Appendix 2

TECHNICAL NOTE

Job Name:	Seven Dials Junction Improvements, Brighton
Job No:	21810/015
Note No:	TN004 rev A
Date:	13th March 2013
Prepared By:	K. Marshall
Subject:	Conditions around the Elm Tree on Vernon Terrace

Brighton and Hove City Council (BHCC) has instructed Peter Brett Associates LLP (PBA) to prepare a technical note concerning the existing highway conditions and current highway proposals to the surrounding area of an Elm tree directly adjacent to Seven Dials in Brighton as part of the detailed design of the junction improvements.

Elm Tree on Vernon Terrace

EXISTING SITUATION

An existing Elm tree is situated in the southern footway of Vernon Terrace which is on the exiting arm travelling south-west from the Seven Dials roundabout in Brighton.

Existing tree March 2013 (from Vernon Terrace looking north-east)

The tree is approximately 12 to 14m tall with a trunk approximately 1.0m wide and a canopy/root spread of approximately 8m. The tree appears to lean slightly southward towards the buildings on Vernon Terrace and there is evidence in the form of cracks and displacement of kerbs to show that the tree roots spread through the footway and out into the carriageway. It is reported that the tree roots also appear to be affecting the boundary wall of the adjacent property.

Location Plan

Elm Tree on Vernon Terrace

The existing position of the tree is such that it is interrupting the existing kerb line and pedestrian guard railing. Consequently the tree extends significantly into the carriageway as well as narrowing the footway.

Existing carriageway and footway have been displaced / adjusted to suit the growth of the tree

Footway

The existing footway width directly adjacent to the Elm has been measured on site as 0.95m wide. The footway has a crossfall from the tree to the back of the footway as a result of the tree roots pushing the footway surface upwards, the reverse of a normal situation. The existing footway either side of the tree is 2.0m wide and falls from the back of the footway to the carriageway.

The existing crossfall of the footway around the tree forces any surface water to fall towards the private property however the longfall of the footway provides a path in guiding the water back onto the carriageway as desired.

Guidance for footway design with regard to mobility suggests the following widths:

- **700mm and less** – an ambulant person walking
- **750mm minimum** – a person using a walking stick
- **900mm minimum** – a person using two sticks/ crutches or a walking frame
- **1100mm (1.1m) minimum** – a blind person using a long cane or an assistance dog
- **1200mm (1.2m) minimum** – a visually impaired person being guided by an ambulant person
- **1500mm (1.5m) minimum** – a wheelchair user passing or side-by-side an ambulant person
- **2000mm (2.0m) minimum** - two wheelchair uses passing one another

Footway width below standard 2.0m

Generally a pushchair user will require a similar width to a wheelchair user.

This guidance is taken from Department of Transport – Inclusive Mobility: A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure (2005).

For the situation on Vernon Terrace the footway should therefore be a minimum of 2.0m wide and the existing situation is a departure from standard due to the Elm tree, particularly for blind and visually impaired people being guided. It is noted that the obstacle is over a short distance so ambulant pedestrians can 'give way' to one another. The route could be considered uncomfortable for the visually impaired and opposing wheelchair / pushchair users, although it is noted that opposing wheelchair users could 'give way' to each other. Given that one of the aims of the scheme is to improve the pedestrian environment, a sub-standard footway width is not a desired option.

Visibility

The standard in Design Manual for Roads and Bridges (DMRB) state the pedestrian stood 2.0m back from the kerb line (1.5m min) should be able to see 70m along the road in both directions. *(DMRB, TD 90/05 Geometric Deign of Pedestrian, Cycle and Equestrian Routes, table 3.3 and TD42/95 Geometric Design for Major/Minor Priority Junctions).* The guidance in Manual for Streets (MfS) states that this distance can be reduced to 20m for low speeds.

The existing pelican crossing does not meet visibility requirements under the DMRB of MfS due to the location of the Elm tree blocking the following:

- For vehicles traveling southbound:
  - the view of the primary traffic signal,
  - the view of pedestrians standing on the south-east side of the crossing waiting to cross,
- For pedestrians standing on the south-east side of the crossing waiting to cross northbound:
  - the view of vehicles turning from Dyke Road onto Vernon Terrace,
  - the view of the vehicles approaching from the circulatory roundabout

These are departures from normal design standard which could cause a safety issue particularly if the secondary traffic signal (located on the north side of Vernon Terrace) fails. It should be noted that there are no recorded accidents at the existing pelican crossing on Vernon Terrace between March 2007 and February 2012.

Drawing 21810/015/SK004 attached to this technical note shows the issues surrounding the tree.

PROPOSED SITUATION

A new zebra crossing is proposed to be installed in approximately the same position as the existing pelican crossing. Therefore the above visibility issues also exist with the proposals, and are compounded by the removal of traffic signal control as the zebra crossing will rely more on forward visibility between pedestrians and vehicles to ensure the appropriate priorities are able to be given. It is therefore considered an essential part of the current zebra crossing design that the Elm tree is removed.

SUMMARY

Advantages of removing the elm tree (for both existing and proposed situations):

1. There can be a full unobstructed 2m wide footway.
2. The visibility of the pedestrian crossing will be greatly improved for approaching vehicles, to conform to DMRB standard.
3. The visibility of approaching vehicles will be greatly improved for pedestrians waiting to cross, to conform to DMRB standard.
4. The on-going damage that roots are causing to the footway, carriageway and utilities in the area and subsequent maintenance issues is removed.
5. The risk of roots damaging the wall at the adjacent property and subsequent maintenance issues is removed.
6. The risk of a claim for damages (to a person tripping or property damage) as a result of the

position of the tree (through roots/fallen braches) removed.

7. The risk of an accident due to vehicle impact onto the tree or manoeuvre to avoid the tree in the carriageway is removed.
8. There is a reduced risk of surface water falling towards private property (nr 38 Montpelier Crescent – off Vernon Terrace)
9. The maintenance costs of cutting back the tree each year as it grows across the carriageway and blocks light and visibility to/from the adjacent property will be removed.

Disadvantages of retaining the elm tree (for both existing and proposed situations):

1. The safety issues noted above remain.
2. In the proposed arrangement for Zebra crossing the safety issues are compounded to the point where we consider that a Zebra crossing should not be installed in the current proposed position without the removal of the tree.

The advantages and disadvantages of retaining the tree within the scheme have not been considered in this technical note. Refer to technical note TN005 for further information.

DOCUMENT ISSUE RECORD

Technical Note No	Rev	Date	Prepared	Checked	Reviewed (Discipline Lead)	Approved (Project Director)
21810/015/TN004	-	12.03.13	KM	KM	SE	BP
21810/015/TN 004	A	20.03.13	KM	KM	SE	BP

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