REHABILITATING
CHINA’S CRUMBLING HIGH-RISES
PART I
THE CHALLENGE OF CHINA’S CRUMBLING HIGH-RISES
The negative spiral
Demolition vs rehabilitation?
PART I

THE CHALLENGE OF CHINA’S CRUMBLING HIGH-RISES
The negative spiral
Demolition vs rehabilitation?

PART II

RESEARCH + DESIGN METHODOLOGY
Main question
Methodology

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THE CHALLENGE OF CHINA’S CRUMBLING HIGH-RISES
The negative spiral
Demolition vs rehabilitation?

PART II
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PART III
THE REHABILITATION STRATEGY
The socio-organisational proposition
The physical method
The financial model
PART I
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PART IV
DISCOVERING THE STEP BY STEP REHABILITATION METHOD WITH THE DONGSISHITIAO JIA CASE
The case of Dongsishitiao jia
Step 1: Placement in the urban context
Step 2: Let’s rehabilitate the communal grounds and building together!
Step 3: You can improve your dwelling!
Step 4: From tools to plan
Step 5: Lets construct... Ask it to the RE:NEW TBD-er!

CONTENT
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THE CHALLENGE OF CHINA’S CRUMBLING HIGH-RISES
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Step 2: Let’s rehabilitate the communal grounds and building together!
Step 3: You can improve your dwelling!
Step 4: From tools to plan
Step 5: Let’s construct... Ask it to the RE:NEW TBD-er!

PART V
REFLECTIONS ON THE FUTURE OF CHINA’S CRUMBLING HIGH-RISES
PART I

THE CHALLENGE OF CHINA'S CRUMBLING HIGH-RISES
CRUMBLING HIGH-RISES: “EARLY HIGH-RISE HOUSING SHOWING SIGNS OF SEVERE DECAY”

1.0 THE NEGATIVE SPIRAL
DEFINING THE EARLY HIGH-RISE HOUSING OF BEIJING

PAGE 8-107
1400 EARLY HIGH-RISES

THE VAST AMOUNT OF EARLY HIGH-RISES OF BEIJING
1.0 THE NEGATIVE SPIRAL

STANDARD DESIGNS OF THE EARLY HIGH-RISES OF BEIJING
1.0 THE NEGATIVE SPIRAL

PHYSICAL DECAY
1.0 THE NEGATIVE SPIRAL

PHYSICAL DECAY

GRADE OF DECAY
(593 early high-rises)

- 50% Grade 1
- 37% Grade 4
- 11% Grade 3
- 2% Grade 2

Van Stijn, A. 2016

Grade
1
2
3
4
5
6
1.0 THE NEGATIVE SPIRAL
SOCIAL DEPRIVATION

1970

2015

EARLY HIGH-RISES AS BEACON OF MODERNITY
EARLY GENERATIONS AS CRUMBLING HIGH-RISES
LATER GENERATIONS HIGH-RISES

LOWER SOCIAL STRATA
MIDDLE (HIGH) SOCIAL STRATA
SUPER RICH
FAMILIES WITH SCHOOL GOING CHILDREN

4TH RING ROAD
3RD RING ROAD
2ND RING ROAD

PHYSICAL METHOD
FINANCIAL MODEL
SOCIO-ORGANISATIONAL PROPOSITION

1. PRESERVE, RENEW +
2. TOP-DOWN
3. BOTTOM-UP
4. PLAN
5. CONSTRUCTION

CASE IMPLEMENTATION
THE CHALLENGE
WHAT + HOW WHERE
REHABILITATION STRATEGY
1.0 THE NEGATIVE SPIRAL

FINANCIAL IMPASSE

PAGE 1-60
1.0 THE NEGATIVE SPIRAL

FINANCIAL IMPASSE

NEGATIVE SPIRAL

PHYSICAL DELAPIDATION

SOCIAL DEPRIVATION
“Urban rehabilitation physically indicates the area-based, gentle and step-by-step urban renewal (without wholesale demolition) to improve the quality of living” (Hui, 2012, p.56)
CAN A REHABILITATION STRATEGY BE DEVELOPED TO DEAL WITH THE CHALLENGES OF THE EARLY HIGH-RISE HOUSING IN BEIJING?
CAN A REHABILITATION STRATEGY BE DEVELOPED TO DEAL WITH THE CHALLENGES OF THE EARLY HIGH-RISE HOUSING IN BEIJING?
CAN A REHABILITATION STRATEGY BE DEVELOPED TO DEAL WITH THE CHALLENGES OF THE EARLY HIGH-RISE HOUSING IN BEIJING?

INTEGRAL SOLUTION FOR THE CHALLENGE

REALISTIC = NON-ABSTRACT + POSSIBLE + ATTRACTIVE
Can a rehabilitation strategy be developed to deal with the challenges of the early high-rise housing in Beijing?

A hands-on strategy

Realistic = non-abstract + possible + attractive

Integral solution for the challenge

2.0 Research + Design Methodology

Main Question

Page 18-107
WHAT + HOW

WHERE

WHO

WHAT + HOW

REHABILITATION STRATEGY

PHYSICAL METHOD

FINANCIAL MODEL

SOCIO-ORGANISATIONAL PROPOSITION

THE CHALLENGE

RESEARCH + DESIGN METHODOLOGY IN SCHEME

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2.0 RESEARCH + DESIGN METHODOLOGY
2.0 RESEARCH + DESIGN METHODOLOGY

UNDERSTANDING THE RESEARCH + DESIGN METHODOLOGY

PAGE 20-107
2.0 RESEARCH + DESIGN METHODOLOGY

UNDERSTANDING THE RESEARCH + DESIGN METHODOLOGY

PAGE 20-107
2.0 RESEARCH + DESIGN METHODOLOGY

UNDERSTANDING THE RESEARCH + DESIGN METHODOLOGY

PAGE 20-107
PART III

THE REHABILITATION STRATEGY
THE REHABILITATION STRATEGY

3 COMPONENTS

SOcio-Organisational Proposition

Physical Method

Financial Model

START

STEP 1

STEP 2

STEP 3

STEP 4

STEP 5

Finish

Planning	

Maintenance

Production	

Socio-organisational Proposition

Physical Method

Financial Model

3.0 The Rehabilitation Strategy

A 3 Component Strategy

Page 22-107
3.1 THE SOCIO-ORGANISATIONAL PROPOSITION

ONE OF THREE STRATEGY COMPONENTS

PAGE 23-107
3.1 THE SOCIO-ORGANISATIONAL PROPOSITION

PROBLEMS WHICH TRANCEND THE EARLY HIGH-RISES
3.1 THE SOCIO-ORGANISATIONAL PROPOSITION

PHASES

CRUMBLING
NOW

FIXED
5-10 YEARS

BETTER
10-25 YEARS

IDEAL
25-50 YEARS

ALLEVIATING ON SITE
QUICK FIXES
UNIDEAL REALITY

BETTER SOLUTIONS
ALLEVIATING +
SOLVING ON SITE

IDEAL SOLUTIONS
SOLVING ON
CORRESPONDING SCALE
IDEAL REALITY

NOW
5-10 YEARS
10-25 YEARS
25-50 YEARS
CRUMBLING
FIXED
BETTER
IDEAL
ALLEVIATING ON SITE
QUICK FIXES
UNIDEAL REALITY
BETTER SOLUTIONS
ALLEVIATING +
SOLVING ON SITE
IDEAL SOLUTIONS
SOLVING ON
CORRESPONDING SCALE
IDEAL REALITY

3.1 THE SOCIO-ORGANISATIONAL PROPOSITION
INTRODUCING PHASES
PAGE 26-107
3.2 THE PHYSICAL METHOD

ONE OF THREE STRATEGY COMPONENTS

PAGE 27-107

PHYSICAL METHOD

START

STEP 1
PLACEMENT IN URBAN CONTEXT

STEP 2
TOP-DOWN REHAB. COMMUNAL GROUNDS + HIGH-RISE BUILDINGS

STEP 3
BOTTOM-UP REHAB. DWELLINGS

STEP 4
FROM TOOLS TO PLAN ASK THE ARCHITECT!

STEP 5
PLAN TO CONSTRUCTION

FINISH
3.2 THE PHYSICAL METHOD

THE PHYSICAL METHOD GOALS

Page 27-107

RESPECT OWNERSHIP
STATUS QUO

PHYSICAL METHOD

START

STEP 1
PLACEMENT IN
URBAN CONTEXT

STEP 2
TOP-DOWN REHAB.
COMMUNAL GROUNDS +
HIGH-RISE BUILDINGS

STEP 3
BOTTOM-UP REHAB.
DWELLINGS

STEP 4
FROM TOOLS TO PLAN
ASK THE ARCHITECT!

STEP 5
PLAN TO
CONSTRUCTION

FINISH
3.2 THE PHYSICAL METHOD

The Physical Method Goals

- Preservation, renewal + exploration
- Top-down rehabilitation, communal grounds + high-rise buildings
- Bottom-up rehabilitation, dwellings
- From tools to plan: ask the architect!
- Plan to construction

Physical Method

Start

Step 1: Placement in urban context

Step 2: Top-down rehabilitation, communal grounds + high-rise buildings

Step 3: Bottom-up rehabilitation, dwellings

Step 4: From tools to plan: ask the architect!

Step 5: Plan to construction

Finish

Realistic + easy = break impasse

Respect ownership status quo
3.2 THE PHYSICAL METHOD

DUAL APPROACH

BOTTOM-UP

TOP-DOWN

STAKEHOLDERS
LANDLORDS
OWNER OCCUPIERS
TENANTS OF PUBLIC HOUSING
PRIVATE TENANTS HOUSING
SUB-TENANTS PUBLIC HOUSING
RAT POPULATION

STAKEHOLDERS
RE:NEW COACH
GOVERNMENT
NON-PROFIT DEVELOPERS
RESIDENTS REPRESENTATIVES
FOR PROFIT DEVELOPERS
MARKET PARTIES

WHAT
+ HOW
WHERE
REHABILITATION STRATEGY
PHYSICAL METHOD
FINANCIAL MODEL
SOCIO-ORGANISATIONAL PROPOSITION

1
PRESERVE, RENEW +

2
TOP-DOWN

3
BOTTOM-UP

4
PLAN

5
CONSTRUCTION

CASE IMPLEMENTATION
3.2 The Physical Method

**Top-down Toolbox**

- **Tool**: Pre-heating and cooling ventilation air
- **Tool**: Public toilets, kitchens, laundrettes blocks
- **Tool**: Adding and covering (underground) car parking + bike parking
3.2 THE PHYSICAL METHOD

Infill Solutions for Bottom-Up Rehabilitation

Re:VIVE THE FUTURE OF YOUR HOUSE...

Re:NEW
3.2 THE PHYSICAL METHOD
INFILL SOLUTIONS FOR BOTTOM-UP REHABILITATION

Room in a closet
1

Storage rooms
2

Service spaces enlargement
3

Big living room lay-out
4

3.2 THE PHYSICAL METHOD
INFILL SOLUTIONS FOR BOTTOM-UP REHABILITATION
PAGE 31-107
3.2 THE PHYSICAL METHOD

MASS PRODUCED CUSTOMISABLE PRODUCTS

PAGE 32-107
3.2 THE PHYSICAL METHOD

MASS PRODUCED CUSTOMISABLE PRODUCTS

BOTTOM-UP INFILL SOLUTIONS

RE:VIVE THE FUTURE OF YOUR HOUSE...

RE:NEW

ATTRACTIVE + AFFORDABLE + EASY TO USE

TOP-DOWN TOOLBOX
3.3 THE FINANCIAL MODEL
ONE OF THREE STRATEGY COMPONENTS
3.3 THE FINANCIAL MODEL

ENTHICE + EMPOWER STAKEHOLDERS TO REHABILITATE
3.3 THE FINANCIAL METHOD
EMPOWERING STAKEHOLDERS TO PARTICIPATE
ENTHICEMENT

1. PROFITABLE BUSINESSCASES
2. SELF-FINANCING CONSTRUCTION
3. TWO BIRDS-ONE STONE APPROACH

3.3 THE FINANCIAL MODEL
ENTHICING STAKEHOLDERS IN THREE WAYS
3.3 THE FINANCIAL MODEL

Adding and covering (underground) car parking + bike parking

Image: ++
Green: +
REHAB: ++
3.3 THE FINANCIAL MODEL
A DIVERSIFIED FINANCIAL MODEL
3.3 THE FINANCIAL MODEL

PHASED VALUE CREATION
3.3 THE FINANCIAL MODEL

PHASED VALUE CREATION

PAGE 38-107
3.3 THE FINANCIAL MODEL

CATALYST

INVESTMENT BY GOVERNMENT

VALUE CREATION

CRUMBLING
NOW

FIXED
5-10 YEARS

BETTER
10-25 YEARS

IDEAL
25-50 YEARS

WHAT

+ HOW

WHOWHERE

REHABILITATION STRATEGY

PHYSICAL METHOD

FINANCIAL MODEL

SOCIO-ORGANISATIONAL PROPOSITION

1. PRESERVE, RENEW + EXPLORE

2. TOP-DOWN

3. BOTTOM-UP

4. PLAN

5. CONSTRUCTION CASE IMPLEMENTATION
### 3.3 The Financial Model

**Catalyst**

**GOVERNMENT SOCIO-STRATEGY**

- **Tax Exemption**
- **Original Residents** ¥100
- **Deed**
- **Social Subsidies** ¥100
- **Non-Profit**
- **Social Rent/Sale Fees** ¥100
- **Participant**
- **As Executor**
- **Store Rent Fees** ¥100
- **External Market Party**

**For-Profit Developer**

- **Residents**
- **Value Creation**

**Timeline**

- **Crumbling** Now
- **Fixed** 5-10 Years
- **Better** 10-25 Years
- **Ideal** 25-50 Years
DISCOVERING THE PHYSICAL REHABILITATION METHOD WITH THE DONGSISHITIAO JIA CASE

PART IV
4.0 THE PHYSICAL METHOD

A HANDS-ON, FIVE STEP REHABILITATION METHOD
4.1 THE CASE OF DONGSISHITIAO JIA
4.1 THE CASE OF DONGSISHITIAO JIA

SITE IN 3D

PAGE 43-107
4.1 THE CASE OF DONGSISHITIAO JIA

OVERCROWDED + ILLEGAL PARKING

BAD INFRASTRUCTURE

TOO LITTLE MAINTENANCE

NO GREEN OR COMMUNITY SPACE!

ILLEGAL SUB-STANDARD STRUCTURES

PHYSICAL DECAY IN THE COMMUNAL GROUNDS
4.1 THE CASE OF DONGSISHITIAO JIA

PHYSICAL DECAY IN THE COMMUNAL AREAS OF THE HIGH-RISES

TOO LITTLE MAINTENANCE

BASEMENT SLUMS

APPROPRIATION OF AND GARBAGE IN CORRIDORS
4.1 THE CASE OF DONGSISHITIAO JIA

PHYSICAL DECAY IN THE DWELLING

OUTDATED LAYOUTS

TOO SMALL KITCHEN AND BATHROOM

POOR CONSTRUCTION QUALITY

POOR INDOOR CLIMATE + INFRASTRUCTURE

REHABILITATION STRATEGY

PHYSICAL METHOD

FINANCIAL MODEL

SOCIO-ORGANISATIONAL PROPOSITION
LET’S REHABILITATE... DONGSISHITIAO JIA!

4.1 THE CASE OF DONGSISHITIAO JIA

REHABILITATION OF A CASE ACCORDING TO THE STRATEGY USING THE 5 STEP METHOD
STEP 1: PLACEMENT IN THE URBAN CONTEXT
STEP 1: PLACEMENT IN THE URBAN CONTEXT

INTRODUCING: PRESERVE, RENEW + EXPLORE

PRESERVE
1. Preservation is main objective
2. Conservative + non-invasive tools + infill solutions

RENEW
1. Average
2. Liberal tools + infill solutions
3. Over-rehabilitation needs to be prevented.

EXPLORE
1. Prime locations
2. Explore all opportunities
3. Pilot projects to catalyse renew + preserve projects.
STEP 1: PLACEMENT IN THE URBAN CONTEXT
PRESERVE + RENEW + EXPLORE: THREE EXAMPLES

1. PRESERVE, RENEW + EXPLORE
2. TOP-DOWN
3. BOTTOM-UP
4. PLAN
5. CONSTRUCTION

THE CHALLENGE

WHAT
WHAT
WHAT
WHAT
WHAT

HOW
HOW
HOW
HOW
HOW

WHERE
WHERE
WHERE
WHERE
WHERE

REHABILITATION STRATEGY
REHABILITATION STRATEGY
REHABILITATION STRATEGY
REHABILITATION STRATEGY
REHABILITATION STRATEGY

PHYSICAL METHOD
PHYSICAL METHOD
PHYSICAL METHOD
PHYSICAL METHOD
PHYSICAL METHOD

FINANCIAL MODEL
FINANCIAL MODEL
FINANCIAL MODEL
FINANCIAL MODEL
FINANCIAL MODEL

SOCIO-ORGANISATIONAL PROPOSITION
SOCIO-ORGANISATIONAL PROPOSITION
SOCIO-ORGANISATIONAL PROPOSITION
SOCIO-ORGANISATIONAL PROPOSITION
SOCIO-ORGANISATIONAL PROPOSITION
STEP 1: PLACEMENT IN THE URBAN CONTEXT

PREVERSE + RENEW + EXPLORE: THREE EXAMPLES IN THEIR CRUMBLING STATE
STEP 1: PLACEMENT IN THE URBAN CONTEXT

PRESERVE + RENEW + EXPLORE: THREE EXAMPLES DURING DIFFERENT PHASES OF REHABILITATION
STEP 1: PLACEMENT IN THE URBAN CONTEXT

CATEGORY OF THE DONGSISHITIAO JIA CASE

PAGE 53-107
STEP 2

COMMENCING TOP-DOWN REHABILITATION OF THE COMMUNAL GROUNDS AND HIGH-RISE BUILDING
LOAD BEARING WALLS PREVENT LAYOUT FLEXIBILITY
AREA FOR SUPPORTING FACILITIES IS TOO SMALL
BUILDING INFRASTRUCTURE IS OLD OR BROKEN
COMMUNAL AREA IS VISUALLY MESSY
THERE IS NO UNITY IN WINDOW FRAMES AND ALL ARE CAUSING THERMAL LEAKS
THE SHELL OF THE BUILDING IS AESTHETICALLY DETERIORATING
COMMUNAL AREA HAS BEEN OCCUPIED BY APPLIANCES
SMALL ARTIFACTS ARE "GROWING" LIKE TISSUE OF THE WALLS
THE COMMUNAL AREA IS COVERED IN SHADOW MOST OF THE DAY
(ILLEGAL) SUB-STANDARD ADDITIONS, (ILLEGAL) PARKING, GARBAGE, STORAGE UNITS, AND INFORMAL GREEN AREAS CLUTTER THE COMMUNAL AREA
COMMUNAL AREA HAS BEEN OCCUPIED BY (ILLEGAL) SUB-STANDARD ADDITIONS
SMALL ADDITIONS, STORAGE UNITS, INFORMAL GREEN AND INFORMAL COMMUNITY AREAS ARE "GROWING" LIKE TISSUE OF THE WALLS
ALLOCATED PARKING TAKES UP MOST OF THE COMMUNAL AREA, POLLUTING THE SPACE AND LEAVING NO ROOM FOR LEISURE OR GREEN PROGRAM

STEP 2: COMMENCING TOP-DOWN REHABILITATION OF THE COMMUNAL GROUNDS AND HIGH-RISE BUILDING
GATHERING INFORMATION USING STANDARDISED ANALYSES

PAGE 55-107
Dwelling:
- Increase density
- Offer possibilities to diversify dwellings (functionally + aesthetically)
- Offer possibilities to enlarge dwellings

Building
- Update shell (technically and aesthetically)
- Renew building infrastructure (wiring, piping)
- Make more energy efficient
- Improve aesthetic design entrance area (more impressive)
- Improve communal hallways (aesthetically and functionally)
- Increase the amount of communal space/facilities
- Improve living conditions of basement dwellers.

Da-yuan
- Increase parking spaces.
- Increase amount of quality outside space.
- Increase the amount of affordable housing to relocate at least all basement dwellers to an affordable dwelling (through transformation of existing, densification, and new built)
- As compensation and to stimulate social spatial integration high-end dwellings and commercial space can be constructed.
- Increase community facilities (sport, kitergarden, playground, community centre)
MATCHING TO DO LIST WITH TOOLS TO REHABILITATE AND FULLFILL SECONDARY INTERESTS
STEP 2: COMMENCING TOP-DOWN REHABILITATION OF THE COMMUNAL GROUNDS AND HIGH-RISE BUILDING

TOOLS AS STANDARDISED CUSTOMISABLE PRODUCTS IN THE TOOLS GUIDE

PAGE 58-107
STEP 2: COMMENCING TOP-DOWN REHABILITATION OF THE COMMUNAL GROUNDS AND HIGH-RISE BUILDING

TOOLS AS STANDARDISED CUSTOMISABLE PRODUCTS IN THE TOOLS GUIDE

PAGE 59-107
Provide new infrastructure

Improve thermal performance

Improve “looks” of the high-rises

ALL FACADE

Step 2: Commencing top-down rehabilitation of the communal grounds and high-rise building
STEP 2: COMMENCING TOP-DOWN REHABILITATION OF THE COMMUNAL GROUNDS AND HIGH-RISE BUILDING

THE ALL FACADE RENEW + EXPLORE BASE PRODUCT
STEP 2: COMMENCING TOP-DOWN REHABILITATION OF THE COMMUNAL GROUNDS AND HIGH-RISE BUILDING

THE ALL FACADE RENEW + EXPLORE BASE PRODUCT
STEP 2: COMMENCING TOP-DOWN REHABILITATION OF THE COMMUNAL GROUNDS AND HIGH-RISE BUILDING

THE ALL FACADE RENEW + EXPLORE BASE PRODUCT
STEP 2: COMMENCING TOP-DOWN REHABILITATION OF THE COMMUNAL GROUNDS AND HIGH-RISE BUILDING

THE ALL FACADE RENEW + EXPLORE BASE PRODUCT
STEP 2: COMMENCING TOP-DOWN REHABILITATION OF THE COMMUNAL GROUNDS AND HIGH-RISE BUILDING

CUSTOMISATION OF THE ALL FACADE PRODUCT
STEP 2: COMMENCING TOP-DOWN REHABILITATION OF THE COMMUNAL GROUNDS AND HIGH-RISE BUILDING

DIFFERENTIATION THROUGH CUSTOMISATION
STEP 2: COMMENCING TOP-DOWN REHABILITATION OF THE COMMUNAL GROUNDS AND HIGH-RISE BUILDING
ONE ALL FACADE FOR ALL OF THE HIGH-RISE OR... ALL FOR ONE!
STEP 3
FACILITATING BOTTOM-UP REHABILITATION
OF THE DWELLING
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

STANDARDISED CUSTOMISABLE PRODUCTS AS INFILL SOLUTIONS IN THE RE:NEW GUIDE

PAGE 66-107
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

MULTI
EXTEND
SERVICE
ASSIST

PHYSICAL
METHOD
FINANCIAL
MODEL
SOCIO-ORGANISATIONAL
PROPOSITION

CASE
IMPLEMENTATION

THE CHALLENGE

WHAT
HOW
WHERE

PRESERVE, RENEW +
TOP-DOWN
BOTTOM-UP
PLAN
CONSTRUCTION

4 RE:NEW PRODUCT LINES
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

HOW DO YOU REHABILITATE YOUR DWELLING? THE EXAMPLE OF XIAO LIANG AND WEN TING

HI!
WE´RE XIAO LIANG AND WEN TING
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

HOW DO YOU REHABILITATE YOUR DWELLING? THE EXAMPLE OF XIAO LIANG AND WEN TING
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

CHOOSING A “FAVOURITE” DESIGN...

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STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING
... OR CUSTOMISING YOUR OWN MODULE

RE:NEW
SERVICE BATHROOM MAKER

CHOOSE YOUR BASE:

030 SERIES
- 030 150
- 030 180
- 030 210
- 030 240

060 SERIES
- 060 150
- 060 180
- 060 210
- 060 240

00 CLOSED SERIES

01 HORIZONTAL OPEN SERIES

02 VERTICAL OPEN SERIES
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

CONFIGURING A BASE FOR THE SERVICE MODULE
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

CONFIGURING A BASE FOR THE SERVICE MODULE
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING
CONFIGURING A BASE FOR THE SERVICE MODULE
**STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING**

**CONFIGURING A BASE FOR THE SERVICE MODULE**

1. **106 SERIES**
   - 106 150
   - 106 180
   - 106 210
   - 106 240

2. **290 SERIES**
   - 290 10
   - 290 20
   - 290 30
   - 290 40
   - 290 50

3. **260 SERIES**
   - 260 10
   - 260 20
   - 260 30
   - 260 40
   - 260 50

4. **230 SERIES**
   - 230 20
   - 230 30
   - 230 50

---

**RE:NEW**

**SERVICE BATHROOM MAKER**

**FRONT AND BACK?**

---

**WHERE**

**WHOWHERE**

**REHABILITATION**

**STRATEGY**

**PHYSICAL**

**METHOD**

**FINANCIAL**

**MODEL**

**SOCIO-ORGANISATIONAL**

**PROPOSITION**

---

**PRESERVE, RENEW +**

---

**TOP-DOWN**

---

**BOTTOM-UP**

---

**PLAN**

---

**CONSTRUCTION**

---

**CASE STUDY IMPLEMENTATION**

---
## Step 3: Facilitating Bottom-Up Rehabilitation of the Dwelling

Choosing your own lay-out using the service layout components

### RE:NEW Service Bathroom Maker

**Make your lay-out:**

<table>
<thead>
<tr>
<th>Service</th>
<th>Better Ideal Series</th>
<th>Kitchen &amp; bathroom room interior panels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>From 25./-p DIY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From 70.-/p PREFAB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From 100.-/p DIY</td>
</tr>
<tr>
<td></td>
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<td>From 200.-/p PREFAB</td>
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<td></td>
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<td>From 50.-/p DIY</td>
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<td>From 100.-/p PREFAB</td>
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<tr>
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<td></td>
<td>From 300.-/p DIY</td>
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<td>From 600.-/p DIAG</td>
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<td>From 300.-/p DIAG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>From 600.-/p PREFAB</td>
</tr>
</tbody>
</table>

*Case Study:*

The challenge

**What**

- Physical method
- Financial model
- Socio-organisational proposition

**How**

1. Preserve, renew + explore
2. Top-down
3. Bottom-up
4. Plan
5. Construction
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

CHOOSING YOUR OWN LAY-OUT USING THE SERVICE LAYOUT COMPONENTS
RE:NEW
SERVICE BATHROOM MAKER
CHOOSE YOUR STYLE

FACILITIES

FIXTURES

FINISHES

WHAT

HOW

WHERE

REHABILITATION STRATEGY

PHYSICAL

METHOD

FINANCIAL

MODEL

SOCIO-ORGANISATIONAL

PROPOSITION

CASE

IMPLEMENTATION

THE CHALLENGE

WHAT

HOW

WHERE

REHABILITATION STRATEGY

PHYSICAL

METHOD

FINANCIAL

MODEL

SOCIO-ORGANISATIONAL

PROPOSITION

CASE

THE CHALLENGE

STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING
CUSTOMISING FACILITIES, FIXTURES AND FINISHES
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING
ORDERING PREFABRICATED OR DIY
ORDER FOR YOU!

ORDER PREFAB
ORDER DIY
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING
ASSEMBLING OF THE PRODUCT BY RE:NEW HANDYMEN IN THE ON-SITE WORKSHOP
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

INSTALLATION OF THE PRODUCT IN THE DWELLING: PLUG AND PLAY
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

WORKSHOP AS HUB FOR ON SITE PREFABRICATION OF TOOLS AND RE:NEW SOLUTIONS
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

WORKSHOP AS HUB FOR ON SITE PREFABRICATION OF TOOLS AND RE:NEW SOLUTIONS
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

WORKSHOP AS HUB FOR ON SITE PREFABRICATION OF TOOLS AND RE:NEW SOLUTIONS
WORKSHOP AS HUB FOR “ON SITE” PREFABRICATION

CNC MILLING

STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

WORKSHOP AS HUB FOR ON SITE PREFABRICATION OF TOOLS AND RE:NEW SOLUTIONS
WORKSHOP AS HUB FOR "ON SITE" PREFABRICATION

CNC MILLING

NON-CNC COMPONENTS

STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING
WORKSHOP AS HUB FOR ON SITE PREFABRICATION OF TOOLS AND RE:NEW SOLUTIONS
UPSCALING THE WORKSHOP
Towards a national mass-production

MULTIPLYING THE WORKSHOP
Towards a local mass-production

STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING
FROM EXPERIMENT TO INDUSTRY IN BETTER AND IDEAL PHASES

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Hi!

We want more space!
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

ORDERING A PRODUCT DIY
ORDER FOR YOU!

ORDER PREFAB
ORDER DIY
EXTEND
300

STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING
CONSTRUCTING A PRODUCT DIY WITH THE CONSTRUCTION MANUAL
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

CONSTRUCTION OF THE EXTEND 300 PRODUCT
**STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING**

**CONSTRUCTION OF THE EXTEND 300 PRODUCT**

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STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

STABILITY WITH 3 LAYERS OF 18 mm PLYWOOD
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

CONSTRUCTION OF THE EXTEND 300 PRODUCT
STEP 3: FACILITATING BOTTOM-UP REHABILITATION OF THE DWELLING

RE:PLUG AND PLAY! THE EXAMPLE OF XIAO LIANG AND WEN TING

WHAT A RETURN OF INVESTMENT!

IT IS EVEN GOOD FOR US RENTERS
STEP 4

FROM TOOLS TO PLAN
STEP 4: FROM TOOLS TO PLAN
THE RE:NEW ARCHITECT TO TRANSLATE TOOLS TO A PLAN
STEP 4: FROM TOOLS TO PLAN

AN IDEAL VISION FOR THE DONGSISHITIAO JIA: CRUMBLING PHASE
STEP 4: FROM TOOLS TO PLAN

AN IDEAL VISION FOR THE DONGSISHITIAO JIA: IDEAL PHASE
**STEP 4: FROM TOOLS TO PLAN**

**AN iDEAL VISION FOR THE DONGSISHITIAO JIA: USE OF THE MULTIDECK TOOL**

**MULTIDECK**
STEP 4: FROM TOOLS TO PLAN

APPLICATION OF TOOLS TO MERGE INTERESTS AND CREATE AN ATTRACTIVE LIVING ENVIRONMENT
STEP 4: FROM TOOLS TO PLAN

APPLICATION OF TOOLS TO MERGE INTERESTS AND CREATE AN ATTRACTIVE LIVING ENVIRONMENT

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STEP 4: FROM TOOLS TO PLAN

APPLICATION OF TOOLS TO MERGE INTERESTS AND CREATE AN ATTRACTIVE LIVING ENVIRONMENT
APPLICATION OF TOOLS TO MERGE INTERESTS AND CREATE AN ATTRACTIVE LIVING ENVIRONMENT

STEP 4: FROM TOOLS TO PLAN
STEP 4: FROM TOOLS TO PLAN

APPLICATION OF TOOLS TO MERGE INTERESTS AND CREATE AN ATTRACTIVE LIVING ENVIRONMENT
STEP 4: FROM TOOLS TO PLAN

An ideal vision for the Dongsishitiao Jia which can compete with a “new” design.
**STEP 4: FROM TOOLS TO PLAN**

**HOW TO ACHIEVE THE IDEAL VISION IN PHASES**
STEP 5: LET'S CONSTRUCT
FROM PLAN TO CONSTRUCTION WITH THE RE:NEW TECHNICAL BUILDING DESIGNER
STEP 5: LET'S CONSTRUCT

EXISTING LOAD BEARING CONSTRUCTION OF THE DONGSISHITIAO HIGH-RISES

PAGE 98-107
STEP 5: LET'S CONSTRUCT
LOAD BEARING CONSTRUCTION OF THE DONGSISHITIAO HIGH-RISES POST REHABILITATION
Permanent load = load of loadbearing construction + load of non-loadbearing elements

Variable load = Live load (people, furniture, vehicles) + Environmental load (windload, snowload, seismic load)

Exceptional load = fire load + explosion load + collision load

Strength foundation > 1.3 (CCIII safety factor) x permanent load + 1.65 (CCIII safety factor x variable load) x variable load + exceptional load

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**STEP 5: LET'S CONSTRUCT**

LOAD SCHEMES TO TEST LIMITS TO THE EXISTING FOUNDATION

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**STEP 5: LET’S CONSTRUCT**

ENERGY EFFICIENT HEATING AND COOLING CLIMATE SYSTEM IN PHASE FIXED AND PHASE BETTER + IDEAL
STEP 5: LET'S CONSTRUCT
STANDARD DETAILS FOR EASY BUILDING CONSTRUCTION DRAWING
PAGE 102-107
STEP 5: LET'S CONSTRUCT

STANDARD DETAILS EXAMPLE: ALL FACADE + ALL FACADE PLUG IN STYLE + EXTEND PRODUCTS

PAGE 103-107
STEP 5: LET'S CONSTRUCT
APPLICATION OF THE STANDARD DETAILS TO DEVELOP THE CONSTRUCTION DRAWINGS FOR THE DONGSISHITIAO JIA CASE
PART V

REFLECTIONS ON THE FUTURE OF CHINA’S CRUMBLING HIGH-RISES
5.0 REFLECTION
INTERLOCKING SCALES, DISCIPLINES, TIME TO SOLVE THE CHALLENGE