Choose a daily routine**

Fig. 18 Site location

Mr. Wong
Live: Mong Kok
Work: Sheung Wan
08:00
Good morning! Have a nice day!
Kam Fung St
Google
08:10
Time to go!
Good morning!
08:30
This cherry looks nice!
How much is it?
"They have the best apple! Try it!"
Yes agree!
Really?! I'll buy it next time!
Hi! How are you!
18:30
20:00
18:30
18:30 PM
Hi! Your friend Zhang is inviting you to a football game! Come and join them?
Yes
No
20:00
Nice shoot!!!
...
WOO-HOO!

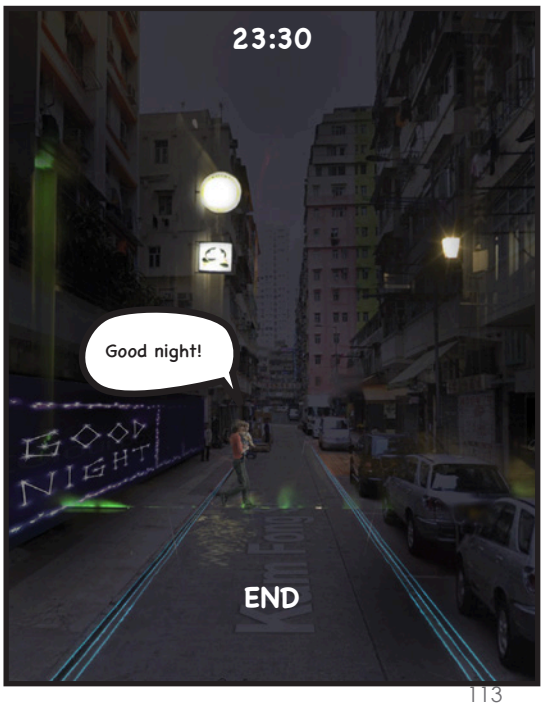
21:30
Heyy! It says you are also at the underground passage! Shall we go for a beer?
Haha this is interesting!
Look! What are they doing?!

21:45
Would you like to join an Movie event next week?
Dad! What's this?
Haha!


22:00
Any one needs a second-hand chair? Contact me!
Haha this is interesting!
Well done!
ANY ONE NEEDS A SECOND-HAND CHAIR? CONTACT ME!
SHALL WE GO FOR A MOVIE THIS WEEKEND?

22:35
Hey! Your neighbors are watering their trees in the garden, go and say hello!
Yes
No

23:00
Good evening! How's your day? How is your tree now?


23:30
Good night!
GOOD NIGHT
END

VISION 2-1

VISION 2-2

Any one needs a second-hand chair? Contact me!
Haha this is interesting!
Well done!
ANY ONE NEEDS A SECOND-HAND CHAIR? CONTACT ME!
SHALL WE GO FOR A MOVIE THIS WEEKEND?

VISION 3-1

百好酒店
PAK HO HOTEL
TEL:26259808 歡迎自由行人士入住
Hi! How are you!
This cherry looks nice!
How much is it?
"They have the best apple! Try it!"
Yes agree!
Really?! I'll buy it next time!

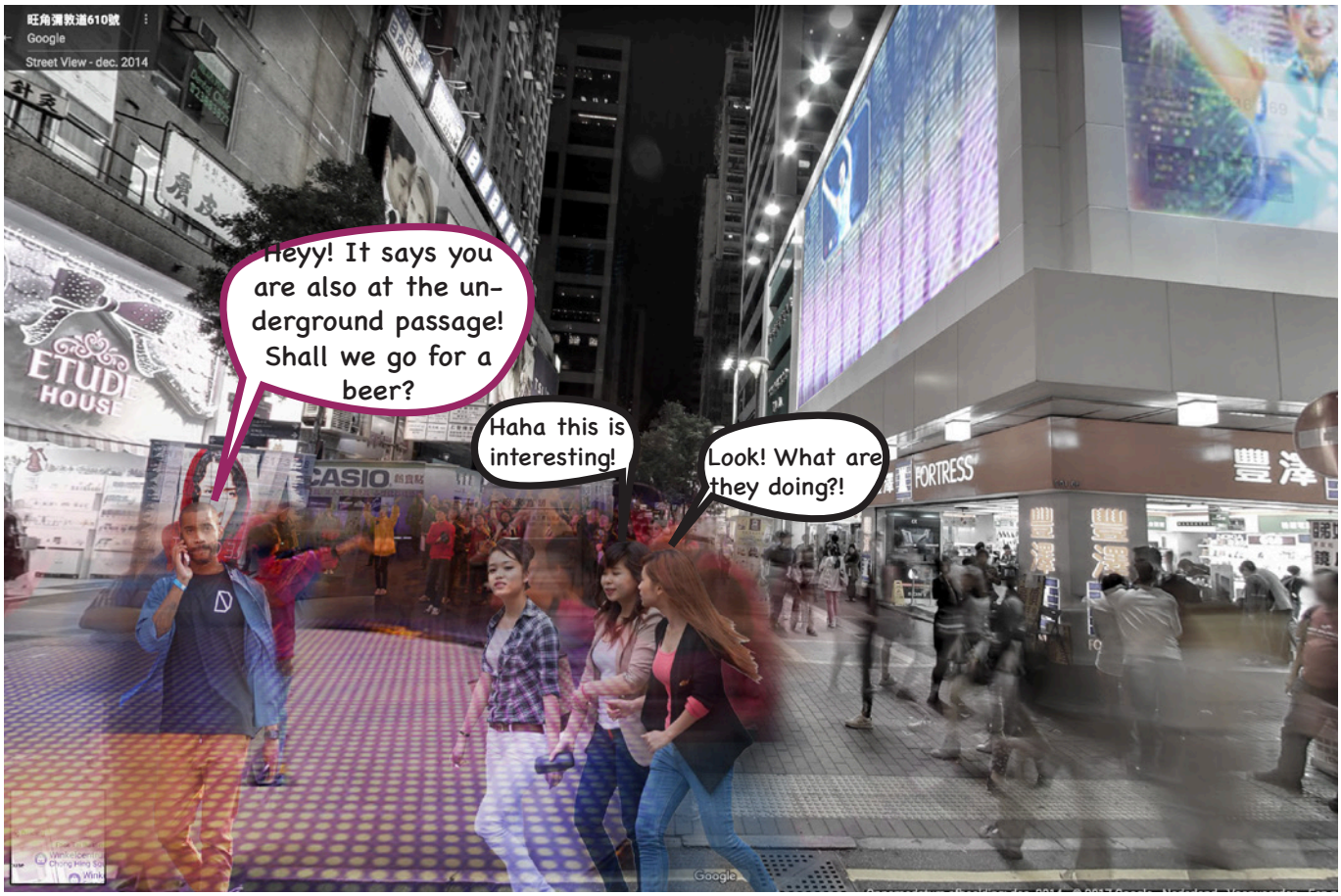
VISION 3-2

百好酒店
PAK HO HOTEL
Would you like to join an Movie event next week?
Dad! What's this?
Haha!
COMMENTS

VISION 4-1

VISION 4-2

VISION 1


旺角彌敦道610號
Google
Street View - dec. 2014
ETUDE HOUSE
CASIO
FORTRESS
豐澤
Heyy! It says you are also at the underground passage! Shall we go for a beer?
Haha this is interesting!
Look! What are they doing?!
Google

VISION 5

VISION 6

#REFLECTION#

# 6.1 #Reflection#

After the testing design in Hong Kong, the reflection is mainly based on three aspects: Reflection on the applied method (Hong Kong); Reflection on the applicability of the method; Reflection for the future research (Fig.87).

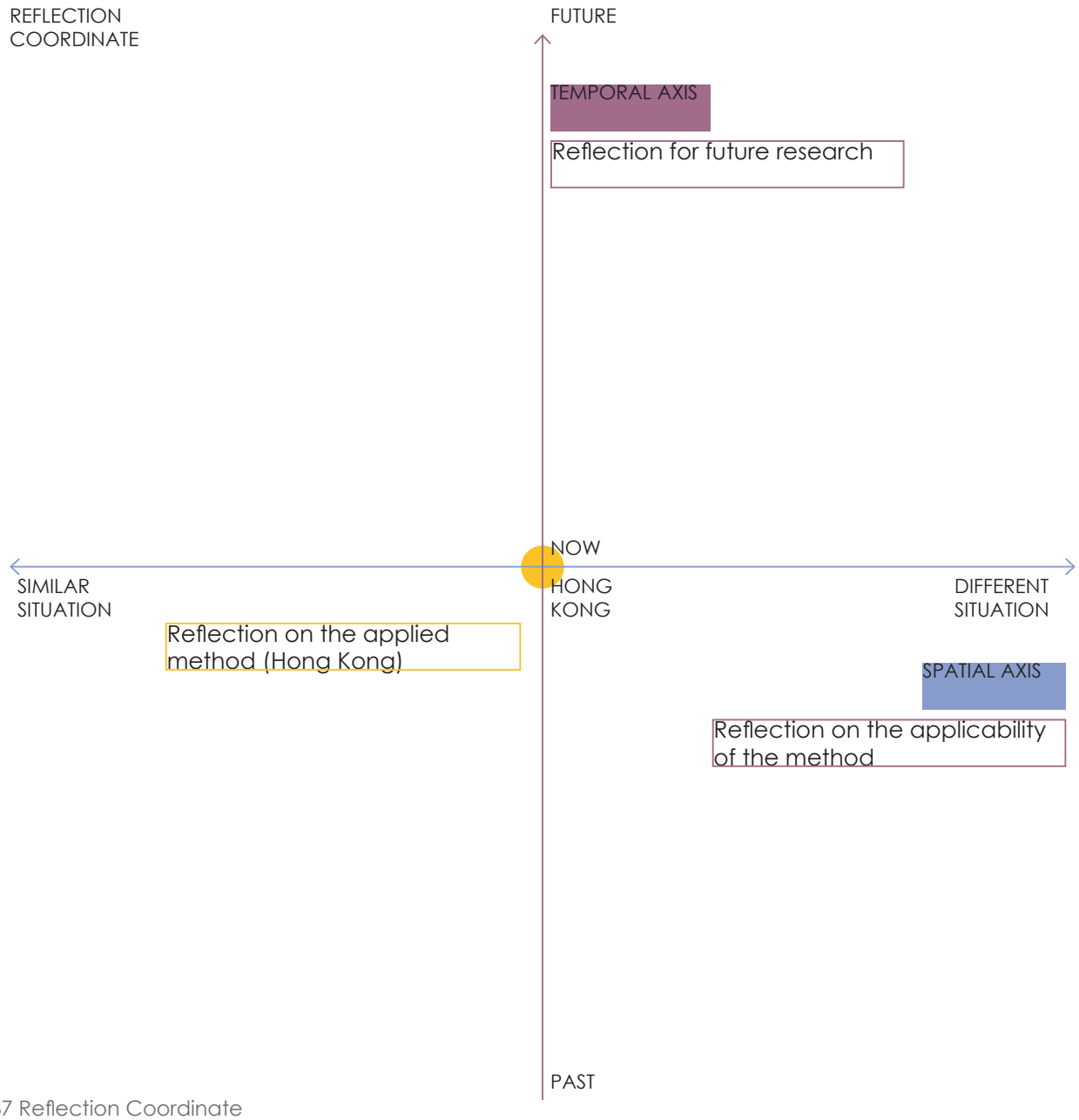



Fig. 87 Reflection Coordinate
Source: Author

### 5.1.1 REFLECTION ON THE APPLIED METHOD (HONG KONG)

The project embraces the appearing of Digital technology without sacrifice the physical urban environment. It is on one hand, respects the trend of the development of our society (bottom-up), but on the other hand, gives guidelines and restrictions that could avoid the adverse effects (Top-down).

The project gives a new , which allows the physical urban public spaces to become more interesting, attractive and diverse. And the advantage of digital technology could not only help with enlarging our range of visibility, but also provides platform which increases the possibility of interaction and communication with other citizens, neighbors and friends.

### 5.1.2 REFLECTION ON THE APPLICABILITY OF THE METHOD

The project starts an discussing on the role of digital technology and physical public space within the new urban context, and use it as the supportive to explore how public space could be transformed spatially, functionally and technically in responding to the changing demanding and expectation.

Although it uses Hong Kong as the example, the conclusion - pattern library and its user guide could also be used as a reference to the research and implementation of other cases. For instance, for the place where has a lower popularization and demand on digital technology, the patterns with a lower level of digitalization might be suitable. Moreover, the categorization could also be re-considering in regarding to the specific situation.

In order to help with the implementation on other cases, a pattern book was made (Fig.89). It explains the principle, attributes and the demands of every single pattern, including suitable scale, publicness, degree of digitalization, price and carriers.

This is not a fixed pattern book, but it build up a bone and structure, that whenever new patterns are produced, it can be filled into it immediately.

### 5.1.3 REFLECTION FOR THE FUTURE RESEARCH

This project attempts to start on discussing the role of physical public space within different urban context, and use it as the supportive to speculate the possible new role within the new urban context, as well as to explore how public space could be transformed spatially, functionally and technically in responding to the changing demanding and expectation.

Since it is start with a generous consideration, although the thesis takes Hong Kong's extreme situation as an example, it could be imagined and expected that the project could further lead to the re-consideration of the relationship of our physical and digital world. And the conclusion and evaluation could be somehow seems as a starter for future researches regarding on different urban context and spatial condition (Fig.88).

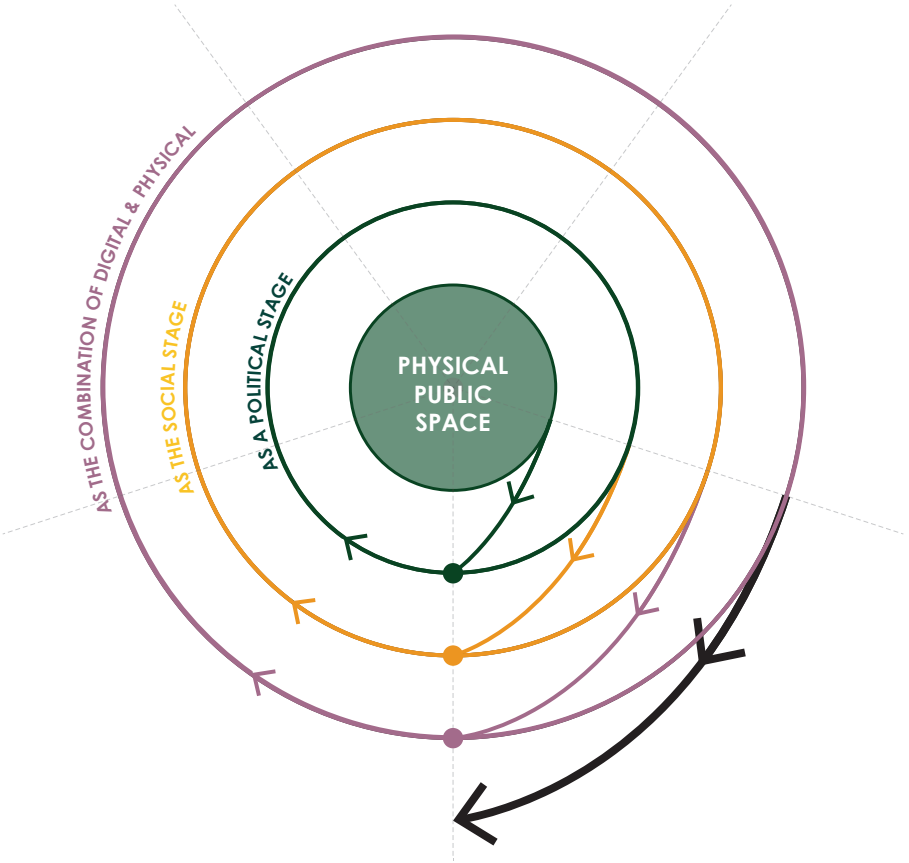
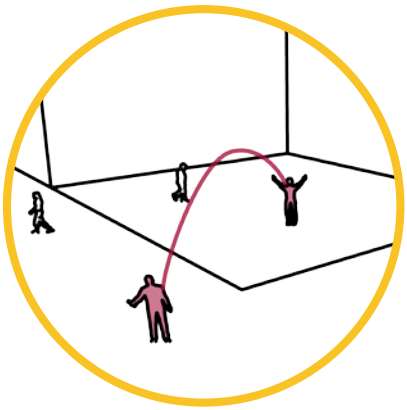
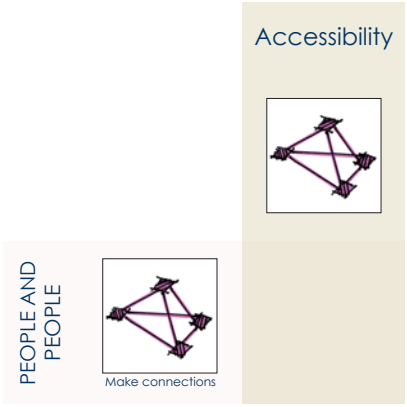



Fig. 88 Site location

# 01
# Friends connecting






**PRINCIPLE:**

The friends connecting is mainly based on the personal-mobile devices, it allows users to let personal networks of friends know when they were at a physical public space via their mobile devices without seperately calling or messaging.

**LEVEL & SCALE:**

Level of implementation or the capacity:

Scale of implementation or the capacity:
Household - Street/block - District - Urban scale

Street/block District

Household Urban

**PUBLICNESS:**

Private Public

Quiet Noisy

**DEGREE OF DIGITALIZATION OF PHYSICAL SPACE:**

Low High

In order to implement the pattern "Friends connecting", it is necessary to first establish and spread a digital social network. The extensive the social network is, the better the pattern could work.

**Price:**

Low High

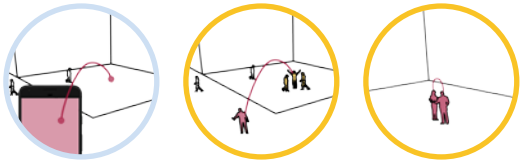
**FUNCTION AND POSSIBLE BENEFITS:**

·People could maintain and enlarge their social network in a much more easier way.

·Physical public space could be used more frequently.

**Carrier/ Device:**

**POSSIBLE COMPOSITION:**



http://www.technocrazed.com/10-mindblowing-google-projects-that-failed

Fig. 89 Pattern book
Source: Author

# #APPENDIX#

**Aspect 2 • the relationship between the theme of the graduation lab and the subject/case study chosen by the student within this framework (location/object)**

As the graduation lab 'Urban Fabrics' mainly emphasises on the exploration of how new technologies change both the physical environment and intangible structures through design. It aims to understand how we as urbanists can make sustainable, attractive and vital urban design that could contribute to our society.

The project uses Hong Kong as an testing example to figure out the possibilities of combine digital space with physical public spaces, thus further reinforcing the social interaction. As the society of Hong Kong now is tending to be digitalized, the existing physical public space, which was designed in the past can not reflect changing and digitalizing society anymore. This makes the physical public spaces, as the stage and physical carrier of public life seems to be obsoleting. Therefore, what is necessary is to re-consider the new role of our physical living environment with the participation of new technologies in the new era.

Within the studio 'Urban Fabrics', it could helps me to establish a design perspective, that is, understanding a sequence of design decisions taken by designers at various scales and aspects of our urban context. For instance, in order to figure out a proper way to implement digital technology into physical space, it is important to focus not only the digital technology, but also the different spacial character while researching; Similarly, designers' efforts should not only be put on developing strategy, but also on testing design proposal in a smaller scale. Since the situation of Hong Kong, including the tangible and intangible structures, are unique and different from European or even other Asian cities. Apart from the design approach, zooming out and give evaluation and suggestions of the applicability

on different urban context and time scale is also necessary, as it is the way to transfer the information and conclusion of this thesis into a general design language, which could be used for other cases.

**Aspect 1 • the relationship between research and design**
**Aspect 3 • the relationship between the methodical line of approach of the graduation lab and the method chosen by the student in this framework**

With my understanding, the methodical line of approach of the graduation lab of 'Urban Fabrics' emphasizes the interconnected relationship between research and design through the act of designing. First of all, research is the foundation for every design process, that it plays an important role on influencing the concept generation process and the application of the concept on the site during the process of design. Furthermore, with the implementation of the generated concept, reflection and evaluation can produce a discussable output, which might be useful to other intended new projects. In this way, it actually forms a circle in which the input and output can be efficiently connected, and help with the generation of new knowledge and insights. As it is said, 'The contribution of design practice to academic research can be described as a spectrum with two extreme poles, with a long and variable combinations between the two.' Research into design could also be seen as one of the most straightforward and efficient way to help with understanding not only the basic knowledge, but also the aspect of history, society, technique, as well as the practical experiments and results.

In the case of my project, the study of the physical public space and social environment evaluates the spacial quality and explicits the requirement and goal. Regarding the

aspect of digital technology,  the analysis of a sequence of cases study relates to the implementation and practice experiment also helps me with understanding and transferring digital technology spatially in the context of urban design, which then guides the whole design process.

**Aspect 4 • the relationship between the project and the wider social context**

Our society is now experiencing the continuously transformation of globalisation, privatisation, digitalization and digitization. The transformations are happening not only in Hong Kong, but also in  other countries with different levels. It is undoubtedly that those transformations has, on one hand, brought us many benefits regarding on the aspects of economy, technology, and culture etc., but on the other hand, it is also posing more challenges to us. The character of our new urban context is increasing emphasizes on the individuality and diversity of each single body, that might on the other hand, weaken the public sphere and social integration. Considering with that, digital technology, which allows people to be more interconnected despite anytime, anywhere could be seen as one of the most powerful support.

The design of public space could have greatly effect on the interaction of people who met in such spaces. Public space as a reflection and connection of the society, has a symbolic role on expressing the diversity and enforcing the social harmony. Consequently, regarding the transformation of our society, cities are not only in need of the physical public spaces itself, but also appealing for workable and successful public spaces that could enhance social interactions. Therefore, taking advantages of digital technology and finding possibilities for the digitalization of physical public space seems to be meaningful enough for this era (Fig.1).

This project attempts to start on discussing the role of physical public space within different urban context, and use it as the supportive to speculate the possible new role within the new urban context, as well as to explore how public space could be transformed spatially, functionally and technically in responding to the changing demanding and expectation. Since it is start with a generous consideration, although the thesis takes HK's extreme situation as an example, it could be imagined and expected that the project could further lead to the re-consideration of the relationship of our physical and digital world. And the conclusion and evaluation could be somehow seems as a starter for future researches regarding on different urban context and spatial condition (Fig.2).

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