

Sligo Quay Walls – Architectural Survey & Archive

Scope: Registered 3d point cloud of sections of the historic Sligo Harbour Walls, 2d AutoCAD elevations and rendered point cloud images

Client: Archaeological Development Services, Belfast

Date: June 2004

Background: As a prerequisite for the demolition and reconstruction of sections of the east and west quay walls at Sligo Harbour to accommodate a new foot bridge, a detailed set of CAD drawings in elevation were needed to assist the project architect.

Health & Safety: All high definition scanning was carried out from the relative safety of the river bank, considerably reducing risk by avoiding working on exposed tidal river bank sediments as traditional survey techniques would have employed.

Project Facts

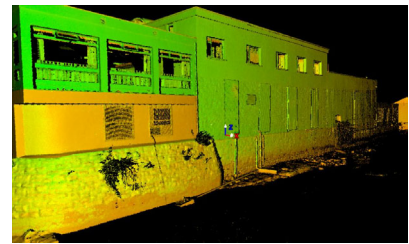
Field: 2 person scanner crew, 1 field day.

Office: 1 surveyor, 3 days using Cloudworx.

Deliverable: registered 3d point cloud, rendered point cloud images, 2d CAD elevation



Archaeological Development Services, Belfast (ADS) approached Gridpoint Solutions Ltd to supply a complete 3d laser scanning High Definition Survey (HDS) of selected areas of the quay walls. This allowed the project architect unparalleled access to a complete highly accurate and detailed (stone by stone) survey of the walls coupled with production of scale 2d elevation drawings plus rendered point cloud images.



Rendered Point Cloud image (East Wall)

The fully registered point cloud of both walls was opened in AutoCAD™ using the 3d point-cloud analysis plug-in CloudWorx™. CloudWorx™ tools were used to "slice" the walls intelligently, anywhere along the X, Y and Z axes and provide detailed 2d views of each slice directly within AutoCAD.

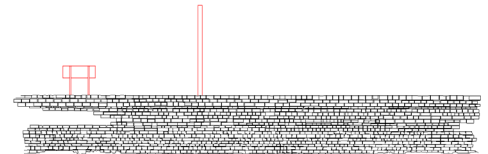
Benefits

- Increased Health & Safety
- Quick turnaround
- Reduced return visits for missed detail
- Survey quality and accuracy
- Unique, unparalleled 3d record of historic Quay walls



Rendered Point Cloud image (West Wall)

Workflow: Gridpoint Solutions Ltd used the Leica Geosystems 2500 HDS scanner to capture 10 separate high-detail, high-density scans of both walls at low tide. Scan data was viewed in real-time on the scanner laptop allowing areas of architectural detail/significance to be quickly identified and rescanned at a greater resolution. This complete 3d point-cloud record of the walls was made available for future work and archiving. If the client required additional site information chances are extremely high that it has already been captured, eliminating return site visits and therefore reducing costs.



CAD elevation, East Wall

AutoCAD's™ standard drafting tools (e.g. polygon tool, arch tool, spline tool, etc.) were used to trace and create the elevations from the point cloud slices. Once finished the drawings and fully registered point cloud were emailed to the project architect.



CAD elevation, West Wall