

CASE STUDY | CANADA DOCK

PEEL PORTS, 2018



PROJECT SUMMARY

LandScope Engineering were commissioned to undertake a full and detailed structural condition survey of various assets around Canada, Gladstone and Seaforth Docks within the Port of Liverpool. The application of an integrated survey inspection presented the opportunity to provide the client with a compelling 3D model, above and below the waterline, fit for the purpose of assessing the condition of port facilities.



RESOURCES



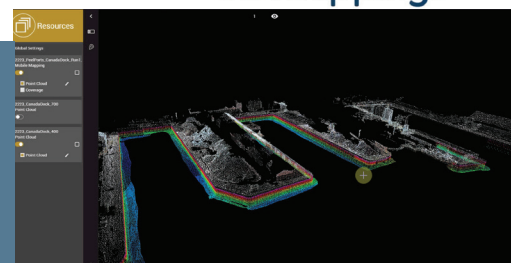
BELOW WATER

An R2Sonic 2020 multibeam echo-sounder was used in conjunction with a 2INS (Applanix Surfmaster) inertial navigation system, deployed from S.V. "Investigator".

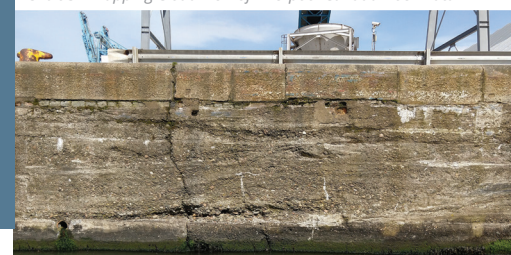


ABOVE WATER

Topcon IP-S3 mobile mapping system was used in conjunction with a local GNSS base station to capture the accurate LiDAR point cloud and photography.



Orbit 3D Mapping Cloud view of Liverpool Canada Dock Data



Photographic Data Resource for Harbour Wall Condition Assessment

PROJECT PHASES

- 1 INITIAL PHASE
Project planning and vessel setup.
- 2 SECOND PHASE
Data collection.

Acquisition of mobile mapping and multibeam data.
- 3 THIRD PHASE
Data processing and reporting.
- 4 FINAL PHASE
Presentation of data to Peel Ports.

THE DETAIL

Utilising LandScope's infrastructure asset management service, autoMAP, the project incorporated the following key elements;

- A vessel mounted mobile mapping system (Topcon IP-S3 HD1) was utilised to acquire high density LiDAR and 360° high resolution panoramic imagery
- Deployment of high frequency multibeam sonification – with customised angle of transducer to ensure maximum coverage from the waterline to the wall / bed interface
- Registration and integration of all datasets
- Provision of datasets to aid asset visualisation e.g. point clouds and photographic data
- Presentation of integrated 3D datasets within the Orbit platform

To aid the challenging process of port asset management, LandScope developed bespoke visualisations through the provision of a fully geo-referenced environment. The use of integrated point clouds and imagery creates a new dimension to viewing port and dock assets (above and below the water). Value added is realised by using these spatial datasets, acquired during a single campaign, for a multitude of purposes. LandScope enabled Peel Ports with the data and tools to aid asset visualisation, inspection and assessment as well as detailed asset inventory to feed into their overall port facility asset management planning.