

Geo-enabling the Global Village

No one should be left behind



Colin Low
Chief Executive
Singapore Land Authority

12 October 2022

- 730 sq km
- Population of 5.5m
- “Limited Land – Unlimited Space”





Geo-powered transformation



Geospatial - Public Sector



**Underpinned by
technological advancements**

Capturing Data in High Resolution

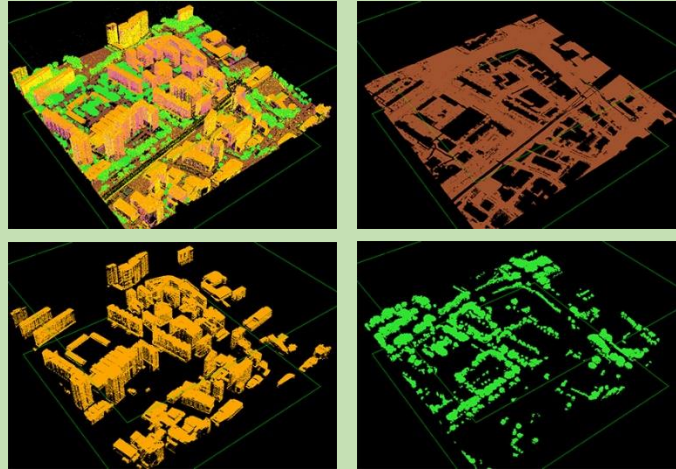


Long range, dual channel laser scanner

TECHNOLOGY



Large format, high-resolution camera sensor



Point Cloud

3D DATA



Vertical and Oblique Images



Color-Infrared Image

600 Billion
Point Cloud



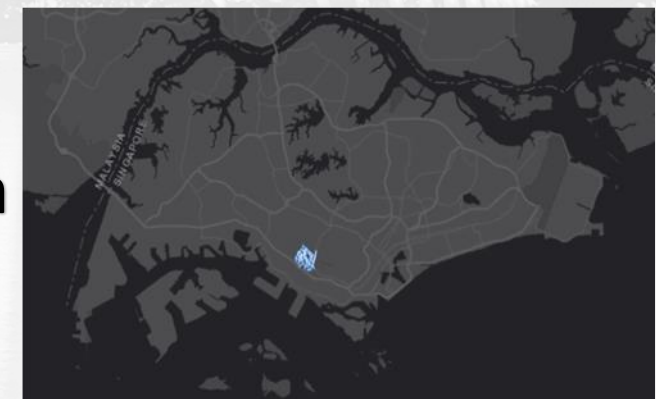
Point Cloud

3 Million
Panoramic Images



360° panoramic image

5,500 km
Public Street



Evolving Cadastre Needs

Complexities of structures and related rights - need planning in third dimension



Bus Interchange
(Airspace lot)



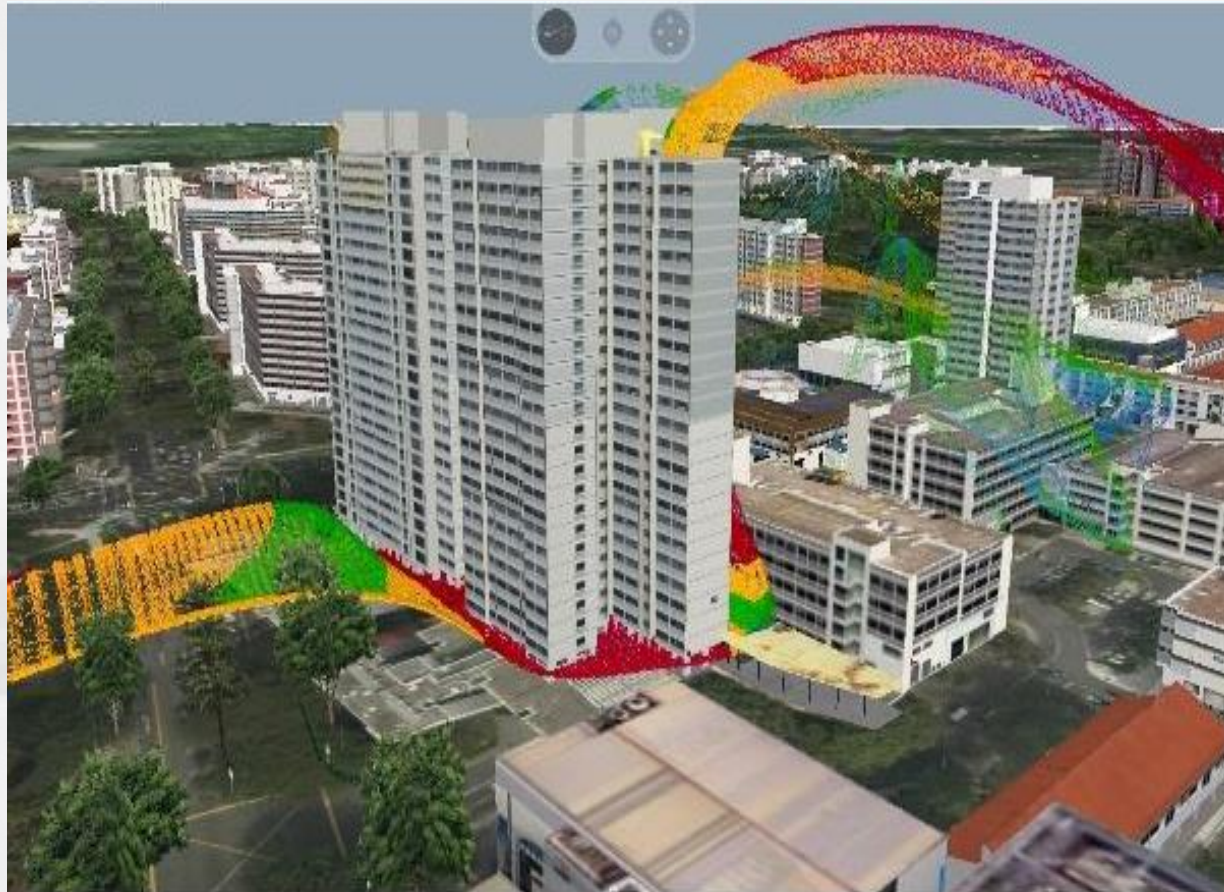
HDB Hub
(Building)



MRT station
(Subterranean lot)



Transforming City Planning

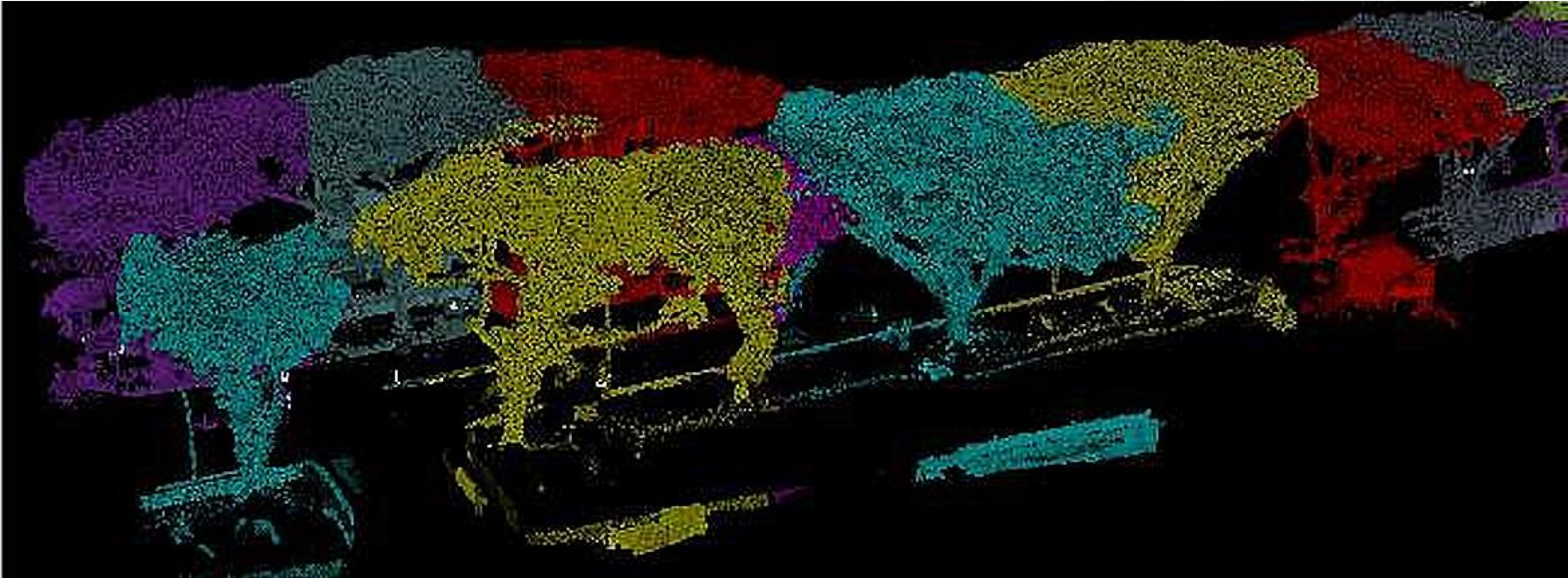


Wind Flow and Micro Climate Analysis

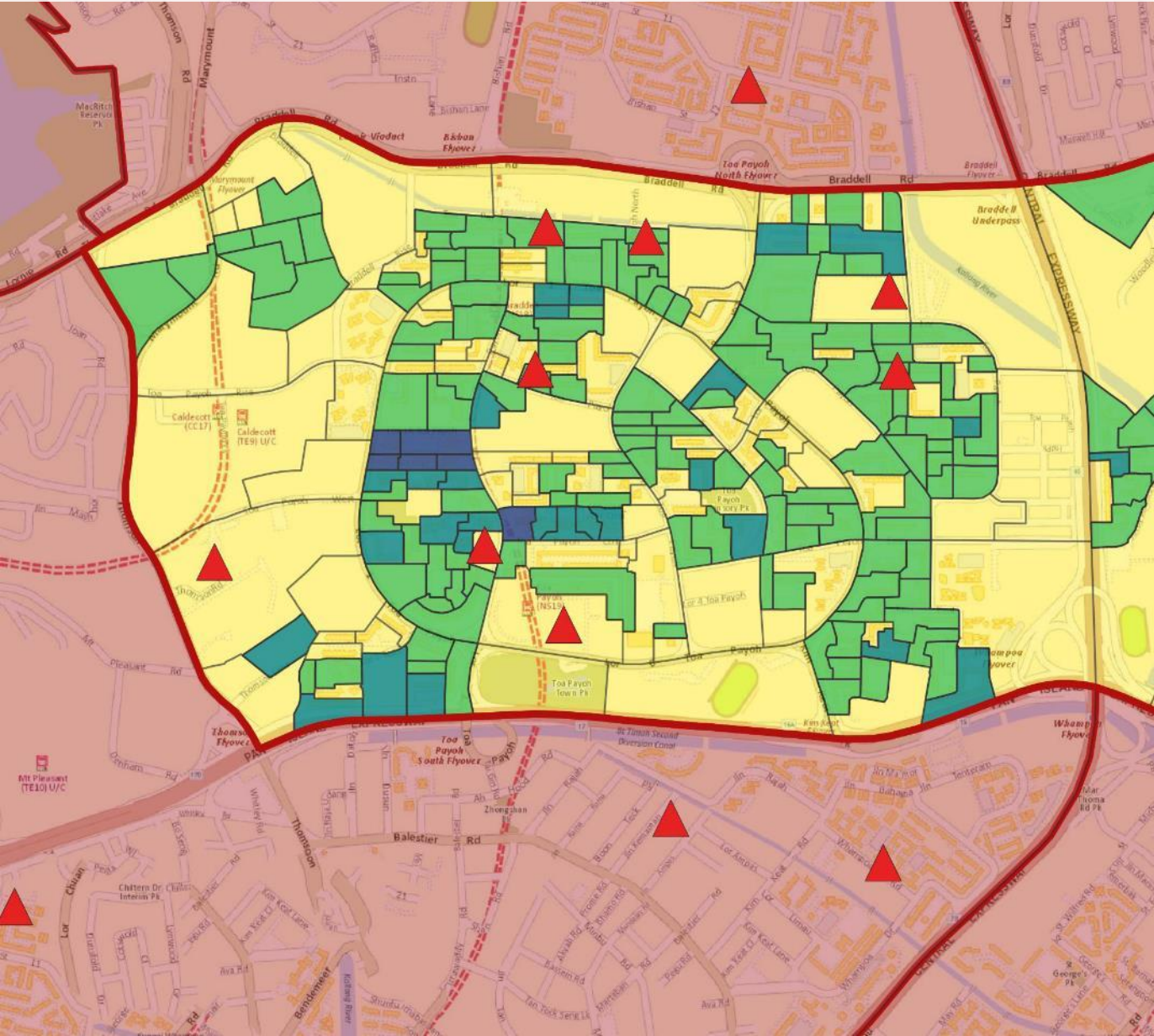


Shadow Analysis

Planning of Public Spaces - Trees Mapping



Data Driven Decision Making



Planning for Shifting Demographics



Barrier-Free Access

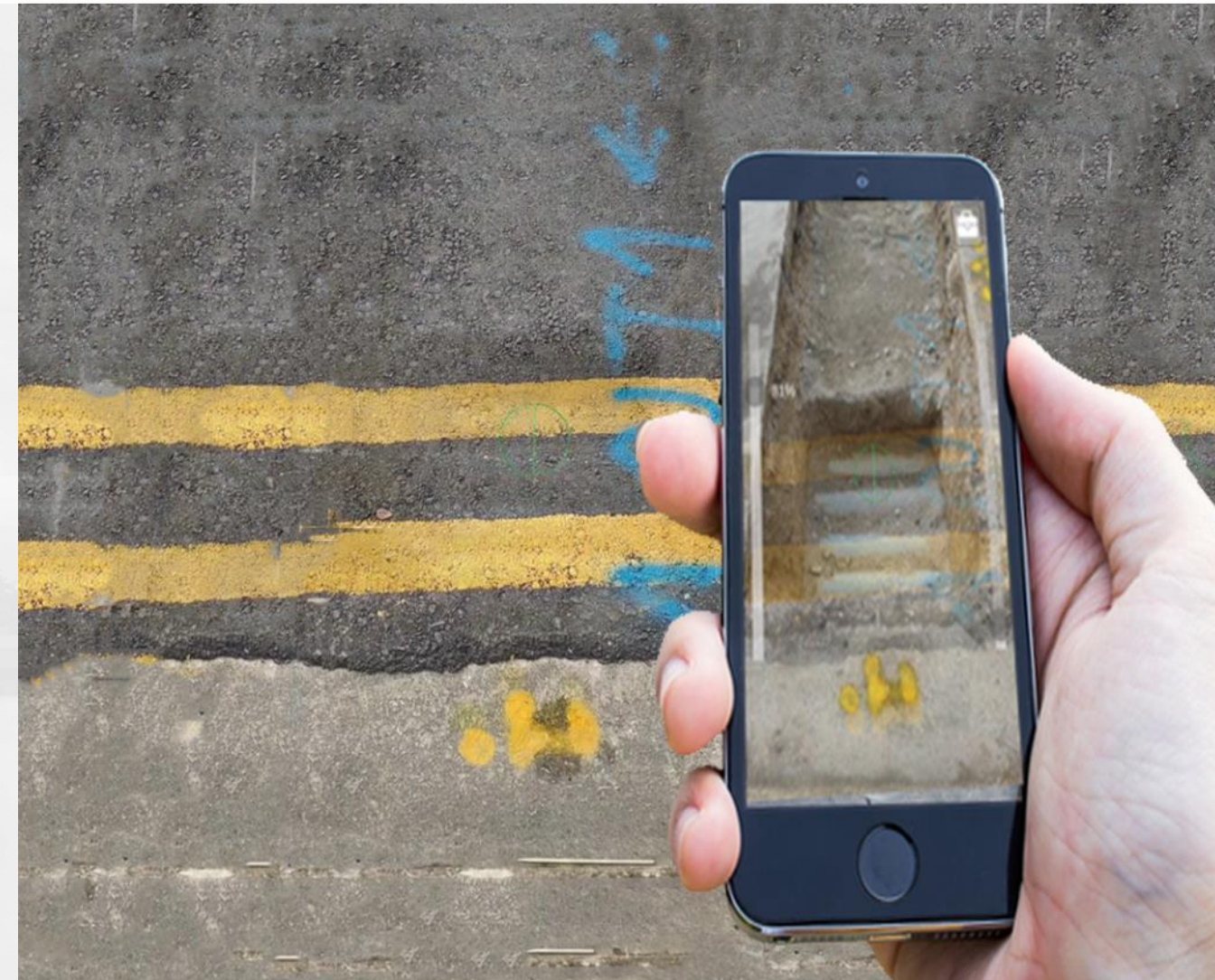


Autonomous Vehicles

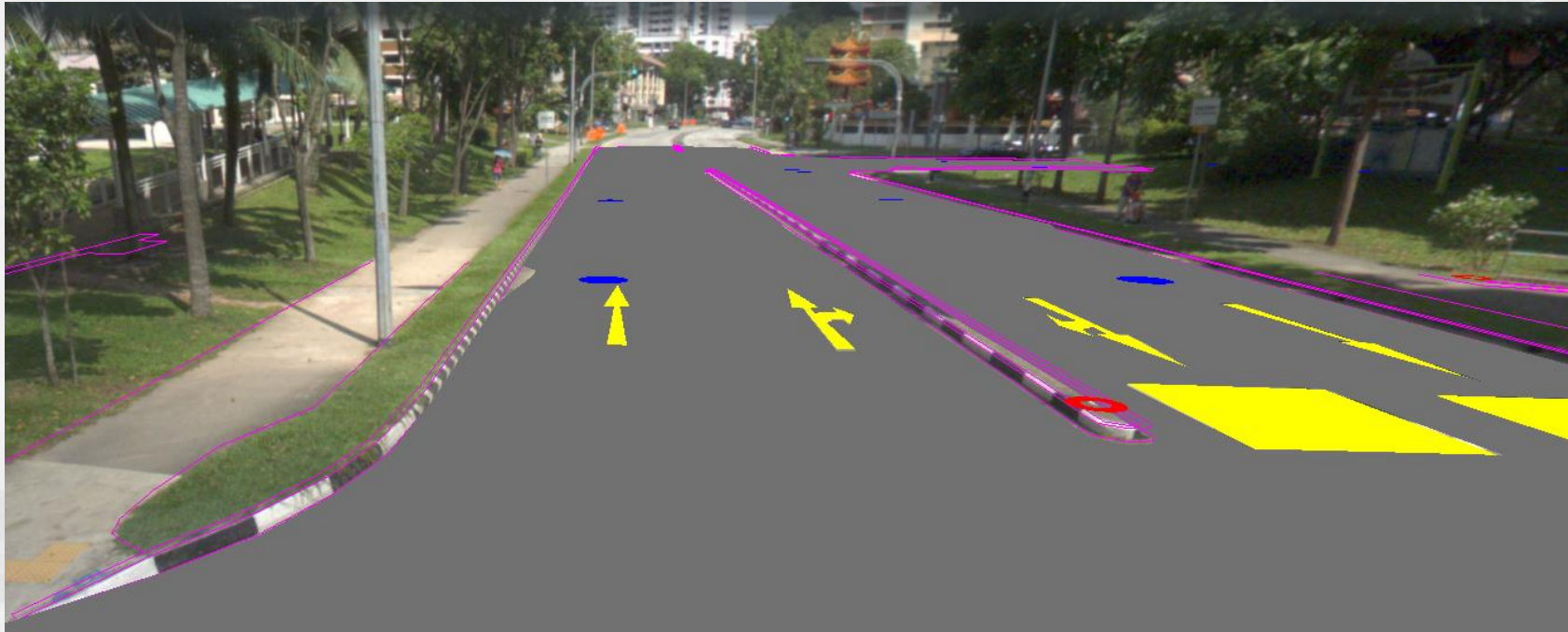
Planning of Public Spaces – Subsurface Utilities Mapping



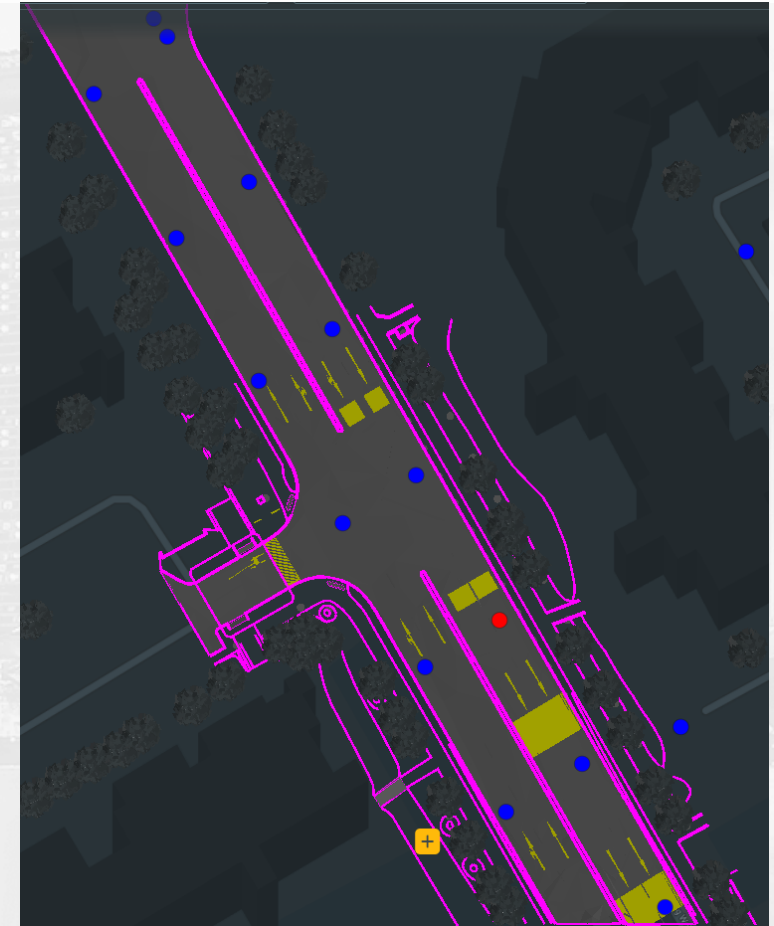
Augmented Reality (AR) Visualisation of Subsurface Utilities



Automating with Artificial Intelligence



Identification of road and roadside features

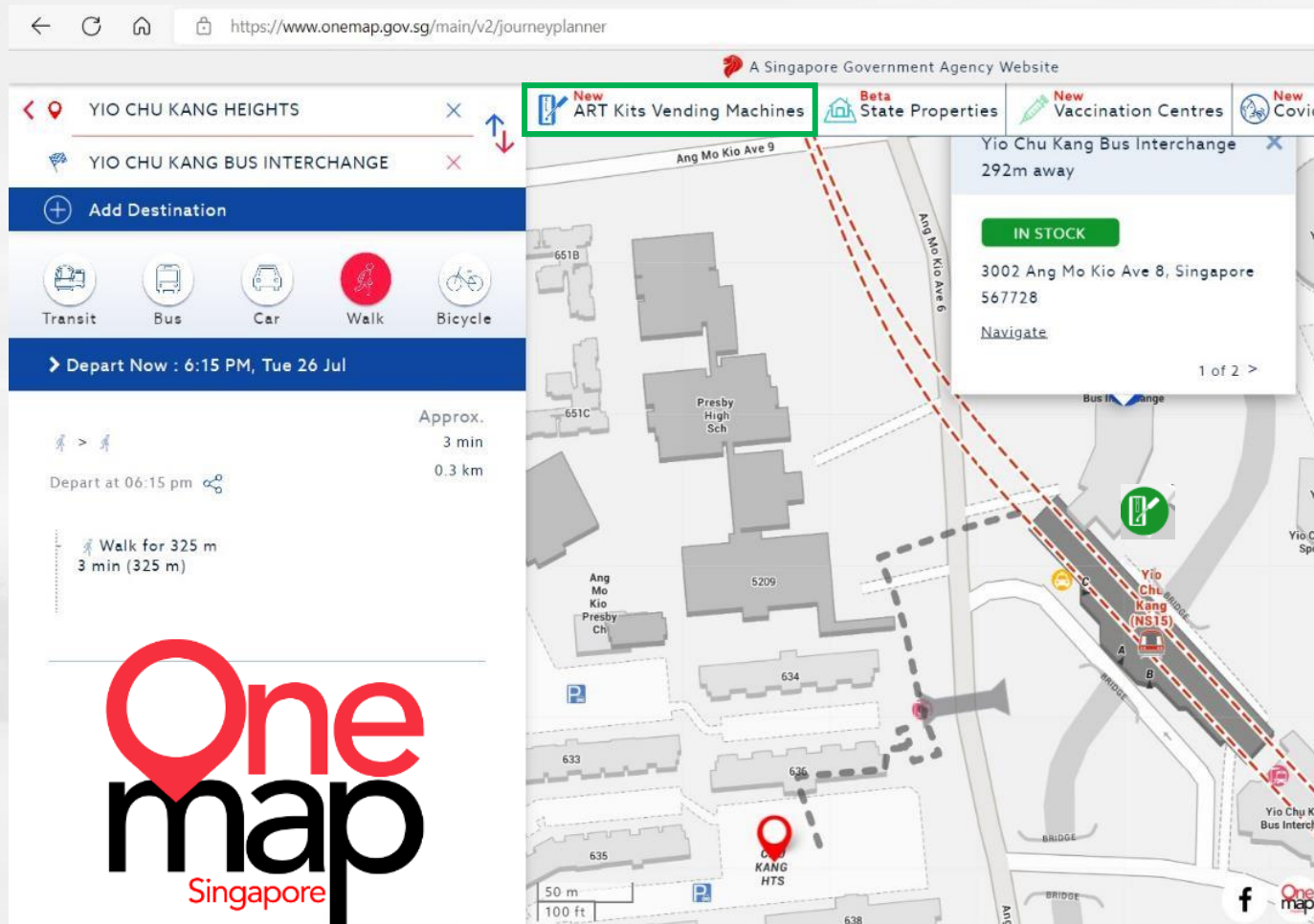


Extracting their exact location

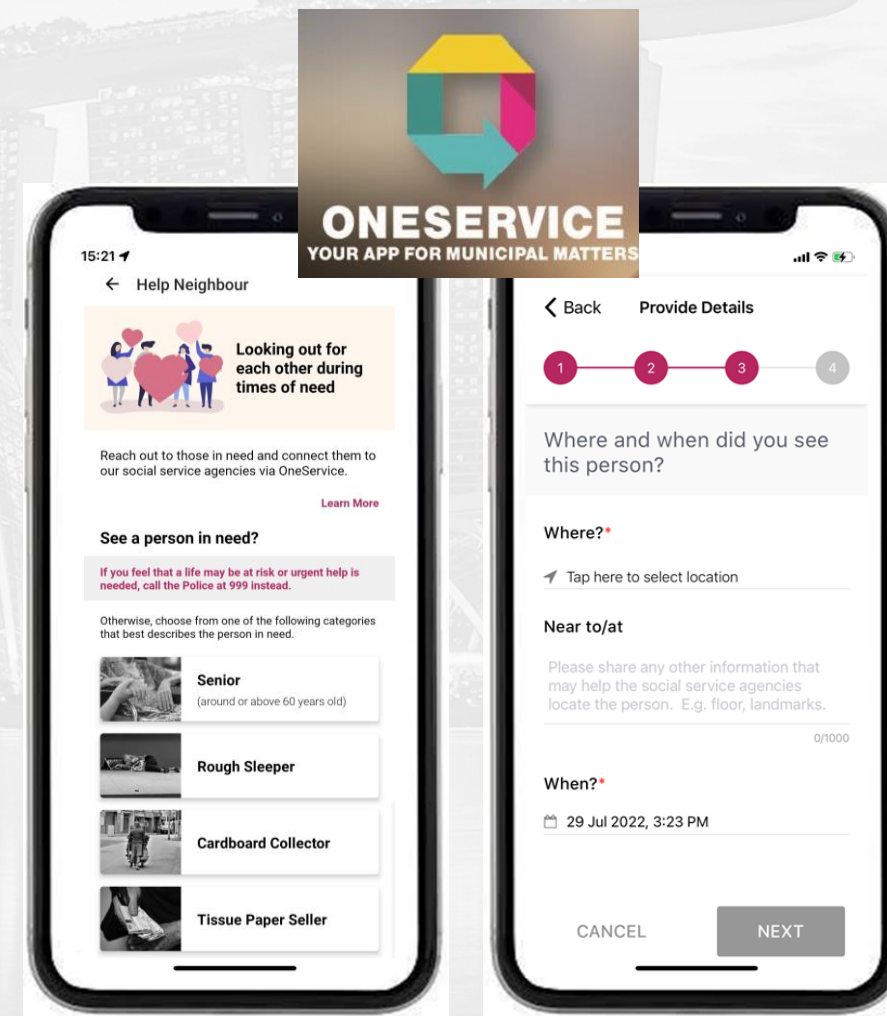


Geospatial - Social Services

Open GeoData for COVID & Social Services



Navigate to Free ART Kits

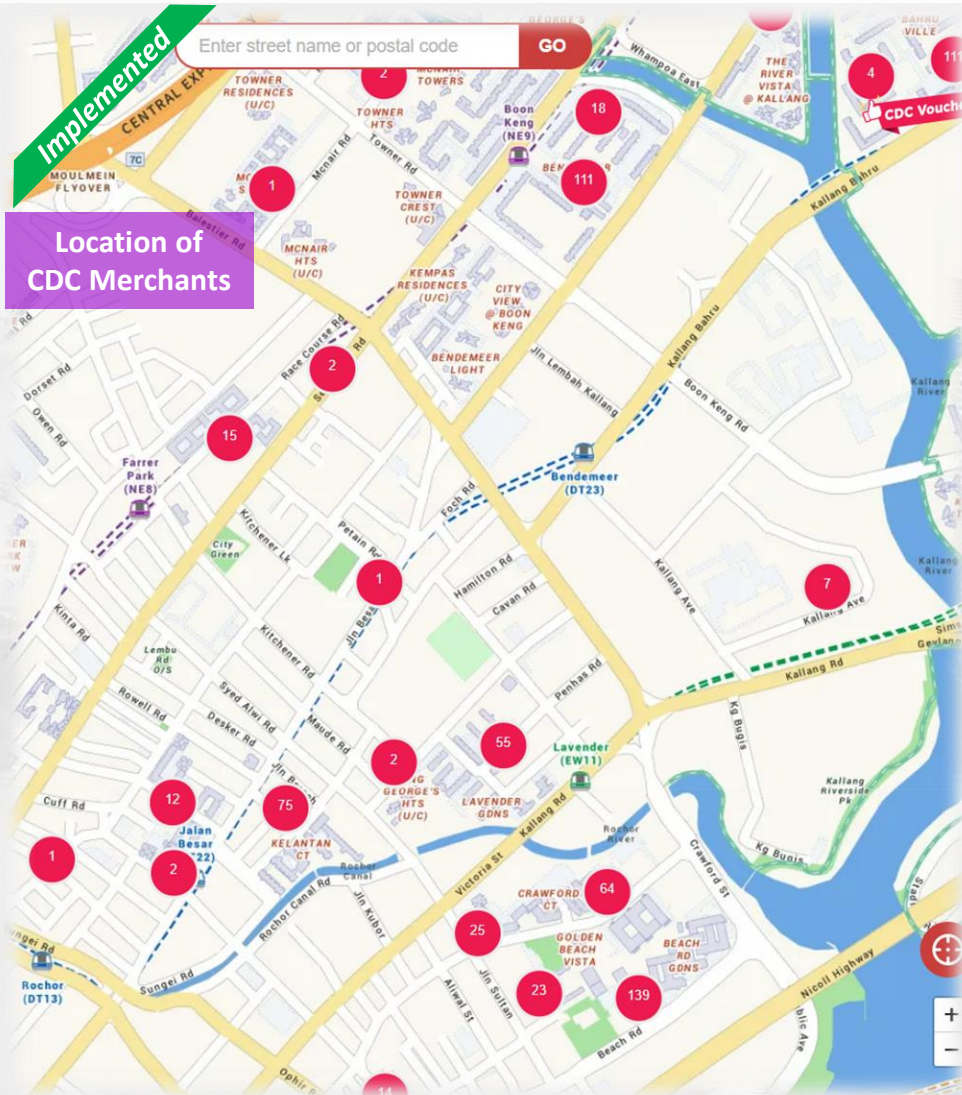


OneService App

MyResponder App Powered by OneMap



Connecting Communities with OneMap



Connecting Citizens to CDC Merchants



Connecting Partners & Volunteers to beneficiaries

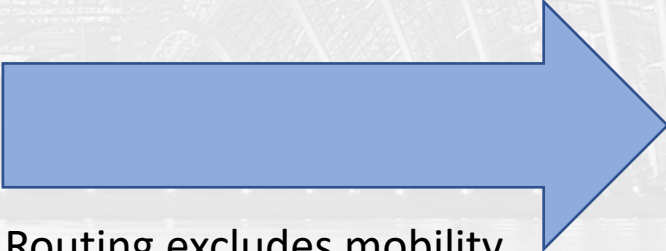
Mapping Barrier Free Access (BFA) for Inclusiveness

Marina Bay Sand
Impact @ Hong Lim Green

Transit **Barrier Free**

Depart now : 11:13am, Thu 26 May

Mode	Approx. Time	Approx. Cost
DT	12 min	\$0.95
195	26 min	\$0.95
106 / 133 > 970 / 186	27 min	N.A



Routing excludes mobility "obstacles" for barrier free transit



Marina Bay Sand
Impact @ Hong Lim Green

Transit **Barrier Free**

Depart now : 11:13am, Thu 26 May

Road Condition:
● N.A ● Good ● Ok ● Tough

Impact @ Hong Lim Green **Approx. 26 min**

2.1km

Marina Bay Sand



Connecting Inclusive Employers to Communities



Uniqlo has been working towards the goal of employing at least one person with disability per store since 2001. Over 90% of its stores in Japan employ at least one person with disability, and Uniqlo has expanded this initiative to overseas outlets.

Uniqlo has also created a buddy system that pairs staff with disabilities with store managers to help guide and mentor them in their training.

All employees — PWDs or not — have the same set of benefits, compensation, and a fair chance for career progression.



1 Transport Option : Public Transport

48	2 bus stops	Approx. 11 min \$0.95
Depart at 10:38 am		
57	2 bus stops	12 min \$0.95
Depart at 10:29 am		
		13 min \$0.00
Depart at 10:28 am		

2 Transport Option : Walk

		Approx. 13 min 1.0 km
Depart at 10:28 am		
Walk for 958 m 13 min (958 m)		

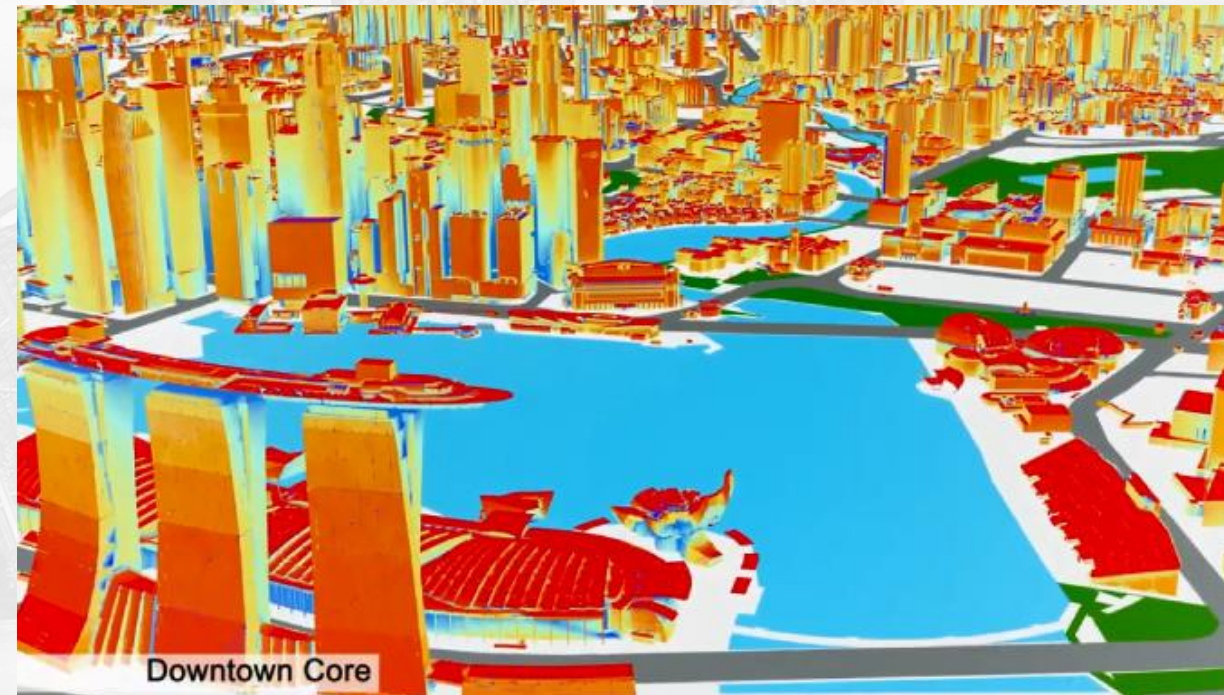
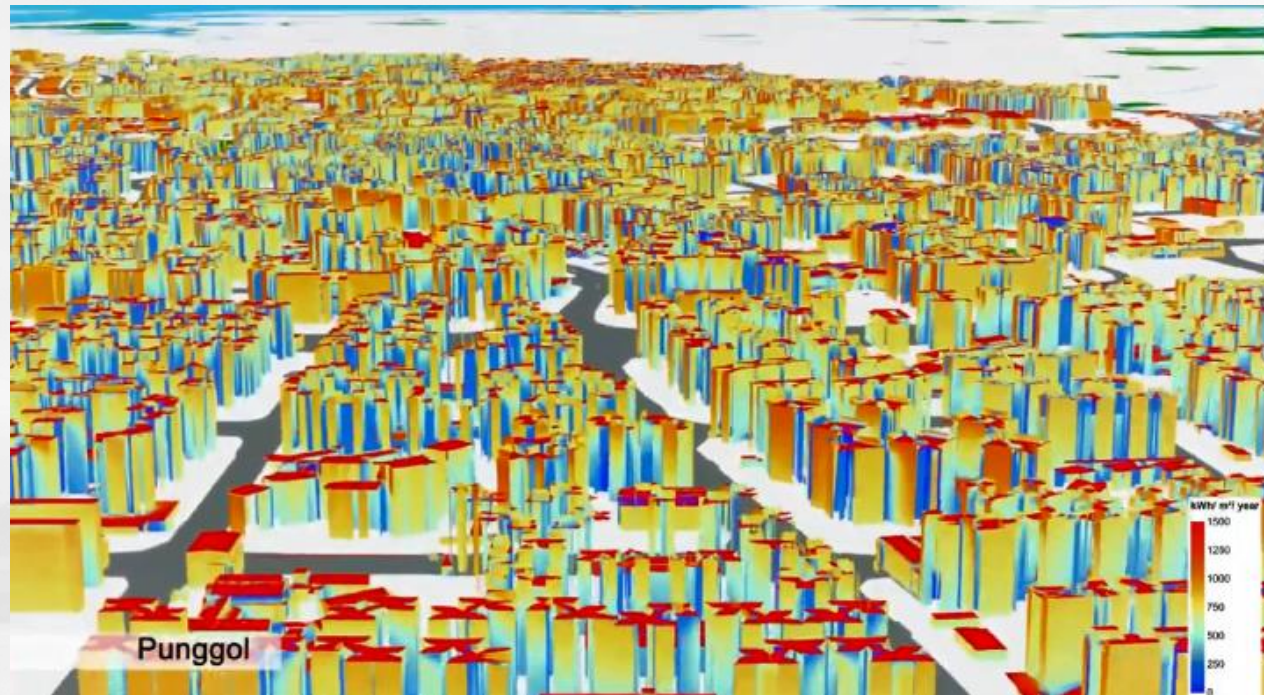
■ ■ ■ ■ Barrier-free Access Route





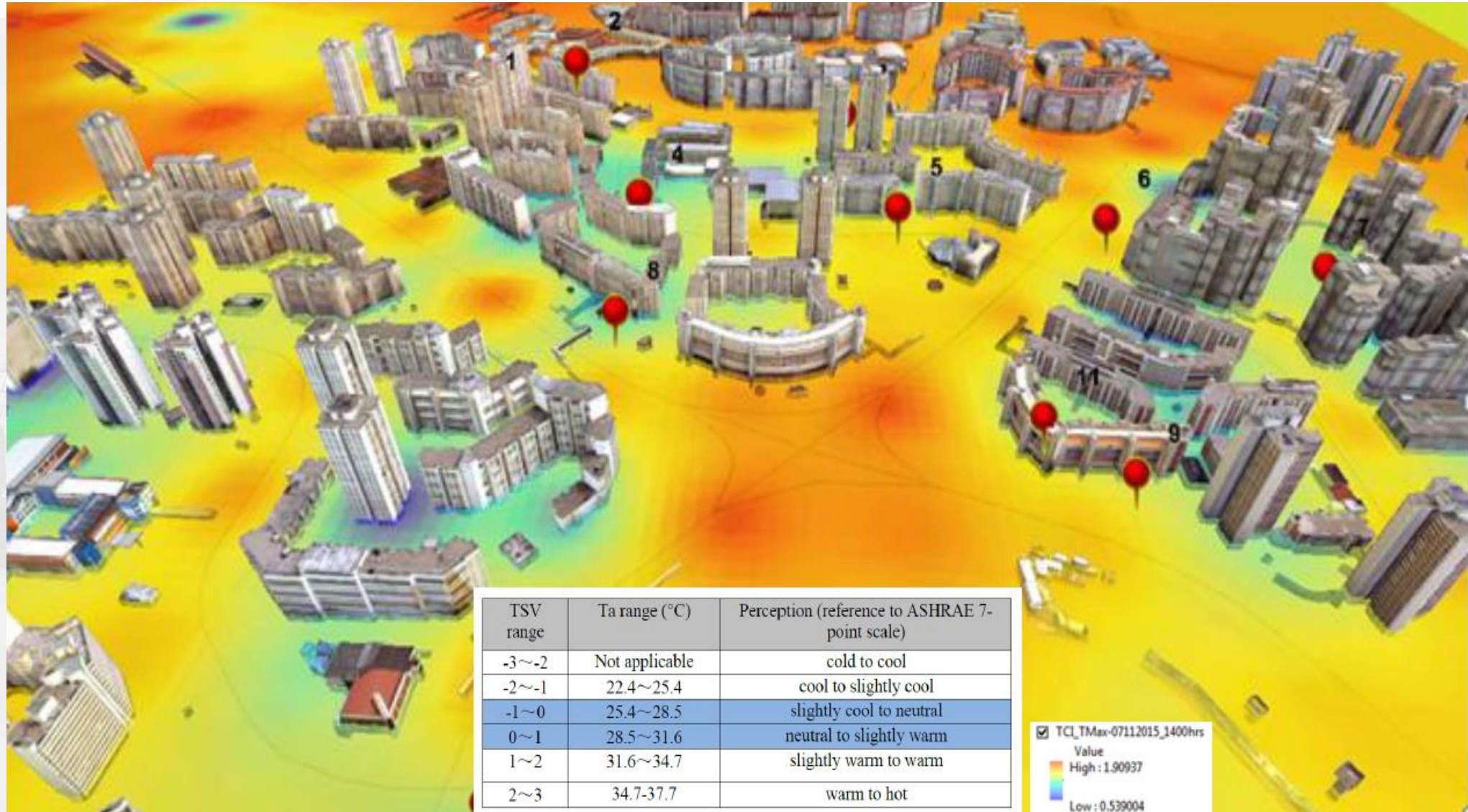
Geospatial - Enabler for Sustainability

Development of 3D Solar Potential Map

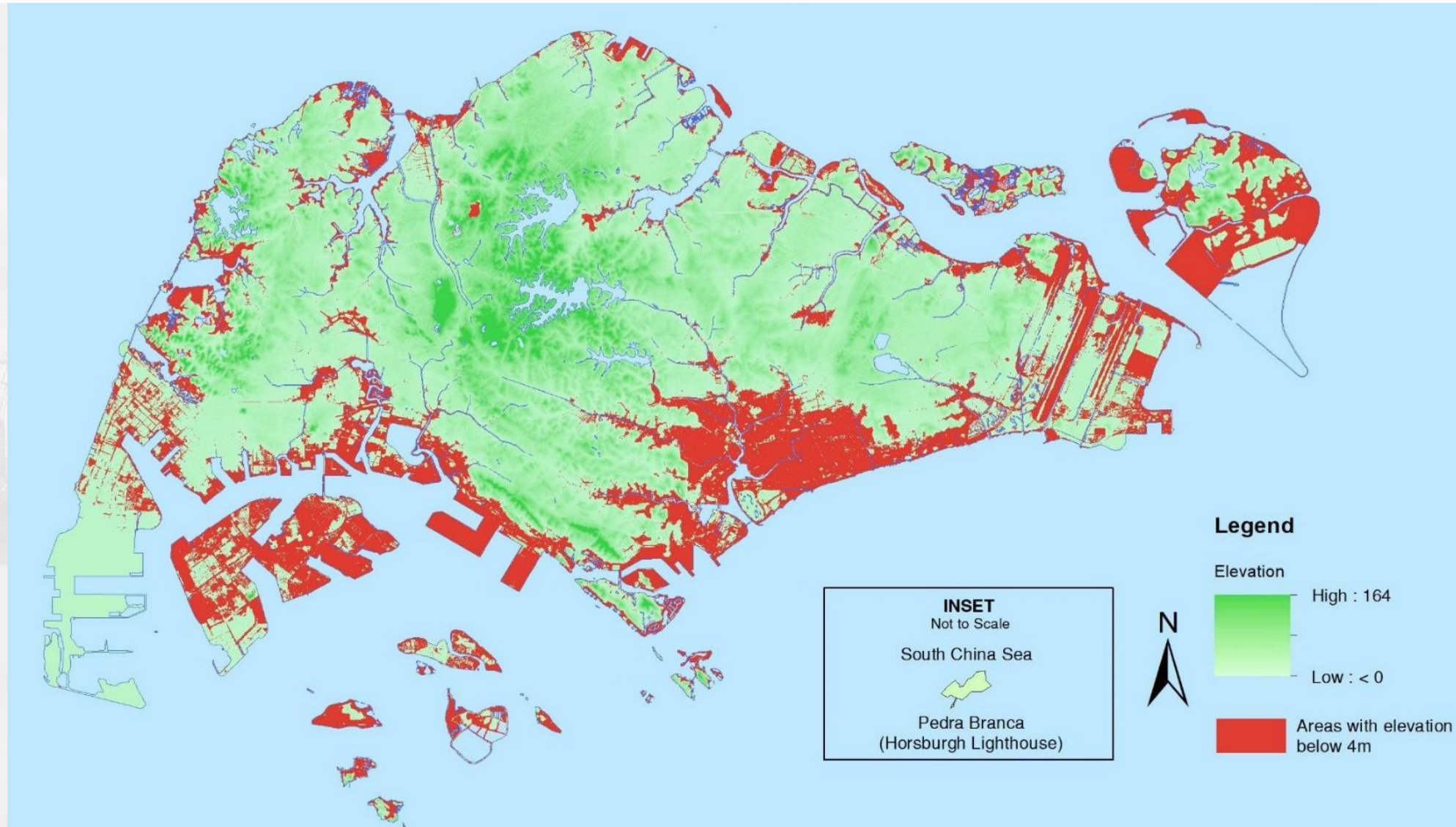


Images Courtesy of Solar Energy Research Institute of Singapore (SERIS) and School of Design & Environment (SDE), National University of Singapore (NUS)

Urban Heat Model

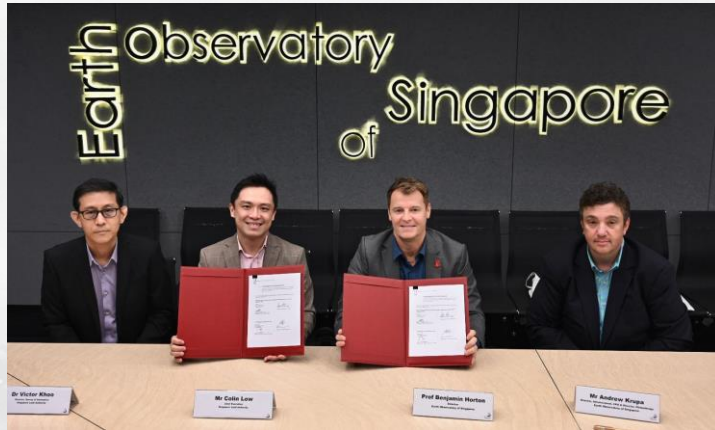


Mitigate Impact of Sea Level Rise

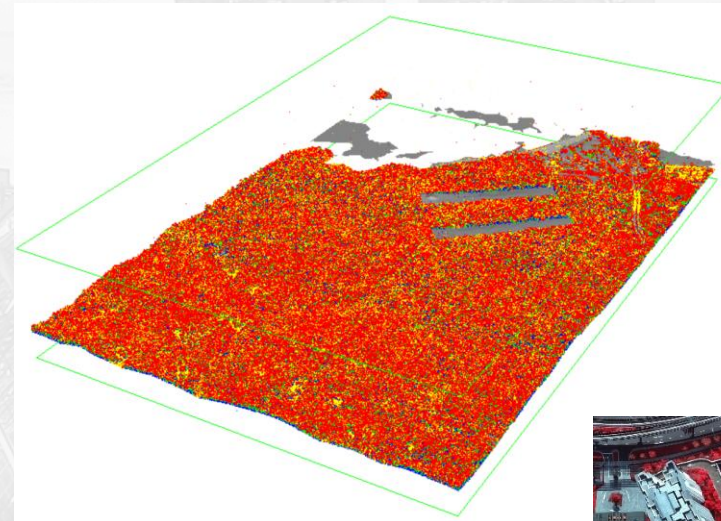


Collaborating on Climate Research

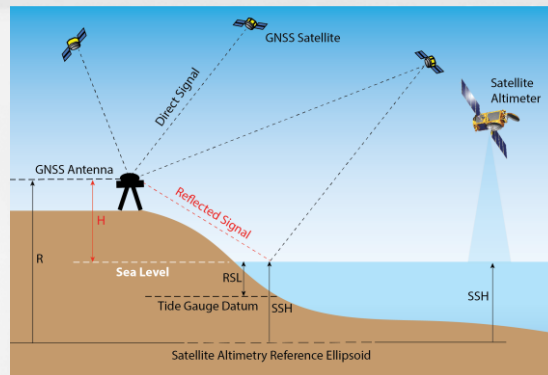
More accurate ways to measure land-height and sea-level changes around Singapore



Leveraging SLA's aerial LiDAR and multi-spectral aerial photography



Effect of the atmosphere on the weather and climate on the island nation.



Measuring and monitoring of Singapore's nature-based carbon resources for national mitigation efforts



Geospatial - Private Sector

Improving Last Mile Delivery



"With our drivers contributing pictorial data to facilitate OneMap's accuracy ...we can potentially set a new industry operational standard through improvements in the entire last-mile delivery..."

Mr Lai Chang Wen

Chief Executive Officer of Ninja Van

MOU Signing between SLA and Ninja Van



Colin Low
Chief Executive

Lai Chang Wen
Chief Executive Officer



Promoting Awareness in Geospatial

Promoting awareness in geospatial technologies and their potential areas of application



Implementation of suitable programmes to help businesses better appreciate how geospatial technologies can improve their current and future operations

SINGAPORE BUSINESS FEDERATION
Apex Business Chamber

20
YEARS OF CONNECTING BUSINESSES

THE HUMAN TOUCH
BALANCING MANPOWER RESILIENCE WITH
PRODUCTIVITY FOR TRANSFORMATION

Manpower Policy Paper on Supporting Lifestyle Services,
Environmental Services and Estate & Facilities Management Services

The complex block contains the Singapore Business Federation logo and its 20th anniversary branding. Below this is a stylized illustration of a data center or server room with various workers in different uniforms (a technician, a cleaner, a server room worker) interacting with the infrastructure. The illustration is set against a blue and orange background with circuit-like patterns.

Partnering Real Estate Agencies



Property Result

28,MARINE CRES 440028

S/N	Type	Model	Lease Commence	Remaining Lease (years)	Level	Area (sqm)	Price	Date
1	5 ROOM	Standard	1975	52	19 TO 21	1356.2514	\$855000	Apr 2021
2	5 ROOM	Standard	1975	53	16 TO 18	1356.2514	\$760000	Mar 2021
3	5 ROOM	Standard	1975	53	19 TO 21	1356.2514	\$700000	Dec 2020
4	5 ROOM	Standard	1975	55	04 TO 06	1356.2514	\$800000	Aug 2018
5	5 ROOM	Standard	1975	55	07 TO 09	1356.2514	\$795000	Jun 2018
6	5 ROOM	Standard	1975	56	16 TO 18	1377.7792	\$900000	Sep 2017
7	5 ROOM	Standard	1975	56	07 TO 09	1356.2514	\$768000	Sep 2017

* Select the floor level to access 3D view.

Collaborating with Private Sector - A Living Lab





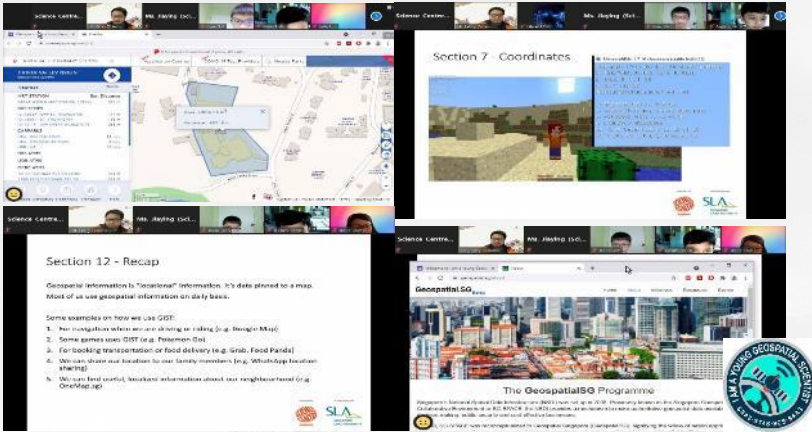
Geospatial - Education Sector



Planning for our future

Seeding Interest from Young

Young Scientist Geospatial Badge



Singapore Geospatial Scholarship



Regional Geospatial Youth Forum



Geomatics School Outreach & Girl Guides Geospatial Badge



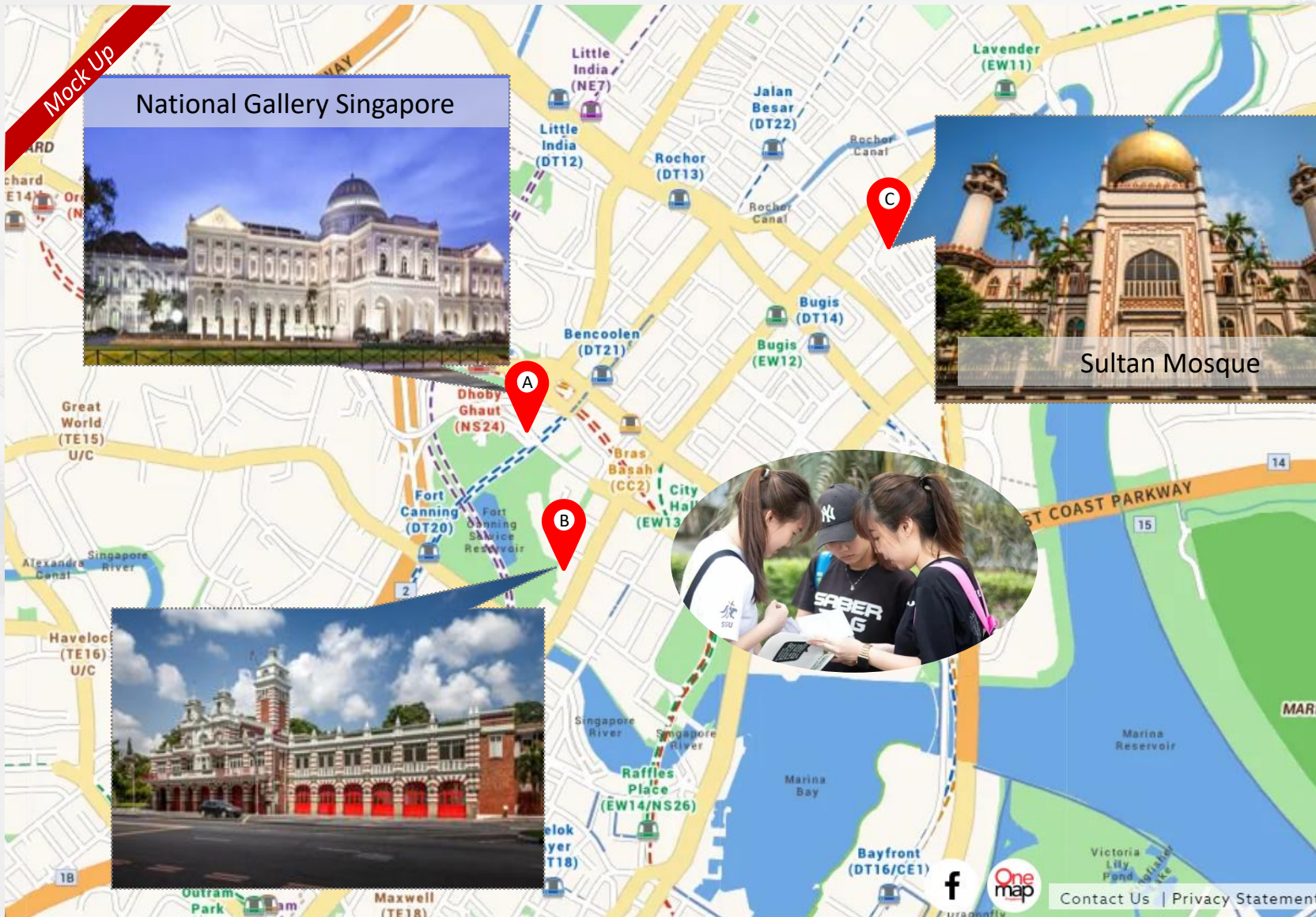
ASEAN Geospatial Challenge



MOE-EduGIS



Making Geospatial Fun – Singapore Heritage Trail



Use OneMap to navigate, to deduce clues and to explore Singapore's heritage.



Mainstreaming

Living Lab

Seed Early. Create Stickiness

Solutioning - Public - Private