



Environmental Monitoring Data

Project:	Sydney Metro City & Southwest– TSE Works
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01	11/10/2019	N. Alexander	R. Muir	R. Muir	For publication

Project Summary

The Sydney Metro City and Southwest is the second portion of the new standalone rail network known as the Sydney Metro which is Australia’s largest public transport infrastructure project and a priority rail project for the NSW Government. John Holland CPB Ghella (JHCPBG) have been contracted by Transport for New South Wales to design and construct the Tunnel and Stations Excavation Works Project (TSE Works) of the Sydney Metro City & Southwest between Chatswood and Sydenham. Figure 1 provides an overview of the Project.



Figure 1: Project Overview

Environmental Protection Licence and Reporting Requirements

John Holland Pty Ltd obtained the Environment Protection Licence (EPL No. 20971) from the NSW Environment Protection Authority for the Tunnel and Station Excavation (TSE) Works on behalf of the John Holland CPB Ghella (JHCPBG) Joint Venture. The licence is for construction works relating to Rail Systems Activities and Concrete Works as defined under Schedule 1 of the *Protection of the Environment Operations Act, 1997* (POEO Act).

The licence describes monitoring and reporting requirements for the TSE Works, and specifically provides discharge criteria for water treatment plant and sediment basin water quality. The following report details environmental monitoring undertaken during this reporting month conducted in accordance with the EPL.

The EPL can be found by following the link below to the EPA’s website:

<https://apps.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=165252&SYSUID=1&LICID=20971>

Discharge Water Monitoring

Testing and discharge was undertaken during this reporting period. Table 1 contains the discharge monitoring results.

Noise and Vibration Monitoring

Noise and vibration monitoring was undertaken during this reporting period. Table 2 contains the vibration monitoring results, and Table 3 contains the noise monitoring results.

Real-Time Noise and Vibration Monitoring

Real-time noise and vibration monitors were operating at Barangaroo, Crows Nest, Martin Place, Pitt Street, and Victoria Cross during the September reporting period. Table 4.1 and 4.2 contains summarised real-time noise monitoring results and real-time vibration data is displayed in Table 5.

Table 1: Discharge Water Monitoring Data.

Monitoring Point	Identifier ¹	Dates Sampled	Parameter/ Criteria/ Measured Value						Oil & Grease (None Visible)	Comments
			pH (6.5 – 8.5)			Turbidity (<35 NTU)				
			Min	Max	Average	Min	Max	Average		
2	CD_02	01/09/2019 to 30/09/2019	6.9	8.3	7.3	0.2	25.2	4.7	Nil	Compliant
3	VC_03	01/09/2019 to 30/09/2019	6.8	8.3	7.3	0.3	26.1	7.7	Nil	Compliant
2	BN_02	01/09/2019 to 30/09/2019	6.6	8.4	7.5	2.1	18.6	10.4	Nil	Compliant
2	BL_02	01/09/2019 to 30/09/2019	6.7	8.5	7.3	0.1	33.5	10.9	Nil	Compliant
1	MDS_01	01/09/2019 to 30/09/2019	6.6	8.5	7.6	0.5	34.2	16.7	Nil	Compliant

¹ As per discharge point identified in Sydney Metro City and Southwest Temporary Basin and Water Treatment Discharge Point Schedule

Table 2: Vibration Monitoring Data.

Monitoring location	Monitoring Date	Attended or Continuous Monitoring	Measured VDV (m/s ^{1.75})	VDV Target (m/s ^{1.75})	VDV Compliant	Measured PPV (mm/s)	PPV Target (mm/s)	PPV Compliant
50 Martin Place, Sydney	13/09/2019	Attended	N/A	N/A	N/A	0.40	7.5	Y
10 Atchison St, St Leonards	14/09/2019	Attended	N/A	N/A	N/A	0.10	25	Y
50 Martin Place, Sydney	17/09/2019	Attended	N/A	N/A	N/A	0.55	7.5	Y
243 Miller St, North Sydney	17/09/2019	Attended	N/A	N/A	N/A	0.18	7.5	Y
77-79 Christie St, St Leonards	19/09/2019	Attended	N/A	N/A	N/A	0.10	25	Y
2 Atchison St, St Leonards	24/09/2019	Attended	N/A	N/A	N/A	0.10	25	Y

Table 3: Noise Monitoring Data

Monitoring Location (Noise-Catchment Area, Street, Suburb)	Monitoring Date	Attended or Continuous Monitoring	Parameter	Measured Value dB(A)	Goals / Targets dB(A)	Comments
OSR_1168, 115 Reserve Rd, Artarmon	09/09/2019	Attended	LA _{eq} (15-min)	64.9	54	TSE works compliant. Traffic was dominant noise source.
AS_01_558, 19 Barton Rd, Artarmon	09/09/2019	Attended	LA _{eq} (15-min)	49.2	43	TSE works inaudible.
MP_04, 50 Martin Place, Sydney	09/09/2019	Attended	LA _{eq} (15-min)	59.1	65	TSE works compliant.
MDS_02, 356 Edgeware Rd, Newtown	12/09/2019	Attended	LA _{eq} (15-min)	60.8	57	TSE works compliant. Traffic was dominant noise source.
CN_01, 10 Atchison St, St Leonards	14/09/2019	Attended	LA _{eq} (15-min)	46.0	40	TSE works inaudible, background noise dominant.
VC_04, 243 Miller St, North Sydney	17/09/2019	Attended	LA _{eq} (15-min)	46.2	55	TSE works compliant.
CN_01, 77-79 Christie St, St Leonards	19/09/2019	Attended	LA _{eq} (15-min)	30.4	70	TSE works compliant. TSE works inaudible.
MDS_02, 356 Edgeware Rd, Newtown	20/09/2019	Attended	LA _{eq} (15-min)	64.4	43	TSE works inaudible.
CN_01, 7-9 Herbert St, St Leonards	20/09/2019	Attended	LA _{eq} (15-min)	28.3	50	TSE works compliant.
CN_01, 7-9 Herbert St, St Leonards	20/09/2019	Attended	LA _{eq} (15-min)	28.0	50	TSE works compliant.
CN_01, 7-9 Herbert St, St Leonards	20/09/2019	Attended	LA _{eq} (15-min)	25.0	50	TSE works compliant.
CN_01, 7-9 Herbert St, St Leonards	20/09/2019	Attended	LA _{eq} (15-min)	29.4	50	TSE works compliant.
CN_01, 7-9 Herbert St, St Leonards	20/09/2019	Attended	LA _{eq} (15-min)	28.3	50	TSE works compliant.

Monitoring Location (Noise-Catchment Area, Street, Suburb)	Monitoring Date	Attended or Continuous Monitoring	Parameter	Measured Value dB(A)	Goals / Targets dB(A)	Comments
CN_01, 7-9 Herbert St, St Leonards	20/09/2019	Attended	LA _{eq} (15-min)	29.1	50	TSE works compliant.
CN_01, 7-9 Herbert St, St Leonards	20/09/2019	Attended	LA _{eq} (15-min)	29.6	50	TSE works compliant.
CN_01, 7-9 Herbert St, St Leonards	20/09/2019	Attended	LA _{eq} (15-min)	26.7	50	TSE works compliant.
CN_01, 2 Atchison St, St Leonards	24/09/2019	Attended	LA _{eq} (15-min)	39.5	40	TSE works compliant.

Table 4-1 Summary Table of Real Time Noise Data Compared Against EPL Condition E1.1.

Do Real-Time Noise Monitoring Results Comply with EPL Condition E1.1?																
Date	10 to 12 Clarke Street		65 Berry Street		Castlereagh Boutique Hotel		Edinburgh Castle Hotel		50 Martin Place		25A Hickson Road		237 Miller Street		60 Castlereagh Street (Basement)	
	Noise Limit	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	
01/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
02/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
03/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
04/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
05/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
06/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
07/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
08/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
09/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
10/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
11/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
12/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
13/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
14/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
15/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
16/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
17/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
18/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
19/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
20/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
21/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			No	Yes	
22/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
23/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
24/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
25/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
26/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
27/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
28/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
29/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
30/09/2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	

Table 4-2: Real-Time Noise Monitoring Data

Report for Condition E1.1 on 01/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	3	Yes
Report for Condition E1.1 on 02/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	1	Yes
	Lower	39	7	Yes
50 Martin Place	Upper	26	10	Yes
	Lower	39	24	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	7	Yes
	Lower	39	13	Yes

Report for Condition E1.1 on 03/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	2	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	5	Yes
50 Martin Place	Upper	26	10	Yes
	Lower	39	29	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	1	Yes
Report for Condition E1.1 on 04/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	1	Yes
	Lower	39	27	Yes
65 Berry St	Upper	26	1	Yes
	Lower	39	1	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	2	Yes
	Lower	39	3	Yes
50 Martin Place	Upper	26	22	Yes
	Lower	39	26	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	1	Yes
	Lower	39	2	Yes

Report for Condition E1.1 on 05/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	20	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	16	Yes
50 Martin Place	Upper	26	16	Yes
	Lower	39	22	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	2	Yes
Report for Condition E1.1 on 06/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	12	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	3	Yes
	Lower	39	35	Yes
50 Martin Place	Upper	26	5	Yes
	Lower	39	24	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	1	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	2	Yes

Report for Condition E1.1 on 07/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	5	Yes
	Lower	39	32	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	3	Yes
Report for Condition E1.1 on 08/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	2	Yes

Report for Condition E1.1 on 09/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	2	Yes
	Lower	39	19	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	1	Yes
	Lower	39	21	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	14	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	10	Yes
	Lower	39	13	Yes
Report for Condition E1.1 on 10/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	23	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	1	Yes
	Lower	39	7	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	14	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	19	Yes
	Lower	39	21	Yes

Report for Condition E1.1 on 11/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	3	Yes
	Lower	39	25	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	1	Yes
Edinburgh Castle Hotel	Upper	26	2	Yes
	Lower	39	16	Yes
50 Martin Place	Upper	26	2	Yes
	Lower	39	18	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	4	Yes
Report for Condition E1.1 on 12/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	15	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	1	Yes
50 Martin Place	Upper	26	3	Yes
	Lower	39	21	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	2	Yes

Report for Condition E1.1 on 13/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	14	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	12	Yes
50 Martin Place	Upper	26	4	Yes
	Lower	39	28	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	2	Yes
Report for Condition E1.1 on 14/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	5	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	1	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	1	Yes

Report for Condition E1.1 on 15/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	1	Yes
Report for Condition E1.1 on 16/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	12	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	4	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	13	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	17	Yes
	Lower	39	21	Yes

Report for Condition E1.1 on 17/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	1	Yes
	Lower	39	13	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	2	Yes
	Lower	39	5	Yes
50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	2	Yes
	Lower	39	5	Yes
Report for Condition E1.1 on 18/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	9	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	4	Yes
237 Miller Street	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	1	Yes
Ground Floor, 50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes

Report for Condition E1.1 on 19/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	2	Yes
	Lower	39	14	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	8	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	11	Yes
	Lower	39	14	Yes
Ground Floor, 50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
Report for Condition E1.1 on 20/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	27	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	1	Yes
	Lower	39	14	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	8	Yes
	Lower	39	11	Yes
Ground Floor, 50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes

Report for Condition E1.1 on 21/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	5	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	7	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	32	No
	Lower	39	36	Yes
Ground Floor, 50 Martin Place	Upper	26	3	Yes
	Lower	39	3	Yes
Report for Condition E1.1 on 22/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	3	Yes
	Lower	39	6	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	2	Yes
Ground Floor, 50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes

Report for Condition E1.1 on 23/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	27	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	1	Yes
	Lower	39	34	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	1	Yes
Ground Floor, 50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
Report for Condition E1.1 on 24/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	1	Yes
	Lower	39	19	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	1	Yes
	Lower	39	10	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	1	Yes
	Lower	39	3	Yes
Ground Floor, 50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes

Report for Condition E1.1 on 25/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	16	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	2	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	5	Yes
	Lower	39	10	Yes
Ground Floor, 50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
Report for Condition E1.1 on 26/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	11	Yes
	Lower	39	20	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	1	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	5	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	2	Yes
Ground Floor, 50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes

Report for Condition E1.1 on 27/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	1	Yes
	Lower	39	29	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	13	Yes
	Lower	39	18	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	2	Yes
	Lower	39	7	Yes
Ground Floor, 50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
Report for Condition E1.1 on 28/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	7	Yes
	Lower	39	9	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	1	Yes
	Lower	39	22	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	2	Yes
Ground Floor, 50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes

Report for Condition E1.1 on 29/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	0	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	2	Yes
Ground Floor, 50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes
Report for Condition E1.1 on 30/09/2019				
Location	Noise Goal	15-min periods in exceedance		Has condition been met?
		Permitted	Exceeded	
10 to 12 Clarke Street	Upper	26	0	Yes
	Lower	39	8	Yes
65 Berry St	Upper	26	0	Yes
	Lower	39	0	Yes
Castlereagh Boutique Hotel	Upper	26	0	Yes
	Lower	39	0	Yes
Edinburgh Castle Hotel	Upper	26	0	Yes
	Lower	39	8	Yes
25A Hickson Road	Upper	26	0	Yes
	Lower	39	0	Yes
60 Castlereagh St (Basement)	Upper	26	0	Yes
	Lower	39	3	Yes
Ground Floor, 50 Martin Place	Upper	26	0	Yes
	Lower	39	0	Yes

Real Time Noise Results Comments:

237 Miller Street, North Sydney

On 19 September 2019 at approximately 1:00pm the noise monitor located in the carpark of 237 Miller Street went offline, upon investigation the equipment was found to have been damaged and was no longer operable. A more secure location for the equipment is being sort and the monitor will be reinstalled at the new location.

60 Castlereagh St, Sydney

A noise alarm was triggered at Martin Place site – 60 Castlereagh St on 21 September 2019. The alarms were caused by other contractors working at this location arranged by third parties not related to TSE.

Table 5: Real-Time Vibration Monitoring Data (Maximum recorded value per day)

Day	22 Clarke Street, Crows Nest	10 to 12 Clarke Street, Crows Nest	65 Berry Street, North Sydney	25A Hickson Road, Millers Point	50 Martin Place, Sydney	60 Castlereagh Street (Basement), Sydney	Castlereagh Boutique Hotel	211-217 Castlereagh Street, Sydney
Criteria (mm/s)	25	25	25	25	7.5	25	7.5	25
01/09/2019	0.45	0.14	0.11	0.28	0.2	0.25	0.14	0.08
02/09/2019	0.71	0.46	1.07	0.11	2.15	0.23	0.71	0.24
03/09/2019	0.59	0.52	0.4	0.25	1.96	0.64	4.61	0.26
04/09/2019	0.53	1.12	0.29	0.11	0.48	0.43	2.79	0.36
05/09/2019	1.16	1.12	0.29	0.11	0.48	0.69	1.64	0.55
06/09/2019	0.49	0.59	0.24	0.11	0.45	1.05	2.38	0.33
07/09/2019	0.51	0.65	0.33	0.1	1.12	0.36	1.23	0.35
08/09/2019	0.49	0.16	0.14	0.08	0.27	0.23	0.18	0.09
09/09/2019	1.11	0.84	0.29	0.13	4.2	0.8	0.74	0.33
10/09/2019	1.08	0.87	0.37	0.23	0.27	1.98	0.82	0.26
11/09/2019	0.68	0.79	0.38	1.16	1.51	0.72	0.83	0.64
12/09/2019	1.5	0.82	0.37	0.11	0.27	1.39	0.67	0.2
13/09/2019	0.6	0.35	0.56	0.11	0.31	1.8	1.82	0.11
14/09/2019	0.7	0.51	0.11	0.16	5.55	0.54	0.23	0.09
15/09/2019	0.43	0.2	0.11	0.08	0.27	0.21	0.21	0.06
16/09/2019	0.56	1.28	0.38	0.1	9.57	0.87	0.75	0.1
17/09/2019	1.05	1.28	0.27	0.92	4.51	0.54	3.63	0.07
18/09/2019	0.63	0.46	0.3	0.16	0.28	0.59	1	0.1
19/09/2019	0.62	0.95	0.82	0.18	0.67	2.91	5.61	0.16
20/09/2019	0.6	0.41	0.32	0.25	0.72	1.36	1.04	0.1
21/09/2019	0.49	0.33	0.13	0.15	0.36	0.62	1.08	0.09
22/09/2019	0.35	0.24	0.11	0.5	0.27	0.28	0.12	0.07
23/09/2019	0.62	0.33	0.37	0.13	0.7	1.75	1.03	0.18
24/09/2019	0.71	0.49	0.47	0.25	11.07	2.08	2.38	0.69
25/09/2019	0.91	1.15	0.27	0.08	0.31	2.42	4.38	0.09
26/09/2019	0.97	0.35	0.27	0.08	0.39	1.52	2.57	0.18
27/09/2019	0.73	1.28	0.35	0.25	0.34	0.98	1.29	0.3
28/09/2019	0.45	0.44	0.11	0.18	0.39	0.85	1.49	0.28
29/09/2019	0.31	0.33	0.11	0.11	0.27	0.23	0.15	0.09
30/09/2019	0.49	0.56	0.58	0.13	0.42	1.31	1.41	0.58

Real-Time Vibration Results Comments:

50 Martin Place, Sydney

16 SEPTEMBER 2019

On 16 September, alerts were received from vibration monitor located at 50 Martin Place regarding vibration level exceedance. Upon investigation, the tenant of the property noted that the cause of the alerts was contractors of theirs, undertaking maintenance works within the same room as the noise monitor.

24 SEPTEMBER 2019

On 24 September, alerts were received from vibration monitor located at 50 Martin Place regarding vibration level exceedance. Upon investigation, the tenant of the property noted that the cause of the alerts was contractors of theirs, undertaking maintenance works within the same room as the noise monitor (similar in nature to that occurring on 16 September).