The Highland Council

The Mackintosh Mausoleum, Petty
Report on collapsed roof

Part 1 – written report and recommendations

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The Highland Council

Mackintosh Mausoleum, Petty – report on collapsed roof

1 Purpose of the report

1.1 The report has been commissioned by the Highland Council following the partial collapse of the slated roof forming part of the Mackintosh Mausoleum which is attached to the east gable of the former parish church of St Columba's, Petty. The roof is believed to have collapsed in the summer of 2012, and a section of what has survived of the remaining section of the roof is considered to be in a highly dangerous condition. The roof is highly visible on the skyline when seen from the south from the graveyard (Fig 1), and from the links of the golf course to the immediate north of the site.

1.2 The purpose of the report is to provide an evaluation of the current condition of the property; to establish the risks faced in carrying out remedial works to stabilise the structure; and to advise on repairs to be considered to the fabric of the building which will involve reinstating the roof to protect the interior as part of a programme of conservation work which may be the subject of grant assistance from Historic Scotland.

2 General description and limitations

2.1 The structure is single storey, with walls of rubble masonry with small stone snecks, plastered on the inside and harled externally. The harled surfaces have been lost to the re-entrant angles to the rear of the building. The plan form is L-shaped, and the original burial chamber of the late seventeenth century was extended in the mid-eighteenth century with a separate vault formed to the north which has an arched opening internally. The apertures to the front wall of the original mausoleum have simple tracery and rybats of grey mudstone; there appears to be a corresponding blind arched opening of a similar date at the rear (north) wall. The east elevation (corresponding to the rear where the separate vault was formed) would have been illuminated originally by a Venetian window of which the architectural detail is in more durable sandstone with high relief carvings, and closed off when a later wall monument was erected, probably 1861. The external lintol carries the date of 1742 and the initials of LM (Lachlan Mackintosh of Mackintosh) and AD (his wife, Anne Duff) (Fig 2). The surviving part of the roof, corresponding mainly to the vault to the north, is of simple trusses with high collars and extended rafter feet, clad with blue West Highland slates laid in diminishing courses with sandstone ridging. The front entrance is flanked by a pair of cast-iron cats, representing Clan Chattan, both holding banners on poles set on stone plinths (Fig 3).

2.2 The vault to the north has wall monuments which are partially visible on the north gable and east walls in yellow sandstone and marble respectively (Fig 4). The floor of the mausoleum is finished in sandstone slabs and it is believed that there are burials below this level.

2.3 Being unsafe, the property had been boarded up, and for a number of years it had been inaccessible. Together with the adjoining redundant church (which is in private ownership) it has been on the Buildings at Risk since 1990 and the condition of the structures has been monitored on a number of occasions since. Although the mausoleum is in the ownership of Clan Mackintosh, since the mid-1990s the clan has requested that the responsibility for its future care should pass to the Highland Council, with a renewed plea made in 2003. It is understood that the Council served a Dangerous Building Notice on the owners of the adjacent church in April 2013 to make it wind and weathertight. The Council has the responsibility for the maintenance of the graveyard (Fig 5).

2.4 Since the roof collapsed the Council has cordoned off the site with Heras fencing to deter access. Warning signs that the site is unsafe, and that it should not be entered, have still to be posted on the fencing. The Council has protected the exposed wallheads with tarpaulins anchored with sandbags, and invasive vegetation has been removed from the wallheads. In view of the unsafe condition of the overhanging section of roof following the collapse, the property has not been entered for the purposes of undertaking the survey and inspection of the internal fabric of the structure has been restricted to what can be seen from a ladder, and through the aperture of the entrance doorway which is blocked with fallen debris. The interior of the mausoleum is choked with broken rafters, sarking and sections of roof for which the slates have remained intact (Fig 6).

2.5 The site has been inspected on behalf of the Council by Fairhurst, Consulting Engineers (Inverness), and this report should be read in conjunction with the illustrated preliminary email report prepared following the site visit.

2.6 The site was visited on 03 July 2013. Photographs appearing in this report were taken on that date.

2.7 For the purpose of the report the front elevation of the mausoleum is deemed to face south, with the adjoining church orientated east-west.

3 Designations

3.1 The old parish church of Petty, the mausoleum, burial ground and watch house within the burial ground, are listed not as a group entry but as a single Category B entry, implying a site comprising 'buildings of regional or more than local importance, or major examples of some particular period, style of building type'[1]. This designation covers the whole of the site.

3.2 The description of the list entry refers specifically to the mausoleum, dating it as c1686, and describing the principal architectural features which include the Venetian window of 1742. In the supplementary notes the date is given for the earlier church at 1769, and also the deed is quoted whereby Lachlan Mackintosh of Kinrara left a sum of money for the erection of a mausoleum coinciding with his death in 1686.

[1] Notes to Chapter 2, Clause 2.19, Historic Scotland Scottish Historic Environment Policy, December 2011

3.3 The site of a motte, to the immediate west of the enclosed burial ground, is a scheduled ancient monument and therefore of national importance.

4 Understanding the site: brief historical background

4.1 The site has had a complex history. The dedication of the church to St Columbus would appear to indicate that this had been an early Christian site, with one source suggesting that the church occupied the site of a Culdee cell[2]. The establishment here of a parish church, with a motte nearby, further suggests centre of medieval lordship and a settlement had been established here of some considerable importance; whether this had been related to the de Moravias of Petty does not appear to have been established necessarily, but it seems probable. The openness of the view, towards the firth in particular, gives the structures a particular prominence within the landscape. Associations with lordship have been strengthened by the burial vaults for the Clan Chattan families of the Mackintoshes and Macgillivrays, with the former possessing the stronghold built in the fourteenth century to the immediate southeast of the churchyard, which they held until the property was granted to James Stewart, Earl of Moray by Mary Queen of Scots. The erection of Castle Stuart in 1625 as defensive fortification by James Stewart, 3rd Earl of Moray, followed a protracted dispute over ownership and compensation with Clan Chattan who had seized the castle in the previous year[3]. The castle incorporates the remains of the earlier Clan Chattan stronghold.

4.2 The orientation of the nave of the present parish church is east-west, following that of the original parish church on the site. It is conceivable that the fabric of this first church could have survived and had been incorporated in later buildings, an arrangement that exists in several of the Post-Reformation churches on the northern fringes of the Moray Firth which were adapted from former shells, to which transeptal aisles were added on to the north side of the nave to the majority[4]. Many of the gravestones in the kirkyard, and especially those close to the church, are of an early date, and have been recorded on separate occasions[5] [6].

4.3 The present fabric of the church shows evidence of an earlier church having been incorporated in the present building, which was rebuilt between 1836 and 1839 to a T-shape plan form with the usual arrangement of the transeptal aisle to the north. Plans could have been prepared by Robert Caldwell who practised as an architect in Inverness up to the year when the church opened; alternatively, the design could have been by an unnamed architect based in Edinburgh, with Caldwell as the executive architect[7]. As to the date of the previous church, from the joint accounts of the parish ministers of the Old and the New Statistical Accounts this can be set at 1767. The latter account provides confirmation that the building was erected on the foundations of the old. As the Mackintosh Mausoleum predates the 1767 church by around 80 years it is likely

[2] Francis H Groome *Ordnance Gazetteer of Scotland* entry for Petty
[3] Martin Coventry *The Castles of Scotland* first published 1995, revised 4th edition, 2006 p185
4 Andrew PK Wright *Gazetteer of Post-Reformation churches* in *East Church, Cromarty: Conservation Plan* 2006
[5] Highland HER, note of survey for Highland Family History Society
http://her.highland.gov.uk/SingleResult.aspx?uid=MHG31452
[6] Survey by S Farrell, published in *Discovery and Excavation Scotland, Vol 2* 2001
http://canmore.rcahms.gov.uk/en/site/14246/details/petty+st+columba+s+church+and+macintosh+vault/
[7] John Gifford *Buildings of Scotland: The Highlands and Islands* 1990 p214

that localised areas of masonry at the lower levels of the east gable incorporates masonry of an earlier date. The evidence of a former church building (or former buildings of more than one age) can be seen in the east gable where blocked up window and door openings occur, and where a string course can be seen at high level to the north of the ridge of the roof of the mausoleum (Fig 7). Access to the loft must have been by a forestair to the front of the mausoleum as the lintol, rybats to the right jamb, and an elevated door threshold can still be made out. There is also evidence of a blocked up window opening at the north wall of the former nave, to the east of the north aisle. Matters become a little confused if the representation of the church on Roy's Great map of the mid-eighteenth century (which predates the church of 1767) is to be considered accurate – it depicts the site of the enclosed churchyard clearly in its original form before it was extended further southwards, with the church shown as cruciform in plan (Fig 8). The projection on the south side could have related to the family burial ground which has survived to the present day, the ashlar masonry and mouldings of which suggests a date of c1700. It would have been attached to earlier buildings and was severed when the new church frontage was erected in the late 1830s (Fig 9).

4.4 As noted above the mausoleum can be dated with some certainty to 1686, or shortly thereafter, in accordance with the posthumous wishes of its donor. The tracery and arched door opening is an unusually late survival of Gothic at a time of Episcopacy (the Michael Kirk at Gordonstoun, 1705, carries on this unbroken architectural tradition). These windows had leaded lights originally from the evidence of the glazing lines which survive in the masonry (Fig 10), and were probably blocked up in Victorian times. The north jamb to the mausoleum appears to be contemporary with the 1742 date on the Venetian window lintol at the east elevation, and while externally there is little difference in appearance, the quoins of the north gable have raised margins whereas those of the earlier building are plain. The window could have been blocked up in 1861 when what appears to be the monument to the 26th Chief, Alexander Mackintosh was inserted (this has to be verified). The wall tabling of the later work has a cavetto moulding (Fig 11) whereas that of the earlier building is plain chamfered. The whole of the roof must have been rebuilt in 1742, but it cannot be verified if the roof timbers are the original ones without gaining access to the interior. Reslating of the roof may have occurred in the nineteenth century when cast iron rainwater goods were introduced to some of the walls.

4.5 A photograph taken by Robert Moyes Adam in 1912[8] suggests that outwardly the appearance of the mausoleum remained unchanged until the years of decay set in. Among few changes in the nineteenth century had been the introduction of the pair of cast-iron cats guarding the front door which may have coincided with the interment of one of the family members within the vault. The fabric of the mausoleum suffered from slow decline in the late twentieth century. The later stages of this decline are recorded in the images accompanying the entries in the Building at Risk Register[9], which records a series of visits, the first of which was in 1990.

[8] University of St Andrews Special Collections
[9] www.buildingsatrisk.org.uk/details/905299

4.6 The church was abandoned in 1950, and in 1985 demolition of the property was sought by the Church of Scotland after it had offered ownership to the Highland Regional Council, which turned the offer down. The application for demolition was refused, and in 1987 the church was purchased for use as a design and print workshop, changing hands shortly thereafter. The building remains in private ownership. Concerns over its deteriorating condition resulted in the owners being served the Dangerous Building Notice in April 2013 (see 2.3).

5 Philosophical approach

5.1 Although the building is listed, because of its purpose there is no prospect of it being adapted to other uses. For the purposes of conserving the structure it should be treated as though it were a scheduled ancient monument, conserving the fabric, wherever possible, as found and with minimal levels of intervention. Accordingly, the general principles of repair should be in accordance with Historic Scotland's *The Conservation of Architectural Ancient Monuments in Scotland: Guidance on Principles* (2001).

6 Evaluation of the fabric

Setting and access

6.1 The site is approached by a narrow public road with steep verges, and with a small turning circle at the head at the approach to the graveyard unsuited to heavy goods vehicles. While access might be possible by the farm track to the north of the site this would require to be negotiated with the landowner, but a retaining wall would require to be overcome from this direction in order to gain access to the site. Further constraints are imposed to the west and north of the redundant former church by overhead power lines (Fig 12).

6.2 The approach from the public road through the graveyard is also heavily constrained by the sloping ground and by the retaining walls marking the line of the original churchyard. To the west of the older length of wall the gate piers and stone steps leading to the upper burial ground would require to be negotiated. Once within the burial ground there are several gravestones and monuments of which many will be in a fragile state, and some of them are of considerable antiquity. They would require to be negotiated in delivering materials or scaffolding to the site of the mausoleum. Surrounding the mausoleum there are also monuments and graveslabs (Fig 13). The whole of the site is archaeologically sensitive.

6.3 On the east boundary there are a number of trees overhanging the burial ground and the mausoleum. Overhanging branches will require to be trimmed back by an arboriculturist, or an experienced tree surgeon, in consultation with the adjoining proprietor to gain access to the roof of the mausoleum and to prevent the risk of damage in the longer term (Fig 14).

Roof finishes and structure

6.4 The pitch of the roof is greater than would be the norm, which is commonplace with structures of this age. While this will have assisted with resisting the forces

imposed by the weight of the roof finish (blue West Highland slates laid in diminishing courses, and fixed with iron cut nails) and the heavy sandstone ridging, the structure is weakened by the collars placed high within the trusses leaving extended rafter lengths resting on wallplates at wallhead level.

6.5 The collapse of the roof can be attributed primarily to the reason of extensive water penetration over the years. While this has been exacerbated by the loss of strength in the rafters at the base of the valley gutter at the northwest re-entrant there have been several isolated areas where the loss of roofing slates has resulted in the decay of sarking boards and individual rafters resulting in breakage or a loss of strength, weakening the roof (Fig 15). Water penetration has occurred also at the head of the roof from the lack of pointing and bedding mortar to the sandstone ridges. The roof structure at the piended section at the southeast corner was intrinsically weak in having no collars to the roof trusses, such that the stability was heavily dependent on the hip rafter and the tie at ceiling level. It can be seen that the hip rafter has suffered from water penetration at the upper surfaces from defects in the roofing materials – it appears that the slates could have been close-mitred and this detail may have failed through lack of maintenance over the years (Fig 16).

6.6 Levels of dampness in the structure have fostered extensive activity by woodworm, which in areas has affected the performance of the roof timbers and has been a contributory factor in the collapse of the roof. Gaping apertures in the roof along the west wallhead of the north jamb to the mausoleum have resulted in the beamfilling becoming saturated and harbouring extensive vegetation growth behind the lath and plaster at the cooms to the ceiling (Fig 17). Longstanding decay at the base of the valley gutter had been patched as a temporary measure by polythene and by mineral felt.

6.7 But for the advanced decay along the west wallhead, the condition of which cannot be verified wholly until access to the interior of the structure is possible, the roof above the north jamb appears sound and true, in principle, should be capable of being repaired. Care will require to be taken over propping the west side in order to carry out repairs to the defective rafter feet due to the fragile nature of the stone floor to the mausoleum, and due to the fact that this may disguise where burials have occurred.

6.8 The collapse of the piended section has left a fragment of the roof suspended, extending back to the arched internal wall at the north jamb. From this point southwards the ridge of the roof can be seen to be dipping progressively; the sandstone ridging will be adding to the load (Fig 18). The imbalance over this section caused by the collapse has been such that the wallplate (affected by woodworm infestation) has been lifted clear above the masonry over this section of the wallhead (Fig 19). The exposed areas of the roof are vulnerable not only from self-weight – there is also the risk of collapse from wind damage. This risk extends to the roof of the north vault which would be left open-ended if the unstable section of roof were to collapse which, from being on elevated ground in a coastal location renders the site exposed to potential damage from uplift and suction in extreme conditions. This section of the roof is unstable, and is presently in a dangerous condition.

6.9 The structure had been fitted with cast-iron rainwater goods at one stage, of which no evidence survives now other than the gutter brackets affixed to the sarking. The rainwater goods appear to have been confined to the outer east and south walls. Their introduction may provide evidence that the roof has been reslated at some stage during the nineteenth century – possibly even when the church was refurbished in the 1830s.

6.10 It is inescapable that the unstable area of the roof will require to be taken down before access can be possible to the interior of the building for the purposes of recording and clearing out the debris after the roof fall. The engineer's suggestion to form a bridge across the interior of the mausoleum supported on external towers of scaffolding seems to offer a reasonable approach which will allow the section to be supported. The weight of the stone ridging pieces and slating can then be removed before the section is lowered down gradually to avoid the risk of creating structural damage. A careful methodology for undertaking this work should be prepared beforehand.

6.11 Although the existing timbers should be salvaged with the intention of reusing them wherever possible in the construction of a new roof, it seems unlikely that many of them will be suitable for the reasons set out above. On conservation grounds, for the protection of the interior of the mausoleum, it is appropriate under the circumstances to rebuild the roof in section sizes, profiles and using traditional carpentry techniques which match the original work. New sarking will be required, to match board widths and thicknesses of the original roof. The roof should be constructed off new wallplates bedded over a dpc of 'Alumite' or similar material set on the wall tabling stones. Slates should be salvaged carefully for re-use, and should be matched in second hand material where there is a shortfall laid to match the coursing, colour and texture of the original roof, laid over breathable felt and fixed with stainless steel or copper slating nails. A lead valley should be inserted in accordance with the recommendations of the Lead Sheet Association (having regard to increased Code thicknesses for use with historic buildings). Further research may be required for the mitred slate detail at the piend, which should be replicated, but with lead soakers to prevent water penetration. Cast iron goods should be reinstated in those areas where they were fitted originally to reduce levels of dampness to the interior of the building. The positions of downpipes and associated soakaways should have due regard to the likelihood of human remains being encountered during ground excavations. Consideration should be given to introducing rainwater goods at the northwest re-entrant to protect the walls and to prevent the discharge of water from the base of the valley gutter. At the north gable and at the abutment to the church gable lead soakers below the slates should be introduced, and a fine stainless steel mesh introduced to provide a bond for the haunching which should be carried out in hydraulic lime.

6.12 All sandstone ridging should be carefully salvaged and set aside for reuse where sound. Where ridging is broken and incapable of being reused, new sections should be supplied in matching stone. New stone should be hand dressed to match and not be delivered straight off the saw, and should be bedded and pointed in appropriate hydraulic lime mortar. The ridge ventilator should be checked over and reinstated in its original position on the ridge.

Structural shell – external walls and finishes

6.13 Remarkably, the collapse of the roof does not appear to have affected the structure of the external walls to any great extent. There has been rotation in the masonry of the southeast corner which shows up as a vertical crack in the internal plaster, and on the outside where the tabling stone has moved: close examination reveals that this movement has been longstanding and has not been occasioned by the lifting of the wallplate (Fig 20). There is further evidence of cracking close to the corner on the east wall which has been patched in cement mortar and the cause of this movement may be due to lateral thrust occurring from the hip truss.

6.14 Cracking close to the north gable at the head of the adjoining walls suggests that the gable is prone to moving outwards, although associated bulging or misalignment of the gable could not be identified.

6.15 At the south elevation at the abutment with the east gable of the former church, where the wall is chamfered and set back from the face of the wall, there has been a failure in the foundations with voids appearing in the core of the wall (Fig 21). The reasons for this appear to be uncertain, but could be attributed to burrowing animals in the past. The masonry will require to be consolidated to provide a firm foundation.

6.16 All structural cracking to the building and defects to foundations should be identified once unrestricted access has been provided. Cracks should be recorded and monitored, with cracks strengthened where necessary in accordance with the engineer's advice.

6.17 The tracery and rybats of the windows and door of the south elevation appear to have been built roughly, with wider joints than would be normal. Of grey mudstone, they have not weathered well and are prone to exfoliating. While light brushing with a stiff bristle brush may find a sound surface, the exfoliation is likely to continue, given the nature of the material (Fig 22). A conservator's report would be justified to establish if the stone can be consolidated in order to arrest further decay.

6.18 Harled surfaces have survived over the larger part of the external walls of the structure, including the north gable. There should be a presumption to retain the material, with patching kept to a minimum associated with making good cracks where structural movement has occurred. Wherever the material is peeling, consideration should be given to filling in open joints to extend the life of the material.

6.19 Open joints in remaining areas of the external walls should be repointed in lime mortar to retain the appearance of the historic masonry. Mortar should be renewed only where the original mortar is soft, or has perished (Fig 11).

6.20 Wall tabling stones, where accessible following the roof collapse, should be lifted and rebedded in hydraulic lime mortar. The core of the wall should be checked at the same time, and if weakened by water penetration resulting in loss of material, limited grouting in lime or from resetting stonework and

repointing in hydraulic lime should be considered. It may be preferable not to reinstate beamfilling between the rafter ends to avoid the risk of moisture transfer to the structural timbers, including the wallplate, and to encourage ventilation through the roof structure.

6.21 At the north gable the sandstone skews appear to be in reasonable condition although the apex stone has weathered. The skews have wandered slightly out of alignment, and should be lifted, rebedded and repointed in hydraulic lime mortar. Care should be taken not to disturb the harled surface. Depending on the state of the internal gable and levels of dampness, consideration may need to be given to bedding the skews on an 'Alumite' or similar dpc, and to introducing stainless steel dowels to discourage further movement. Although the gable is steeply pitched, downward movement of the skew stones may be discouraged by the inclusion of kneeler blocks at the mid-points of the gable. The skewputt at the northwest corner appears to have moved slightly and may merit lifting, rebedding, and anchoring the stone to the core of the wall (Fig 23).

6.22 The door and door frame may be found to be beyond repair following the roof fall and damaged by debris, but consideration should be given to preserving parts of it including the linings and any surviving ironmongery. The pine safe lintols above the door opening are rotten and consideration should be given to renewing them in oak in preference to precast concrete, with the ends wrapped in dpc material.

6.23 The heraldic cats are formed from two sections of cast-iron with the seam between the two castings pointed up in what might be linseed oil putty, or possibly a pure lime putty mix. Their condition does not give cause for concern, but a report on their condition would be merited from an accredited conservator. The surfaces might be prepared for shot-blasting with a fine grade of material in preparation for the application of a decorative treatment to preserve the life of the statues and the banners they hold.

Internal finishes and protection

6.24 The internal finishes to the mausoleum - of rubble walls plastered on the hard, lath and plaster to the cooms, and stone slabs to the floor - are vulnerable to decay and damage, and there should be a presumption to reinstate the roof to the structure. At present very little of the floor can be seen due to the amount of debris which has been deposited due to the roof fall, and so its condition is not known and will have to be established once access is safe.

6.25 Plaster finishes appear to have suffered from levels of residual dampness caused by water penetration from high level (which may explain the blisters on the wall shared with the east gable of the former church), but also from rising damp which has affected the base of the walls where blistering and extensive discolouration has occurred (Fig 24). The growth of algae can be seen adjacent to the main memorial at the north gable at the base of the wall. The plaster finish appears to pre-date the memorial believed to date to 1861, which disturbed the original plaster when it was inserted. While the insertion of effective rainwater goods may help levels of dampness generally, it may not overcome the problem of rising damp for which normal solutions to alleviate

the risk may not be possible on this site. While there is a presumption to conserve the plasterwork and any lathing, where it has blistered or has been damaged where plastered on hard it would be preferable to remove the finish locally to allow the masonry to breathe. In this context consideration might be given to inserting a new painted heavy iron gate shaped to the existing door opening which allows air to circulate while, at the same time, allowing the interior of the mausoleum to be viewed and interpreted, and preventing the entry of birds to the interior.

6.26 The rounded arch at the opening to the vault within the north jamb is formed of regular yellow sandstone voussoirs. Movement within the wall has caused the keystone to drop slightly and voussoirs to the right of the opening to be displaced, resulting in a fracture to one of them. There is cracking in the plaster above the fracture which extends to the line of the former ceiling (Fig 25). The full extent of the cracking and its likely cause can only be established once safe access is possible.

6.27 Given the significance of the monuments within the mausoleum, it would seem appropriate to request a report by an accredited conservator on their current condition and any conservation problems which may need to be addressed.

6.28 If delay is likely to be incurred before any contract can be entered into to embark on repairing the damage following the roof fall of 2012, consideration should be given to erecting a temporary roof over the structure to limit further damage to the interior of the structure, and to reduce the risk of the exposed walls becoming saturated in the short term.

7 Interim conclusions and recommendations

7.1 The roof fall at the Mackintosh mausoleum has caused extensive damage but fallen material has been confined to the interior of the original late seventeenth century structure. The debris which has fallen, together with the overhanging section of unsupported roof which is at risk of collapse, and hence constitutes a dangerous structure, conspires to make access inadvisable in the short term on grounds of health and safety. Until such time as safe access can be provided, the recommendations set out in this report can only be considered provisional. Apart from concerns expressed over the condition of the rafters on the west side of the later north jamb, the roof in this area appears not to have suffered and should be capable of being repaired. On grounds of conservation and the preservation of the internal fabric of the mausoleum the roof should be reinstated reusing as much historic material from the downtakings as is feasible.

7.2 Remarkably, despite the severity of the collapse, the structure of the external walls has been little affected by the fall, although some historic problems of structural movement throughout the building were observed. It is conceivable that in some areas the masonry will require to be consolidated and strengthened.

7.3 Residual problems of dampness have caused problems to the historic fabric of the mausoleum. While the more obvious ones relate to long term defects from the failure of roofing materials, the closing up of the mausoleum over the years

will have contributed to problems of dampness from rising damp and other causes, and it is conceivable that the plaster will have become hygroscopic under these conditions. Improved ventilation of the structure and the introduction of rainwater goods should assist with slowing down the rate of decay and reducing the risk of continuing woodworm infestation which has been damaging to the structural timbers.

7.4 The physical problems of gaining access to the site will have to be considered carefully in advance of repair works commencing in terms of the perceived risks to the historic environment and special interest of the site. In the shorter term, careful consideration will require to be given to removing the dangerous unsupported elements of the roof to permit safe access, and without causing damage to the historic fabric of the building.

7.2 In addition to the detailed recommendations set out in the text in Section 6, the following further recommendations are made:

1) Once safe access is provided, and before repair works commence, there would be merit in carrying out a building record survey of the fabric of the mausoleum
2) In conjunction with the foregoing, a survey of the monuments and graveslabs in the vicinity of the mausoleum should be undertaken by an archaeologist, and a report prepared setting out findings, and also the requirements for an archaeologist's watching brief for the site
3) Once safe access is provided to the interior of the property, the recommendations set out in this report should be reviewed and an engineer's report prepared on the defects recorded in the structure
4) A survey would require to be undertaken to confirm the presence of bats, or other protected wildlife species, before works commence
5) Given the levels of woodworm infestation, a survey and report should be sought from a timber infestation specialist in accordance with the philosophy of adopting a conservation approach to treatment
6) A specialist report should be sought on sourcing materials for, and matching, historic lime mortars, renders and plasterwork and over the specification of suitable materials for their repair
7) An accredited conservator should be commissioned to report on the mudstone dressings and tracery to the openings of the south elevation, the carved lintol of the Venetian window, and on the current condition of the monuments within the mausoleum
8) An accredited conservator should be commissioned to report on the cast-iron cat statues and on measures to protect them against future decay

8 Author of the report

Andrew PK Wright is accredited at the highest level in conservation architecture and is an architectural historian based in Forres, Moray.

A former Diocesan Architect of the Scottish Episcopal Church, and a former member of the Church of Scotland Committee on Artistic Matters, he has had a long involvement in the care of ecclesiastical buildings and researching their history. He is a member of the Ecclesiastical Architects' and Surveyors'

Association, and from its inception in 1995 he has been an honorary architectural adviser to the Scottish Redundant Churches Trust with a particular responsibility for the East Church, Cromarty; Kildrummy Church; and St Margaret's Braemar.

Since 2012 he has been an external member of Historic Scotland's Advisory Committee, and has been appointed to the Transition Board responsible for the merger of Historic Scotland and RCAHMS into a new body serving the historic environment in Scotland.

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First draft 09 July 2013

The Highland Council

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Part 2 – illustrations

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The Mackintosh Mausoleum, Petty: report on collapsed roof

Illustrations to the text

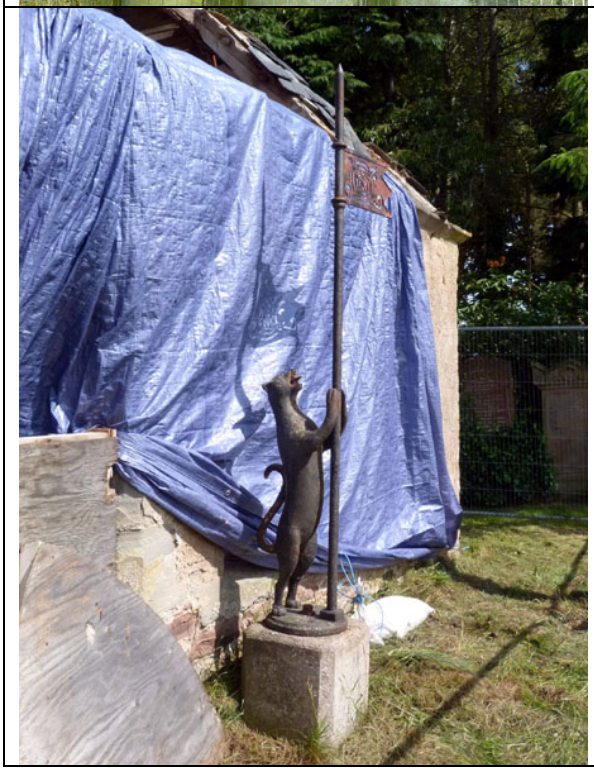
	**Fig 1** View from the south, from across the graveyard; the collapsed roof of the mausoleum is to the right (east) of the former parish church of St Columba
	**Fig 2** The lintol to the Venetian window on the east elevation which carries the date of 1742 on the keystone, commemorating Lachlan Mackintosh and Anne Duff
	**Fig 3** One of the pair of cast-iron cats symbolising Clan Chattan, carrying banners on poles flanking the entrance to the mausoleum

Fig 4 Wall monuments can be glimpsed through the arch at the entrance to the north vault on the north gable and east wall, of yellow sandstone and marble respectively; the panel to the right is believed to have been inserted in 1861 at which time the Venetian window would have been blocked up

Fig 5 View from the southwest of the former parish church of 1839 with the mausoleum beyond; the octagonal bellcote at the west end of the church has been taken down

Fig 6 Interior of the mausoleum viewed from the north, showing collapsed sections of roofing with the sarking and slates still intact and the space littered with debris

Fig 7 High level stringcourse above the roof ridge of the mausoleum at the east gable of the former church shows evidence a previous building on the site, possibly that of 1767

Fig 8 Extract from Roy's 'Great Map' of Scotland (1747-55) suggests that an earlier kirk set within the burial ground, seen to the west of the orchards surrounding Castle Stewart, could have been cruciform in plan
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Fig 9 Family burial ground of c1700 of ashlar sandstone which became detached from the front wall of the church when it was rebuilt in the late 1830s

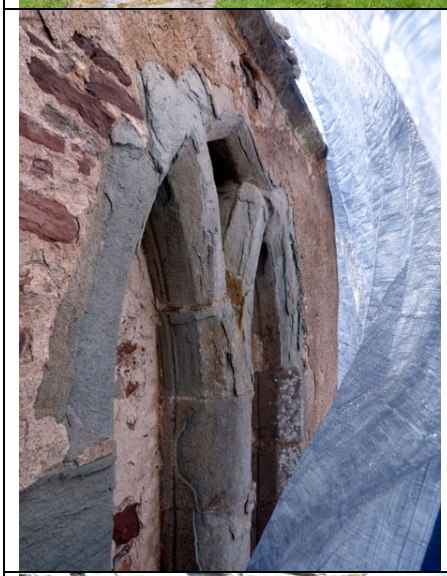

Fig 10 Gothic tracery of c1686 to the windows of the front elevation of the mausoleum, built of mudstone which is exfoliating; the line of the former glazing for leaded lights is visible

Fig 11 Internal junction between the late 17thc work and the mid-18thc extension to the north shows the differing patterns of wall tabling, from a plain chamfered stone in the earlier work to a more sophisticated cavetto moulding in the work of c1742; the rubble masonry has suffered from constant wetting from the base of the valley gutter and has open joints where the mortar has been lost

	**Fig 12** Trees on the east boundary; a change in level and overhead cables will have an impact on access from the north of the site, although there are fewer gravestones to negotiate in this area of the churchyard
	**Fig 13** A burial lair with a stone kerb and headstone, dated 1848, is in close proximity to the south wall of the mausoleum and will require protection when erecting scaffolding
	**Fig 14** Overhanging trees are placing the mausoleum at risk on the east boundary; the photographs shows also further gravestones in this area which would need to be recorded and protected before works commence

Fig 15 This section of the roof is unsupported after the roof fall, but shows at least two areas in close proximity to one another where the loss of slates resulted in the collapse of the sarking boards and decay of the rafters, allowing water to enter the interior of the mausoleum: one of the rafters has broken through

Fig 16 The unsupported hip rafter following the roof collapse, showing water damage from defective coverings; it is not known how the piend had been protected, whether by sandstone hip tiles similar to the main ridge, or by close-mitred slates

Fig 17 Extensive damage caused by loss of slates and sarking on the west side of the roof above the north vault: the condition of the rafter ends is uncertain, being covered in vegetation growth and debris trapped by the beamfilling and plaster and lath, but is bound to be poor, throwing the stability of the roof into question

Fig 18 The unsupported part of the roof exposed after the collapse can be seen from the south, with the stone ridging dipping towards the unrestrained hip rafter

Fig 19 Photograph looking along the wallhead from the southeast corner, showing the wallplate (partially rotten with woodworm infestation) lifted clear from the stone tabling under the weight of the unsupported portion of the roof – this condition extends to as far as the internal wall to the north vault where the roof appears sound

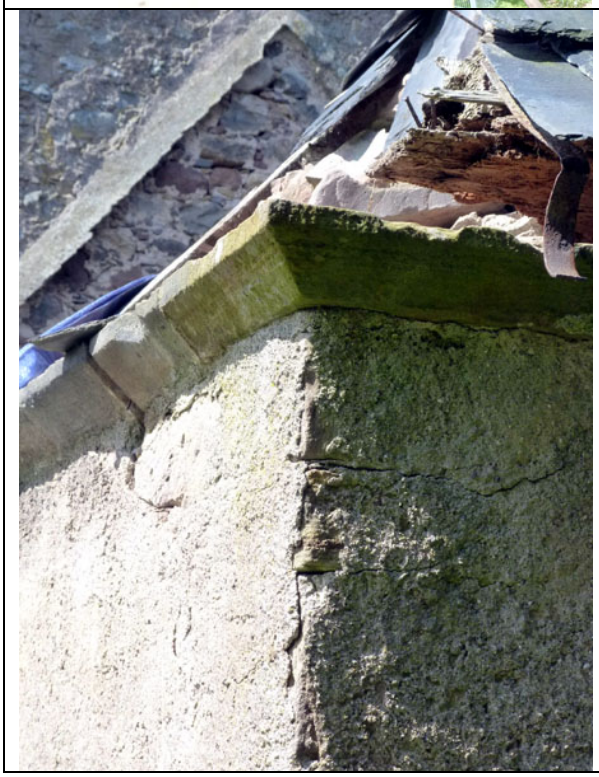

Fig 20 Detail of the wallhead at the southeast corner of the building, showing the wallplate lifted from the wall tabling course and rotation in the corner stone which has disturbed the harling, although this is thought to be unrelated to the roof collapse

Fig 21 Open voids in the base of the external wall at the junction with the former church gable, on the south elevation: the grey mudstone of the window rybat and cill is visible

Fig 22 The gothic tracery to the windows of the south elevation is poorly formed and unorthodox in detail; the grey mudstone is of poor quality and is exfoliating, with some loss of detail

Fig 23 The skewputt at the northwest corner of the north gable has moved slightly under the load of the skews which are slightly out of alignment; the problem is exacerbated by the steep pitch of the roof

Fig 24 Plaster finishes to the external walls show signs of historic staining from dampness, in this instance from rising damp affecting the base of the walls

Fig 25 Cracking in the plaster finish above the arch leading into the north vault, resulting in the keystone dropping and movement in the voussoirs to the right of the opening; the collar tie beyond the head of the wall has snapped due to weakness caused by woodworm infestation

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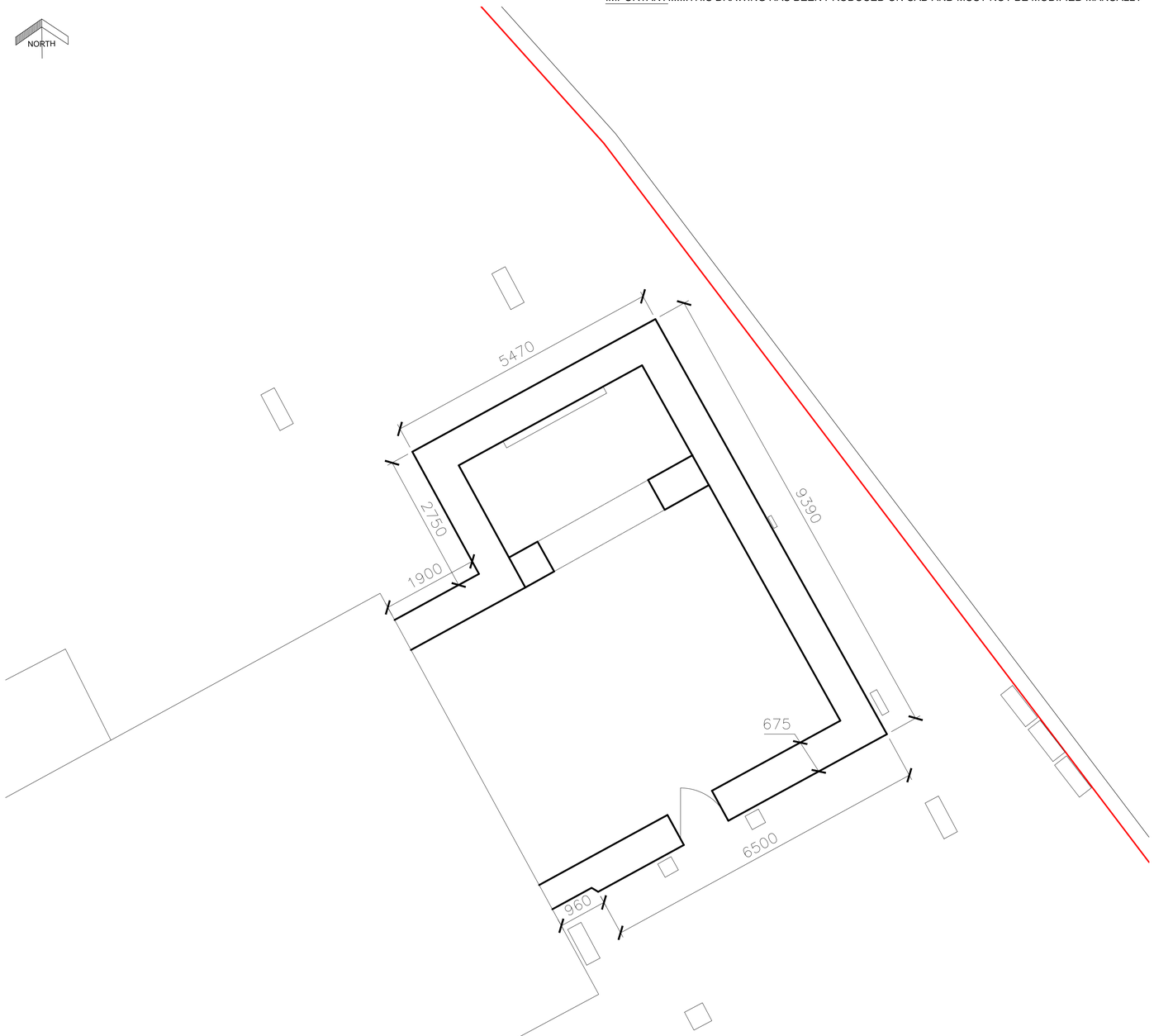
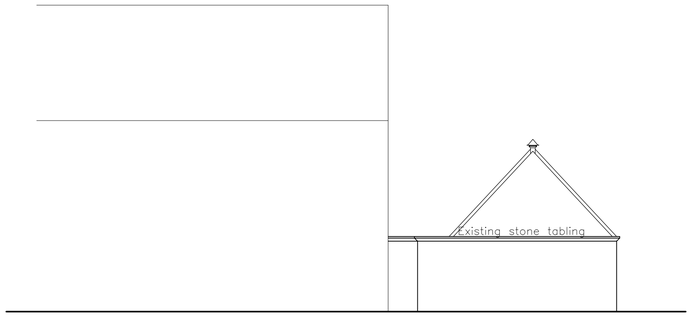
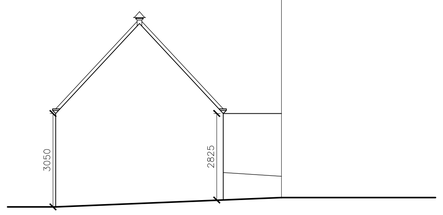




South East Elevation

North East Elevation



North West Elevation 1:100

PHOTO NO.1- SOUTH EAST

PHOTO NO 2- NORTH EAST

PHOTO NO.3- NORTH WEST

PHOTO NO.4- INTERNAL - FROM NORTH

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Scale 1=50

symbol denotes monument within 3m of building

Preliminary

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Description.

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CLIENT: Planning and Development

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PROJECT: Old Petty Mausoleum

DRAWING TITLE: Plan and Elevations

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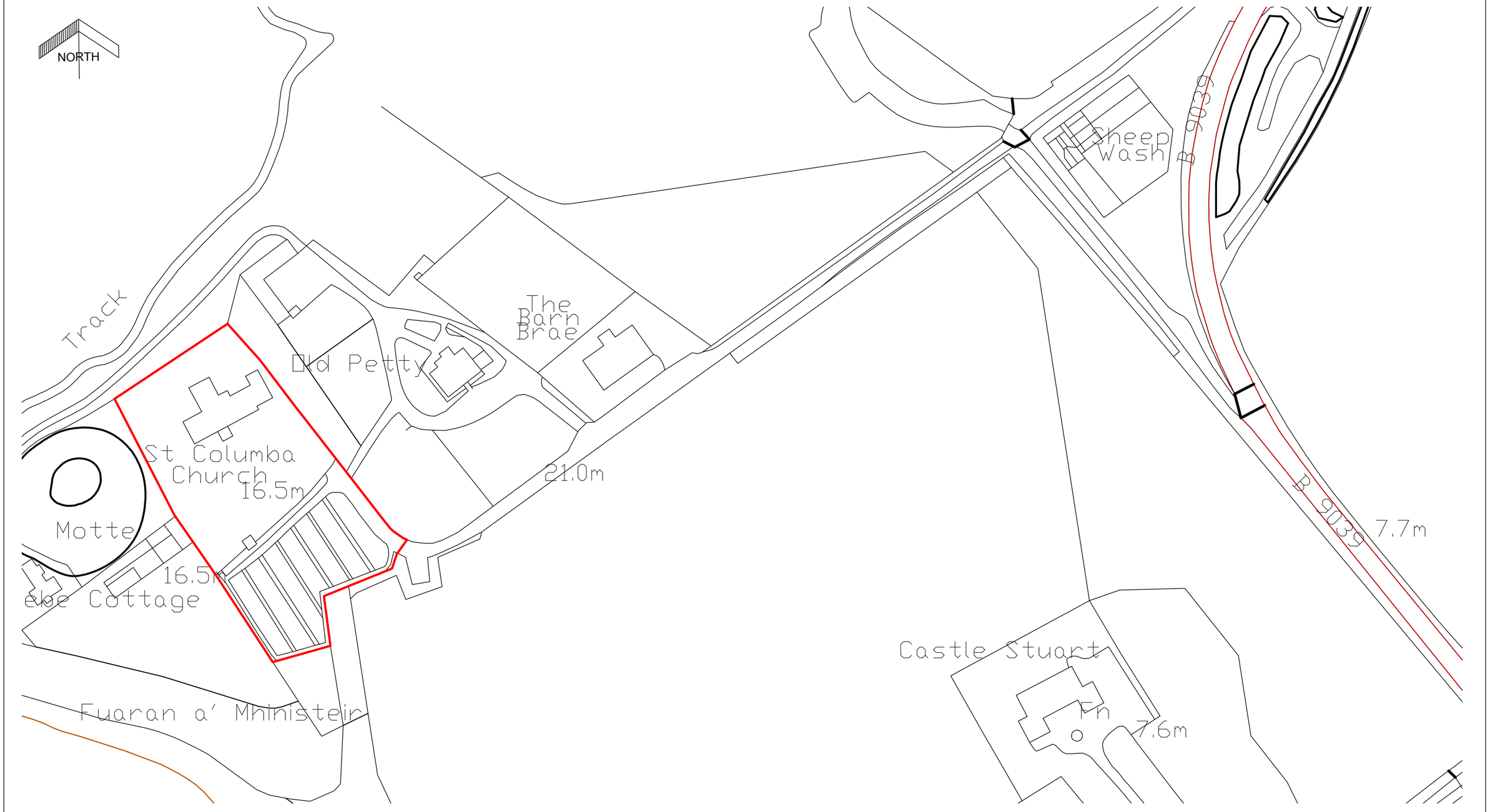

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CLIENT: Planning and Development
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PROJECT: MacIntosh Mausoleum, Petty Old Parish Church
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