KAMPONG THE NEXT LEVEL
Context
Location
Why?
What?

Research
Main focus
Research
Inspiration
Level up

Concept and design
Urban development
Stroke development
Structure

Impact
Other locations
Quality of life
Indonesia
Bandung
Urbanisation
Colonial city centre
Kampong: a collection of houses that visibly belong together surrounded by a fence.
SHARED HERITAGE

Consequence of colonial time

Materials

Urbanization
What makes the kampong a unique place which should be maintained?
Strong community
Unique atmosphere
Unique atmosphere
Pleasant climate
Near the river
Result of rapid urbanisation?
What has to be improved?
Urban

Few public spaces
Urban

Danger of floodings
Poorly made houses
Unsafe environment
How do they build in the kampong?
Construction
Typologies

Temporary
Timber and sheet metal

Semi-permanent
Brick/concrete base and temporary top

Permanent
Fully build of brick or concrete
Shop and hierarchy

Tukang

Laden
Semi-permanent
Most common type

Structure: Timber, aluminium
Cladding: Sheet metal, plaster
Floor: Concrete or Timber 2nd
Roof: Tiles or sheet metal
Base: Brick or Concrete
Foundation: Concrete

Materials used
Creativity of the kampong
Chikapundung river
Closed to the river
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Quality of life
How can the overall quality, strength and adaptability of the self-built housing in the kampong of Braga in the old colonial city centre of Bandung be improved?
Research methodology

Context

Technology
Criteria and systems

- Easy assembly
- Affordable
- Sustainable
- DIY
- Incremental
- Strength
- Size
- Available materials

- Moduli 225
- Precut
- Pan knot
- Bamboo joint
- Components
Modular systems
Design matrix

<table>
<thead>
<tr>
<th>Material joint connection</th>
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<th>Pre-built house of 6000$</th>
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<td>Connection with infill</td>
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### Example: adaptability

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Result modular joint
Why lightweight structure?

Movable through alleys
No heavy tools needed
Economical
Efficient with materials
Better for seismic tremors
Re-useable
Already building lightweight in the kampong
Room for improvement

Modular lightweight structure
Vernacular architecture
Vernacular architecture

1 level: 2,5m
Porous walls
Hollow attic
Ventilation through roof
Natural ventilation

1-2 levels: 2m
Solid walls
No ventilation through roof
Technology to solve ventilation

Leaves
Wood and bamboo
On stones
Climate material use
Riverside housing
Riverside housing

View

Protection

Ventilation
Raised walkway
Raised walkway

Create space for the water

New layer of infrastructure

Extra space
Co-housing
Seperation wet rooms

Sharing facilities reducing space needed

Strengthen the comminty
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Other locations
Quality of life
Embodied energy
Excessive use of materials
Riverside typology
Self-built
Modularity
Incremental
Local materials
Low quality materials
Lack of space
Weak structure
Floodings
Few public spaces and greenery
Pleasant climate
Strong community
Atmosphere of the kampong
Vernacular architecture
The Next Level
Built over existing
Raised alley
New public space
Personal
Climate
Incremental
Self-built
Chikapundiung
Lack of space
Opening up to the river
Connecting the riverbanks
Growing from the river
Growing inland
Adapting to the existing
Creating walkway next to the river
How can this be realised?
Using existing social structure
1 RW = 5-7 RT
1 RT = 300 persons
35 houses
1 house = 6-9 family members
Introducing a grid
Walkway to existing

Walkway add-on

Existing
Inbetween space
Existing height
Business model

GOVERNMENT

COLLECTIVE KAMPONG [RT]

SHARED FACILITY BUILDING

1

UP
RAISED LEVEL

KAMPONG RESIDENT

HOUSE
Role of the government

**GOVERNMENT**
- Public infrastructure: walkway
- Public facilities

**COLLECTIVE KAMPONG (RW)**
- Maintenance: public infrastructure
- Maintenance: public facilities

**COLLECTIVE KAMPONG (RT)**
- Community infrastructure: raised alley
- Community housing
- Community maintenance
Role of the government

- Community housing
- Community infrastructure
- Public facilities
- Public infrastructure
The 10 Rules for Leveling Up

1. Built with elements of 60x60x2600 Borneo wood
2. Built 900mm from ground level for water clearance
3. At riverside maximum building height of 2 levels
4. Alley size of 1800mm
5. Column distance 1800mm
6. Beam length between 3000mm and 5000mm
7. Next row of housing maximum one layer higher
8. Infill has to have one ventilation panel
9. Roof has to be ventilating
10. Next row of buildings has to connect to raised walkway
Role of the architect

- Expression
- Infill
- Make create share
- Informal economy
- Private space
- Layout
- Use of space

- Designs the framework
- Boundaries
- Community space
- Infrastructure
- Structure
- Quality
- Facilities and services
- Connecting
The start
Facility building
Section facility building

Sun water heating

Rainwater
Raised floor

residential rain garden
(keep 10 feet away from most structures)

- native plants absorb runoff and pollutants while attracting songbirds and butterflies
- root zone aids in nutrient uptake, microbial activity, and infiltration
- gravel bed (if needed)
- prepared soil mixture (if needed): 50-60% sand, 20-30% compost, 20-30% topsoil
- pendion zone allows pollutants to settle and organic matter to accumulate
- perforated pipe to outlet (if needed)
- overflow structure (if needed)
- rock/vegetated swale or pipe
Floorplans facility building
Incremental growth
Incremental growth
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Incremental growth
Incremental growth
Section dwelling
Roof shapes
Roof choice

Less material

Simpler construction

Same section
and climate principles

2 sides gutter
Dominant wind direction
Alley facade
Facade section

Ground Level

Level 1

Level 2

Roof

3500

6100

8700

gs. Waterclearance

900

112/127
River section
River facade
How it can develop
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Where else?

Other riverbanks facing the same problems

Rural or city kampongs

Other tropical countries
What has been improved?
More public space and space for water
Connection to the river and otherside
Stronger and safer structures
Same kampong feeling
125/127
New infrastructure
Research methodology

Context → Problems → Criteria → Systems → Matrix → Sub-solutions → Weight solutions → Combined solution → Input design

- Fascinations
- Ambitions
- Goals

- Sub-themes

- Research methodology

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Incremental growth
Riverside plan Karsten

Jalan Braga became the luxurious, European shopping street. The street transformed from the loose open bebouwing to the gesloten bebouwing. The Cikapundung plan was only partially executed.
Growth
Dealing with existing
- Sun water heating
- Rainwater
- Green roof
- Solar panel integration in roof
- Plastic gutter
- Plastic sheeting
- Soil
- Wood sheeting