AN INCREMENTAL TAMANSARI

A proposal for a new, healthy kampung development system in Bandung, Indonesia

Danny Janse
Slum neighborhood in Cang-7, Jakarta (Source: Authors Own)
Kampung along railway, Jakarta (Source: Authors Own)
Kampung street view (Source: Authors Own)
Kampung street view (Source: Authors Own)
New kampung street proposal (Source: Author's Own)
KS Tubun flat in West-Jakarta (Source: Manggala mi / Aya)
Current kampung development projects

‘100-0-100’ project
Current kampung development projects

‘100-0-100’ project

100% supply of clean water throughout the country

0% slums in Indonesia

100% fulfillment of sanitation
Current kampung development projects

‘100-0-100’ project

100% supply of clean water throughout the country

0% slums in Indonesia

100% fulfillment of sanitation
Current kampung development projects

- Loss of social structure
  *(From kampung structure to vertical buildings)*

- Social isolation
  *(Re-located in the outskirts of the city)*

- Loss of jobs
  *(Distance to current jobs)*

- Huge debts
  *(Rent, public transport fees)*

- Low quality housing

- Child unfriendly
Formal-informal division
(Source: Authors Own)

Formal areas
Kampung neighborhoods
Green areas
History

Bandoeng

En omgeving

Zijn een paradijs, ook voor de jeugd!

Dit

Biedt Bandoeng U!

Bandoeng:

Europa in de tropen

De ideale woonstad!

Vestigt U zich daarom te Bandoeng

Lage belastingen

Gezond, fris, droog, heerlijk, bergklimaat.

Lust en ontspanning

Op vele manieren en vele plaatsen

De heerlijke bergmeeren en het Zuidenadriaanse strand geeft U alles wat U op „Lido”-gebit wenst.
Current kampung development projects
History

Legend:
- Formal area
- Informal area
- Green area
- Colonial Building
- Chikapundung
- Medium road
- Big road
**Rapid urbanization**

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
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<tbody>
<tr>
<td>1833</td>
<td>5000</td>
</tr>
<tr>
<td>1846</td>
<td>31000</td>
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<tr>
<td>1906</td>
<td>50000</td>
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<tr>
<td>1920</td>
<td>94800</td>
</tr>
<tr>
<td>1930</td>
<td>166815</td>
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<tr>
<td>1940</td>
<td>230000</td>
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<tr>
<td>1961</td>
<td>1000000</td>
</tr>
<tr>
<td>1990</td>
<td>2000000</td>
</tr>
<tr>
<td>2018</td>
<td>2500000</td>
</tr>
<tr>
<td>2040</td>
<td>4100000</td>
</tr>
</tbody>
</table>

1940 - 250 thousand
1961 - 1 million
1990 - 2 million
2018 - 2.5 million
Rapid Urbanization

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>- 2,5 million</td>
</tr>
<tr>
<td>2040</td>
<td>- 4,1 million</td>
</tr>
</tbody>
</table>

Graph showing population growth from 1833 to 2040, with key events including Independence of Indonesia and Start rural-urban migration.
Kampung Tamansari
Kampung Tamansari
Kampung Tamansari
Kampung Tamansari
How can we re-interpret the old ‘Healthy City’ identity of the 1920’s, in order to improve the public health, and therefore the livability, whilst meeting the densification requirements of kampung Tamansari in Bandung?
**Conceptual framework**

- Colonization
- ‘Healthy City’
- Livability
- Density
- Urban Health
- Slum-forming
- Rapid urbanization

- Position of research & design
- Concepts
- Causing factors
- Connections
Research Question

How can we re-interpret the old ‘Healthy City’ identity of the 1920’s, in order to improve the public health, and therefore the livability, whilst meeting the densification requirements of kampung Tamansari in Bandung?
“Even though there is yet to date no clear definition, it is clear that Livability is about the relation between subject (organism, person or community) and its surroundings, and the extent to which this surrounding is able to sustain the needs of the social life it contains”
## Components of Livability

1. Crime and safety
2. Housing
3. Education
4. Employment and income
5. **Health** and social services
6. Transport
7. Public open space
8. Social cohesion and local democracy
9. Leisure and culture
10. Food and other local goods
11. Natural Environment

*Components of livability (Source: Lowe, et al, 2013)*
Livability

- Livability = contrast

(The personal perception of livability is based on the individual's perception of 'the normal')
Livability

- Livability = contrast
  (The personal perception of livability is based on the individual’s perception of ‘the normal’)

- Kampung improvement
  (The current kampung redevelopment projects are not creating a positive contrast, but rather an equal contrast or even a negative one)
Livability

- Livability = contrast
  (The personal perception of livability is based on the individual's perception of 'the normal')

- Kampung improvement
  (The current kampung redevelopment projects are not creating a positive contrast, but rather an equal contrast or even a negative one)

- An Incremental Tamansari
  (Create a focus not only on the improved kampung, but also the realization of the contrast)
Public health

“A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”

World Health Organisation 1948
Public health

Health
- Diseases
- Conditions
- Disability
- Health care distribution
- Health care access
- Health care costs
- Pharmaceuticals

Environment
- Infrastructure
- Build environment
- Transportation
- Water quality
- Air quality
- Contaminants
- Noise
- Toxic waste
- Disasters
- Waste-management

Geography
- Land-use
- Natural barriers
- Population density
- Neighborhood configuration
- Boundaries
- Spatial patterns

Economics
- Occupation
- Employment
- Income
- Services
- Economic growth
- Natural resources
- Taxation

Sociodemographics
- Population
- Growth
- Natality
- Mortality
- Education
- Literacy
- Behavioral risk

Determinants of public health (Source: Lowe, et al, 2013)
Public health
Public health

- Location
- Livability
- Health

- Infrastructure
- Build Environment

- Population Density
- Neighborhood Configuration

- Transportation
- Boundaries

- Land-use
- Spatial Pattern

- Natural Barriers
- Services

- Natural Resources
- Population
### Public health

<table>
<thead>
<tr>
<th>100 x 100 m</th>
<th>'Formal pocket'</th>
<th>100 x 100 m</th>
<th>'Maze area'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor Space Index</td>
<td>1.43</td>
<td>Floor Space Index</td>
<td>2.24</td>
</tr>
<tr>
<td>Ground Space Index</td>
<td>0.64</td>
<td>Ground Space Index</td>
<td>0.77</td>
</tr>
<tr>
<td>Open space Ratio</td>
<td>0.24</td>
<td>Open space Ratio</td>
<td>0.10</td>
</tr>
<tr>
<td>Average Amount of Layers</td>
<td>1.92</td>
<td>Average Amount of Layers</td>
<td>2.24</td>
</tr>
<tr>
<td>Average Street Width *</td>
<td>4.49 m</td>
<td>Average Street Width *</td>
<td>2.19 m</td>
</tr>
</tbody>
</table>
Public health

Zoning spatial patterns
(Source: Authors Own)
Public health

Chikapundung river

Buildings going along with the structure of the Chikapundung

Main body of the kampung is following an east-west orientation along with the topographical underground

Transitional area linking the structures

Line of formal buildings oriented contra to the slope

Jalan Tamansari

Formal buildings
Public health

Minimum Kampung 1,5 m²/pp
Averadge Kampung 5,98 m²/pp
Maximum Kampung 10,5 m²/pp

EU average 42,6 m²/pp
Indonesian minimum 9 m²/pp
Javanese minimum 5,25 m²/pp
Conclusion

- Colonization
- ‘Healthy City’
- Livability
- Density
- Rapid urbanization
- Urban Health
- Slum-forming

Position of research & design
Concepts
Causing factors
Connections
“The aim for the project is to turn kampung Tamansari into a highly livable, healthy, green, sustainable, affordable and feasible kampung neighborhood”
An ideal future

**Block structure**
A reinterpretation of the back-to-back structure, with each block having its own shared facilities.

**Incremental development**
A feasible, affordable and collaborative development strategy within the healthy-framework.

**Roofscapes**
The roofscapes will make the roofs of the incremental elements available as semi-public spaces for the block inhabitants.

**Vertical street-network**
The vertical-streets will make sure that the kampung-lifestyle can continue within a vertical oriented structure.

Components of the new future of the kampung (Source: Authors own)
An ideal future

Key-components

- Keep the entrances
- Connect to surrounding structure
- Central green pocket park
- Build upon the river promenade proposed by Eco-District plan

Vision map (Source: Authors own)

- Keep the buildings along the Jalan Tamansari
- Upper part oriented along with the slope
- Keep the existing structure, but improve the buildings
- Realize block structure
An ideal future

Key-components

- Use the existing structure to create the new block structure
- Create central pocket park
- Realize connection over river
- Strip of functions along the riverbank
The current kampung structure will be the basis for the new neighborhood plan.

2025

Completely or partially cleared areas will be designed for a minimum housing number.

2030

From here on, the kampung population has the opportunity to expand their own block structure.

2040

The growing amount of kampung inhabitants will result in growing housing blocks.
An ideal future
An incremental Tamansari
An incremental Tamansari
An incremental Tamansari

![Incremental development framework](source)

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**Functions & Facilities**

1. Community Center
2. Mosque
3. Mosque
4. Mosque
5. Kindergarten/Daycare
6. Hik office
7. Building material storage / Workplace
8. Optional Shop house / Warehouses
9. 10
10. Apartment Building
11. Housing element XL
12. Community place
13. Market Square
14. Playground
15. Ro Roan (Bedding housing)
16. - 10m
17. - 5m
18. - 5m
19. - 10m

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*Source: Authors Own*
An incremental Tamansari

Incremental development
An incremental Tamansari

Housing element possible floor plan (Source: Authors own)
An incremental Tamansari
An incremental Tamansari
An incremental Tamansari
An incremental Tamansari
An incremental Tamansari

Functions and facilities:
- Community Center
- Mosques
- Mosques
- Kindergarten/Dayscare
- RW-office
- Building material storage / Workplace
- Optional Shophouse / Warung

Key:
- Shophouse / Warung
- Mosque
- Dayscare
- RW-office / generator
- Community Center
- Workshop / Storage
An incremental Tamansari
An incremental Tamansari

Street hierarchy
- Primary streets
- Secondary streets
- Tertiary streets
An incremental Tamansari

Street sections (Source: Authors own)
An incremental Tamansari

- Water supply line
- Covered storm-water ditch
- Sewage pipe
- Storm-water pipe to River
- Open storm-water ditch
- Transitional space
- Manhole

Primary street
Secondary street
Tertiary street
Legend:
- Primary sewage pipe
- Secondary sewage pipe
- Biodigester
- Septik tank
An incremental Tamansari
An incremental Tamansari

Block structure
An incremental Tamansari
An incremental Tamansari
An incremental Tamansari
An incremental Tamansari

No infill

Fencing

Roofing

Expansion

Combination 1

Combination 2

Infill of the transitional area (Source: Authors own)
An incremental Tamansari

Roofscapes

Vertical street network
An incremental Tamansari

Reacreational area

Playground for children

Small-scale sports functions

Urban farming

Solar panels

Green roofs
An incremental Tamansari
Conclusion

How can we re-interpret the old ‘Healthy City’ identity of the 1920’s, in order to improve the public health, and therefore the livability, whilst meeting the densification requirements of kampung Tamansari in Bandung?

1920’s Bandung

Densification

Livability

Public health
Built environment

100 x 100 m
‘Formal pocket’

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1,43
Ground Space Index
0,64
Open space Ratio
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Average Amount of Layers
1,92
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4,49 m

100 x 100 m
‘Maze area’

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Open space Ratio
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2,24
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2,19 m

100 x 100 m
Incremental Tamansari

Floor Space Index
0,56
Ground Space Index
0,43
Open space Ratio
1,00
Average Amount of Layers
1,34
Average Street Width *
3,52 m
Spatial pattern
Spatial pattern
Neighborhood configuration
Population density

Minimum Kampung
1.5 m²/pp

Average Kampung
5.98 m²/pp

Maximum Kampung
10.5 m²/pp

New average
5.28 m²/pp
Infrastructure
How can we re-interpret the old ‘Healthy City’ identity of the 1920’s, in order to improve the public health, and therefore the livability, whilst meeting the densification requirements of kampung Tamansari in Bandung?
Thank you.