Kampung Densification Program
Tools and strategies to increase the density of Jakarta’s inner-city kampungs

Mark van den Ouden
2014/12/18 PS
A. High Density Traditional Kampung
  Density: 32,000 km²
  Low to mid-income

B. Communal Kampung
  Density: 24,000 km²
  Low to mid-income

C. Main infrastructural site
  Density: 16,000 km²
  Mid to high-income and commercial sites

Current situation
M scale: 1:1,000
Source: Site visit Jakarta May 2014
M Current situation
Street view

1 Layer - Batawi house
Traditional single layer house built from wood and cheap bricks. Usually with a garden.
From 2 to 12 inhabitants.

Typologie - Batawi Houses
M scale axonometrie

Source:
3 Layers - Mid income house

Expansive mid to higher mid income house as found in the inner city kampong. Build from concrete or a combination of a concrete structure with brick walls. Side walls are always closed due to neighbors that attach houses onto this wall.

Source:
M Current situation

Street view

Typologie - New Kampung House

Source: 1:1.000
M Current situation

Street view

Typologie - Commercial

M scale axonometrie

2 layer - Kampung shophouse
Low Mid income family with a shop (warung) at the ground floor. Build from bricks and steel-plating.
Site C Current situation

3 sites - C
M scale axonometrie
Site B Current situation

Section

3 sites - B
M scale axonometric

1:200
Site A Current situation

Section

3 sites - A

M scale axonometric
Current situation

Source: Sitevisit Jakarta May 2014

1:100

1:200
**M Current situation**

- **Image**

  - Brick ground floor, sheet metal first floor
  - Runah Material (Material shop) with window frames
  - Runah Material (Material shop) with stone and sand

Source: Sitevisit Jakarta May 2014

**Site A - Construction**

M scale axonometrie

1:100
**M Current situation**

**Image**

- Washing and cooking
- Storage
- Livestock

Source: KIP, Sitevisit Jakarta May 2014
M Current situation

Image

Low-income, completely open
Mid-low income, small border
High-income, completely closed off

Source: Sitevisit Jakarta May 2014
Streets are the extensions of the livingrooms, connected by benches, gardens and open doors.

Current situation

Image

Benches underneath canopy

Terraces to meet neighbours

Communal living room in the middle of the street

Site A - Using the public space

M-scale axonometric

Source: Sitevisit Jakarta May 2014
Commercial functions are interwined with living in the kampung.

M Current situation

Image

Sales

Production

Streetfood preparation

Site A - Using the public space

M scale axonometrie

Source: Sitevisit Jakarta May 2014, ETH Zurich Tropic Town
M Current situation

Street view

Hiding for the sun underneath commercial signs

Various fabrics used to block sunlight on streets

Bamboo window blinds

Source:

Site A - Shading

M scale axonometrie
Needed growth
Capacity for growth

- 1 floor: 10% concrete, 40% stone, 50% wood
- 2 floors: 30% stone, 70% wood
- 3 floors: 50% concrete, 40% stone, 10% wood
- 4 floors: 90% concrete, 10% stone
- 5 floors: 100% concrete

[Diagram showing the distribution of materials for each floor level]
Buildings which can’t reach their needed growth
Buildings which cannot reach their needed growth
Preserve!
By slightly lowering the pressure on the Betawi kampung structures we can preserve them and let them grow "naturally".

Vertical expansion!
When the max is reached we should go vertical. Introducing vertical kampungs at intersections, trade hubs, borders of new kampungs and monah central locations.

No more cars
Cars will not be allowed in the center of the kampungs, they will destroy them again. Ojeks are only allowed into the first circle.
These need government (kota) intervention in order to get to the required height!
Hypothesis:

The bottom-up designed kampung has a limit to its size of roughly 1.3 times its current size. Therefore, top-down Kota should provide assistance to allow a doubling of density to happen, as a new form of the kampung improvement program (KIP). This KIP 2.0 should consist of various rules, infrastructural tools and architectural elements, a toolbox for densification.
**Increase of the mid-high income class**
A higher floor place a person which makes it a higher far!

**Decrease of family size**
From 4.3 to 3.5.

**A lot more local functions**
Pasar, schools, health centres and shops should all be closer to home to reduce travel times.

**Reduce cars (parking) in the kampung**
Increase of motor leads to more cars, and cars are notorious kampung destroyers.

**More porosity to “breath”**
The kampung needs wind corridors, more communal spaces and

**From 24.000 to 50.000 € / km2**, smaller families and larger houses means an increase of the FAR from 1.3 to 2.9.

**Changing society leads to more than a doubling of the FAR.**
Electric Scooter Highway

M Electric Scooter Highway

M scale axonometric
Public transportation
Street view

S - Site A
New Plot division

Need of more space / squares
Building to maintain
Public Service buildings

Current Situation (kampung)

Kota influence

Final Situation (kampung kota)
Windcatchers
Communal Roofs
Vertical Kampung House
Do you want to live with your entire family in the same street, but are all the plots in your street sold already? No problem, you can now build your own street with multiple houses on the same plot! The government provides a basic concrete structure of max 4 floors with ramps or stairs that could house a total of 8 homes for you and your family!
Split Houses

The split house is based on a policy to help double the amount of registrable and legal land. If you sell half of your plot, you'll get formal rights for the other half and a budget to build a new house (from concrete and bricks). Because of this, you can build a much higher house. The land next door can be sold (split the profit between the old owner and the government) and used to build another house on it. Directly doubling the density!
Parasites

The parasite takes advantage of the concrete walls of the higher mid-income inhabitants of the inner-city Kampung by placing floors between the 2 adjacent walls. The houses might be small, but they take full advantage of the depth of their neighboring houses. A spiral staircase is attached as the main access point.

XS - The Parasite

Current Situation (kampung)

Kota influence

Final Situation (kampung kota)
1. Communal Roof (low to mid-income 14 x 25 m2)
2. Individual vertical kampung house (low to mid-income 40 m2)
3. Family vertical kampung house (low mid-income 5 x 25 m2)
4. Street extension house (mid-income 2 x 40 m2)
5. Split house (mid & high-income 80 m2)
6. Shop house (Low and mid-income 3 x 30m2 / 1 x 60 m2)
1. Communal Roof (low to mid-income 14 x 25 m²)
2. Individual vertical kampung house (low to mid-income 40 m²)
3. Family vertical kampung house (low mid-income 5 x 25 m²)
4. Street extensihon house (mid-income 2 x 40 m²)
5. Split house (mid & high-income 80 m²)
6. Shop house (Low and mid-income 3 x 30 m² / 1 x 60 m²)
Communal Roof
(low to mid-income 14 x 25 m²)

Individual vertical kampung house
(low to mid-income 40 m²)

Family vertical kampung house
(low mid-income 5 x 25 m²)

Street extension house
(mid-income 2 x 40 m²)

Split house
(mid & high-income 80 m²)

Shop house
(low and mid-income 3 x 30m² / 1 x 60 m²)

Vertical family house

Communal Roof (low to mid-income 14 x 25 m²)

Individual vertical kampung house (low to mid-income 40 m²)

Family vertical kampung house (low mid-income 5 x 25 m²)

Street extension house (mid-income 2 x 40 m²)

Split house (mid & high-income 80 m²)

Shop house (low and mid-income 3 x 30 m² / 1 x 60 m²)

Concrete base, cast in site concrete columns and pillars

Wooden roof

Prefab stairs. Build-in toilet and shaft.

Concrete base, cast in site concrete walls. Main beams concrete,
1. Communal Roof (low to mid-income 14 x 25 m²)
2. Individual vertical kampung house (low to mid-income 40 m²)
3. Family vertical kampung house (low mid-income 5 x 25 m²)
4. Street extension house (mid-income 2 x 40 m²)
5. Split house (mid & high-income 80 m²)
6. Shop house (low and mid-income 3 x 30m² / 1 x 60 m²)

Sun & Ventilation Water Kota Structure Kota Kampung Structure

Concrete base, cast in site concrete columns and pillars
Wooden roof

Prefab stairs. Build-in toilet and shaft. Wooden roof

Concrete base, cast in site concrete columns and pillars
Prefab stairs. Build-in toilet and shaft

Concrete base, cast in site concrete walls. Main beams concrete, secondary beams wood.

Prefab steel beams. Wooden secondary structure on top of a concrete slab casted in site

Wooden or concrete secondary structure

Wooden secondary structure. Stairs from rumah material

High income house
1. Communal Roof (low to mid-income 14 x 25 m²)
2. Individual vertical kampung house (low to mid-income 40 m²)
3. Family vertical kampung house (low mid-income 5 x 25 m²)
4. Street extension house (mid-income 2 x 40 m²)
5. Split house (mid & high-income 80 m²)
6. Shop house (Low and mid-income 3 x 30 m² / 1 x 60 m²)

Concrete base, cast in site concrete columns and pillars
Wooden roof
Prefab stairs. Build-in toilet and shaft.
Concrete base, cast in site concrete walls. Main beams concrete, secondary beams wood.
Prefab steel beams. Wooden secondary structure on top of a concrete slab casted in site
Wooden secondary structure.
Prefab roof from rumah material
Wooden or concrete secondary structure

Sun & Ventilation
Water Kota Structure
Kota Kampung Structure

+ + + + +
+ + + + +
+ + + + +
+ + + + +
+ + + + +
+ + + + +

Concrete base, cast in site concrete columns and pillars
Wooden roof
Prefab stairs. Build-in toilet and shaft
Wooden secondary structure.
Section A Future
Section B Current
Section B Future
Warungs and other commercial functions are found on the ground floor.

Construction detail of the main wooden construction. Secondary beams are held in place by steel plates mounted in between the main columns keeping the beam lengths short.

Bamboo walls and roofs
Solar Chimney
Wooden framework with glass planes
Black coated steel panels
Optional EV panels
Beams 24x50mm
Beam 120x600mm

1:20 section

Exploded Axo
Communal Roof
Section C current