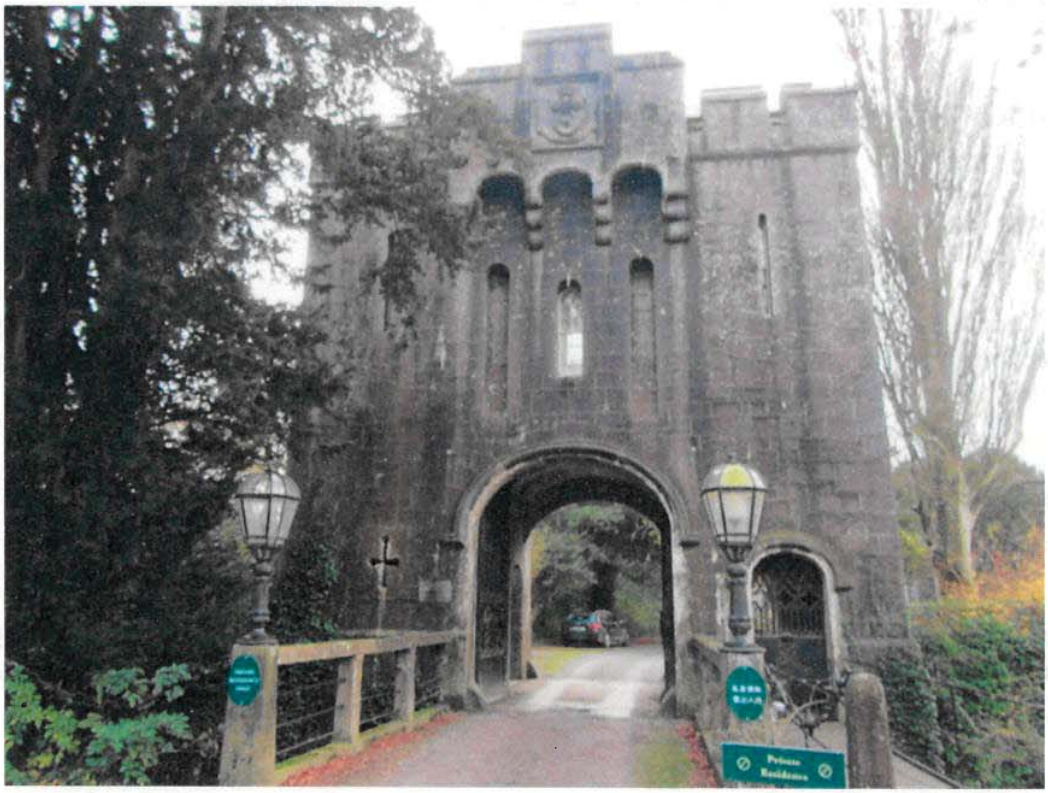


THE KEEP GATE OF BIRR CASTLE, CO. OFFALY

METHOD STATEMENT

HSF 2019

DAVID KELLY PARTNERSHIP with MARGARET QUINLAN ARCHITECTS

January 2019

Job No. 18225

INTRODUCTION

Birr Keep Gate and Moat were built in famine times. The proposed works to secure the fabric are part of a larger project to bring the building back into residential use.

DESCRIPTION OF THE EXISTING STRUCTURE

Setting

Birr Keep Gate is located to the North of Birr Castle. It adjoins a moat built which provided protection to Birr Castle. The Keep Gate is accessed by a wooden bridge over the moat. It is now the only vehicular access into Birr Castle.

Brief History

Birr keep gate was built as part of famine relief in 1847-1848 to the designs of the 3rd Countess of Rosse. Three young soldiers were executed here in 1923. It served as the Birr Metrological Station from the time of the 4th Earl until the establishment of the independent Met Station in Clongill.

Architectural Details

The roof is hidden behind a castellated parapet with a bartizan over the entrance arch. The walls are a snecked limestone rubble with string course at the base of the parapet. The windows and arch are as described in the NIAH:

Round-headed window and blind openings. Stone oriel window to first floor with mullions and transoms. Balistraria and loop-like window to front elevation. Segmental-headed integral carriage arch and pedestrian portal (with hood mouldings) *with cast-iron gates. Vaulting to ceiling of integral carriage arch.*

PROPOSED WORKS

It is proposed to carry out works to turn the keep gate into a habitable space. It has not been occupied in over 100 years so preparatory works are required. Proposed works include lining the walls of the first floor, installing flooring, making the door more user friendly, repairing leaks around the bay window and creating step access onto the flat roof.

Schedule of Works

1. Scaffold, treat and remove vegetation and repoint walls where necessary.

2. Replace existing sliding door, salvaging metal fittings, all to match existing. Incorporate a wicket door for fire escape. Fit new sliding door gear to allow the door move with ease;

3. On the ground floor, lift the existing stone flooring and insulate underneath. Reinstate floor;

4. On the first floor, replace decayed wooden flooring; adding insulation underneath; Keep new joists short of walls;

5. Plaster the walls on the first floor with a thermal insulating lime plaster such as Diasen (incorporation cork aggregate and NHL3.5 Lime);

6. Adapt top section of staircase to improve access to roof for maintenance;

7. Remove existing modern roof hatch. Install an opening triple glazed light to give access to the roof and to light the stairwell;

8. Line flue with flexible double skin stainless steel;

9. Investigate and recover the roof over the bay window. Add lead counterflashing under string course;

METHODOLOGY FOR PROPOSED WORKS

Monitoring of the work on site

Conservation work will be the subject of regular inspection by Conservation Architect Margaret Quinlan and Conservation Engineers David Kelly Partnership.
It is a requirement of this project that the masons employed on the works be experienced in the conservation of masonry in historic buildings/National Monuments.

Repointing

Repointing must be preceded by careful cleaning of the joints. All vegetable matter and decayed mortar needs to be removed and the joint cleaned before repointing. Samples of the raked-out mortar will be recovered for analysis.

A sieve analysis of a substantial sample of the mortar will be undertaken, so that the texture of the replacement mortar will match the original as closely as possible. An analysis of the sand and grit may also help to identify the source which will usually have been relatively local. The lime for the mortar mix will be a natural hydraulic lime, which is designated "NHL". The degree of hydraulicity is designated by the numbers "2", "3.5" or "5". The mortar will be made with NHL 3.5, in combination with sand and grit. The sand needs to be washed and sharp and graded as close as is practicable to the sand in the original mortar. Grit will also be added in the proportion in which it occurred in the original mortar. The exact ratio of lime to sand and grit will be determined by the grading of the sand being used and the degree of exposure of the wall.

New mortar will be pressed into the joint to a depth at least one and a half times the height of the masonry joint to ensure the stability of the new pointing mortar. The mortar, properly mixed, should be quite fat in texture, but with a well-controlled water content so that the mortar when placed remains firm.

The mortar will be tightly packed in the joint to ensure that it engages with the masonry and struck off level with the face of the stone. In the raking out process some joints will be raked through the core of the wall in a regular pattern and a plastic grout tube fitted and held in place by the repointing mortar.

As the mortar is hardening up it will be hammered on the face with a bristle brush to finally tighten up the joint and to expose the coarse aggregate in the mortar. The Contractor will be required to undertake sample repointing for approval.

Diasen Plaster

Walls to be plastered with a Diasen cork mix with Natural Hydraulic Lime - NHL 3.5 to manufacturers specification under the supervision of the engineer.

REASONS FOR CHOOSING THESE METHODOLOGIES

These methodologies were chosen because:

(a) they apply international best practice consistent with the philosophies of conservation outlined in the International Charters agreed upon in Venice and Burra;

(b) they have been applied successfully on previous conservation projects of a similar nature;

(c) they follow published guidance from The Department of Arts, Heritage and the Gaeltacht's Advice Series 'Maintenance – A Guide to the Care of Older Buildings' and 'Architectural Heritage Protection Guidelines for Planning Authorities (2011)'; Historic Scotland and others.

IMPACT STATEMENT AND PROPOSED MITIGATION MEASURES

The building has been out of use for 100 years. These changes will allow the Keep Gate become a habitable dwelling and bring it back into use. Its location as the entrance to Birr Castle is one that is seen by thousands of visitors every year.
The works will be largely reversible and materials will be sustainable and conservation friendly.

EMPLOYMENT BENEFITS

The estimated total days of employment are 135 days.

AOIFE MURPHY

AM/NH/18225
30/01/2019

MAPS

Historic 25 inch Map

6 Inch Cassini Map

Historic 6 inch map

Digital Globe View

PHOTOGRAPHS

Photo 1 Keepgate Castle View

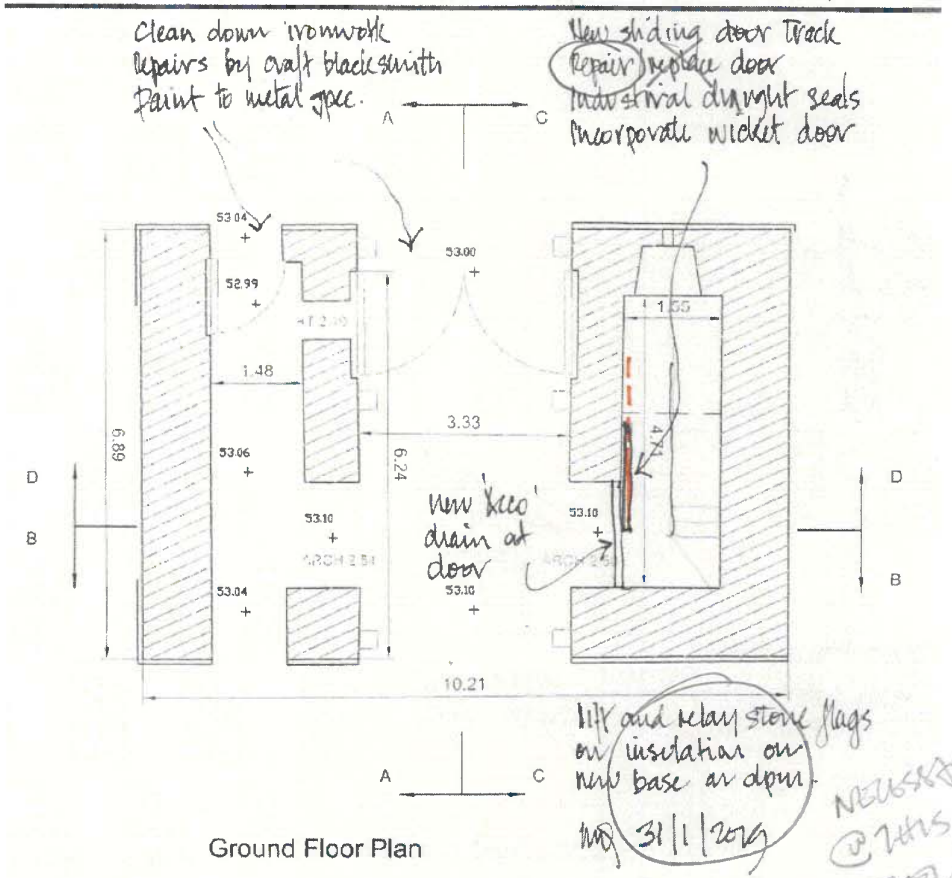
Photo 2 Rooftop

Photo 3 Trapdoor

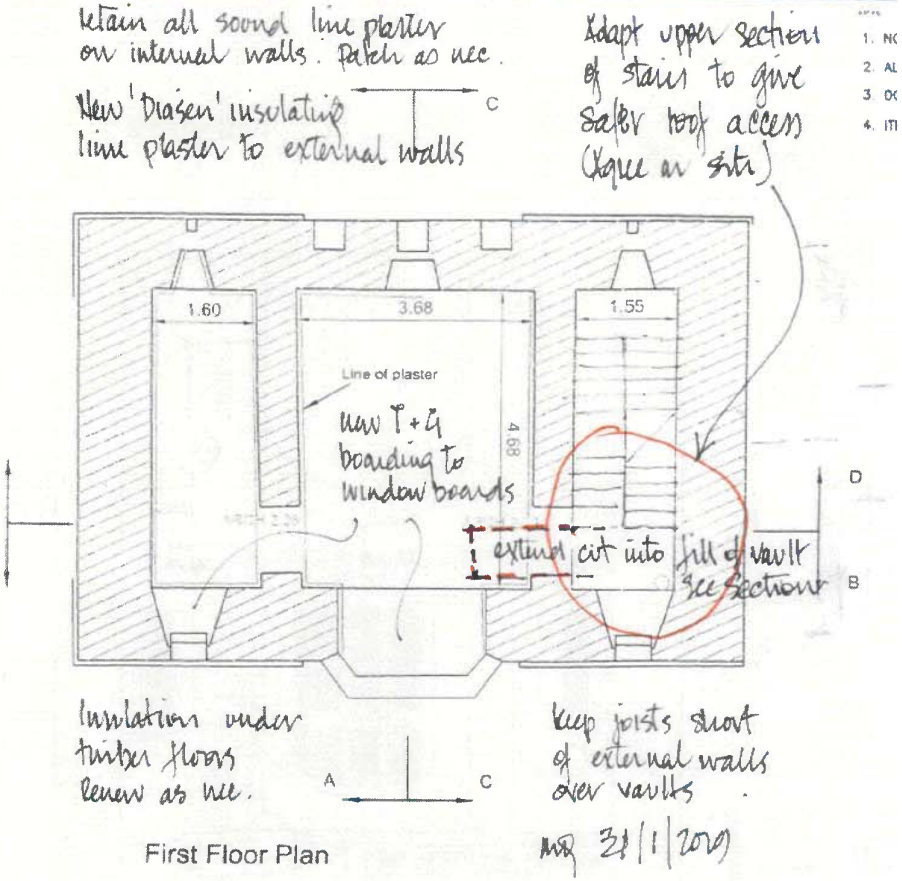
Photo 4 Water ingress above window

Photo 5 Staircase

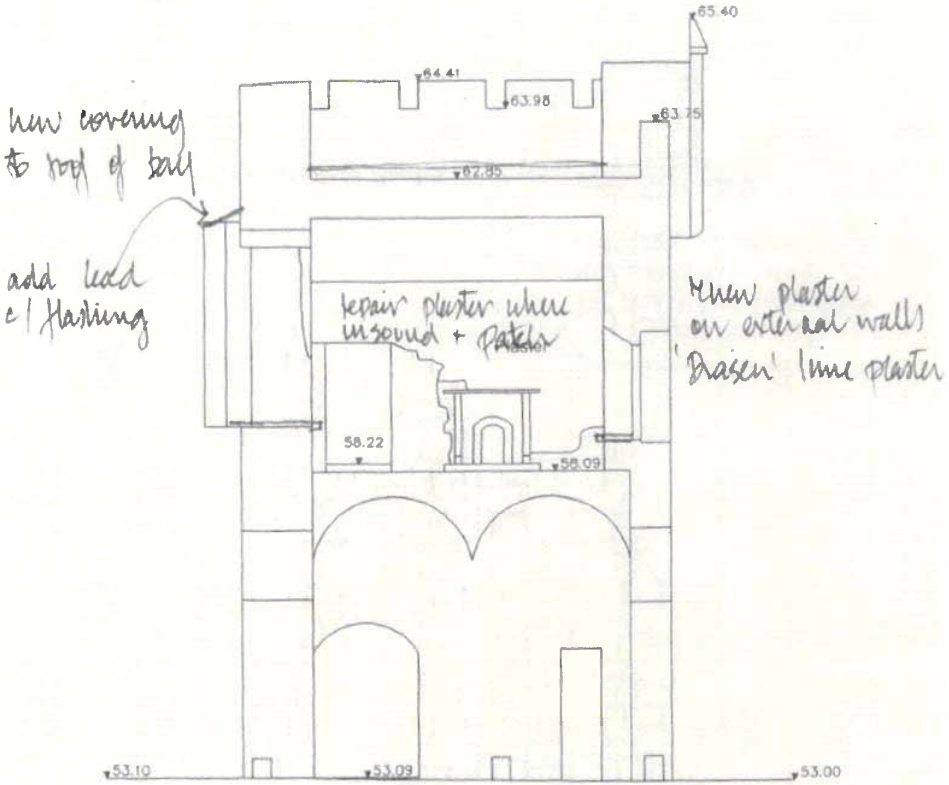
Photo 6 Lime Leaching Internal Walls



Ground Floor Plan



First Floor Plan



Section A-A

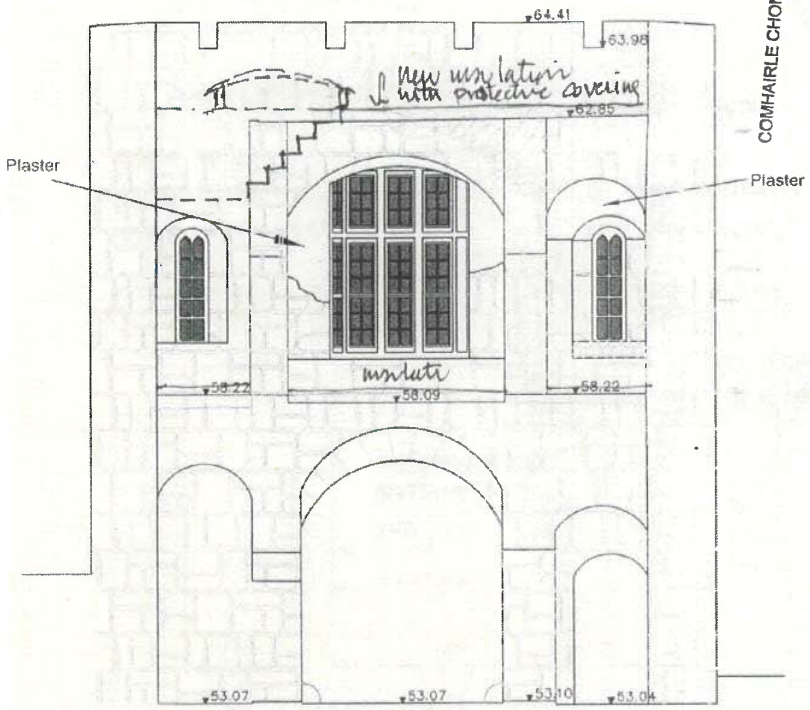
mg 31/1/2019

Improve safety of roof access by adapting present (recent) stair and ladder.

Extend existing 'cut' into hill over vault and create steps.

New opening rooflight, triple glazed

All to be agreed on site with Cons. Officer



Section B-B

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