URBAN BLOCK TYPOLOGY AS URBAN GENERATOR

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Urban Block Typology as Urban Generator

Thesis Abstract

Considering the emergence of "modern architecture" serving to fulfill new programmatic needs of the rapidly growing city as background, this thesis starts by critiquing the actions of the Urban Renewal Authority (URA) in Hong Kong, which tend to replace traditional urban block types by blocks dominated by monotonous and large scale buildings. Arguably, this sudden change would destroy existing sub-cultures, spatial characters and communal networks, in other words spatial practices that have evolved over decades which are highly dependent on the traditional urban block type. In response to this type of insensitive wholesale development, this thesis explores possibilities of incremental urban renewal processes that seek to reconcile the conflicts between the new programmatic needs and traditional type of urban block.

By studying the logic and mechanism of different types of existing urban blocks in Central, this thesis aims at creating a new block typology which on one hand preserves existing sub-cultures, spatial characters and communal networks; and on the other hand fulfill the emergent programmatic needs. Eventually, this thesis will propose an alternative urban model which reinterprets urban block typology as an urban renewal generator, in the context of historical and high dense city as central.
Background

Central, as the first developed area of Hong Kong, experienced rapid urban growth from 1841 to now. The long history of Central makes it a place containing rich context of urban block typologies, as a result, the rich context of urban block typologies give rise to the rich context of sub-cultures, spatial characters and communal networks of Central.

The different urban forces, such as reclamation, URA projects, emergence of new infrastructure and new building technology, would lead to the evolution of the urban blocks, at the same time, affecting the sub-cultures, spatial characters, communal networks of the city.
Purpose

As criticized by Leon Krier, the current situation of Central, Hong Kong, which is a mixture of new and traditional, is identified as “False Pluralism” causing no possibility of choice. In response to his criticism, this thesis explores possibilities to reconcile the conflicts between the new programmatic needs and traditional type of urban block.

In the 60s, Japanese Metabolism Group and Archigram suggested new urban model like Helix City and Plug-in City as means to fulfill new programmatic needs out of the reconstructing modern cities in the post-war period. However, their proposal highly inclined to the using of mega-structure and new technology, the vision remained futurist drawings in their books.

This thesis aims at creating a new practical urban model which uses urban block typology as a generator, on one hand preserving existing sub-cultures, spatial characters and communal networks, and on the other hand fulfilling the new programmatic needs.
The research is divided into four parts, which are the studies of
1) urban block typology,
2) urban forces shaping urban blocks,
3) sub-cultures and their spatial requirements, and the
4) site contextual study in the scale of 1 to 3,000
1) Study of Urban Block Typology

The study of urban block typology was started by classifying all urban blocks existing in Central, based on different characters like, sub-divided or single-owner, number of side with shop-front, with or without courtyard, public or private, public accessibility and with or without shopping mall.

Through this classification, all blocks are generalized into nine types.

<table>
<thead>
<tr>
<th>BLOCK TYPE</th>
<th>GENERIC DIAGRAM</th>
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<tbody>
<tr>
<td>1</td>
<td><img src="image1" alt="Open Space" /></td>
</tr>
<tr>
<td>2</td>
<td><img src="image2" alt="Building Block" /></td>
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<td>3</td>
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<td>8</td>
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<tr>
<td>9</td>
<td><img src="image9" alt="Building Block" /></td>
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</tbody>
</table>

Diagram showing Classification of Block done by Chow Chun Man

first 3 columns of the study of Urban Block Typology done by Chow Chun Man
The characters of different block types are studied in terms of their distribution and massing scale. These studies aim at figuring out the physical inter-relationship between different block types.
Typical individual blocks of each type are selected and their sub-division pattern and programmatic spatial arrangement are studied.

<table>
<thead>
<tr>
<th>IMAGE</th>
<th>SUB-DIVISION</th>
<th>PROGRAM</th>
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</thead>
<tbody>
<tr>
<td>Chater Garden</td>
<td>1:2,000</td>
<td>1:2,000</td>
</tr>
<tr>
<td>Pak Tzu Lane</td>
<td>1:1,000</td>
<td>1:1,000</td>
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<tr>
<td>Graham Street</td>
<td>1:1,000</td>
<td>1:1,000</td>
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<tr>
<td>Prince’s Terrace</td>
<td>1:1,000</td>
<td>1:1,000</td>
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<tr>
<td>Robinson Road</td>
<td>1:2,000</td>
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</tr>
<tr>
<td>City Hall</td>
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<td>1:2,000</td>
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<tr>
<td>LÉGCO</td>
<td>1:1,000</td>
<td>1:2,000</td>
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<tr>
<td>Mandarin Oriental</td>
<td>1:1,000</td>
<td>1:2,000</td>
</tr>
<tr>
<td>Cheung Kong Centre</td>
<td>1:1,000</td>
<td>1:4,000</td>
</tr>
</tbody>
</table>

study of sub-division pattern and program done by Chow Chun Man
2) Study of Urban Forces

Seven urban forces are studied, which are

1) Reclamation & Barracks,
2) LDC & URA Projects,
3) New Infrastructure,
4) New Building Technology,
5) Heritage Preservation,
6) Government Hill Axis, and
7) Building Ordinance

1) Reclamation & Barracks

Central experienced several reclamation projects since the colonization. Every time the aim is to gain land for new development. Therefore, generally, from the hillside to the coastline, the history of land becomes younger and younger. Block type also show a generally change from the hillside to the coastline. This leads to change of streetscape from the hillside to the coastline.

The removal of barracks since the 1970s gave land for the new block types, and led to the emergence of new commercial zone in Admiralty.

study of urban forces done by Chow Chun Man
2) LDC & URA Projects

The LDC & URA projects led to the emergence of new block types, it serves to renew the old structures and fulfill the new programmatic needs. However, it leads to rupture and decline of old type blocks, also the rupture and decline of the existing sub-cultures, spatial characters and communal networks.

3) New Infrastructure

The stringent spatial needs of the railway station lead to the emergence of gigantic new block types.

The scale and flow rate of the new roads and highways encourage the growth of the new blocks types, which provide internalized street and podium to resist the polluted and noisy roads.
4) New Building Technology

The new building technology allows the construction of skyscrapers, which require blocks with large size in order to have efficient development. This leads to the growth of new type blocks.

The change of building construction method also leads to the decline of the old type blocks which were sub-divided into very narrow lots.

5) Heritage Preservation

The heritage preservation helps the old building blocks survive in the rapid urban renewal process. Some old blocks are transformed into other type by changing of program, but the structures and skins of the old buildings are kept unchanged.

THE SCALE OF STREET MUST BE CAREFULLY DESIGNED. NEW BUILDINGS ARE RESISTANT TO HEAVY STREET BY INTERNALISATION OF STREET, BUT OLD STREETS IS SENSITIVE TO VEHICULAR TRAFFIC. IN SOME PLACE, PEDESTRIANIZATION OF STREET CAN HELP ENCOURAGING STREET LIFE AND NEW STREET PROGRAM.

THE PRESERVATION OF HISTORICAL BUILDINGS ARE ALL TIME POSITIVE TO THE CITY. INSTEAD OF KEEPING STRUCTURE AND CHANGING PROGRAM INSIDE. ORIGINAL LANDSCAPE AND STRUCTURE OF THOSE BUILDINGS CAN BE MODIFIED TO CREATE NEW PUBLIC SPACE AND PROGRAM.
6) Government Hill Axis

The government hill axis leads to the concentration of single-owner blocks along the axis. And the inter-block relationship along the axis can be kept through the several reclamation in the recent 100 years.

7) Building Ordinance

New building ordinance such as needs for accessible street creates some non-developable lots in the center of some old type blocks, and leads to the emergence of the "courtyard" block, which is type 2.

Also, new building ordinance such as needs for prescribe windows, limitation on site coverage, means of escape, leads to more complex building types which requires much larger site. This leads to the combination of small lots into larger lots, subsequently leads to transformation of block type.
3) sub-cultures

This is the study of sub-cultures in terms of the distribution, block type, program, spatial sequence and temporal spatial requirement along the Peel Street in Central. The sub-cultures are:

1) white-collar workers who work in the office,
2) local resident,
3) upper class local resident,
4) creative industry and
5) SoHo (western pubs and restaurants)

In the column of distribution, we can see that all sub-cultures are concentrated and have clear boundaries.

In the column of types, we can see that the sub-divided block types such as 2,3,4,5 are good container of all sub-cultures, in contrary, new block types such as 8,9 can only contain the office buildings for the white-collar worker.
Different sub-cultures have different spatial requirement. For example, office buildings need lifts and car parks and attachment to wide roads. Luxurious resident buildings also need lifts and car parks but the lower class resident buildings don’t.

study of sub-cultures done by Chow Chun Man
Different sub-cultures also have different special requirement in different time. For example, the creative industry and SoHo people need to operate at night but the upper class need to live in quiet environment at all time. The street market need to be high dense, crowded, noisy and wet while the white-collar like to be quiet, clean and dry.

The study of sub-culture shows the typology of urban block has a close relationship with the existence of sub-cultural groups.

<table>
<thead>
<tr>
<th>TEMPORAL SPATIAL REQUIREMENT</th>
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<tbody>
<tr>
<td><strong>time</strong></td>
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<td>club house</td>
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<tr>
<td>working</td>
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<td>displaying</td>
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<td>selling</td>
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<tr>
<td><strong>time</strong></td>
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<tr>
<td>street life</td>
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<tr>
<td>drink</td>
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<tr>
<td>food</td>
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</tbody>
</table>

study of sub-cultures
done by Chow Chun Man
4) site contextual study in the scale of 1 to 3,000

Site mapping regarding different parameters such as distribution of office building, residential apartment, street market, creative industry, pub, and also ages of building and pattern of pedestrian, open space and roads.
Proposed Site and Conclusion

The area around the street market in Graham Street and Peel Street is selected for site in the next stage of this thesis, for it is border line of the new type blocks and old type blocks, also its rich context of sub-cultures. Conflicts arise when old type blocks cannot survive the new programmatic needs of the city. As a result, old type blocks are replaced by new type blocks, at the same time, existing sub-cultures, spatial characters and communal networks are destroyed.

A URA projects is now being undertaken to so-called “renew” the area. Numbers of old buildings will be demolished and the street market will be destroyed.

This thesis tries to give alternative proposal by creating new type blocks, which on one hand, fulfilling the new programmatic needs, and on the other hand maintaining the spatial environment of the existing sub-culture groups, eventually maintaining the special and diversified characters of Central.
Site Conditions

Central, Hong Kong, figure and ground, 2007
the area bounded by red line is the study area of thesis
the red coloured blocks are the proposed site
done by Chow Chun Man

Site plan
done by Chow Chun Man
Design Strategy

Front Street and Urban Courtyard/Backlane form the two surfaces of traditional urban block. Traditionally, Front Street serves as main circulation network of urban block, and it forms a delicate ecology of sub-cultures with stringent spatial requirements, which is incompatible with other programs and sub-cultures.

As a design strategy, this thesis intends to make use of Urban Courtyard/Backlane to serve as an alternative circulation network which provide individual lots/buildings with the possibilities to develop new programs, while the existing spatial practices in Front Street can be preserved.
Urban Transformation Process

1960s

In the 60s, the blocks were sub-divided into narrow lots with width of 4-5m.
The buildings had 3 to 4 storeys.

existing

Small and narrow lots were combined into bigger lots and developed into highrise with modern building technologies.
Street food market is developed in the front streets.

URA

Bunch of old buildings will be demolished and redeveloped into giant towers of residential apartments, offices and hotel.
Street market will be destroyed.

an alternative

Urban courtyards and backlanes are used to initiate a new urban transformation process.
Non-courtyard blocks are combined to form courtyard blocks, with demolition of selected buildings.
Instead of demolition of all old buildings to gain a clear site, over 70% of existing buildings are preserved to minimize the impact on the existing spatial practices.

Urban courtyards are connected to form a new circulation network for new programs. Also, it offers basic infrastructures to the blocks, such as open space and private communal space.

Between the front streets and the courtyards are thresholds which serve to signify the spatial change.

Shops along the streets are preserved so that the existing spatial practices are maintained.

New-built shops are managed by a governmental body to control the program and rental price of the shops, so that effect of gentrification is minimized.

Corner sites are selected to redeveloped into new middle-rise buildings for financial return of the initial constructions.

Affordable housing is provided in these buildings to act against gentrification.

Flat-to-flat compensation is also provided for the local residents by using these buildings.

Shared car parks are offered to the blocks to enhance infrastructure of the blocks.
Building Envelope

Development of the individual lots are subject to a virtual building envelope to ensure spatial qualities of the blocks, such as ventilation, viewing, natural lighting and development density.

Catalytic Buildings

New buildings with modern building technologies are built in the courtyards as an urban renewal catalyst. It can colonize the surrounding buildings for space expansion, by constructing linking bridges.

Exiting old buildings can be adaptively reused in this process, demolition of old structures can be avoided.
Programmatic Transformation

Program (existing)

Program (URA)

Program (proposed)

residential
retail shop
office
hotel
hybrid
Final Design
Bibliography

1. image from "Hong Kong – City of Vision", chapter 3 by Peter Cookson-Smith.
ARCHITECTURE LIBRARY
建築學圖書館
THESIS 畢業論文
*Overdue Fines on Thesis*
HKS1.00 per hour

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4 hrs.