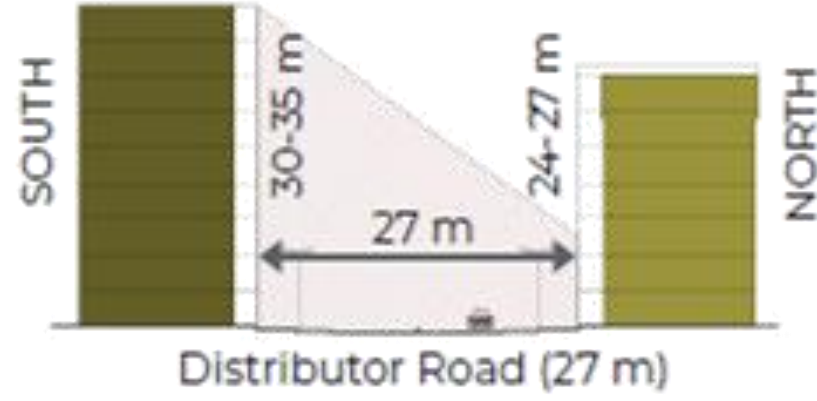
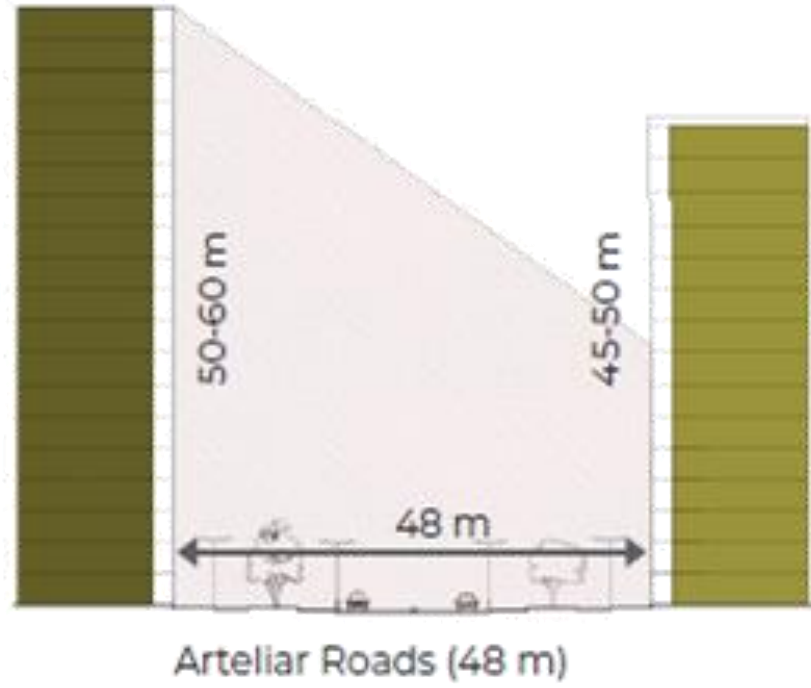
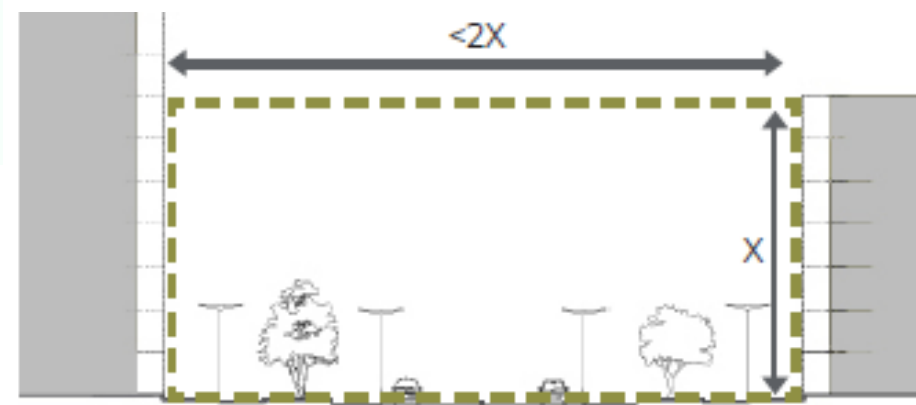


CLIMATE AND BUILDING DESIGN STRATEGIES

Building Heights: Enclosure and Orientation

1) Enclosure - Minimum ratio of 1:2 of building heights to street widths need to be achieved specially for major artelier and sub-artelier roads to achieve enclosure.



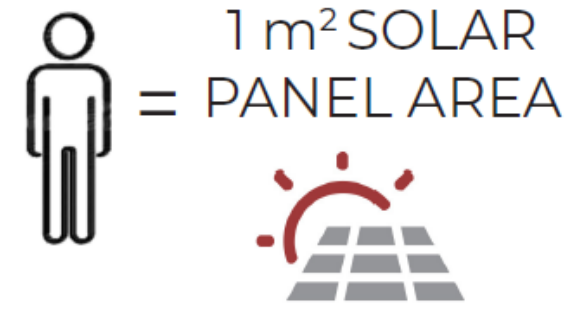
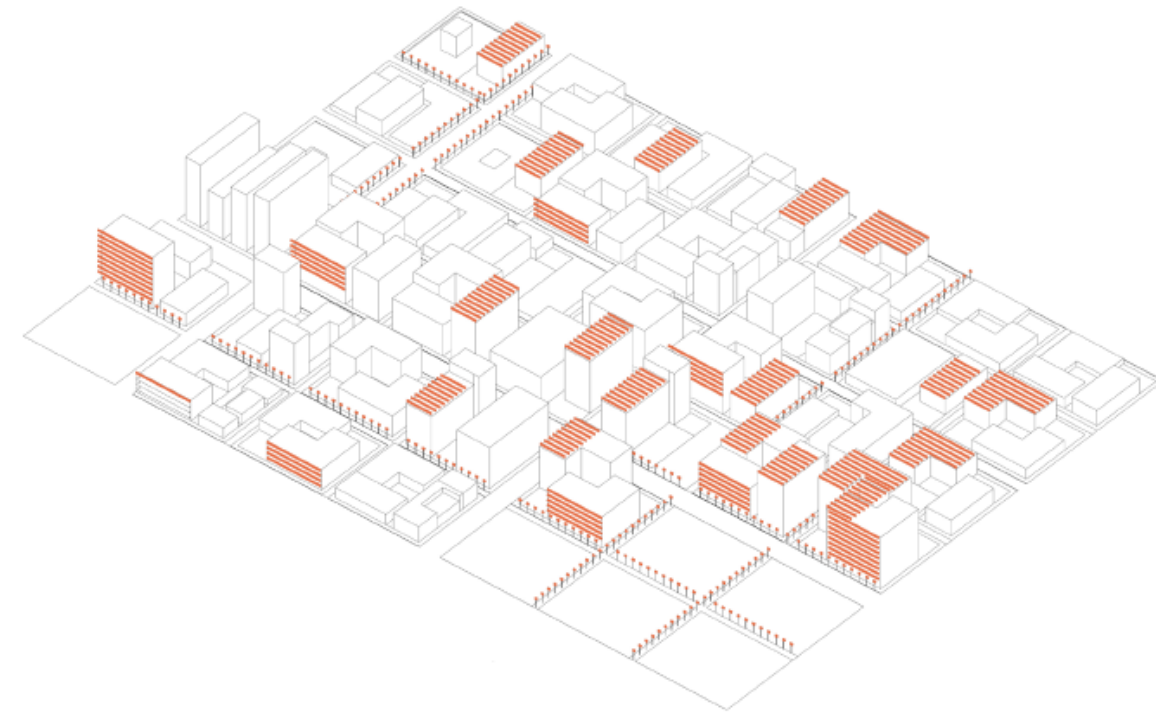
Renewable Energy System

1) Calculating Area for Solar Energy Production
Energy consumption per capita per day is = 1.5 kWh

Energy produced by 1m x 2m 360W solar panel in a day = 360 x 8 = 2880 Wh = 2.8 kWh

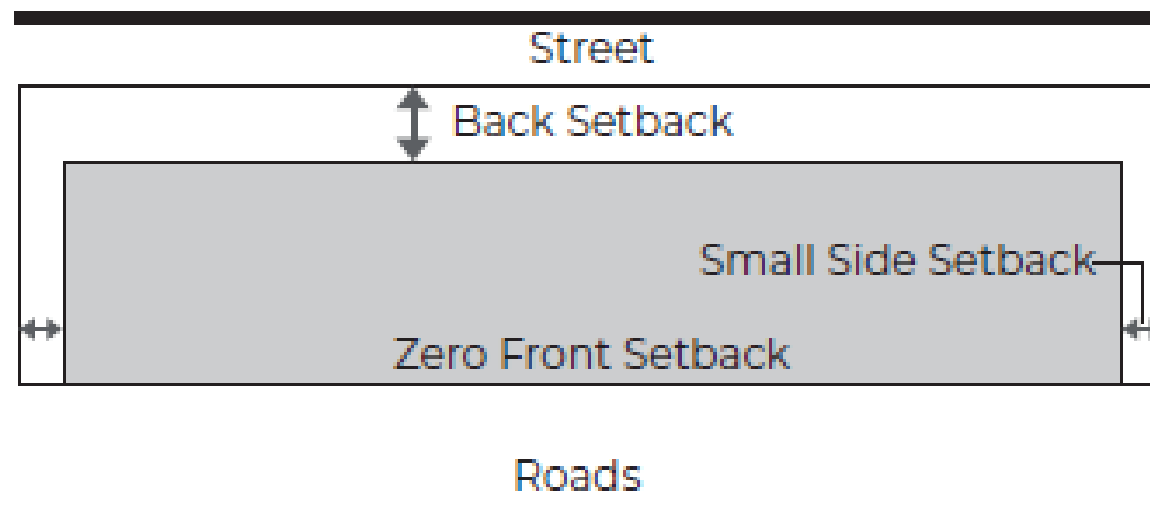
Area required for one person energy production is = $\frac{1.5 \text{ kWh} \times 2 \text{ m}^2}{2.8 \text{ kWh}}$ = 1.07 ~ 1 m²

1 m² SOLAR = PANEL AREA

Light and Shadow configuration for different sizes of roads.

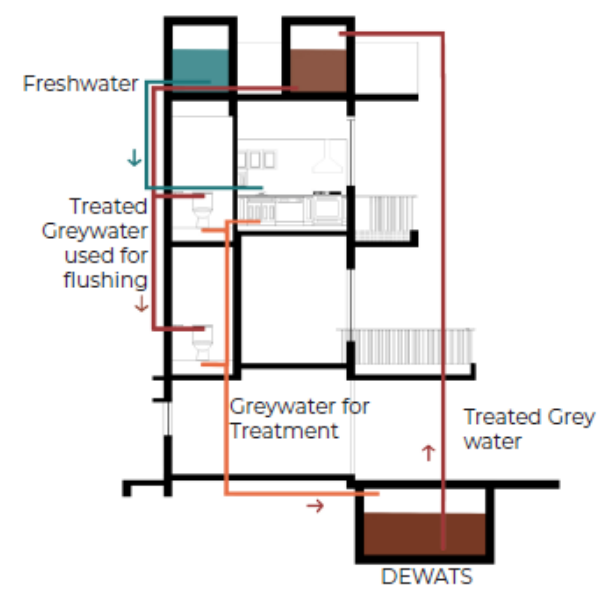
There should be no front setback from the main roads and access should be given through streets at the backside of the built form



Water

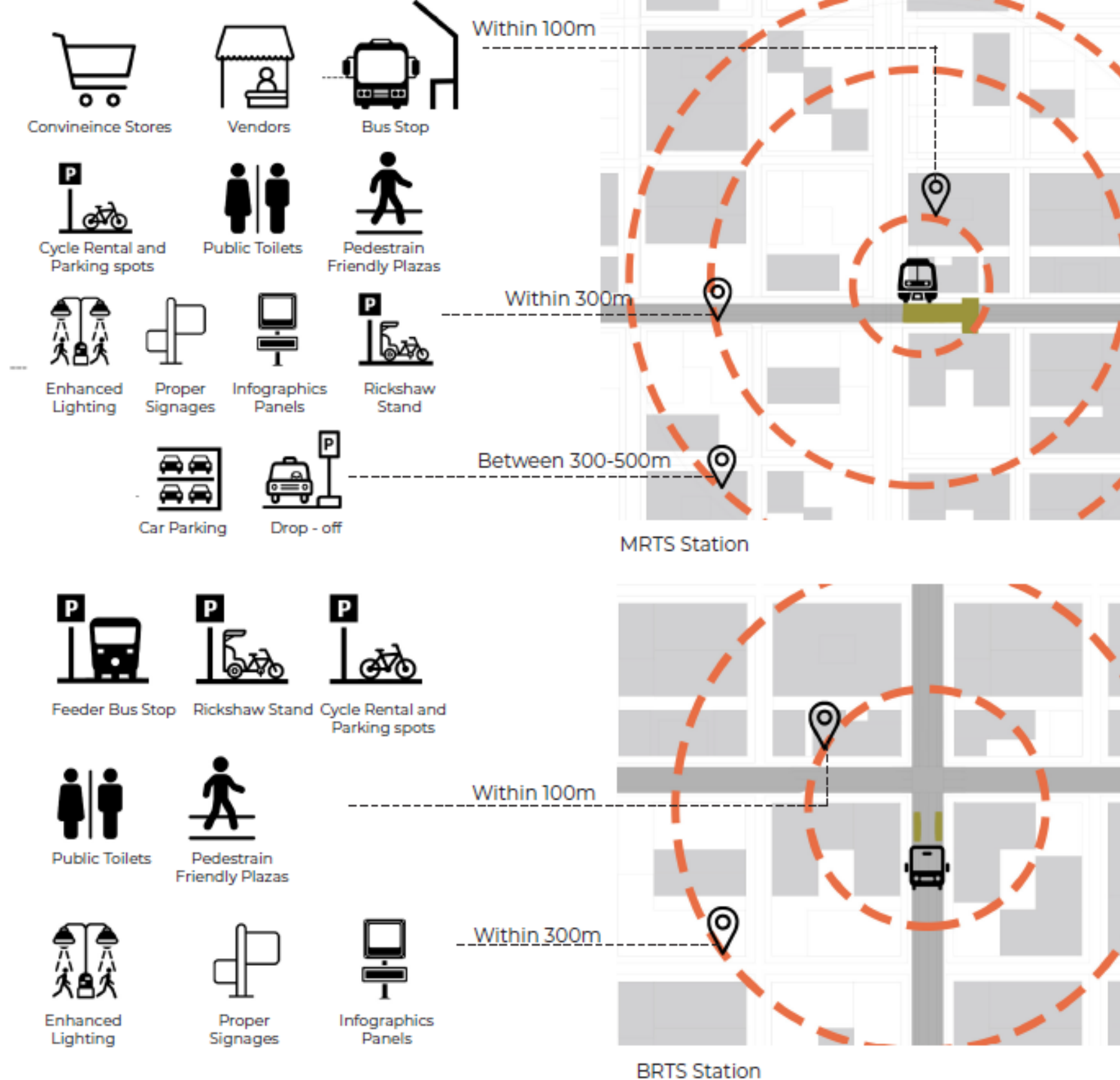
1 person = 15 m³ STORAGE

1 person = 1.5 m² OF DEWATS

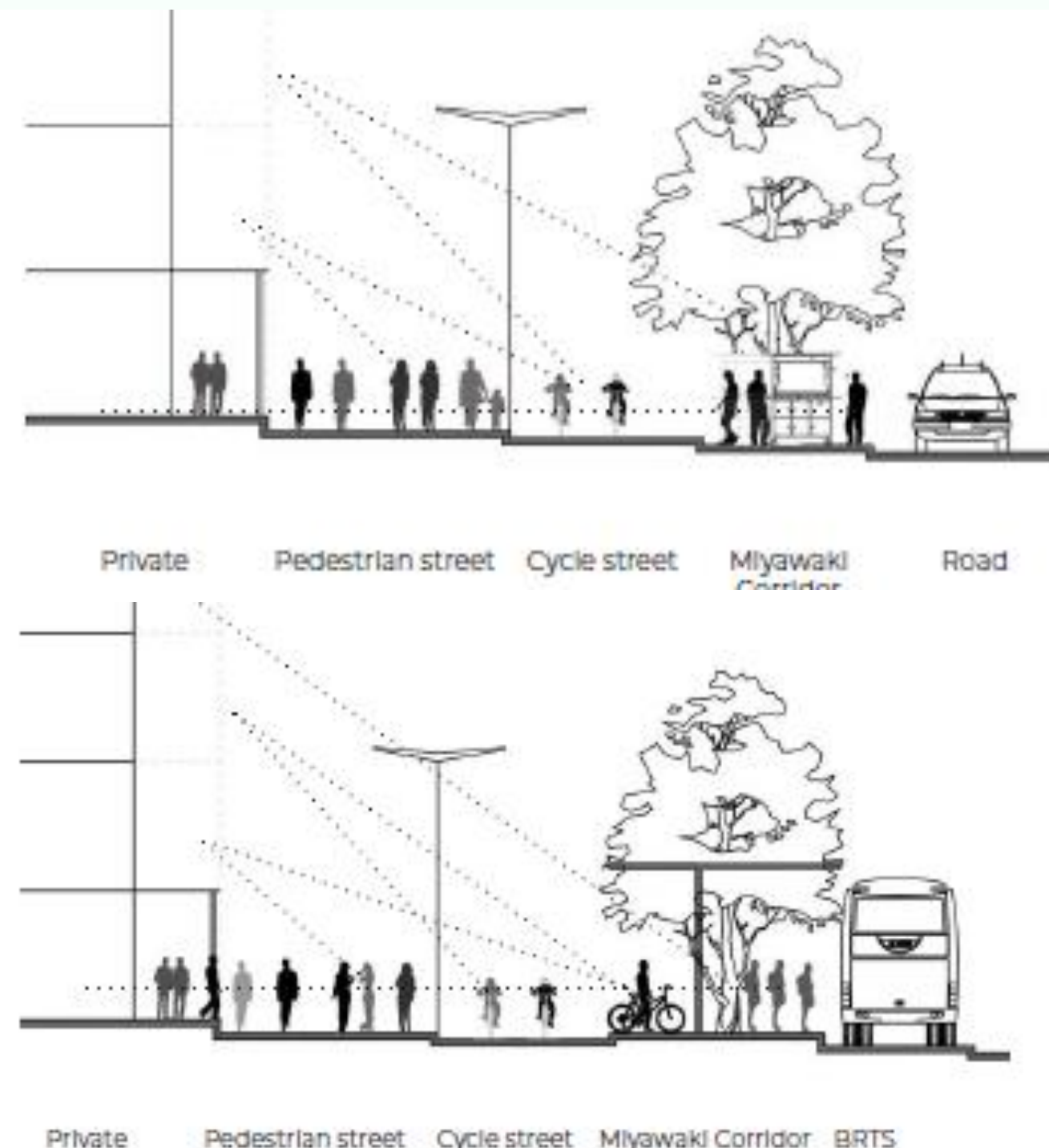


Last Mile Connectivity and Infrastructure Development

2) Essential Services around the Station



Road Sections With Integrated Greens



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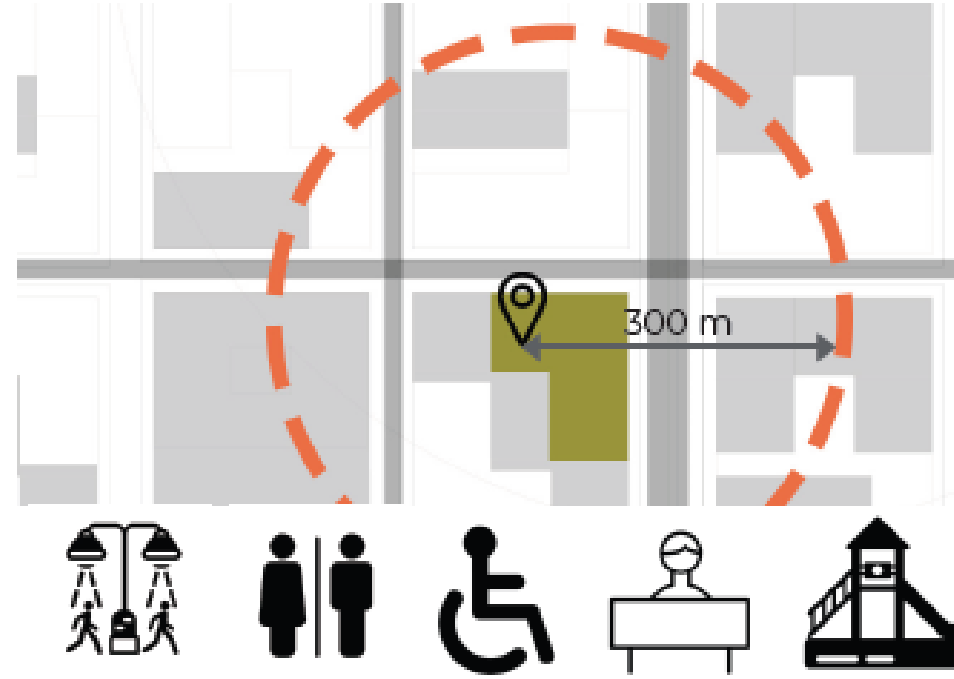
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Bachelors of Architecture

Student(s): Batch 2018-2023
Faculty: Prof Dhaval Chauhan
Prof Jaydeep Bhagat

Urban Context Studio (Updated Course)

URGENT Cross-Cutting Theme: 4. Integrative Smart Green & Blue Urban Planning, including science, policy and management for adaptation, mitigation and urban NBS
Credits: 8 ECTS Type of Course: Studio
Semester: VIII Sem Year: 2022



Ecology

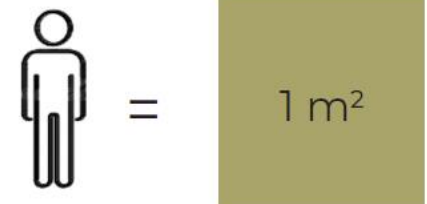
Landscape and Green Spaces

1) Calculating Area for Green Spaces and Miyawaki Forest

The amount of CO₂ exhaled from 1 person is replenished by 6 trees using that CO₂ for photosynthesis.

Considering that 2 of these trees are naturally occurring and we do not need to plant them in the city.

We need to plant for the 4 trees per person in the city. Using Miyawaki Method of Urban Forestation we can use 4 trees/m².



At Neighbourhood and City Scale

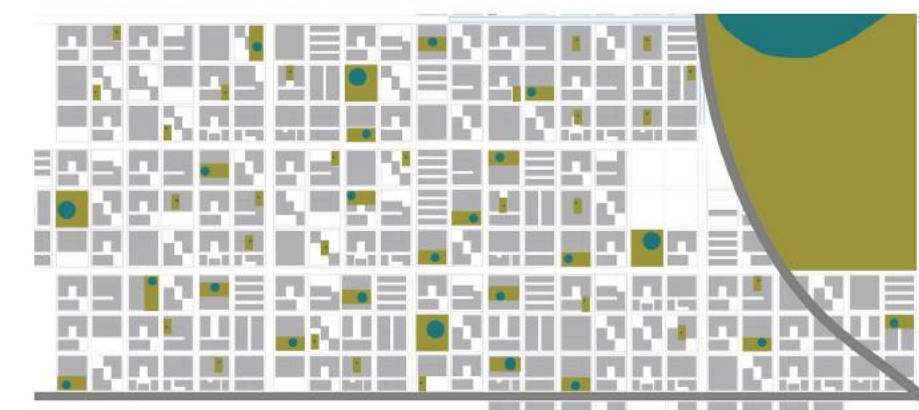
1) Rain water Harvesting in Open Spaces

All the parks and open public spaces should have access to atleast 2.5% of its area for rainwater storage.

2) Groundwater Recharge

Small and Medium sized parks should have percolation wells

Large city scale parks should have the percolation pond to collect cities storm water and allow to percolate.



3) Increasing Percolation Capacity of Surfaces

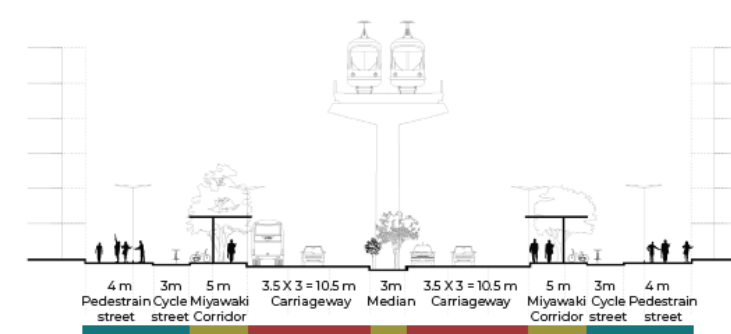
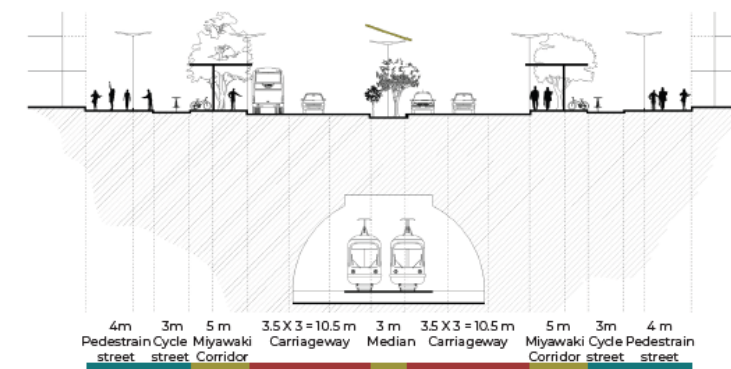
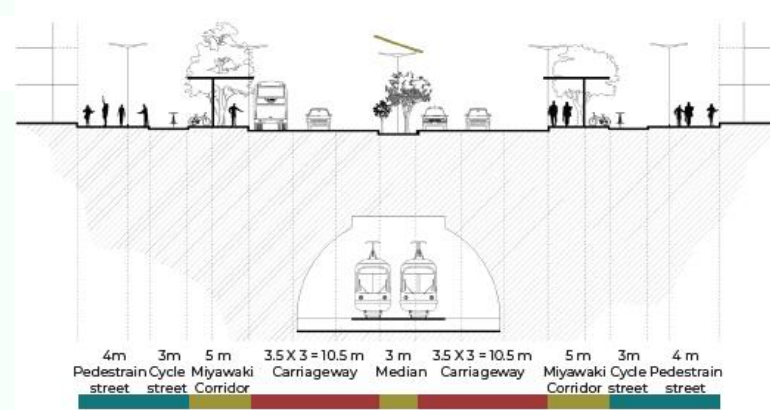
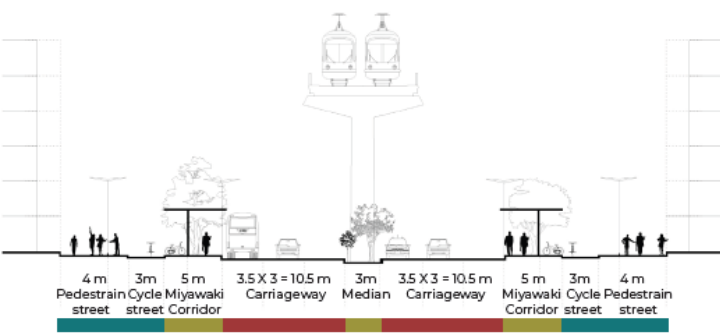
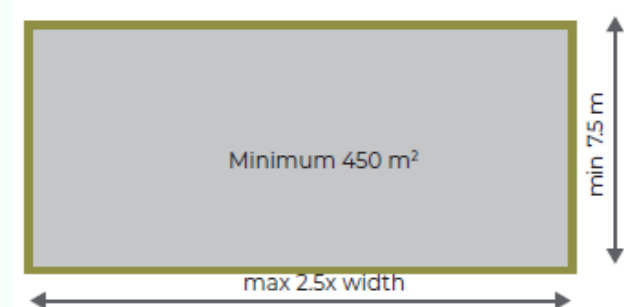
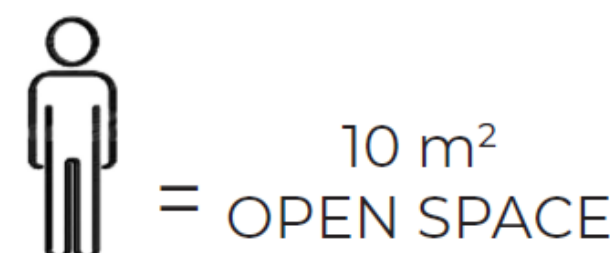
All the pedestrian walking ways needs to have green paver blocks which increase perviousness and allow a lot more groundwater discharge.



Spaces/ Types for UA



Open Spaces, Urban Agriculture and Ecology



Sizes and Hierarchy of open spaces

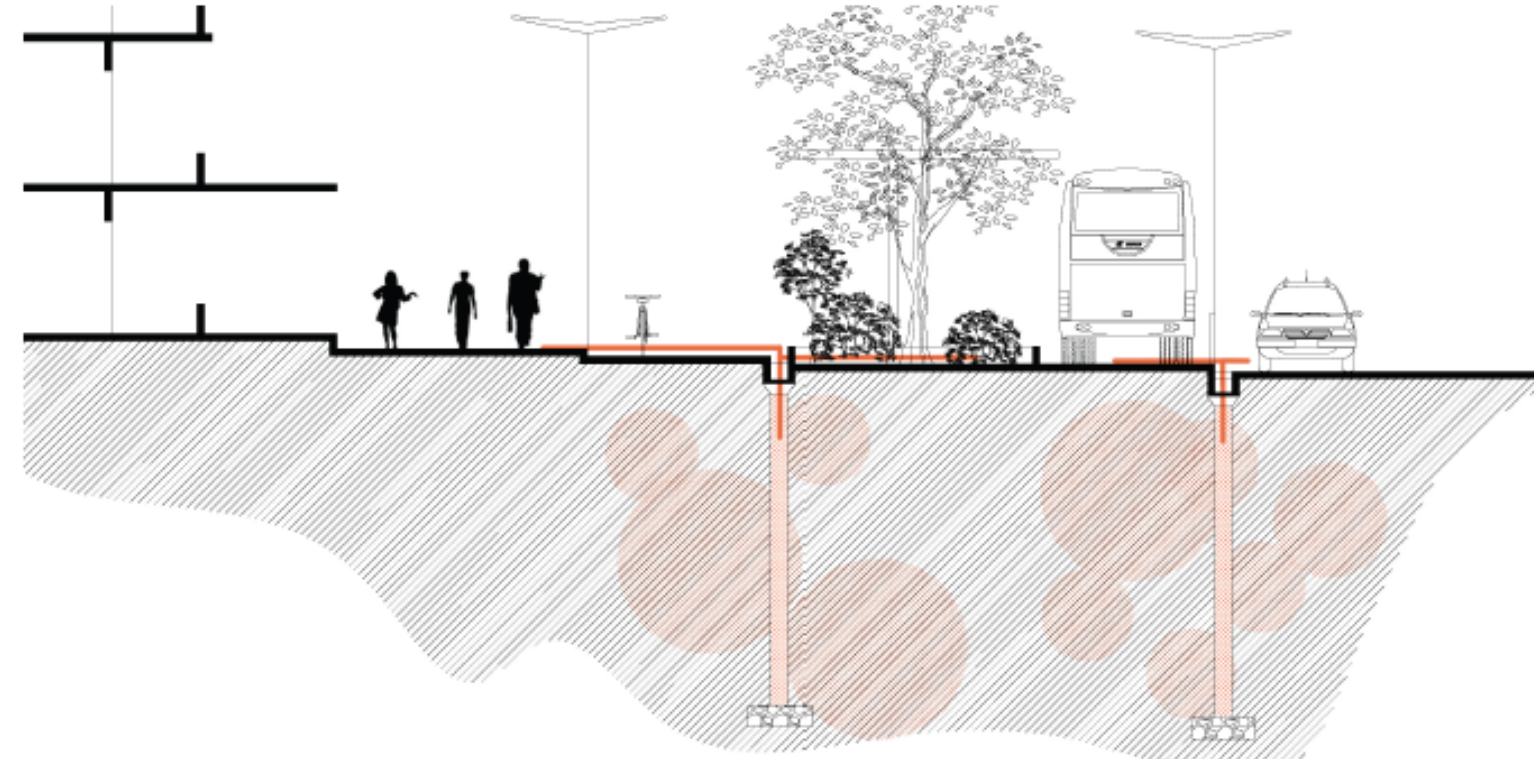
The basic approximate areas of open space according to their hierarchy are:

Housing Area Park
5000 m²

Neighbourhood Park
10000 m²

Community Park
50000 m²

* Any building line to be atleast 3 m away from the boundary of the community park



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P12_Knowledge Dissemination Series Prepared By Utsavi Shah

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