

Job Name: Theatre Square, 100 Avenue Road, Swiss Cottage

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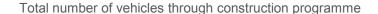
Introduction

This Note provides supplementary information to the Theatre Square Construction Management Plan (CMP) with the aim of addressing outstanding transport related concerns raised by Councillors at Camden's Planning Committee (19th July 2018). In doing so, the Note; clarifies the number of vehicles generated by the construction and demolition activities; summarises the assessment of the site access options considered; and from this, justifies a CMP based on accesses from both the A41 and Winchester Road/ Eton Road. Further details are provided on how the works will be co-ordinated with the CS11 scheme, in particular the changes to Bus Stop D (Avenue Road) should the CS11 programme slip and ensuring any impact to public transport users and bus operations are minimised throughout the works.

Number of Construction Vehicles

The total number of construction vehicles required to demolish the existing and construct the new buildings has been estimated for each stage of works (e.g. demolition, basement, super structure & cladding and fit outs & finals). The frequency of vehicle arrivals depends on the duration of each of these stages, but which is a function of the length of the overall works programme. The CMP proposes a three year works programme which produces the maximum daily vehicle numbers previously stated. Unfortunately, the '50 vehicles' was incorrectly reported in the CMP as a monthly figure but also it was not made clear that this daily figure was a peak of vehicle movements over a limited period.

The total number of vehicles profiled over a three-year programme is illustrated below which gives an average of vehicles per day of 29 and a maximum of 53 per day but this only occurs over two-month period following demolition.





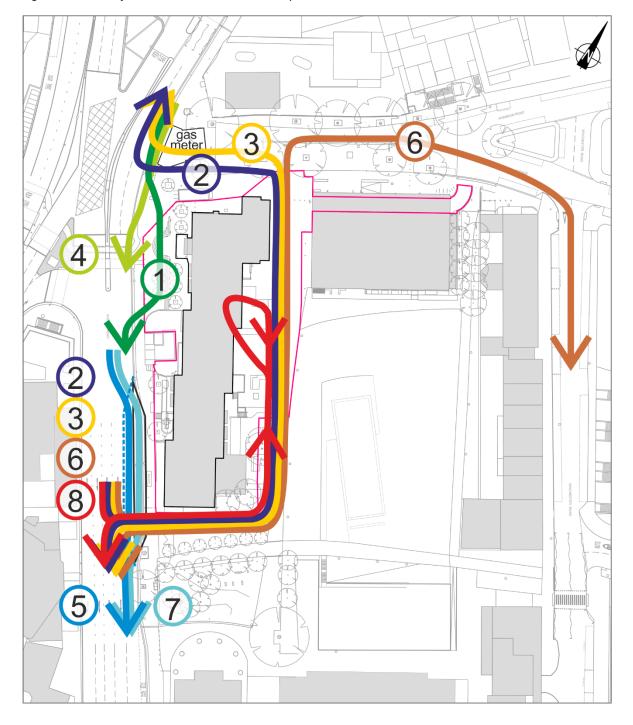




Construction Vehicle Route Options

Various site access routes were considered during the preparation of the CMP. These routes are illustrated in Figure 1 and followed by a summary of the key constraints for each.

Figure 1: Summary of construction vehicle route options





Route 1

Description

The vehicle loading area is located within the site between the two London Underground (LU) station entrances on Avenue Road. To enter and exit the loading area the access route would require vehicles to cross the footway from the A41 near to the station entrances.

Constraints

- Safety issues related to vehicles crossing busy footways in front of entrances to the Swiss Cottage Underground station.
- Vehicle access route conflicts with the proposed location of a CS11 pedestrian and cycle crossing which will attract high levels of pedestrian activity.
- The vehicle access and egress routes would have to bypass a temporary crossing proposed as part of the CS11 works.
- Increased risk of left-turn hooks between cyclists and construction vehicles.
- Route runs over LU assets that include a pedestrian subway and ticket hall.

Conclusion

The option was rejected because of safety concerns related to construction vehicles being so close to high level of pedestrian and cycle activity at the existing and proposed CS11 crossings.

Route 2

Description

Access route to Eton Avenue from the A41 between the gas pressure reduction station/ market storage building and the Swiss Cottage Underground station. The route would involve vehicles crossing the footway from the A41 for access only. The exit would be via the A41 site gates located just south of Bus Stop D.

Constraints

- Standard size construction vehicle unable to make the turn between the gas pressure station/ market storage building and the station steps without conflicting with associated structures.
- Gas pressure reduction stations guarantee pressures do not exceed the design limits of the pipeline they are supplying. The substantial risks associated with incorrect gas pressure requires pressure reduction stations to be designed so that they only fail in exceptional circumstances. This complex infrastructure makes them extremely difficult to relocate.
- Conflict with market stalls and the operation of the market.
- Pedestrian safety concerns related to the high levels of footfall close to the Swiss Cottage Underground station entrance and a pedestrian crossing on the A41.
- The vehicle access route conflicts with the proposed location of a CS11 pedestrian and cycle crossing which will attract high levels of pedestrian activity.

Conclusion

Rejected for the same reasons as Option 1 with additional impact on the major gas infrastructure and market storage facilities.

Route 3

Description

Access to Eton Avenue from A41 through the area currently occupied by the gas meter/ market storage building.

Constraints

- Hazardous and complicated process to remove/ relocate the pressure reduction station (see above).
- Timeframes to remove/ relocate the gas meter infrastructure is incompatible with the construction programmes for the CS11 scheme and Theatre Square development.





- Disruptive to the operation of the market.
- Requires a suitable location to relocate the market storage building.
- The vehicle access route conflicts with the proposed location of a CS11 pedestrian and cycle crossing which will attract high levels of pedestrian activity.

Conclusion

Rejected for the same reasons as Option 1 with the additional impact of the enabling works being highly disruptive.

Route 4

Description

Pit Lane located within a layby on the A41 to the North West of the site. Vehicles use A41 to pull in and out of the Pit Lane.

Constraints

- Location of Pit Lane with respect to the crane locations does not allow for the efficient movement of materials to, from and across the site.
- Safety concerns associated with materials being transferred over areas of high pedestrian activity.
- The vehicle access route conflicts with the proposed location of a CS11 pedestrian and cycle crossing which will attract high levels of pedestrian activity.
- There is a risk of construction vehicles blocking back over the CS11 crossing.

Conclusion

Rejected on inefficient and potentially high risk site logistics combined with higher levels of pedestrian and cycle safety risk compared to other options.

Route 5

Description

Pit Lane located within a layby on the A41 at Bus Stop D that maintains the existing kerb line to reduce the risk of utility diversion or protection works.

Constraints

- Requires a relocation of Bus Stop D.
- Requires an 86 metre re-alignment of the CS11 cycle track and Bus Lane.
- Limits the extent of landscaping proposals in the interim CS11 scheme (i.e. during the Theatre Square works).

Conclusion

Rejected because of the extent of the impact to the CS11 scheme.

Route 6

Description

Construction vehicle route via Winchester Road and Eton Avenue with vehicles entering/ exiting the site at gates located between the Hampstead Theatre and the site. The route along Eton Avenue is via a currently defined vehicle access route. This is the consented route for all construction vehicles. Most vehicle movements will enter at Eton Avenue and exit via site gates on the A41.

Constraints

- Construction vehicle movements on residential roads.
- Pedestrian safety concerns related to Eton Avenue particularly during the Farmers Market on Wednesday and busier Market days such as Saturday.
- Requires the existing access route along Eton Avenue to be kept clear with a potential reorganisation of the market stalls.

Conclusion

Recommended to be retained as a construction vehicle route but supported by a Pit Lane on the A41 (see Option 7) to help reduce the number of vehicle movements along Winchester Road and Eton Avenue.





To address local resident concerns, the number of vehicles movements will be limited to 14 (one-way) or 7 (two-way) per day during demolition which will be reduced to 7 (one-way) movements for the remainder of the construction stage. Additional measures to mitigate the impact of these limited construction vehicle movements throughout the period of works will include:

- Limited operational hours to avoid vehicle movements during the commuter peak periods and including the start and the end of the school day.
- Support to rationalise and manage the layout of the market stalls, ensuring any impact on traders and their businesses is minimised.
- Active traffic marshalling along Eton Avenue to ensure a safe environment for pedestrians and cyclists is maintained.

Any further reduction to the number of vehicles using Winchester Road would prolong the works programme. It has been estimated that if no vehicles use Winchester Road this would add up to 2 years to the programme, as a result of having to construct the two buildings separately and the inefficiencies as a result of double handling materials across the site.

Route 7

Description

Pit Lane located within a layby on the A41 at Bus Stop D but to reduce the impact on the CS11 scheme the layby is inset further into the footway.

Constraints

- Requires a relocation of Bus Stop D.
- Potential narrowing of the adjacent footway.
- Risk of utility diversion or protection works with potential delay to the programme.
- Capacity of Pit Lane may not fully accommodate the forecast number of vehicles, potentially resulting in the CS11 Bus Lane becoming blocked.

Conclusion

Recommended as the sites' main construction vehicle access point for the following reasons:

- Allows for the efficient movement of materials to and from the site helping to achieve the threeyear construction programme for the development.
- Site hoarding adjusted to ensure an adequately wide footway adjacent to the Pit Lane.
- A vehicle booking system will be implemented to reduce the risk of vehicles blocking back into the CS11 Bus Lane.

The key benefit is that the Pit Lane allows for a substantial reduction to the number construction vehicles on Winchester Road and Eton Avenue.

Route 8 - 'Hybrid Option'

Description

This route to support the Hybrid Option in Appendix W of the CMP allows vehicles to enter and exit the site directly from the A41 and has been developed to investigate opportunities to shorten period construction traffic uses Winchester Road and Eton Avenue. The current CMP retains Winchester Road (Route 6) during most of the works but to address ongoing local resident concerns the addition of this route could potentially reduce the use of Winchester Road to only the demolition phase.

Constraints

- Limited area to manoeuvre vehicles within the site due to proximity to the new building cores, site boundary and the constraints with existing basement.
- Delayed construction of the southern building (The Winch) so ensure enough space to safely accommodate two-way vehicle movements within the site. This will result in a 9-month extension to the works programme.
- TfL have stated that the number of vehicles accessing / exiting via A41 cannot increase above 14 vehicles per day when Bus Stop D is still in operation at its current site.





Conclusion

The combined use of this route with Route 6 has shown that the use of Winchester Road could be limited to just the demolition phase but it would result in a 9-month prolongation to the programme. Due to the extended impact this will have on the operation and safety of Avenue Road, TfL have stated that this is not their preferred option and use of Route 8 as an alternative to Winchester Road is not recommended for any phase of the works.

Recommendation

The conclusion of this work was the recommendation made in the CMP that construction vehicle access to the site should be via a:

- Pit Lane on the A41 (Route 7); supported by
- the secondary access via Winchester Road (Route 6)

Following installation of the Pit Lane, Route 8 will only be used to avoid any periods where vehicles are delayed in the Pit Lane and there is a risk of vehicles queuing back into the Bus Lane. The Pit Lane capacity analysis below suggests the risk of the Pit Lane operating over capacity is low.

Pit Lane Capacity

The Pit Lane has a capacity which is limited by its length and the time needed to load and unload materials from each vehicle.

The length of the Pit Lane is restricted by the large London Plane tree to the south and the footway width required outside the Swiss Cottage Underground station entrance to the north. These constraints mean the Pit Lane is only able to accommodate two standard construction vehicles or one articulated heavy goods vehicle at any one time.

Any period where this capacity is exceeded, will result in construction vehicles blocking back into the CS11 Bus Lane with potential knock-on effects to bus routes and the reliability of local services. The Bus Lane on Avenue Road under the CS11 proposals is used by up to 50 buses per hour, so any period of sustained blocking back would have a substantial impact.

To minimise this risk, a vehicle booking system will be implemented, with the arrival of construction vehicles at the Pit Lane actively managed. There will however be periods during the three-year programme where loading and unloading activities do not go to plan and while those vehicles which have not yet left the depot sites can be halted, those already on the road will need to be diverted.

In these exceptional circumstances vehicles will be diverted via Winchester Road and Eton Avenue (Route 6) or if the vehicle limit is reached then the direct access off the Avenue Road (Route 8) will be used.

Periods of overcapacity are most likely to occur when the forecast number of vehicles is highest. Table 1 shows the likely number of vehicles arriving at the Pit Lane each hour during the peak periods for each phase. It assumes:

- all vehicles access the site via the Pit Lane on the A41; and
- the operating hours are those required by TfL to limit construction vehicles on the network during the peak periods (i.e. 7 hours between 0930 and 1630 hrs Monday to Friday)

The most intense periods of Pit Lane use occur during the basement and sub-structure works over a two-month period where vehicles are forecast to arrive at the Pit Lane every 8 minutes. With a two-vehicle capacity this gives a 16-minute dwell time for each vehicle in the Pit Lane.

Given the limited two-month duration and the types of materials being moved this is considered a workable dwell time. Should loading and unloading activities become delayed however, the secondary accesses described above will be used to ensure the operation and safety for road users on Avenue Road is maintained throughout the works.





Table 1: Forecast weekday arrival rate of vehicles at the Pit Lane

Phases	Access Routes				Max. Vehicles/	Revised Working Hours	
	Winchester Rd	A41 Access	Pit Lane	Duration ¹	day at Pit Lane	Vehicles/ hour	Minutes/ vehicle
1: Demolition ²	✓	✓	×	5 months	0	n/a	n/a
2: Basement & piling & sub-structure	✓	✓	✓	11 months (peak period)	53	7.4	8.0
Super Structure, Cladding	✓	✓	✓	13 months	39	5.6	10.8
4: Fit Out & testing	×	✓	✓	10 months	20	3	20.0

Co-ordination of Works

Development of the CMP assumes some overlap with the construction of the CS11 scheme. The uncertainty of a start date for the CS11 scheme indicates the temporary traffic management plans require need to be flexible.

Should there be a delay to introducing the Pit Lane, an interim layout for Bus Stop D (adjacent to the development site) provides drivers a safer exit from the site onto the A41 but also allows for a limited number of vehicles to access the site from the A41. This interim layout is shown in Drawing Number: 42437-5501-99 and which removes the layby and relocates Bus Stop D slightly further to the north (away from the site access).

Should CS11 be further delayed, the Pit Lane will be introduced as shown in Drawing Number: 42437-5501-97. This shows the Pit Lane inset into footway to accommodate the CS11 scheme at a later date in the developments construction phase.

If CS11 is delayed indefinitely then the Pit Lane will be introduced as shown in Drawing Number: 42437-5501-98. This retains the existing kerb line at the Pit Lane to maximise the width of the adjacent footway but will require additional traffic management measures on the A41 to ensure lane diverges and vehicle speeds past the works area remain safe.

Bus Stop D (Avenue Road)

If work on CS11 starts before the end of the year then the following strategies are proposed for Bus Stop D to facilitate construction access to the site either directly from the A41, the Pit Lane or both:

- Bus Stop D is temporarily moved out of the existing layby as shown in Drawing Number: 42437-5501-99.
- Bus Stop D will be suspended for the period it takes to construct an enhanced Bus Stop E as part of the CS11 scheme. Bus passengers will initially have to use Bus Stop B (just north of the College Crescent junction) until services can use the new CS11 Bus Stop E.

Should CS11 be delayed indefinitely it is not possible to relocate bus routes to Bus Stop E as proposed in the CS11 scenario. This is because in the current layout of Avenue Road, Bus Stop E is too close to the Adelaide Road junction which makes the right turn for buses from the Bus Stop towards Finchley Road unsafe.

Under a 'No CS11' scenario it is therefore proposed to suspend Bus Stop D with bus passengers instead boarding and alighting from Bus Stop B. Bus Stop D is located predominantly to serve the Swiss Cottage Underground station with the walking distance between Bus Stop D and nearest station entrance being 43 metres. This compares with 137 metres for Bus Stop B. It is recognised that:



¹ Some phases run concurrently.

² Some or all, of the demolition phase may be undertaken before the Pit Lane is operational.



- Enhancements to Bus Stop B will be required to mitigate the additional bus dwell time due to the increased boarding and alighting activity but also minimise any change to passenger interchange times with Underground services.
- The gap between Bus Stop B and the next downstream Bus Stop V (Finchley Road) is 620 metres. This is longer than desirable but not unreasonable, given the distribution of key destinations (i.e. the Underground Station/ Hampstead Theatre/ The Royal Central School of Speech & Drama and the Swiss Cottage Leisure Centre/ Library) are clustered closer to Bus Stop B.

The proposal is to increase the length of the clearway at Bus Stop B towards the junction. This will require the removal or reduction in the length to the existing Red Route loading bay which should be acceptable as the CS11 proposals for this section of Finchley Road remove the loading bay completely. If the loading bay needs to be retained, then it is proposed to introduce a shorter bay behind the bus stop i.e. between the pedestrians crossing zig-zags and the relocated clearway. This arrangement will have operational benefits for bus services due to the shorter distance between the Bus Stop and the junction stop line and will also reduce the walk distance to the nearest Station entrance from 137 metres to 105 metres.

Summary and Conclusions

- This Note provides supplementary information to the Theatre Square Construction Management Plan (CMP) with the aim of addressing outstanding transport related concerns raised by Councillors at Camden's Planning Committee on 19th July 2018.
- The average number of construction vehicles across a 36-month programme is estimated to be 29 vehicles per day. The period of highest vehicle activity is over a 2-month period during the basement excavations and piling phase where the maximum vehicle numbers arriving at the site could reach 53 vehicles per day.
- In total eight construction vehicle access routes where assessed which led to a site access strategy that recommended a Pit Lane on the A41 (Route 7) supported by a an access via Winchester Road Eton Avenue and the A41 (Route 6). A tertiary access point directly off the A41 (Route 8) will be used to reduce the risk of construction vehicles blocking back from the Pit Lane into the general traffic lanes on Avenue Road or under a CS11 scenario, into the Bus Lane.
- Other construction vehicle access routes were rejected predominantly on the increased risk to pedestrian/ cycle safety; a significant impact on the operation and landscaping proposals of the CS11 scheme; or a prolongation of the programme due to a requirement for major enabling works (e.g. relocating mains gas infrastructure or protection of underground structures).
- A hybrid option to further reduce construction vehicle movements along Winchester Road, proposed the increased use of Route 8 directly off the A41. This had the potential to limit construction vehicle movements along Winchester Road to only the demolition phase but the resulting delayed construction of the southern part of the building this would cause added 9 months to the works programme. This would result in an extended period of disruption to the operation of Avenue Road and the CS11 scheme and therefore is not TfL's preferred option.
- The A41 Pit Lane allows a substantial reduction in the number of construction vehicle movements along Winchester Road and Eton Avenue which was the consented route for all vehicles as part of the original planning determination. Based on the construction vehicle forecasts across the programme the Pit Lane and secondary access of the A41 will result in a 75 per cent decrease in construction vehicle activity on the Winchester Road and Eton Avenue route.
- The following additional restrictions and measures will be implemented to further address local resident concerns:
 - Winchester Road and Eton Avenue will be limited to 14 movements per day during the demolition phase and 7 thereafter.
 - Vehicles will not operate in peak periods which include the start and end of the school day.
 - Traffic marshalling along Eton Avenue will ensure a safe environment for pedestrians and cyclists is maintained during periods of site operations.
 - Support will be provided to rationalise and manage the layout of the market stalls, ensuring any impact on traders and their businesses is minimised.





- The Pit Lane has an operational capacity for two standard construction vehicles or one articulated HGV. Any periods of overcapacity could result in construction vehicles blocking back into the CS11 Bus Lane with potential delay to local bus services.
- While a vehicle booking system will minimise the risk of blocking back, the availability of the Winchester Road and Eton Avenue route and a direct site access off Avenue Road provides a short and effective alternative way to remove construction vehicles from the public highway. The operational resilience these alternative routes provide will ensure there is no increased safety risk to road users, pedestrians and cyclists and that local bus services will be protected from delays.
- A bus stop strategy is proposed to ensure any impact on bus users as a result of changes to Bus Stop D is minimised throughout the works. Alternative strategies are in place to ensure this mitigation can be achieved under a 'with' CS11 and 'without' CS11 scenario.
- Essential Living will continue to work with TfL and update the live CMP document as necessary should the CS11 scheme not progress or be substantially delayed. Any amendments required will follow the principles of the current CMP.

DOCUMENT ISSUE RECORD

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Appendix A Contents

Drawing Number: 42437-5501-97Drawing Number: 42437-5501-98Drawing Number: 42437-5501-99

