



**Client** BALTIC Centre of Contemporary Art  
**Project** 3D Scan Survey  
**Role** 3D Scanning / Surveyor  
**Completion** September 2019

## OVERVIEW

BALTIC Centre for Contemporary Art recently provided our surveyors with a fantastic opportunity to undertake a 3D Digital Scan of their impressive landmark building. Located on the south bank of the River Tyne alongside the Gateshead Millennium Bridge, BALTIC as it is affectionately known, has over 3000m<sup>2</sup> of art space, making it the UK's largest dedicated contemporary art institution.

The building was originally designed by Hull-based architects, Gelder & Kitchen in the 1930's, for Rank Hovis (Now RHM plc). Completed in 1950's, the mill remained in operation until 1981. After a period of dereliction, the property was re-designed by Ellis Williams Architects as part of a RIBA Competition, to be transformed into the art gallery seen today.

The building now comprises of six main floors and three mezzanine levels, with a later two storey extension forming the entrance way. Along with a noteworthy Rooftop Restaurant and an 11-tonne, 21m high 'wing door', which is designed to slide across the external façade and screen the windows from daylight, where exhibits require darkened conditions e.g. film or projections. To date, BALTIC has welcomed over 8-million visitors since opening to the public in 2002.

## BACKGROUND

BALTIC Centre for Contemporary Art provided *Elvet Construction Consultants*, with unfettered access to their prestigious building positioned on the bank of Tyne River to facilitate an extensive perimeter scan, accounting for the unique profile and all architectural intricacies.

Undertaking this survey, came with a few notable challenges to be realised, as follows:

- The area surrounding BALTIC is pedestrianised and despite commencing the survey at sunrise, the instrument naturally captured the activity of morning commuters. Post survey we invested time to carefully isolate any interference ('noise') from the point-cloud information to cleanse the data and ensure high quality imagery.
- Readings on site indicated a 12knots wind speed, which initially hindered the acquisition of scan data for the unsheltered walkways and roof areas as the instrument was exposed to some subtle movement. To overcome this issue, we quickly adapted our scan strategy and identified alternative sheltered vantage points, which enabled us to establish the same point of view.
- To accurately capture the structural detail of the roof our surveyors required a head for heights as they accessed the exposed gangways, 48m above the below plaza. Prior to undertaking the survey, we produced specific risk assessments and method statements for working at height whilst adopting a harness and fall arrest system.



Project Management



Cost Management



Building Information Modelling



Asset Management



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## CASE STUDY



### ADDED VALUE

Undertaking non-invasive measures, we were able to produce a precise 3D digital re-production of BALTIC, which facilitated the development of high impact, photo-realistic, visuals, which can be used to generate as-built drawings. This information can also be utilised for renovation and conservation projects where an inventory of the original condition is captured at precise moment in time, including for deformation monitoring. Once the information is within a virtual environment, specialist architects and designers can manipulate the scan data to reconstruct lost or damaged elements should the building suffer any disrepair in the future.

With a range of 120m the scanner was able to map the intricacies of BALTIC within areas, which may otherwise prove inaccessible without adopting means of temporary access (e.g. scaffold).

Whilst it did not form part of this commission; we also offer 5D BIM Cost Management service, which applies sophisticated estimating capabilities enabling quantities to be harvested directly from the model to provide a powerful tool which produces accurate and auditable cost estimates and Bills of Quantities etc.

*“It was an absolute privilege to be given the opportunity to survey such an iconic building”*

Glen Griffiths – Director  
Elvet Construction Consultants

### INNOVATION

Our Surveyors are highly skilled and trained to operate state-of-the-art high precision Trimble TX8 Scanner, which is capable of measuring over one million points per second with less than 1mm spacing. Furthermore, with a range of over a 120m and a 360° x 317° field of vision, we can demonstrate superior measurement capabilities.

Elvet is committed to investing in Autodesk® Software Packages and the associated training. This guarantees that our surveyors have the skills and knowledge to undertake and produce these technical surveys, into workable models, which promote collaborative working by providing a platform, which can be assessed by all disciplines within any project team.

