METROLINK

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A20.1

Summary of Supporting Ground Investigation Scope

Appendix A20.1 - Summary of Supporting Ground Investigation (GI) Scope

IGSL 1995

This investigation was intended to characterise ground conditions on the proposed Dublin Light Railway between St Stephen's Green and Sandyford. The ground investigation comprised the following:

- 39 no. boreholes sunk via cable percussion to depths of up to 13.7 mbgl; and
- In-situ and laboratory geotechnical testing.

Wimtec 2000

This investigation was intended to evaluate ground conditions on the route of the proposed Dublin Light Railway Sandyford to Ballymun line, including:

- 43 no. boreholes sunk via cable percussion, rotary open hole & rotary core methods;
- Installation of standpipe piezometers within 5 No. boreholes;
- In-situ and laboratory geotechnical testing;
- Groundwater level monitoring and in-situ permeability testing; and
- 13 no. soil sampling and laboratory geochemical analysis.

IGSL 2002a

Investigation to support development of Mater Hospital comprising demolition of existing buildings and construction of a six-storey building with a basement. The GI work undertaken included:

- Formation of 11 no. cable percussion boreholes to up to 14.2 mbgl;
- Advancement of 2 no. Geobore S rotary core boreholes;
- Mechanical excavation of 15 no. trial pits;
- Installation of standpipe piezometers within boreholes;
- In-situ and laboratory geotechnical testing; and
- Groundwater level monitoring and in-situ permeability testing.

IGSL 2002b

Investigation of the location of a proposed substation at O'Connell Street for the Dublin Light Rail Track project. The GI work undertaken included:

- Formation of 2 no. cable percussion boreholes to up to 14.2 mbgl;
- Advancement of 2 no. rotary core boreholes; and
- In-situ and laboratory geotechnical testing.

IGSL 2007

This investigation was undertaken for the proposed Old Metro North scheme. The GI work undertaken comprised:

- 58 no. boreholes sunk via cable percussion and rotary methods up to 54.60 mbgl;
- In-situ and laboratory geotechnical testing; and
- Groundwater level monitoring and in-situ permeability testing.

IGSL 2008

This investigation was undertaken for the proposed Dublin Metro North Line from St Stephens Green to Lissenhall. The ground investigation comprised:

- 67 no. cable percussion boreholes with 62 no. rotary follow on up to 40.7 mbgl;
- In-situ and laboratory geotechnical testing;
- Groundwater and gas monitoring;
- 44 no. soil samples for chemical testing and 5 no. groundwater samples for chemical testing;

Norwest Holst 2008

This investigation was undertaken to determine the ground and groundwater conditions along the route of the proposed light rail public transport system between St Stephens Green and Ballymun Road. The ground investigation comprised:

- 42 no. cable percussion boreholes with 21 no. rotary follow on to up to 60.25 mbgl;
- 4 no. trial pits;
- In-situ and laboratory geotechnical testing;
- Gas and groundwater monitoring; and
- 20 no. soil samples for chemical testing.

Norwest Holst 2009

This investigation was undertaken on the site of the Mater Hospital for the proposed Dublin Metro North project. The ground investigation comprised:

- 5 no. rotary boreholes to 16.91 mbgl;
- In-situ and laboratory geotechnical testing;
- In-situ permeability testing;
- Gas and groundwater monitoring; and
- 15 no. soil chemical testing and 8 no. groundwater chemical testing.

IGSL 2010

This investigation was undertaken for the proposed Dublin Metro North Line from St Stephens Green to Lissenhall. The ground investigation comprised:

- 14 no. cable percussion boreholes with 9 no. rotary follow on to up to 40.5 mbgl;
- In-situ and laboratory geotechnical testing;
- Groundwater level monitoring; and
- 4 no. soil samples for chemical testing.

Soil Mechanics 2011

This investigation was undertaken on the site of the proposed Metro North Depot in Dardistown. The ground investigation comprised:

- 4 no. cable percussion boreholes and 1 no. rotary borehole to 20.25 mbgl;
- 10 no. trial pits to 4 mbgl;
- 4 no. trial pits to 3 mbgl for infiltration tests;
- In-situ and laboratory geotechnical testing; and
- 6 no. soil samples for chemical testing, 3 no. groundwater samples for chemical testing and 6 no. soil samples for leachate chemical testing.

Ground Investigations Ireland 2018

The investigation was undertaken on the site of the proposed New Metro North Line in the Griffith Park and Dardistown area. The ground investigation comprised:

- 2 no cable percussion boreholes and 4 no. rotary boreholes to 35.4 mbgl;
- Groundwater monitoring;
- In-situ and laboratory geotechnical testing;
- 2 no. soil samples for chemical testing and 4 no. groundwater samples for chemical testing.

Causeway Phase 1 2019

The Phase 1 GI was undertaken to inform the preliminary design and Environmental Impact Assessment for the proposed Project. The GI was undertaken throughout the whole area of the proposed Project and comprised:

- 3 no. cable percussion boreholes and 48 no. rotary boreholes to up to 50 mbgl;
- In-situ and laboratory geotechnical testing;
- Groundwater monitoring and in-situ permeability testing;
- 59 no. soil samples for chemical testing and 9 no. groundwater samples for chemical testing; and
- 33 no. samples for Waste Acceptance Criteria (WAC) testing.

Causeway Phase 2 2019

The second phase of investigation was also undertaken to inform the preliminary design and EIA for the MetroLink project. The ground investigation comprised:

- Completion of 26 no. rotary boreholes;
- Completion of 4 no. sonic boreholes;
- Installation of 38 no. monitoring standpipes;
- 8 no. variable head permeability tests and 32 no. packer / lugeon tests;
- 5 no. machine excavated trial pits;
- 3 no. soakaway tests;
- Groundwater monitoring;
- In-situ and laboratory geotechnical testing;
- 51 no. Soil samples for chemical testing; and
- 26 no. soil samples for WAC testing.

Causeway Phase 3 2020

The third phase of investigation was undertaken to inform the preliminary design and EIA for the MetroLink Project in the Swords area of the proposed works. The ground investigation comprised:

- Completion of 8 no. rotary boreholes;
- Installation of 11 no. monitoring standpipes;
- 3 no. pumping tests and groundwater monitoring;
- In-situ and laboratory geotechnical testing;
- Groundwater monitoring and in-situ permeability testing;
- 17 no. soil samples for chemical testing; and
- 9 no. soil samples for WAC testing.

Causeway Phase 4 2020

The fourth phase of investigation was undertaken to inform the preliminary design and EIA for the MetroLink Project in the Glasnevin area. The GI comprised:

- Completion of 24 no. dynamic (windowless) boreholes;
- Mechanical excavation of 12 no. trial pits;
- 45 no. retaining wall and arch cores;
- Vacuum excavation of 14 no. foundation pits and 2 no. inspection pits;

- Groundwater monitoring;
- In-situ and laboratory geotechnical testing;
- Groundwater sampling and in-situ permeability testing;
- 73 no. soil samples for chemical testing; and
- 29 no. soil samples for WAC testing.

Causeway Phase 5 2021

The Phase 5 GI was undertaken under the design of Arup to provide data for the Article 27 application to the EPA (prepared by Arup) and included GI throughout the proposed Project. The GI comprised:

- Completion of 5 no. light cable percussion boreholes;
- Completion of 29 no. light cable percussion boreholes with rotary follow-on;
- Completion of 25 no. rotary boreholes;
- Completion of 3 no. sonic boreholes;
- Completion of 12 no. dynamic (windowless) boreholes;
- Installation of 19 no. monitoring standpipes;
- Hand excavation of 5 no. inspection pits;
- Mechanical excavation of 51 no. trial pits;
- 4 no. samples of a stockpile in Huntstown Quarry;
- Groundwater monitoring;
- In-situ and laboratory geotechnical testing;
- Groundwater sampling and in-situ permeability testing;
- 382 no. soil samples for chemical testing; and
- 355 no. soil samples for WAC testing.