

Stacy Warren
Director Infrastructure
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

7 July 2018
Ref: 170108-ER-DPE-TSE-Jun 18

Dear Stacy

RE: Sydney Metro City & South West Chatswood to Sydenham CSSI 15_7400 – ER Monthly Report for June 2018 – TSE Contract

Healthy Buildings International (HBI) submits this report to the Secretary in accordance with:

- Condition A24 (I) of the Sydney Metro City & South West Chatswood to Sydenham CSSI 15_7400 Approval (9 January 2017) and associated modifications (MOD1_Victoria Cross and Artarmon (18 October 2017), MOD2_Central Walk (21 December 2017), MOD4_Sydenham Station and Metro Facility South (13 December 2017), and MOD 3_ Martin Place Metro Station (22 March 2018) ; and
- As required by the subsequent appointment as the approved Environmental Representative (17 February 2017);

The attached summary details the key activities undertaken by Environmental Representatives for Sydney Metro – City and South West Chatswood to Sydenham during the month of **June 2018**.

Yours sincerely



Michael Woolley
Environmental Representative

Cc: Sydney Metro: Fil Cerone, Matt Marrinan, Ben Armstrong, Stuart Hodgson, Nicole Williams, Adam Koutsamanis, Suzanne Saunders, Rob Muir (JHCPBG)
DPE: Swati Sharma, Rob Sherry, Elizabeth Williamson



Summary of Contract Packages	Environmental Representative/s
Demolition and Tunnel and Station Excavation (TSE)	Michael Woolley
Alternate	Jo Robertson / Annabelle Reyes

Key Construction Activities	
Demolition and TSE	<p>Works conducted in June 2018 at the following sites are summarised below:</p> <p>Chatswood Dive Site and Artarmon Substation:</p> <ul style="list-style-type: none"> ➤ Chatswood dive site <ul style="list-style-type: none"> ○ Building the tunnel dive involving installation of concrete piles, building the capping beam, excavation of material and installation of rock anchors. ○ Removal of concrete and asphalt slabs with a jackhammer and removal of excavated material that cannot be reused on-site. ○ Construction of driveways, internal roads and foundations for acoustic sheds and other tunnel infrastructure including spreading and compacting road base materials and pouring and spraying concrete. ○ Installation of a secondary 8-metre high noise barrier made of shipping containers along the Nelson Street boundary. Foundations were installed, and the pre-painted containers were lifted into place with a crane. ○ Installation of hoarding and various utility services to support site operations. ➤ Nelson Street <ul style="list-style-type: none"> ○ Installation and commissioning of underground utilities and temporarily reinstating the works areas. ➤ Rail corridor <ul style="list-style-type: none"> ○ Survey, utility and geotechnical investigations between Brand Street and Albert Avenue. ○ Modification of the existing open v-drain within the rail corridor near Brand Street involving installation of concrete pipes, backfilling the drain with material and compaction of the material. ➤ Out-of-hours works <ul style="list-style-type: none"> ○ Chatswood dive site <ul style="list-style-type: none"> ▪ Delivery and unloading of oversized plant and equipment. ▪ Accessing the site intermittently to load and unload materials required for out-of-hours works. ○ Mowbray Road, Pacific Highway, Hampden Road and Nelson Street <ul style="list-style-type: none"> ▪ Identification, installation and commissioning of underground utilities. This involved saw cutting, excavating and backfilling trenches, installing conduits, installing cables and temporarily reinstating works areas. ▪ Removal of a tree stump and a light pole on Mowbray Road. ▪ Building the permanent site exit driveway on Mowbray Road involving removal of the existing kerb and footpath, minor earthworks and pouring concrete. ▪ Installation of banners on the hoarding on Mowbray Road and the Pacific Highway. ▪ Installation of temporary traffic and pedestrian management and establishing works areas. ▪ Equipment used during these works included but is not limited to, hand tools, truck mounted cranes, excavators, concrete saws, stump grinder, winches, vacuum excavation trucks, trucks, light vehicles,



	<p>lighting towers and generators.</p> <ul style="list-style-type: none">○ Mowbray and Orchard Road<ul style="list-style-type: none">▪ Location of existing underground utility services (more information about these works will be provided in a separate notification).▪ Temporarily reinstating of excavated areas.▪ Delivery and unloading of plant and equipment.○ Brand Street between Hampden Road and the rail bridge<ul style="list-style-type: none">▪ Location of existing underground utility services and constructing a driveway to access the rail corridor.▪ Installation of fencing and signage. <p>Artarmon</p> <ul style="list-style-type: none">➤ Out-of-hours works – Artarmon and St Leonards Ground movement monitoring plays an important role in managing safety during tunnelling. Small monitors, similar in size to road reflectors, will be installed on roads and footpaths along the tunnel alignment. The monitors will remain in place until tunnel construction is completed, after which they will be removed and the location points reinstated. Monitors were planned to be installed in the below streets in Artarmon and St Leonards from Monday 18 June 2018. Installation will be progressive and was expected to take five nights to complete, weather and site conditions permitting:<ul style="list-style-type: none">○ Broughton Road, Artarmon○ Christie Street, St Leonards○ Eric Road, Artarmon○ Herbert Street, St Leonards○ Miller Lane, Artarmon○ Mowbray Road, Artarmon○ Pacific Highway, St Leonards <p>Works involved:</p> <ul style="list-style-type: none">○ Setting up traffic control around the site.○ Using hand tools to drill small holes to install the monitors.○ A slow moving support vehicle and an escort vehicle support this activity.○ The worksite continuously moving throughout the shift and only a short time was spent in each location. <p>Crows Nest Station:</p> <ul style="list-style-type: none">➤ Within and around the site<ul style="list-style-type: none">○ Completion of pile trimming in the southern section of the site (south of Hume Street) using concrete saws and hammers.○ Continuing construction of the concrete capping beam in the southern section.○ Continuing construction of the south side of the Hume Street bridging structure including concrete works.○ Continuing storm water adjustment works on the Hume Street bridging structure.○ Continuing excavation of the station box mainly on the northern section of the site (north of Hume Street).○ Continuing construction of footings for site sheds south of Hume Street.○ Continuing installation of site services.○ Continuing to install rock anchors and wall support around the site.○ Installation of survey and monitoring equipment on buildings and in roads around the site.○ Continuing earthworks and load out of excavated materials from site.
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	<ul style="list-style-type: none">○ Regular delivery of plant and materials.➤ Out-of-hours works:<ul style="list-style-type: none">○ Within and around the site<ul style="list-style-type: none">▪ Delivery and removal of oversized plant and equipment.○ Junction of Clarke Street/ Hume Street (east)<ul style="list-style-type: none">▪ Installation of monitoring equipment.○ Pacific Highway south of Hume Street, Clarke Lane/Hume Street (south side)<ul style="list-style-type: none">▪ Ausgrid opened the road/footpath to complete redirection and connection of the power supply to site.○ Hume Street at Clarke Lane<ul style="list-style-type: none">▪ Delivery of rails for the gantry crane▪ Delivery of acoustic shed panels○ Hume Street at Clarke Lane<ul style="list-style-type: none">▪ Ausgrid removal of redundant cables▪ Delivery of a gantry crane <p>Victoria Cross Station:</p> <ul style="list-style-type: none">➤ Victoria Cross South site<ul style="list-style-type: none">○ Relocation of sections of hoarding and installing artwork on hoardings.○ Installation of retention (anchors).○ Breaking out ground for acoustic shed footings and station excavation.○ Concrete works to build footings for the acoustic shed.○ Construction of a capping beam around the site.○ Installation of the acoustic shed over the north of the site.○ Installation of survey and monitoring equipment on buildings and roads.○ Loading out excavated materials via Denison Street.○ Removal of hazardous material from the site.○ Installation of site services.○ Deliveries of plant, equipment and materials.➤ Victoria Cross North site<ul style="list-style-type: none">○ Concrete works for footings of the acoustic shed, retaining walls and haul road.○ Continuing excavation to the east of the site for the haulage road and spoil area.○ Connecting the HV kiosk near Miller Street.○ Loading out excavated materials.○ Commencing acoustic shed installation.○ Installation of site services.○ Deliveries of plant, equipment and materials.○ Installation of survey and monitoring equipment on buildings and roads.➤ Out-of-hours works<ul style="list-style-type: none">○ Around the sites<ul style="list-style-type: none">▪ Mobilisation and the delivery/removal of oversized equipment and materials.▪ Installation of traffic signage, survey and monitoring equipment.○ Victoria Cross Station South site<ul style="list-style-type: none">▪ Installation of survey and monitoring equipment.▪ Conduct of road condition surveys in Denison, Little Spring and Spring Streets.○ Victoria Cross North site<ul style="list-style-type: none">▪ Relocation of fencing and hoarding on Miller, Berry and Denison
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Streets.

- Delivery of acoustic shed parts via Berry Street.
- Installation of acoustic shed panels.
- Installation of survey and monitoring equipment.

Barangaroo Station:

- Hickson Road (between Dalgety Road and Windmill Street bridges)
 - Continued installation of an acoustic shed involving steel work, cladding and wall and installation using large cranes and elevated work platforms.
- Dalgety Road and Munn Street
 - Installation of monitors and survey points for future tunnelling activities (some of this work involves using small drilling rigs).
- Hickson Road (between Dalgety Road bridge and High Steps)
 - Piling and steel works for the Hickson Road support structure.
 - Civil works, high pressure grouting, piling, excavation and concreting activities.
- Nawi Cove and Barangaroo foreshore
 - Installation of a new electrical substation for tunnel boring machines.
 - Setting up the water and slurry separation plants.
- Out-of-hours works
 - Temporary access shaft inside the acoustic shed – Hickson Road
 - Rock sawing, shaft support and concreting works.
 - Using the gantry crane to load excavated material into storage containers.
 - Deliveries of concrete, machinery and equipment.
 - Hickson Road (between Dalgety Road bridge and High Steps)
 - Relocation of underground utilities involving saw cutting, jack hammering, excavating and backfilling trenches, installing conduits, installing/pulling cables and reinstating work areas.
 - Removal of an overhead power cable.
 - Deliveries of plant and equipment.
 - Corner of Sussex Street and Erskine Street
 - Relocation of underground electrical utilities involving saw cutting, jack hammering, excavating and backfilling trenches, installing conduits, installing/pulling cables and reinstating work areas.

Martin Place Station:

- Bligh Street site
 - Excavating 24-hours a day, up to seven days per week including roof support.
 - Rock hammering during this process and will at times be audible.
 - Equipment used during these works will include road headers, rock bolt and shotcrete rigs, excavators, dust scrubbers, concrete pumps, concrete and haulage trucks, mobile cranes, bobcats and forklifts.
 - Excavated material will be removed from site via O'Connell Street using single body haulage trucks. Truck numbers will vary depending on the time of day, but on average five trucks per hour will leave the site during day shifts. Material excavated at night will be stockpiled in the acoustic shed and removed during the day.



	<ul style="list-style-type: none">○ Concrete truck deliveries will occur via O’Connell Street during nightshifts. During the initial phase there will be an average of three concrete deliveries per night.➤ Martin Place North site<ul style="list-style-type: none">○ Removal of scaffolding and the existing B-class hoarding and replacing it with A class hoarding.○ Finalising structural demolition works and removing materials from site.○ Utilities works including excavation and installation of conduits, cable installation and Ausgrid jointing works.➤ Martin Place South site<ul style="list-style-type: none">○ Installation of scaffolding to prepare 39 Martin Place for demolition.○ Removal of hazardous materials.○ Delivery of equipment and materials to and from site.○ Removal of rooftop plant and equipment.○ Removal non-structural walls.○ Using the tower crane to lift large equipment to the roof.○ Relocation of utilities and decommissioning an electrical substation.➤ Out-of-hours works<ul style="list-style-type: none">○ Hunter, Castlereagh and Elizabeth streets, Martin Place (between Elizabeth and Castlereagh streets)<ul style="list-style-type: none">▪ Utility works including Ausgrid pit inspections, trial hole investigations, pit installation and trenching for conduit and cable installation.▪ Utility relocation of existing services.▪ Oversized equipment deliveries and crane mobilisations for lifting equipment into sites.▪ Installation of monitoring and survey points for tunnelling activities.○ Bligh and O’Connell streets<ul style="list-style-type: none">▪ Oversized equipment deliveries and crane mobilisations for lifting equipment into site.▪ Excavation of the temporary access ramp from the Bligh Street site (these works will occur 24 hours a day, up to seven days a week).▪ Concrete truck deliveries.▪ Installation of monitoring and survey points for tunnelling activities. <p>Pitt Street Station:</p> <ul style="list-style-type: none">➤ Pitt Street North site<ul style="list-style-type: none">○ Site establishment works for the excavation phase.○ Heritage investigations.○ Installation of a substation kiosk and upgrading services on the corner of Pitt Street and Park Street.○ Constructing the acoustic shed.○ Excavation of the Pitt Street North shaft.➤ Pitt Street South site<ul style="list-style-type: none">○ Installation of scaffolding and safety structures.○ Removal of hazardous materials, stripping out buildings and removing waste.➤ Out-of-hours works<ul style="list-style-type: none">○ Pitt Street North<ul style="list-style-type: none">▪ Delivery of oversized plant, materials and equipment including cranes.▪ Utility-related works including trenching.
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- Pitt Street South
 - Construction of hoardings.
 - Delivery of plant and equipment.
 - Sewer and stormwater inspections.

Waterloo Station:

- Waterloo Station site
 - Construction of piling platforms and foundations for various site facilities involving removing unsuitable material, delivering fill material to site and compacting the material using vibratory rollers.
 - Delivery of worker facilities and water treatment plant.
 - Installation of concrete piles and building the capping beam around the station box to support the ground during excavation.
 - Starting the station box excavation works.
 - Construction of a driveway layback to Raglan Street, involving excavation and concrete works.
- Botany Road, George, Wellington, Raglan and Cope streets
 - Footpath drilling to install a monitoring device that will collect information from tunnelling and excavation works. Prior to drilling, the team will carry out excavation activities to expose and identify underground services.
- Botany Road
 - Removing a tree near the bus stop using a chainsaw, stump grinder and mulcher.
 - Upgrading the power supply to the site, involving trenching across footpath from a pole adjacent to the site office.

Marrickville dive site:

- Marrickville dive site
 - Construction of site structures including spoil shed, site offices, conveyor footings and structure installation
 - Demolition of existing structures and removal of existing concrete and asphalt slabs involving hammering
 - Ongoing construction activities of the dive site including earthworks, shotcrete and rock/ground anchoring work, construction of piling rig pads, installation of concrete piles and building the capping beam around the dive area to support the ground during excavation
 - Ongoing construction of the internal road network
 - Haulage of excavated material from site
 - Ongoing installation of site hoarding and artwork
 - Temporary storm water diversion work.
- Marrickville precast facility
 - Concrete segment production within the acoustic shed
 - Ongoing construction of the precast facility and support infrastructure
 - Storage yard crane operation
 - 24-hour operation of the precast facility expected to start beginning of June.
- May Street, St Peters
 - Restoration of a small section of May Street
 - Some asphaltting and cleaning down the work area.
- Out-of-hours works
 - Edinburgh Road/ Bedwin Road intersection
 - Investigative work as part of the Edinburgh Road/Bedwin Road



	<p>intersection upgrade is planned for the coming weeks. This initial work may include, potholing and investigation of existing services.</p> <ul style="list-style-type: none"> ▪ A separate notification will be provided to residents and businesses near the work area. ○ Marrickville dive site and precast facility <ul style="list-style-type: none"> ▪ Out-of-hours oversized deliveries (no unloading will occur). ○ Edinburgh Road, Marrickville (adjacent to site) <ul style="list-style-type: none"> ▪ Minor potholing ▪ Reinstatement work.
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ER Inspections	
Demolition and TSE	<p>Weekly inspections continued under the management of the TSE contractor for the demolition sites. The DPE Compliance Officer attended the Inspections on 12/6/18 and 19/6/18. Sites inspected in June 2018 comprised:</p> <ul style="list-style-type: none"> ➤ Victoria Cross South – 05/06/18, 19/06/18 ➤ Victoria Cross North – 05/06/18, 19/06/18 ➤ Chatswood – 05/06/18, 19/06/18 ➤ Martin Place – 05/06/18, 19/06/18 ➤ Bligh Street – 05/06/18, 19/06/18 ➤ Crows Nest – 05/06/18, 19/06/18 ➤ Barangaroo – 12/06/18, 26/06/18 ➤ Pitt Street – 12/06/18, 26/06/18 ➤ Waterloo – 12/06/18, 26/06/18 ➤ Marrickville – 12/06/18, 26/06/18 <p>ER Inspection reports have been prepared and issued to Sydney Metro and the TSE Contractor. Actions identified during the inspections comprised:</p> <ul style="list-style-type: none"> ➤ Inspection on 05/06/2018 <ul style="list-style-type: none"> ○ Chatswood – erosion and sediment controls ○ Crows Nest – erosion and sediment controls ○ Martin Place – water used for dust suppression seeping through controls and flowing into the gutter on Castlereagh Street ➤ Inspection on 12/06/2018 <ul style="list-style-type: none"> ○ Marrickville – Tonal alarms causing irritating noise levels, Erosion and sedimentation controls. ○ Waterloo – erosion and sedimentation controls, update on vibration results exceeding trigger levels adjacent church was provided. ○ Barangaroo – Chemical spill, chemical storage, erosion and sediment controls, leaking of runoff water ➤ Inspection on 19/06/2018 <ul style="list-style-type: none"> ○ Chatswood – Concrete washout, erosion and sediment controls ○ Crows Nest – erosion and sediment controls ○ Bligh St – chemical storage ○ Martin Place – water used for dust suppression seeping through controls and flowing into the gutter on Castlereagh Street ➤ Inspection on 26/06/2018 <ul style="list-style-type: none"> ○ Marrickville – Concrete wash out, erosion and sedimentation controls, chemical storage. Some ERSED related issues at Marrickville were repeat issues from previous inspections having not been closed out. ○ Waterloo – Engineer provided more detailed update on management of works in respect of cracking at the Church and exceedances of vibration criteria , erosion



	and sedimentation controls.
	Various notes were made in the reports reflecting commitments made by the TSE Contractors.

Endorsed Document/s	
Sydney Metro	The following documents were reviewed and endorsed by the ER with the assistance of Alternate ERs (not just specific to TSE related works): <ul style="list-style-type: none"> ○ Tree Report Rev Z ○ Minor Works Application - Axicom New Tower ○ Environmental Impact Assessment - Tower Construction
TSE	The following TSE documents were reviewed, comments provided to the TSE Contractor and Sydney Metro where relevant, and endorsed by the ER with the assistance of alternate ERs: <ul style="list-style-type: none"> ➤ Out of hours works (OOHW) approvals <ul style="list-style-type: none"> ○ Installation of Prisms for Monitoring ○ Road Survey - Victoria Cross ○ Road Survey White Bay ○ Road Survey Camellia ○ Cats Eyes Monitoring installation CH and CN ○ Corridor Works ○ Installing optical prisms onto building facades ➤ Site Establishment Plan <ul style="list-style-type: none"> ○ Pitt Street Rev 2 (2) ○ Barangaroo Rev 2 ➤ Construction Traffic Management Plans (CTMP) <ul style="list-style-type: none"> ○ Northern Corridor Works Mowbray Road to Brand Street ○ White Bay Truck Marshalling ➤ Other <ul style="list-style-type: none"> ○ White Bay Ancillary Facility Management Plan Version 2 ○ 180620 TfNSW 25 - Consistency Assessment - Additional Land ○ Waterloo Station CNVIS Rev 7 ○ Pitt Street South Demolition CNVIS Rev 6
Demolition	<ul style="list-style-type: none"> ➤ Out of hours works (OOHW) approvals <ul style="list-style-type: none"> ○ Extension to OOHWs at Martin Place (Demob of B-Class hoarding and erection of A-Class)

Complaints / Incidents / Non-compliance	
TSE and demolition	<p>It is understood that Sydney Metro has been providing summaries of complaints to DPE daily. Responses to each complaint have been noted in each complaint report, with follow up actions often defined in revised reports.</p> <p>The following events/incidents have been reported to the ER over the period:</p> <ul style="list-style-type: none"> ● On 29 May 2018 during a regular ER Inspection (where a DPE Compliance Officer was present) JHCPBG reported cracking of a wall in the Church adjacent the Waterloo site had occurred and exceedances of the vibration levels (as defined in the CNVIS) in the Church had been recorded. JHCPBG were investigating the cracking and exceedances and were to issue a report covering the issue. Further updates on the situation were provided during ER Inspections on 12th and 26th June 2018 (noted the DPE Compliance Officer was also in attendance on 12th June). JHCPBG stated that the report had been delayed due to ongoing and changing responses to



	<p>managing the issue. A report was provided to the ER and AA on 5 July 2018 (post this reporting period) which was also provided to DPE Compliance on 6 July. The report and potential for non compliance with the relevant CNVISs for the site and with other management plans is under consideration, in conjunction with the Acoustic Advisor.</p> <ul style="list-style-type: none"> • A spill of 40L of oil was reported on 26 June 2018 at Crows Nest Station site. The spill was contained using spill kits on site and did not enter any drains. • JHCPBG reported on 19th June that an operator at Crows Nest had used a hammer to break up concrete during a respite period. A complaint was received (No. 478) in relation to this. An Environmental Event report dated 20 June 2018 was provided to the ER. In accordance with the Environment Protection Licence (EPL) No. 20971 Condition L4.5 and L4.6, and in accordance with the Conditions E37, E38 and the CNVIS for Crows Nest excavation works, respite periods for high noise impact works were agreed with the community and implemented at the start of May 2018. The report identifies that operation of the hammer attachment occurred within the agreed respite periods. • A dust event at Marrickville on 4 June 2018 was reported in an Environmental Event report dated 13 June 2018 and provided to the ER on 21 June 2018. The report was generated in response to an EPA request following a complaint made to them. JHCPBG determined that the event was caused by the cleaning of hardstands which occurred for approximately 20 minutes. Various management and mitigation measures were discussed in the report. • A report covering a noise complaint on 19th April 2018 adjacent the Martin Place South site was issued to the ER during the month. The report was issued to DPE by Sydney Metro on 15th June 2018. • JHCPBG notified the ER of emergency works required to unblock a concrete pump at Waterloo on 25 June 2018.
Sydney Metro	<p>There were no non-compliances/complaints received in relation to works undertaken directly by Sydney Metro.</p> <p>There were no incidents related to Sydney Metro conducted works as defined by the project approval definition for incidents reported to DPE under condition A41.</p>

Audits	
TSE	A Draft Audit Report for an Internal Audit of the Construction Heritage Management Plan was provided dated 18 June 2018.
Demolition	Nil
Sydney Metro	Nil

Looking Forward	
Demolition and TSE	<p>Core Focus Areas for the month of July 2018 are:</p> <ul style="list-style-type: none"> ➤ ERSED controls and mud tracking from sites across the project, particularly given wet conditions in June. ➤ Site establishment works and operations at the White Bay Truck Marshalling area; ➤ Initial investigations and other early works at Blues Point; ➤ Review of SEPs and CNVIS's for new works or updates for existing sites; and ➤ Set up of mitigation controls as part of site establishment across all sites.