



ARDEN AND PARKVILLE COMMUNITY REFERENCE GROUP

MEETING 13

18 September 2020

AGENDA

1. Introductions and welcome
2. Creative Program update
3. Project wide construction update
4. Parkville construction update
5. North Melbourne construction update
6. Tunnelling update
7. Stakeholder and communications update
8. General feedback and items for future discussion
9. Meeting close

CREATIVE PROGRAM UPDATE



PARKVILLE STORIES UPDATE



**Creative
Program**



The Royal Women's Hospital



*Original artwork illustrated by Janelle Barone
as part of the Parkville Storytelling Project.*

*The Metro Tunnel Creative Program has
been developed to maintain Melbourne's
vibrancy, liveability and public engagement
during the construction impacts of the
Metro Tunnel Project.*

*Scan the
QR code
with your
camera to
see the other
artworks
and read the
other stories*



Presenter: Mary Parker

MEET OUR 'UOO UOO'

- The Creative Program is supporting RCH's fundraising drive by sponsoring this 'Uoo Uoo' painted by local artist Justine Millson
- It is hoped to be installed near the RCH children's playground.





THANK YOU ESSAY

President Anthony Parker



THANK YOU ESSAY

Presenter: Mary Parker



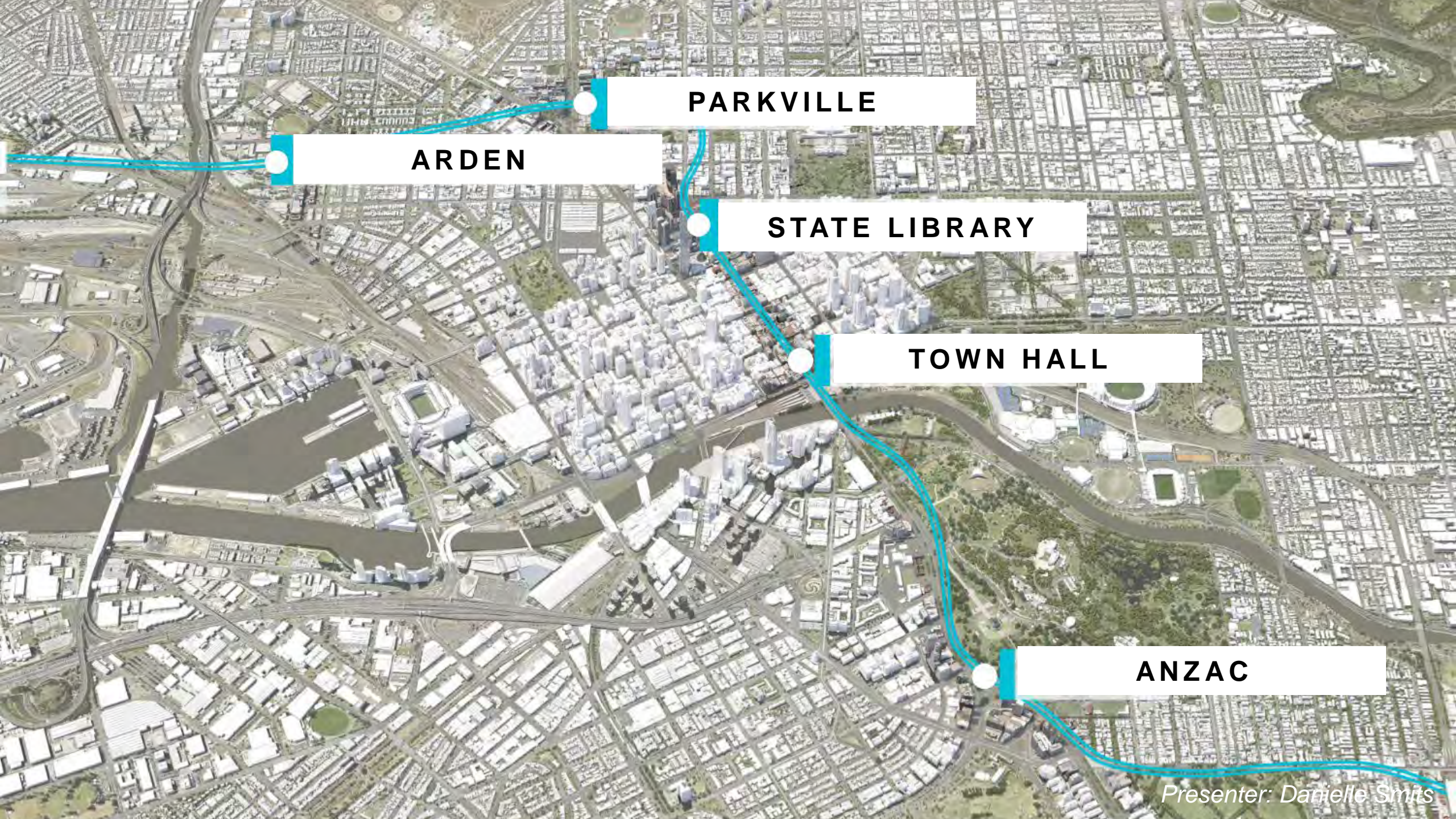
GRATTAN STREET WEST HOARDING

Presenter: Mary Parker

CONSTRUCTION UPDATE – PROJECT WIDE



Presenter: Danielle Smits



PARKVILLE

ARDEN

STATE LIBRARY

TOWN HALL

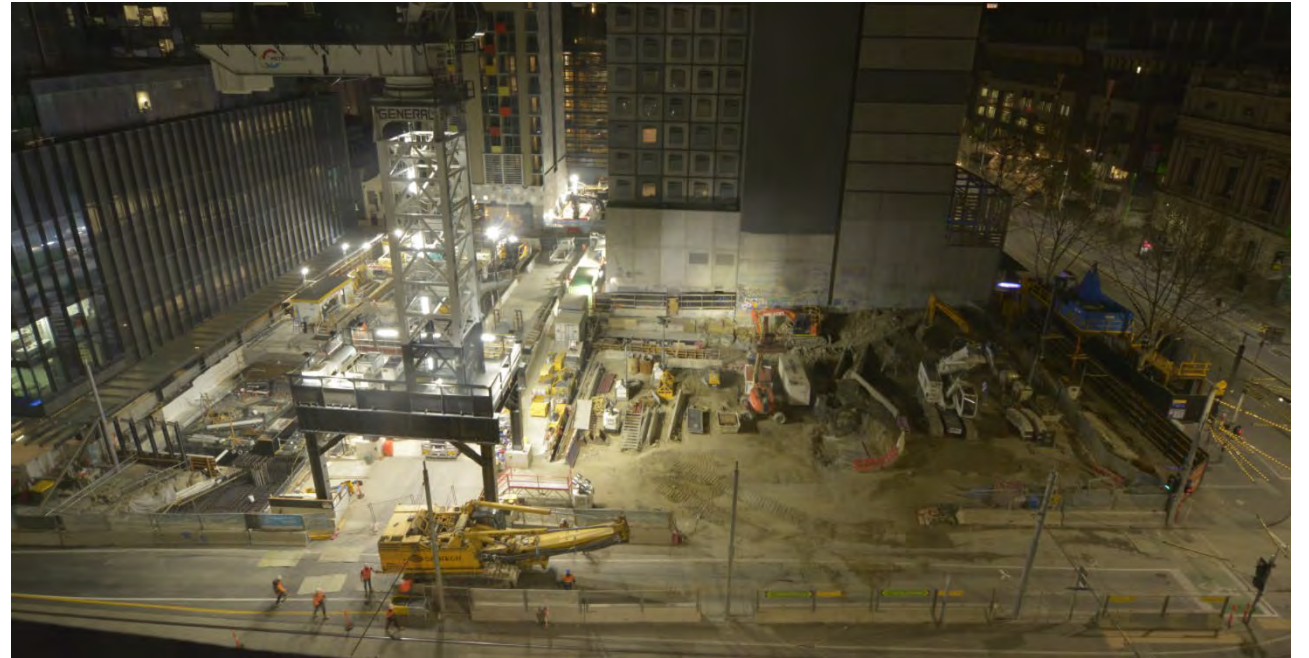
ANZAC

Presenter: Danielle Smits

STATE LIBRARY STATION

There are aboveground and belowground works at the State Library Station

- Piling has been completed at the La Trobe Street site after commencing in November 2018, which will be one of the future station entrances and site of the a future oversite development
- Top-down excavation is commencing at the La Trobe Street and Little La Trobe Street sites
- Below ground in the State Library Station, the central cavern has been completed. Also the first eastbound rail tunnel breakthrough happened on Thursday 17 September



State Library Station – La Trobe Street site



STATE LIBRARY STATION – AUGUST 2020

Presenter: Danielle Smits



STATE LIBRARY STATION – AUGUST 2020

Presenter: Danielle Smits

TOWN HALL STATION

There are aboveground and belowground works at Town Hall Station:

- Roadheader excavation is ongoing with excavation of the central caverns and adits under Swanston Street
- Aboveground, the Flinders Quarter site have completed the first suspended slab pour, which will form one of five levels. Flinders Quarter is being constructed using a top-down shaft construction.



Town Hall Station - Flinders Quarter site

ANZAC STATION

- First tunnelling drives from Domain to Eastern Portal will be completed in the coming month, to be followed by TBM retrieval
- Once TBM pieces back to site, the machines will be reassembled to be launched towards CBD in early 2021
- Last section of roof slab poured this week
- Excavation has commenced on the Shrine of Remembrance station entrance. This will be dug down to 10 metres
- First phase of excavation to station concourse level under St Kilda Road is complete



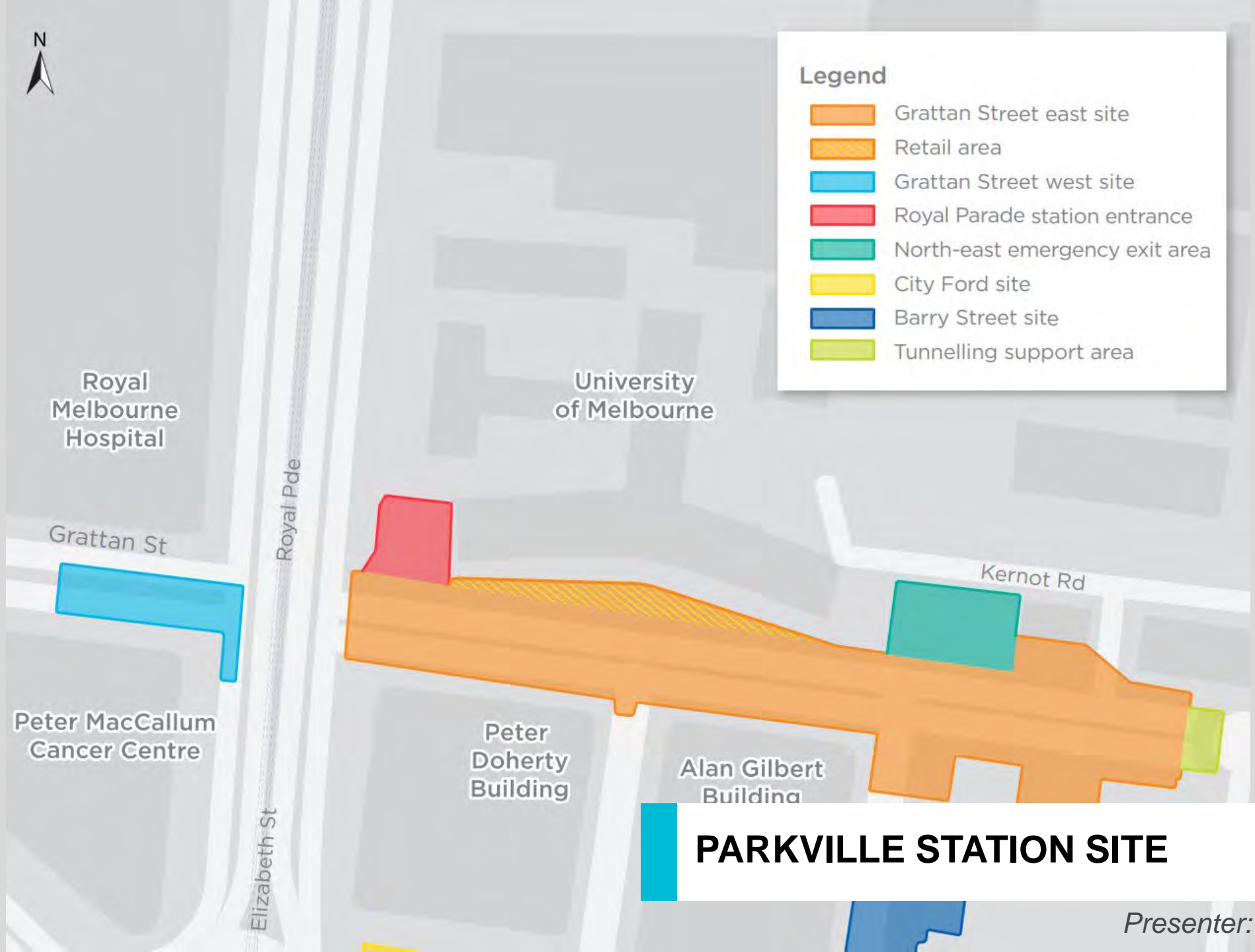
Anzac Station site

CONSTRUCTION UPDATE - PARKVILLE



CONSTRUCTION UPDATE – GRATTAN STREET EAST





PARKVILLE STATION SITE

Presenter: Danielle Smits

GRATTAN STREET EAST PROGRAM

Activity	Sep	Oct	Nov	Dec	Jan	Feb
Permanent structure works (concrete pours & associated activities)						
Royal Parade station entrance excavation and strutting						
Royal Parade station entrance - tension piles						
Retail area excavation						
Staged pile removal						
TBM support activities (launch frame / deck removal)						
North-east emergency exit excavation and associated works						
Service relocations – goods lift						
TVS shaft / Goods lift works – piling, strutting & excavation						

Dates are indicative and subject to change

PERMANENT STRUCTURE WORKS

Permanent structure works ongoing:

- B3 suspended slab – works to complete the final sections of this slab are expected to commence from early November
- Wall lining and columns are ongoing
- B2 suspended slab – 2 pours completed
- B1 suspended slab – works to commence in early December.



Wall lining works B3-B2 suspended slab

TUNNELLING SUPPORT WORKS

- Works are required to install and remove the thrust frame for TBM relaunch.
- Site setup commenced on Monday 7 September
- Temporary deck removed to facilitate lifting equipment into the deck
- Crane mobilisation has commenced
- Leicester Street (between Grattan Street and Pelham Street) remains open.



Tunnel support works

ROYAL PARADE STATION ENTRANCE

Staging of the works is aligned with the main station box permanent structure activities.

Stage 1:

- Excavation complete
- Strut installation complete

Stage 2:

- Excavation ongoing
- Strut installation from October 2020
- Tension piles to commence from late December 2020



Royal Parade station entrance

RETAIL AREA

Staging of the works is aligned with the main station box permanent structure activities.

- Strut installation is complete
- Excavation and associated works commenced mid-September



Retail area works

NORTH-EAST EMERGENCY EXIT

- Works to commence in November for approximately 6-8 weeks, involving:
 - Excavation
 - Strut installation
 - Shotcrete
- Works will resume from mid-2021 until mid-late 2022:
 - Excavation and associated works
 - Permanent structure works
 - Mechanical, electrical, and plumbing fit-out
- Total excavation depth will be approximately 9 metres.

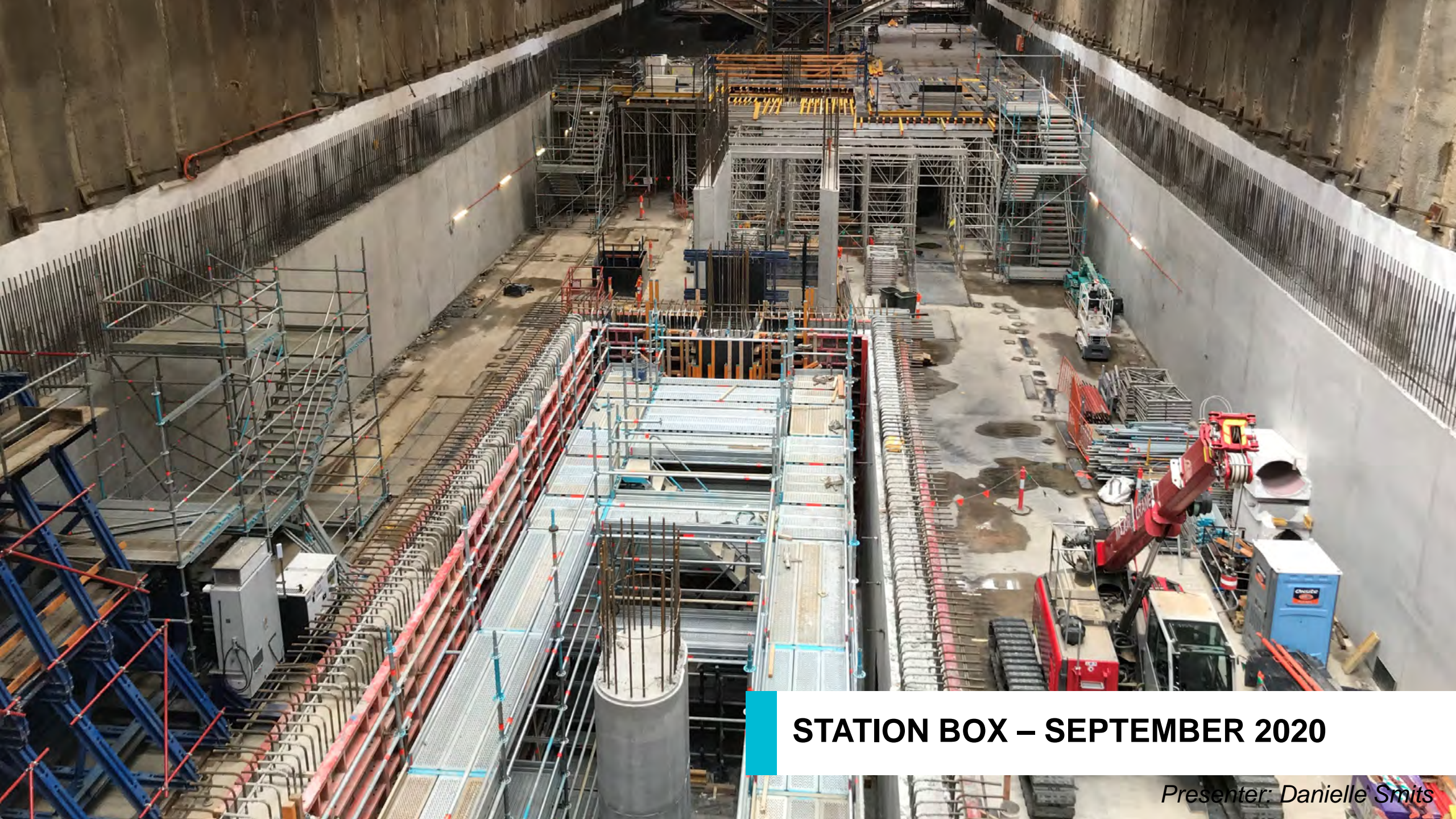


North-east emergency exit area



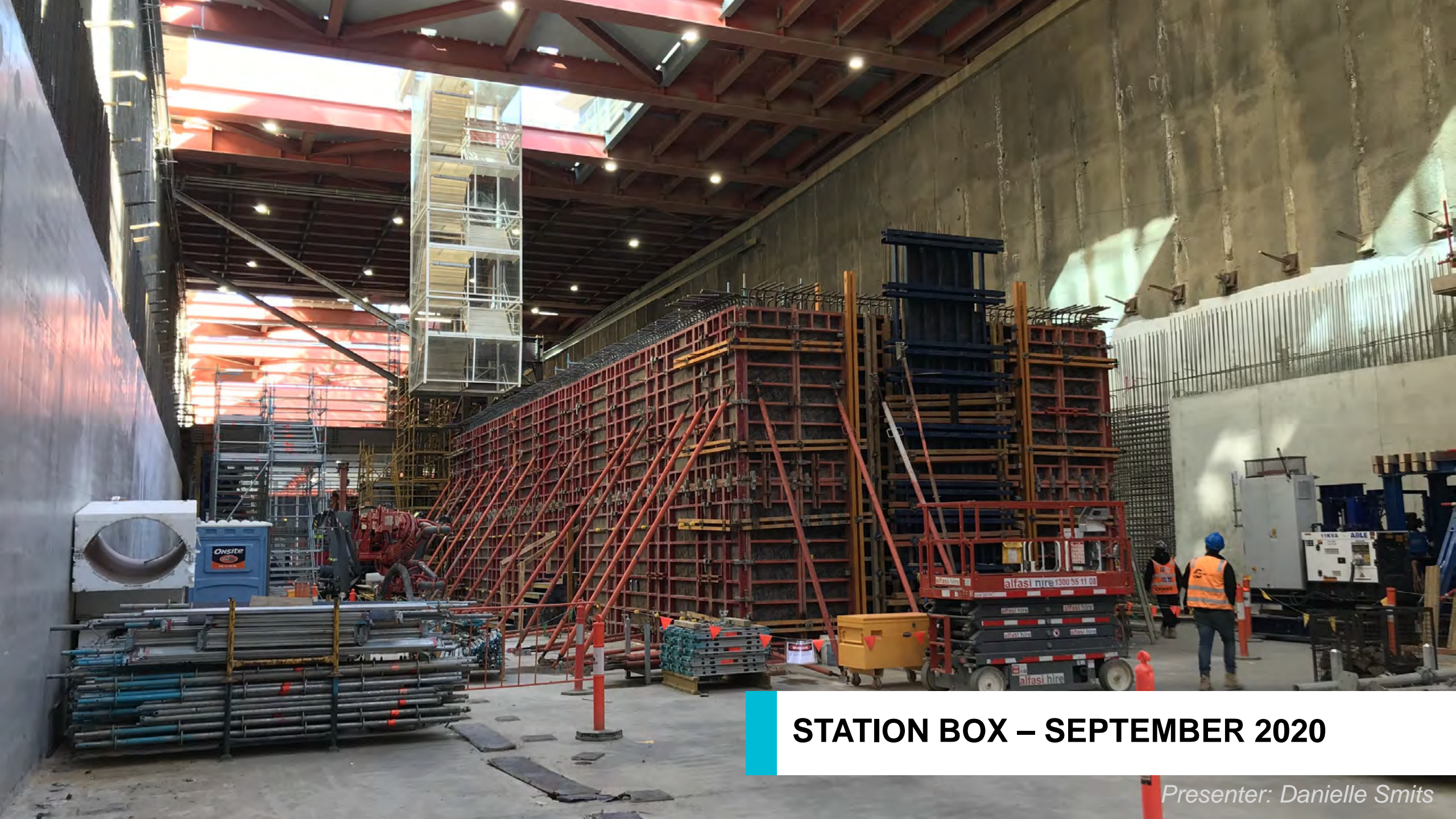
GRATTAN STREET EAST – SEPTEMBER 2020

Presenter: Danielle Smits



STATION BOX – SEPTEMBER 2020

Presenter: Danielle Smits



STATION BOX – SEPTEMBER 2020

Presenter: Danielle Smits



STATION BOX – SEPTEMBER 2020

Presenter: Danielle Smits

CONSTRUCTION UPDATE – GRATTAN STREET WEST

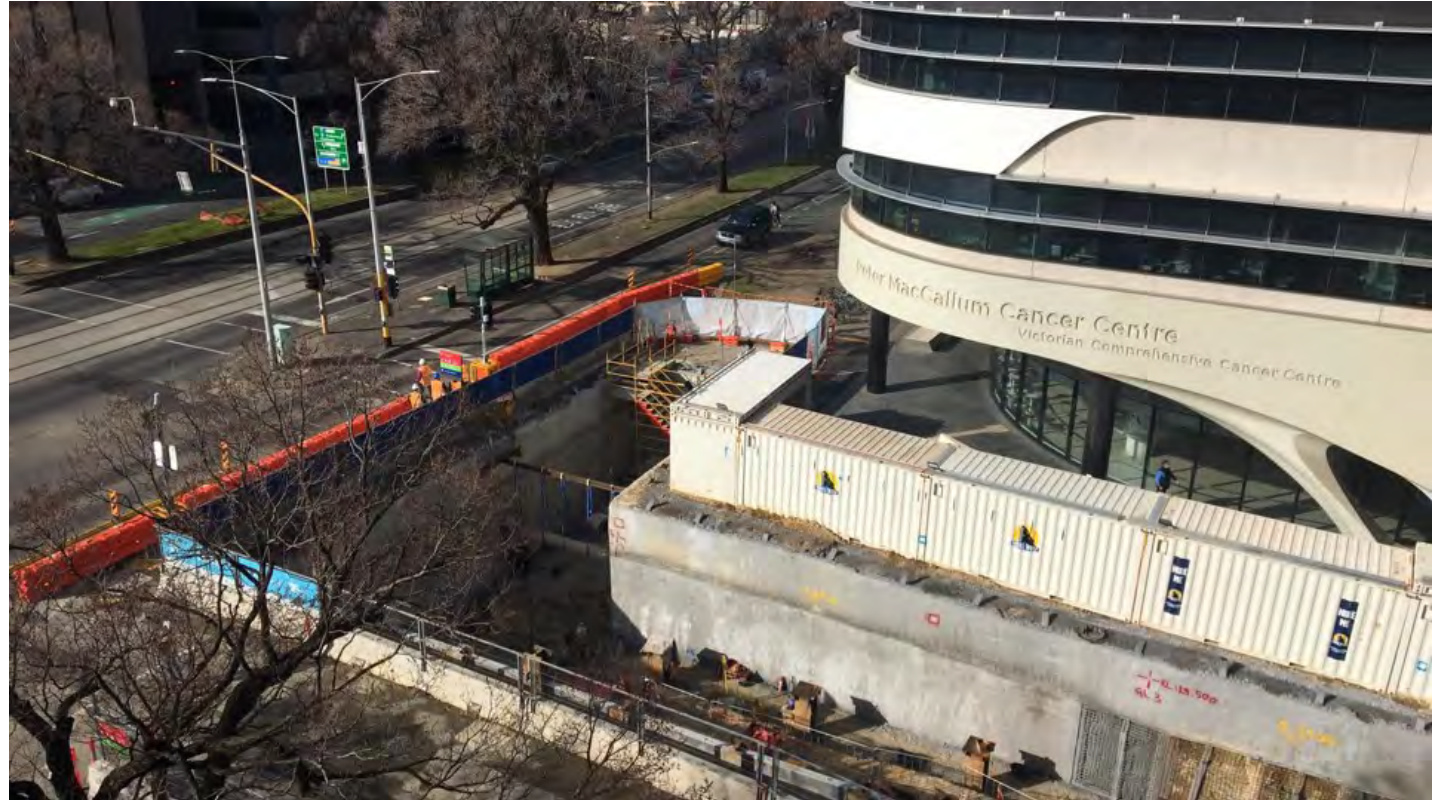
GRATTAN STREET WEST PROGRAM

Activity	Sep	Oct	Nov	Dec	Jan	Feb
Roof slab construction						
Pile deheading and backfill						
Service works (HV pit construction and services tie-in)						
Road reinstatement and preparation for stage 2 construction						

Dates are indicative and subject to change

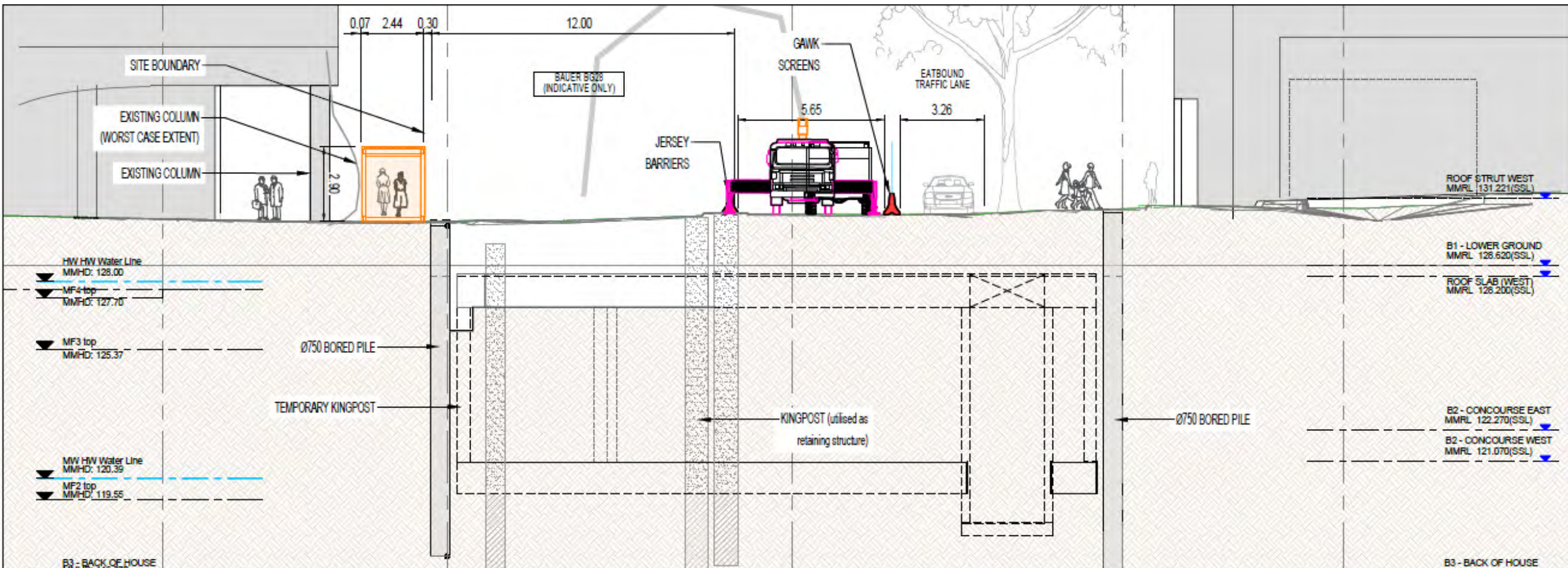
GRATTAN STREET WEST

- Roof slab construction works have commenced and are scheduled to be completed by mid-October
- Pile de-heading and backfill will follow
- Service works that will impact Royal Parade northbound service lane to commence mid-October



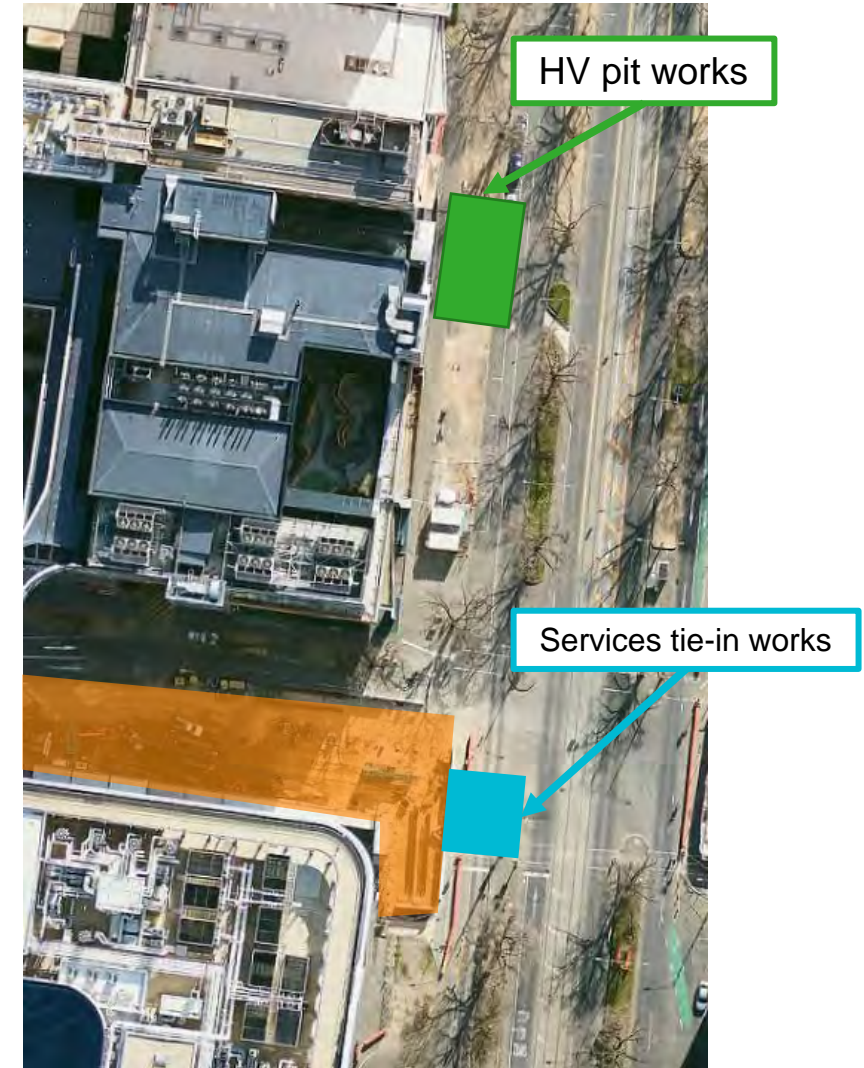
Grattan Street west

ROOF SLAB – FORM, REO & POUR



UPCOMING TRAFFIC CHANGES

- High voltage pit construction: Oct - Nov 2020:
Royal Parade northbound service lane closure
- Services tie-in works: Nov – Dec 2020:
Involving works in the Grattan Street and Elizabeth Street/Royal Parade intersection
- Pile de-heading and watermain installation -
Localised footpath pedestrian diversions



TREE REMOVALS AND HERITAGE

- Upcoming tree removals:
 - P006 - November 2020
 - Required to enable HV relocation works
 - P007 - November 2020
 - Required to enable Stage 2 site establishment & piling works
 - P008 - November 2020
 - Required to enable Stage 2 site establishment & piling works
 - Heritage tree approved for removal by Heritage Victoria
- Current approvals/endorsements:
 - Stage 4 submission to Heritage Victoria for endorsement for West Box works

TREE REMOVALS





GRATTAN STREET WEST- SEPTEMBER 2020

Presenter: Danielle Smits



GRATTAN STREET WEST – SEPTEMBER 2020

Presenter: Danielle Smits

CONSTRUCTION UPDATE – NORTH MELBOURNE



NORTH MELBOURNE PROGRAM

Activity	Sep	Oct	Nov	Dec	Jan	Feb
Tunnelling (Arden to Parkville)						
Concourse slab construction						
West box inner wall construction						
East box inner wall construction						
Roof slab construction						
Driven piling (foundation reinforcement)						
Service proving (Laurens Street)						
West (station) building construction						
Intake substation construction						
Cross passage construction						

Program is indicative and subject to change



Presenter: Kim Mas

CONCOURSE SLAB CONSTRUCTION

- 75% of the full concourse slab has now been poured, including full completion of the west box concourse slab
- Works to complete the east box concourse slab will continue through until the end of October



West box concourse slab

STATION INNER WALL AND COLUMN CONSTRUCTION

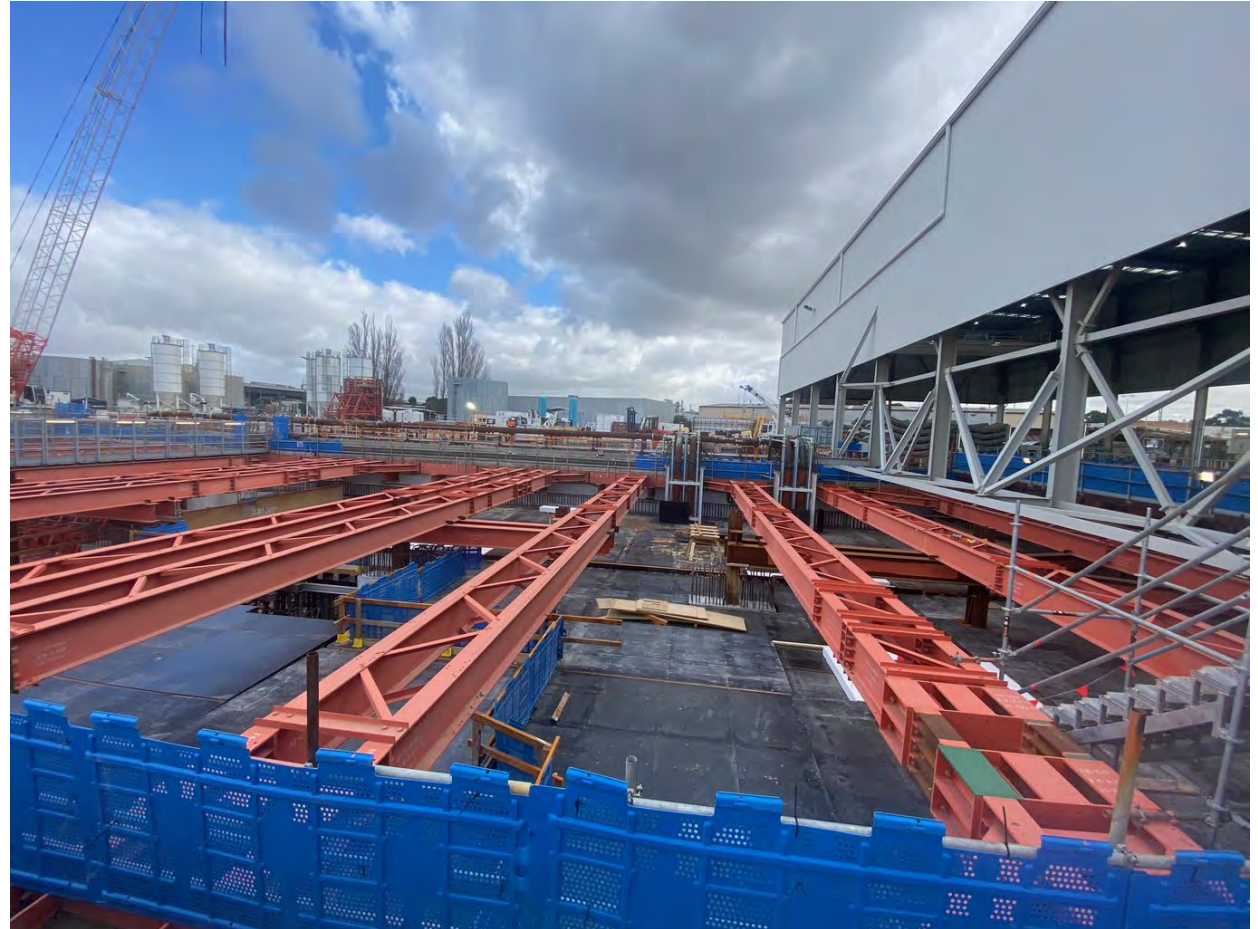
- Station box lining walls are 45% complete
- West box core walls are 42% complete
- Two elliptical columns, 12 rectangular columns and 2 circular columns are still to be poured



Completed rectangular columns (west box)

ROOF SLAB CONSTRUCTION

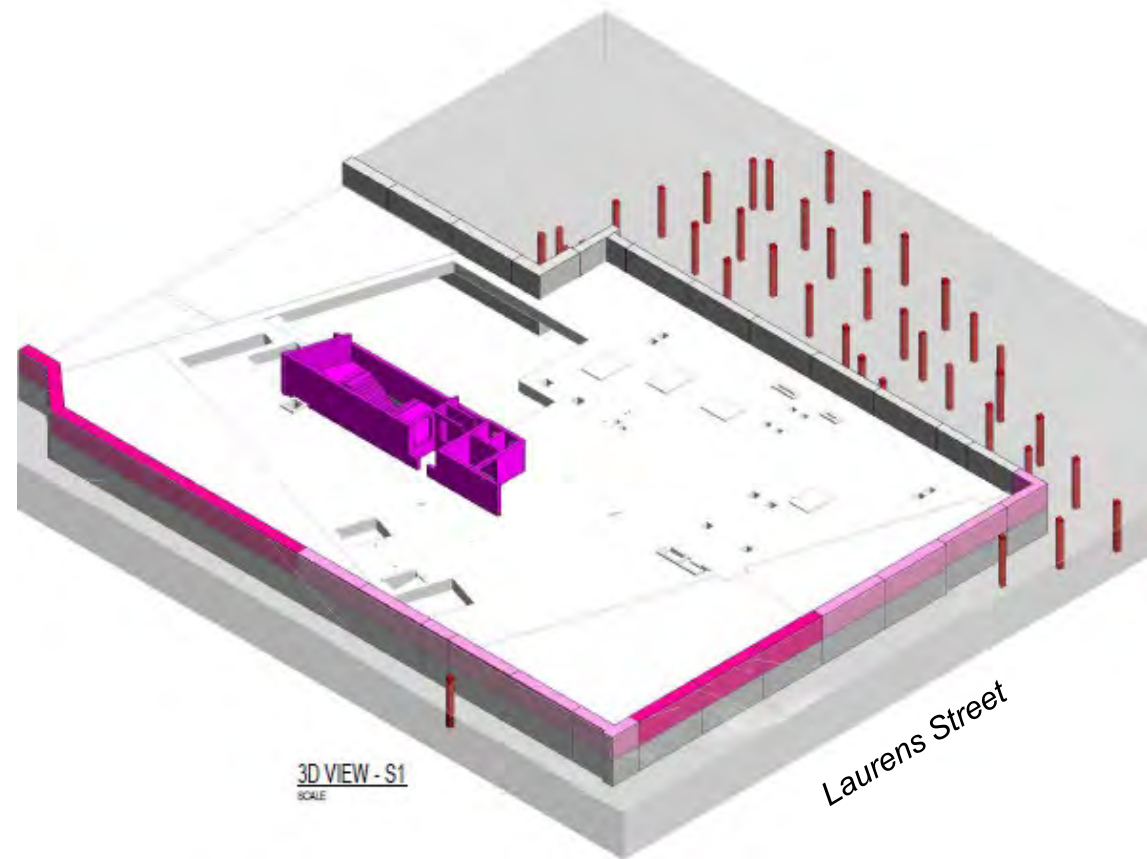
- Two out of 11 bays have been poured to date
- The remaining nine pours will occur between September 2020 and March 2021
- Struts are removed directly after each concrete pour to allow for the commencement of future building construction



Roof slab (west box)

DRIVEN PILING (FOUNDATION REINFORCEMENT)

- 31 driven piles will be installed in the north east corner of the station box and one pile in the south east corner
- Piles will reinforce the station building foundation (where the building sits outside of the station box)
- Driven piling to commence late 2020/early 2021
- Driven piling works will only be undertaken during normal construction hours (7am – 6pm Monday to Friday and 7am to 1pm Saturday)



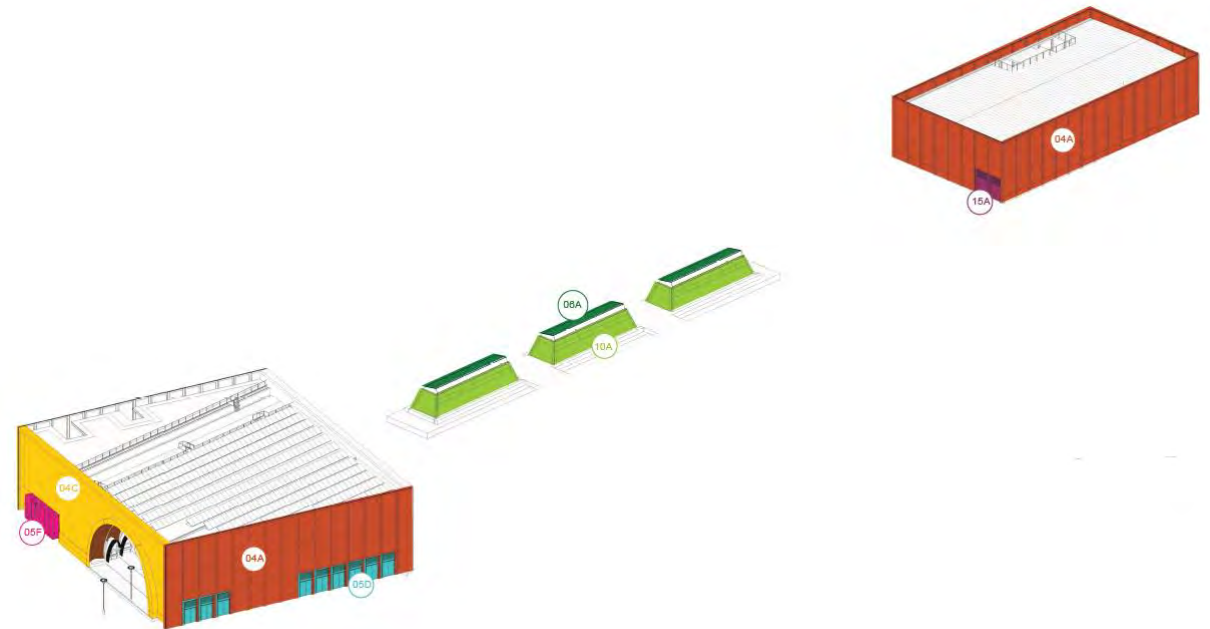
Location of driven piles

SERVICE PROVING (LAURENS STREET)

- From October, service proving will occur for the future, permanent relocation of services adjacent to the station site. These works will continue until early 2021
- Service proving will occur at the intersection of Queensberry and Laurens Street and the intersection of Arden and Laurens Street
- Planning is underway for the closure of the footpath on the western side of Laurens Street from late 2020/early 2021 until September 2023. This closure will support service proving works and ongoing station construction

WEST (STATION) BUILDING CONSTRUCTION

- Work will commence on the new Arden Station maintenance building in early 2021
- The maintenance building will be located at the western end of the station box
- Works will take approximately six months



Arden Station – station entrance (left), skylights (middle), maintenance building (right)

INTAKE SUBSTATION CONSTRUCTION

- Foundation piling was completed on 7 September
- Foundation structure construction is underway and due for completion by late December 2020
- Foundation structure pit construction commenced on 7 September
- Undertrack bore works are scheduled to commence at the end of October



Intake substation site piling

CROSS PASSAGE CONSTRUCTION

- Cross passage 5 (Lothian Street) - excavation commenced on 16 September. Shotcreting, waterproofing and concreting works to follow
- Cross passage 6 (Hotham Gardens) - installation of the support structures to commence in the coming days. Excavation is programmed to start at the end of September
- Cross passage 7 (corner of Errol and O'Shanassy streets) - backfilling and installation of the support structures to commence early October. Excavation is programmed to start early October



Cross passage lining finishing works – cross passage 2 (McLennan Drive)

WHAT'S HAPPENING AT ARDEN STATION

Out of hours works (Arden Station site)

- 6pm –10pm (evening works), Monday to Friday
 - Primary structure construction (including concrete pours), as required
 - Strut removal, as required
- 10pm – 7am (night works), Monday to Friday
 - Over-size equipment deliveries to and from site and use of a crawler crane to unload deliveries
 - After 6pm, construction vehicles will enter and exit via Arden Street wherever possible
- 24 hours, seven days a week
 - Tunnelling, slurry treatment plant, grout pump and segment facility operation
 - Trucks transporting excavated material from site
 - Cross passage construction between Arden and Parkville

TUNNELLING



TBM PROGRESS

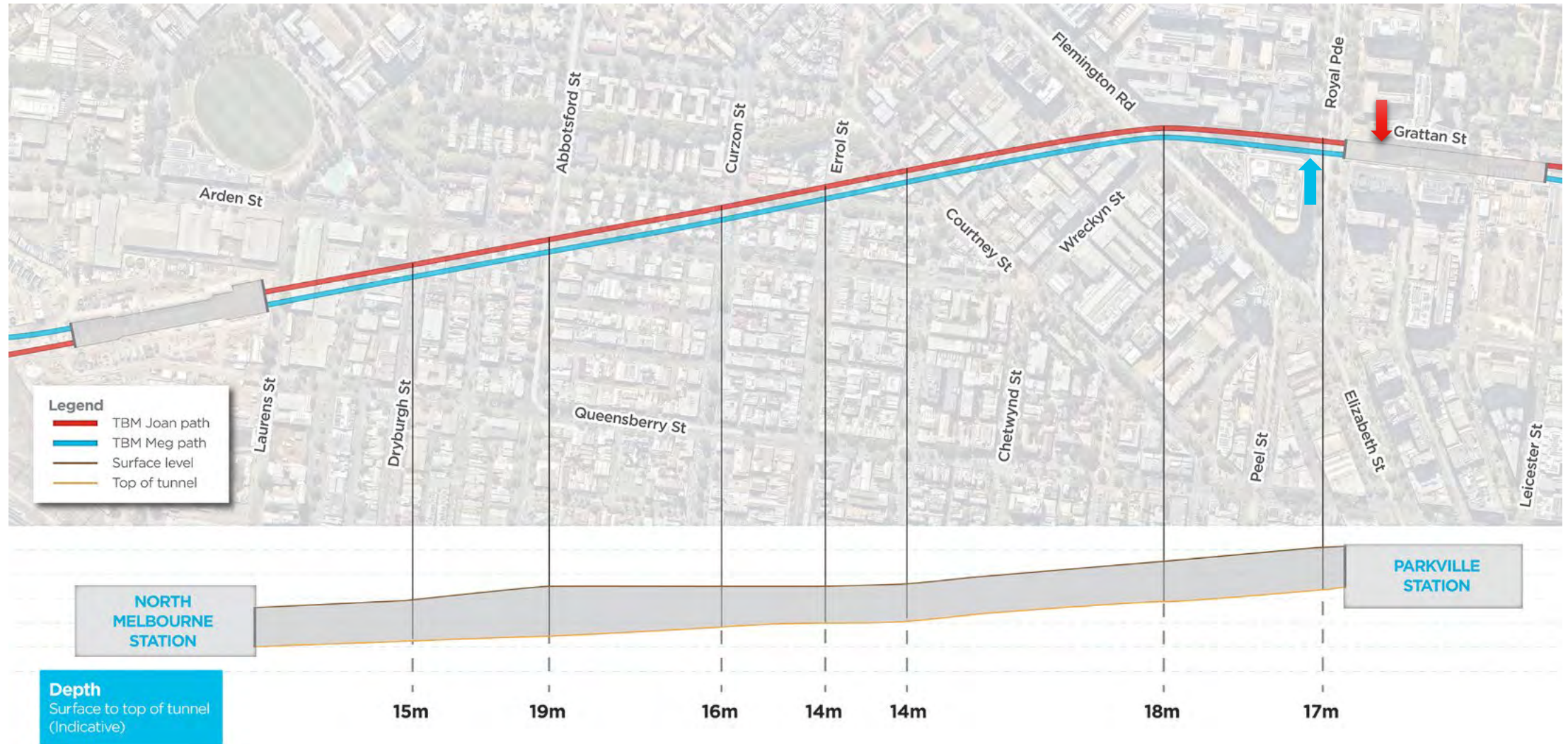
TBM Joan

- Broke through at Parkville Station 27 August 2020

TBM Meg

- 825 rings installed
- 1.41 kms
- Break through at Parkville Station to occur in the coming days

TBM PROGRESS



PARKVILLE TBM BREAKTHROUGHS

- TBMs mill slowly through the fibreglass 'soft eye' of the station box
- The 'soft eye' is designed to minimise impacts of the breakthrough
- Reduced confinement pressure to maintain slurry flow and ensure maximum amount of spoil/debris is pumped back to the Arden Station site slurry treatment plant (STP)
- Process to contain slurry in the station box after breakthrough



TBM BREAKTHROUGH – AUGUST 2020

Presenter: Ryan Martin



TBM BREAKTHROUGH – AUGUST 2020

Presenter: Ryan Martin



TBM BREAKTHROUGH – AUGUST 2020

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Presenter: Ryan Martin



PARKVILLE STATION
BREAKTHROUGH AUGUST 2020

TBM BREAKTHROUGH – AUGUST 2020

Presenter: Ryan Martin



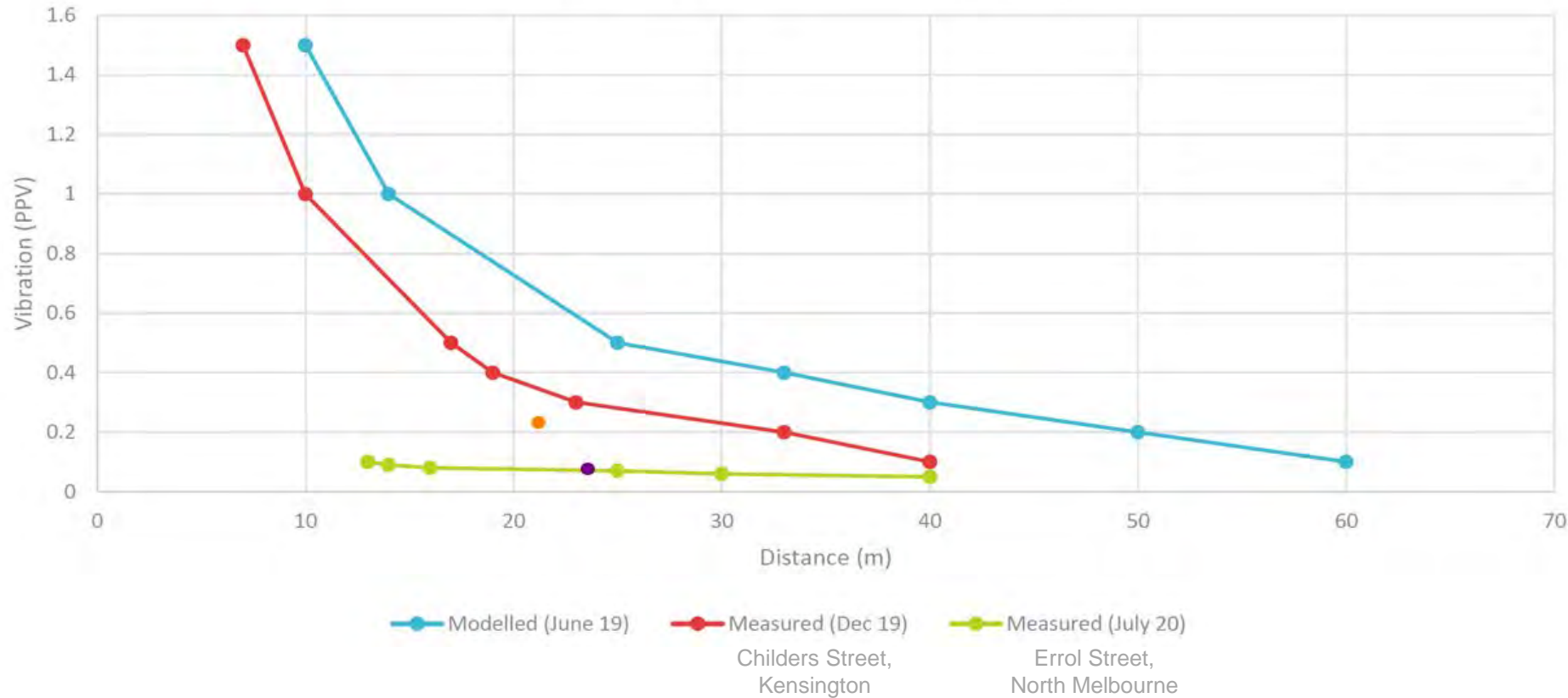
TBM TRANSFER – SEPTEMBER 2020

Presenter: Ryan Martin

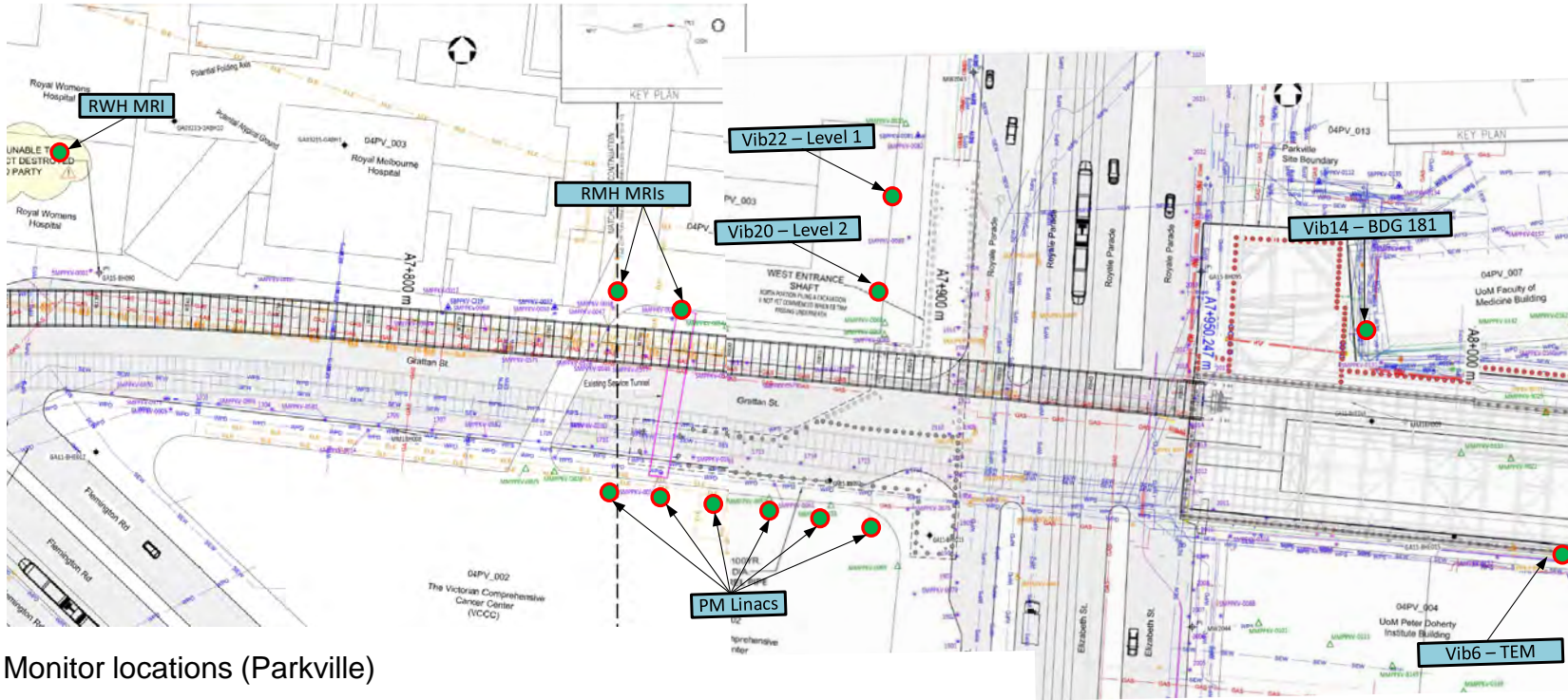
MANAGING NOISE AND VIBRATION - TBMS AND BREAKTHROUGH

TBM MONITORING – ARDEN TO PARKVILLE

Vibration (PPV) as a Function of Distance



Distance	Vibration (mm/s PPV)			
	CYP Predicted	CYP Measured Dec 19'	CYP Measured July 20'	CYP measured Grattan St Aug 20
10m	1.5	1	Not Available	
15m	0.9	0.6	0.11 (13m)	0.2 (16m) Breakthrough
20m	0.7	0.35	0.08 (19m)	0.045 (18m)



On-site monitoring during TBM1 breakthrough

TUNNELLING COMMUNICATIONS AND ENGAGEMENT

TUNNELLING COMMUNICATIONS AND ENGAGEMENT

COMPLETED

Notifications and communications

O'Shanassy Street, Market Lane and Courtney Street

- TBM2 one week out letters to residents on O'Shanassy Street, Market Lane and Courtney Street

Meetings, briefings and events

- SMS updates provided to two residents

TUNNELLING COMMUNICATIONS AND ENGAGEMENT

COMPLETED

Notifications and communications

Courtney Street, Mary Street, Villiers Street and Flemington Road

- TBM2 one week out letters to residents on Courtney Street, Mary Street and Villiers Street

Meetings, briefings and events

- SMS updates provided to five residents and the Lort Smith Animal Hospital
- Online tunnelling information session with Parkville Association (2 September)

Note: following the introduction of Stage 4 restrictions in August, TBM2 arrival letters were unable to be distributed to properties between Villiers Street and Flemington Road

COMMUNICATIONS AND ENGAGEMENT PARKVILLE STAKEHOLDERS

Communications to potentially impacted stakeholders

- Parkville Precinct Reference Group
- Fortnightly meetings with key stakeholders
- Daily update issued to key stakeholders as the TBM travels near Grattan Street west and approaches breakthrough
- TBM Breakthrough Information Session
- [Fact sheet](#) on TBM breakthrough, transfer through the station box and relaunch

TUNNEL LINING SEGMENT MANUFACTURING FACILITY



TUNNEL LINING SEGMENT MANUFACTURING FACILITY

- The Metro Tunnel's concrete segment manufacturing plant in Deer Park has produced 80 per cent of the pieces that will form the project's twin nine-kilometre tunnels
- The \$18 million purpose-built facility opened in 2018
- The facility has produced more than 45,000 of the 57,112 curved segments needed to line the tunnels
- At peak construction, around 270 segments are being produced each day
- Each concrete segment is curved and weighs 4.5 tonnes
- Tunnels will be lined with around 9,500 concrete rings
- Each ring consists of six individual curved segments
- The facility has created more than 70 new jobs



TUNNEL LINING SEGMENT MANUFACTURING FACILITY

Presenter: Ryan Martin

STAKEHOLDER AND COMMUNICATIONS UPDATE



ENGAGEMENT AND COMMUNICATIONS UPDATE

NORTH MELBOURNE AND PARKVILLE

Notifications and communications

- Arden – July/August 2020 Construction Update (7 July)
- Arden – September/October 2020 Construction Update (4 September)
- Parkville – August/September Construction Update (6 August)
- Parkville – Tunnelling Support Works Notification (31 August)
- Parkville – weekly update to key stakeholders

Door knocks, meetings, briefings and events

- Parkville - fortnightly meetings with Peter MacCallum Cancer Centre, Melbourne Health, University of Melbourne, City of Melbourne; monthly meetings with Graduate House
- Parkville Precinct Reference Group (15 September)
- Arden – fortnightly meetings with City of Melbourne (5 August, 19 August, 2 September, 16 September)

ENGAGEMENT AND COMMUNICATIONS UPDATE

NORTH MELBOURNE AND PARKVILLE

Community issues and enquiries

- Dirt and mud on Arden Street
- Arden site noise enquiries
- Grattan Street west station entrance construction

Upcoming engagement

- Cross passage construction
- Grattan Street east – TVS shaft and Goods Lift works
- TBM relaunch at Parkville Station

PROJECT MILESTONE VIDEOS



PARKVILLE TBM BREAKTHROUGH (TBM JOAN)



<https://youtu.be/YIEy815Vldg>

TUNNEL LINING SEGMENT MANUFACTURING FACILITY



<https://youtu.be/kdOTaZeWkKo>

QUESTIONS?



NEXT MEETING

Friday 13 November 2020

- Final meeting for 2020



Western Portal

South Kensington

Arden

Parkville

North Melbourne

Melbourne Central

State Library

Flagstaff

Parliament

Town Hall

Southern Cross

Flinders Street

Richmond

Anzac

South Yarra

Eastern Portal

Sunbury Line

Cranbourne / Pakenham Line