

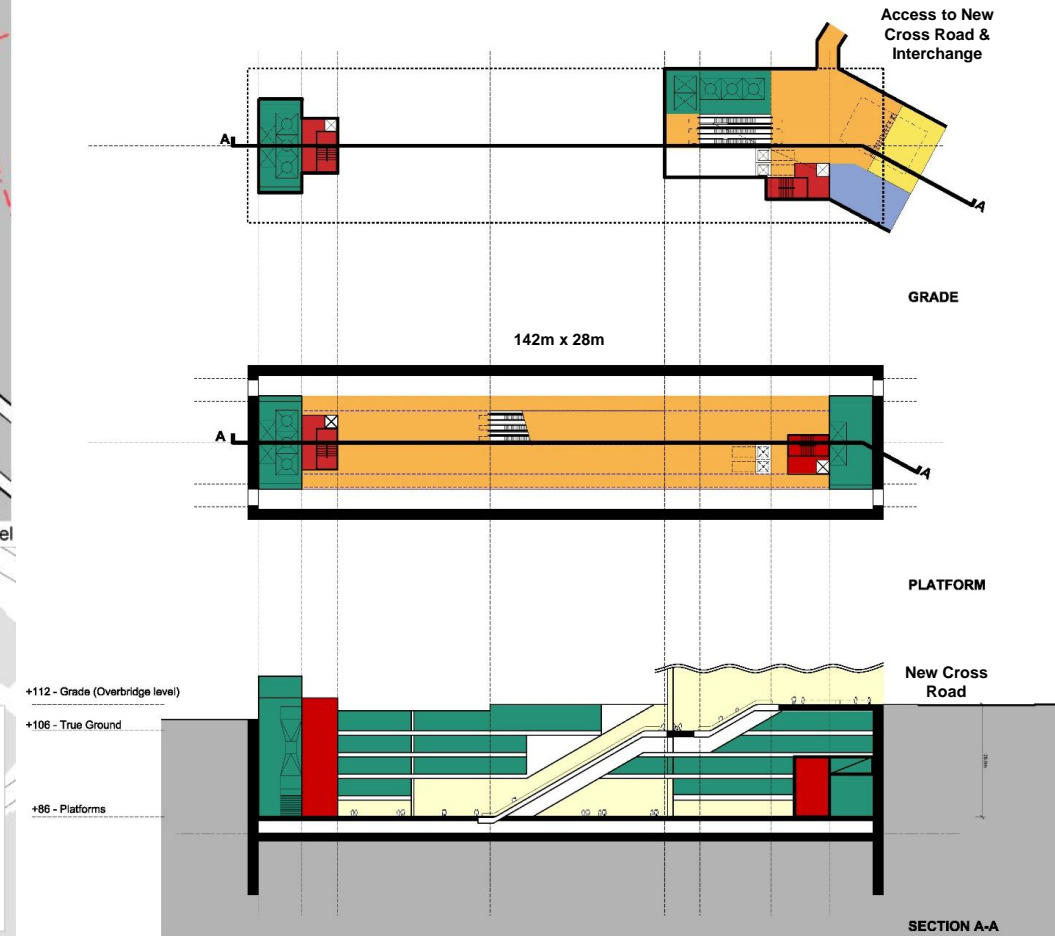
# Bakerloo Line Extension New Cross Gate Station

Sainsbury's/Mount Anvil Progress Meeting  
*11<sup>th</sup> April 2018*

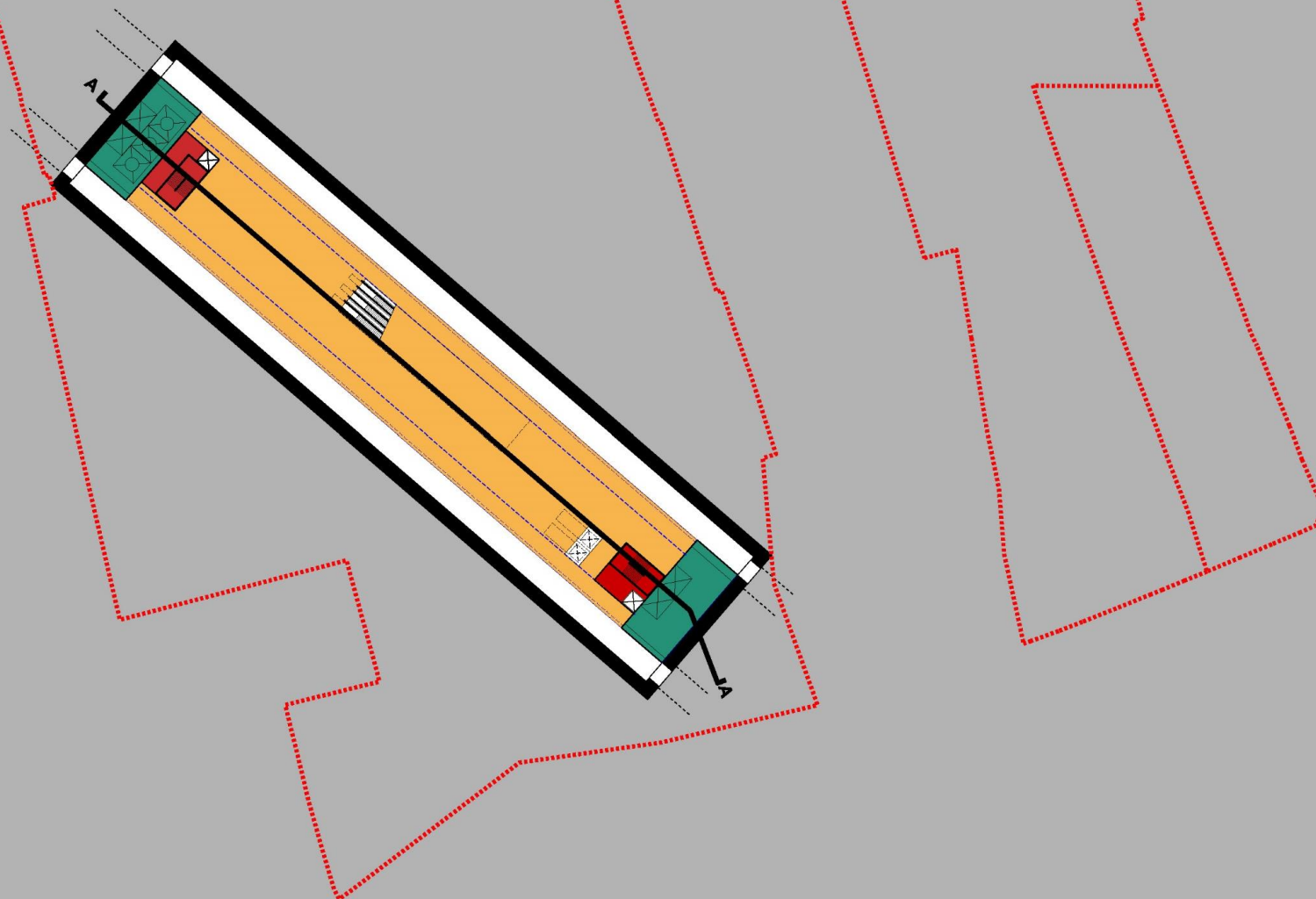
# Agenda

- Introduction
- TfL Update:
  - Option 1 Box Construction
  - Option 3 Mined Construction
  - Option 3a (S/MA Mined Construction)
- Sainsbury's and Mount Anvil Update

# Option 1 – Overview

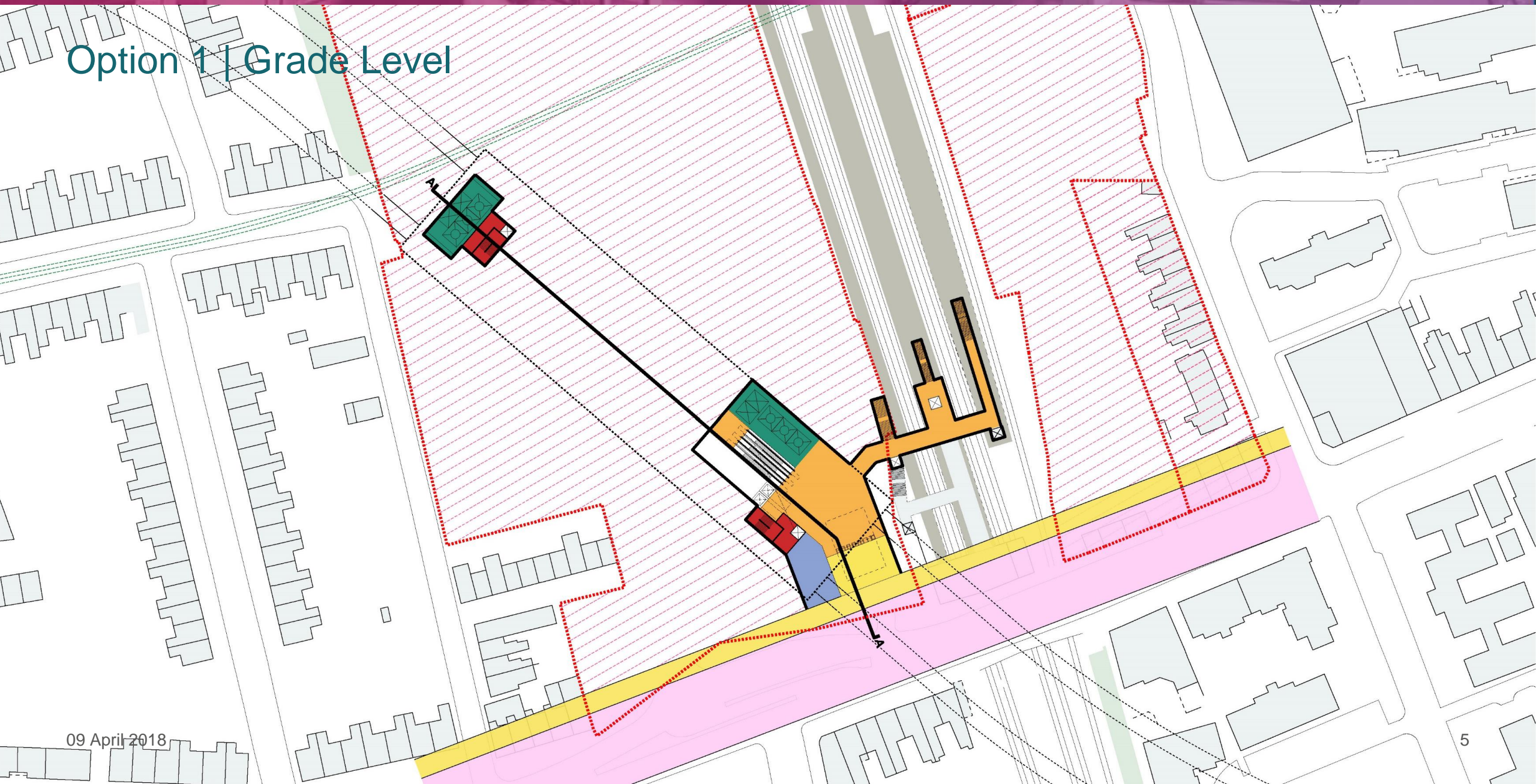


## Option 1 | Platform Level



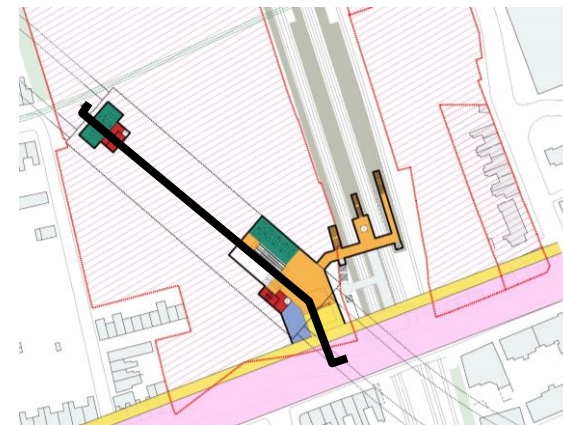
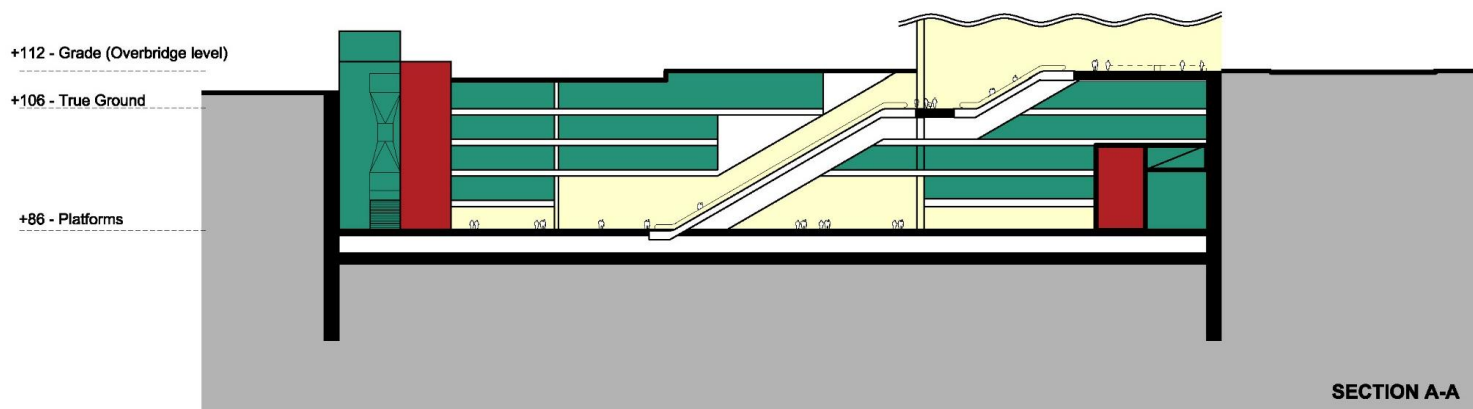


## Option 1 | Grade Level

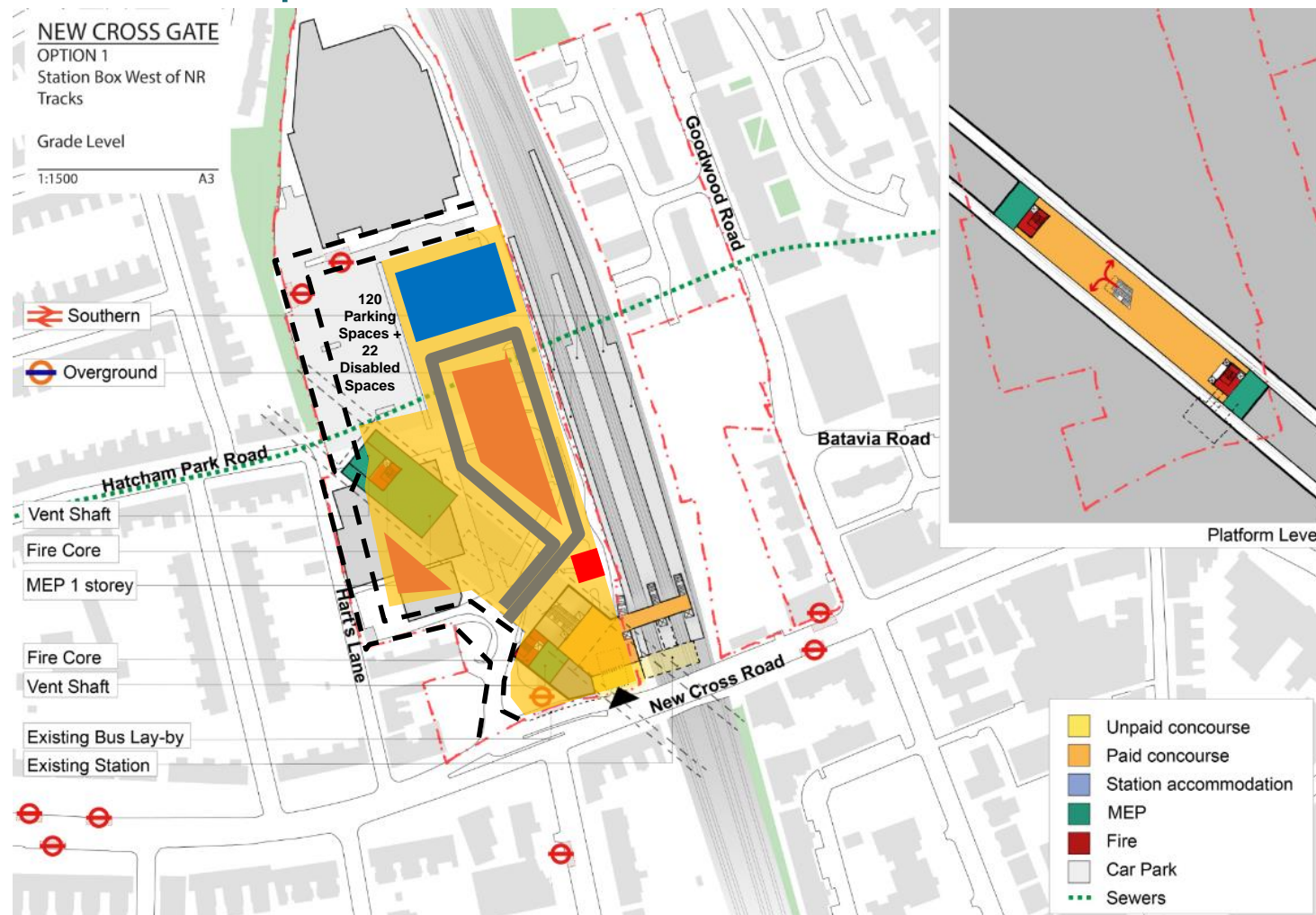




## Option 1 | Section



# Option 1 – Worksite Requirements

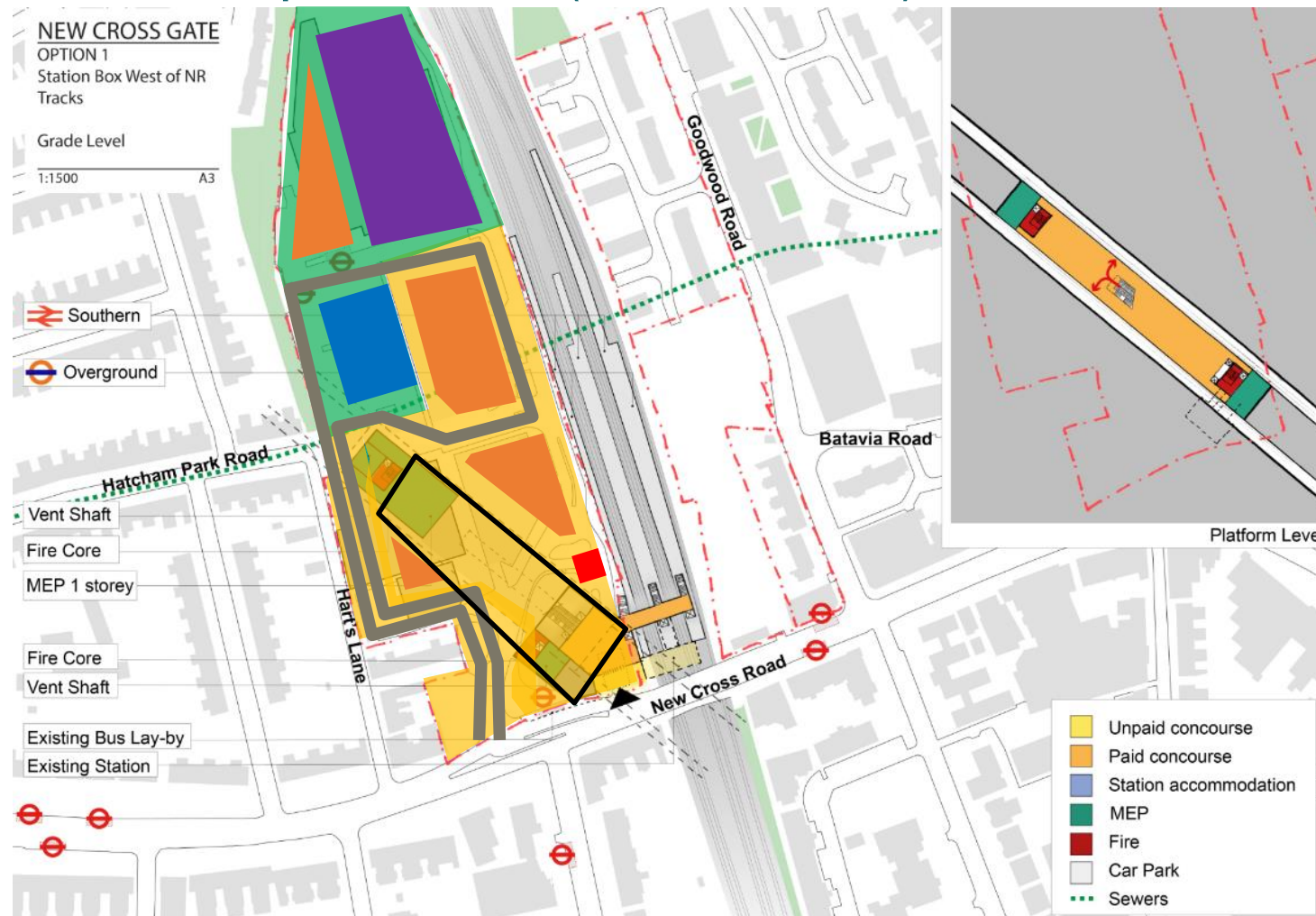


## Key

- Construction worksite
- Satellite worksite
- Welfare
- Haul Road
- Crane
- Materials Storage
- Slurry Treatment Plant
- Sainsbury's Access
- TBM Launch Site

*Note:*  
The access and space provision shown for Sainsbury's store is our best estimate at this stage of planning and design to provide the fullest accommodation possible, whilst ensuring the proposed BLE station works can be undertaken.

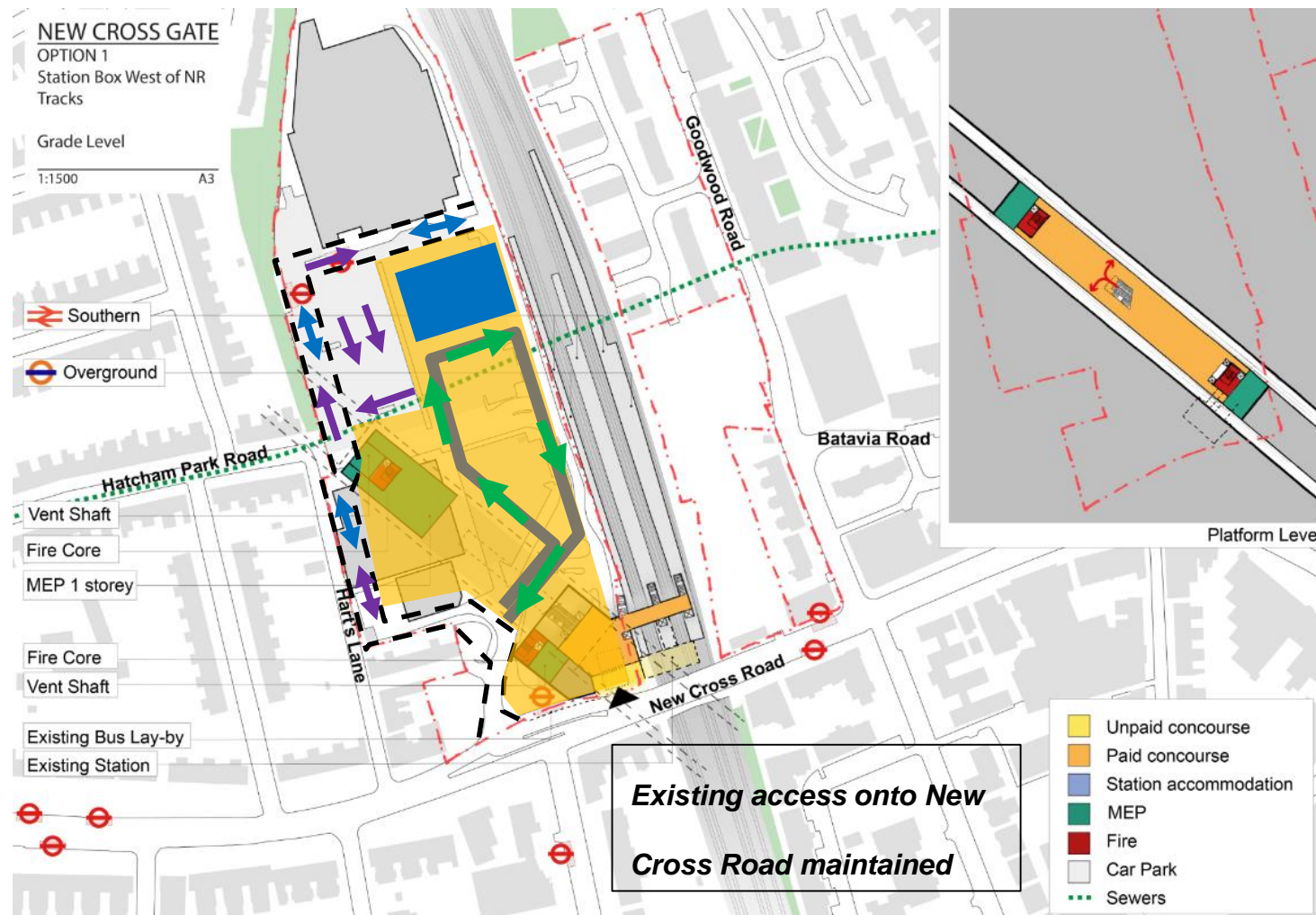
## Option 1 – Worksite Requirements (Satellite Site)



*Note:  
The access and space provision shown for Sainsbury's store is our best estimate at this stage of planning and design to provide the fullest accommodation possible, whilst ensuring the proposed BLE station works can be undertaken.*



# Option 1 – Vehicle Movements



*Note:*  
The access and space provision shown for Sainsbury's store is our best estimate at this stage of planning and design to provide the fullest accommodation possible, whilst ensuring the proposed BLE station works can be undertaken.

# Option 1 – Construction Methodology

- *Diaphragm walls/Contiguous piles for station box structure;*
- *Top-down construction method likely due to space constraints.*



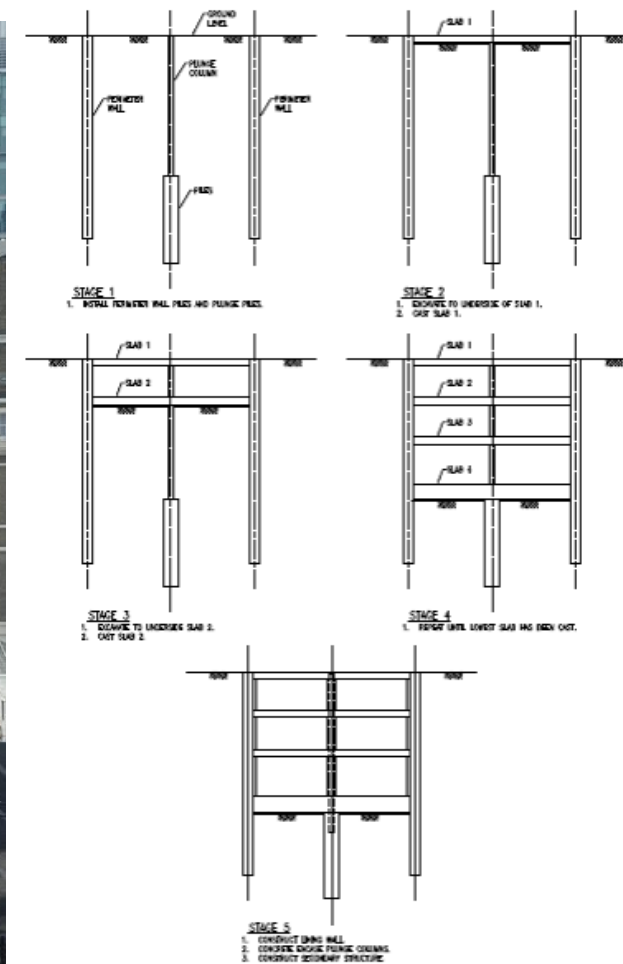
Secant piled wall



Diaphragm wall



Diaphragm wall construction



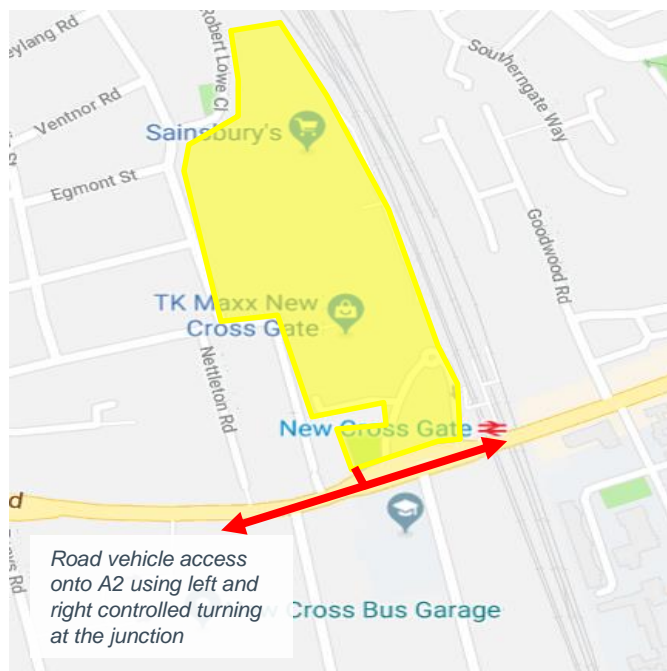


## Option 1 – Construction Logistics (Rail)

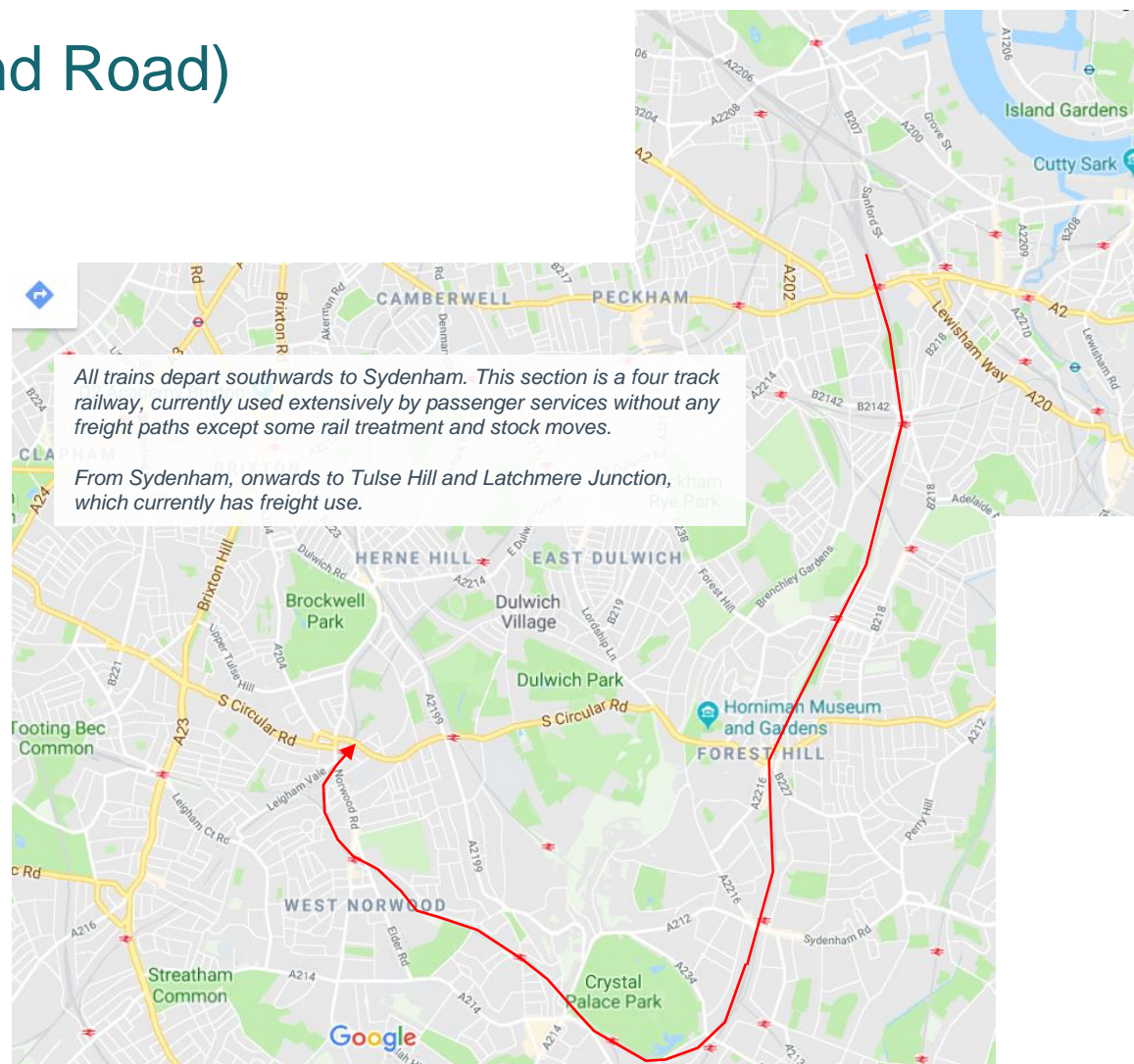




## Option 1 – Construction Logistics (Rail and Road)

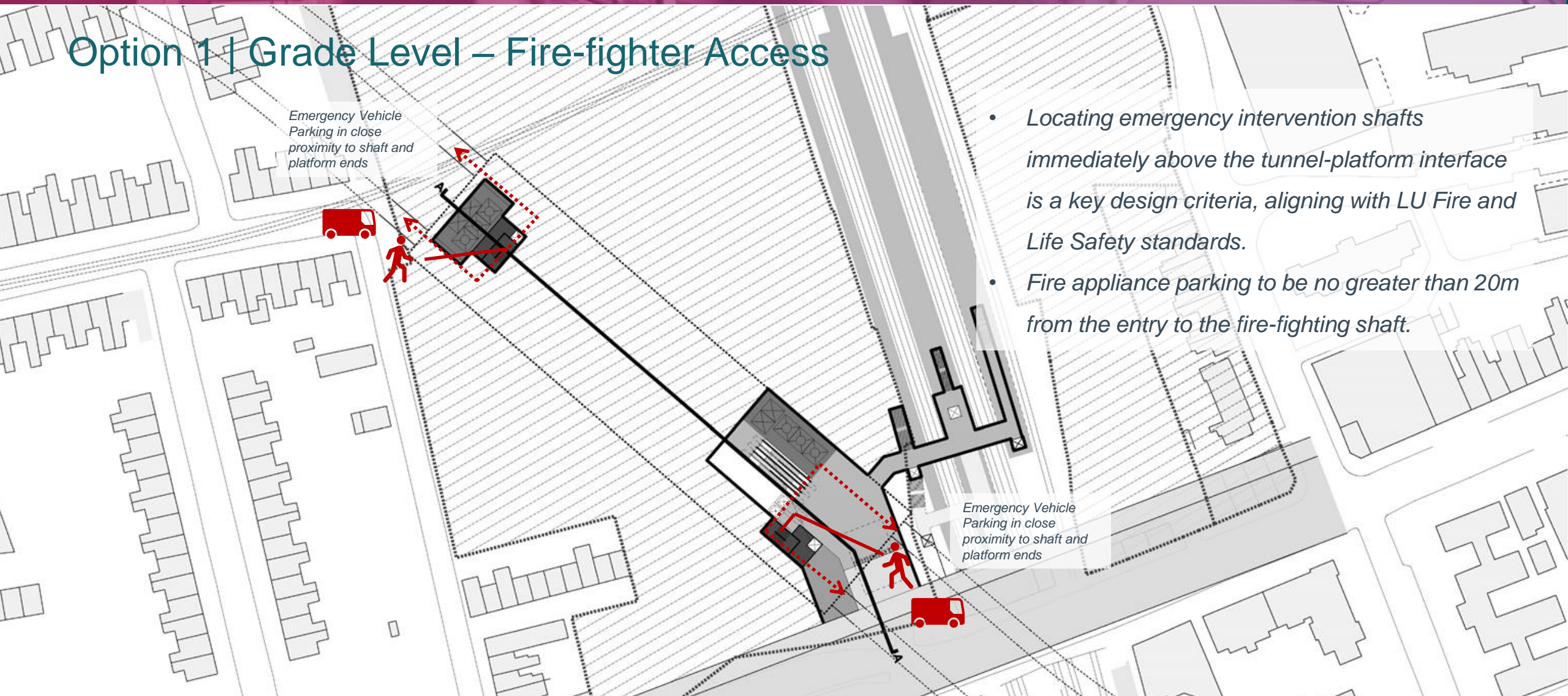


*During BLE works, the current arrangement of junctions across the frontage of the site would change. In particular, it is likely that a single entrance would be managed, with the set up of signalised junctions amended to facilitate right turn out for efficient bus stand movements accommodated at the front of the BLE site.*





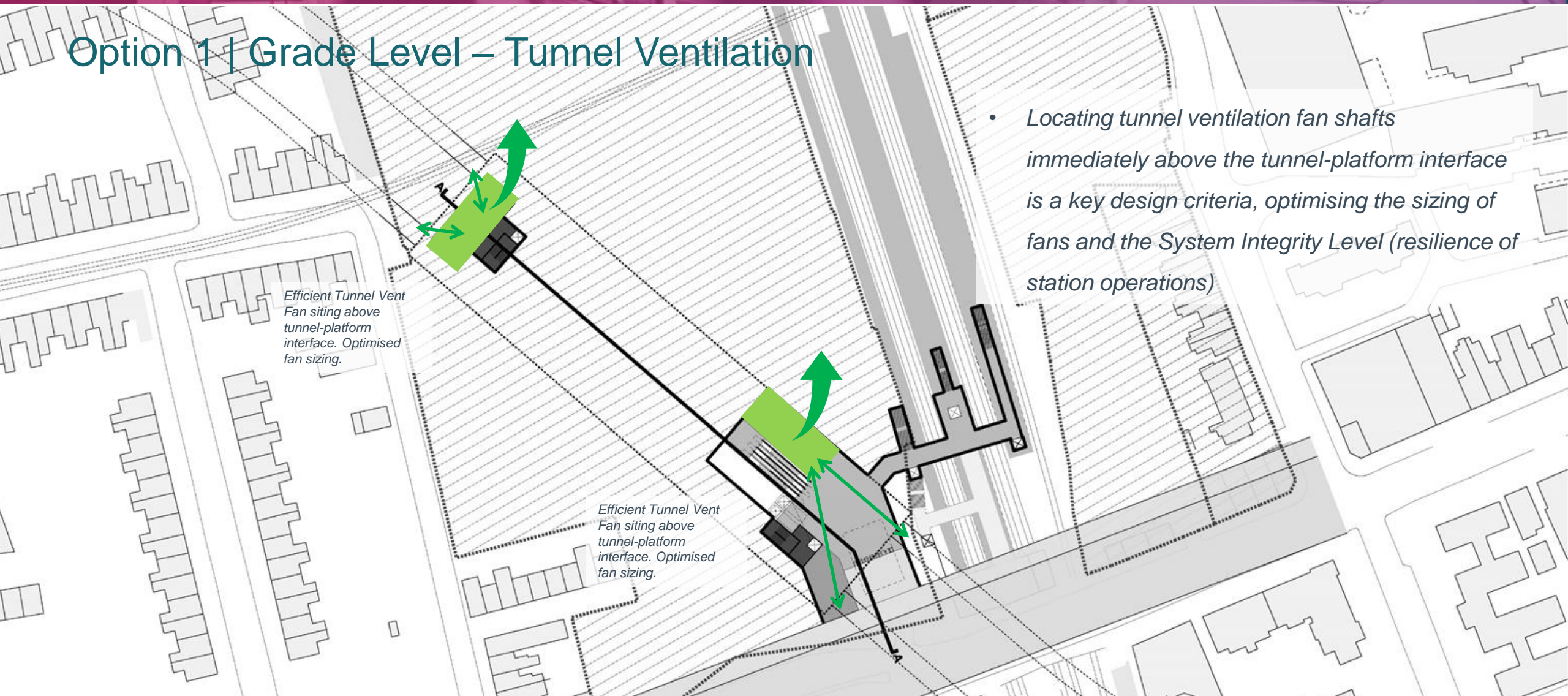
## Option 1 | Grade Level – Fire-fighter Access



- Locating emergency intervention shafts immediately above the tunnel-platform interface is a key design criteria, aligning with LU Fire and Life Safety standards.
- Fire appliance parking to be no greater than 20m from the entry to the fire-fighting shaft.



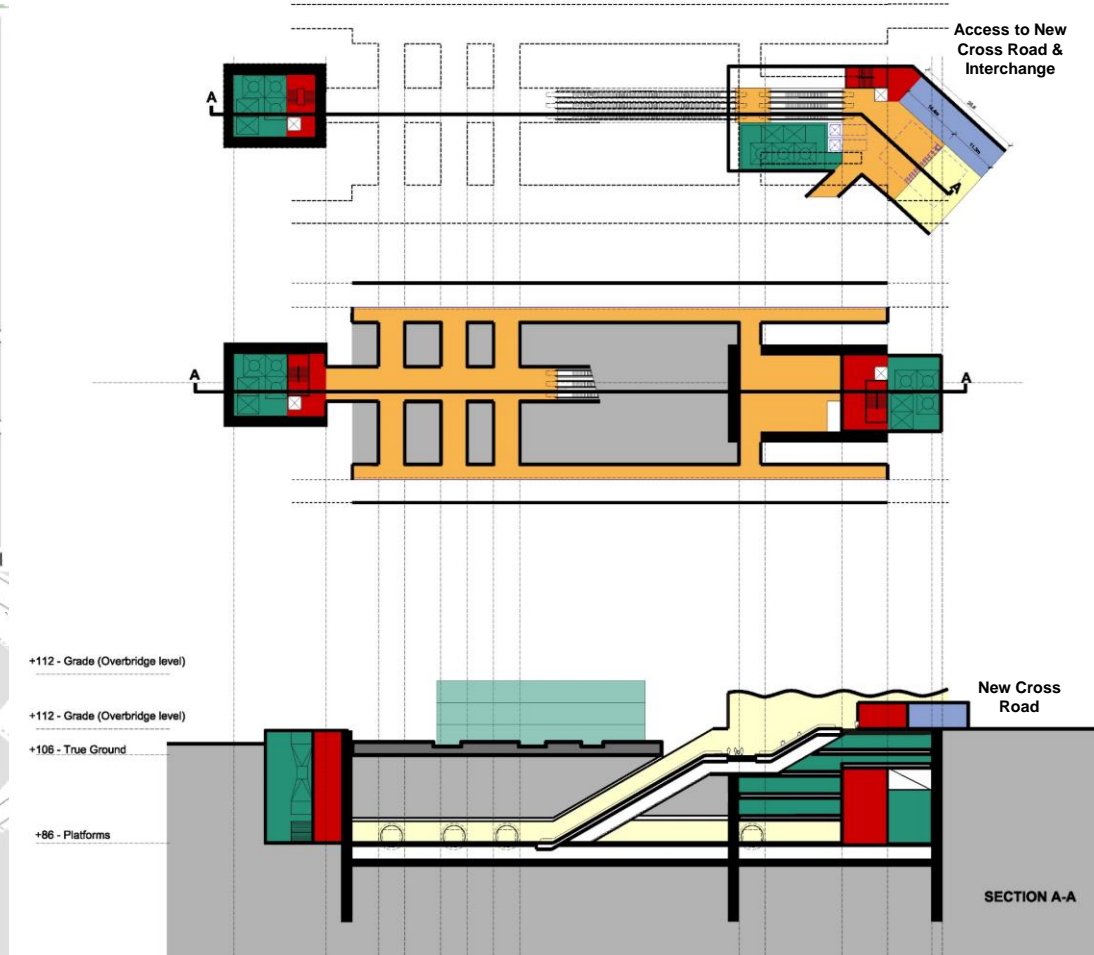
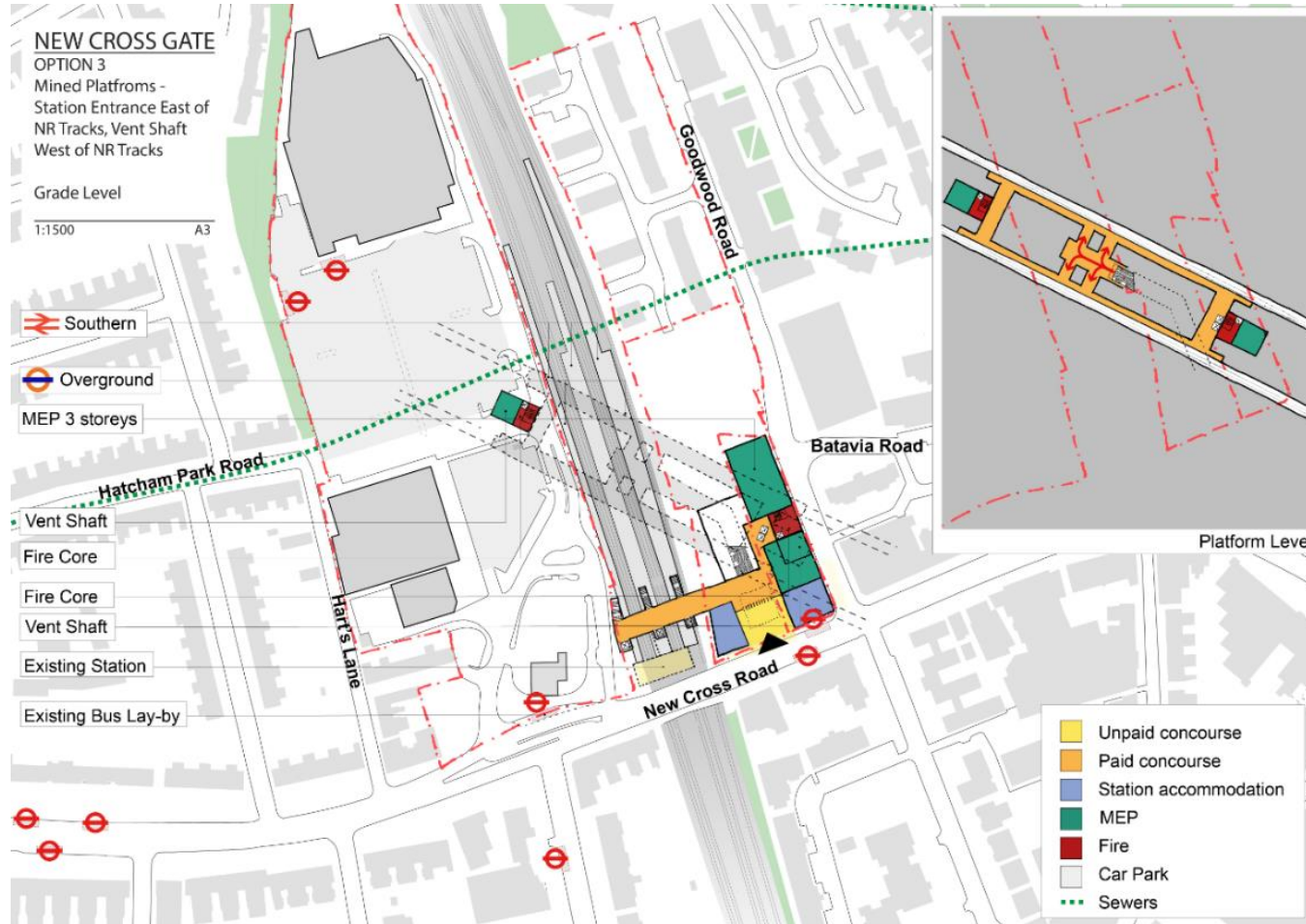
## Option 1 | Grade Level – Tunnel Ventilation



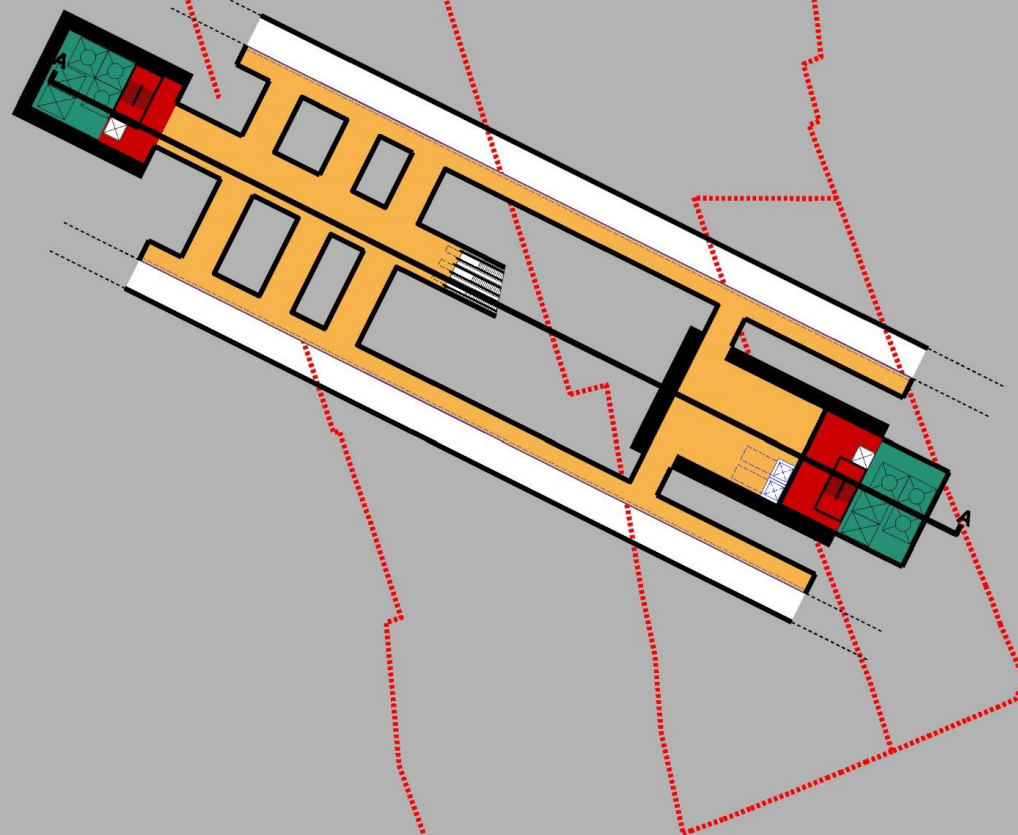
- Locating tunnel ventilation fan shafts immediately above the tunnel-platform interface is a key design criteria, optimising the sizing of fans and the System Integrity Level (resilience of station operations)



# Option 3 | Summary

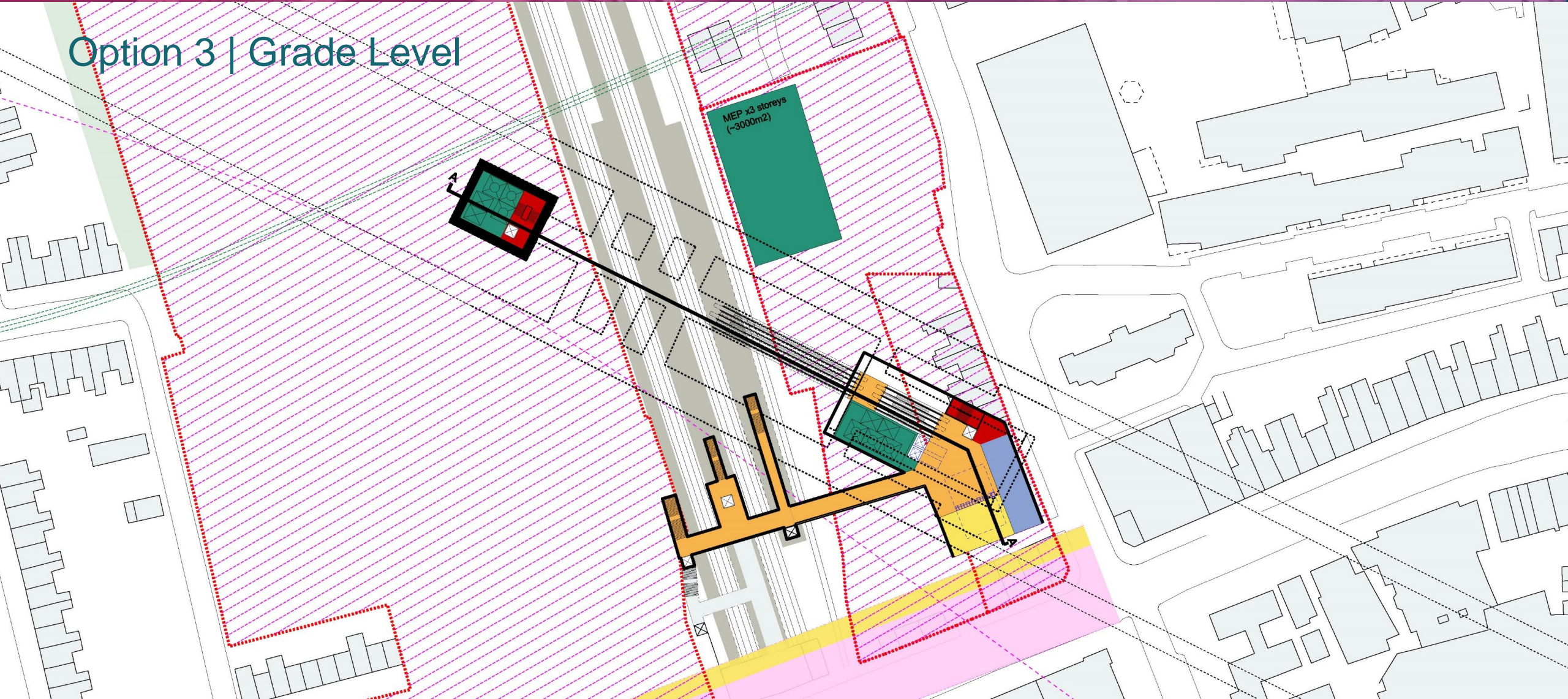


## Option 3 | Platform Level



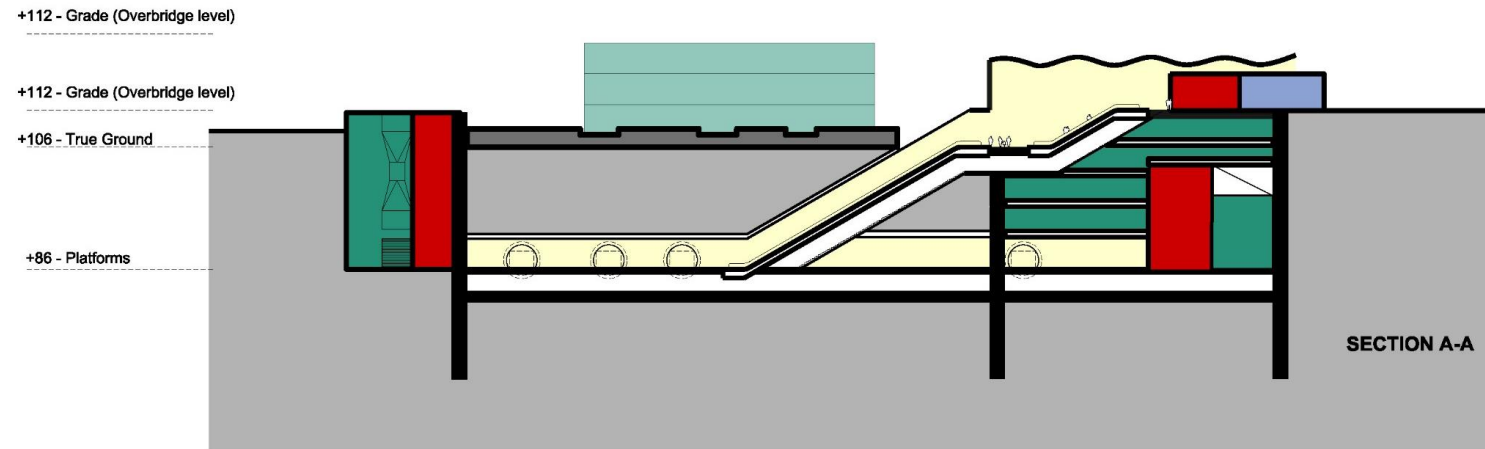
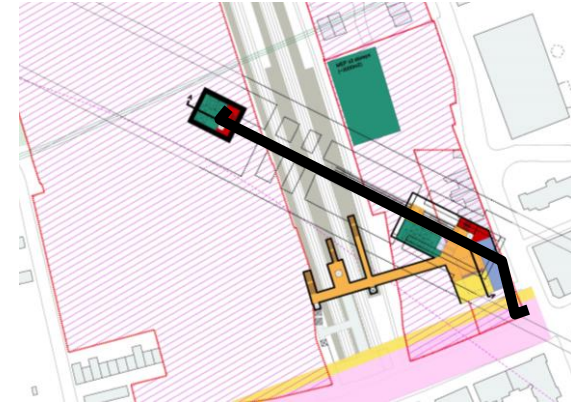


## Option 3 | Grade Level

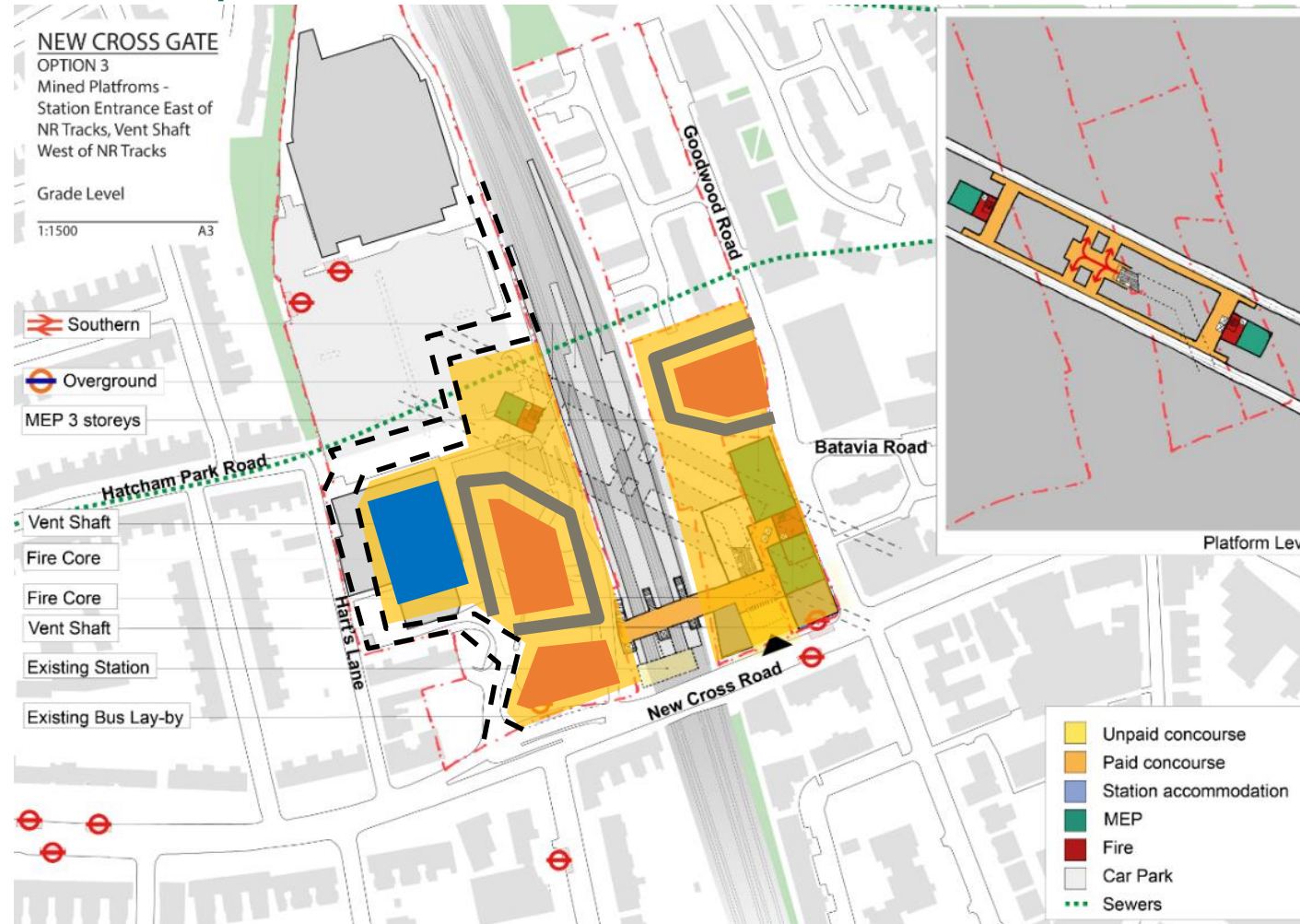




## Option 3 | Section



## Option 3 – Worksite Requirements

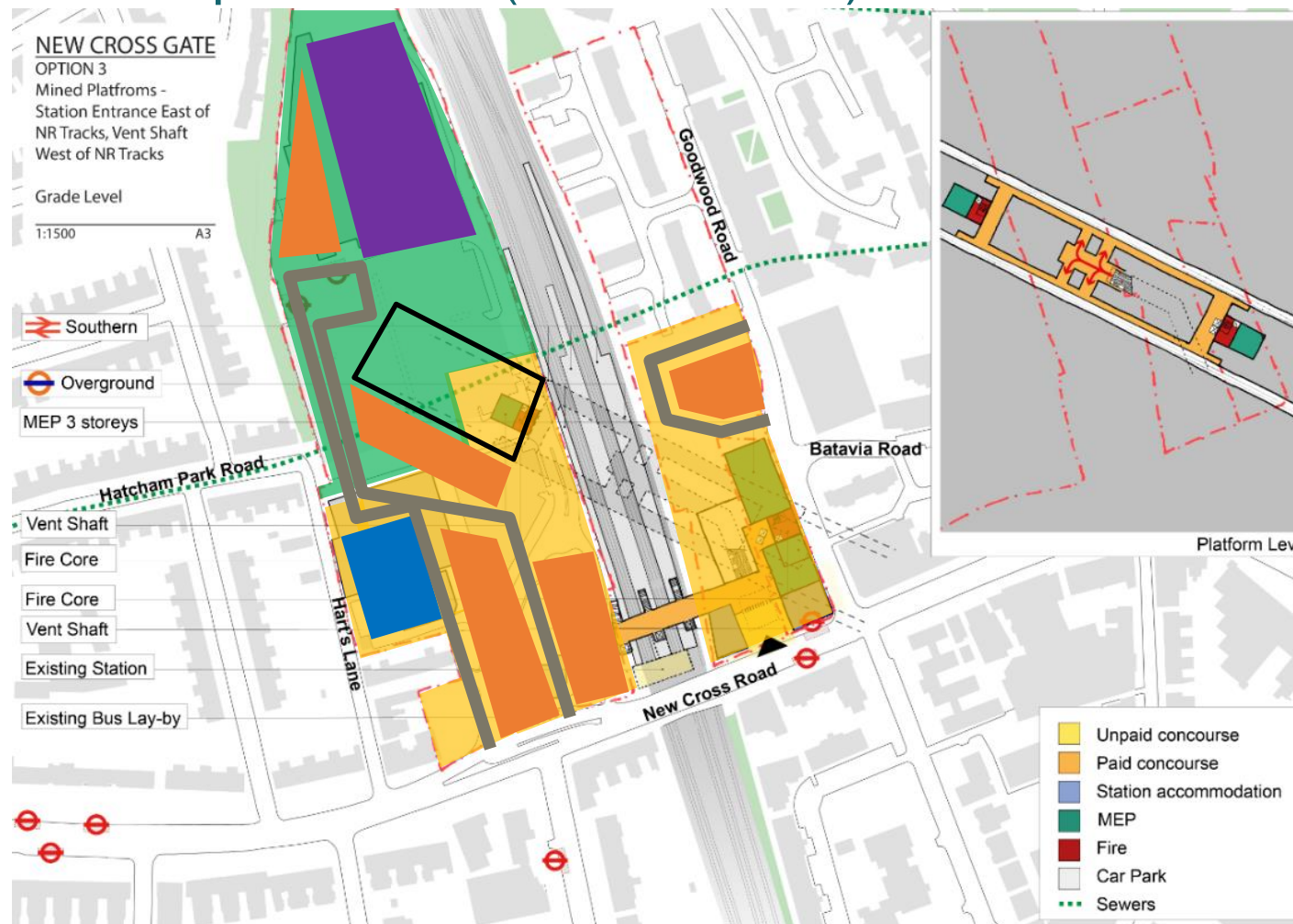


### Key

- Construction worksite
- Satellite worksite
- Welfare
- Haul Road
- Crane
- Materials Storage
- Slurry Treatment Plant
- Sainsbury's Access
- TBM Launch Site

*Note:*  
The access and space provision shown for Sainsbury's store is our best estimate at this stage of planning and design to provide the fullest accommodation possible, whilst ensuring the proposed BLE station works can be undertaken.

## Option 3 – Worksite Requirements (Satellite Site)



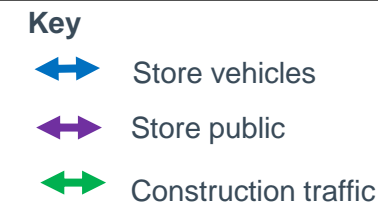
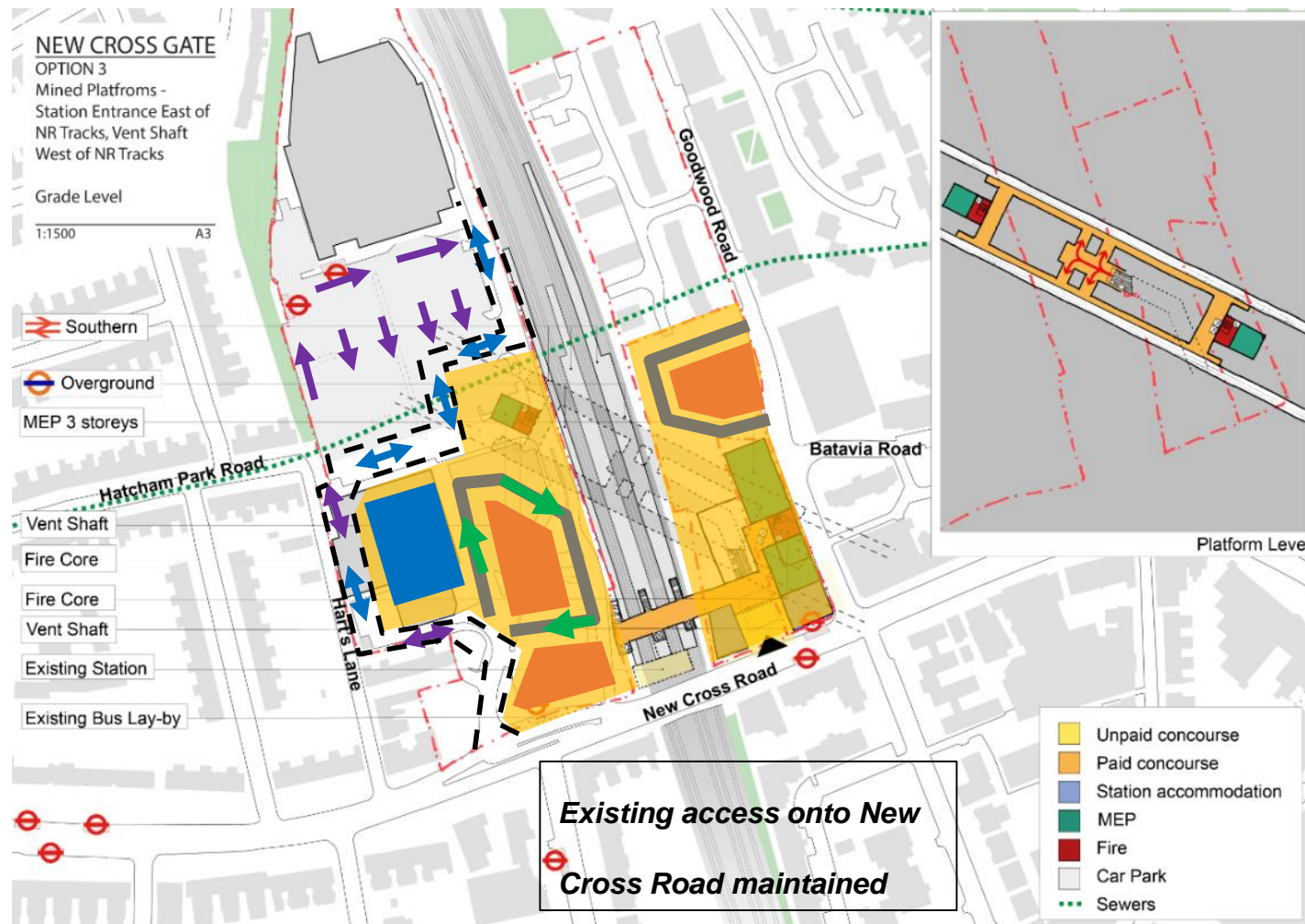
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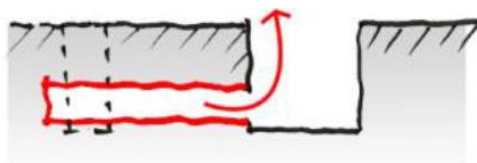
## Option 3 – Vehicle Movements



*Note:*  
The access and space provision shown for Sainsbury's store is our best estimate at this stage of planning and design to provide the fullest accommodation possible, whilst ensuring the proposed BLE station works can be undertaken.

## Option 3 – Construction Methodology

- *Diaphragm wall shaft for access;*
- *Spray concrete lining (SCL) of tunnels*
- *Mining in one direction;*
- *Ground improvement will be required to reduce possibility of settlement.*

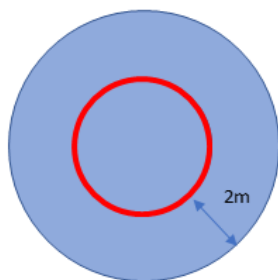
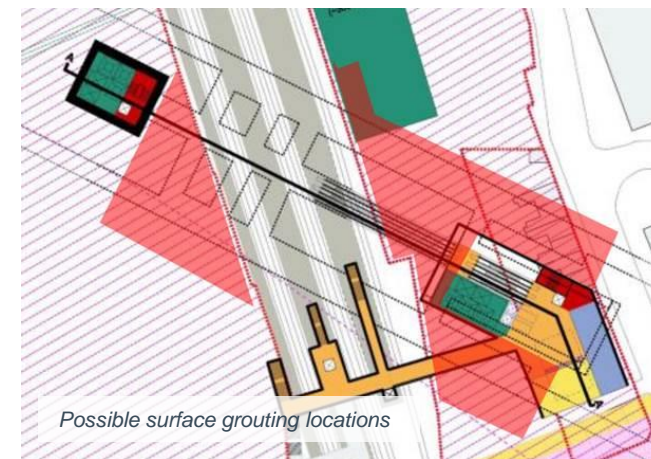
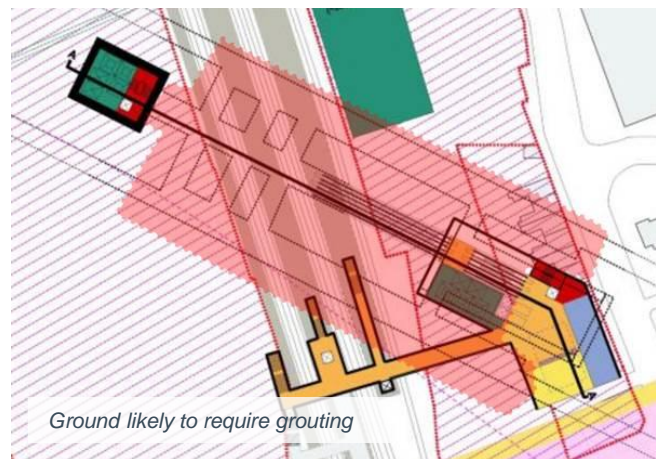


Single-direction  
mining

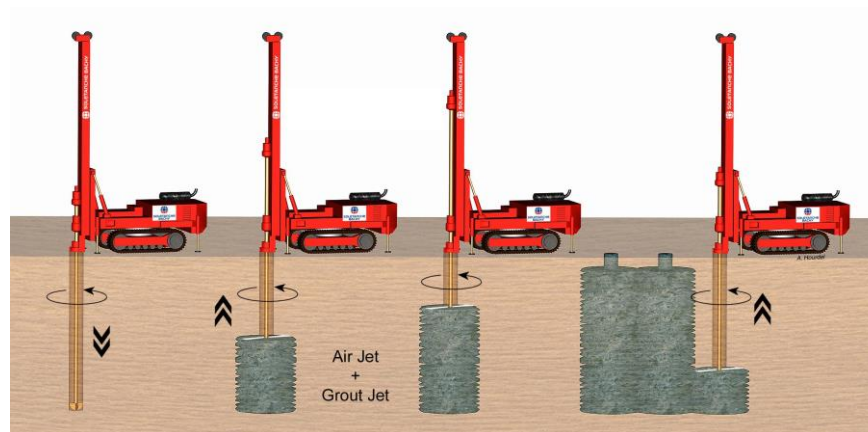


## Option 3 – Ground Improvement

- *Permeation grouting or jet grouting;*
- *Most efficient to grout from ground level;*
- *Likely requirement for inclined bores from either side of the railway.*

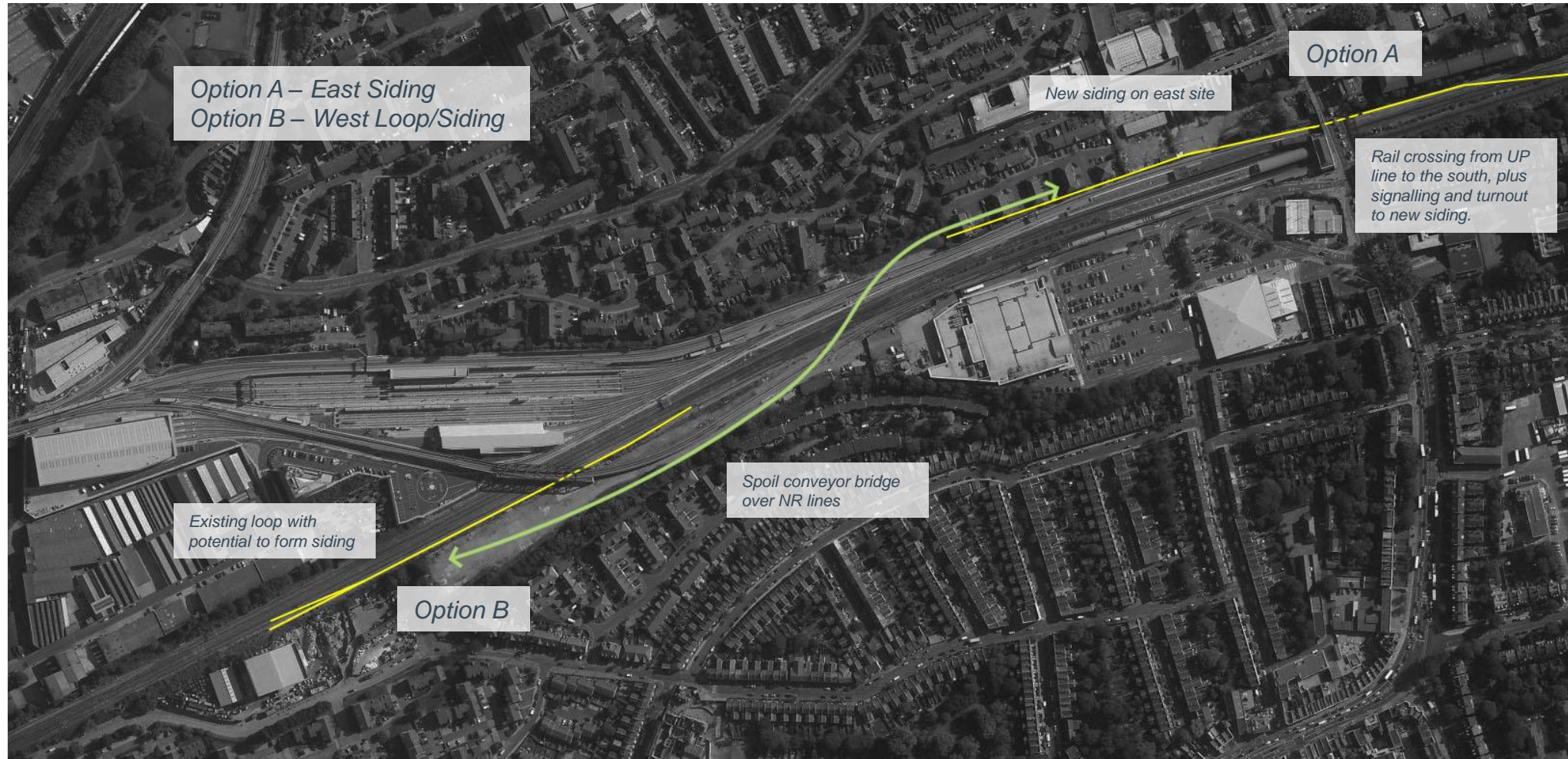


*Minimum 2m annulus around any such tunnel to be treated by grouting*



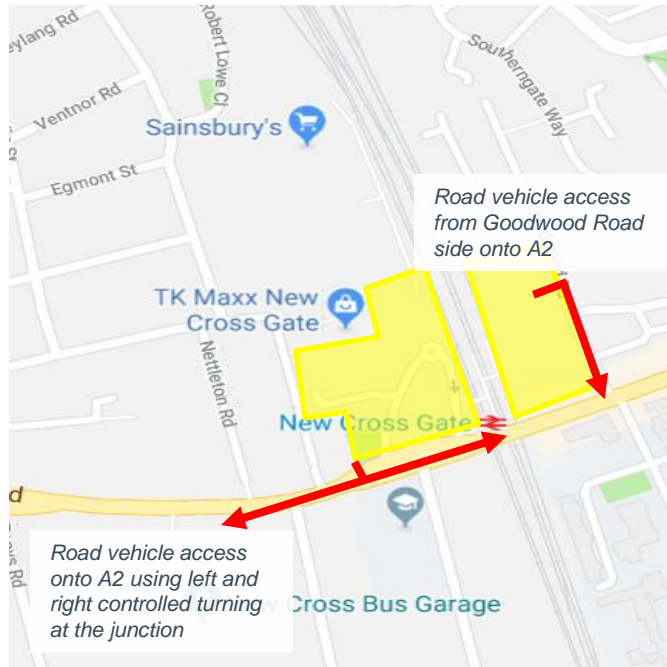


## Option 3 – Construction Logistics (Rail)

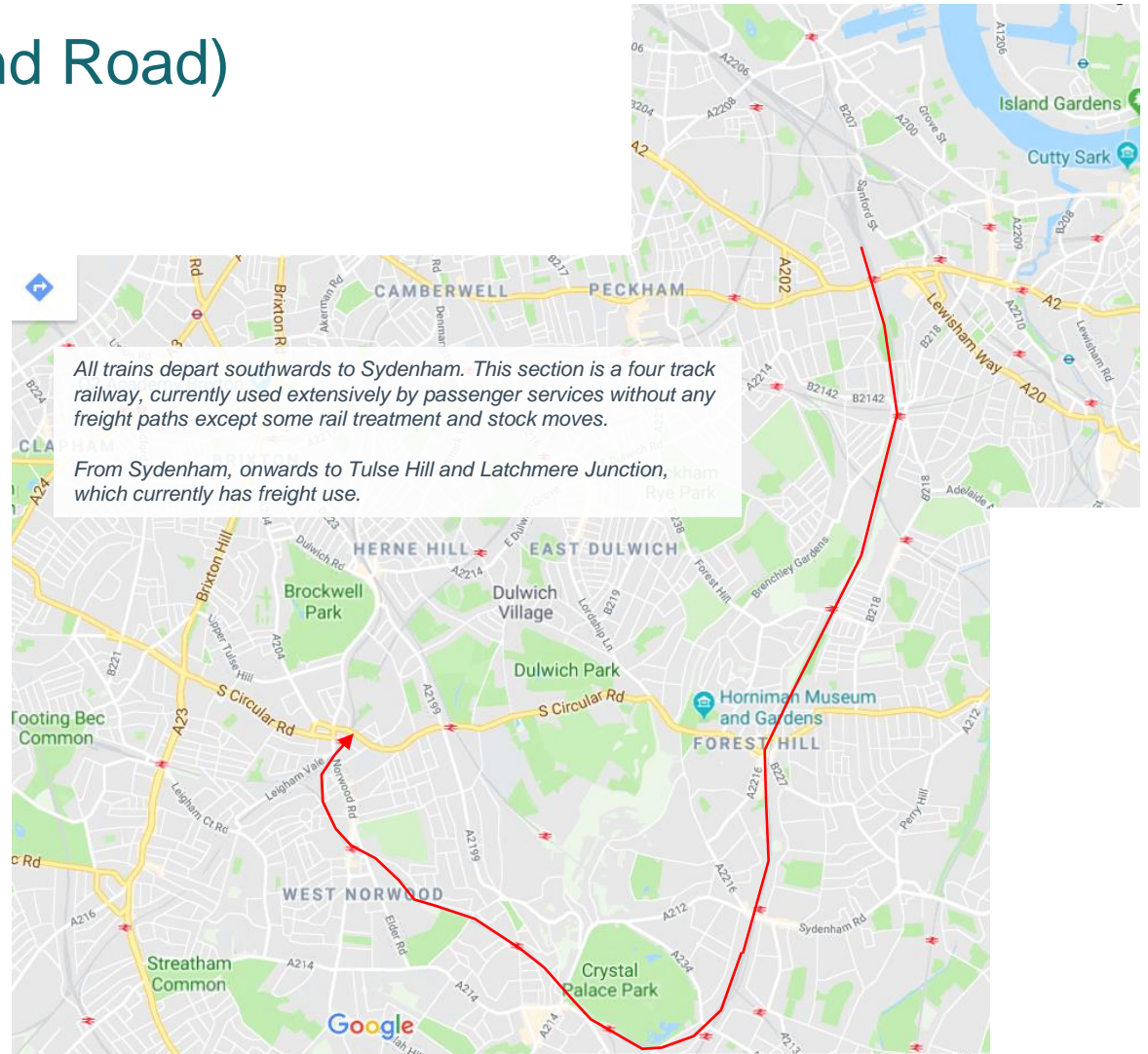




## Option 3 – Construction Logistics (Rail and Road)



The Goodwood Road site access is on a residential road which has left turn only onto the A2.





*Emergency Vehicle  
Parking in close  
proximity to shaft and  
platform ends*

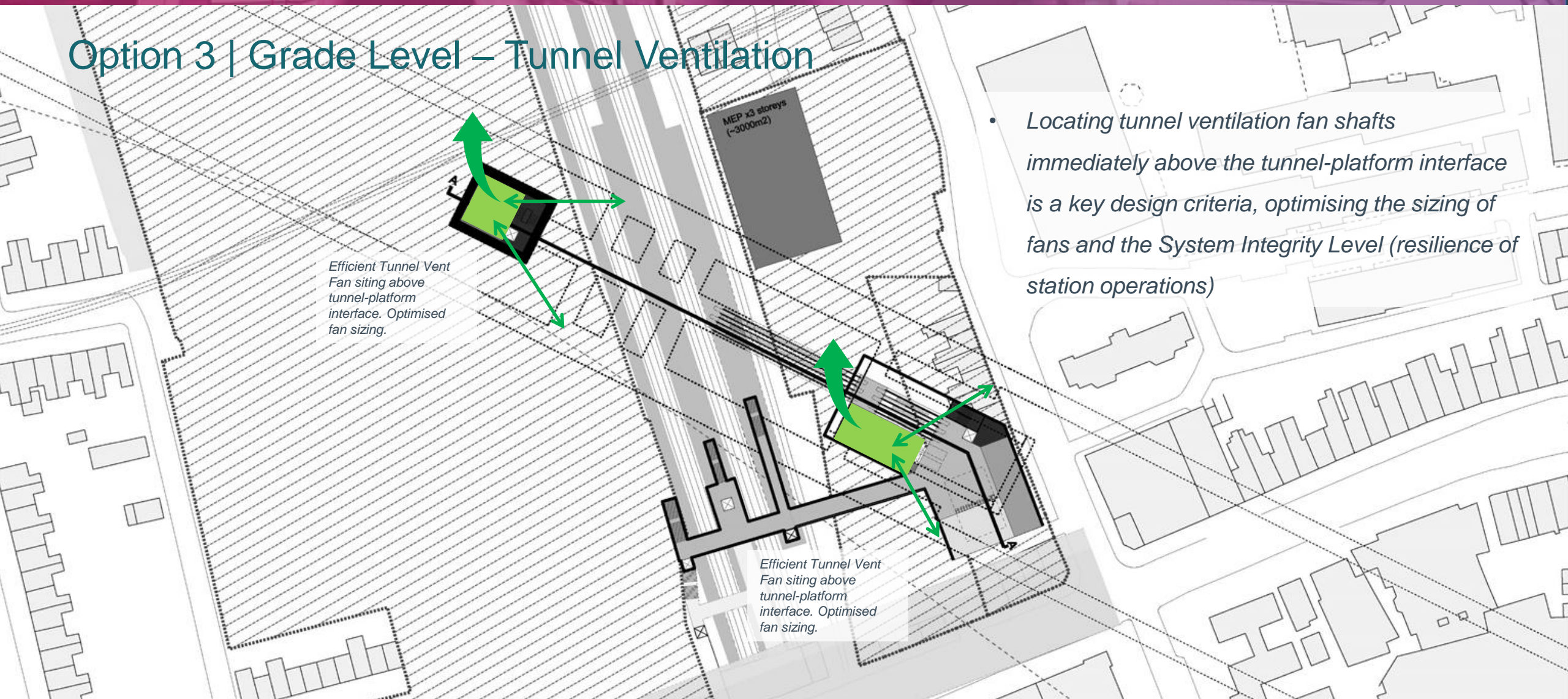
MEP x3 storeys  
(~3000m<sup>2</sup>)

- *Locating emergency intervention shafts immediately above the tunnel-platform interface is a key design criteria, aligning with LU Fire and Life Safety standards.*
- *Fire appliance parking to be no greater than 20m from the entry to the fire-fighting shaft.*

*Emergency Vehicle  
Parking in close  
proximity to shaft and  
platform ends*



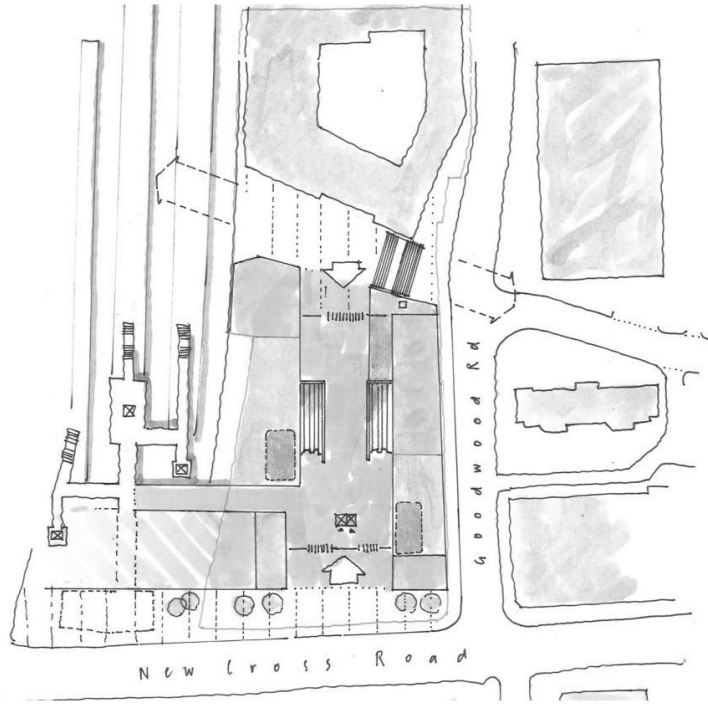
## Option 3 | Grade Level – Tunnel Ventilation



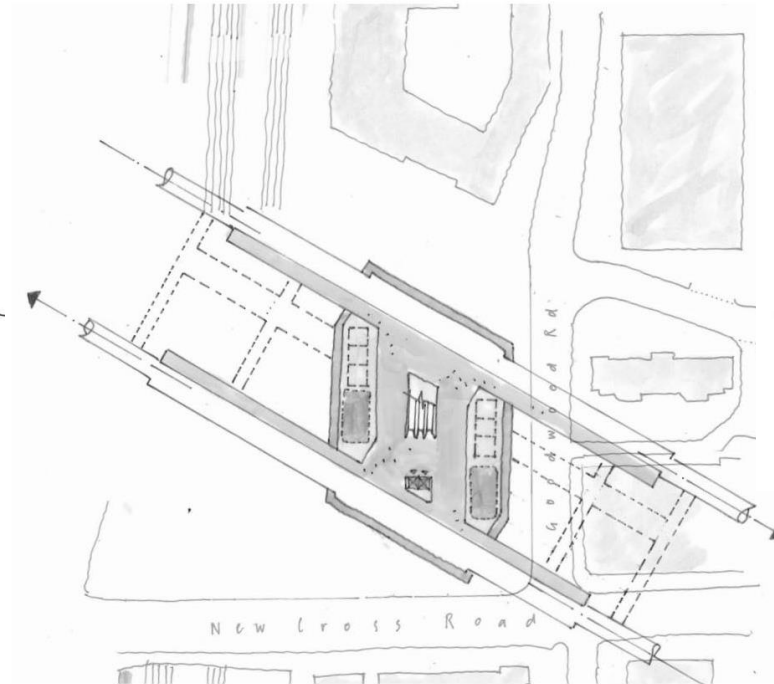
- Locating tunnel ventilation fan shafts immediately above the tunnel-platform interface is a key design criteria, optimising the sizing of fans and the System Integrity Level (resilience of station operations)



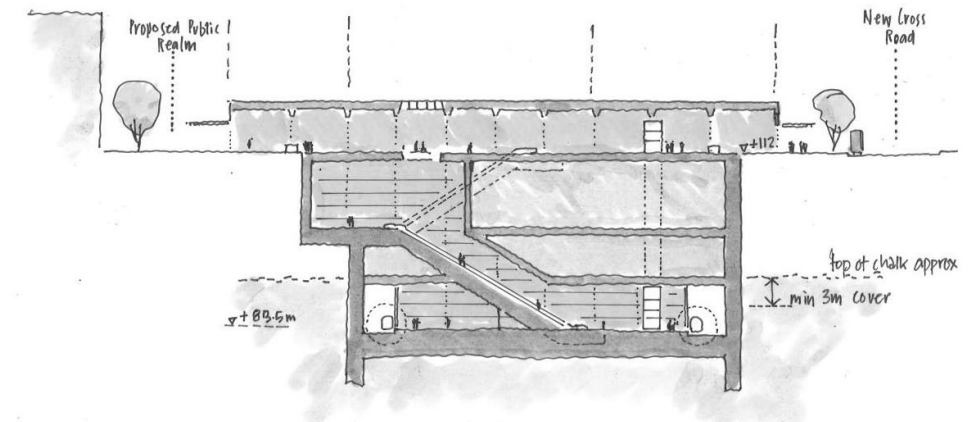
## Option 3a – S/MA Proposal Overview



Grade Level



Platform Level



Section



## Option 3a – Worksite Requirements

- Option 3a includes a single shaft for providing construction access to the platform level and the tunnel interface. The result is the requirement to acquire the Wandle Housing site for storage and construction operations.
- Option 3 allows the construction to be divided evenly between the west and east sites, allowing the Wandle Housing to remain.

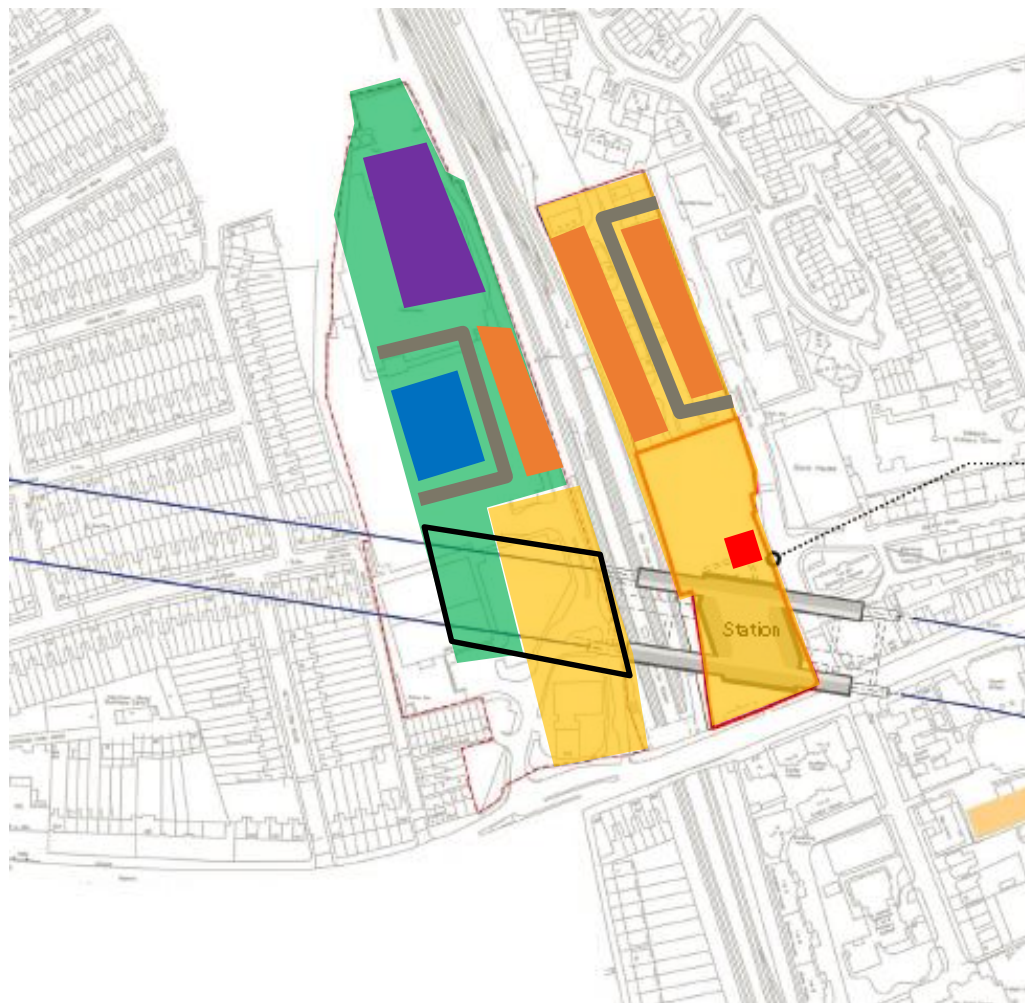


### Key

- Construction worksite
- Satellite worksite
- Welfare
- Haul Road
- Crane
- Materials Storage
- Slurry Treatment Plant
- Sainsbury's Access
- TBM Launch Site

## Option 3a – Worksite Requirements (Satellite Site)

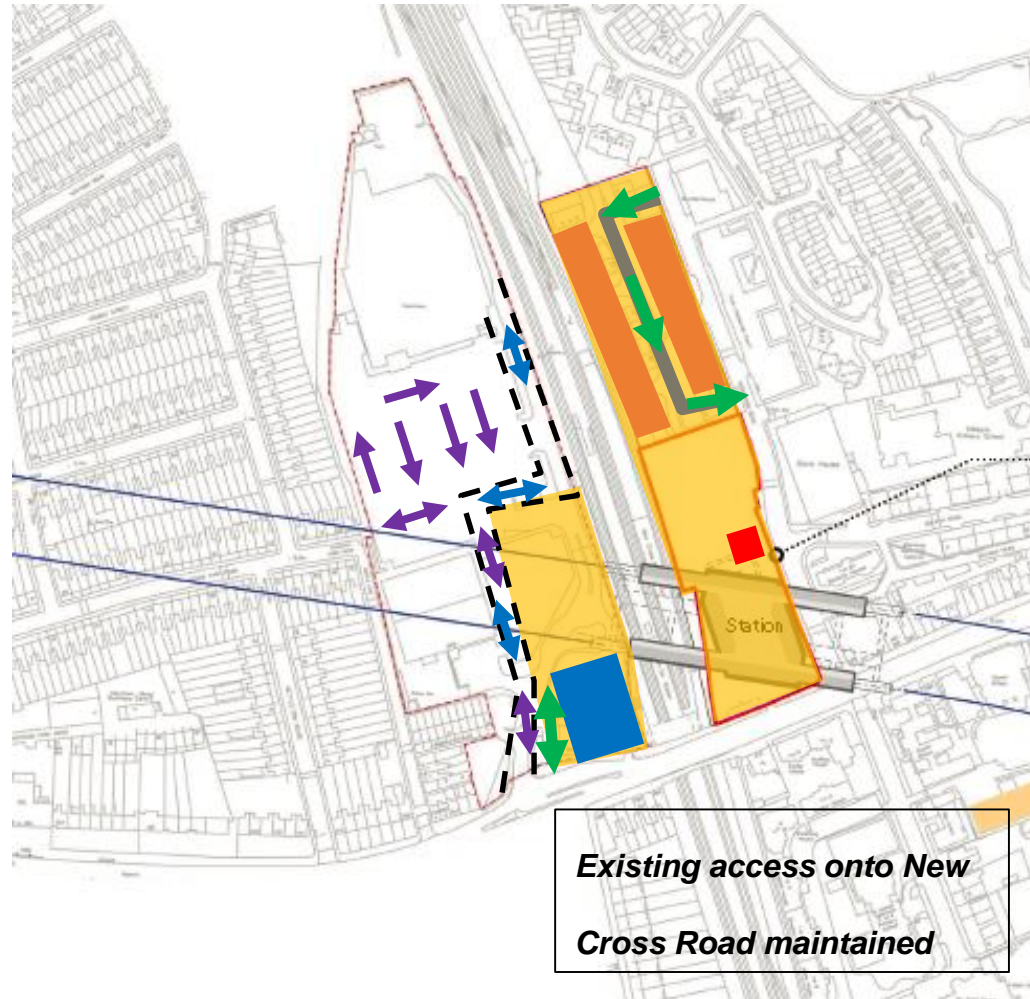
- As a satellite construction site, the west site is extended to the north, allowing efficient rail access to the Cold Blow Lane loop.



Key	
<span style="display:inline-block; width:15px; height:15px; background-color:yellow;"></span>	Construction worksite
<span style="display:inline-block; width:15px; height:15px; background-color:green;"></span>	Satellite worksite
<span style="display:inline-block; width:15px; height:15px; background-color:blue;"></span>	Welfare
<span style="display:inline-block; width:15px; height:15px; background-color:grey;"></span>	Haul Road
<span style="display:inline-block; width:15px; height:15px; background-color:red;"></span>	Crane
<span style="display:inline-block; width:15px; height:15px; background-color:orange;"></span>	Materials Storage
<span style="display:inline-block; width:15px; height:15px; background-color:purple;"></span>	Slurry Treatment Plant
<span style="display:inline-block; width:15px; height:15px; border:1px dashed black;"></span>	Sainsbury's Access
<span style="display:inline-block; width:15px; height:15px; border:1px solid black;"></span>	TBM Launch Site



## Option 3a – Vehicle Movements



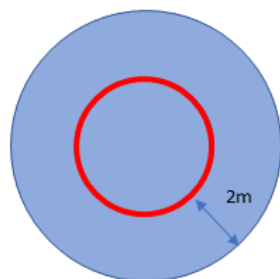
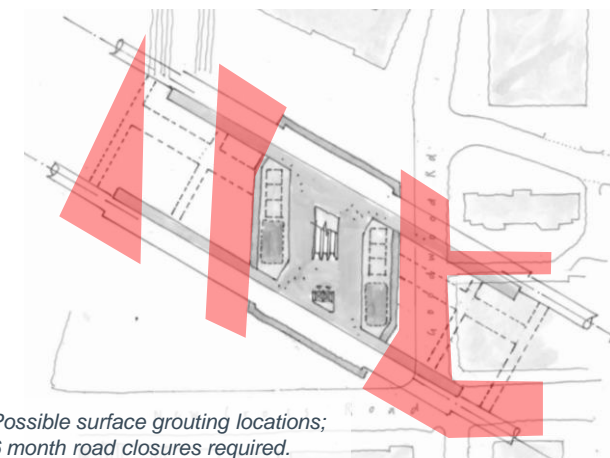
### Key

- ↔ Store vehicles
- ↔ Store public
- ↔ Construction traffic

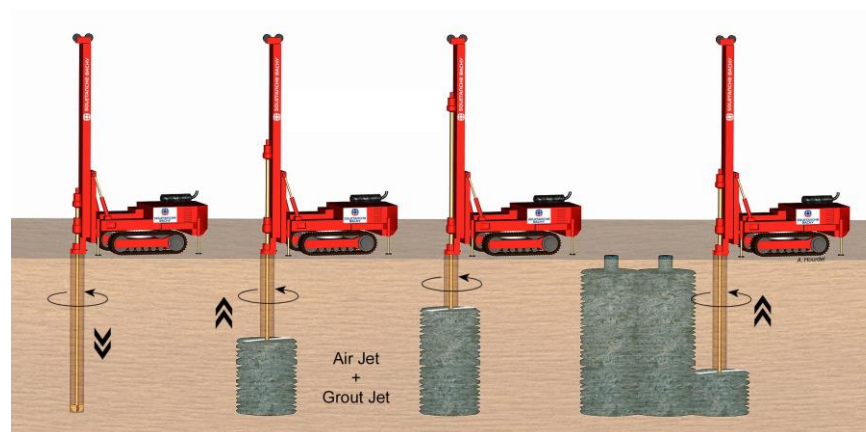
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## Option 3a – Ground Improvement

- *Permeation grouting or jet grouting;*
- *Most efficient to grout from ground level;*
- *Likely requirement for inclined bores from either side of the railway;*
- *6 month road closures to the east of the site.*

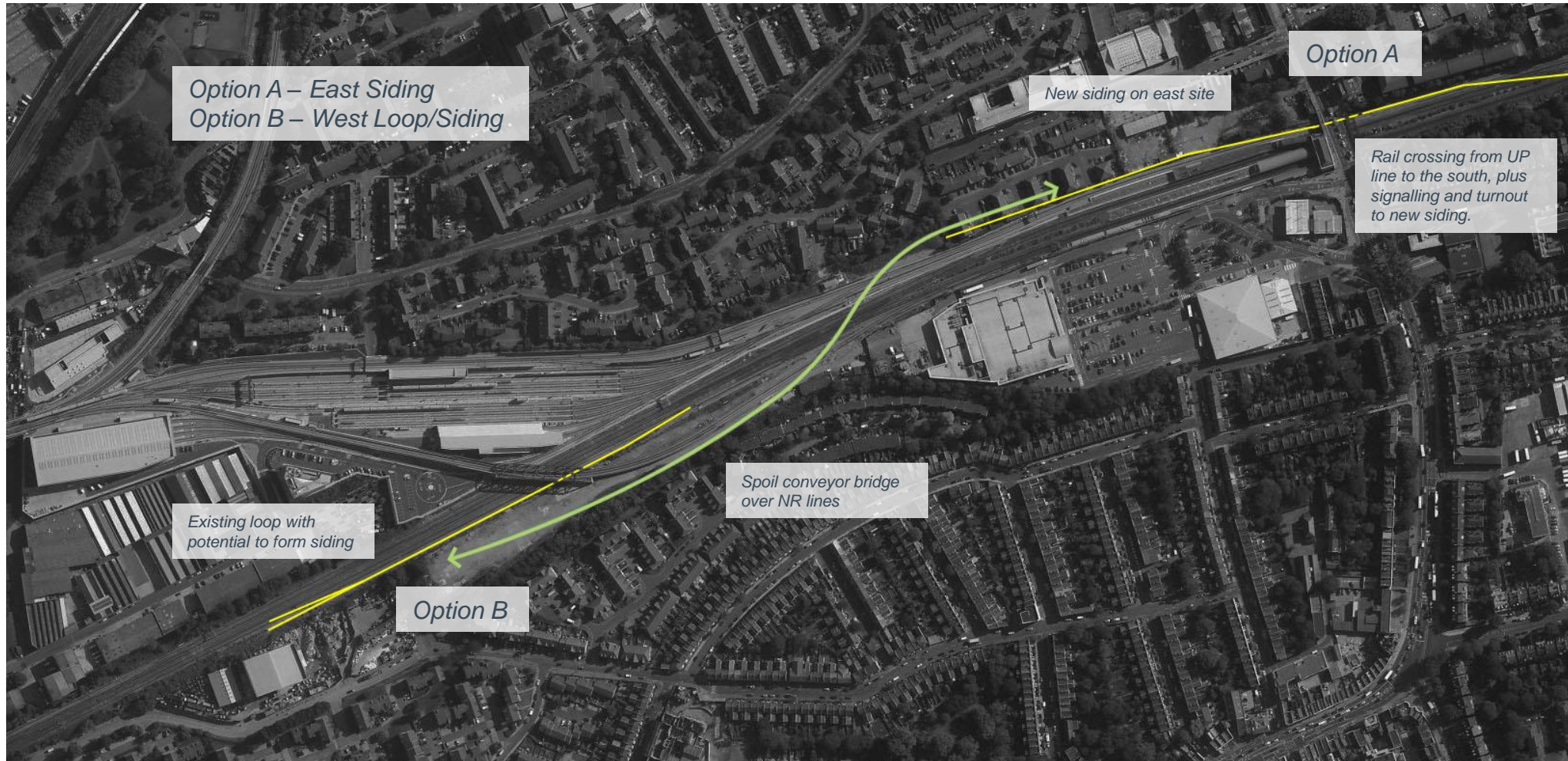


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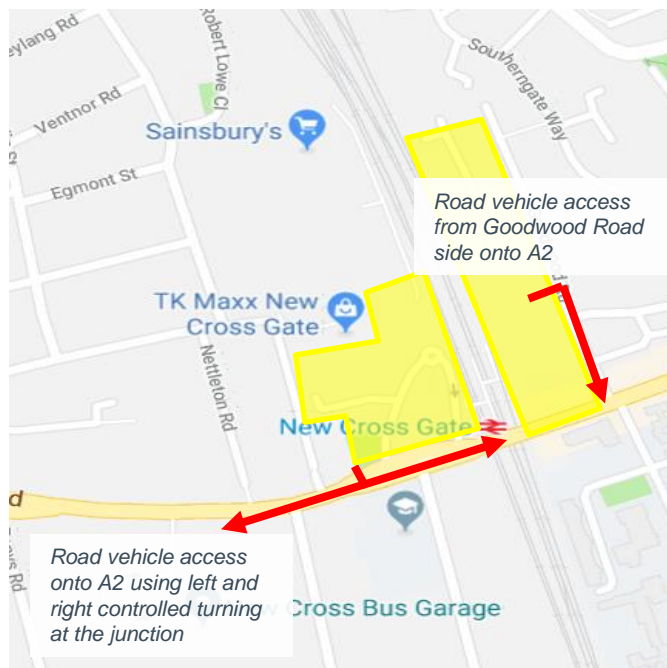


## Option 3a – Construction Logistics (Rail)

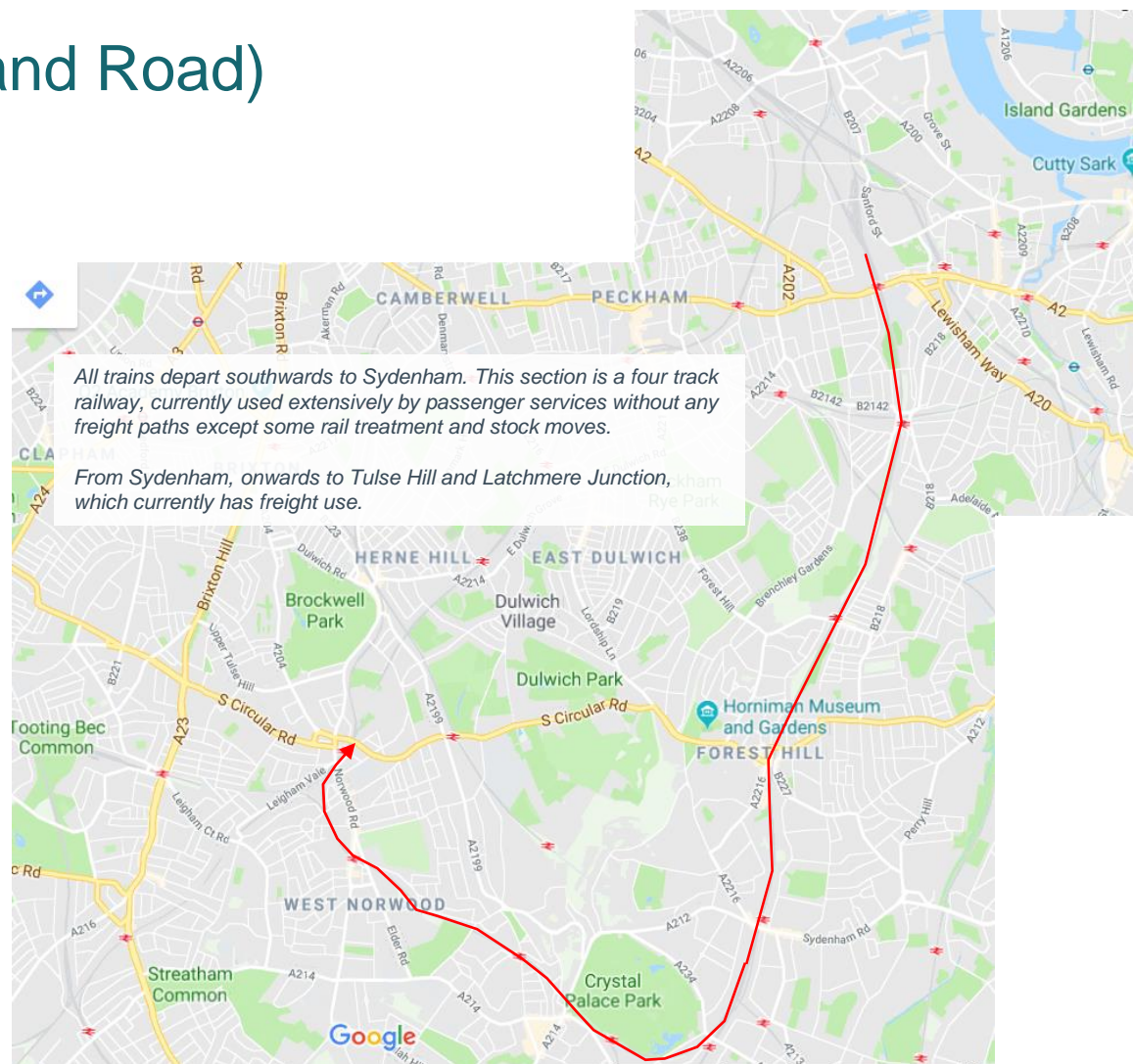




## Option 3a – Construction Logistics (Rail and Road)

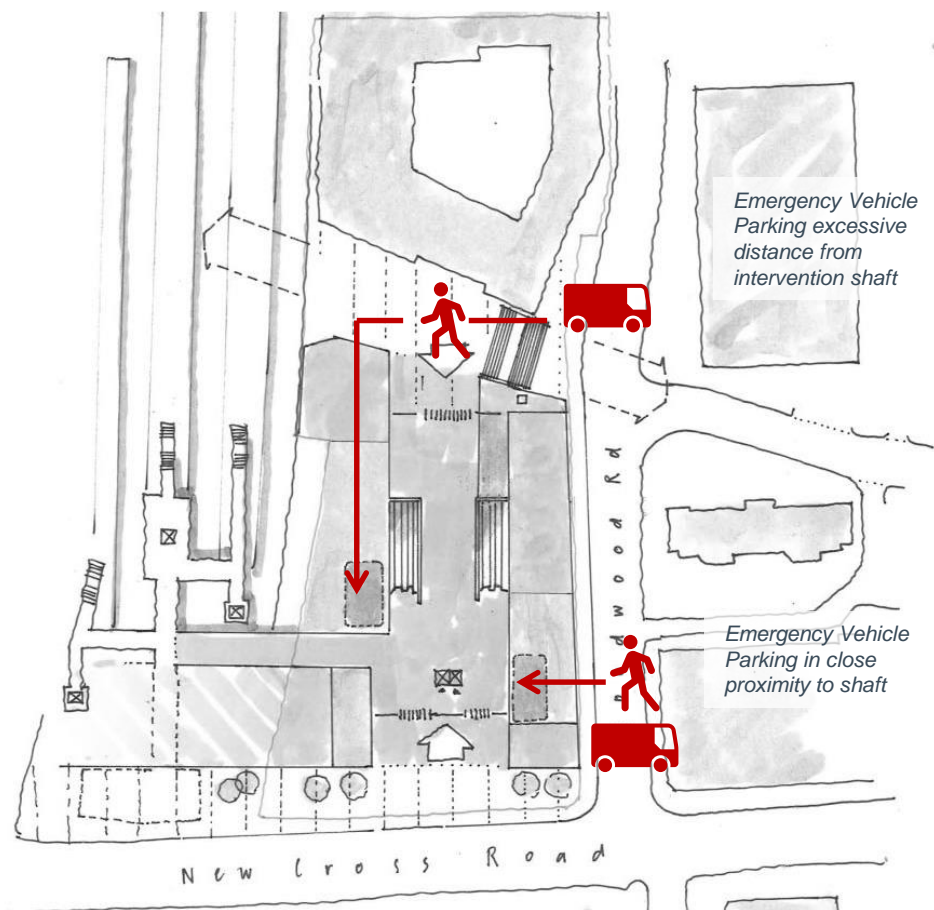


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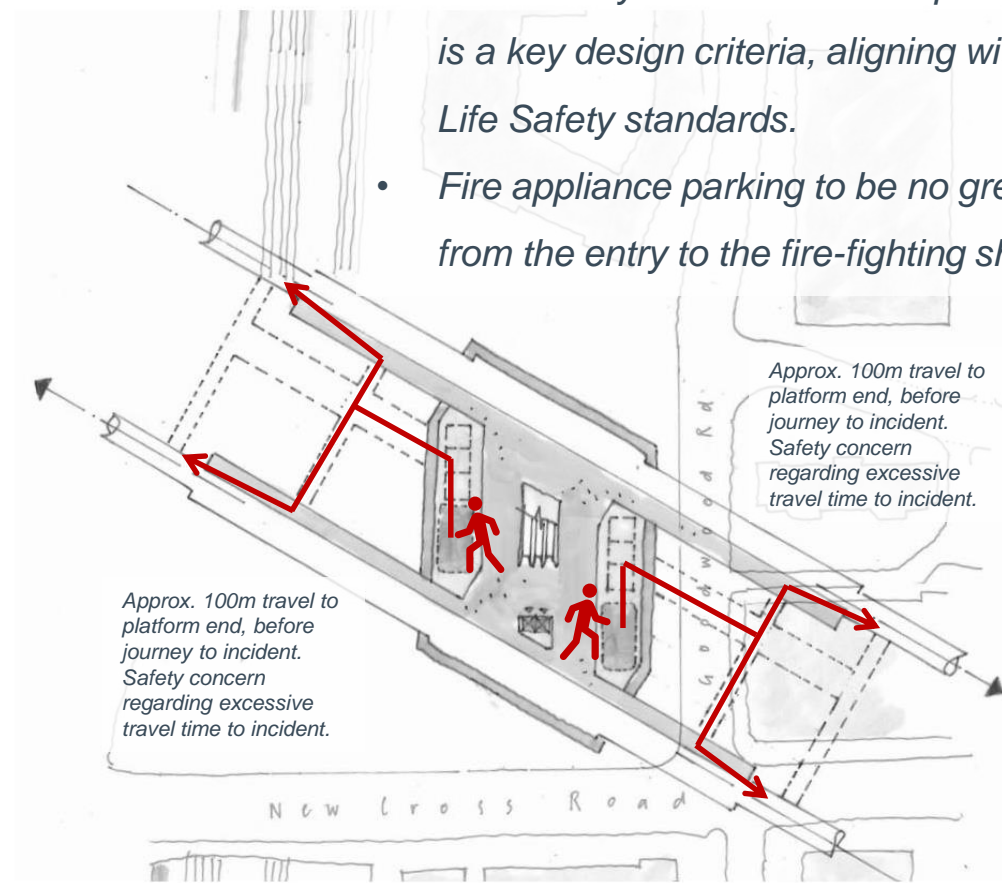




## Option 3a – Fire-fighting Access



- Locating emergency intervention shafts immediately above the tunnel-platform interface is a key design criteria, aligning with LU Fire and Life Safety standards.
- Fire appliance parking to be no greater than 20m from the entry to the fire-fighting shaft.



## Option 3a – Tunnel Ventilation

