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5th June 2023

Brett Hutton
JCDecaux
Unit 2-3, 182-190 Euston Rd,
Alexandria NSW 2015

RE: Pacific Hwy, Pymble, NSW
Column Mounted P50 Signage, Structural Feasibility Statement

This Structural Feasibility Statement has been conducted by Dennis Bunt Consulting Engineers Pty Ltd (DBCE) at the request of JCDecaux.

The proposed sign is documented in the generic DA drawings by the architects Tzannes (JCD Multi-Site P50) 21027/ 001(D), 002(D) and 003(C) and the site-specific DA drawing by DBCE 22098 / DA01(F) and DA02(B).

A survey of the site was commissioned by JCDecaux. A preliminary geotechnical report by Douglas Partners was also commissioned by JCDecaux.

The P50 sign is a single sided LED screen with visual screen dimensions of 3072mm horizontally x 4608mm vertically. The top of the LED screen will be located 8290mm above the ground. The sign is to be located above a column and horizontal beam that will form an L shape under the screen. The column and horizontal beam will be clad in stainless steel. There will be a door in the rear of the column to store equipment for the LED screen.

Site Description

The site is in an area between Pacific Hwy to the north and Avon rd. to the south and is covered in low level bushes.

The ground is fairly flat and is at the same level as the Pacific Hwy. There is a vertical drop of approximately 6m on the Avon side with a brick facing retaining wall. The sign will be located adjacent to a low-level fence next to the Pacific Hwy footpath and approximately 3m from the vertical drop. There will be some new landscaping which will not add any significant load to the existing brick retaining wall.

Structural Description

Steel frame

The structure will consist of a fabricated steel column 600mm x 300mm x 20mm thick and a rectangular box section welded to the top of the column to form an L shape.

A door is to be located in the rear of the column to store equipment so the column will act as a C section for most of its height.

A welded steel frame consisting of 200 x 100 RHS vertical members and 100x100 SHS horizontal members will be bolted to the top of the horizontal box section. Spigots will be welded to the top of this section and the vertical members in the welded frame will drop over the spigots and be fixed with bolts.

The LED screen will be assembled in the contractor's factory and clamped to the welded frame so it can be transported to site as one unit.

The L shaped structure will have stainless steel cladding fixed to it also in the contractor's factory and be transported to the site as one unit.

On site the L shaped structure will be bolted to the top of the concrete footing and the welded frame supporting the LED screen bolted to the L shaped frame.

The different elements will be lifted into position by a crane stationed on either Avon Rd or the Pacific Highway at night during a road closure. The crane will not be located on the soil and hence not load the existing brick retaining wall.

The weight of the structure including the digital screen and the cladding is approximately 3.1 tonnes.

The sign is to be designed for a wind load for region A, terrain category 2.5 and a 50 year design life in accordance with AS1170.2.

Footing

The preliminary geotechnical report shows 6m of fill (the depth of the existing brick retaining wall) with stiff to hard clay at a depth of 8 to 12m and shale and laminate bedrock underneath.

The proposed footing is a 3m x 3m x 1.5m deep concrete pad and plinth supported off 4/600 diameter bored concrete piles that are to be socketed 1m into the rock.

The shear force applied to the top of the concrete pad due to wind acting on the sign will be transferred to the rock by two of the piles acting in compression while two act in tension. The piles will also apply lateral force to the stiff and hard clay under the brick retaining wall. The weight of the sign will be supported by the 4 piles onto the rock.

We note that the footing will not rely on the 6m of fill or brick retaining wall to support the sign.

The bore holes in the soil for the concrete piles will be constructed by a drilling rig stationed on the Pacific Highway at night during a road closure. The drilling rigs base will not encroach on the soil and hence will not load the existing brick retaining wall. The excavation of the 3m x 3m x 1.5m concrete pad will be done with a small excavator which will not add significant load to the soil or the brick retaining wall.

Recommendations

Based on the survey and our preliminary design we see no reason why the cantilevered signage cannot be installed.

A geotechnical report based on a bore hole drilled in the location of the sign is commissioned to provide information on the soil/rock profile and its depth below ground.

A services search is undertaken in the area of the footing.

If you have any questions, please do not hesitate to ring the undersigned on 0400 023 714

Yours Faithfully,

A handwritten signature in blue ink, appearing to read 'J Linsell', is written over a light blue rectangular background.

John Linsell BE(Hons), MIEAust, CPEng, NPER(Struct)
for Dennis Bunt Consulting Engineers Pty Ltd