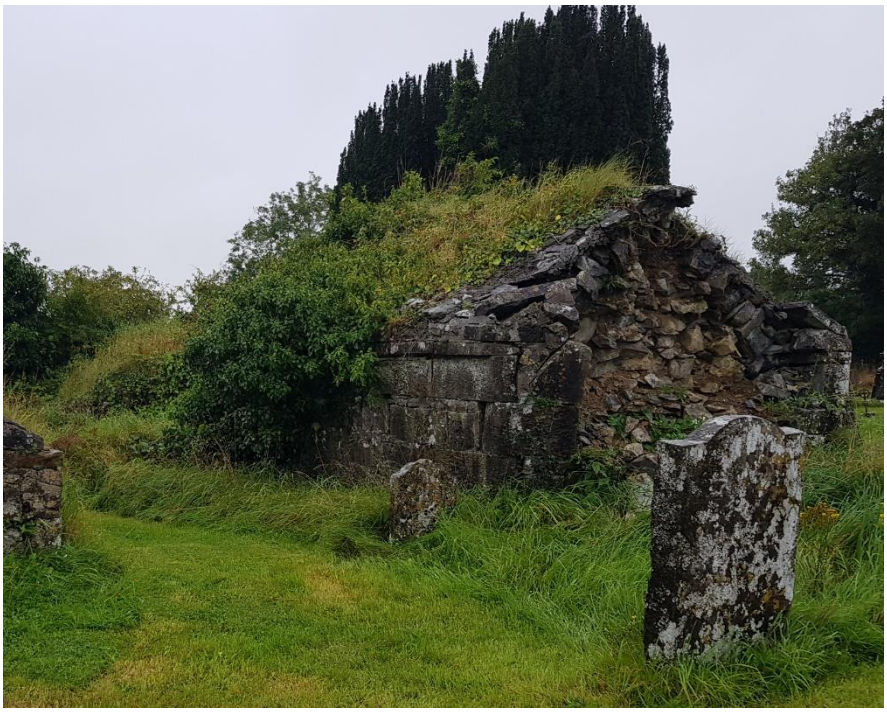
Conservation Architect's Report

on

Owen O'Connor Mausoleum, Ballintubber, Co. Roscommon.



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on behalf of

Roscommon County Council

Comhairle Contae Ros Comáin Roscommon County Council

An Chomhairle Oidhreachta The Heritage Council

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1. INTRODUCTION / OVERVIEW

This report has been prepared on behalf of Roscommon County Council to record the condition of the ruins of the Owen O'Connor Mausoleum, Ballintubber, Co. Roscommon. Ballintober Old Graveyard is an important archaeological site, with interrals dating back to at least the seventeenth century. The subject mausoleum is one of a group of four rectangular mausolea, of limestone construction with sloped stone roofs within the ruin of a medieval church on the southern boundary of the graveyard. These unusual structures are individually (and as a collection) of considerable architectural, artistic, archaeological, historical, technical, and social significance, and make an important contribution to this historic ecclesiastical site. The NIAH survey *(Ref. 31815002)* identifies the graveyard as having Regional Significance, noting the quality of the eighteenth and nineteenth century grave markers, its historic interest as the site of an earlier church, and the presence of a holy well, *Tober Brida*, from which the townland takes its name.

The mausoleum is currently heavily overgrown with vegetation and is in a fragile condition. The stone facing on the east gable has fallen outwards into the graveyard. The condition of the mausoleum, as set out in this report, was recorded during a visual inspection by the author on 2nd September 2020. The recommendations contained in this report are informed by the guidance contained in *'Ruins – The Conservation and Repair of Masonry Ruins*' (2010, Department of Culture, Heritage and Gaeltacht Advice series).

The preparation of this report has been supported by grant assistance from The Heritage Council.

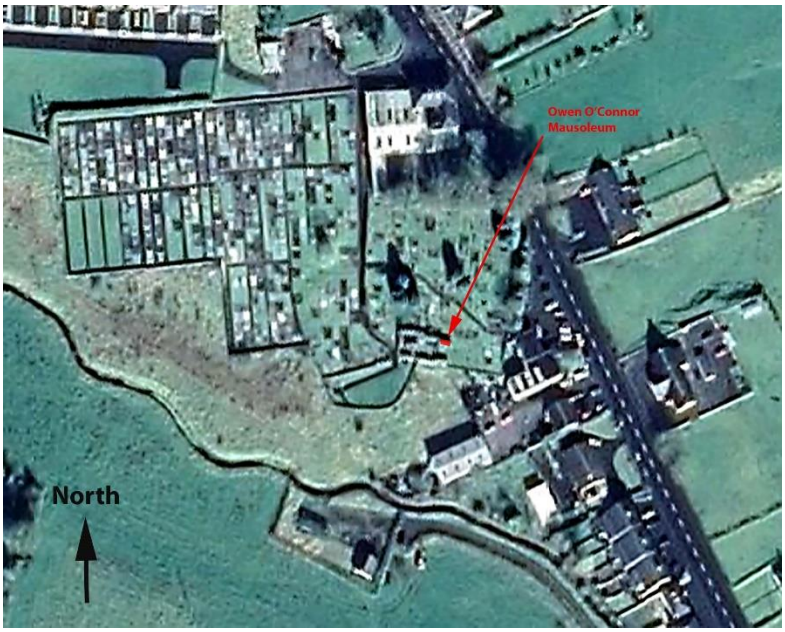

Fig. 1 Aerial view of Ballintober Old Graveyard, showing location of the Owen O'Connor Mausoleum.

2. HISTORICAL BACKGROUND

Ballintubber (also spelt Ballintober) is derived from the Irish *'Baile an Tobair'*, meaning 'the settlement of the well'. The village is located on the River Suck, approximately 4 miles to the south-east of Castlerea. Ballintubber was the principal seat of the O'Conor Family, who ruled the Kingdom of Connacht on and off from 967 and continuously from 1102 to 1475. The head of the O'Conor's held the title '*The O'Conor Don'*.

Ballintubber Castle, to the north of the village, was initially constructed by Richard de Burgh, Earl of Ulster. It is the only surviving early medieval castle of the O'Conors[1], who also had estates at Roscommon and Clonalis House, Castlerea. The medieval church of Ballintubber is included as *Thorbirbrig* in the ecclesiastical taxation of Elphin in 1306. The ruin of this church, which is located on a low ridge, at the bottom of a south-facing slope along the southern boundary of the rectangular Ballintober Old Graveyard, is the burial place of successive heads of the O'Conor Family. The subject mausoleum is one of four extant mausolea within the ruin of the church.

Writing in 1837, Samuel Lewis described Ballintubber as containing *'about twenty-six dwellings; all cabins except three; and behind it to the west, at the extremity of a limestone ridge, are the picturesque ruins of the*

[1] Timoney, Mary B., *'Ballintober Old Cemetery and the grave memorials of County Roscommon'* (June 2018, Roscommon County Council). P. 339.

castle[2]*.* Lewis notes the population as being 2,480. The first edition Ordnance Survey map of 1837-42 *(Fig. 1)* shows Ballintober Old Graveyard to the south of the ruins of Ballintubber Castle. The ruined church is shown with four rectangular mausolea, which are annotated as *'vaults'.* This map shows a large quarry to the east of the old graveyard, which Lewis describes as *'a quarry of exceptional limestone'.*

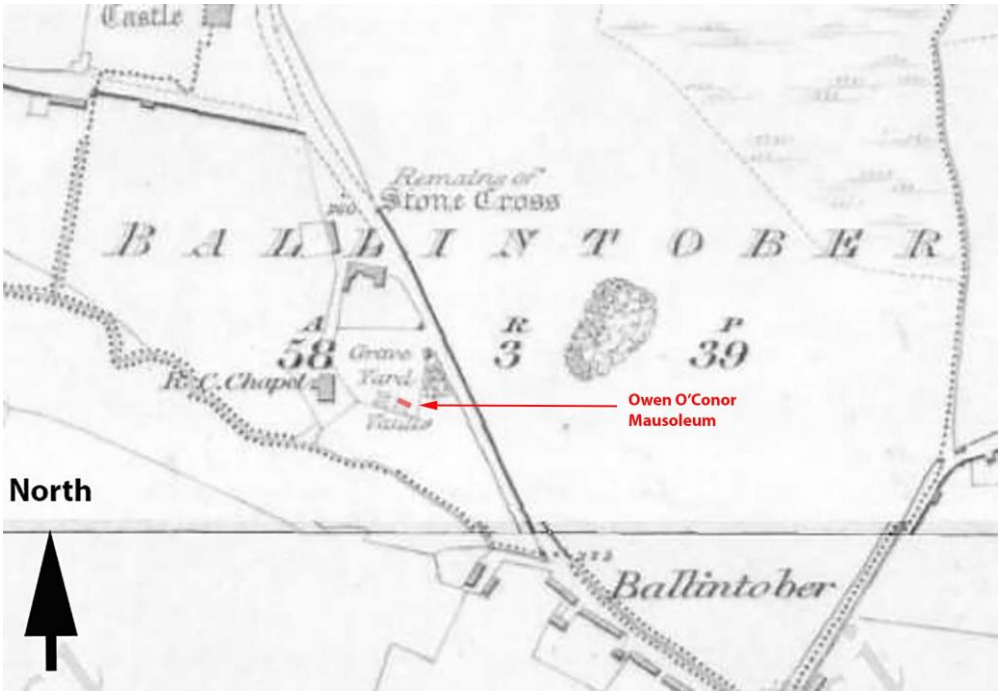

Fig. 2 First Edition Ordnance Survey Map of 1837-42, showing Ballintober Old Graveyard to the north-west of the village (to the south of the ruined castle). The four rectangular mausolea are located at the south boundary of the graveyard, annotated as 'vaults'. The large quarry to the east may well have provided a source of local limestone for the construction of the Owen O'Connor Mausoleum, as well as for some of the headstones and grave markers within the graveyard.

The subject mausoleum was built in 1762 by Owen O'Connor and his wife Catherine McDermot. There is evidence of some alteration following the initial construction of the structure, with photographs taken prior to the collapse of the east gable showing a change in the stonework that is suggestive of an alteration in the slope of the roof at the east end of the mausoleum. The west gable is dominated by a substantial memorial plaque and shows no signs of similar disturbance.

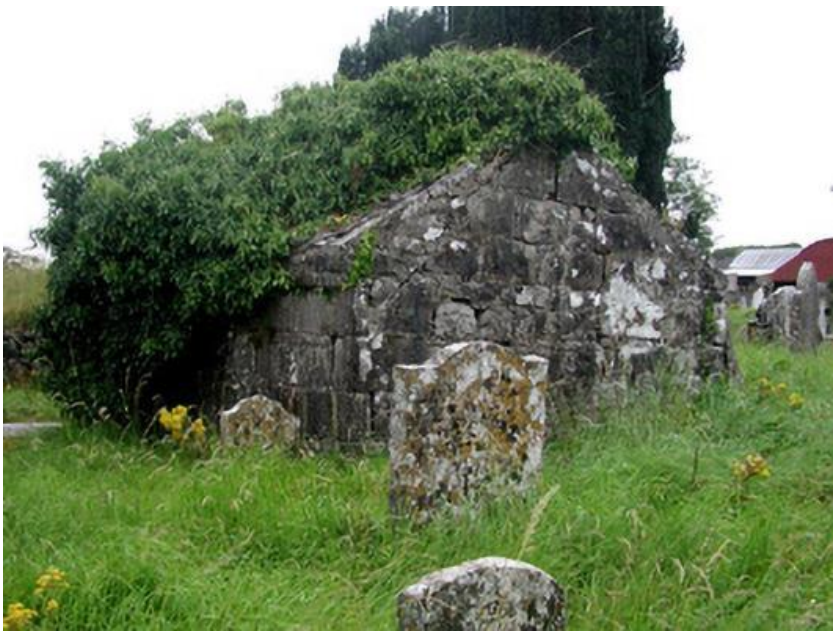

Fig. 3 Photograph of the east gable prior to the collapse of the stone facing, taken as pat of the NIAH survey in August 2003 (NIAH ref. 31815002). The use of smaller stones under the barge is quite different to the cut stone lower down and suggests that the slope of the roof may have been changed.

[2] Lewis, Samuel, *'A topographical dictionary of Ireland'* (London: 1837, S. Lewis & Co.) – entry for 'Ballintobber' (sic.)

3. DESCRIPTION OF THE OWEN O'CONOR MAUSOLEUM

The mausoleum is a single storey east-to-west rectangular structure and is constructed of light grey limestone, with a double pitch roof. The external walls are made up of squared stone blocks, with the exception of the upper part of the east gable, where smaller and more irregular stones are used. Given the quality of the cut stone elsewhere on the external walls, it is probable that this more random stone is linked to a change in the slope of the roof following the initial construction of the structure. The apparent line of an earlier, more steeply-sloped, gable is visible where the stone changes *(Fig. 3).* The stonework on the west gable is more consistent, comprising squared limestone with a central (large) limestone memorial plaque, engraved with a coat-of-arms and text *(Fig. 4) – 'Pray for the souls of owen o'connor & his wife Cathe O'Connor alias McDermott & Children who caused Y monument to be Erectd for them & their Posterity. June Ano Domine 1762. MK'*[3]. It is possible that the introduction of this memorial plaque coincided with the change in the slope of the roof.

Fig. 4 Engraved memorial plaque on west gable (2018, reproduced from Timoney, P. 182)

The construction of the mausoleum can be seen at the collapsed east gable *(Fig. 5)*. The mausoleum chamber comprises a vault of roughly-hewn limestone, which was then faced with a squared limestone outer wall. The double-pitched roof is made up with flat limestone slabs, of random shape and size, bedded in a lime-based mortar *(Fig. 6).*

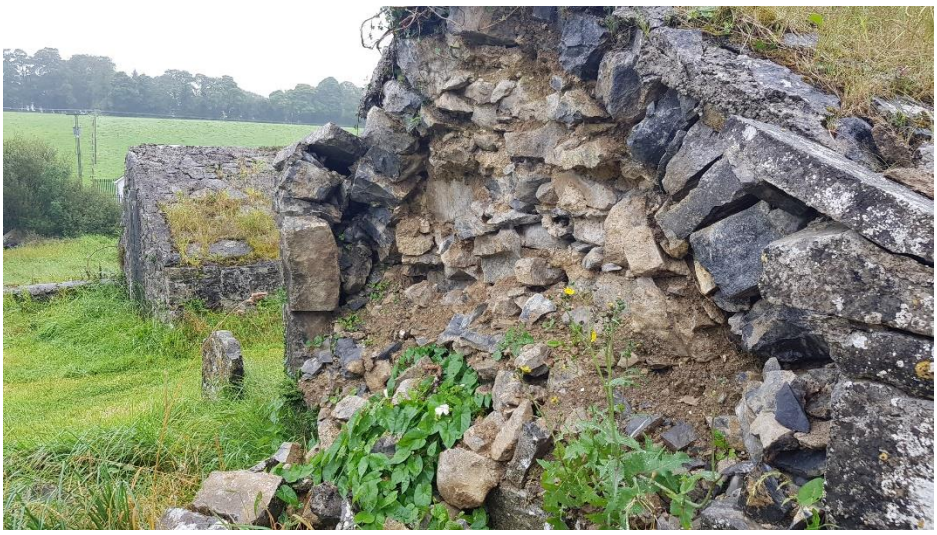

Fig. 5 Detail showing exposed inner vault construction at collapsed east gable of Owen O'Conor Mausoleum.

[3] Timoney, P.460.

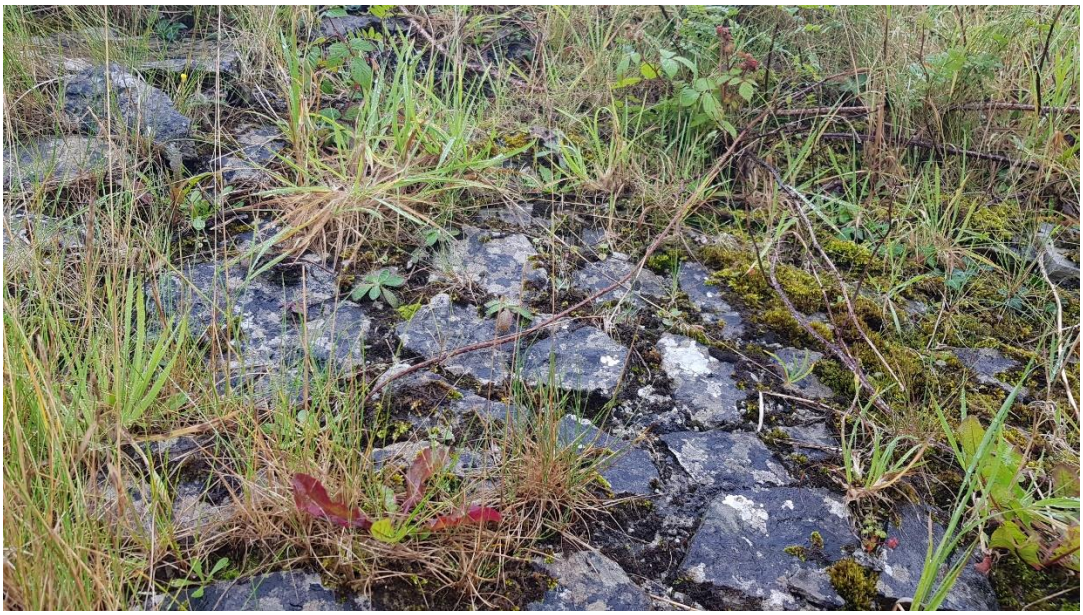

Fig. 6 Detail of flat limestone random slab finish to pitched roof of Owen O'Connor Mausoleum

There was no access to the interior of the mausoleum. The inner leaf of the east gable wall, which is visible where the outer stone has collapsed, is of stone rubble construction.

4. CONDITION

The Owen O'Connor Mausoleum is currently in a fragile condition. The following issues were noted:

a) Collapsed east gable

The squared stone outer face of the east gable has collapsed outwards. The stones for this gable remain on site and are lying in the grass in front of the mausoleum. This collapse is relatively recent and appears to have been primarily caused by water ingress through the roof and through gaps in the random stone at the top of the gable *(Fig. 7)* over a prolonged period of time. This facilitated a gradual erosion of the aggregate within the core of the wall (i.e. between the inner and exterior stone facing), with the loss of this material causing the bond between the two faces of the wall to weaken over time. The problems with the east gable may have been compounded by some settlement in the ground at the base of the wall.

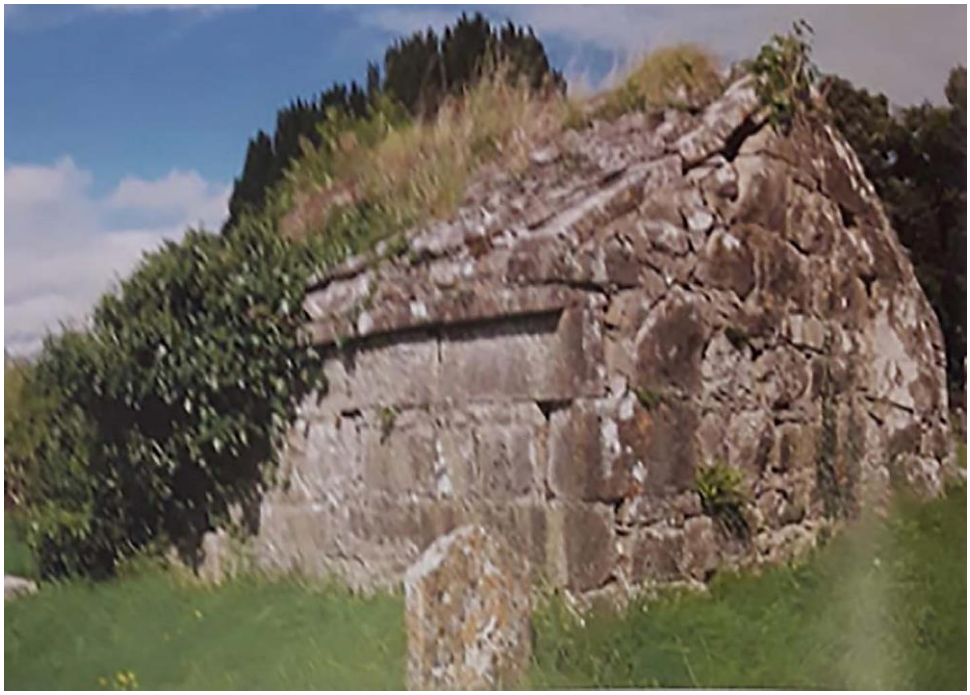

Fig. 7 Photograph of east gable shortly prior to its collapse, showing large gaps in the stone rubble under the south barge (2018, reproduced from Timoney, P. 182)

b) Inner wall and exposed core of east gable

The inner wall of the east gable, which is of random stone rubble construction, is now exposed following the collapse of the outer face. This inner wall was not constructed to act as a single leaf wall or to be exposed to the elements. While the inner wall is not currently showing signs of imminent collapse, it is likely that the stone rubble will begin to break down over the short-to-medium term. The exposed core of the wall, which comprises a mix of aggregate and lime, had almost entirely washed away from the upper part of the stone rubble inner wall on the date of inspection and is likely to wash away from the base of the wall over a relatively short period of time *(Fig. 8).* The wall is also very vulnerable to damage from vandalism. The presence of bindweed and other vegetation, which is now rooted in the wall, is likely to further weaken the structure.

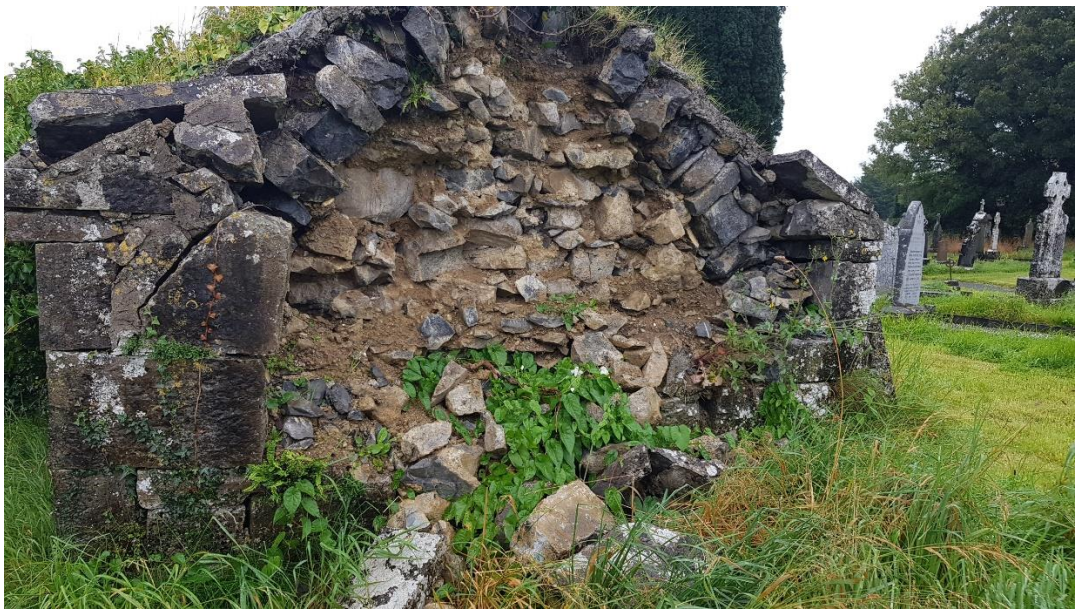

Fig. 8 Detail of collapsed east gable

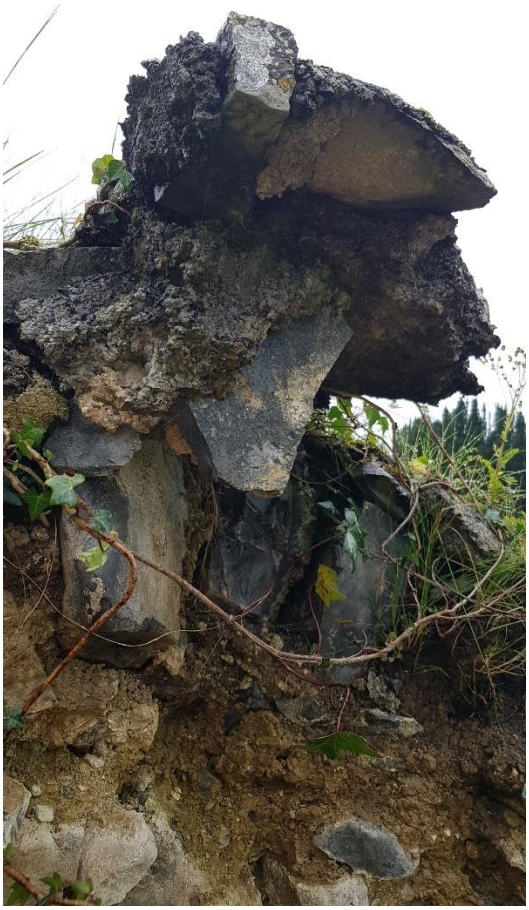

Fig. 9 Surviving stone from ridge of roof overhanging collapsed east gable

c) Roof

The composition of the roof comprises smaller stone slabs of random shape bedded in mortar onto the top of the wall. This roof construction remains relatively intact, with no signs of movement or delamination of the stone covering, apart from the section of the roof abutting the collapsed east gable. The relatively wide gaps between the stone slabs has facilitated water ingress through the joints and this has led to the growth of grass and other vegetation in the gaps between the stone. Some remedial work was carried out to the roof during the twentieth century, with modern cement mortar pointing evident between some of the joints in the stonework. The continuous growth of this vegetation will eventually cause significant deterioration in the composition of the roof over time. The covering of the roof nearest to the east gable is in a very fragile condition *(Fig. 9)*. Part of the barge structure has begun to unravel and there are loose stones near the edge of the collapsed gable. It is likely that the surface of the roof will continue to unravel backwards (i.e. to the west) from this unstable edge *(Fig. 10)*. The loss of this cover from the roof poses an imminent serious threat to the structure.

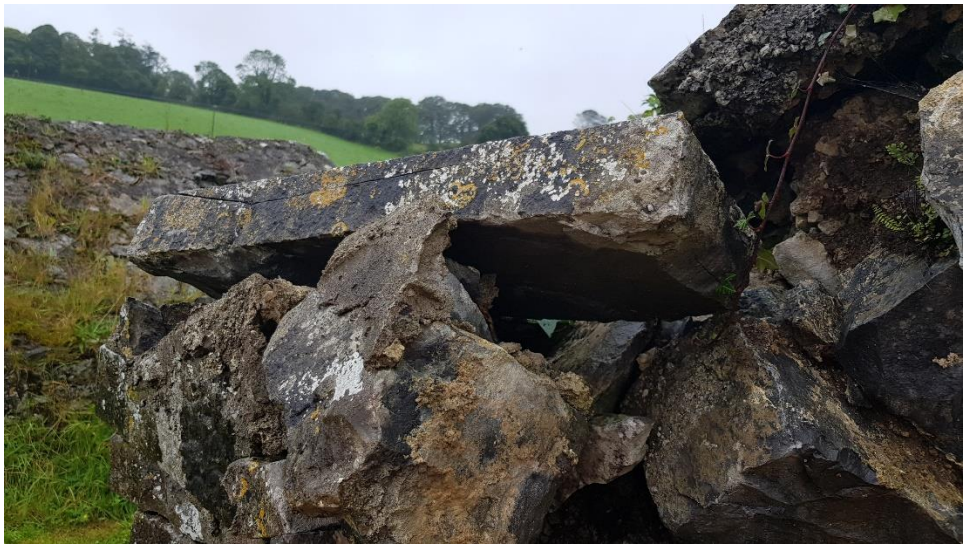

Fig. 10 Loose stones at edge of roof and east gable

d) Walls of the mausoleum

The walls on the remaining three sides of the mausoleum are extant and in reasonable condition. The south façade, which was visible at the time of inspection, comprises squared limestone. This stone facing is intact with some loss of mortar pointing between the stones. The west gable was heavily overgrown with ivy. This gable comprises squared limestone with a large engraved memorial plaque, as shown in the photograph above *(Fig. 7, dating from 2018).* It is likely that both of these external walls have suffered water ingress and possible leaching of material out of the central core, similar to that which preceded the collapse of the east gable.

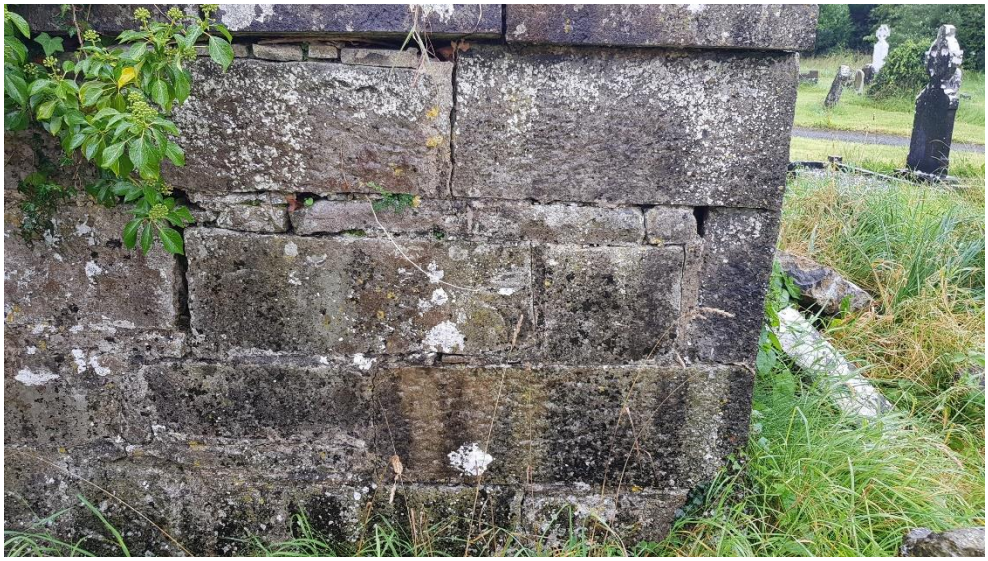

Fig. 11 Detail of squared limestone on south exterior face of Mausoleum, at corner with collapsed east gable.

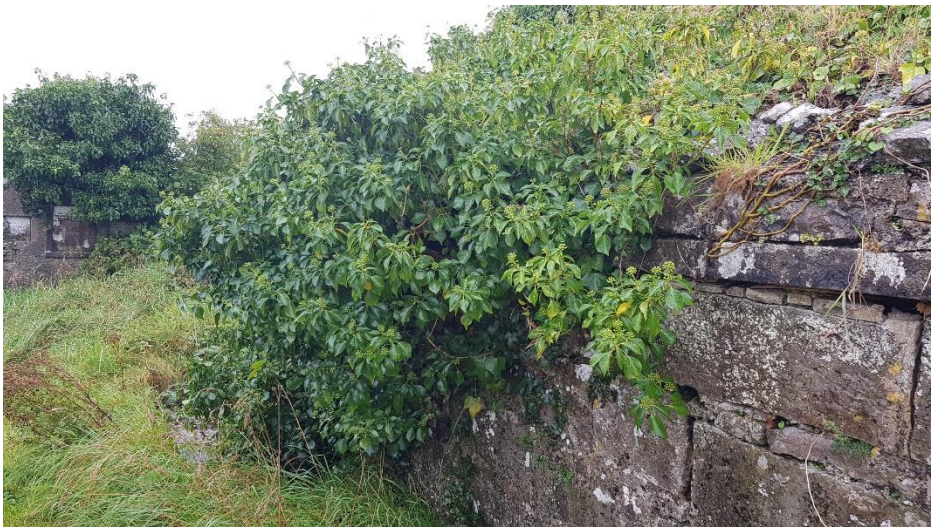

Fig. 12 Detail of squared limestone on south face of mausoleum, with heavy ivy growth on west gable

The north external wall is heavily overgrown. The outer face of the wall comprises squared limestone with smaller stones than on the west and south facades. It is possible that this wall incorporates some fabric from the earlier church, but the extent of such survivals could not be determined by visual inspection. Most of the mortar joints are open. It is likely that that here has been significant loss of bedding mortar and core material from this wall.

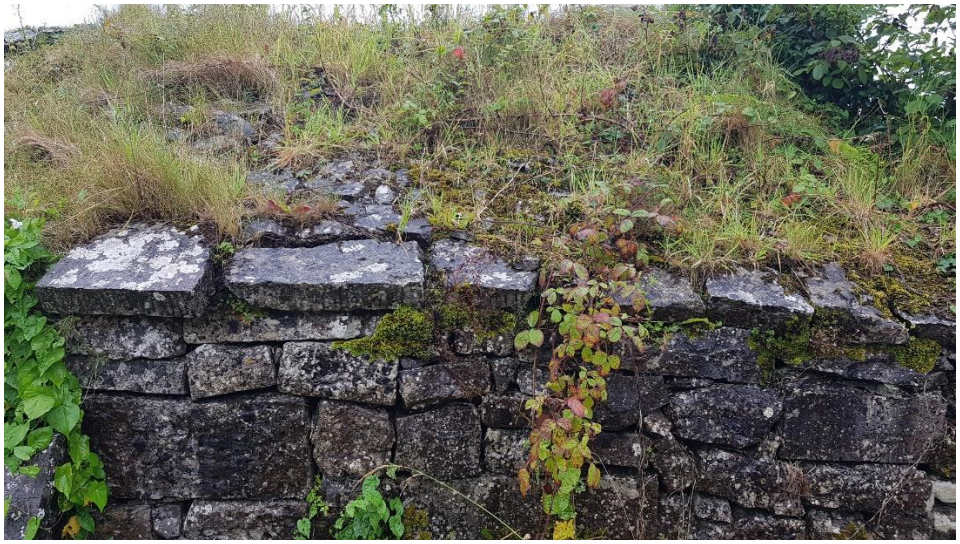

Fig. 13 Detail of north façade of Owen O'Connor Mausoleum

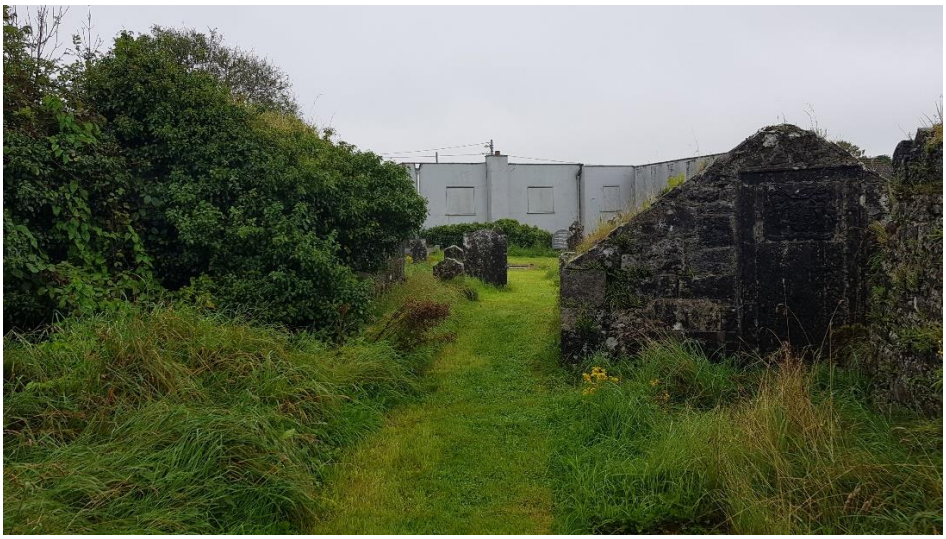

Fig. 14 View of Owen O'Connor Mausoleum (on left) from west. The west gable is completely hidden behind heavy ivy growth.

e) Vegetation growth

There is established ivy growth on and around the ruined mausoleum, some of which is embedded into the walls and roof. Much of this growth comprises woody plants (whitethorn, buddleia, ivy, etc.) that has become rooted or embedded within the masonry structure. If left unchecked, the root systems of the embedded vegetation will extend into the voids between the inner vaulted structure and the outer walls and roof of the mausoleum. This will cause a further weakening and deterioration of the walls. The west part of the structure, most particularly the west gable, is heavily overgrown and almost completely obscured by ivy growth *(Fig. 14).* There was also surface vegetation, including wild grass, dandelions and bindweed present on the mausoleum structure. Urgent action is required to kill off and carefully remove the vegetation, to consolidate the wall, and to consolidate the pointing of the roof to encourage improved water runoff.

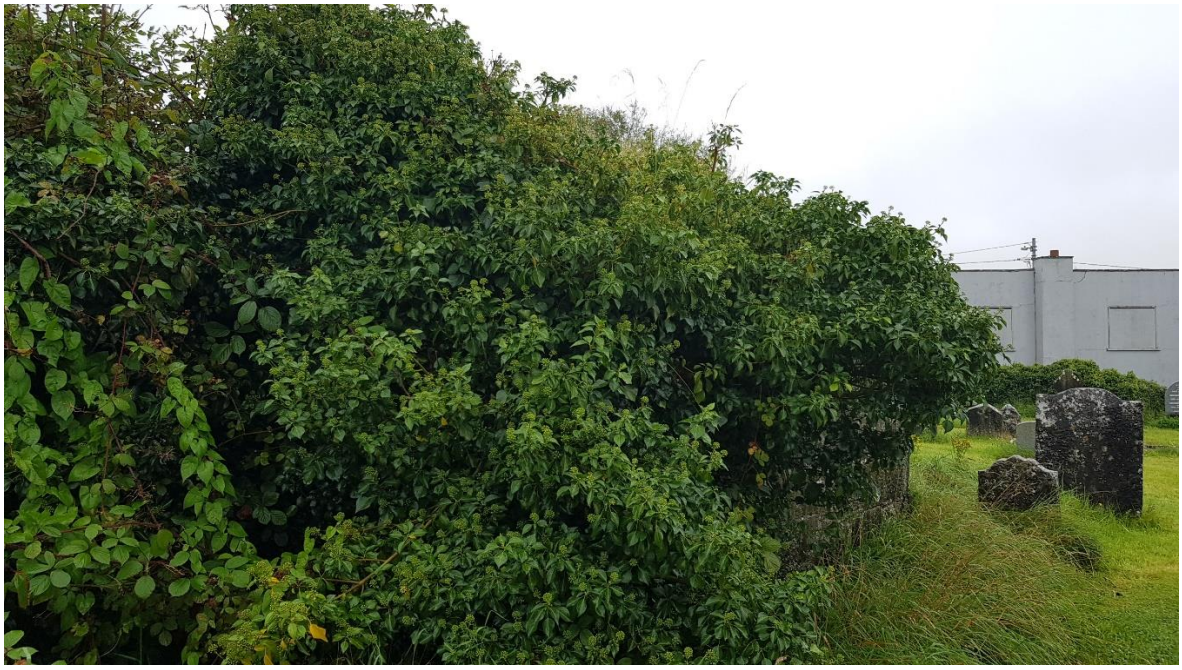

Fig. 15 Vegetation growth on the Owen O'Conor Mausoleum, viewed from south-west

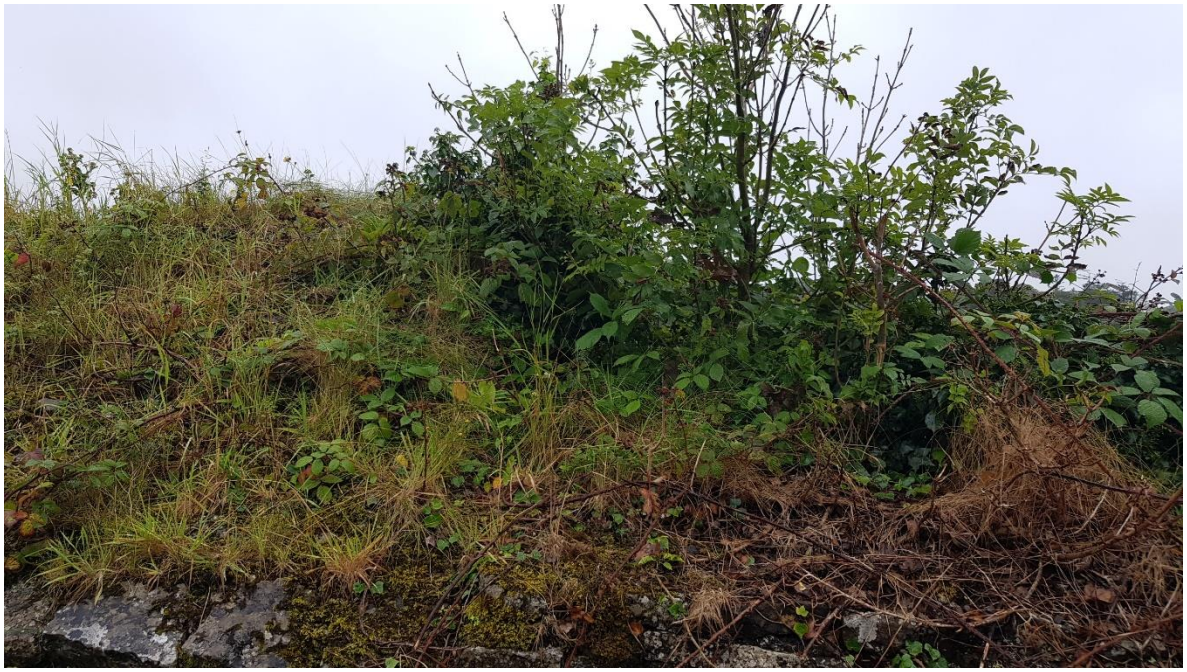

Fig. 16 Detail of vegetation growth on roof of Mausoleum.

5. RECOMMENDATIONS

Owen O'Connor Mausoleum in Ballintober Old Cemetery is a structure of considerable architectural, historical, technical and social significance, located on a site of rich archaeological and ecclesiastical interest dating back to early Christian times. The mausoleum, which is one of a cluster of four within the site of a Medieval church ruin, is at particular risk due to the effects of water ingress through the roof and walls, the leaching of aggregate and mortar from the core around the inner core, and the impact of embedded root systems growing within the stone rubble structure. The killing and cutting back of vegetation, to be carried out without the removal of embedded branches and roots, is an important first step to facilitate the repair and consolidation of the mausoleum. Thereafter, an urgent programme of stone repair and reconstruction is required.

The following actions are recommended in order of priority. These should be carried out following the specification and methodology noted below.

a) Treatment of embedded woody vegetation

The biocide treatment of this vegetation should be carefully targeted on killing the plant from the root upwards. This method involves the application of a biocide treatment under the bark close to the root of the plant. This approach differs from the more-commonly used application of a biocide treatment to the leaves, which will kill the foliage but cause the living plant to retreat into the root system. This can result in expansion of the roots, which can in turn destabilise the ruined structure. The slow and gradual process of killing back the plant will take several months and avoids any expansion or shrinkage of the root system. The approach involves the peeling back of a section of the bark about 50mm high to expose the substrate. A biocide (roundup or similar) is applied in paste form to the open section of the trunk and is then sealed with clingfilm and duct tape. The optimal time to carry out this treatment is in the spring, with allowance for 2-3 repeated applications on each trunk/branch at monthly intervals heading into the summer.

Under the above approach, the biocide travels with chlorophyll from the site of the treatment downwards into the root system, which will slowly die without swelling or expansion of the embedded roots or branches. This method of treatment and wrapping of the base of each plant will only be possible where the full circumference of the branches are projecting from the wall and accessible. In locations where thick ivy branches are attached to the stone rubble and cannot be pulled outwards without the risk of damage to the wall, the branches may be cut and biocide plugs inserted into drillholes at the base of the plant.

Once the initial biocide treatment has been active for a number of weeks, the treatment can be augmented by the surface application of a selected biocide spray that is suitable for the control of a wide range of deep-rooted perennial and woody weeds on non-crop land. This biocide spray should be mixed with a temporary dye that will temporarily mark the treated foliage for 3-4 days. The use of this dye will minimise the risk of missed areas or overapplication.

Once the biocide treatment is successful and fully complete, all dead vegetation growth should be left in situ pending work commencing on the consolidation and re-pointing of the wall (see b) below).

b) Biocide treatment of grassy and non-woody vegetation

Once the treatment of the more established and woody vegetation has taken affect, the walls and roof of the mausoleum should be spray-treated with a non-selective persistent herbicide. It may be necessary to carry out multiple treatments, including an application into any mortar joints that are open or have been raked out to ensure maximum effectiveness of the treatment. Particular care will be required to kill off and removed any vegetation, including bind weed, that is rooted in the core of the collapsed east gable.

c) Recovery of stone work from collapsed east gable

The loose stones from the collapsed gable, which are lying on the ground to the immediate east of the mausoleum, are to be carefully recovered. These stones are to be carefully sorted by size and shape, with particular care to be taken to identify the external face of each stone. The stone mason is to meet the project conservation architect, who should be a RIAI Grade 1 Conservation Architect with experience of comparable work, to loosely lay out the salvaged stone to match the configuration of the east gable prior to its collapse. Particular care is to be taken to replicate the sloped line, possibly associated with a earlier roof slope, which was a feature of the collapsed gable. Once this loose arrangement of stones has been reviewed and agreed, the stone mason is to chalk mark the face of each stone for identification purposes.

d) Investigation of base of the wall at the collapsed east gable

The base of the collapsed east gable is to be investigated by an engineer with comparable conservation experience, working in conjunction with the project conservation architect. The purpose of this investigation will be to establish if the lower portion of the gable is sufficiently robust to act as support the reconstructed outer face of the gable. Depending on the outcome of these investigations, it may be necessary to underpin or introduce a footing at the base of the wall. Allowance should be made for archaeological supervision of this investigative work.

e) Reconstruction of collapsed east gable

The reconstruction of the gable should be carried out using the salvaged stone from the site (see item c) above). The reconstructed stone should follow the layout and configuration of the numbered stones as agreed with the conservation architect. The core of the wall (i.e. between the inner face and the reconstructed outer face) should be filled with a compacted dry mix of medium-size limestone gravel, sand and lime. Allowance should be made for the use of helical flexible stainless steel reinforcement bars and stainless steel ties, to act a stitch reinforcement between the retained inner leaf and the reconstructed outer face of the gable; and to reinforce the masonry at the corners (i.e. junction of the east gable and the north and south walls) and at the barge (junction with the roof). This reinforcement should comprise a series of stitched connections in multiple locations. The introduction of more invasive structural supports would be harmful to the integrity of the structure and is not recommended. Where there are wide joints or gaps between the stones, particularly where there are smaller stones at the top of the structure, these should be packed at with smaller stone gallets (flat stones) and pins (pointed stones).

f) Works to north and south external walls and west gable

Each of the mortar joints in the existing (intact) stone walls should be checked. Any loose or friable mortar should be carefully removed using hand tools to facilitate re-pointing. If there are areas of cement mortar pointing, these should be removed by an experienced stone mason using hand tools, taking particular care to avoid disturbance to the surrounding masonry. These open joints should then be pointed to the specification noted at g) below. Where there are wide joints or gaps between the stones, these should be packed at with smaller stone gallets (flat stones) and pins (pointed stones). The stability of the larger stones should be checked as the works proceed. Where loose stones are identified, allowance should be made for the introduction of helical flexible stainless steel reinforcement bars and/or stainless steel ties. Any embedded branches or roots should be dug out and removed as part of this work. Allowance should be made for the introduction of a lime-based liquid grout (see g) below) to fill out any voids in the wall as part of this work.

g) Consolidation of stone walls – mortar pointing and liquid grout

The new bedding and re-pointing mortars to the rubble masonry should consist of a fine to medium-grained lime-based mortar mix, formulated for stone rubble fabric in a moderately exposed location, in a moderate to severe environment. Sands will be local, and primarily consist of local limestone. The sand used will comply with current standards including BS 1200, BS 882, BS 1200:1976, BS

4551-1:1998, BS EN 998-2:2002, and the European normative references EN 1015-1. All works will be carried out complying with BS 7913:1998 Guide to the Principles of the Conservation of Historic Buildings. The proposed lime mortar will comprise a mix of 2.5 parts aggregate to 1 part NHL3.5 lime. The work is to be carried out by operatives skilled in the use of lime mortars. The relevant contractor should provide details of the proposed operatives who will carry out the lime mortar repairs together with evidence of their previous experience on similar projects to the satisfaction of the conservation architect. The mortar pointing should have a brushed finish, to expose the grit within the mortar, and should be slightly recessed in the joint. A trial sample will be carried out at the outset to facilitate agreement on the work methods and finish with the conservation architect. *(Note: Portland cement-based mortars will NOT be used for any repair or re-pointing works, even where those repairs will be hidden from view or concealed within the fabric of the wall). The contractor will provide the conservation architect (on request) with samples of the lime mortar for testing. This will comprise petrographic analysis, be carried out by a specialist stone and historic mortars consultant. The purpose is to ascertain that the specified mix has been followed - the correct naturally hydraulic lime has been used; the aggregate is as specified; the proportions of the mix are correct; and no cement or other non-specified additives have been used).*

The works to consolidate the stone rubble walls should include for grouting and deep tamping of existing open and dry joints, and voids revealed during removal of the flowering plants and failed stones. The grouting material will be lime-based with a suspension aid (such as bentonite). It is important that the final strength of the grout should not exceed that of the limestone masonry, that be similar in permeability, low in shrinkage and have a good flow rate for effective penetration. Prior to appointment, the contractor shall provide a written methodology and specification for the grout to include the proposed lime (hydraulic or non-hydraulic) and details of the suspension aid for agreement with the Conservation Architect.

h) Works to the roof

The roof of the mausoleum has been subject to water penetration and weathering stresses far in excess of those experienced by the wall face. All vegetation should be killed off and removed in tandem with the re-pointing and consolidation of the roof. Each of the mortar joints in the roof should be checked. Any loose or friable mortar should be carefully removed using hand tools to facilitate re-pointing. The roof includes areas of cement mortar pointing, which should be removed by an experienced stone mason using hand tools, taking particular care to avoid disturbance to the surrounding masonry. The contractor should notify the conservation architect, where larger pockets of cement mortar are identified, which are too large to remove without causing damage to the ruin. On removal of the vegetation and any past mortar pointing, it is crucial to consolidate the roof build-up prior to re-pointing. Any loose stones should be lifted and re-bedded. The lifting of stones should be limited to only those locations where the existing stones are loose. Any stones that are lifted should be re-bedded in the same configuration. Where there are wide joints or gaps between the stones, these should be packed at with smaller stone gallets and pins. Particular care should be taken to ensure that the slope of the roof is consistent, with no dips or hollows that would allow water to collect and seep into the structure. The new bedding mortar should be a natural hydraulic mortar (NHL 3.5). The recommended mix is NHL 3.5: Sand aggregate in the ratio 1:2½. The sand aggregate should be sharp, coarse limestone sand (10mm down, gauged with a fraction of fine limestone aggregate to improve workability). The mortar pointing should be finished flush with surface of the stones on the roof of the mausoleum, to facilitate water run-off.

i) Treatment of sapling trees around the perimeter of the mausoleum

There are a number of sapling trees growing against the mausoleum. These have potential to cause damage to the footing and substructure of the walls if they are allowed to grow to maturity. Each individual branch of each sapling is to be treated using the approach outlined under a) above. This involves the peeling back of a section of the bark about 50mm high to expose the substrate. A biocide (roundup or similar) is applied in paste form to the open section of the trunk and is then sealed with clingfilm and duct tape. The optimal time to carry out this treatment is in the spring, with allowance for 2-3 repeated applications on each trunk/branch at monthly intervals heading into the summer.

j) Cleaning of engraved stone memorial plaque on west gable
The surface of the limestone memorial plaque should be sprayed with a biocide, kill back algae, lichen and other biological growth. Once this has been allowed to work the 2-3 weeks, the surface of the plaque should be cleaned using a mix of warm water and non-toxic washing-up liquid (such as 'Ecover'), to be worked with a soft nylon brush. The stone should then be rinsed with warm clean water.

6. BIBLIOGRAPHY

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- Lewis, Samuel, 'A topographical dictionary of Ireland' (London: 1837, S. Lewis & Co.) – entry for 'Ballintobber'
- Timoney, Mary B., 'Ballintober Old Cemetery and the grave memorials of County Roscommon' (June 2018, Roscommon County Council).

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Date: **19th November 2020**

APPENDIX A

ADDITIONAL PHOTOGRAPHS OF THE OWEN O'CONNELL MAUSOLEUM

2nd SEPTEMBER 2020

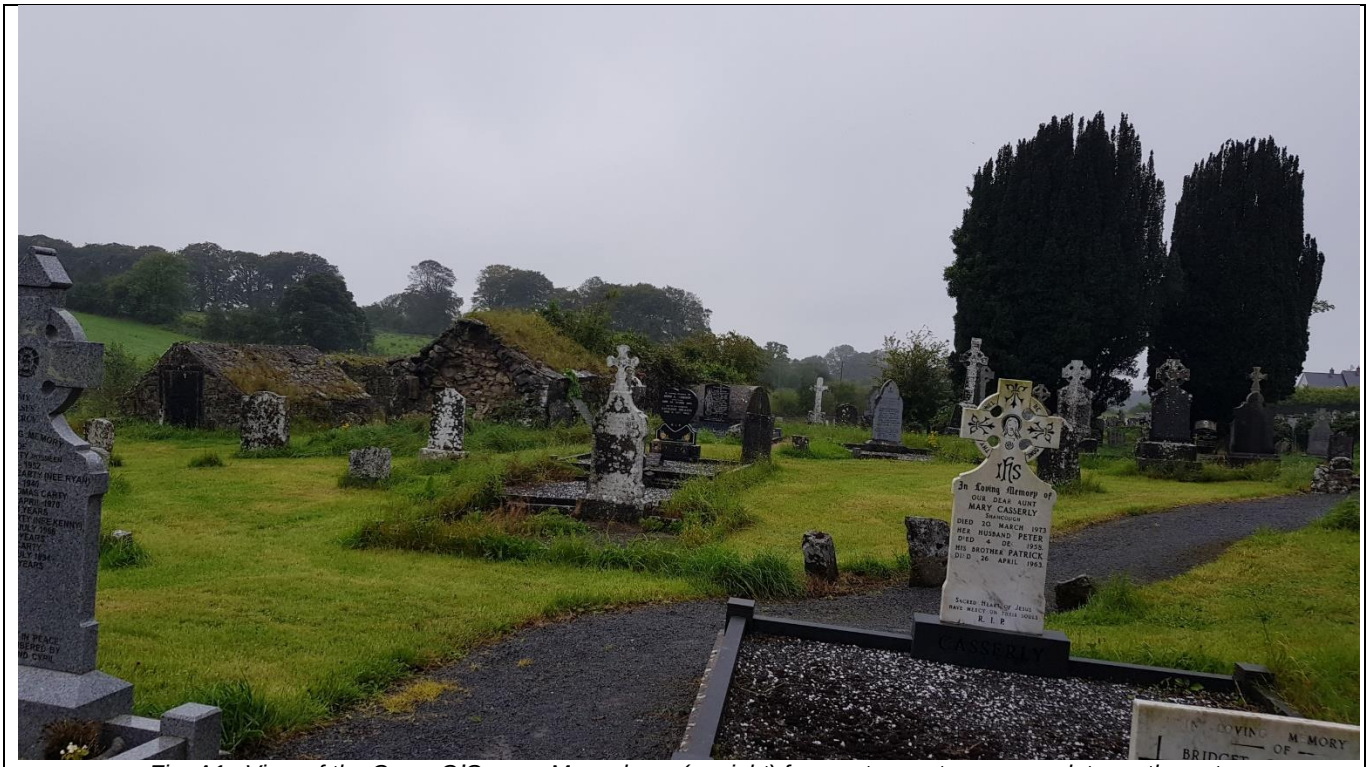

Fig. A1 View of the Owen O'Connor Mausoleum (on right) from entrance to graveyard, to north-east

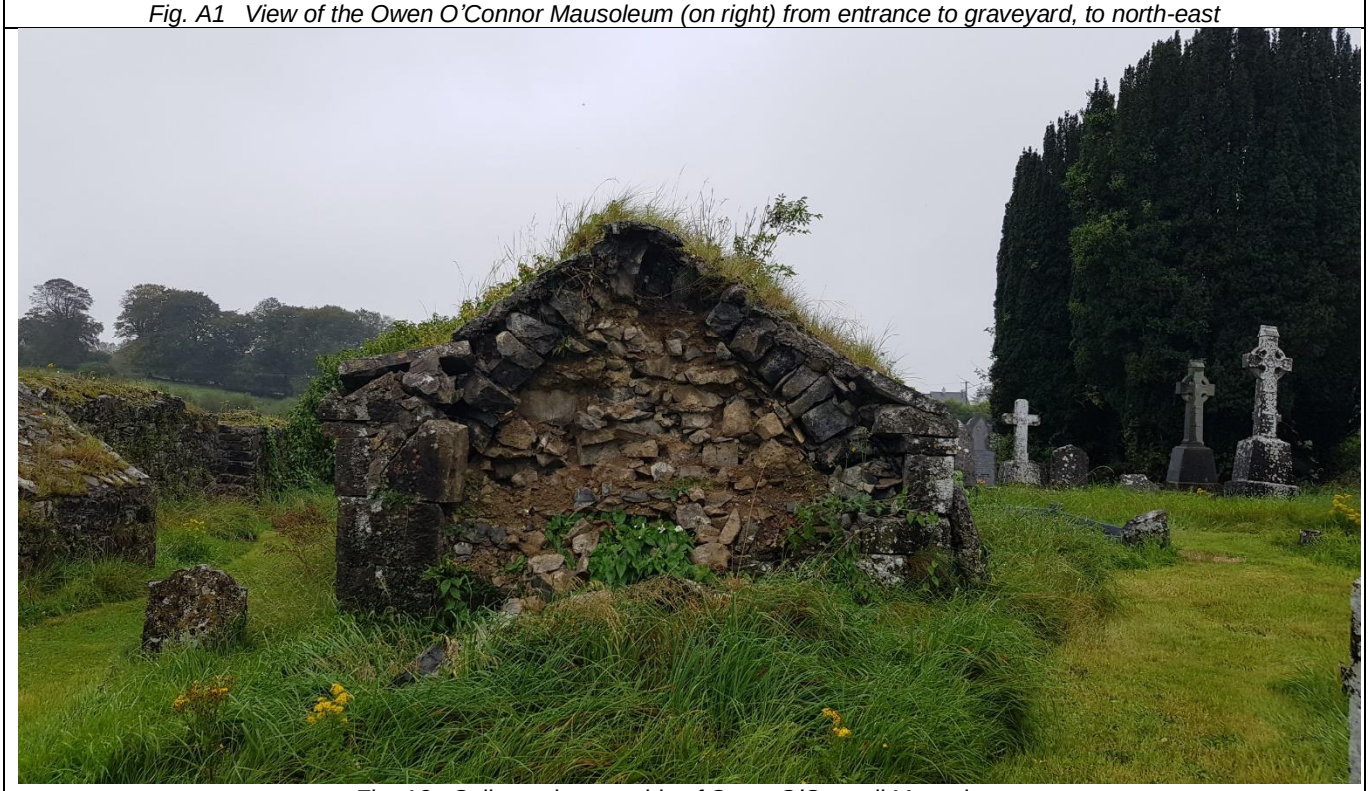

Fig. A2 Collapsed east gable of Owen O'Connell Mausoleum

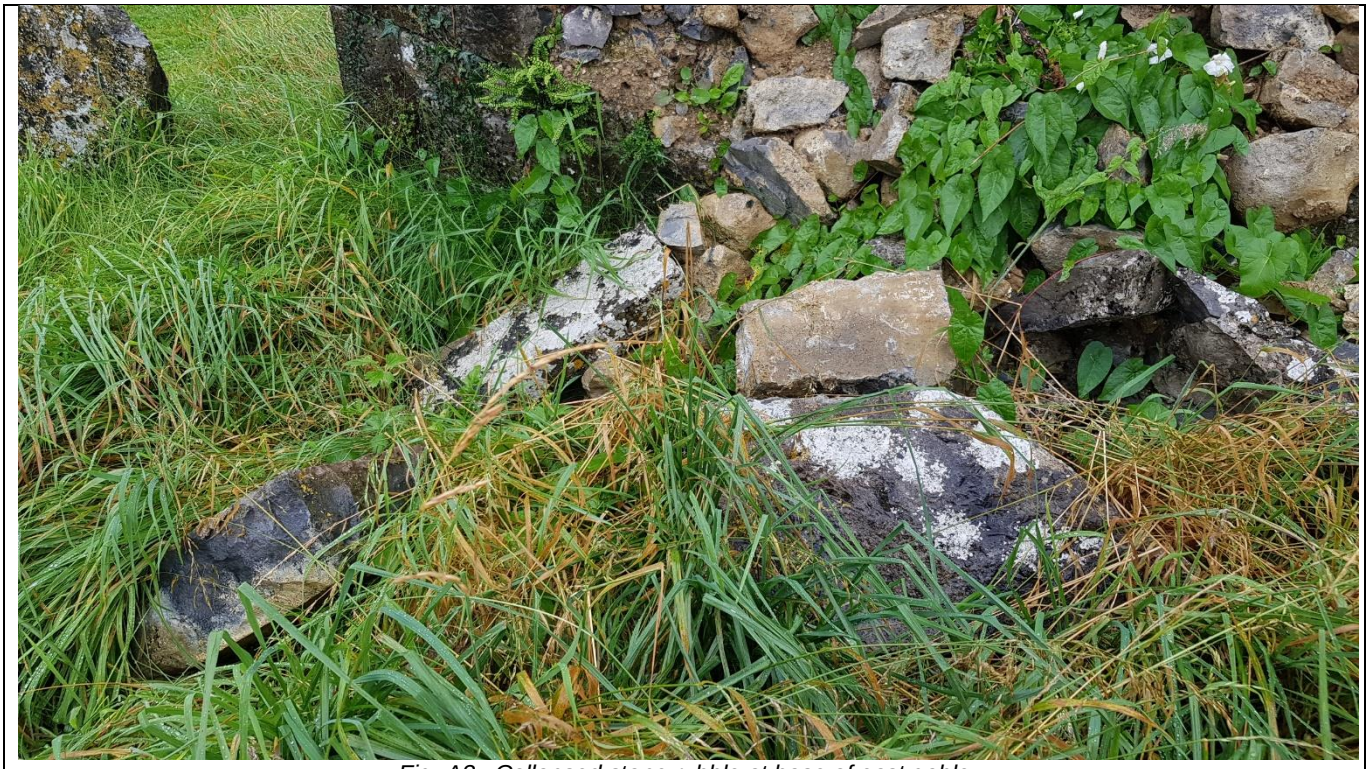

Fig. A3 Collapsed stone rubble at base of east gable

Fig. A4 Detail of north-east corner of mausoleum

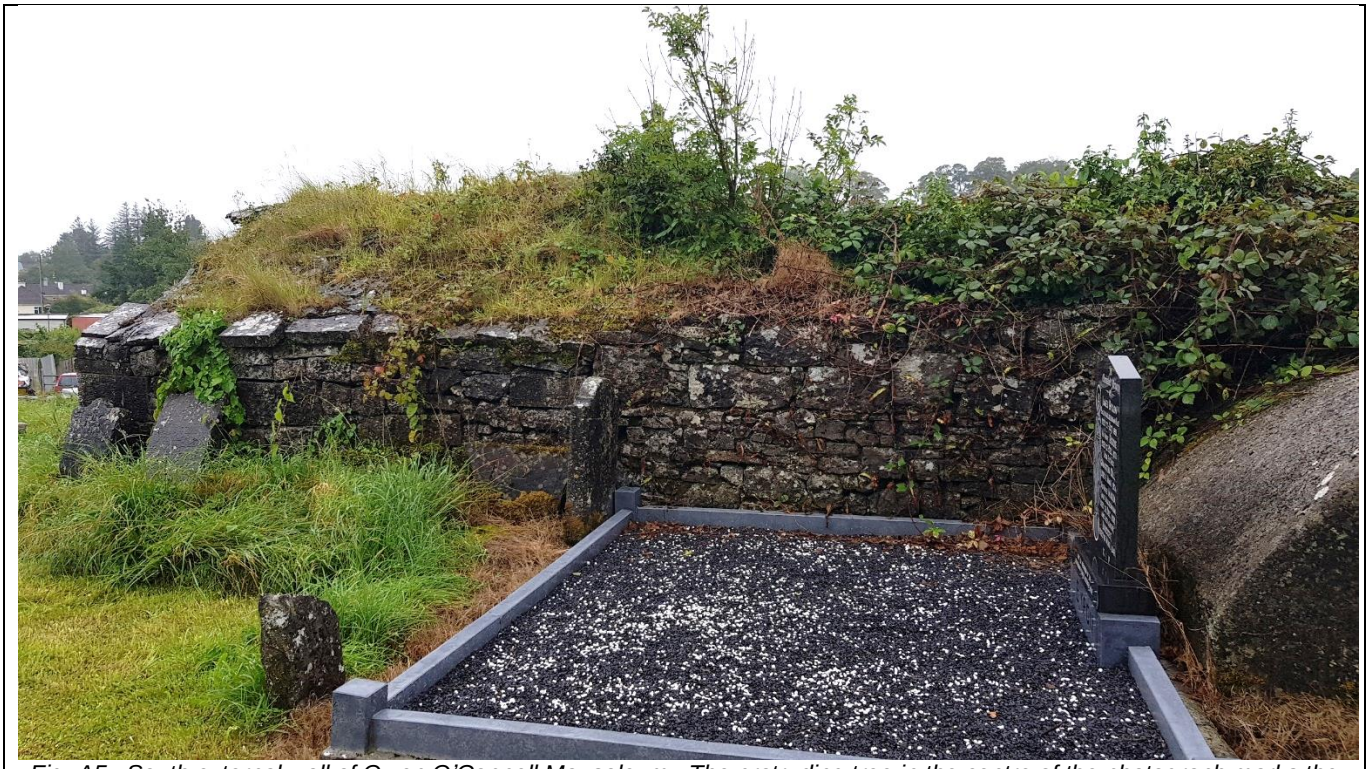

Fig. A5 South external wall of Owen O'Connell Mausoleum. The protruding tree in the centre of the photograph marks the western extent of the mausoleum.

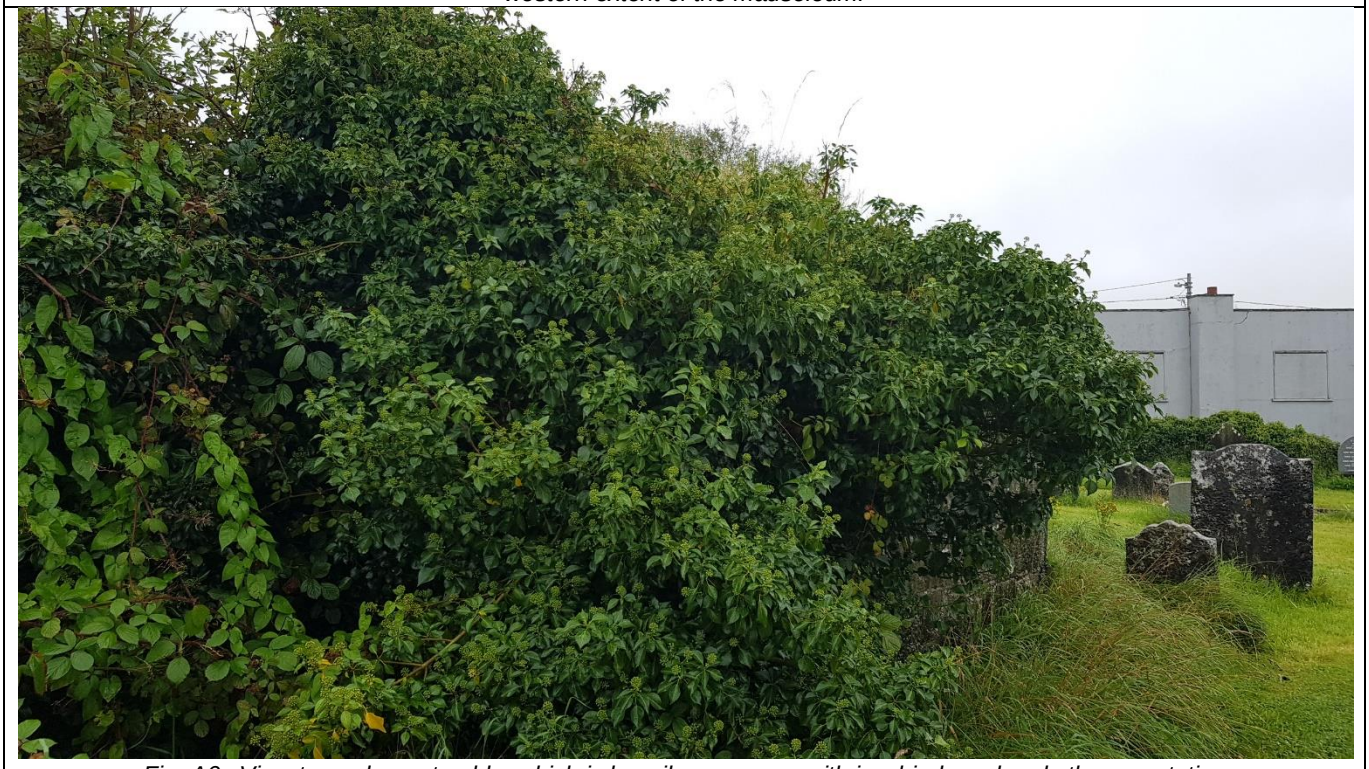

Fig. A6 View towards west gable, which is heavily overgroen with ivy, bindweed and other vegetation

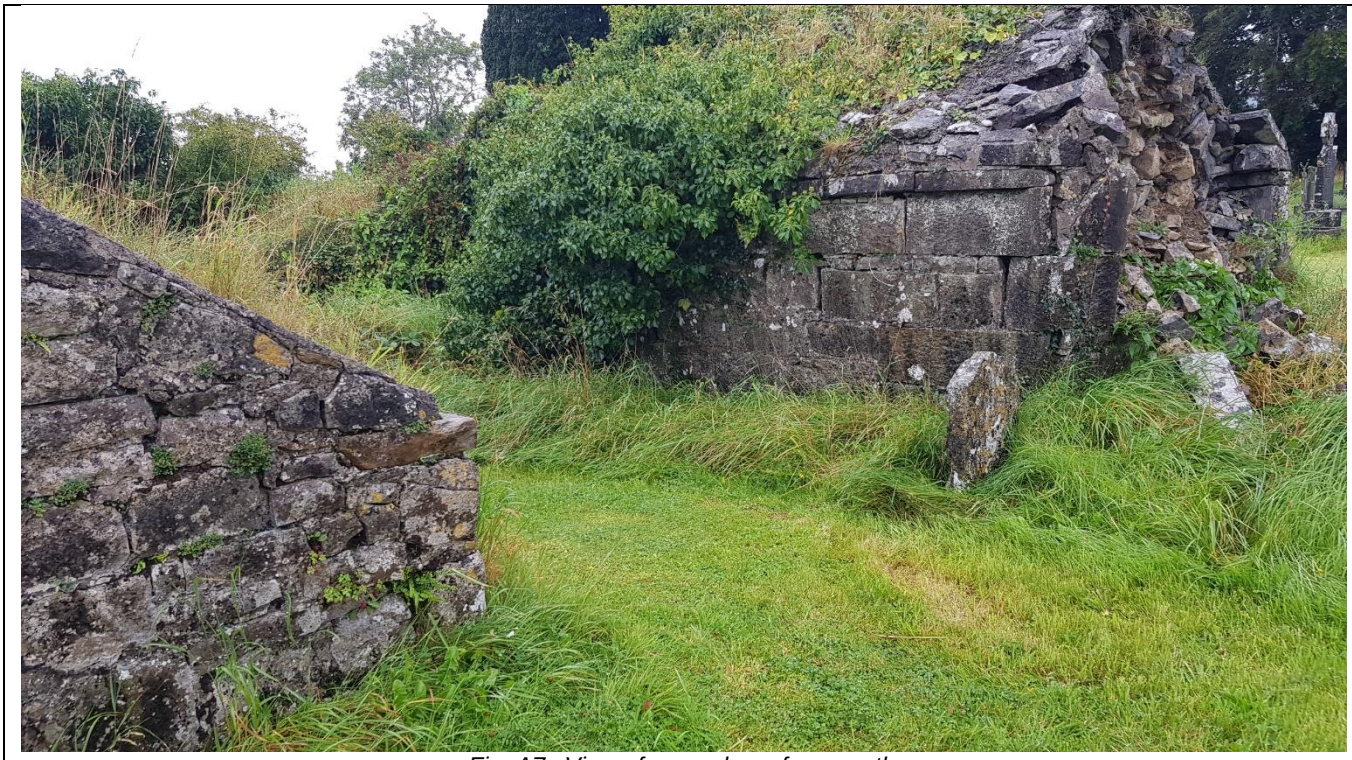

Fig. A7 View of mausoleum from south.