

Site/Project:

Lough Eske Castle

Industry:

Commercial Development

Client:

Harcourt Developments

Location:

Co Donegal

Site Type:

Baronial Castle

Deliverables:

Archaeological Evaluation & monitoring

3D Laser Scan survey

2-D output drawings

Benefits:

Cost Effective

Quick turnaround

Non contact – remote survey

Unparalleled accuracy and detail

Detailed CAD output

Meets both planning requirements and building design and integration needs

**Introduction**

Lough Eske Castle represents the remains of a baronial castle, built in 1861 by Thomas Brooke upon earlier buildings dating from 1721. The building is afforded protection under the National Monuments Act being listed in the Records of Monuments and Places (RMP). It also contains many important regional architectural features.

The site was acquired by Harcourt Developments in order to re-develop the site as a modern 5 Star hotel. As part of heritage planning legislation it was a requirement to carry out an assessment of archaeological potential of the site as well as providing an accurate archive of the surviving building remains prior to re-development. In addition to these archaeological requirements no existing detailed building plans were available. Detailed plan, section and elevation drawings were therefore required as an aid in integrating the existing building into the project design drawings.

Of particular concern was the structural integrity of the building necessitating a means of survey which was non contact and remotely implemented.

This issue

Archaeological Mitigation & Measured Building Survey in Advance of Prestigious Hotel Development

Archaeological Mitigation.

A pre-development evaluation (test trenching) was carried out within the boundaries of the development prior to commencement of on site works to assess the possibility of earlier Jacobian building remains surviving surrounding the existing building. These works were augmented by a construction phase watching brief of ground reduction within the internal areas of the castle.

No evidence of earlier occupation was identified during these works and a full report outlining the results of the archaeological investigations was therefore lodged with DOEHLG confirming **full compliance of archaeological planning conditions**.

The proposed development therefore proceeded with no further archaeological involvement.



Archaeological Evaluation



Archaeological Watching Brief

Applications:

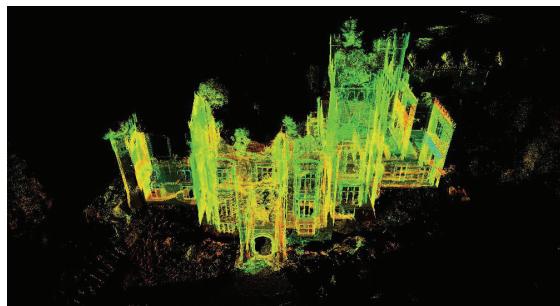
Invaluable aid to heritage management and conservation

Invaluable aid to building design

Measured Building Survey

The building survey consisted of a 3D laser scan survey of the entire external façade and internal rooms of the Castle using a Leica HDS 3000 laser scanner to collect a sub centimeter accurate 3-dimensional measured survey of the building.

The survey was carried out by one operator over a period of 3 days with no need for expensive scaffolding or for close quarter access to the most vulnerable areas of the building.



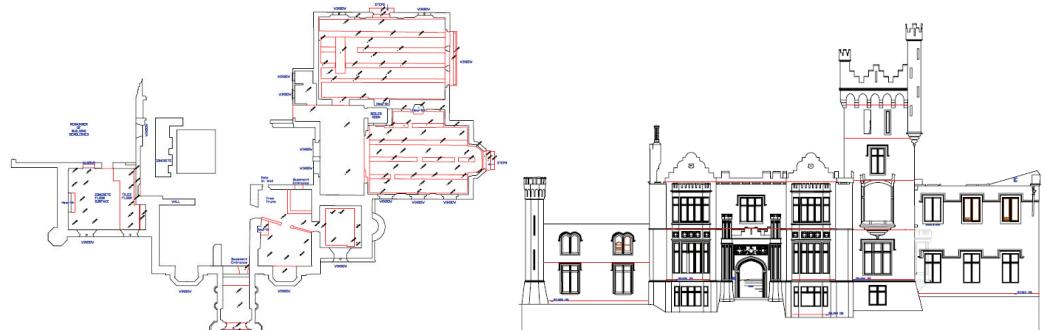
3D Laser Scan point cloud output

CAD Analysis & Output

The completely registered 3D point cloud scans were imported into CAD software for interrogation and visualization analysis, and to generate accurate scaled 2D drawings. Rotation of the full 3D point cloud on any plane allowed for multiple viewing and measurement while section slices were available through all x-y-z- planes.

2-D scaled drawings were available within 1 week of completed on site works, while all elevation, plan and section drawings were completed within 4 weeks of completion of on site works.

Not only did the scan provide very accurate information on the geometry of the each of the castle, but it also allowed for modeling of the building as an aid to integration into overall development plans. The scale drawings were also submitted to DOEHLG as an historic building archive.



Lough Eske Castle Floor plan and Front Elevation drawing output



Lough Eske Castle Hotel post completion