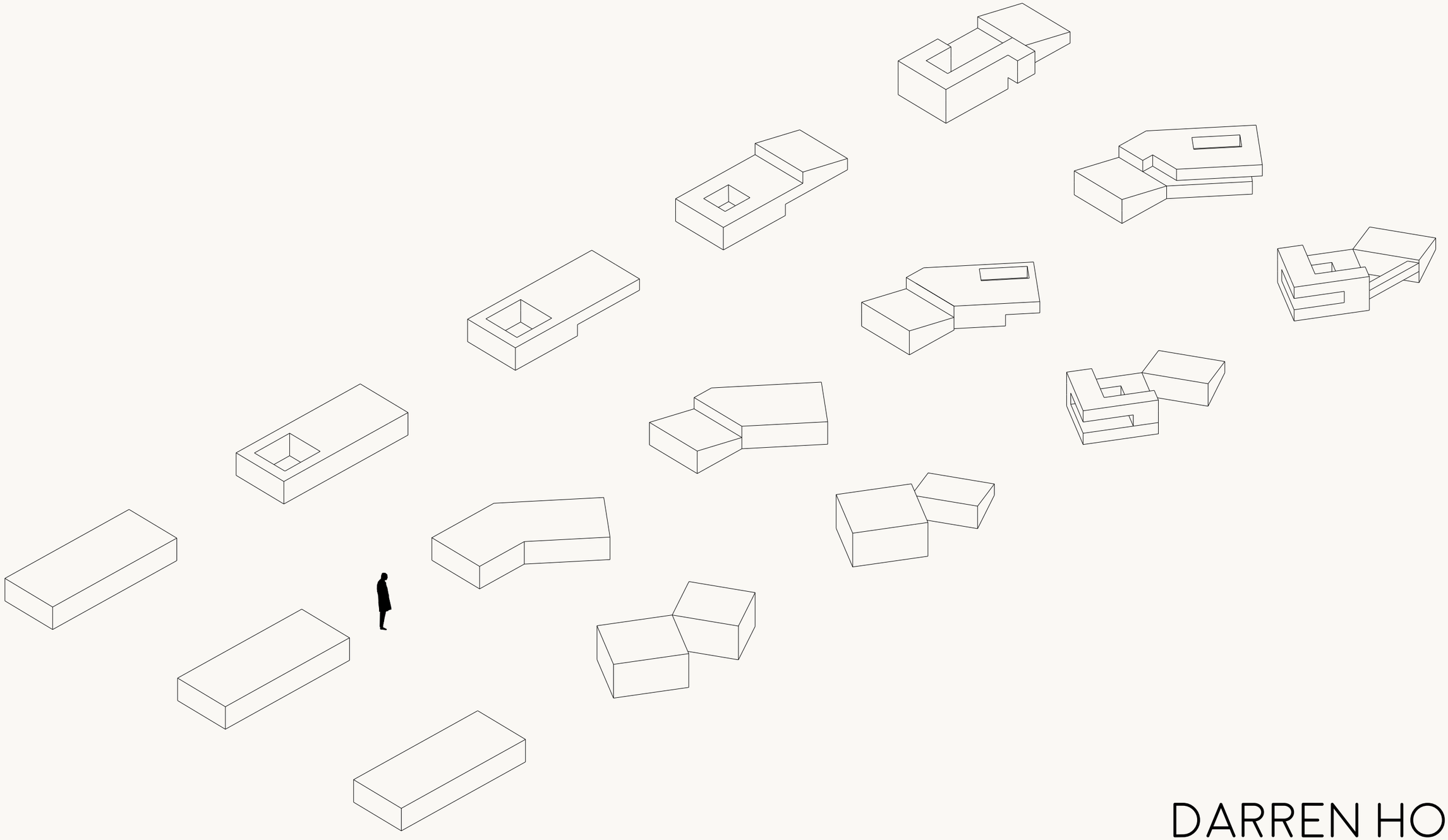


DARREN HO

Design Portfolio

TERM 7 & 8 CAPSTONE
PROJECT 50: SHS_TAMPINES
NORHT HEALTH PRECINCT
FEBRUARY 2020

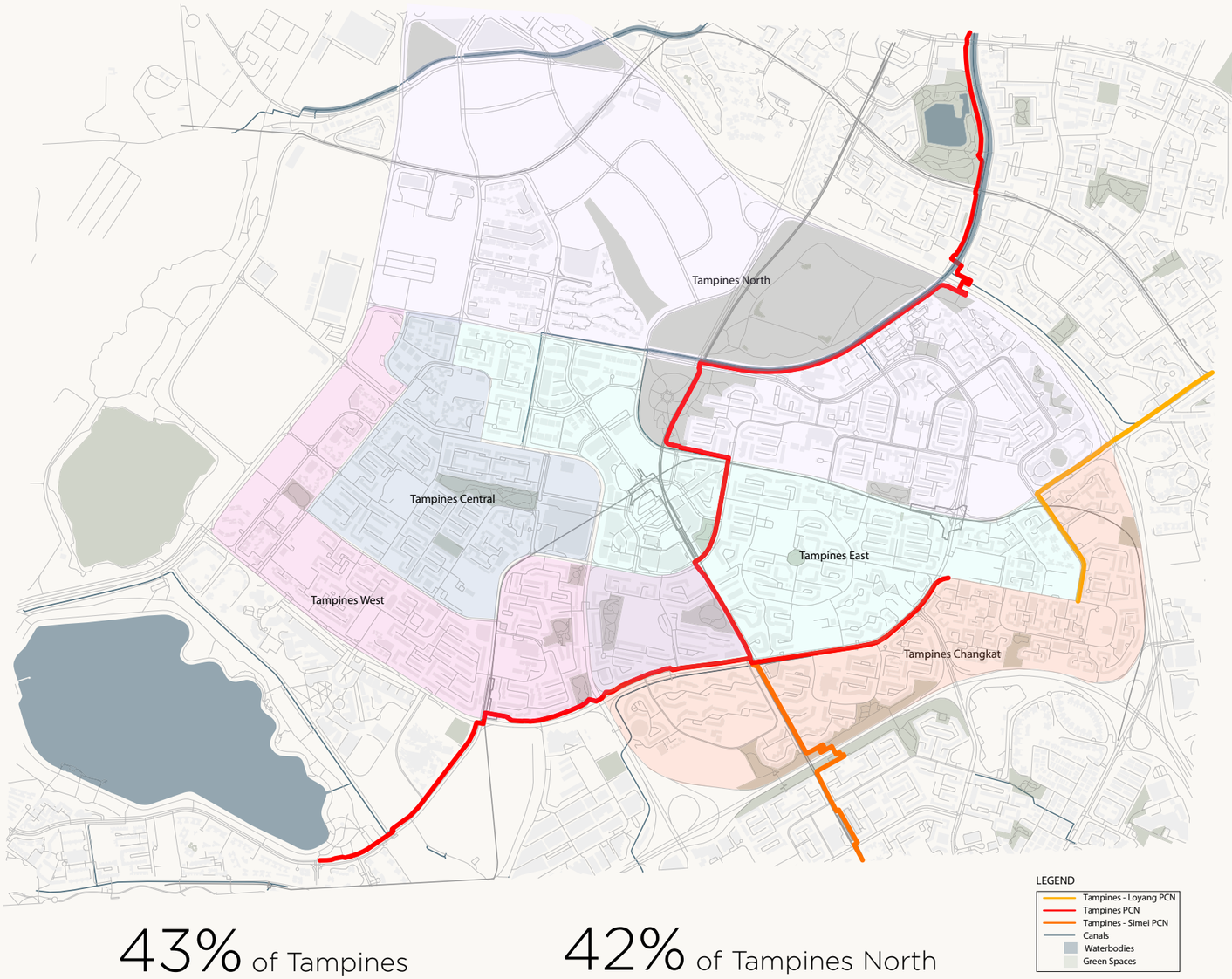
PROJECT BRIEF

In light of the new Tampines North Polyclinic being set to open late 2022 or early 2023, the team has taken this opportunity to conduct a study and collaborated in a project with SingHealth and CGH to engage and **activate the population to take charge and adopt healthier habits for better health.**

Healthy lifestyle is not just about avoiding illnesses and diseases, it is also about exercising regularly and developing the self-awareness of an individual's health status. However, current young adults, in the age range of 26 to 40, are **getting less active due to the lack of time and incentives**, and are also unaware of the benefits of health screening. Hence, this reflects a deep-rooted problem in our population which needs to be solved.

A demographic analysis was conducted on Tampines and Tampines North. Based on data from City Population, Tampines has a total population of 256,730 with close to half of the population, 43%, being middle-aged adults aged from 30 to 60 years old. On the other hand, Tampines North has a population of 2,460 with nearly half of the population, 42%, being young adults aged from 20 to 40 years old. This indicates that Tampines North has in general a younger age demographic relative to the Tampines precinct.

Hence, the target audience for the design solution is young adults in the age range of 20 to 40 years old. However, the design solution will also be including the other age groups as part of the development of the playbook.



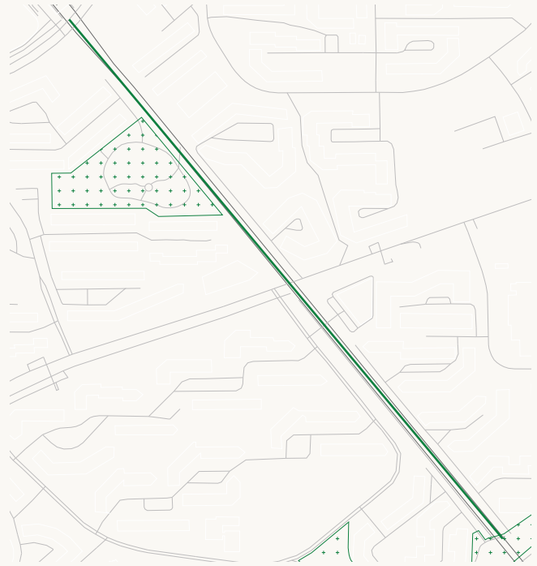
43% of Tampines population is middle aged (30 - 60 years old)

42% of Tampines North population are young adults (20 - 40 years old)

SPATIAL CHARACTERISTICS
DIFFERENT SCALES OF PARK SPACES

	NEIGHBOURHOOD	SUB - NEIGHBOURHOOD	PRECINCT
PARKS	Tampines Central Park Sun Plaza Park Tampines Eco Green	Tampines Neighbourhood Park Tampines Community Plaza	Tampines Tree Garden Tampines Leisure Park Tampines Green Park

	900M	1800M
PARK CONNECTORS	Tampines - Simei Park Connector	Tampines - Loyang Park Connector

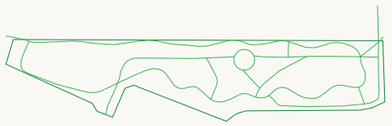


Tampines - Simei PCN

- 944 m

NEIGHBOURHOOD

At Neighbourhood scale, parks are accessible to larger scale community amenities and are located close to a feature point (draw factor) such as Tampines Hub.



Tampines Central Park

- 33980 m2
- 62.4% Shaded

SUB - NEIGHBOURHOOD

Parks at the Sub - Neighbourhood scale are further from the neighbourhood centre and closer to the periphery of the town. There are no draw factor around these parks and they are relatively closer to the larger amenities within Tampines.

Tampines Neighbourhood Park

- 3865m2
- 30.7% Shaded

PRECINCT

Precinct - scale parks are more prevalent and are typically sandwiched between residential blocks. The amenities available are mainly the basic fitness corners located around the HDB blocks.

Tampines Green Park

- 19308 m2
- 68.5% Shaded

PARK CONNECTORS

Park Connectors are often situated near neighbourhoods and serve as connection splines between neighbourhoods toward the town centre, often being landscaped to encourage people to use it as a jogging or cycling path

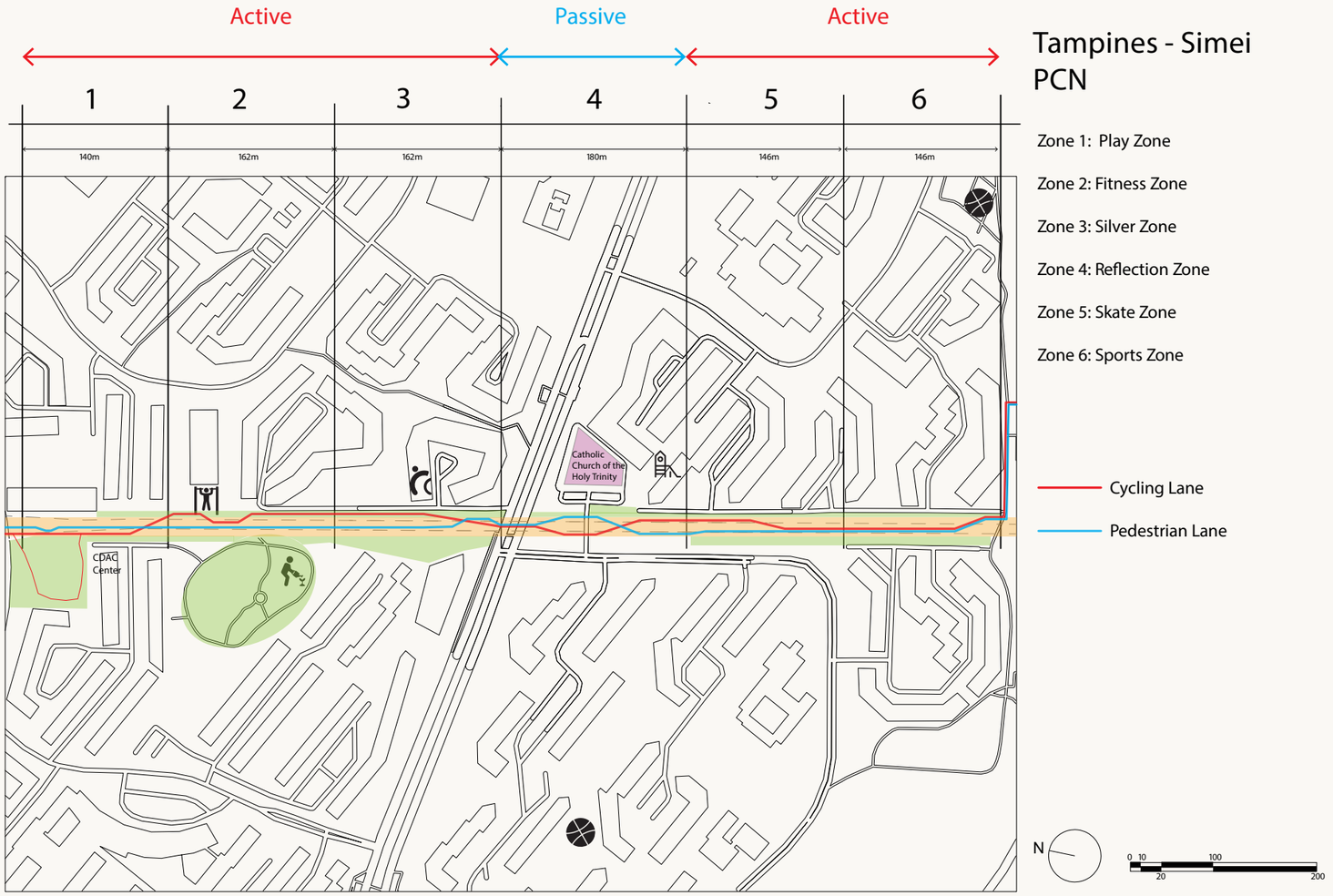
TAMPINES - SIMEI PARK CONNECTOR

PASSIVE AND ACTIVE

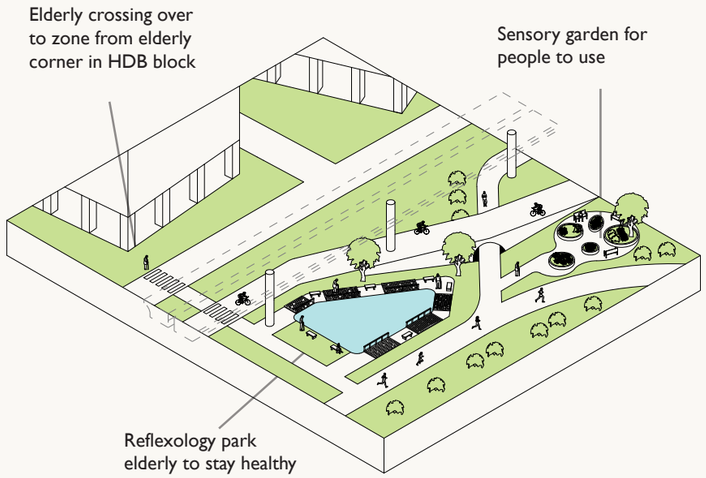
The level of activity that happens within a particular part of the space under the viaduct would relate to its surrounding context, such as the complementary activities that exist near the space. As such, the entire stretch of space is divided into active and passive zones, where active zones relate to places where residents can do activities related to healthy living, while passive zones are places where people can rest and relax. especially after they have exercised at the active zones.

THEMATIC ZONING

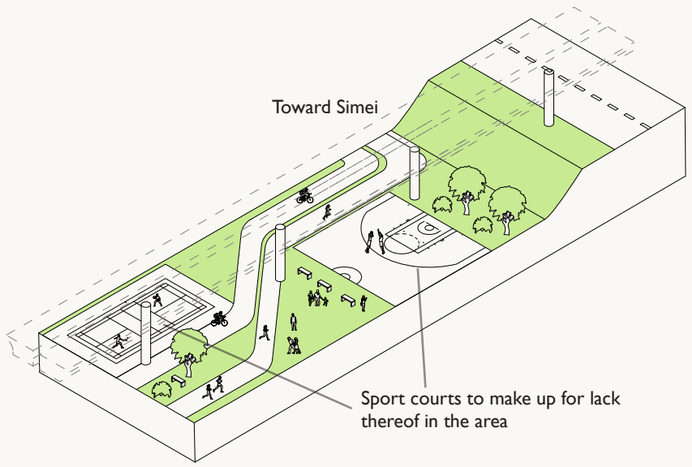
To further specify the type of activities which happen within the active and passive zones, the spaces are further split into smaller zones, with each zone corresponding to a specific theme. This enables a range of unique activities that happens throughout the spline to prevent monotony as residents move through the space, and conversely encourage them to go the entire stretch and experience different environments as they transit between zones.



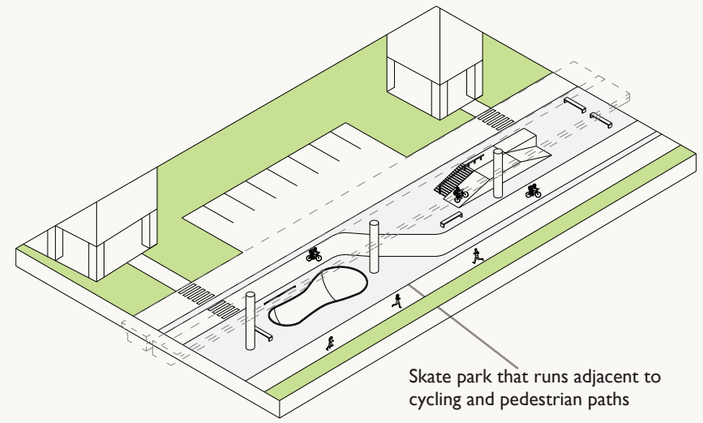
PLACEMAKING - DIFFERENT ZONES



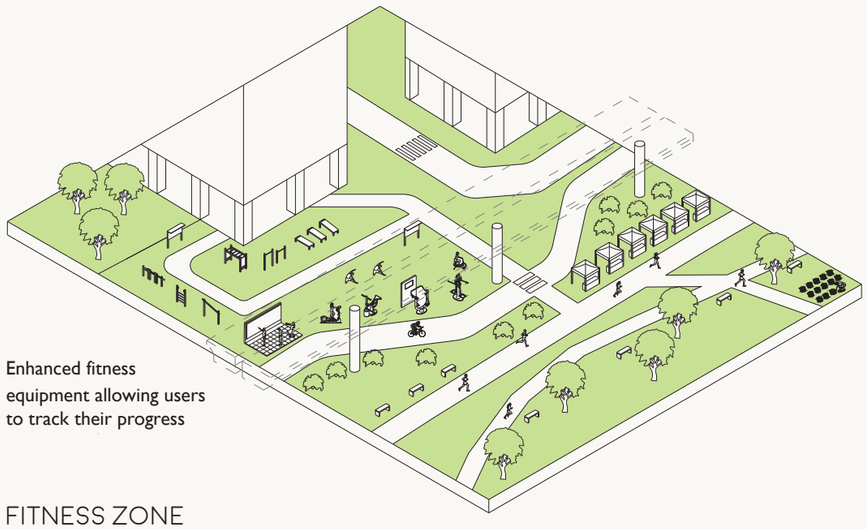
SILVER ZONE



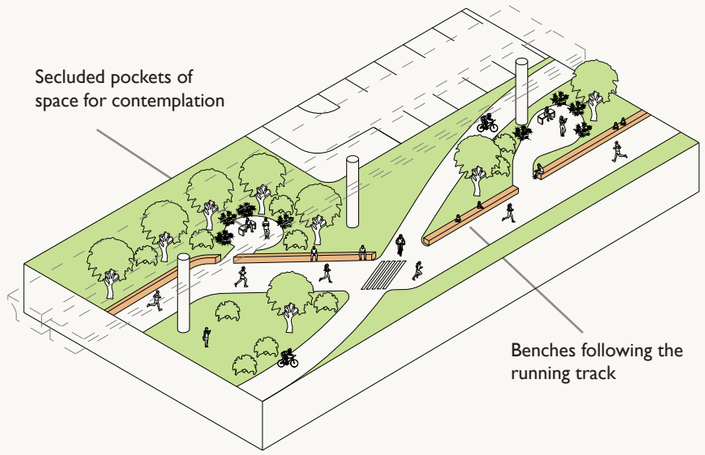
SPORT ZONE



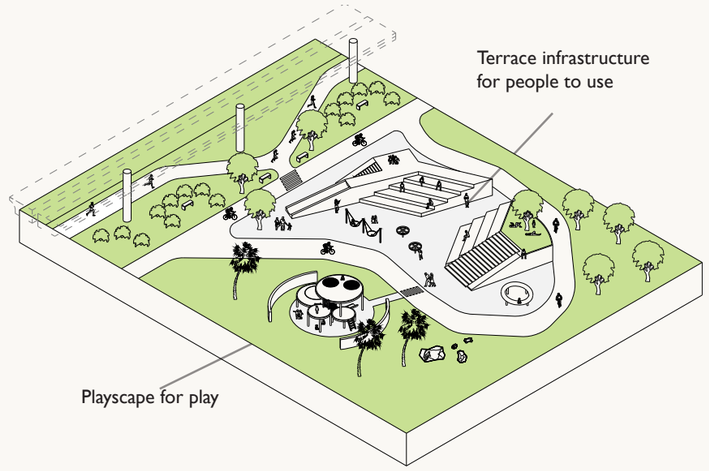
SKATE ZONE



FITNESS ZONE



REFLECTION ZONE

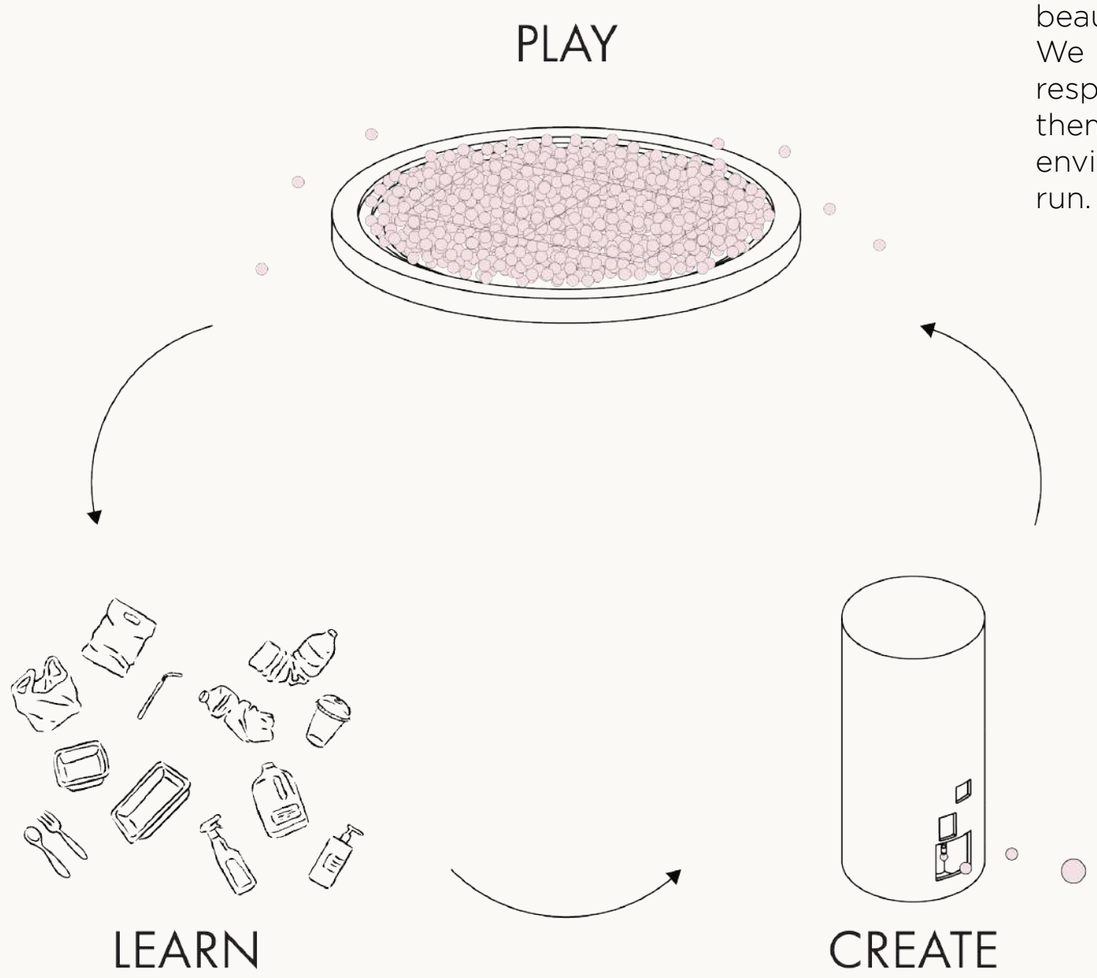


PLAY ZONE

TERM 8 SUSTAINABLE OPTION STUDIO 2
YOUTH - TOPIA
JUNE 2020

PROJECT INTENT

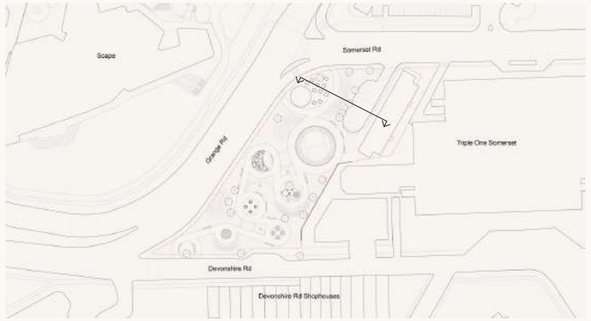
The project aims to create an integrated space combining education and play by exposing youth to the various recycling processes and how the recycled waste can be converted into useful and beautiful material that they can work and play with. We hope to inculcate a sense of environmental responsibility in the youth that they can bring with them for life and even become ambassadors for the environment within their respective fields in the long run.

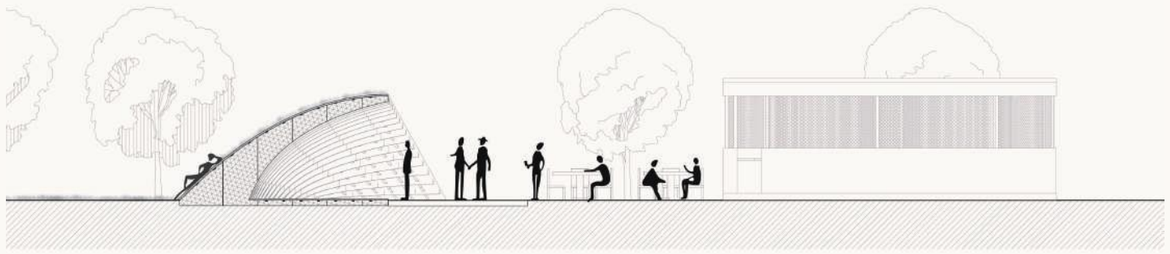


SITE PLAN

Creating a journey through the site that weaves around different programmes that varies in energy (with more active programmes situated closer to the busy Grange Road junction, and quiter elements closer to the Devonshire Road residential area

SECTION 1

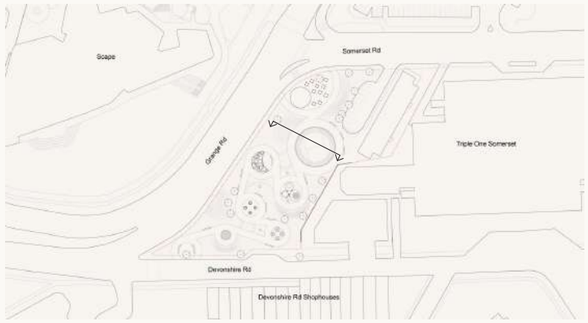


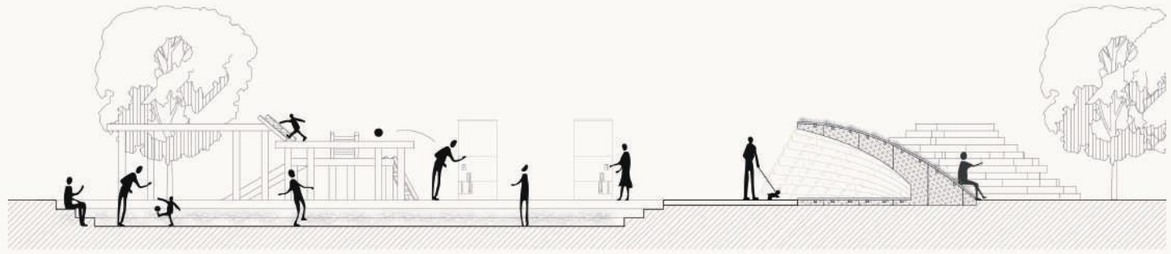


0 2 5 10

SCALE BAR 1:100

SECTION 2





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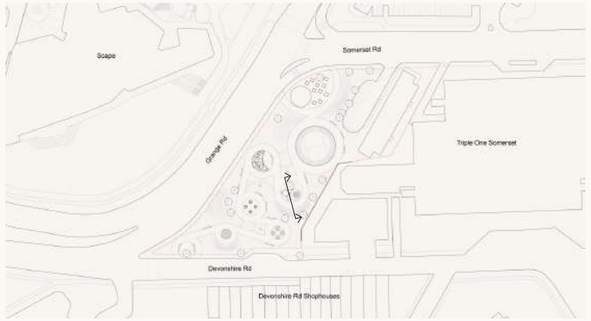

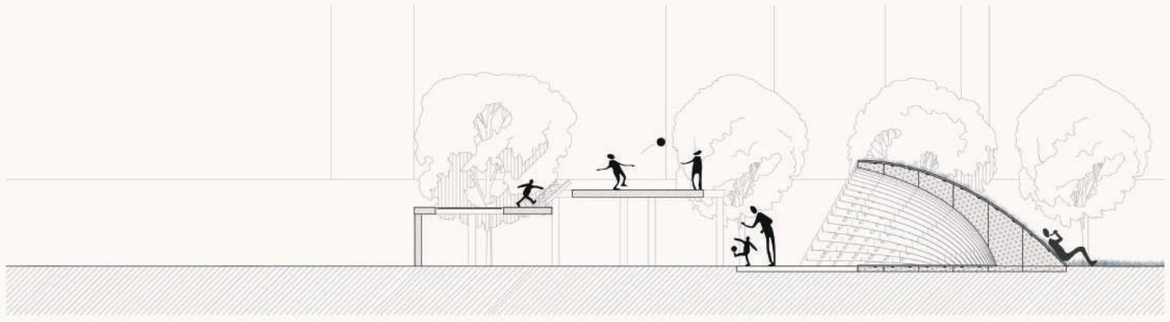

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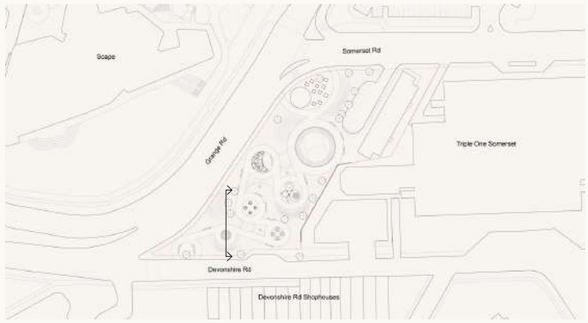
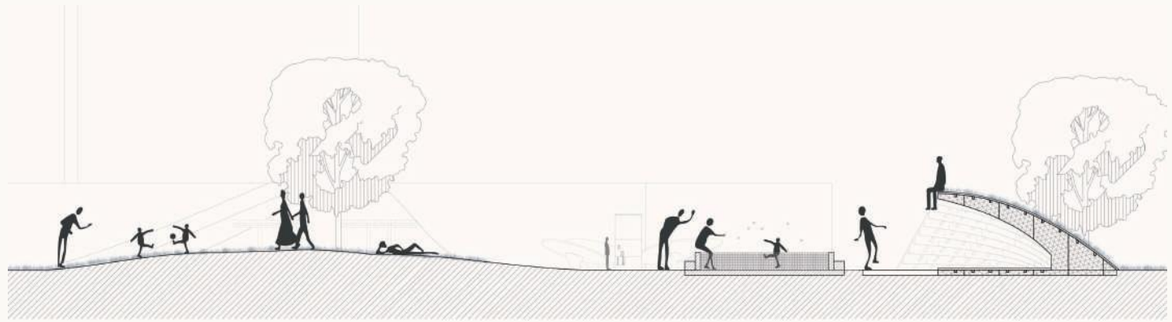
SECTION 4





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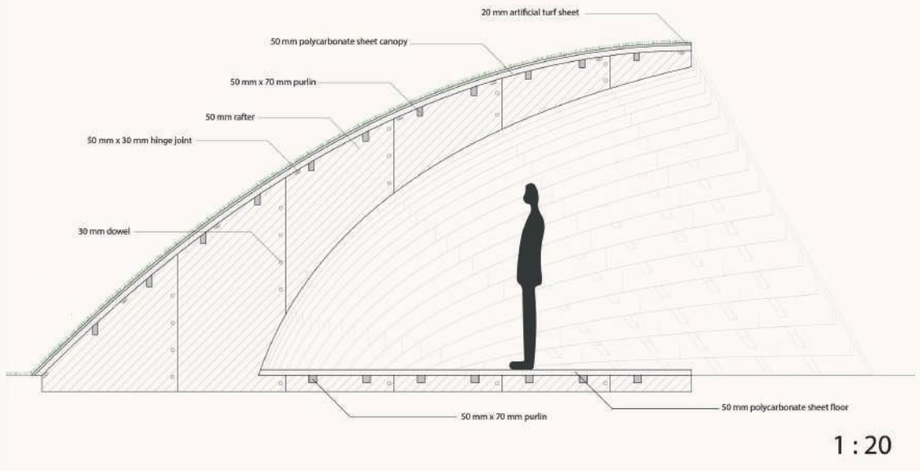
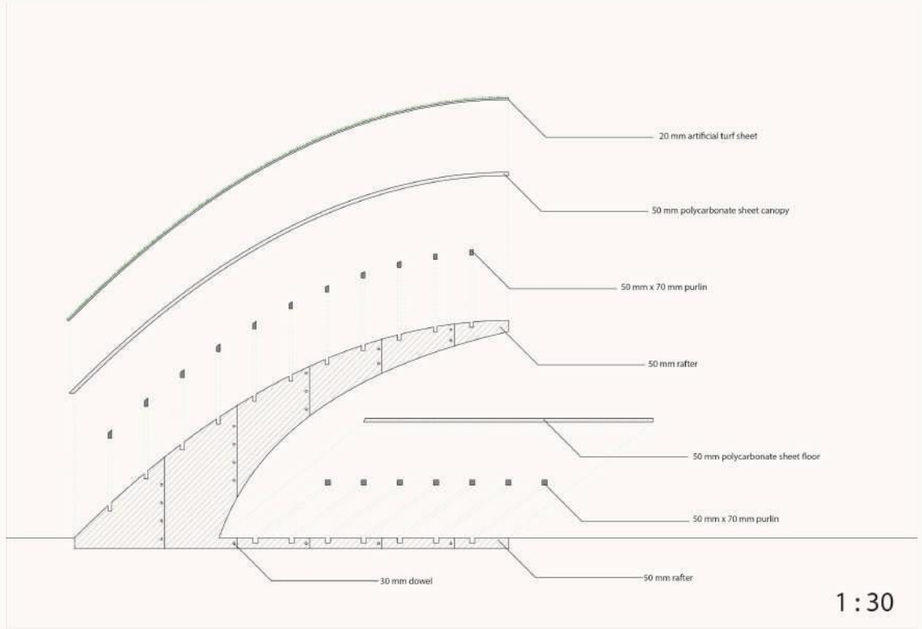
SCALE BAR 1:100

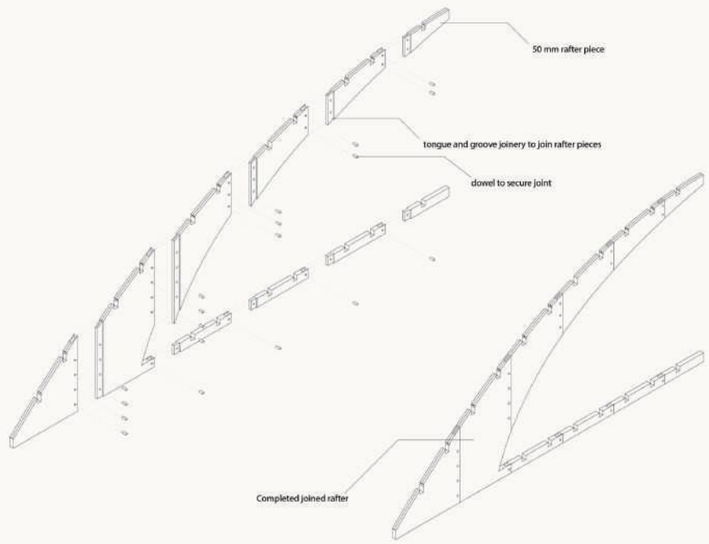
CONSTRUCTION DETAILS



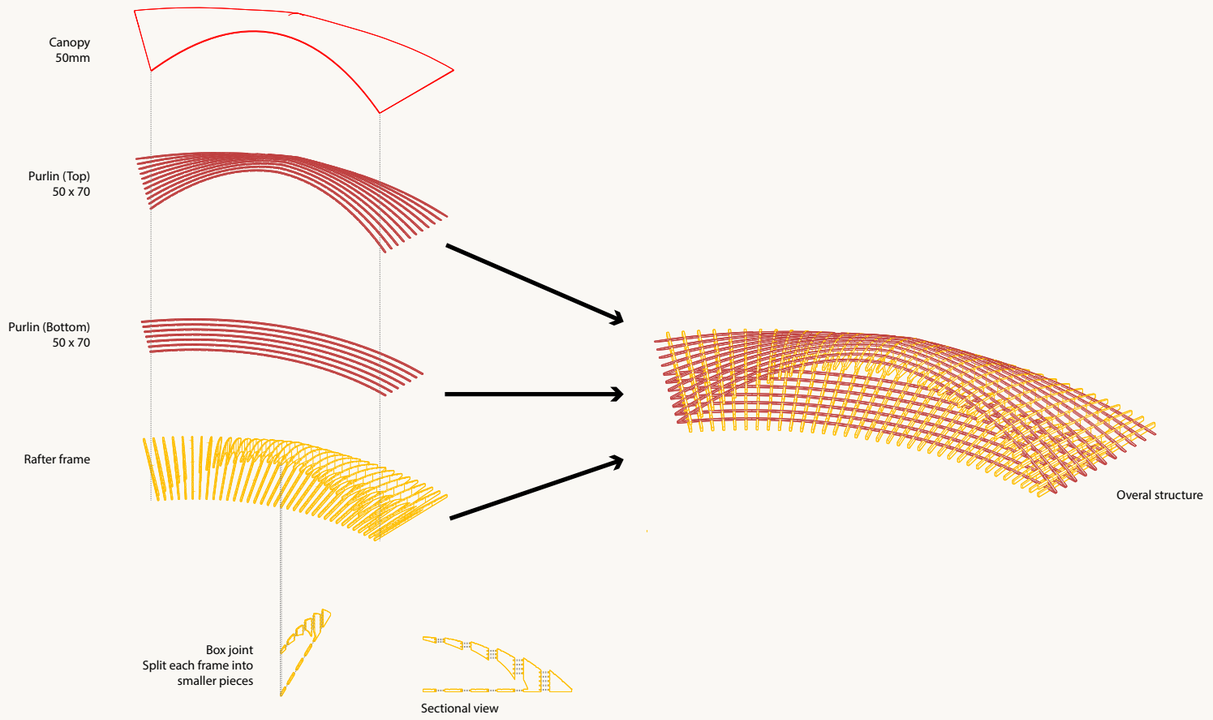
Slope Section



Exploded Section



Rafter

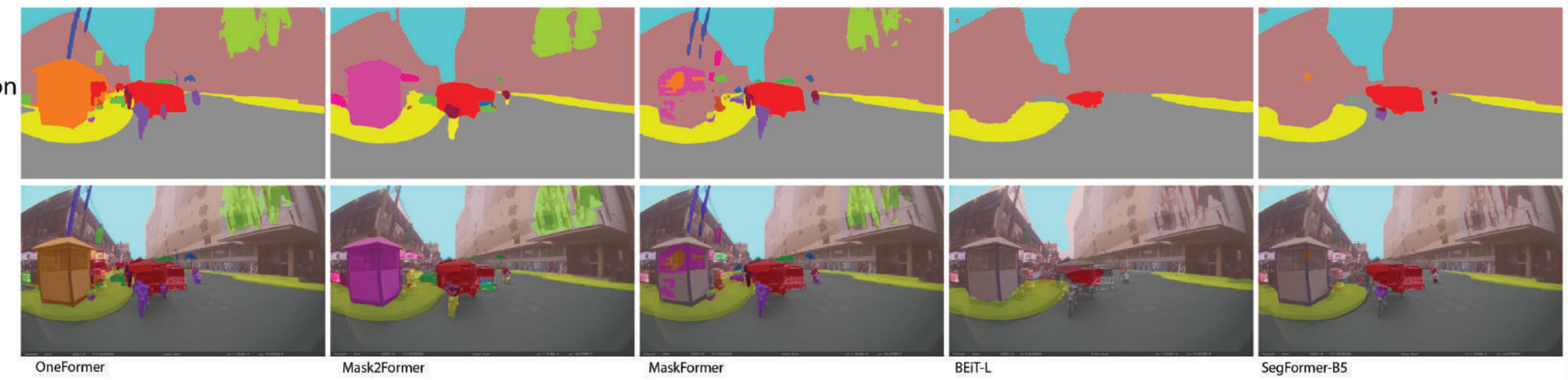


Master of Science in Urban Science, Policy and Planning (MUSPP) 2023

Static Mapillary image

Image segmentation results

Image overlay



Compared diffferent state of the art, **semantic segmentation models** to identify which worked best for Southeast Asian streets.

Quantifying physical streetscape features by **extracting semantic information** of the streets.

Streetscape features (e.g. road, sidewalk, people, etc.) are classified by the model accordingly by **colour**.

Master of Science in Urban Science, Policy and Planning (MUSPP) 2023

Static Mapillary image

Image segmentation results (OneFormer)

Image segmentation results with class percentage values (OneFormer)

Class	%
Road	29.26
Sky	19.78
Tree	18.85
Building	11.81
Base	10.00
Wall	4.86
Sidewalk	2.66
Minibike	1.35
Person	0.54
Chair	0.40
Pole	0.11
Signboard	0.09
Plant	0.07
Streetlight	0.06
Car	0.06
Box	0.04
Awning	0.03
Table	0.01
Rock	0.01

The best fit model was selected to perform semantic segmentation on the rest of the image dataset (total: ~9,000 streetview images).

Percentange values of streetscape features within the street view image could be calculated.

Can be used to quantify physical streetscape features and reinforce existing urban studies methods.

Goal: To access the efficacy of current semantic segmentation models in Southeast Asian streets