

DARREN HO

Design Portfolio



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

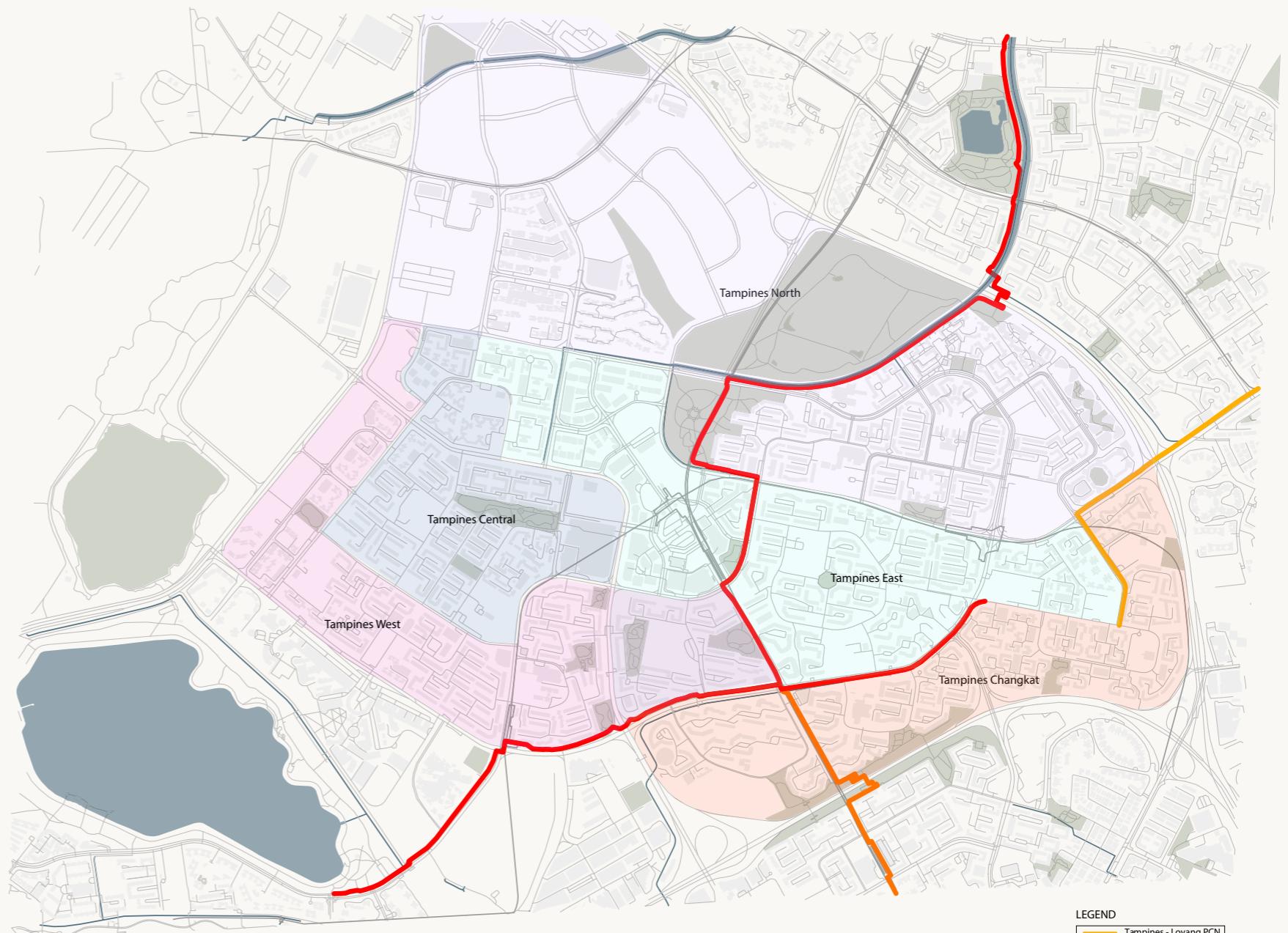
PROJECT BRIEF

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)



LEGEND
Tampines - Loyang PCN
Tampines PCN
Tampines - Simei PCN
Canals
Waterbodies
Green Spaces

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

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.



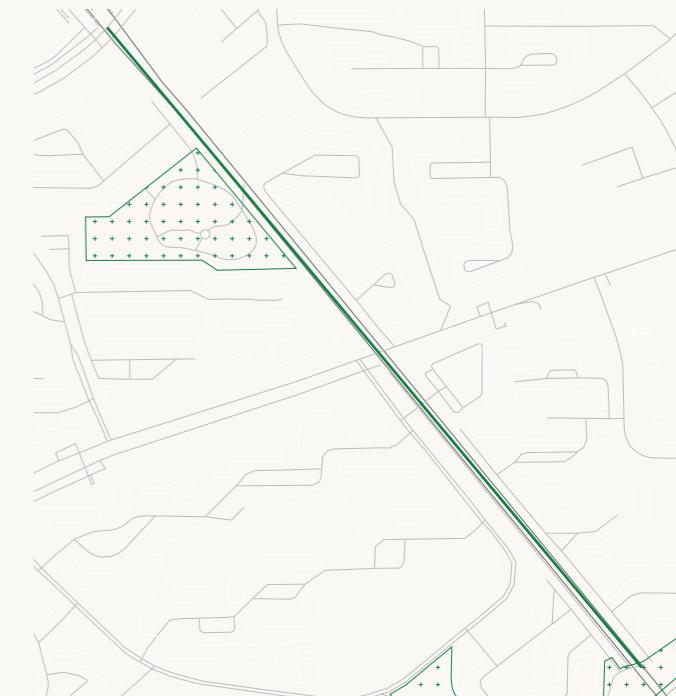
Tampines Neighbourhood Park
- 3865m²
- 30.7% Shaded

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



Tampines - Simei PCN
- 944 m

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

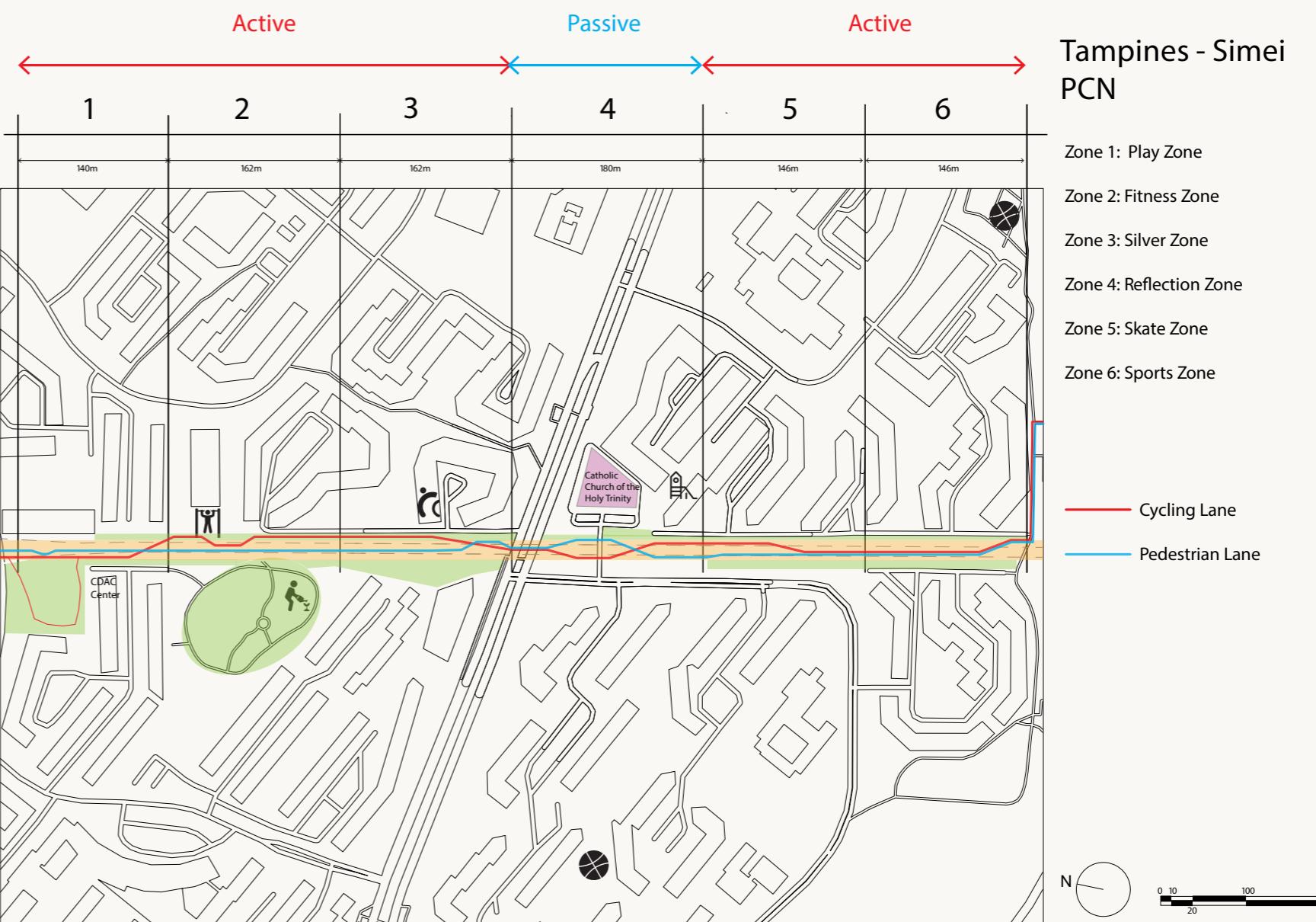


PASSIVE AND ACTIVE

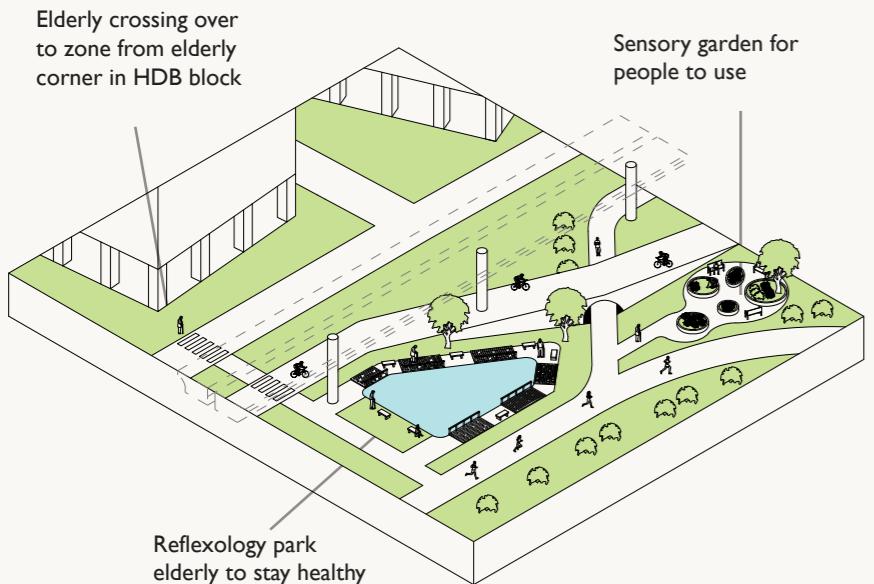
The level of activity that happens within a particular part of the space under the viaduct would relate to its surrounding context, such as the complementary activities that exist near the space. As such, the entire stretch of space is divided into active and passive zones, where active zones relate 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

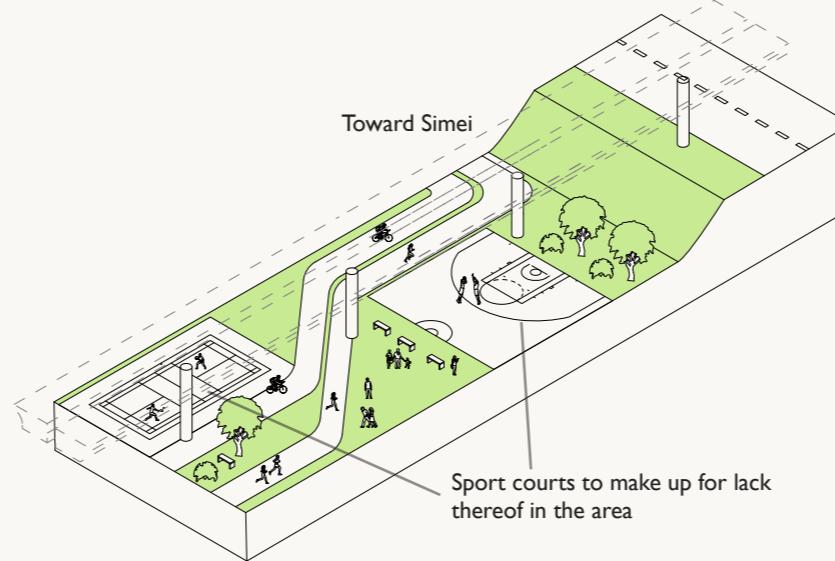
To further specify the type of activities which happen within the active and passive zones, the spaces are further split into smaller zones, with each zone corresponding to a specific theme. This enables a range of unique activities that happens throughout the spine to prevent monotony as residents move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



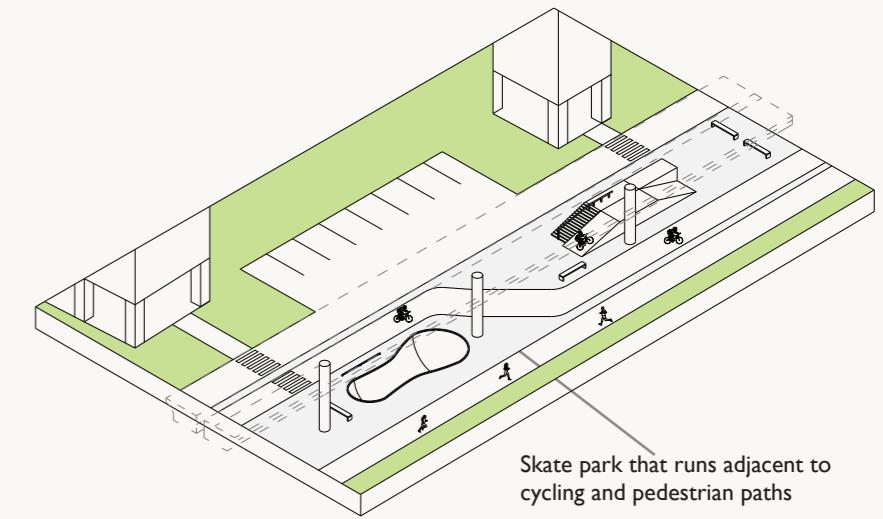
PLACEMAKING - DIFFERENT ZONES



SILVER ZONE



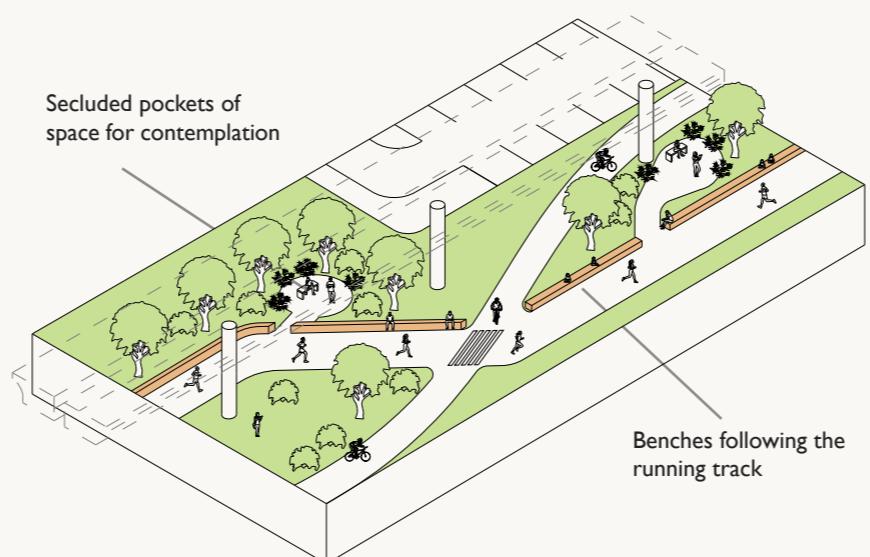
SPORT ZONE



SKATE ZONE



FITNESS ZONE



REFLECTION ZONE

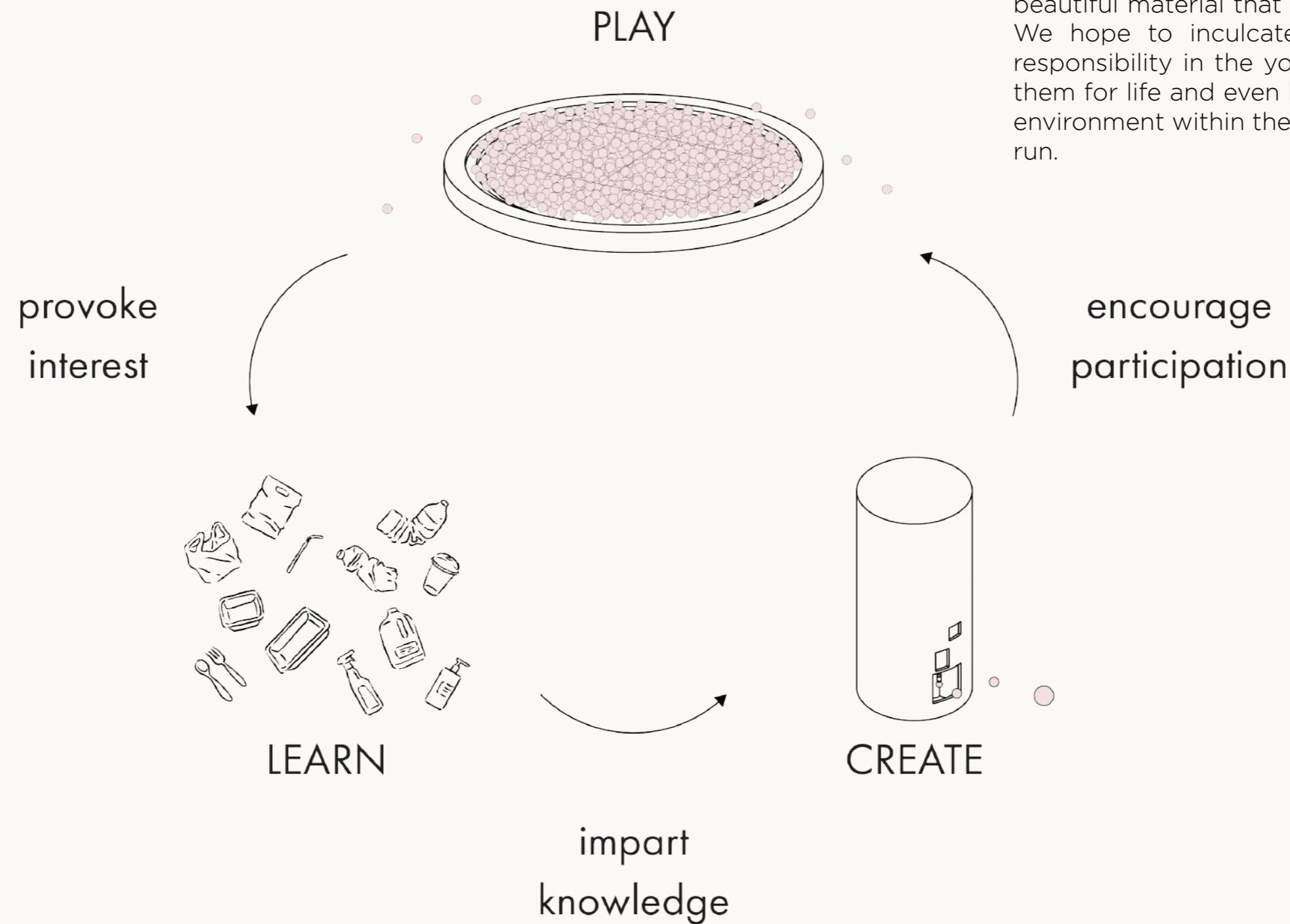


PLAY ZONE



TERM 8 SUSTAINABLE OPTION STUDIO 2
YOUTH - TOPIA
JUNE 2020

PROJECT INTENT



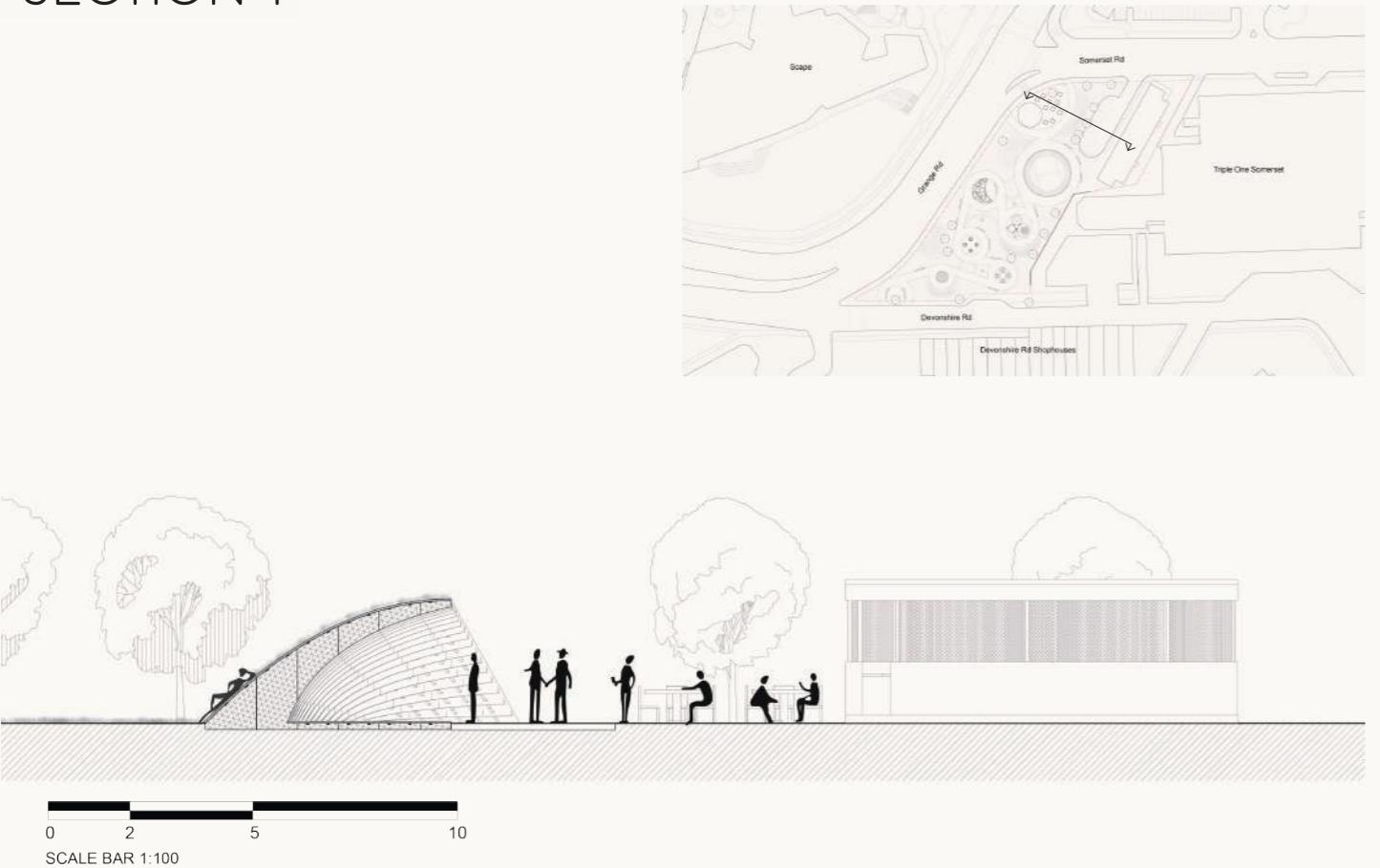
The project aims to create an integrated space combining education and play by exposing youth to the various recycling processes and how the recycled waste can be converted into useful and beautiful material that they can work and play with. We hope to inculcate a sense of environmental responsibility 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)

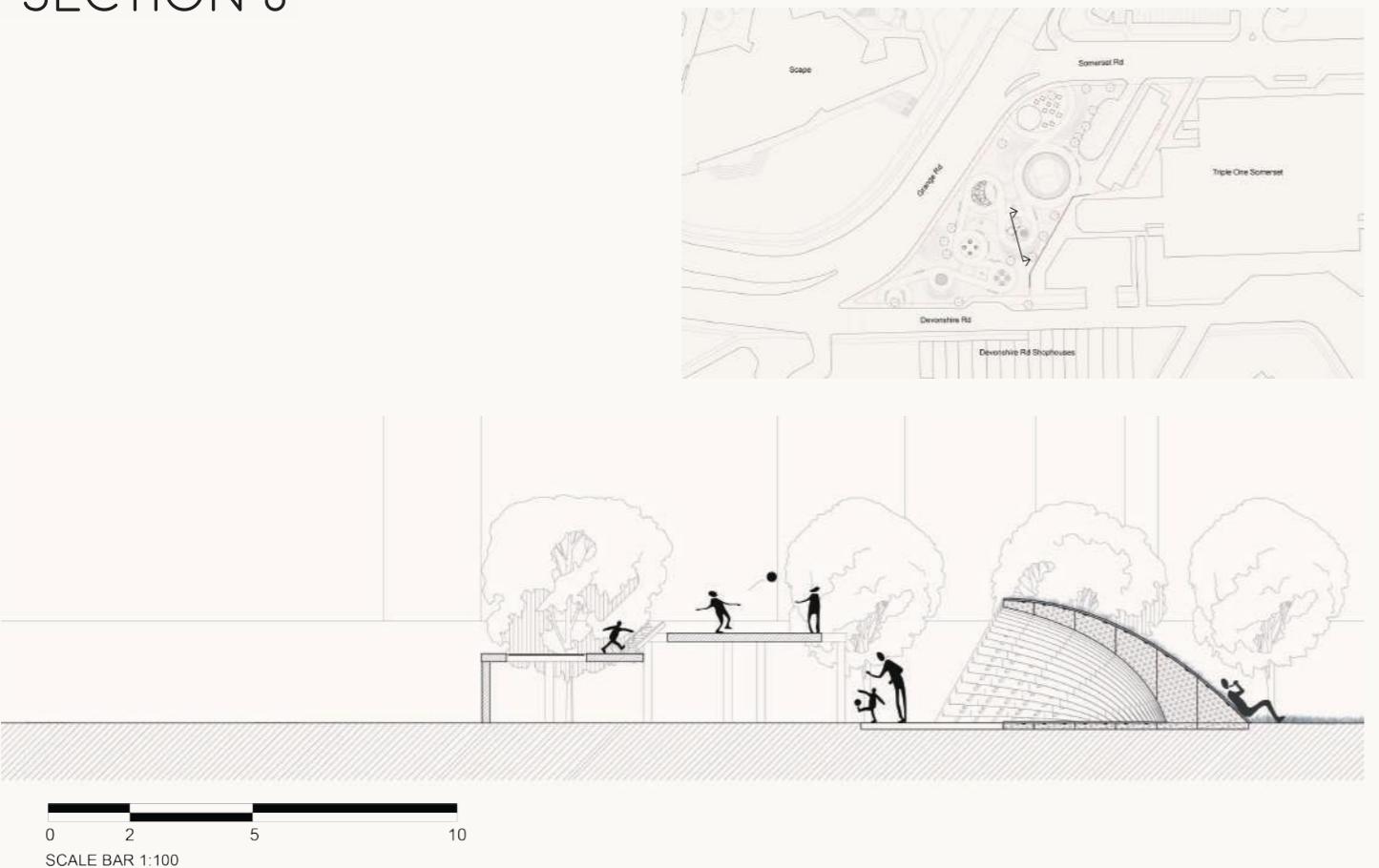
SECTION 1



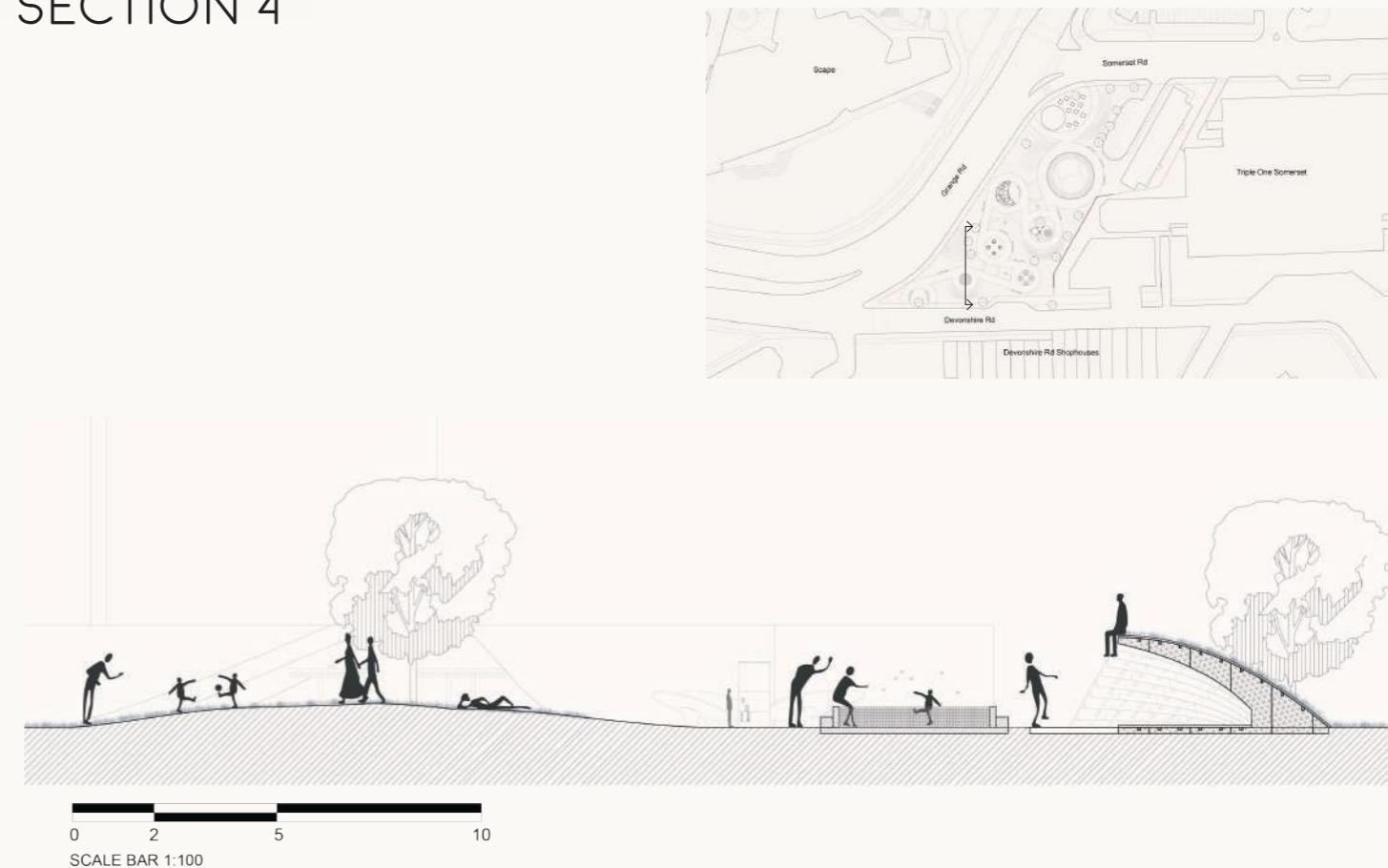
SECTION 2



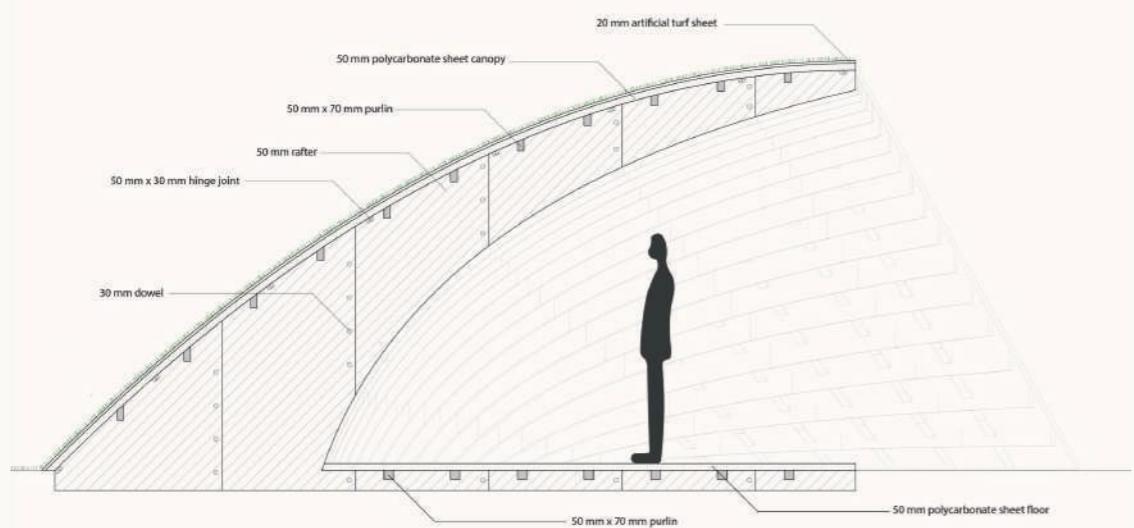
SECTION 3



SECTION 4

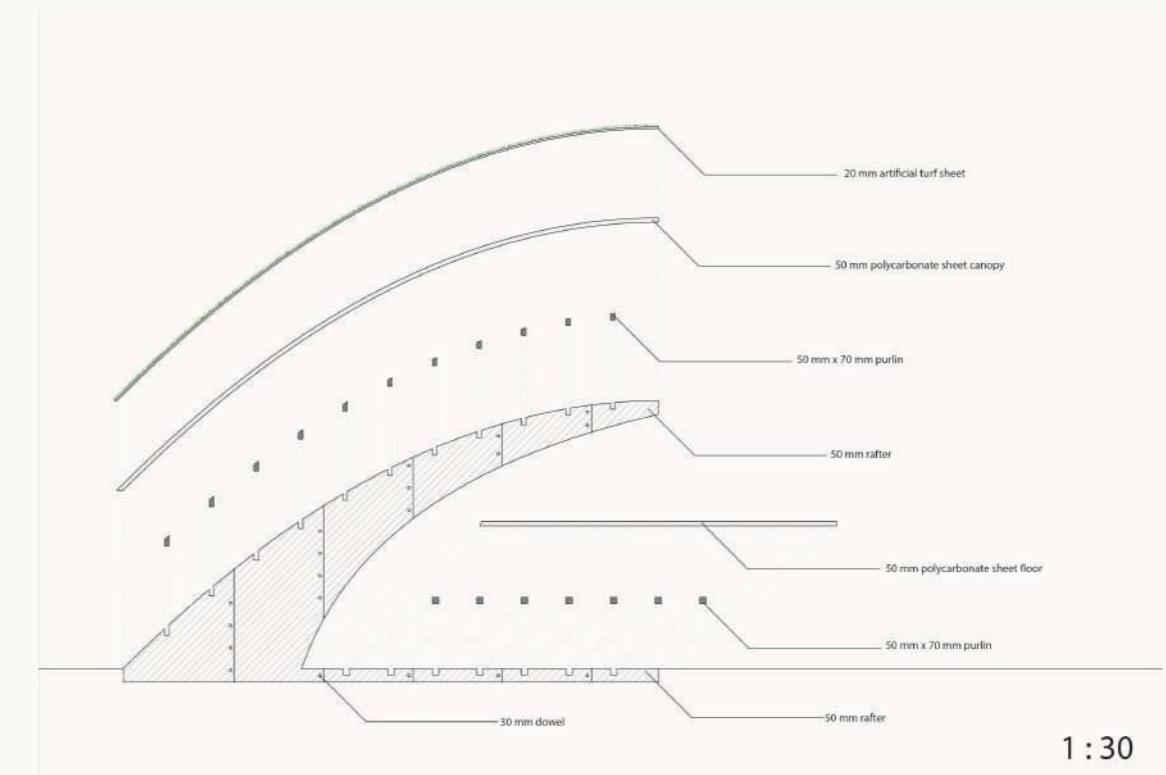


CONSTRUCTION DETAILS

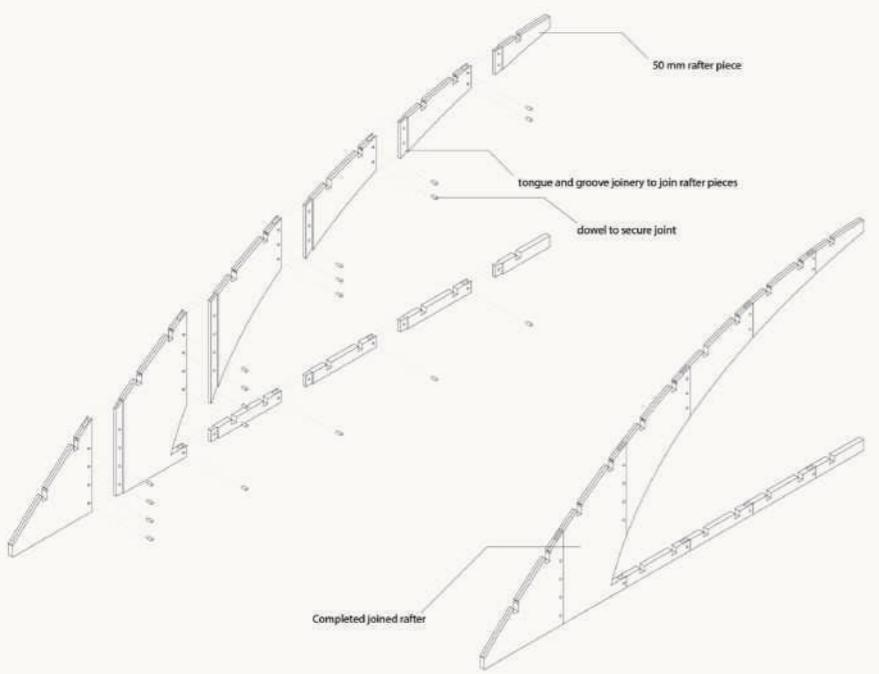


1:20

Slope Section

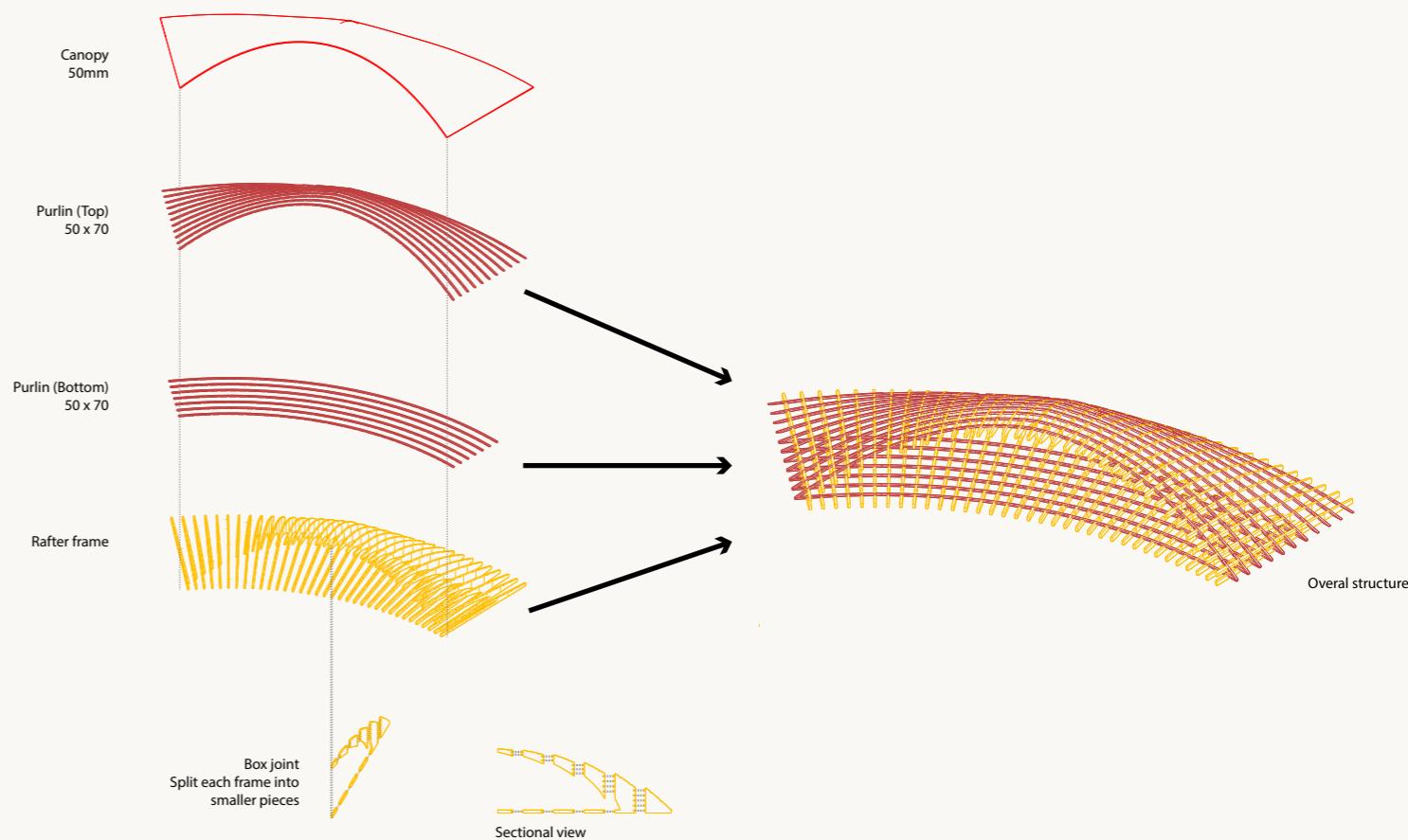


Exploded Section



1:30

Rafter





AI IN HEALTH: URBAN INTERVENTION

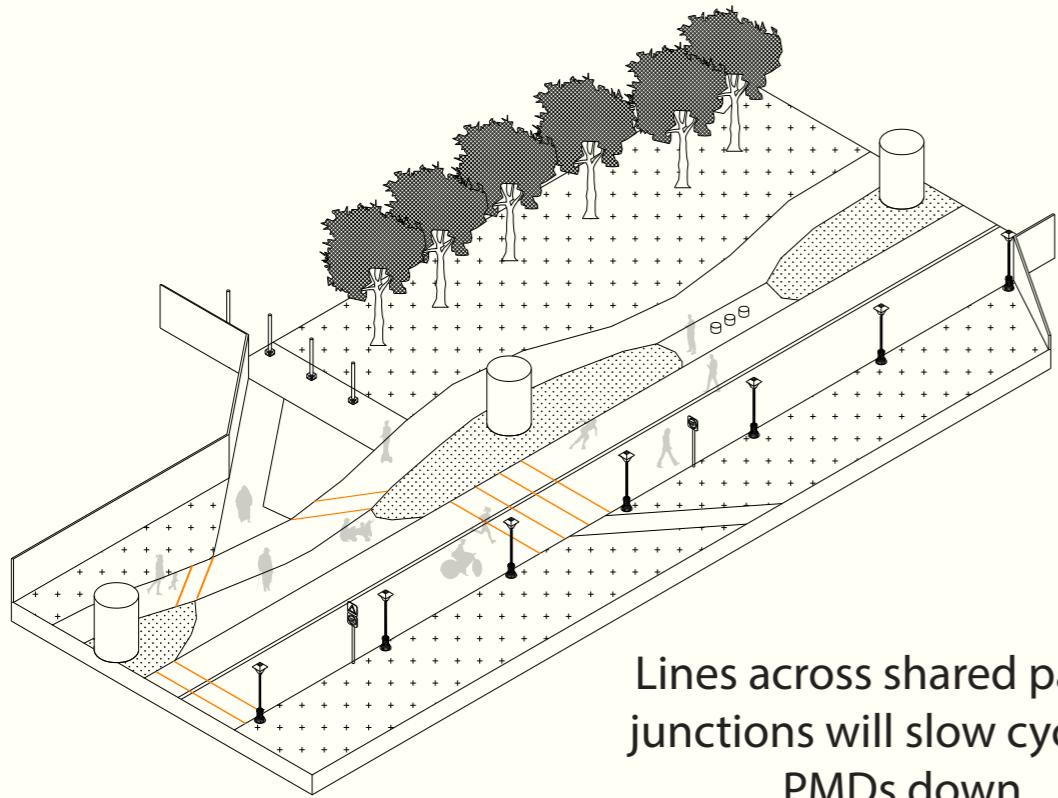
LKYCIC Ageing Urbanism

Prototyping Phase
Dec 2020 - July 2022

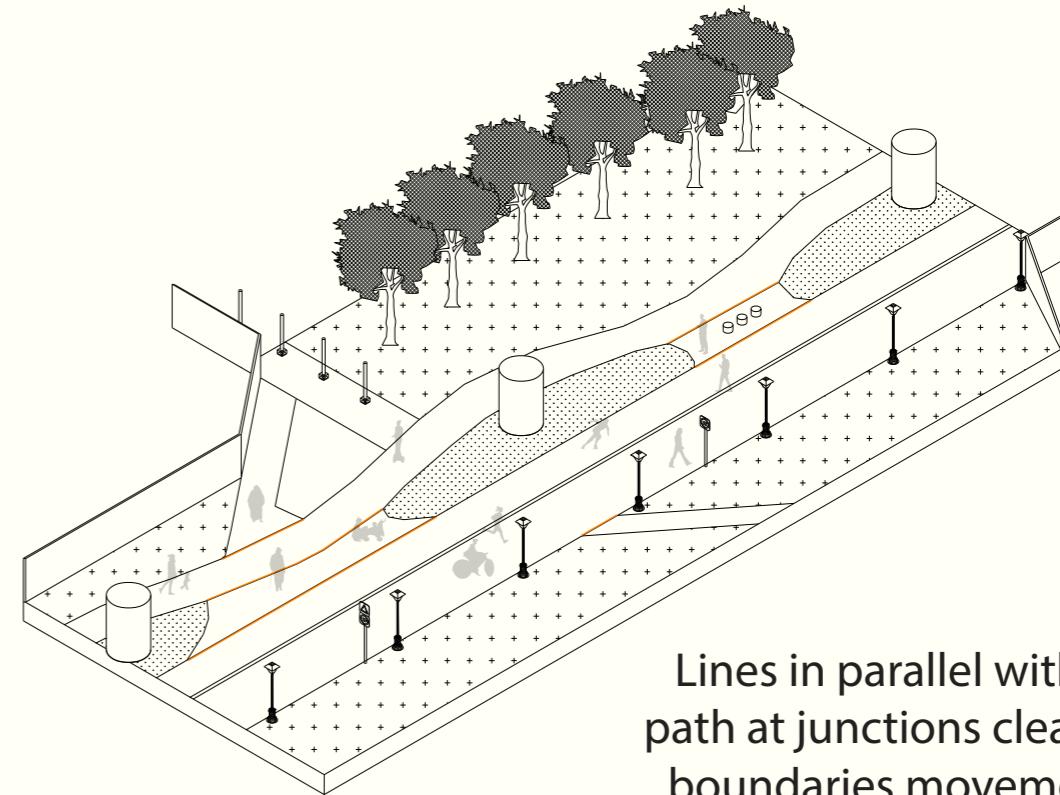


This prototyping phase aims to fulfill the following purpose and objectives:

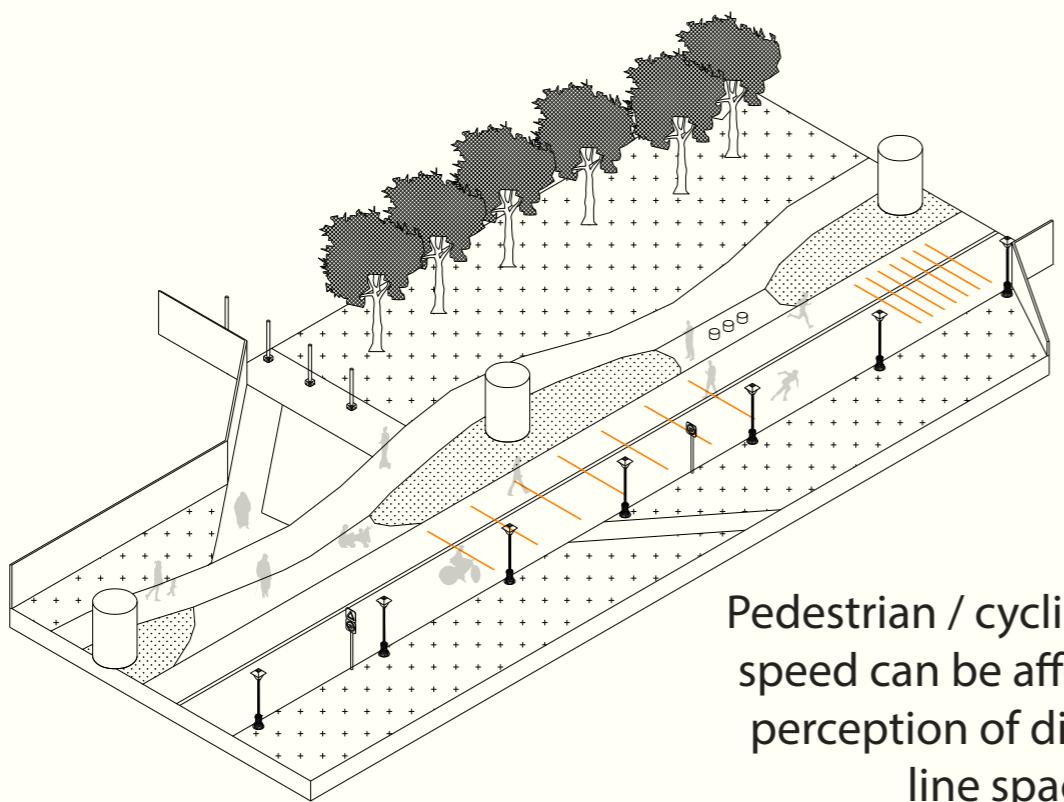
- i) To design prototypes considering implementable urban design and planning recommendations to improve walkable environment in Tampines
- ii) To fabricate, make, and install small-scale design prototypes at Tampines-Simei MRT viaduct park connector network.
- iii) To assess design prototypes with reference to their design ideas/ objectives, usefulness, and feasibility of scaling up.



Lines across shared path at junctions will slow cyclists / PMDs down



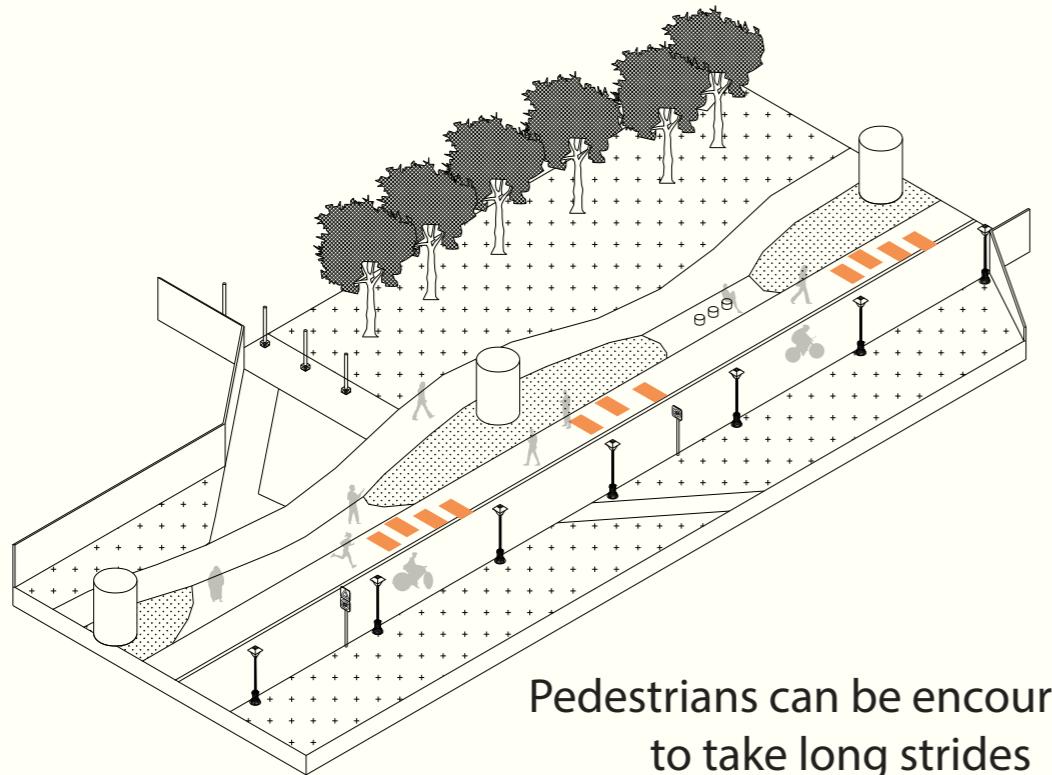
Lines in parallel with shared path at junctions clearly define boundaries movement / rest spaces



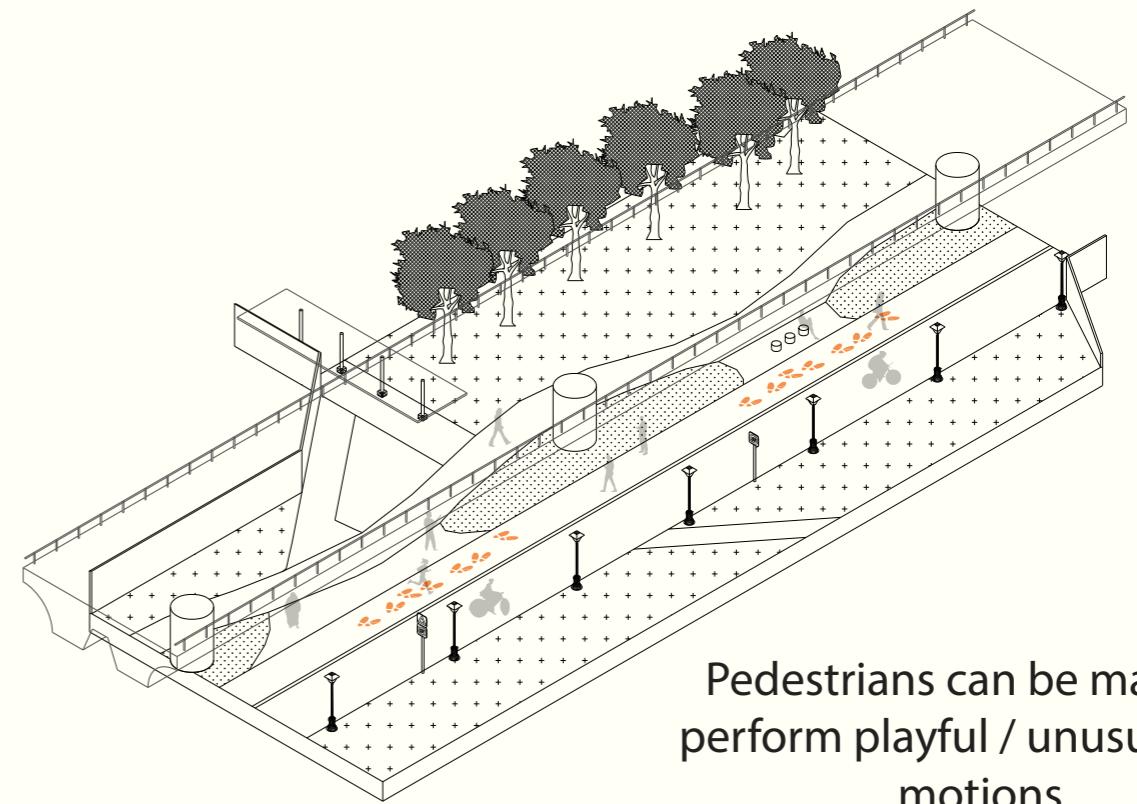
Pedestrian / cyclist movement speed can be affected due to perception of distance from line spacing

DESIGN OPTION 1

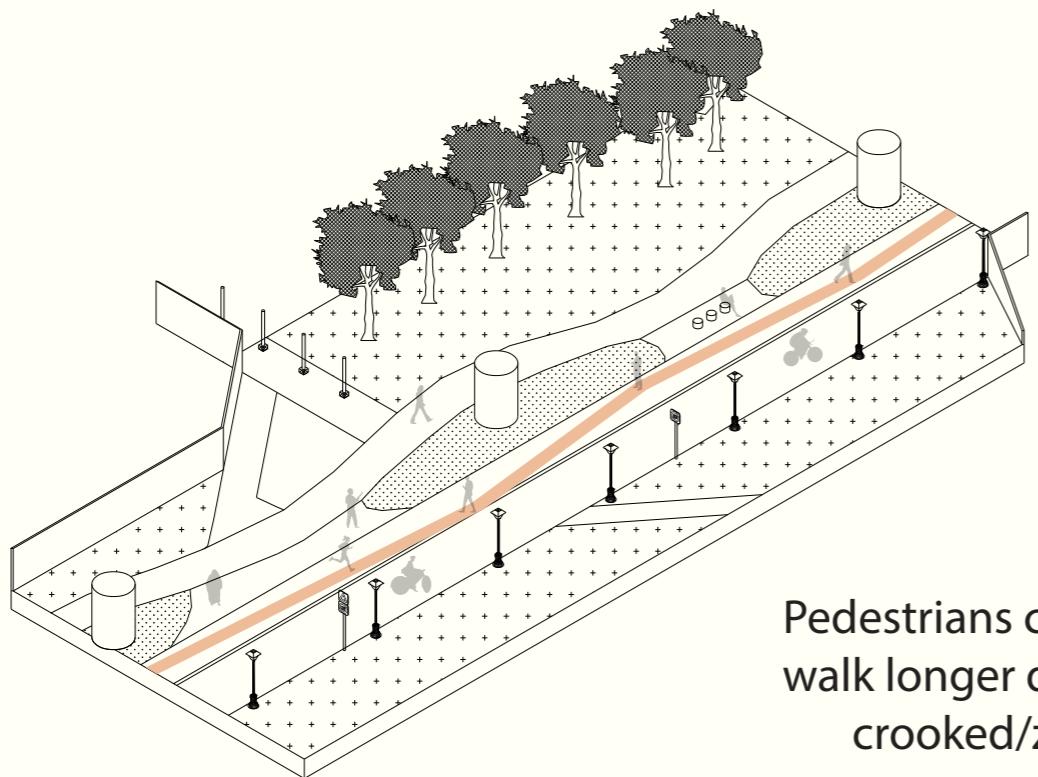
Bright coloured lines across shared walkways can affect pedestrian / cyclist movement behaviour



Pedestrians can be encouraged
to take long strides



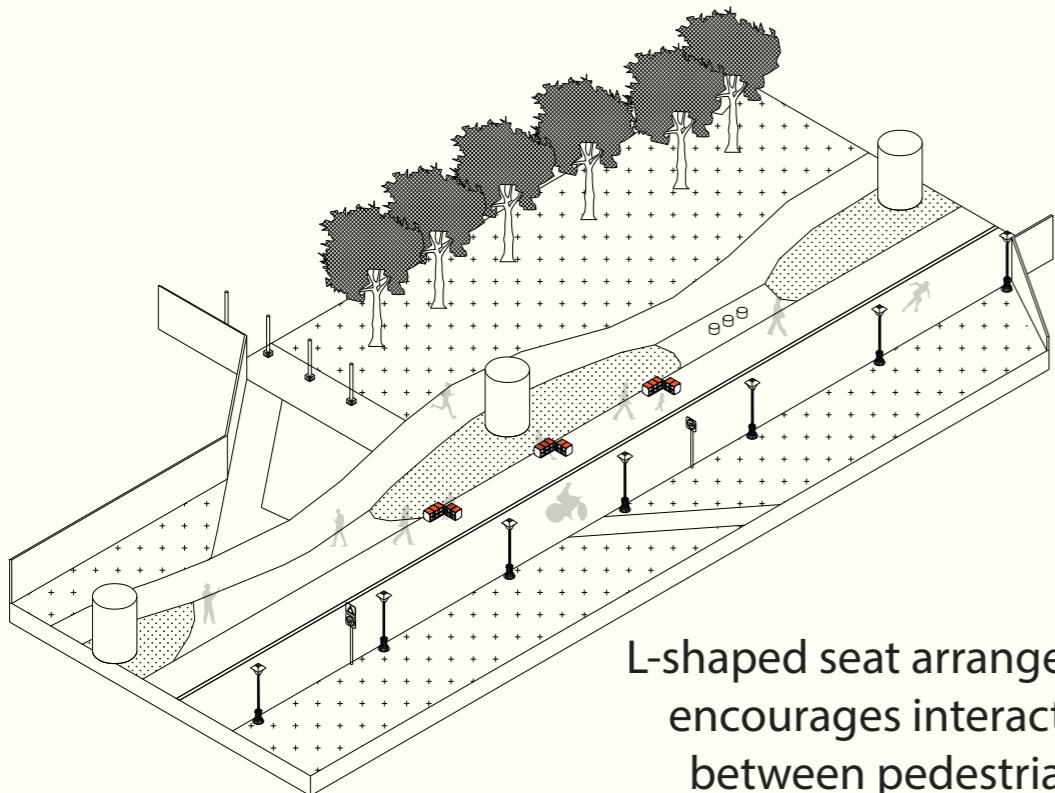
Pedestrians can be made to
perform playful / unusual step
motions



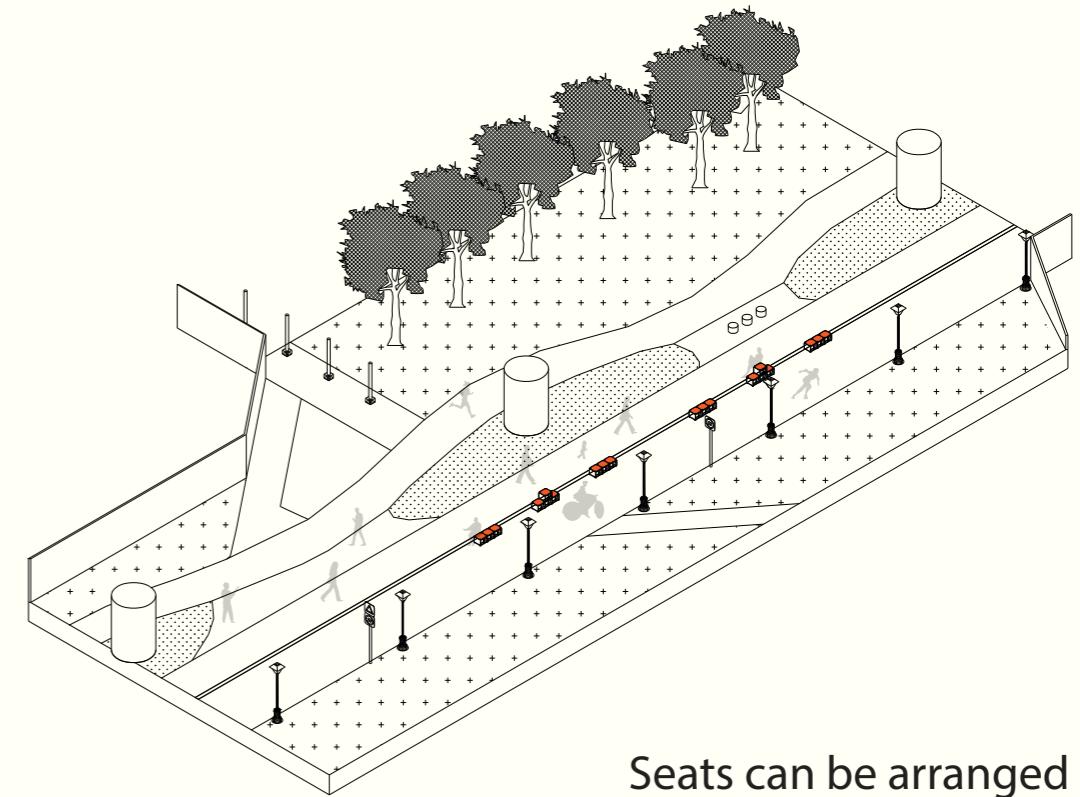
Pedestrians can be made to
walk longer distances using
crooked/zigzag lines

DESIGN OPTION 2

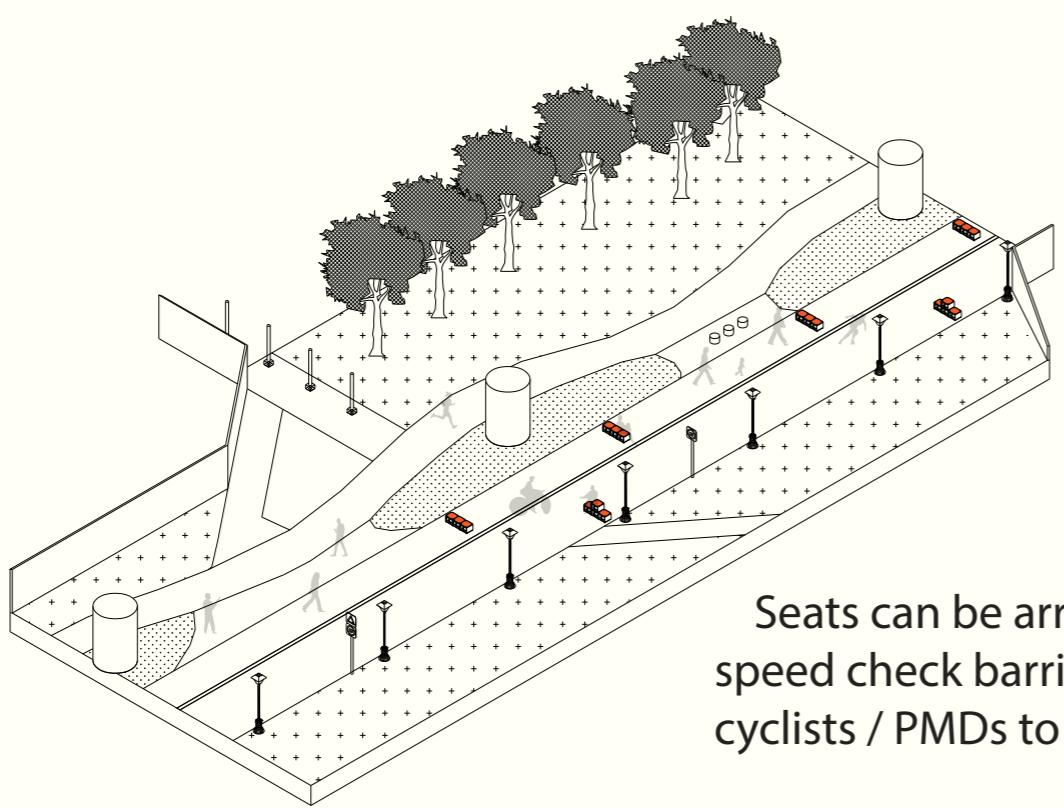
Attractions can nudge pedestrian walking
behaviour



L-shaped seat arrangement
encourages interaction
between pedestrians



Seats can be arranged as
partitions to separate
pedestrian and cycling paths

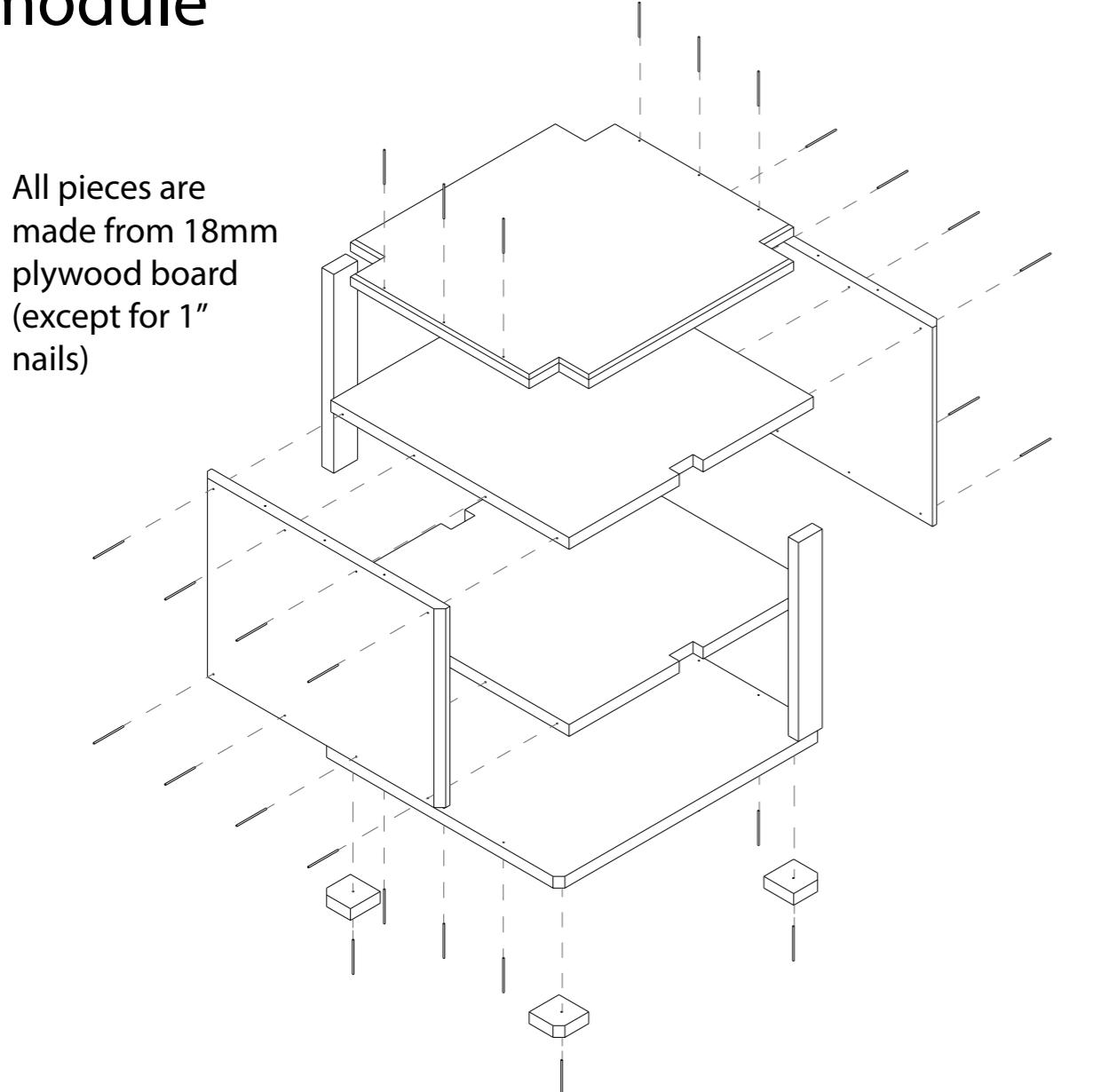


Seats can be arranged as
speed check barriers to force
cyclists / PMDs to slow down

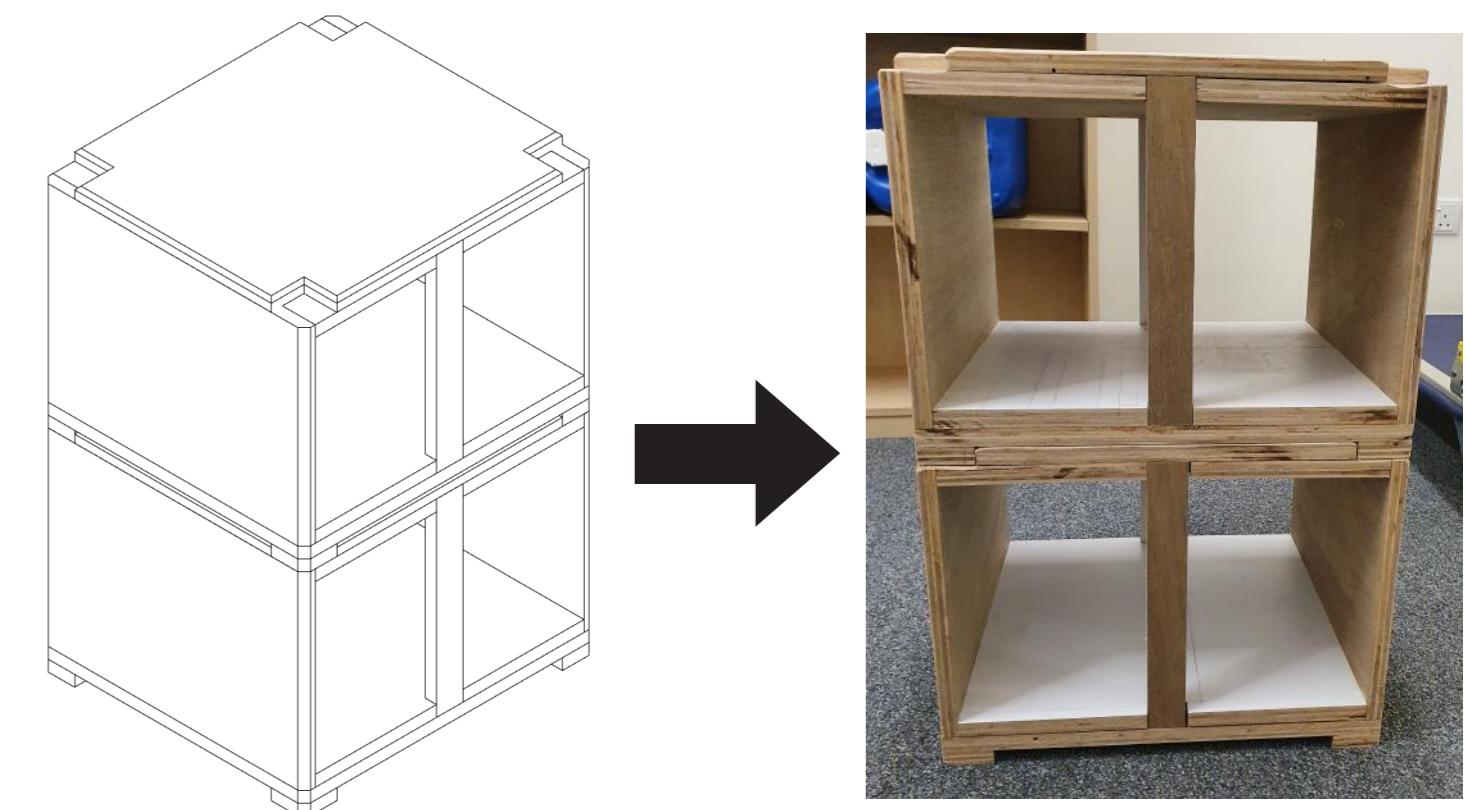
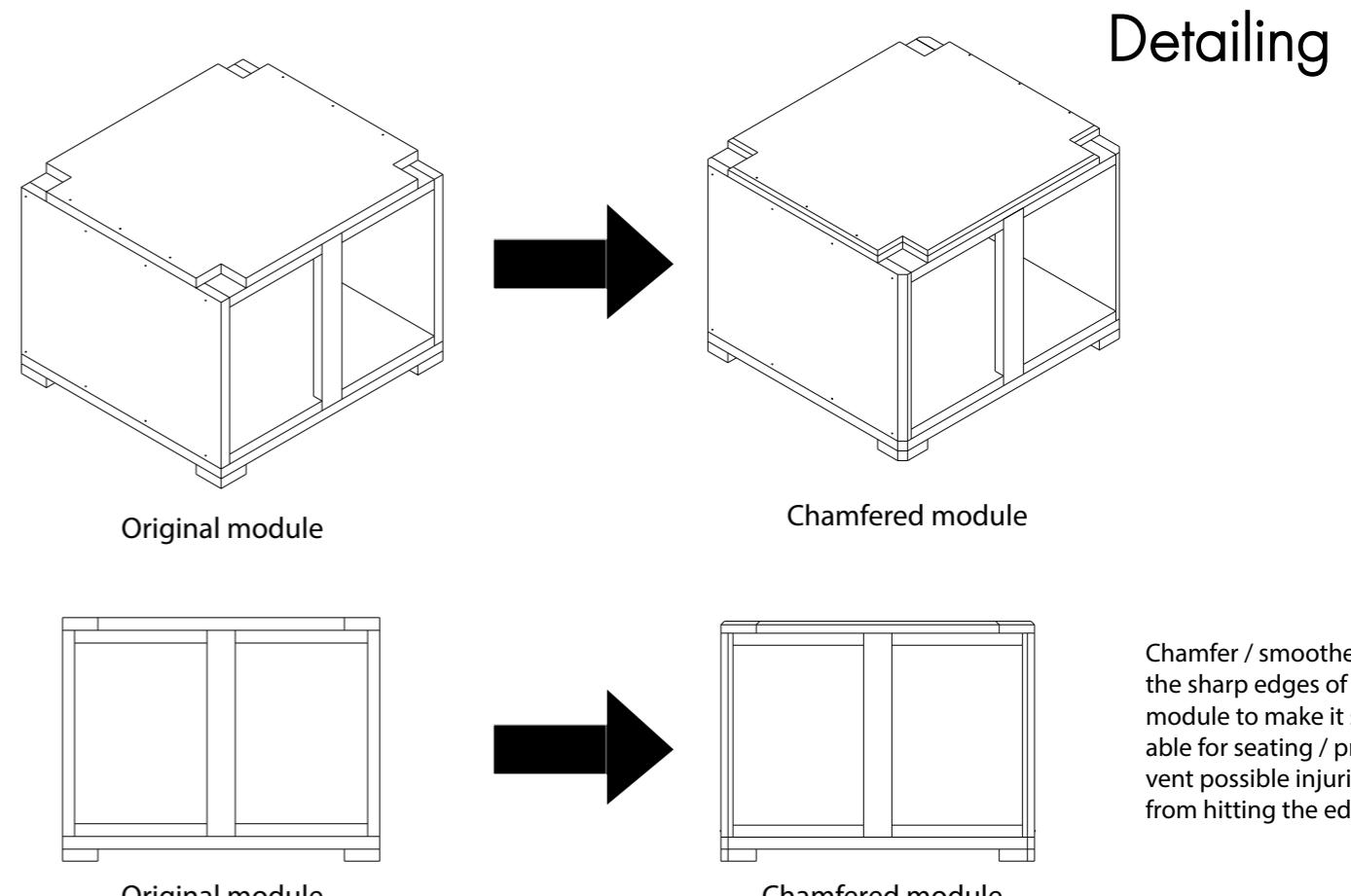
DESIGN OPTION 3

Position and type of seat can influence
pedestrian / cyclist movement and resting
behaviour

Prototype bench module



	x 1	
449mm x 400mm cross shaped 18mm plywood board		
	x 2	
415mm x 400mm H-shaped 18mm plywood board		
	x 1	
449mm x 400mm 18mm plywood board		
	x 2	
400mm x 291mm 18mm plywood board		
	x 2	
291mm x 40mm 18mm plywood board		
	x 4	
50mm x 50mm 18mm piece		
	x 32	
1" nail		



Miscellaneous

Tampines-Simei MRT corridor viaduct

3D point cloud scans

3D Scanner: FARO Focus 3D

Point cloud editors: Autodesk Recap, CloudCompare



Street View



Long Elevation



Short Elevation

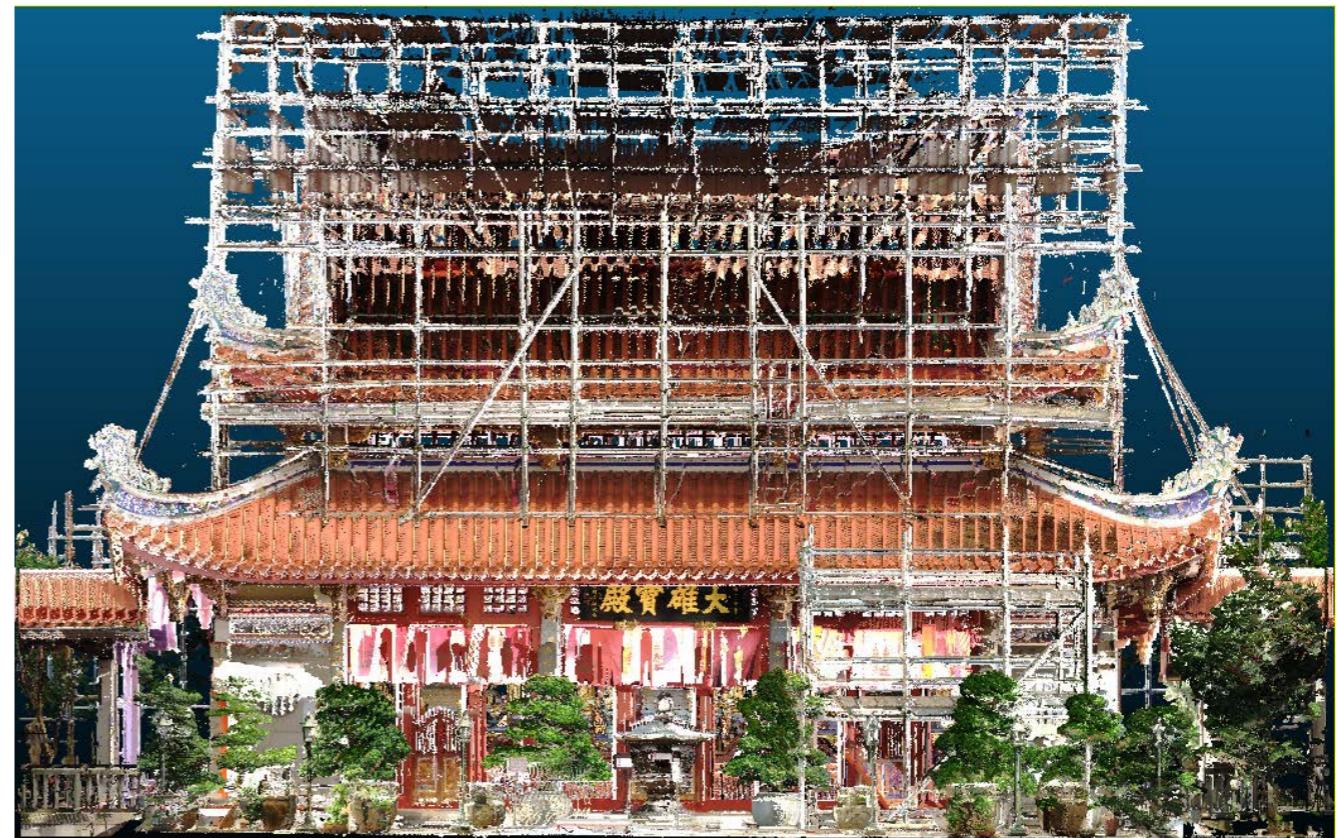
Miscellaneous

Lian Shan Shuang Lin Monastery

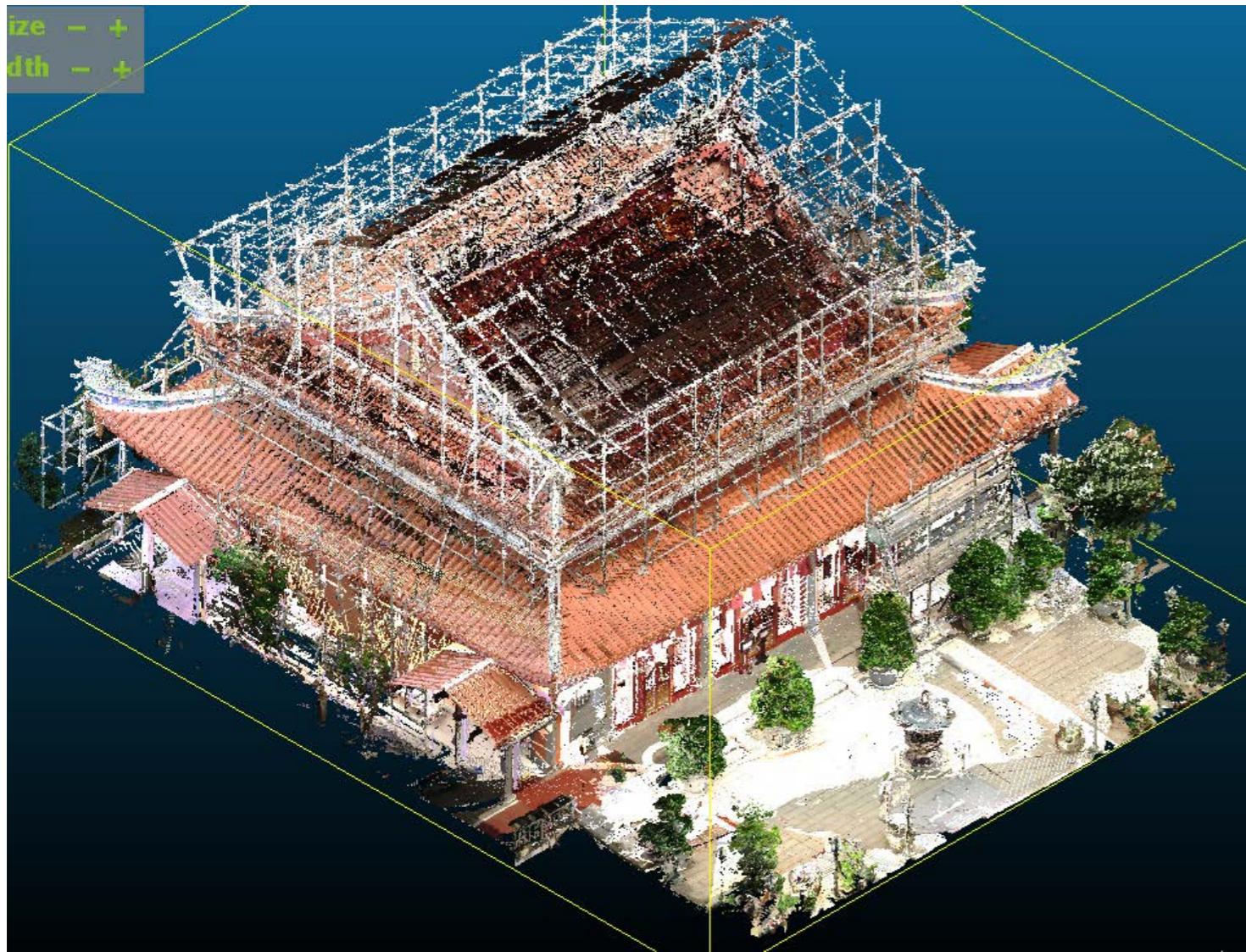
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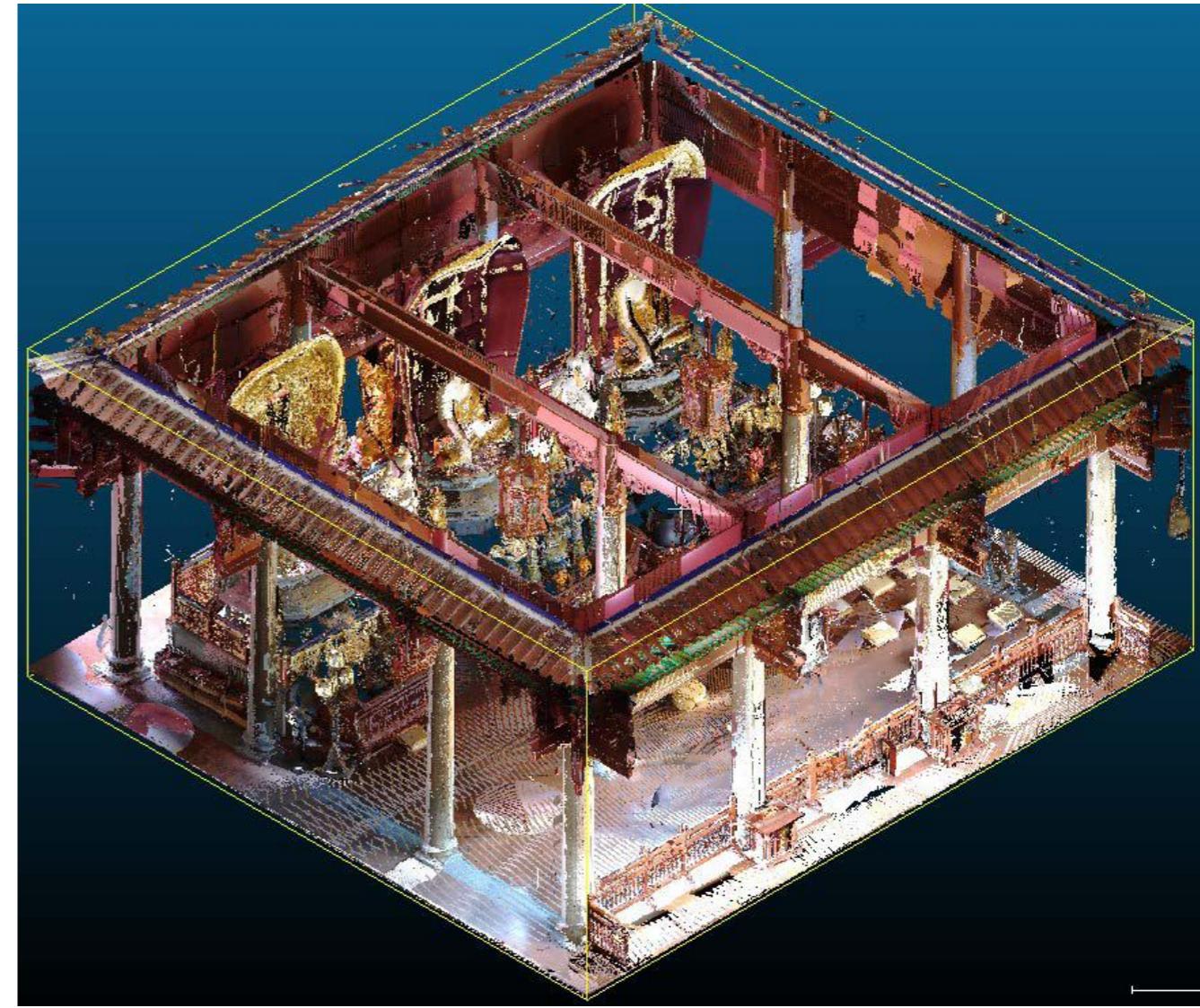
Point cloud editors: Autodesk Recap, CloudCompare



Front View (Da Xiong Bao Dian)



Isometric view (Da Xiong Bao Dian)



Isometric view (Da Xiong Bao Dian interior)

