EVOLUTION OF THE HOUSE
number of people: 9,789
number of households: 3,181
average people per house: 3
total area available: 296,920m²
total area per household: 93,34 m²
(including public infrastructure)

DENSITY: 32,970 people/km²
QUALITY OF LIFE MEASUREMENT: 0.8

number of people: 18,914
number of households: 6,221
average people per house: 3
total area available: 296,920m²
total area per household: 47,72 m²
(including public infrastructure)

DENSITY: 63,705 people/km²
QUALITY OF LIFE MEASUREMENT: 0.72

number of people: 28,629
number of households: 9,543
average people per house: 3
total area available: 296,920m²
total area per household: 31,11 m²
(including public infrastructure)

DENSITY: 96,426 people/km²
QUALITY OF LIFE MEASUREMENT: 0.66

BASELINE
QUALITY OF LIFE MEASUREMENT: 0.33
SEQUENCE OF UPGRADE

1. Existing stove & structure
2. Roof cover
3. Infill
4. Possible vertical extension

Octavia's House

Removal of existing
PUBLIC TOILET & SHOWER area: 8 m²
polished concrete floor finish

COMMUNITY GATHERING AREA area: 35 m²
polished concrete floor finish

COMMUNITY NODE PLAN
1:25

TO UNION AVENUE (SETTLEMENT)
SPECIFICATIONS
1 - Polished screed floor
2 - 75 mm concrete surface bed on 0.25 polyolefin membrane
3 - 50mm Sand bedding course
4 - Earth Filling
5 - 50x50x3 mm Square hollow hot rolled profile, with ridge to accommodate the swivel from the door
6 - Hanger and guide with pivoting system
7 - 50x38 mm timber filling member
8 - 100x50x5 mm steel hot-rolled channel profile
9 - Brick paving stoep on ground fill
10 - Open-graded bedding course
11 - Underdrain (as required)
12 - 150x75x20x3 mm steel lipped channel beam
13 - 20 mm flat bar bolted to steel lipped channel
14 - Welded rebar truss
15 - Precast concrete beam
COLLECTION
1- collect cart
2- collect reed from riverside
3- drop off reed at the factory
3b- return cart to storage

PRODUCTION
4- clean the reed
5- dry the reed
6- cure the reed
7- dry the reed
8- make panels
9- distribute panels

MOVEMENT OF MATERIAL
1 - main access into settlement
2 - new entrance to train station off main access
3 - tool library (public building)
4 - public toilets
5 - movement to food stalls creates a public square in front of it
6 - movement to the training space pulls people through the factory space
7 - the soccer field draws people from the main axis
8 - the end of the movement is the housing, denoting an implied privacy
families: 2
opportunities for extension: 8
shared resources: yes
space: 128 m²
north facing area: 72 m²

extended butterfly
The extended butterfly allow for the opening of both sides of the house, allowing for the utilization of cross-ventilation for cooling.

families: 1/2
opportunities for extension: 3
shared resources: no
space: 64 m²
north facing area: 48 m²

butterfly
The butterfly roof allows two houses to share a wall, as well as a gutter. The ability of this configuration to collect water is an added benefit.

families: 2/3/4
opportunities for extension: 8
shared resources: yes
space: 128 m²
north facing area: 48 m²

single
The single house may be placed independently on a lot of land. The long edges must be oriented North and South, the short edges must be East West with a maximum deviation of 30 degrees.
By configuring the houses at 90 degrees to one another, a courtyard is formed which can be jointly surveyed by both parties. A passage of at least one metre must be between the houses to ensure that there is not water overflow into the house.

- **90 degrees**
  - families: 2
  - opportunities for extension: 8
  - shared resources: no
  - space: 64 m²
  - north facing area: 36 m²

- **back to back**
  - families: 1/2
  - opportunities for extension: 8
  - shared resources: yes
  - space: 64 m²
  - north facing area: 24 m²

The result of two houses placed back to back is a typical pitched roof configuration, which may serve two families, or be built by one family in need of extra space.

- **families: 2**
  - opportunities for extension: 8
  - shared resources: no
  - space: 128 m²
  - north facing area: 72 m²

- **families: 1/2/3/4**
  - opportunities for extension: 8
  - shared resources: yes
  - space: 128 m²
  - north facing area: 48 m²

- **families: 2**
  - opportunities for extension: 8
  - shared resources: yes
  - space: 192 m²
  - north facing area: 72 m²
reflected 90 degrees

The orientation of the two houses, and the pitch of the roofs allows for the houses to share a wall, thereby saving resources. It is important to ensure that the pitch of the roof does not allow for water to enter another house.

extended butterfly

The extended butterfly allow for the opening of both sides of the house, allowing for the utilization of cross-ventilation for cooling.
Density
Denisty near public amenities such as community centres.

Public space
Allow space for public procurement of space near to the main access ways.

Environment
Maintain existing plants and trees, and plant more.

Accessibility
Allow for vehicular access, but prioritize pedestrian access, by scaling the relevant roads and paths to suit their function.

Orientation
Orient major axes in an East-West direction in order to maximise the incidence of Northern light.

Privacy
Ensure that the spaces between buildings create public space which is manageable, and for which the surrounding houses are accountable.

Security
Secure private spaces in order to ensure ownership over these places.

Rules for Configuration
ANALYSIS OF TRAIN STATION

- Fruit seller: fruit, chips and sweets
- Station entrance: not clearly marked, not visible from the road
- Food shop: cooked beef
- Lunch tables: holes in roof, tables in good repair, not utilised
- Public toilets: clean and in good repair, extremely secure
- Ticket office: abandoned, stripped of all windows and doors
- Recycling depot: drop off point for all recycling, cardboard, glass, plastic
- Dead space: no activity
- Storage yard: Al Hassim's Storage Yard
- Bus station: used by recyclers waiting for the depot to open
- Hardware: Al Hassim's hardware store
- Soccer field: poor astro quality, still used often