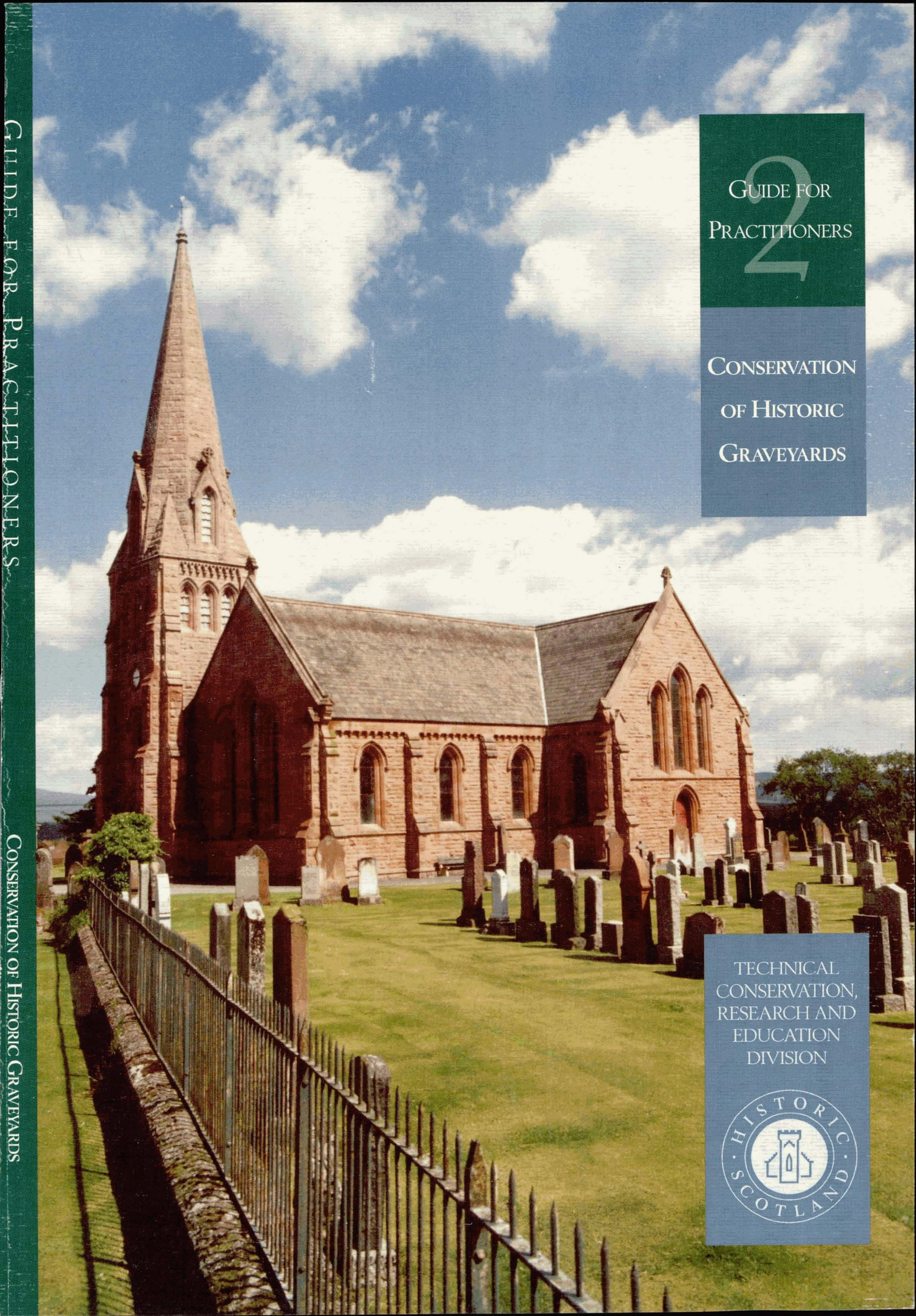


GUIDE FOR PRACTITIONERS 2

CONSERVATION OF HISTORIC GRAVEYARDS

TECHNICAL CONSERVATION, RESEARCH AND EDUCATION DIVISION

HISTORIC SCOTLAND

GUIDE FOR PRACTITIONERS 2 CONSERVATION OF HISTORIC GRAVEYARDS

GUIDE FOR

PRACTITIONERS

CONSERVATION OF HISTORIC GRAVEYARDS

by
Ingval Maxwell
Ratish Nanda
Dennis Urquhart

Published by
Historic Scotland

ISBN 1 900168 74 X

Commissioned by

TECHNICAL CONSERVATION, RESEARCH AND EDUCATION DIVISION

Authors

Ingval Maxwell joined Historic Scotland's predecessor, the Ministry of Public Buildings and Works, as an architect in 1969. Appointed as Director of Technical Conservation, Research and Education Division in 1993, he initiated various research projects addressing such topics as stone cleaning, fire loss in the built heritage and sourcing traditional building materials

He is an active member of a number of UK conservation bodies and is currently Bournemouth University's Architectural Materials Course external examiner. He has been involved in Council of Europe Panel of Experts work and has served on the European Commission "COST Action C5" programme "Urban Heritage, Building Maintenance".

Ratish Nanda is a Delhi-based architect and historic building consultant. He was employed in the Technical Conservation, Research and Education Division of Historic Scotland in 1998-99 and is currently working as a consultant to the Aga Khan Trust for Culture on a project at the World Heritage Site of Humayan's Tomb, New Delhi. He has published Delhi The Built Heritage: a Listing, a two volume publication documenting 1208 historic buildings in that city. The publication was launched by the Hon Prime Minister of India Shri Atai Behari Vajpayee in March 2000.

He graduated from the TVB School of Habitat Studies, New Delhi, in 1995 and has since completed a post-graduate MA in Conservation Studies from the Institute of Advanced Architectural Studies, University of York. Other awards include the Charles Wallace Conservation Scholarship and the Aga Khan Foundation International Scholarship.

Dennis Urquhart is a consulting building pathologist, conservation scientist and Director of Urquhart Consultancy Services Ltd. He was formerly Reader in Building Pathology and Conservation Science at the Robert Gordon University, Aberdeen, where he was also Director of the Masonry Conservation Research Group. With extensive experience in the field of conservation research he is author and co-author of numerous publications including research reports, technical advice notes and guides for practitioners on behalf of Historic Scotland. Recent work includes research into biological growths and biocide treatment of sandstone, the cleaning of sandstone and granite, the removal of graffiti from historic surfaces and the risk assessment of market crosses in Scotland. He is also a Director of the Scottish Stone Liaison Group.

Front Cover Illustration: Penpont, Dumfries and Galloway

CONTENTS

LIST OF ILLUSTRATIONS

97. Floodlighting fixtures can be a significant visual intrusion in a churchyard.

98. Graveyard extension where a hedge has been used to form the boundary.

99. An historic graveyard, whilst kept tidy has not prevented colonisation by a range of plants which have overwhelmed a mausoleum.

100. An example of damage due to uncontrolled tree growth.

101. The character and ambience of the graveyard is enhanced by the shade cast by mature trees.

102. Recently self-seeded tree will damage adjacent gravestones and should be removed.

103. This diseased tree has been felled and the stump left to rot.

104. New gravestones placed in close proximity to a hedge makes hedge cutting difficult and risks damage to the stone.

105. Fallen tree causing damage to headstones. This tree should have been carefully removed before it was allowed to collapse and cause damage to headstones.

106. Wall monument in danger of becoming obscured by ivy. The ivy will help to protect the monument from further graffiti attack but will also cause damage to the stone.

107. The dark staining on this stone is mould growth.

108. Well preserved inscription under moss on a flat gravestone.

109. Moss root penetration into delaminating sandstone headstone.

110. The risk of damage to flat gravestones from mechanical mowers running directly over the stones is well illustrated here and is not recommended.

111. Historic headstone with arris damaged by grass-cutting equipment.

112. The potential to damage these historic gravestones by careless grass cutting is clear. In such cases hand trimming around the stones is recommended.

113. Replacing grass with gravel has ruined the historic character of this burial ground.

114. Significant erosion, as a result of turf removal, has led to this memorial becoming dangerously unstable.

115. Inadequate design of the path to accommodate surface water run-off has resulted in disruption of the tarmac. In this case the use of tarmac has increased maintenance problems and is inappropriate in a graveyard setting of this type.

116. The wide tarmac road detracts from the character of the graveyard.

117. A sensitively designed maintenance-free pathway.

118. Steps formed from natural stone are becoming overgrown through lack of maintenance and may pose a danger to visitors although they integrate well in the setting.

119. Vandalised graveyard.

120. Loss of surface on a marble slab as a result of repeated graffiti removal.

121. Cleaning graffiti from the granite base of a mausoleum has not necessarily damaged the stone but has left an unsightly 'patchwork' effect.

122. Path detail in a city centre kirkyard that is used heavily by the public. The use of granite paving and edging setts is sympathetic to the graveyard environment and reduces life-cycle costs.

123. A corner of the kirkyard featured in Illustration 122. Note the sympathetic design of ancillary features for seating, litter bins and path lighting.

124. The entrance to the kirk is subject to heavy foot traffic and the flat graveslab has had to be incorporated into the paved area to improve access. Whilst the graveslab is granite there has been sufficient wear to result in a loss of inscription.

125. Baroque carved gravestone.

126. Detail of bedding of the slabs.

127. Support and lifting of a slab.

128. Slab on sand bed with textile based membrane.

129. Completed rebedding of the slab.

130. Annand Monument, Ellon, Aberdeenshire, four years after restoration.

131. Annand Monument, right panel.

132. Carved pilaster capital requiring consolidation.

133. Faichney Tomb before conservation treatment.

134. The dismantled Tomb with attached concrete backing.

135. The Tomb post conservation and relocated within the Church.

136. Fractured graveslab in the workshop prior to dowelling.

137. Monteith Mausoleum.

138. Carved detail on sandstone showing significant stone decay.

139. Interior view showing lantern windows.

140. The gravestone in the kirkyard at Colinton Parish Church, Edinburgh, assessed using the Historic Scotland Methodology.

141. Air view, Penpont, Dumfriesshire. Category B Listed Graveyard and Church.

ACKNOWLEDGEMENTS

The authors are indebted to a large number of individuals who have greatly assisted with the production of this Practitioners' Guide, particularly:

Tamara Anson-Cartwright, Ontario Ministry of Citizenship, Culture and Recreation, Toronto
Gordon Barclay, Historic Scotland, Edinburgh
Lawrence Begg, Historic Scotland, Argyll Lodgings, Stirling
Mr Bennetts, Colinton, Edinburgh
Mrs Bennetts, Colinton, Edinburgh
Dr David Breeze, Historic Scotland, Edinburgh
Lou Ann J Brood, US Army Military District Washington, USA
Marilyn Brown, RCAHMS, Edinburgh
Dr Michael Burgoyne, Historic Scotland, Edinburgh
David Craig Chalmers, Commonwealth War Graves Commission, Maidenhead
Keith Downie, Historic Scotland, Edinburgh
Richard Emerson, Historic Scotland, Edinburgh
Dr Stewart Eydmann, West Lothian Council, Linlithgow
Dr Richard Fawcett, Historic Scotland, Edinburgh
Marilyn Findlay, Historic Scotland, Edinburgh
Dr Sally Foster, Historic Scotland, Edinburgh
Stephen Gordon, Historic Scotland, Edinburgh
Jean Marie Hall, Mount Auburn Cemetery, Cambridge, Massachusetts
Kevin Hay, Historic Scotland, Edinburgh
Jackie Henrie, Edinburgh
Dr John Higgitt, The University of Edinburgh, Edinburgh
John Hume, Historic Scotland, Edinburgh
Caroline Kernan, Historic Scotland, Edinburgh
John Knight, Historic Scotland, Edinburgh
Neil Lynch, Historic Scotland, Edinburgh
Christopher McGregor, Historic Scotland, Edinburgh
Dr Aonnghus MacKechnie, Historic Scotland, Edinburgh
Neil Maclean, Dundee
Lorna Main, Stirling Council, Stirling
Denise Mattison Historic Scotland, Edinburgh
Dr Deborah Mays, Historic Scotland, Edinburgh
Jim McBrier, Stirling Council, Stirling
Kevin McLaren, RCAHMS, Edinburgh
Andrew McMillan, BGS, Edinburgh
Angus Mitchell, Greyfriars Kirkyard Trust, Edinburgh
Sarah Morris, Historic Scotland, Edinburgh
Tom Murray, The House, Edinburgh
Shaun Norman, Aberdeenshire Council, Aberdeen
John Palfreyman, The House, Edinburgh
Dr Denis Pringle, Historic Scotland, Edinburgh
Freda Reid, Historic Scotland, Edinburgh
Rev. Charles Robertson, Edinburgh
Neil Ross, Historic Scotland, Edinburgh
Jim Souness, Historic Scotland, Edinburgh
Trish Stewart, Historic Scotland, Edinburgh
Christopher Tabraham, Historic Scotland, Edinburgh
Benjamin Tindall, Edinburgh
Sebastian Tombs, RIAS, Edinburgh
Stephen Ward, SNH, Edinburgh
Mr T C Wilkinson, BACSA, London
Colin Young, Historic Scotland, Fort George
Dr Maureen Young, RGU, Aberdeen

They are also indebted to the following organisations and bodies whose published information, or support, greatly aided the drafting of the document:

Building Research Establishment, Garston
Commonwealth War Graves Commission, Maidenhead
National Association of Monumental Masons, Rugby
National Committee on Carved Stones in Scotland, Edinburgh
National Inventory of War Memorials, London
Public Monuments and Sculpture Association, London
Public Record Office of Northern Ireland, Belfast
Robert Gordon University, Aberdeen
Save Outdoor Sculpture, Washington, USA
Scottish Genealogy Society, Edinburgh
Scottish Record Office, Edinburgh
Scottish Urban Archeological Trust, Perth
The British Lichen Society, London

FOREWORD

As an honoured place for the dead, graveyards also hold a fascination for the living. Many excellent volumes have been produced on the social and historical aspect of cemeteries yet, to date, little has been prepared which addresses the practical needs for their continued well-being. Now, after 3 years work, this volume begins to look at the topic. Ingval Maxwell's practical approach is at the heart of the publication. In response to the emerging demand for a greater awareness of the issues at stake, this knowledge was initially committed to paper in 1997 to be ably developed by Ratish Nanda. The text was further expanded and enhanced by Dennis Urquhart to create this well-illustrated Practitioners' Guide.

The historic background was drafted by Dr Richard Fawcett and the Inventory of Listed Scottish Graveyards prepared by Dr Debbie Mays. Practical information on five Case Studies was compiled by Stephen Gordon, whilst Mr and Mrs F Bennetts' voluntary recording work is included as the sixth.

Although fundamentally Scottish in outlook, and predominantly using photographs from the authors' own collections, this joint approach aims to ensure an international relevance for the broad range of topics addressed.

The Guide is in 3 interlinked parts:

After a brief historical introduction, the main body of the text addresses the technical issues of appropriate conservation work on the various elements of a graveyard. Case Studies and a Checklist of Good Practice reinforce the approaches described and will be of value to all those charged with putting such work into practice.

Appendix A provides a unique inventory of historic graveyards in Scotland. This comprehensive list is distilled from the full inventory of listed buildings in Scotland. It will be of particular value to family history societies, genealogy students and the general visitor who wishes to locate these important places.

Appendices B and C combine to offer an appropriate framework upon which future conservation work might be planned and researched. Through integrating the guidelines for Conservation Plans with the Carved Stone Assessment Methodology, the Practitioners' Guide is placed firmly within the intentions of the Stirling Charter, launched in January 2000.

It is presented as a comprehensive volume which should be of practical value to all those who either have the direct responsibility for maintaining graveyards, or who have more than a cursory interest to find out more.

Ingval Maxwell, Ratish Nanda, Dennis Urquhart
Edinburgh
December 2000

SUMMARY

This Practitioners' Guide offers advice on a range of issues concerned with the conservation of graveyards that have historic and cultural significance. It is concerned with post-Reformation Scottish graveyards. Most of the gravestones and other memorials seen in Scottish graveyards today usually date from the seventeenth century onwards. These historic graveyards are of great value since much of Scotland's recent past is commemorated only on the memorials contained within them. They also contain important archaeological and historic features, not all of which may be visible. The Guide is intended to offer advice on the routine maintenance of cemeteries.

The conservation of graveyards requires a number of complex issues to be addressed. These issues range from the maintenance of the graveyard as a tranquil public space for the living and an honoured place for the dead, to the practical steps required to prevent the accelerated deterioration of stone and other memorials. It is therefore important that as many historic stones as possible are preserved in their settings for future and past generations. The Guide thus contains a number of key sections which address the factors that have greatest influence on conservation practice.

An overview of the legal issues provides information on the development of ownership and responsibility for burial grounds in Scotland and proposes criteria by which 'important' gravestones may be identified. Within this section, the implications of Listing and Scheduling of both entire graveyards and individual elements in the graveyard are explored. Issues surrounding the treatment of human remains, archaeological excavations and ancient objects uncovered within graveyards will enable people responsible for graveyards to develop appropriate policies to deal with them in a sympathetic way.

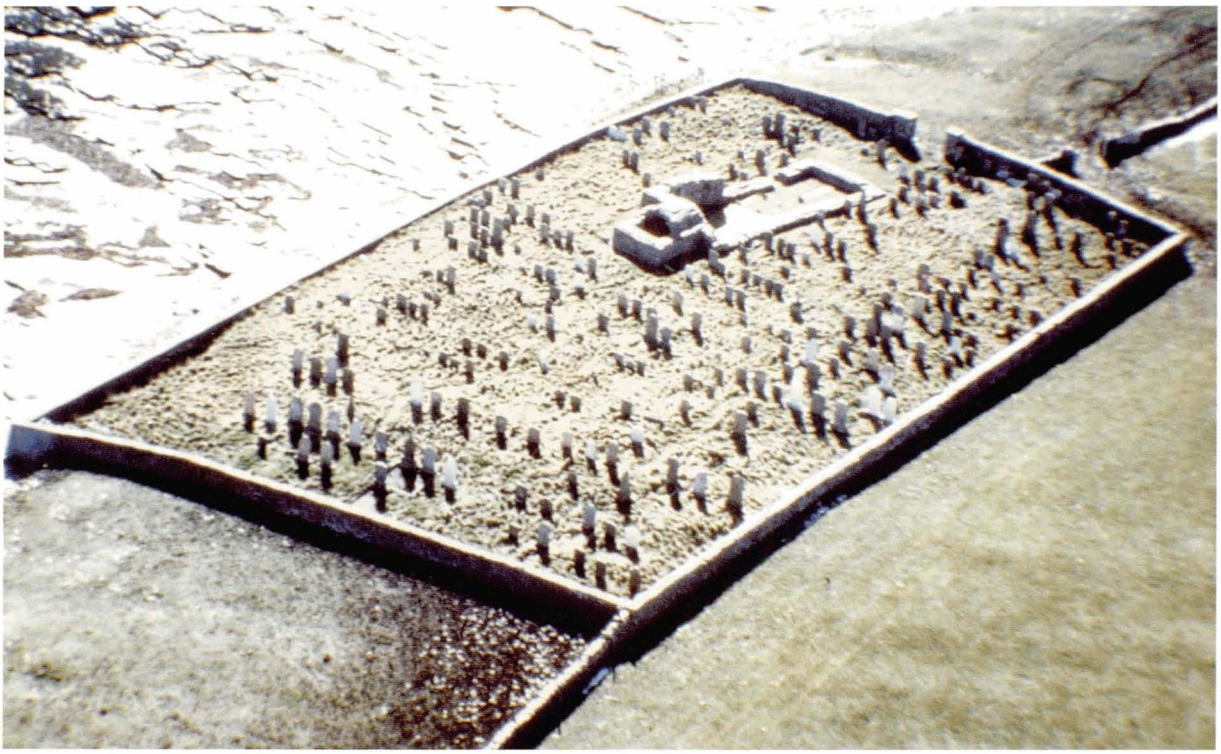
The headstone became the dominant form of memorial by the seventeenth century. While the historic value of stones from earliest times has long been recognised, the quality of gravestones and other types of memorials from the seventeenth century onwards is now increasingly recognised as of significant value. The Guide therefore provides descriptions and examples of the range of headstones, mausoleums and burial enclosures likely to be encountered. Other types of built elements, such as walls, fences and railings, morthouses and watch houses and ruins are also included.

The choice of material from which to form gravestones was influenced by factors such as durability of the stone and cost. Until the mid-nineteenth century the majority of memorials were made from local stone of sedimentary or metamorphic origin. Therefore, in Scotland, the majority of the headstones of this period were formed from sandstone. Unfortunately, many of these stones are now suffering from the effects of a variety of destructive agents. The problems arising as a result of the action of these destructive agents are discussed and the mechanisms of decay are well illustrated. This includes reference to iron memorials as well as to a range of stone and composite types.

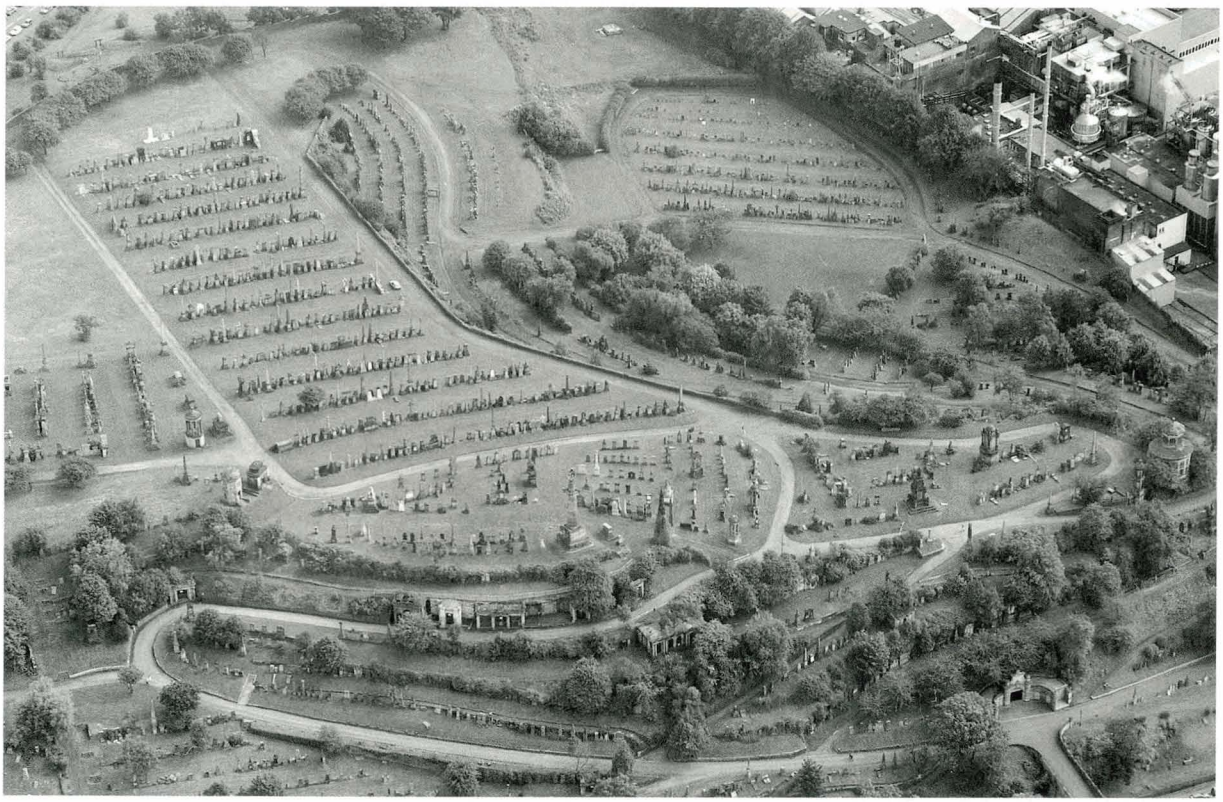
The provision of any form of protection for gravestones is comparatively complex. Often their quality is well worthy of a museum-type regime, but, with factors such as the number of monuments at risk, that level of care is not realistic to achieve. The Guide therefore provides comprehensive advice on the identification of headstones at risk, the repair of headstones and monuments, including guidance on priority for repair. It is important to compile full and accurate documentation while the stones still survive. This documentation should include a detailed inventory. To assist in this task a comprehensive recording form is provided on which details of individual gravestones can be recorded, together with an assessment of its condition and details of any intervention undertaken. The form is designed so that most of the information can be recorded using 'tick boxes' that guide the user through a structured methodology. As part of the documentation process information is provided on the need to prepare suitable conservation and management plans.

Many historic graveyards are important sites for flora and fauna. Whilst graveyards should not be allowed to become overwhelmed by vegetation they can, where appropriate, be minimally and selectively maintained to provide the best natural habitats for indigenous flora and fauna. Advice is given on how to deal best with trees and hedges, ivy, micro-organisms and burrowing animals. Micro-organisms such as algae, lichens and mosses are ubiquitous on gravestones and comprehensive advice is given on these growths.

Six different case studies illustrate some examples of good practice. This is further expanded by a checklist of good practice.



1. Aerial views of churchyards showing the arrangement of the gravestones.
1(a) Medieval graveyard, Orkney: All stones face East in an ordered fashion



1(b) Glasgow Necropolis, informal Victorian landscaped design (Copyright RCAHMS)

1 INTRODUCTION

1 INTRODUCTION

People have been commemorating their dead since time immemorial. This commemoration has taken different forms for people of different civilisations, and, indeed, at different time periods for each culture. The commemorative monuments range from Neolithic cairns, burial mounds, the Egyptian pyramids and the monumental Roman and Islamic tombs to relatively simple headstones, wall memorials and graveslabs. The earliest surviving architectural remains in almost any culture are remains of memorials to the dead and these can often shed light on the lifestyles of humans, many dating from prehistoric times.

Graveyards have developed from relatively random arrangements of east facing gravestones in older graveyards, to the highly formalised, planned layout of lairs, paths, roads and landscaping of modern cemeteries.

1.1 Post-Reformation Graveyards

This Guide for Practitioners is concerned primarily with post-Reformation Scottish graveyards, although many will be earlier in origin. Gravestones and other memorials seen in Scottish graveyards today usually date from the seventeenth century onwards.

These historic graveyards are of great value since much of Scotland's recent past is commemorated only on the memorials contained within them. Pre-Reformation tombs and memorials were built inside churches. Such tombs were built only for the higher classes such as the nobility and the clergy. Post-Reformation beliefs meant that common folk began to aspire to memorials of their own, and the rise of a prosperous middle class of merchants, farmers and skilled craftsmen meant that many could convert these aspirations into reality.

1(c) Western Cemetery, Arbroath, formalised Victorian grid-iron plan (Copyright RCAHMS)

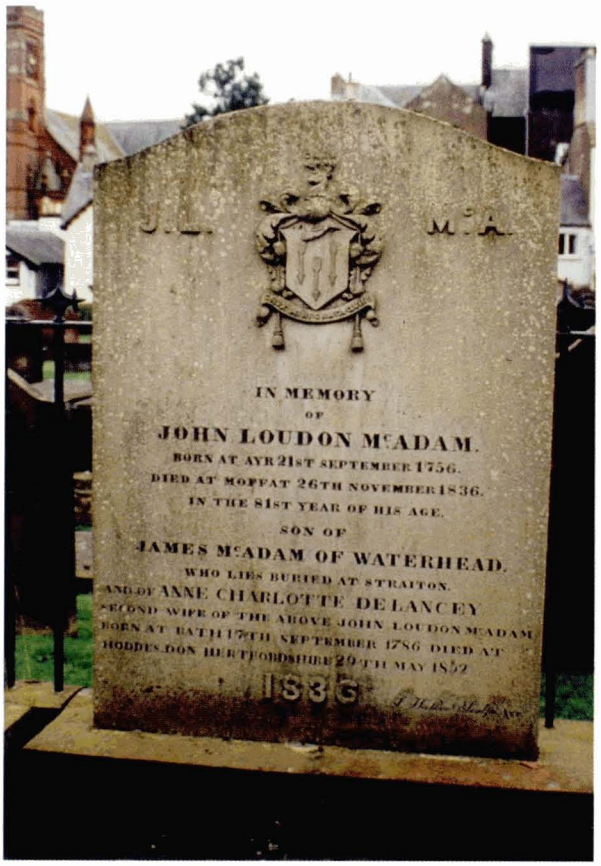
2. Kirkyard, Cromarty Old Church, Ross and Cromarty

Every historic kirkyard (defined here as a burial ground round a church) has evolved to its present form by processes of growth which can potentially be reconstructed by a study of the age and position of graves, the shape of the enclosure, and the relationship of kirkyard to kirk. Some are very early foundations with a long history of church building and burial. Large family vaults, for example, express the dominant role that the family played in community life. The kirkyard may also be one of the most visible records of local tragedies, causes of death, or the shortness of lives, so providing a more telling account of earlier social conditions than any text book. Thus, kirkyards can provide a microcosm of the history of a parish and a fascinating description of life in Scotland over more than three centuries.

As populations increased, space in the kirkyards ran out and by the mid-eighteenth century there was a severe problem in towns. While many kirkyards were repeatedly enlarged to accommodate the growing number of burials, land pressures also led to the formation of urban cemeteries. The Cemeteries Clauses Act, 1847 authorised the setting up of private cemeteries. In the decade following the Act at least six cemeteries opened in Edinburgh. The cemetery movement gathered pace in the beginning of the nineteenth century when cemeteries such as the Glasgow Necropolis were built on the lines of Père Lachaise cemetery in Paris. These new cemeteries, usually sited on the periphery of towns, were designed landscapes, laid out in a formal or irregular design of paths and drives, often divided into denominational sections. From the outset, they were designed as places to visit and stroll in.

3(a). Gravestones as a record of personal tragedy

3(b). bravery (Lieut. Col. Morrison) Penpont



3(c). the famous (John McAdam inventor of tarmacadam) Moffat

The success of the Necropolis and other such cemeteries depended to a great extent on finance: plots for burial were offered for sale in perpetuity. This method of purchasing permanent ownership ensured that individual graves and memorials would remain undisturbed, as would the larger groupings of families or of people of similar social rank. Thus, even though permanent ownership was expensive, relatives could spend money on memorials that would not be removed in time and this was reflected in the architectural ingenuity and sculptural quality of Victorian funerary art. Some of the best architects and artists were commissioned to build memorials and mausoleums, and these works have permanent value as fine art and architecture, such as the mausoleum for David Hume designed by Robert Adam, (Illus 5).

Compared with earlier grave memorials, gravestones in use today are highly standardised in order to ensure easy maintenance and reasonable cost.

Historic graveyards are of value for many different, sometimes conflicting, reasons. Among these are:

- The history of a church and its graveyard is of value to archaeologists and others interested in the development, through time, of religious beliefs and changing attitudes to death, burial and remembrance. The authenticity of the monuments, the setting of the stones and the original location are therefore important;
- Inscriptions on gravestones provide precisely dated evidence of stone decay and deterioration. Dated stones are a valuable source of information to researchers of many disciplines and are, in effect, an open-air laboratory;
- Often remains of buildings no longer extant and of missing memorials can be traced if the setting of a graveyard has not been altered;
- Gravestones are often the only documents of the lives of ordinary people; they reflect the community around each kirkyard in different ways and in different times. The inscriptions on the stones often tell us not only the names and dates of the individuals buried, but also their occupations, important personal traits, and names of relatives. The inscriptions or epitaphs therefore are of prime value to genealogical societies, local historians, and to descendants of the people in whose memory the gravestones were erected. Gravestones of notable people can often lead to strong associational value with a place;
- The study of inscriptions on gravestones has in the past been used to determine child mortality rates, family sizes, occupations and contemporary habits and fashions in an area. The gravestones and their inscriptions can offer fascinating insights into

4. The Necropolis, Glasgow

changing attitudes to death, burial and remembrance over recent centuries;

- The design and style of the gravestones are of interest to art historians;
- Historic graveyards can sometimes be of environmental value as a refuge for wildlife, with birds and plants eliminated from the countryside due to agricultural practices making their homes within them.

There is no 'typical' graveyard as gravestones differ in material, craftsmanship and style in each region of Scotland. What is typical of almost all graveyards is that the memorials, intended for perpetuity, are in peril. Their illusion of permanence is deceptive. Neglect, vandalism, exposure to the ravages of the Scottish climate, pollution and development schemes are slowly eroding our memorials, so diminishing our cultural heritage. Also, in the past, many graveyards were subjected to clearance schemes where either the entire graveyard was converted to a more easily maintained space or many stones were removed, leaving only a few 'typical' stones. A related leaflet, *'The Carved Stones of Scotland - A guide to helping in their protection'* is available from Historic Scotland.

The conservation and maintenance of graveyards is a complex issue. As tranquil spaces, graveyards provide both a public space for the living and an honoured place for the dead. Much of their distinctiveness results from the way in which the gravestones are set out within the enclosure. The way in which they begin to lean and settle in their location greatly adds to their allure, although this can create safety issues. Retaining the historic character of graveyards while at the same time maintaining them effectively is a difficult balance to achieve. Issues of public health and safety, for example prevention of risk of injury from unstable stones, must be balanced against imposing an over-regimented layout of straightened stones. Extreme tidiness must be balanced against supporting our natural heritage by providing a refuge for plant, animal and bird life. The fact that each stone is in the permanent ownership of the family which has the burial lair adds to the complexity. Reaching a balance might not be an easy task, but, once achieved, it will prove very satisfying.

It is important that as many historic stones as possible are preserved in their settings for future generations. Without them the nation's history can never be fully documented. The rural kirkyard, burial ground or urban cemetery can and should play a crucial role in embodying the specific and unique memory and history of a place. We need to conserve and even enhance the character of these valuable spaces within the rural landscape or urban setting. We should be grateful that we have inherited so many fine works of art in our historic graveyards and that these documents in stone have been preserved for us to enjoy and learn from.

When dealing with historic graveyards it is important to recognise the broad principles of conservation as they relate to the built heritage in Scotland. These principles are set out in *The Stirling Charter* published by Historic Scotland (2000).

5. Mausoleum for David Hume (d.1778) designed by Robert Adam, Edinburgh

1.2 Medieval Burial Grounds

For those who could afford the high costs involved, in the Middle Ages the most prestigious place of burial was always within a church, and close to an altar where prayers could be offered for the deceased's soul in perpetuity. The splendid canopied tombs still clustered around the sites of altars at Elgin cathedral, for example, mark the burials of bishops and local magnates. Sometimes a special church or chapel might even be built as the burial place for the founder's family, to which colleges of priests could be attached to offer prayers; these might be within the churchyard of the parish church, as was the case at Maybole. However, for the vast majority of people their last resting place was the ground around the place at which they had worshipped in life.

Even before churches were being built in large numbers, Christians had preferred to be buried close to some symbol of their faith. At Kirkliston, near Edinburgh, a cemetery was found around the sixth-century Catstane, and in the eighth and ninth centuries it is very likely that high crosses, like those at St Vigeans in the east and Iona in the west, were being erected to mark both preaching places and burial grounds. At what stage individual markers for graves were introduced is less certain, though they must always have been most common over the graves of the great and the good. By the tenth century it seems likely that the large numbers of rather mechanically carved cross slabs seen at St Andrews, for example, were marking graves of members of the community. At the same time, hog-backed stones, with curved double-pitched tops carved in imitation of tiled roofs, were being found in areas open to Norse influence, and there is a fine Lowland example at Inchcolm (Illus 6).

As places set apart for burial, graveyards naturally tended to be enclosed by walls, even perhaps before the coming of Christianity, and by the eighth century it was probably expected that such enclosing walls would be built, usually to a rounded plan, or following the natural contours of the site. Christians preferred to be buried with their feet towards the east, and this makes it possible to see that some Early Christian burial grounds were in fact on the site of pre-existing burial places. At St Ninian's Point on Bute early non-Christian burials were aligned from north to south, while the later Christian burials were orientated east to west.

In the later Middle Ages, most graveyards were around churches, and burial rights were strictly defended by those churches because of the income they generated. By the thirteenth century it was specified that churchyards had to be enclosed and protected from animals at the cost of the parishioners, and it had to be stipulated that wrestling matches, sports, dances and lascivious games were expressly forbidden. Reportedly in 1282 the priest of Inverkeithing had indulged in abominable obscenities within his churchyard during the Easter season and, although this was certainly exceptional, it makes such regulations more understandable.

Since a high proportion of medieval churchyards remained in use over a period of many centuries - and many continue in use today – few burials can have remained long undisturbed, and as a result relatively few graveyard memorials have come down to us. Nevertheless, we do know something of the range of types that once existed. Some of the more prestigious earlier types of memorial have already been mentioned, such as the high cross, the cross slab and the hog-backed stone. But for most burials, the occupant would have been fortunate to have his position marked by a rough headstone and perhaps a footstone as well, and once these had been disturbed their origin would have been by no means clear.

For our understanding of the range of types employed in the later Middle Ages we can look to some of the examples still preserved within churches. High-relief carved effigies were probably never common for external burials, and incised brasses would have been entirely inappropriate. Complex tomb chests are also unlikely to have been made in large numbers for external situations and, though it is true that a highly enriched twelfth century stone coffin with arcaded sides survives at Dalmeny Church, it is perhaps most likely that this was originally made for an internal situation (Illus 12b).

Among the types that were probably most common in churchyards were coped stones, such as those seen at Cambuskenneth Abbey, in which the grave was covered by a long stone of polygonal section, possibly with its angles emphasised by mouldings, and perhaps with a carving of a cross or a symbol of the deceased's trade or calling. Heavily weathered coped stones are to be seen in the churchyard at Dunning. Many graves would have been covered by flat ledger slabs incised with a cross and with symbols appropriate to the commemorated individual. The richest range of surviving examples is found in the Western Highlands, with important displays of them at Kilmory and Keills, for example, where the local taste for revived interlace and foliage trails is particularly evident.

6. Hog-backed stone, Medieval burial ground, Inchcolm Abbey

1.3 Chronological Development of Burial Grounds and Gravestones

The following series of illustrations help to provide an understanding of the way in which graveyards have developed. The burial ground shown in Illustration 1a is not formalised, but neither is it a totally random distribution of graves as it shows a linear alignment of stones oriented towards the east. This contrasts with the highly formalised layout of paths and gravestones in nineteenth and twentieth century graveyards (Illustrations 7, 8 and 9 and 10). Most post-Reformation graveyards will contain gravestones of varying ages as shown in Illustration 11. This mix of styles adds to the complexity and character of the graveyard.

The changes in design and complexity of gravestones are well defined in Illustrations 12(a) to (d). The gravestones range from the early-Christian period slabs carved from crudely shaped stones to the very formal designs of the nineteenth-century.

7. Eighteenth century graveyard which shows the move towards standardised designs for headstones and for their continued alignment to the East Penpont

8. A range of nineteenth century monuments in Glasgow Necropolis set out back-to-back in rows

9. A formal nineteenth century landscaped cemetery, Stirling

10. Modern granite memorials of imported stone, Penpont

11. Sandstone gravestones dating from early eighteenth to nineteenth centuries. Note the uniformity of sandstone types, despite the chronological differences, indicating that local stone was most likely used

12(a) Christian/Pictish

12(a), (b), (c), (d). A wider range of early gravestone styles can be found in cemeteries dating from early Christian/Pictish to early eighteenth century

12(b) Dalmeny, Romanesque

12(c) Kilmory Knap Chapel, Medieval

12(d) Logierait, eighteenth century and later

2 LEGISLATION

2.1 Ownership and Responsibility

The ownership and responsibilities of maintenance of graveyards is a complex issue. The Burial Grounds (Scotland) Act 1855 is the principal legislation concerning burial grounds. This Act has been followed by other Acts of Parliament that have amended or enhanced it. (Appendix D gives a list of legislation which affects Scottish Burial grounds.)

As regards kirkyards, the Church of Scotland (Property and Endowments) Act 1925 provided for ownership of all churches in use by the Church of Scotland to be passed from the heritors of the parish to the General Trustees. Meanwhile, responsibility for the upkeep of all burial grounds attached to churches and still in use was transferred to local authorities, except where an individual could lay claim to a particular structure or monument. Thus the maintenance of kirkyards is now the responsibility of the local authority but the memorial stones remain the responsibility of the family.

The number of graveyards in the care of a local authority can range from a few to over a hundred and the department responsible for maintenance of graveyards can vary from the Department of External Environment to Leisure and Cultural Services or Technical Services. Often the department with responsibility for graveyard maintenance is also responsible for the care of playing fields and landscapes. Local authority graveyard maintenance should be regarded as curatorship and be governed by a sensitive conservation policy (refer to chapter 5). In the absence of a such a policy, most local authorities carry out only the minimum requirements of grass cutting, the laying flat of monuments in danger of falling, or stacking of the broken remains of monuments. Collapsed stones are sometimes removed to the periphery of the graveyard.

The private cemeteries, which were established under the provisions of the Cemeteries Clauses Act 1847, have meanwhile either continued to be owned and managed by private companies and their successor trusts or, in some cases, been transferred into the care of local authorities. Section sixteen of the 1847 Act required the 'company' to '*...keep the Cemetery and the Buildings and Fences thereof in complete repair and in good Order and Condition, out of the monies to be received by them...*'.

However, local authorities and cemetery companies have no legal responsibility to maintain individual gravestones which are in the ownership of the lairholder. Section 46 of the Cemeteries Clauses Act 1847 (which was incorporated into the Burial Grounds [Scotland] Act 1855) states that '*The exclusive right of burial in any such place of burial shall, whether granted in perpetuity or for a limited time, be considered as the personnel estate of the Grantee, and may be assigned in his lifetime or bequeathed by his will*'. A gravestone, since it is attached to a lair, can have the legal status of a 'fixture', something which has lost its independent moveable status due to its attachment to heritable property.

As burial lairs and associated gravestones are in the ownership of the lairholder, it is often the case that kirkyards contain historically important stones for which either there are no known living descendants or descendants, if any, cannot be traced. In cases where an important gravestone is in a state of serious decay and in urgent need of conservation, or requires to be relocated, every effort should be made to trace descendants via public notices. However, important gravestones should not be allowed to continue to deteriorate if no 'owner' is found. Perhaps the key question in this respect is the identification of an 'important' gravestone.

An important gravestone may be described as one which:

- Is listed or scheduled;
- Commemorates a person of recognised importance;
- Is a prominent feature in the graveyard;
- Is unique to that graveyard, for example in period, material, construction or design;
- Contains significant carved detail or lettering;
- Is one of the oldest in the locality;
- Is one of an historic group of headstones;
- Records a significant local event;
- Is otherwise unusual or representative.

The above points should be related to the graveyard in question as 'importance' may vary from one graveyard to another.

In graveyards now closed for burial and therefore no longer classed as public cemeteries, private ownership of a burial lair may mean that a new burial could be permitted. In cases where a right of burial has been proved, the archaeological implications of ground disturbance should be studied (see 2.3 and 2.6) and care taken to ensure that a new headstone does not disturb the appearance of the site. A modern granite headstone amongst older sandstone memorials, for example, would detract from the historic character of the entire burial ground.

There are important health and safety issues to be addressed by those charged with the maintenance of graveyards but this is outside the scope of this technical publication.

2.2 Listing

The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 requires the Scottish Ministers to compile lists of buildings of special architectural or historic interest. The administration of both local and national conservation policies is based on these lists. A 'listed building' is any building included in such a list. Any object or structure which is fixed to a listed building, or which falls within the curtilage of such a building and, although not fixed to the building, has formed part of the land since before 1 July 1948, is treated as part of the building. Gravestones are not listed individually unless they are of exceptional importance, or large architectural monuments, or mausoleums which can be considered to be buildings, or monuments attached to boundary, terrace or division walls. However, many kirkyards and cemeteries are listed as a whole either because they are of historic value or because they are associated with a listed building such as an adjacent kirk. A comprehensive listing resurvey is currently taking place. (See Appendix A for listed mausoleaums, kirkyards and cemeteries as at June 2000.)

Local authority permission is required to alter a listed building in any way which would affect its character as a building of special architectural or historic interest. This permission is known as Listed Building Consent The aim is to protect the character of the built heritage and to guard against unnecessary loss or damage. Listing therefore can be beneficial in preventing undesirable development. Listing, however, provides no statutory protection for the remains of any historic structure which survive below-ground in kirkyards.

In many cases it may not be immediately apparent that a kirkyard is listed therefore it is important to check with the relevant department in the local planning authority if Listed Building Consent is required for any work being considered. Church buildings in use for ecclesiastical purposes were exempt from the affect of listed building control until 1 January 1999. At present, a pilot scheme running over three years will assess the affect of applying listed building control to certain works proposed to the exterior of churches in ecclesiastical use. Kirkyards, however, have never been covered by ecclesiastical exemption and continue to be under the purview of listed building control. For more comprehensive information on the process of listing and its subsequent effects refer to *Scotland's Listed Buildings – A Guide for Owners and Occupiers* and the *Memorandum of Guidance on Listed Buildings and Conservation Areas* (1998), both published by Historic Scotland.

2.3 Scheduling

Under this Act, redundant churches, chapels, graveyards and individual burial monuments may be scheduled in any combination. Although a building still in ecclesiastical use may not be scheduled, scheduling may still be applied to any portion of the site not in ecclesiastical use, including the archaeological layers beneath the building itself (which may include burials and structural remains). Early medieval and medieval burial monuments are likely to be scheduled in their own right, but later gravestones are less likely to be of 'national importance'. Scheduling applies to the monument together with the land on which it lies. Moving a burial monument therefore will reduce its importance dramatically. Like listing, scheduling is an ongoing process.

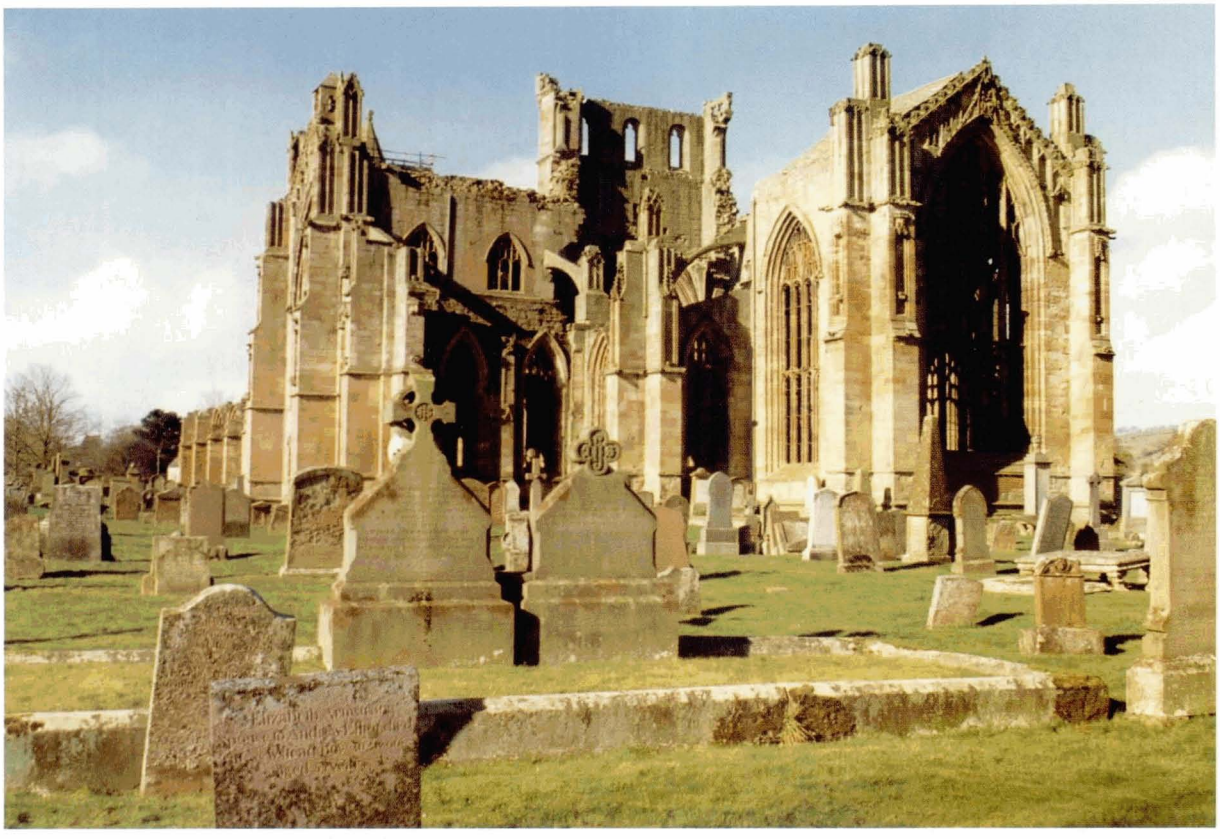
Any work to a scheduled monument, including excavation, requires the prior written consent, known as Scheduled Monument Consent, of the Scottish Ministers. This is obtained through Historic Scotland. Where a building is both listed and scheduled the provisions of scheduling take precedence.

Burial grounds that are within the curtilage of a scheduled monument are themselves scheduled. As shown in Illus 13, the burial ground adjacent to Melrose Abbey serves to illustrate this point.

Further information is contained in *'Scheduled Ancient Monuments - A Guide for Owners, Occupiers and Land Managers'* published by Historic Scotland.

2.4 Inventory of Historic Gardens and Designed Landscapes

Cemeteries, which are usually designed landscapes, may also be designated for their landscape value. An *Inventory of Gardens and Designed Landscapes in Scotland* was published in 1987 as a joint exercise between Historic Scotland and Scottish Natural Heritage. This provides a representative sample of 275 historic gardens and designed or ornamental landscapes in Scotland as a basis for research and



13. Melrose Abbey and adjacent burial ground

future policy formulation. It has been estimated that as many as 2,000 sites in Scotland may have been significant gardens or designed landscapes at some time in the past.

Sites are assessed for their historic, architectural or archaeological value, value as works of art, horticultural, arboricultural or sylvicultural value, nature conservation value, and scenic value. Apart from being included for their own value, cemeteries can be included in the *Inventory* because of the added value they lend to the wider surrounding areas and the setting they provide for important listed buildings.

More sites are currently being surveyed in a joint project between Historic Scotland and Scottish Natural Heritage with a view to extending the *Inventory* into a comprehensive list of the most important sites. Several significant cemeteries will be included in the extended *Inventory*.

Though the designation is non-statutory, sites listed in the *Inventory* will be subject to the statutory consultation provisions of the General Development Procedure (Scotland) Order 1992. Planning authorities are obliged to consult Scottish Natural Heritage and Historic Scotland in respect of any development within the boundary of an *Inventory* site. Management of the cemeteries included in the *Inventory* will require to ensure that existing plantings are not removed for ease of maintenance and that any new planting maintains the historic interest or value of a site, and does not destroy significant ground features. This should be borne in mind by planning authorities in maintenance regimes. The historic character of cemeteries can be disfigured by factors such as inconsiderate formation of new pathways, relocating gravestones, and felling of trees.

2.5 Human Remains

From time immemorial burial sites have possessed immense religious and mythical significance. They form a link between present and past generations. Graveyards therefore can arouse strong emotive responses.

The issues which surround the treatment of human remains are not easy to consider; they touch not only on professional, but also on public and personal sensitivities. In order to set a framework for the manner in which human remains are to be treated in archaeological work managed by Historic Scotland, an Operational Policy Paper on *The Treatment of Human Remains in Archaeology* was published in 1997.

Under Scottish law, all human remains have 'the right of sepulchre' and to violate a grave deliberately is a criminal act. While it is not, in every case, an offence to disturb or disinter human remains, the right of

14. The Dean Cemetery, Edinburgh, which is based on an earlier landscaped garden, is an example of a cemetery listed in the Inventory

sepulchre is strongly defended under the law and an offence is considered to have been committed if the treatment of human remains is deemed to have offended public decency. If any graves are accidentally uncovered due to erosion caused by natural elements, such cases should be reported to the police.

Exceptions to the general rule include cases where those responsible for management of a public burial ground are compelled to disturb the grave from considerations of necessity or expediency. Under such circumstances, a warrant from a court should be obtained. Advice should be sought from the local authority archaeologist or Historic Scotland as to whether archaeological monitoring of excavations is required, followed by reburial. It must also be remembered, that the Church of Scotland (Property and Endowments) Act 1925 when transferring the care of kirkyards to the local authorities, stressed, *'...provided that due regard and respect shall be had by the parish council to the memory of the dead and the wishes of their relatives before any ground already allocated as a burial ground shall be treated as being vacant and unoccupied ground and re-allocated by the parish council as the burial place for another family or for the interment of another family....'*

2.6 Archaeological Remains

Kirkyards (and for that matter, other burial grounds), can possess as much archaeological interest as the kirks. From an archaeological viewpoint, gravestones can be considered as the top layer of the graveyard. These are of added interest due to the inscriptions which help in easily dating this 'top layer' of archaeology. As such, gravestones are of greatest value to archaeologists if they are still surviving in their original positions and to an extent, even if only a record of their original position is available.

In older graveyards, upstanding remains of earlier structures may have to be contended with. These are mainly liable to consist of foundations, although valuable grave markers and stones might also be uncovered. Should such remains be unearthed unexpectedly, the advice of the local authority archaeologist should be obtained at the earliest opportunity. Unnecessary excavation in graveyards would be out of place, given the certainty of disturbing numerous graves of all periods at all depths.

Where gravestones concealed below grass and paths are uncovered, these should be recorded and have their condition assessed. Usually they should then be returfed to prevent an accelerated rate of decay. If left exposed, they should be monitored closely. Discoveries of important gravestones should be reported at the earliest opportunity to the local authority archaeologist who may wish to record them.

Kirkyards often contain the buried remains of earlier churches or other buildings. These may be encountered in any ground disturbance. New drainage trenches or foundations for new walls can reveal such remains. Any excavations for building work, therefore, should be carefully planned and subsequently supervised by an archaeologist. Any excavations planned on a scheduled site will require prior Scheduled Monument Consent (see 2.3 above). In cases where a site is not scheduled and works are not being grant-aided by Historic Scotland responsibility for advice lies with the local authority archaeologists.

2.7 Ancient Objects

Any ancient objects discovered within graveyards fall into the category of abandoned goods. Under Scottish law, ownership of such objects rests with the Crown. The Crown does not always exercise its claim, but all objects found should be reported to the police, who will then notify a museum or an official who will act on behalf of the Crown. For further advice, the Crown Office publishes a leaflet titled *Treasure Trove in Scotland. Guidelines for Fieldworkers*, available from the Treasure Trove Advisory Panel Secretariat, c/o Archaeology Department, National Museum of Scotland.

In graveyards that are in the ownership or under the guardianship of a local authority, the use of metal detectors without written permission is a criminal offence. The same is true for scheduled ancient monuments. It is also an offence to remove from such a monument any object of archaeological or historic interest found using a detector, and any unauthorised disturbance of ground may lead to prosecution.

15. War graves in Dyce Old Church Cemetery, Aberdeen. This part of the cemetery contains the graves of allied airmen from many countries. It also contains the graves of German airmen

2.8 Commonwealth War Graves Commission

There are a number of graveyards in Scotland which contain war graves for servicemen and women who lost their lives in conflicts dating from World War 1. The headstones may be grouped within an area in the graveyard, as shown in Illustration 15, or there may be a solitary headstone. Also to be found are graves of servicemen who died before World War 1 and whose graves are marked by headstones that are different in design (Illus 16) from the Commission's later standardised design (Illus 17).

In these circumstances the graves are maintained by the local authority, on behalf of the Commonwealth War Graves Commission. The Commission requires the graves to be maintained to a very high standard and issues detailed specifications for this purpose. The Commission places great emphasis on maintaining the legibility of the inscriptions and as such the authenticity of the original stone is subservient.

16. A precast concrete headstone to mark the grave of a pre-World War 1 sailor at Cromarty, Ross and Cromarty

17. A standard granite Commonwealth War Graves Commission headstone

3 TYPES OF MEMORIALS

3.1 Types of Gravestones

On sites which have been in continuous ecclesiastical use from early times, there is a high possibility of finding a wide range and period of gravestones, leading to an increased historic interest.

Pictish and early-medieval sculptured stones, dating from the sixth century, can still occasionally be found exposed to the elements in country graveyards. Of all exposed stones, this group is most likely to have a form of legal protection. However, new discoveries continue to be made and some are particularly vulnerable, for example recumbent stones. Between the twelfth and mid-sixteenth centuries, numerous tombs and memorials, varying from simple carved slabs to complex canopied tombs, were erected. Clear regional variations in the design of memorials began to be developed in the middle ages.

Medieval stone coffins interred within the kirk were covered by flat grave covers which were usually flush with the ground. Some grave covers with moulded edges, however, stood proud of the floor. These led to the development of chest tombs. Such tombs, crypts and burial vaults gradually filled all available space within the kirks.

Post-Reformation gravestones were erected in the kirkyards. These now form the largest group of post-medieval carved stones. Like the memorials within the kirks, here too, the earliest gravestones tend to be flat slabs laid flush with the ground. Table tombs and tomb chests soon developed. Most of these have now suffered subsidence, erosion or vandalism, and in many graveyards only the top slabs remain, giving them the appearance of flat graveslabs. All of these might have complex architectural decoration, reminders of death, trade symbols and detailed inscriptions. They serve also to illustrate the evolution of local styles as individual carvers worked out their own favourite designs, lending many of these stones an added interest.

The headstone became a dominant form of memorial by the seventeenth century. Headstones often had attachments such as footstones and kerbstones. Most of these elements, together with any enclosure railings, have disappeared over time, either broken and decayed, cleared away as part of tidying up schemes or removed as cast iron scrap for the war effort in the 1940s.

While the historic value of stones from the earliest period has long been well recognised, the quality of gravestones from the sixteenth century onwards is now increasingly being recognised as of significant value. Their heavily carved style is distinctive and of artistic and cultural value. Many Victorian memorials, are significant, elaborate architectural compositions. It is expected that the artistic quality and the value of the inscriptions and lettering of this range of stones are also in need of similar degrees of protection to their Pictish and early-medieval counterparts.

Many different forms and styles of gravestones adorn the kirkyards and cemeteries of Scotland. Though the evolution of styles can be charted, many of these styles continued to be used in parallel. Regional variations also meant that styles no longer used in one region continued to be used elsewhere. Some of the main styles are described briefly below. A detailed description of these and other styles can be found in *Understanding Scottish Graveyards* by Betty Willsher, published by the Council of British Archaeology Scotland (now the Council of Scottish Archaeology). There will, however, always be gravestones that do not fit into any classification. Illustration 18 is one such example.

18. Example of a sarcophagus which made a revival as memorials during Victorian times

19. Medieval stone coffin, St Andrews Cathedral

3.1.1 Stone Coffins

Stone coffins, also known as a sarcophagus, usually carved out of a single block of stone, were used for medieval burials. The thickness of the sides and bottom varied from 10 to 15 cm. Such coffins tended to assume the profile of the body. Coffins, uncovered in the course of time, can occasionally be visible on the ground. These usually have a small opening in the bottom to allow easy drainage of water and it should be ensured that any such opening is kept clear of debris as water collecting in the coffin will cause rapid erosion. Occasionally, as shown in Illustration 19, medieval stone coffins can become completely exposed through the passage of time.

3.1.2 Flat or Recumbent Graveslabs

Flat graveslabs or recumbent graveslabs laid directly on to the ground have been in use since early-medieval times. These stones can be well carved, often engraved with heraldry. Regional variations of form and material occur in different parts of Scotland. Some have tapering edges and, in effect, have five faces of stone and are known as coped stones.

Frequently, flat graveslabs are the top slabs from table stones that have lost their supporting structures. They have been placed on the ground because of the cost and effort involved in rebuilding the supports.

Many such graveslabs, as a result of their sinking and accumulation of soil, probably lie turfed over in Scottish graveyards. The turf often acts as a protective layer against exposure to the elements, therefore any stones that are unearthed should be recorded and then re-turfed. Care must be taken to avoid damage during grass-cutting and other maintenance works.

3.1.3 Box Tombs

Box tombs are inspired by the tombs from within the kirks. Though the kirkyard counterparts usually do not have sculptured effigies, they closely resemble the bases of the medieval tombs within the kirks with all faces ornamented with carvings. Constructed of five stone slabs, box tombs generally rely on recessed 'woodworking' joint techniques to keep the pieces locked together. The top slab may also be recessed on its underside so that it fits snugly into the space created by the uprights. The end portions may stand proud and be made to look like pilasters or supports. As box tombs are now rare, particular care should be taken to ensure that they remain undamaged and protected.

20. A box tomb with decorative panel

3.1.4 Tablestones

Tablestones comprising a large flat slab raised on two, four or six legs can be quite elaborate. The inscriptions and heavily worked heraldic and other modelling are engraved into the flat slab. Modelled symbols often adorn the supporting legs, which can be worked in the form of balusters with architectural detailing. Occasionally, the spaces between the legs are closed by carved stone panels. Tablestones (Illus 21) should not be confused with box tombs.

21. Tablestones form a prominent feature of this graveyard

Depressions in the carvings on the horizontal face also create localised reservoirs that hold water, thereby creating local patches of erosion and moss growth. Other than a judicious readjustment of the slab to incline the horizontal, which should only be done under the supervision of a conservation professional, little can be done to alleviate this problem.

Due to the nature of their construction, tablestones can suffer from differential settlement. Remedying this will normally involve dismantling the construction. This must be handled with extreme care due to the fact that securing pins or dowels might have been used in the original construction. A properly aligned and strengthened foundation slab, set below ground level to ensure that it can be subsequently covered over, could be necessary if the intention is to reset such distorted assemblies to a truer alignment to protect them from differential decay. If the supporting legs start to tilt or fail and immediate repairs are not possible, it is best to at least dismantle the monument and rest the top slab on a bed of sharp sand, until a more permanent repair can be effected. Historic Scotland should be consulted before disturbing ground on a Scheduled Monument.

However, there can be a counter argument to leave such settled stones as they are, in order to preserve the character of the graveyard. If this approach is taken, the sculpted detail and inscriptions should be fully surveyed and recorded. Failure to do so risks losing a remarkable record of social history and artistic skill.

22. An elaborate sandstone tablestone: note the classical column-like legs and gothic arches

23. Cast iron table monument, Aberdeen St Nicholas. Note design similarities with the stone tablestone in Illustration 22

Occasionally, tablestones, which have split into two pieces, can be found to have been fixed vertically in the ground as headstones. This practice can cause further harm as the horizontal bedding planes, when fixed vertically, can cause accelerated moisture movement from the ground and may lead to delamination of the stone.

3.1.5 Obelisks

Pyramidal obelisk markers are common from Victorian times (Illus 14). They usually comprise a block base with a moulded head upon which a slender pyramidal shaft is positioned. These memorials can be many metres in height, though they are still liable to be founded on only a few bricks for a base. With little or no proper foundation below the bricks, obelisks tend to shift or tilt in position. Provided the tilt from vertical is kept within reasonable dimensions, little may need to be done. However, the monument should be regularly inspected to ensure that further settlement has not taken place and that the stability of the monument has not been compromised. If the structure has become unstable, or in danger of becoming so, this may require the memorial to be dismantled followed by careful repositioning on a stable foundation. Temporary support may have to be installed until the monument is stabilised permanently. Adequate protection should be given to the stone to avoid damage to the arrises as the blocks are jacked back into their correct alignment.

3.1.6 Wall Monuments

24. Elaborate wall memorials are often found adorning the kirk or kirkyard enclosure walls, Greyfriars, Edinburgh

Memorials set against the kirk or the kirkyard wall are derived from the pre-Reformation memorials from within the kirks. These are often decorated with heraldic symbols. While the first wall monuments were simple in design, later examples can be very elaborate (Illus 24). They can range from a single stone panel to a series of panels set around enclosing graveyard boundary walls to mark graves located immediately adjacent to the wall. Memorials, similar to wall monuments, also appear on occasions as free-standing gravestones.

3.1.7 Headstones

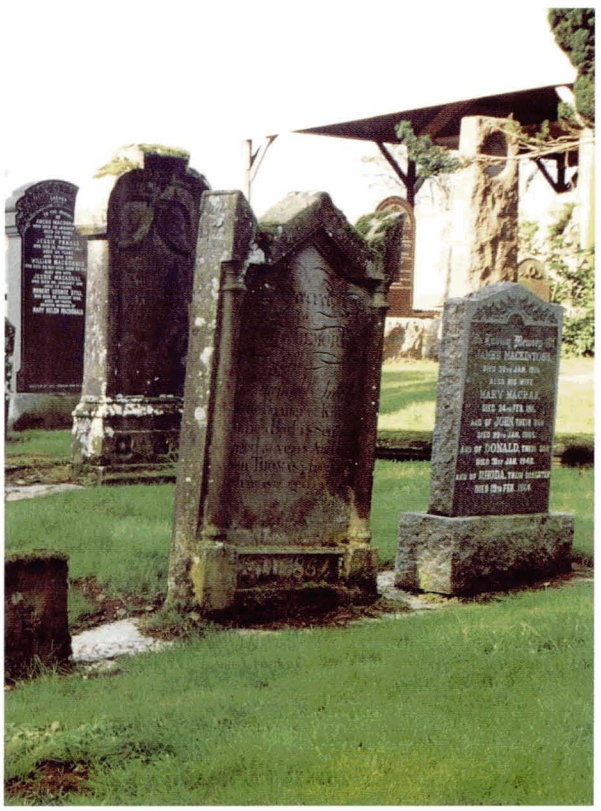
The size and shape of headstones, and materials and motifs used vary enormously, as can be seen in Illustrations 25 to 28. In addition to regional variations, differences in style can be noticed in every kirkyard. The earliest headstones were small with the inscriptions often limited to names and dates of death. Eighteenth century headstones were often carved from

25. Quaker graveyard, Aberdeenshire

very thick stone slabs and usually had both faces, sides and top edge engraved (Illus 26). While the earlier stones were mostly of indigenous materials, nineteenth-century headstones often used slate, imported marble and granite and varied enormously in size (Illus 27). Double headstones can also be seen in Scottish graveyards. The vertical position of headstones allows them to withstand erosion from water collection, but, since most sedimentary stone headstones are placed against their natural beds, they are prone to delamination.

The earlier headstones, having usually been placed straight into the ground without any foundation base, are liable to be leaning or sinking. In the nineteenth century headstones began to be mounted on a base. In the absence of regular maintenance, the headstone can become loosened from the base resulting in the memorial falling over and water collecting in the groove in the base stone.

26. Elaborately carved headstone



27. Adjacent headstones, showing age range from eighteenth to twentieth centuries

28 (a), (b). An example of headstone recycling. An earlier headstone that has been inscribed on the reverse face for later burials

3.2 Symbols

The images on historic gravestones can be very diverse with no two being alike. Each gravestone is a unique historic artefact and should be treated as such. The range of motifs used in combination can result in very sculptural compositions of high artistic quality. Perhaps the most common image, is that of death represented by symbols such as the skull, hourglass and in later times the urn. Similarly, immortality is symbolised by motifs such as the winged cherubs, evergreen trees and flaming torches. In addition, a representation of the person's profession was often given prominence on the gravestone. Farmers, fishermen, sailors, merchants and masons, among others, had their trade symbols carved on their gravestones. Such representations of craft or trade identities create a strong impression of how business was done in the past and are a good record of craft techniques which have now become rare. Other symbolic scenes portrayed on gravestones, such as life represented by Adam and Eve, can be very important due to their rarity.

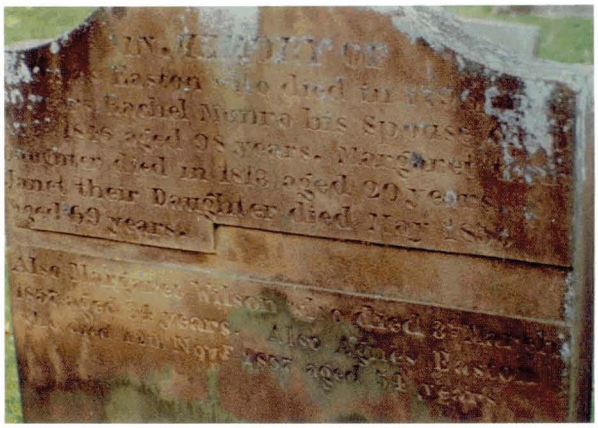
3.3 Inscriptions

Like the symbols, inscriptions can vary enormously in lettering types and styles. Lettering can be incised or allowed to stand proud by relief carving or by inserting individual bronze or cut lead sheet letters into the stone. Incised letters may also be gilded with gold leaf. The early sixteenth and seventeenth century inscriptions are in Latin, with the earlier lettering in capital letters. The later eighteenth-century inscriptions use joined lettering with both capitals and lower-case and many different forms of lettering had come into use.

The quality and style of monumental inscriptions and details can be particularly fine. Apart from providing a personal account, and sometimes a social history of the individual being remembered, the artistic quality of the work of monumental masons is well worth study and recognition in its own right. Epitaphs also range from serious to unintentionally amusing.

A number of individuals and family history societies have been working towards fully recording the inscriptions on graveslabs. Their published works greatly add to local knowledge and understanding and are to be applauded for keeping local history alive. Their efforts are particularly welcome in areas where a high level of inscription loss is being experienced due to erosion of the stone, although occasionally when adjusted by reuse (Illus 28) or amendment (Illus 29).

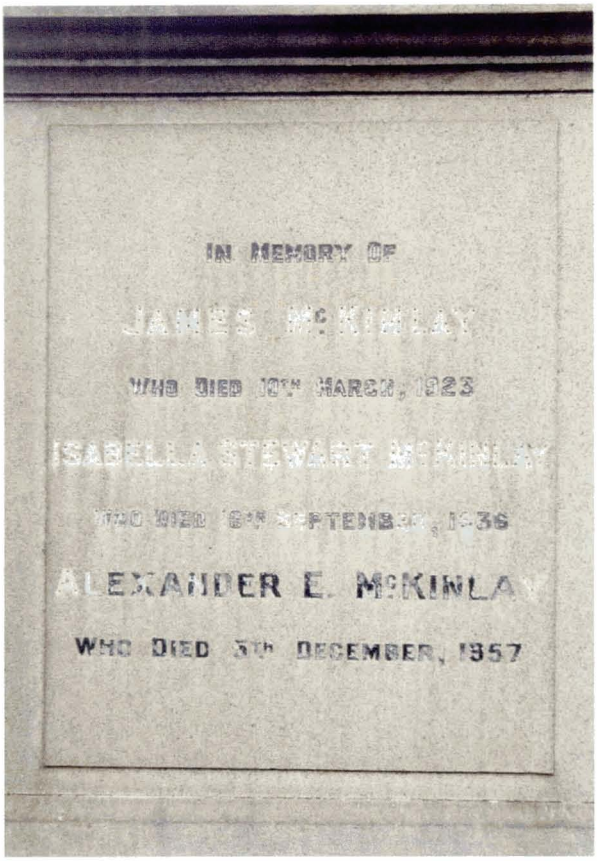
Applied lettering formed from cast iron or cut copper or lead and fixed with pins to the headstone are prone to detachment, either through corrosion of the fixings or vandalism (Illus 30 and 31). The forcible removal of lettering can cause damage to the stone surface.



29. Incised lettering on eighteenth century gravestone. The reason for the removal of part of the inscription is unclear

30. Painted metal lettering fixed to sandstone headstone

31. Applied metal lettering has been forcibly removed with resulting damage to the stone surface



32. Vandalism to cut lead lettering on twentieth century headstone

3.4 Polychromy

Polychromy is where gravestones and other memorials when originally installed could have been painted over. Though the paint layers could have mostly disappeared with time, any remnants of polychromy visible on gravestones should be carefully conserved and recorded. Any repainting of stone memorials should ideally be undertaken only if evidence exists to the original colour. This evidence should be analysed by an expert in order to understand the original paint type and colour. Where repainting can be justified on historical and conservation grounds, porous stones such as sandstone should ideally be painted with a lime wash in order to allow the stone to 'breathe'. Where oil based paints are found to have been used originally, much thought will need to be given to determine whether it would be appropriate to use similar materials for the repainting as this could lead to damage by blocking pores and retaining water within the stone.

33. The headstone in the foreground retains the original white lead paint finish (note the area repainted later to accommodate the last inscription). The stone in the background has been recently painted using a modern paint system

4 MATERIALS AND DETERIORATION PROCESSES

The choice of material from which to form gravestones depended on durability, coupled with due regard to cost and to the lasting honour that the stone would give to the family of the deceased. Construction methods used to erect gravestones, however, left much to be desired. This meant that the longevity of the memorial relied to a disproportionate extent on the material used. Common practice from mid to late-nineteenth century onwards, when erecting gravestones, was to set them on a few bricks placed underground. Soil erosion and ground settlement can result in these bricks sitting above current ground levels with the supported stone left precarious and vulnerable. In such a situation, the ground should be built up with imported soil to restore an adequately firm foundation to secure the stone.

Until the mid-nineteenth century the majority of gravestones, crosses and slabs were made from local stone of metamorphic and sedimentary origin which could be easily worked and sculpted. Often local sources yielded abundant supplies of stone, of a quality suitable for gravestones, which was used to the exclusion of materials from further afield. Also, in the days before mechanised transport it was costly to transport large quantities of building materials over long distances. The majority of carved stones, therefore, were made of sandstone which has always been a popular stone for building purposes. Granite was readily available in the north east and south west of Scotland and schist and slate in other parts of the country. However, even in the 'granite' areas sandstone was used for most of the earliest gravestones because of its ease of working. As a result, many of the local sandstones that were used were of poor quality.

Imports of non-indigenous material began to increase during the latter half of the nineteenth century. This was largely due to the development of easier transportation links by sea, rail and road networks, but also because stones such as granite and marble were perceived to be more durable and therefore more appropriate for use in exposed situations such as graveyards. As a result, monumental masons generally abandoned local materials and a new trade in imported stone began to develop. Imports are even more common today with stone often being imported from halfway round the world to satisfy demand. This change in materials and approach has greatly altered the character of Scotland's graveyards.

Unfortunately, many historic gravestones are now suffering from a variety of destructive agents. Weathering, due to a combination of continued exposure and the age of the carvings themselves, probably represents the greatest problem. Weathering is a complex process, or rather series of processes, depending on one hand on the effects of changes of temperature, wind, rain and frost; and on the other hand, upon the mineralogical content of the stone, its porosity, texture, absorption and the way in which water concentrates on it. The rate of weathering is critical to the decay of the stone. This is affected by levels of pollution, acid rain, salt contamination, bird droppings, rising damp and other such factors. These combine with other common factors such as orientation, micro-climatic effects, architectural detailing, form and constructional techniques to create a variety of surface soiling patterns and erosion. As a result graveyards can be considered to present one of the most interesting experimental sets of conditions the conservator can ever hope to experience. As early as 1882, Archibald Geikie, then Director General of the Geological Surveys of the United Kingdom, realising that gravestones present a series of dated and timed exposure trials, studied the effects of weathering on gravestones in the graveyards of Edinburgh (Geikie 1901). The majority of gravestones stand as true examples of dated evidence, given that they were generally erected within a few months of the death of the individuals whom they were set up to commemorate.

Not all materials weather in the same way. Gravestones made predominantly of sandstone suffer the most severe degrees of weathering (Illus 34). To an extent this varies according to the type of sandstone and the minerals which predominated in the stone. Both granite and marble are generally more homogeneous and durable in their geological structure than sandstone. The characteristics of different stones are dealt with in *Technical Advice Note 12: Quarries of Scotland* (1997), published by Historic Scotland

34. Weathering effects on a range of different sandstone wall monuments

4.1 Sandstone

Sandstone is a sedimentary rock, formed from mineral grains derived from the erosion of pre-existing rocks. The grains are transported, then deposited in a sedimentary basin by the action of water, wind or ice. The grains are either held together with a cementitious mix or embedded in a fine grained matrix. Sandstone available from local quarries, present a variety of colours, textures and performance. It does not polish to a sheen and presents a flat, muted surface.

Since a wide variety of sandstone was used in the local manufacture of graveslabs, it is not uncommon to find an equally broad range of decay problems associated with them. Most significant is the complete elimination of any form of carved or incised identity from the stone face as a result of exposure to the elements. Once this process has started, little can be done to halt it. This is the main argument for full and adequate recording of inscribed details before they are completely lost. Since different stone weathers at different rates, it is not uncommon to find that adjacent slabs reveal significantly different physical conditions even when they are of the same age (Illus 34). The following is a list of commonly found problems.

4.1.1 Delamination

Sandstone, like other sedimentary rocks, is laid down in layers, one on top of the other, thereby forming a series of horizontal bedding planes. These bedding planes have important implications for the way in which stone is cut and used. When a stone is cut from the quarry face, it is split along its natural bedding plane. In buildings the stone is laid according to its natural alignment, so that pressure from the stone above it is perpendicular to the bedding plane. However, sedimentary gravestones were set up against their natural geological structure with the stone being placed at 90° to its natural alignment.

The physical opening up and separation of the geological bedding planes is known as delamination. This results in a decay pattern where veneers detach themselves from the underlying geological bed structure of the stone in a variety of thickness. Where a sandstone is marked by distinct laminae of stratification, it will generally split along these planes under the action of weather. Pressure acting along the bedding plane in face or edge-bedded stone tends to force open the stone along its bedding plane. Through direct contact of the stone with earth, ground salts and water are likely to have a direct pathway into the stone. This can result in salt crystallisation or water freezing in the pore structure of the stone. The weaker geological bedding planes become detached, resulting in the entire face of the stone becoming loose and ultimately dropping off (Illus 35). Inscription details on the delaminate will be lost.

Normally, delaminates occur within a few millimetres of the outer face, but occasionally, the stone will split down the middle of the slab or as successive

delaminations. The separated faces will often also have associated areas of friable stone. These will show as mini-laminates and are likely also to be friable. It is also common to find a stone delaminating even when it is secured into a separate base stone or fixed to walls such as those within mausoleums.

While it is possible to re-attach loose laminates, in practice this may be appropriate only where a stone is of particular historic or cultural significance. The process can be more complex where a stone has split into several laminates. Repair work should only be carried out in a stable interior environment. The conservator should also decide if the stone is in a fit condition to be re-exposed to the elements subsequent to the repair having been carried out.

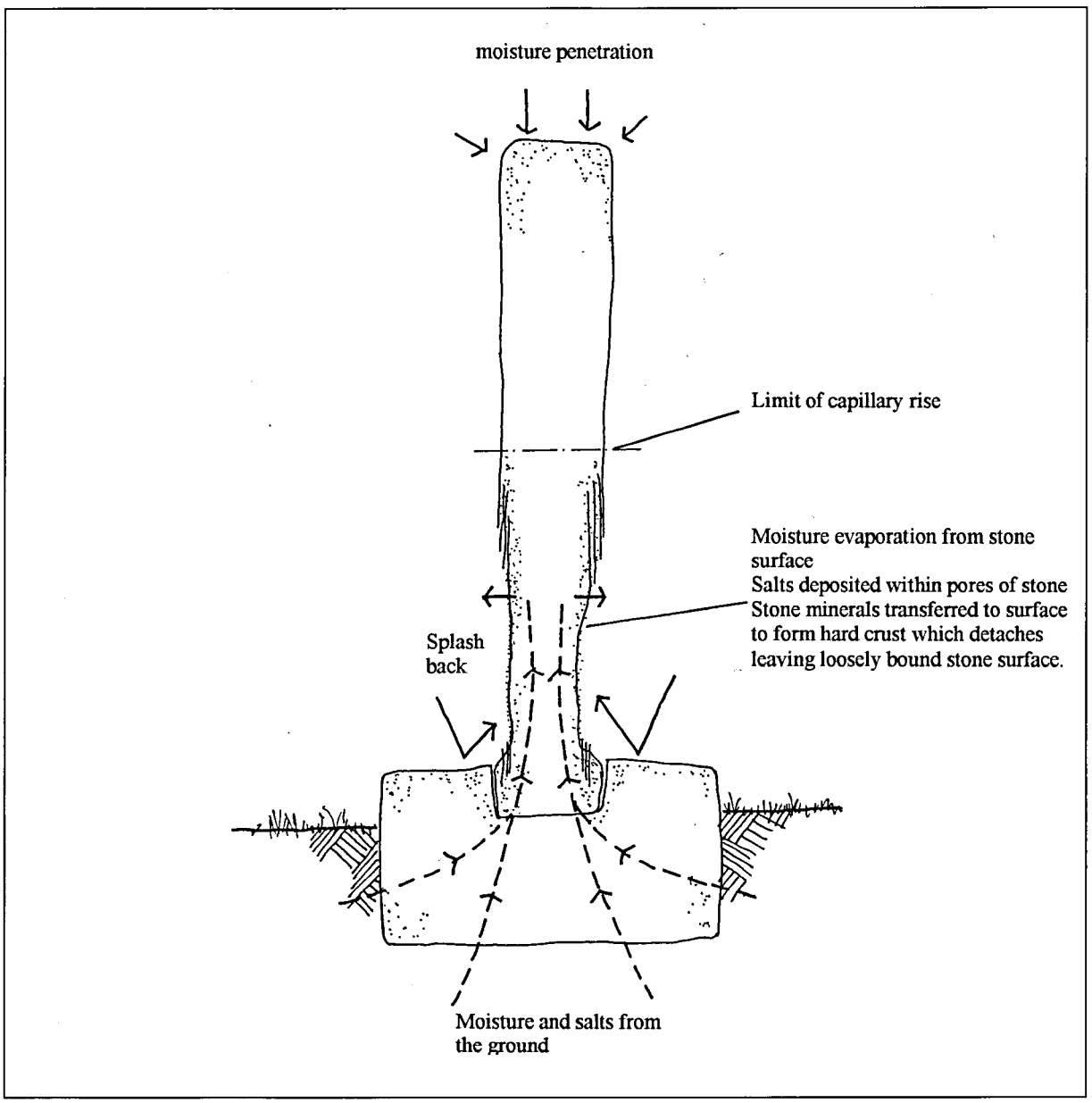
Depending on the thickness of the delaminations, consolidation may require the introduction of non-ferrous pinning and the use of consolidants in order to secure the delaminations. This can be applied by grouting, thereby filling any voids behind the carved surface.

35. Delamination of a sandstone headstone

4.1.2 Contour Scaling

The process whereby a common thickness layer becomes detached from the face of a stone, but follows an architectural profile irrespective of the alignment of the natural geological bedding, is known as contour scaling. It can be caused by salts crystallising in the pore structure of the stone at a common depth from the outer surface and exerting so much shear pressure that the structural integrity of the stone can no longer be sustained. As the salt crystals continue to grow, they begin to exert pressure on the pore walls. A stress builds up and a shearing action takes place. This can build up such a pressure that the entire face is subsequently levered off.

Contour scaling can also result from a redistribution of the cementitious binding material. Mineral cements such as calcite can be attacked by rain water, resulting in dissolution and redeposition near the outer surface of the stone. This leads to a hardened outer crust above a weaker inner zone, resulting in the possible detachment. The resulting wound creates a raw broken face, the exposed edges of which in turn can trap and hold water, thereby exacerbating the problem. In most cases the underlying exposed stonework will erode more quickly. In others, resoiling might occur before further erosion takes place. Again it is possible to re-attach loose scales provided that they are reasonably thick and intact. Ideally, the repaired stone should not be re-exposed to the elements.



36. Diagrammatic representation of scaling of sandstone due to moisture movement and salt deposition

37. A typical example of the sandstone decay mechanisms shown in Illus 36

38. Contour scaling

4.1.3 Surface Blistering

In some situations where salt crystallisation occurs in the immediate few millimetres from the stones outer face, the growth of crystals can blister the outer skin away from the body of the stone (Illus 39). The blistered area is particularly prone to subsequent surface damage and can easily be burst and broken off. There is no effective way to prevent this form of decay, and since this normally results in a volume expansion of the blistered material, it may be difficult to re-attach the blister without damage to the surface. However, in certain cases it is possible to inject a grouting material behind the blister and resecure it to the substrate. It is also possible to desalinate the stone by poulticing the surface using inert paper pulp and purified water. This requires a number of poultice treatments to achieve a worthwhile effect and can never fully desalinate the stone. After such treatment the stone surface may prove quite friable in places and should be consolidated using appropriate repairs based on current conservation repair technology.

39. Blistering and resultant surface detachment

4.1.4 Surface Loss

Where the loss of the surface of a stone has already started, the underlying substrate is likely to be extremely friable and loose. As a stone decays it is not unusual to find loose deposits of broken material lying at its base. In such cases little or nothing can be done to prevent further decay, resulting in the eventual total loss of both the inscription and the body of the stone.

It will normally be impossible to consider re-applying the remaining face pieces for there will be insufficient body in the underlying material to maintain a bond. Clay rich sandstone is particularly prone to this type of problem.

Generalised surface loss may occur in the form of granular disintegration where breakdown in the structure of the sandstone results in loss of individual sand grains from the surface (loose sand grains are often detectable by touch). This form of decay is caused by dissolution or alteration of mineral cements or by salt-crystal growth within the body of the sandstone. Loss of surface occurs gradually over a long period resulting in a generalised loss of detail.

Occasionally, a stone will be found to have decayed only in localised patches. This is usually because of variation in the type of abundance of cement in the sandstone. For example, irregularly distributed calcite cemented patches may be dissolved by rain water resulting in loss of grains from the affected area, so creating weaker zones. Repair to such stones is best carried out by brushing out the loose material, ensuring an effective mechanical key in the body, and making up the missing piece with a matching stone indent, modelled to match the surrounding features of the slab. Repairs with cement based mixes should be avoided as this will adversely affect the future performance of the stone.

40. Typical example of long-term surface loss from sandstone

The two gravestones shown in Illustrations 41 and 42 are extreme examples of surface loss, where the weathering process has caused unusual decay to the central portions of the stones. In the two examples, erosion has progressed inward. Clearly, by the time decay has progressed to this advanced stage there no practical way in which the erosion process can be arrested and the stones will eventually fail when the edges of the stone can no longer resist the mass of the upper section and wind loads. In the case of stones which are in the early stages of the process it may be possible to control moisture movement from the ground by isolating the slab from the ground with a damp-proof membrane. However, as with all gravestones at high risk, it is imperative that a record of the slab and its inscription be taken before such detail is lost.

The exact mechanism of the decay process is unclear but it is possible to make a reasoned assumption as to the nature of the factors leading to the decay form. The characteristics of the sandstone are perhaps the dominant factor and it is likely that the stone will have a high clay content with rather loosely bound grains that are prone to disaggregation. Moisture is able to penetrate into the centre of the stone both from the top of the stone (by gravitational and capillary forces) and from the ground (by capillary action). In addition, salts from the ground may be transported to the maximum point of capillary rise, with the salt then crystallising in the sub-surface pores at this point, known as subflorescence or cryptoflorescence. The conditions which govern the position of crystallisation depend to some extent on the nature of the salts present, the characteristics of the sandstone (pore sizes and distribution) and on evaporation conditions. A particular form of subflorescence is alveolar erosion, which is demonstrated by preferential erosion in some areas due to differential disaggregation leading to the formation of deep cavities (alveoles). It is likely that it is this effect that is at work in the illustrated examples. According to Torraca (1981), alveolar erosion is possible because of external conditions associated with the internal structure. These conditions cause one area to evaporate more quickly than another with the result that water will flow more quickly towards the rapidly evaporating area to cause the decay form shown here.

4.1.5 Micro-climate Induced Erosion

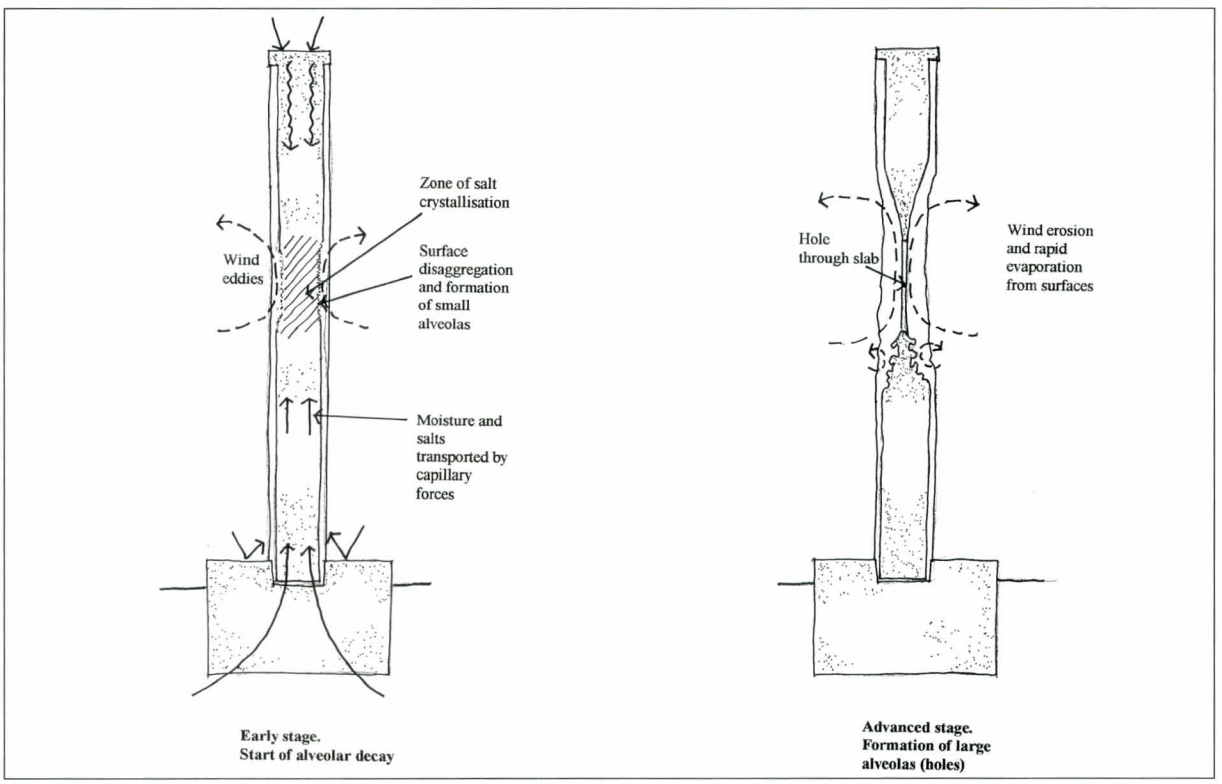
The moulded shape, orientation, and degree of exposure of gravestones can all contribute to surface erosion and decay. Slabs which have been placed facing north-east, and with a sufficiently projecting architrave to keep off much of the rainfall are more likely to retain their inscription legibility for a longer period of time. Even in these cases however internal disintegration will continue to progress. Moisture movement, coupled with localised wind scour can lead to a progressive series of stepped laminates appearing on the face of the stone. This will often result in a concentric pattern of decay, with a deeper depth of decay centring on a central 'eye' of the stone as the air movement can create drying out vortexes in this zone. Often an associated pattern of delaminates will occur below the concentric whorl as water, caught by the exposed lower edges, will increase the breakdown

41. Differential weathering of a nineteenth century sandstone graveslab, where the presence of alveoli can be seen in the central area of the slab

processes in the lower stone. As laminates become loose, and separate from the body of the stone, they can catch additional surface moisture and transmit this into the body of the stone, so adding to the decay through enhanced wetting and drying cycles.

There is not much that can be done to counter the natural decay processes other than providing the stone with a protected, stable environment.

42. An extreme form of alveolar erosion of nineteenth century sandstone graveslab, Edinburgh



43. Cross sections of graveslabs showing processes of alveolar decay

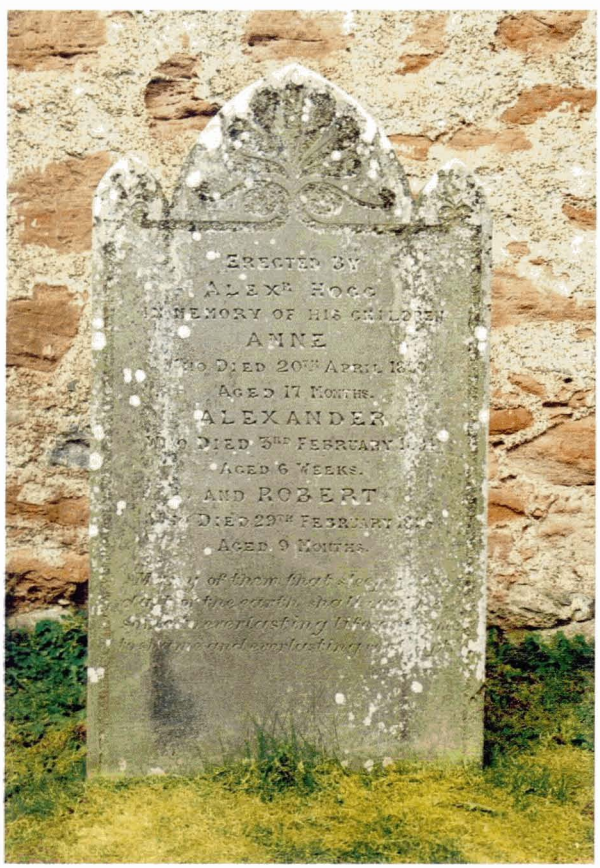
44. Micro-climatic induced erosion leading to differential weathering, Linlithgow

45. Stone erosion reflecting water run-off patterns

4.1.6 Surface Run-off Patterns

The profile of the moulding at the top of a stone can affect underlying surface decay patterns (Illus 45). In periods of heavy rain the zones to either side of the centre line get wetter as the water floods through the pore structure of the stone. When drying out occurs, water recedes from these areas. Consequently, the two zones go through more frequent cycles of wetting and drying than does centre line. This process is known as differential weathering. When the stone is subjected to this process the surface takes on a complex appearance. The binding minerals in the stone tend to break down and the individual stone grains become loosened and detached.

Complex surface staining and erosion patterns can emerge where the effects of water run-off combine with wind-flow over the surface and the geological complexities in the make-up of the stone. The West Lothian sandstone, Binny, is high in natural hydro-carbons and iron. As a result, it soils particularly heavily, although the thickness of the soiling might at most be not much more than 100 microns. Underlying the outer surface soiling are a complex inner series of soiling layers which range in colour from blonde to deep chocolate. As with masonry sandstone, the soiling residue may not be harming the stone. In fact, it can often be found to be giving it a degree of natural protection and should be left in place.



46. Lichen growth reflecting water run-off pattern

4.1.7 Wicking/Moisture Movement

Where a sandstone slab has been set directly into the ground, water has a direct and easy route to follow as it migrates through the stone. This can result in a number of decay processes. As the wettest zone is always liable to be the one in direct ground contact, horizontal banding will be evident on the stone. In extreme situations these bands will display a variety of levels of surface loss. This will occur irrespective of the geological bedding alignments of the stone.

When the stone is covered over with waterproof paint, rising moisture further accelerates stone decay. The paint restricts the natural drying process of the stone and so increases water retention.

Where a stone has a particularly erratic geological bedding this will result in a visually complex pattern of erosion as the weaker beds are steadily eroded away and broken down. Erosion also occurs on gravestones which have been laid flat on the ground or have fallen over resulting in water rise through direct ground contact.

4.2 Limestone

Limestones are sedimentary rocks formed by the accumulation of marine calcareous remains. Although limestone exists in Scotland, large limestone slabs cannot be quarried. Limestone is not often used for gravestones in Scotland but any limestone graveslabs that are found are therefore most probably 'imports'.

Limestone gravestones are particularly prone to surface loss through direct exposure to the elements, and especially to the effects of acid rain. General blurring and surface recession will be observed, particularly on faces directly exposed to the prevailing weather conditions. The degree of loss can often be directly measured where it occurs over any incised face lettering. Inherent fossils in the stone may also be clearly revealed and any more durable features in the body of the stone are likely to emerge as standing proud of the surrounding and receding surface.

A number of such examples can be found in cemeteries around the coast, particularly in the Atlantic west. Many Commonwealth War Graves Commission gravestones are made of limestone slabs of common style, size and detail. In Scotland, however, War Graves Commission headstones are more commonly formed from granite.

4.3 Granite

Granite is an igneous rock produced by the crystallisation of magma beneath the Earth's crust. Granites can be medium to coarse-grained and composed of at least twenty per cent quartz along with various percentages of other minerals. Unlike sandstone and limestone, granites do not have bedding planes although they may have a foliation caused by alignment of elongate minerals. Most granites are hard and generally durable. The cohesive texture of interlocking structures prevents the plucking out of grains and enables a polished finish to be achieved.

Compared to the wide range of colours and textural surface variations in the numerous exotic stones now used in monumental masonry, the choice of indigenous granites tends to be very limited. Scottish granites generally come from Aberdeenshire and south west Scotland and are mostly light coloured, grey or pink. They have a notable history of use as gravestones in Scotland. Imports, on the other hand, present a wide selection of colour hues and, through a broad range of crystal size, can reveal a more lively appearance in their finish.

When granite is finished to a high gloss polish, the surface reads as a strong, aesthetically pleasing, weatherproof glaze which can withstand considerable exposure to the elements. In addition, the polished face allows for a high degree of artistic expression to be exercised. This can be simply achieved by selectively texturing the polished surface to create designs with a variety of matt representations and finishes. In some instances, near photographic quality images can be achieved.

Generally speaking, granite slabs do not require much ongoing maintenance and can usually survive well without attention, provided they are not damaged accidentally. However, granites can be colonised by surface growths of algae and lichens. These can be kept under control with an occasional wash down. Granite stones also show the effects of surface contamination by bird droppings. If left unattended, this can further encourage biological activity on the top and face of the stone.

Granite is not immune to the processes of decay through natural weathering or the effects of environmental pollution. Granite tombstones can be subject to decay such as scaling, flaking or granular disintegration.

4.4 Slate

Slate is a metamorphic rock. When rocks are subjected to high temperatures and stresses deep within the earth's crust their physical characteristics may be altered. This process, known as metamorphism, produces crystalline rocks containing new minerals and exhibiting new textures.

47. Headstones (predominantly granite) in St Nicholas Churchyard, Aberdeen

Slate is the most commonly used fine-grained metamorphic rock and, along with granite, is perhaps the most durable of all the indigenous stone types that have been used in Scottish cemeteries. Just as slates perform well on the roofs of buildings, upright slate graveslabs resist decay and colonisation by biological growths better than sandstone markers. Although slate slabs tend to be thin, due to the geological nature of the material, their overall surface proportions can readily match all other stone types used to create graveslabs. However, slate slabs are rare in comparison to sandstone, granite and marble. This alone makes them all the more significant.

The extremely fine composition of slate allowed monumental masons to exercise their full range of skills. The quality and detail of incised work can be remarkably fine, with edges and arrises appearing sharp and true. This is demonstrated by the finish of the slabs and in their resistance to weathering and exposure. The incised lettering, in particular, tends to remain sharp at the arrises and true in depth. Water run-off over the incised lettering can cause some localised surface staining, though visually unattractive, this is of no physical consequence. Some naturally occurring blemishes in the make-up of the slate may also be noted. The surfaces also generally remain free of organic growths.

48. Slate gravestones at Ballachulish. Note the sharp irrises and incised inscription

49. Incised lettering on a slate graveslab in Portpatrick. Note the intact surface of the stone and the sharpness of the lettering after circa 175 years exposure

4.5 Schist

Schist is a high grade metamorphic rock. Owing to the high proportion of constituent micas, schists have variable weathering characteristics and some disintegrate mechanically relatively easily. Harder wearing schists are suitable for gravestones. Schist from Argyll has been used throughout the west coast of Scotland and the Outer Isles for medieval crosses and graveslabs. Intricate, well preserved carving may suggest that the stone was soft when first quarried but hardened on exposure.

4.6 Marble

Marble is a metamorphic rock originating from limestone. Scotland is not rich in supplies of marble, and although a few local sources are available, they were rarely supplied to the monumental masonry business. Most marble that has been used to create graveyard memorials will have been imported.

Marble, of course, has had a long tradition of being used to create sculpture. It is most likely to be encountered as carved life-like figures which form part of complex memorials or as obelisks. Usually white stone was preferred.

When polished marble is first exposed, it is capable of reflecting objects placed in front of it. However, prolonged exposure to the elements and to atmospheric pollution, soon results in the removal of this polish and gives the surface a rough granular character. Surface loss in turn leads to veining standing proud over the entire face, disfiguring carved detail on statuary and figure work. As a result, it is not uncommon to find graveyard sculpture that is much reduced in mass from its original form. Erosion also manifests itself as surface runnels cut into the stone, particularly where water concentrates in runs over the surface.

The effect of atmospheric pollution on marble monuments of similar age is amply demonstrated by Illustrations 50(a) and 50(b). The carving illustrated in 50(a) is on a monument in a graveyard in an unpolluted Easter Ross environment, as is demonstrated by the lichen growth and the sharpness of the carved detail. Illustration 50(b) is a marble statue within a cemetery in a polluted urban environment. The extensive erosion is evident by the loss of fine detail from the carving, especially on the head.

50(a). Carved detail on marble headstone in area of low atmospheric pollution

50(b). Erosion of a marble statue due to atmospheric pollution, Necropolis, Glasgow

4.7 Iron

Due to its intrinsic properties such as its strength and relatively low cost, iron became very popular as a building material. In one form or the other, it has been used for a variety of different purposes in Scottish graveyards. Boundary railings, chains and pillars enclosing burial lairs, gates and grave memorials have been constructed of the material. Though a significant portion of ironwork was removed and reused for munitions purposes during the wars, many graveyards still possess much ironwork.

Many varieties of iron are produced, differentiated by the method of manufacture and the amount and nature of carbon present. Cast iron and wrought iron are the two main forms used in the graveyard environment. These are dealt with below. Both cast and wrought iron are often used in combination in railings, gateways and occasionally on the grave memorials themselves. Corrosion is the primary conservation problem associated with historic iron work; proper maintenance, regular inspection and painting is necessary in the exposed conditions of graveyards and can enhance significantly the life of iron work. Both cast and wrought iron corrode without regular maintenance through routine painting. This helps to isolate the damaging elements, particularly in the exposed conditions of graveyards, yet they seldom receive this most basic level of protection.

51. A simple cast iron gravemarker

4.7.1 Cast Iron

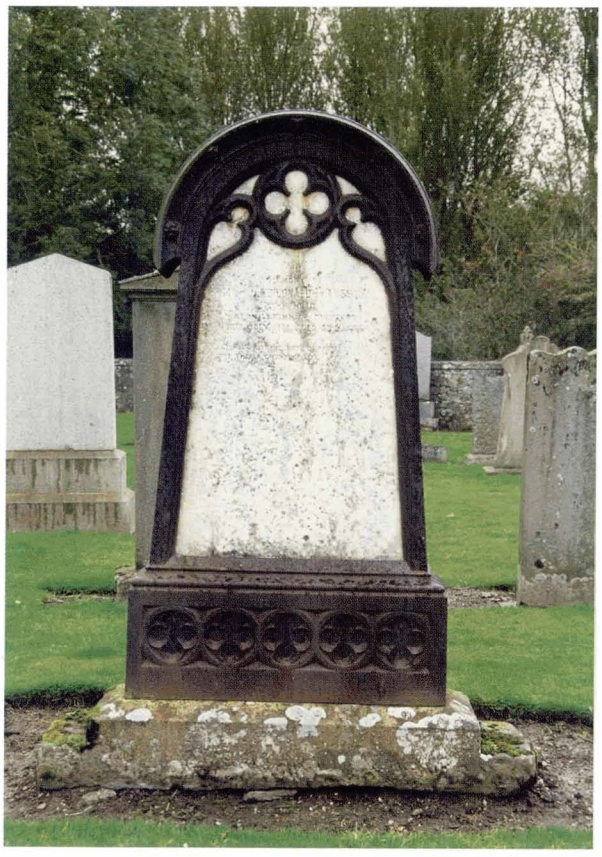
Amongst the different forms of iron, cast iron has the highest form of carbon which makes the material hard and brittle. As the name suggests, cast iron is cast in moulds and not worked beyond the point of being poured. The popularity of cast iron was primarily due to its easy use for ornamental purposes and the possibility of mass production at a moderate cost. Due to the initial labour-intensive activities of mould making, cast iron is cheap to use only where a large number of pieces of the same design are needed. In order to profitably make graveslabs with cast iron, a method of multiple moulds was used which enabled different inscriptions to be added on to a standard design for a memorial. The need to add on another inscription on an exiting memorial was often met by bolting a small iron plaque on to the original memorial.

Cast iron grave markers began to appear in Scottish graveyards from the late-eighteenth century. Cast from molten metal, these markers tend to be small in comparison to masonry slabs (Illus 51).

They usually incorporate a high level of artistic detail with mouldings and features embellishing the uppermost and side edges. Cast iron was also used in conjunction with marble where a cast iron frame might hold a thin marble slab (Illus 52(a) and 52(b)).

Some of the earliest examples of cast-iron graveslabs date from the early-seventeenth century and were the product of Britain's infant foundry industry, mainly found in south east England (McCombe 1977). They were manufactured in small ironworks and were invariably based on tiny blast furnaces.

Cast iron rails or chains set through a series of small stone or iron marker pillars were commonly used to mark a burial lair. Pillars, like gravestones, often settle in their location and become dislodged and lie out of plumb. While minor leanings and sinking should be acceptable as part of the character, significant displacement could result in the collapse of the whole surround. Such pillars should be reset into a vertical position using a technique similar to resetting stone gravestones (see section 5.10). Where a tilt or a lean is corrected, it must be ensured that the repair is not simply cosmetic but the source of the problem is dealt with. Leaning pillars are also more prone to vandalism.



52(a) and 52(b). Typical cast iron and marble graveslabs (circa 1870). The rear face is formed from three flat plates. This is a standard design found throughout Scotland

53. Cast iron chains and posts marking burial lairs

54. Cast iron trellis work and posts marking a burial plot. Note the elaborate cast iron gravemarker with inset marble slab

55. Iron railings defining a burial lair. The level of refinement of the casting can cause confusion with wrought iron

Iron is also used for clamps and dowels situated in joints when a gravestone is built up of a number of stones. In such cases the iron should be removed (as described in section 4.9) and, if structural, replaced with phosphor bronze. Prevention of ponding is particularly important with ferrous materials.

Although iron is perceived to be durable, the reality is that it tends to rust. Rusting is essentially an electro-chemical reaction where the metal ionises in the presence of a conducting liquid (water). This migration of ions breaks down the surface of the metal through the formation of ferric hydroxide (rust) and continues to do so while the conditions remain right for the transfer of ions. Generally speaking, corrosion will occur when ions are compelled to migrate because a conductor such as water is present for the electric charge. If the surface of the metal is covered with soot or other hygroscopic bodies, the rate of corrosion can be significantly enhanced. In continuously damp conditions, rust can spread and continue to eat away the ironwork. Where iron elements are composed of separate bolted pieces, moisture tends to become trapped between the pieces leading to an increased rate of corrosion. When a graveslab has been attacked by rust it may be impossible to read the inscription due to the amount of surface pitting and loss.

4.7.2 Wrought Iron

The refining of pig iron into wrought iron requires several stages whereby nearly all the carbon is driven off, as are most of the other impurities such as phosphorous or silica. It is thus referred to as the 'purest' form of iron. Wrought iron is a relatively soft metal and, when heated, it becomes pliant and is easily hammered into the desired shape. However, despite its softness, wrought iron remains sturdy and resistant to fatigue. In graveyards, it is common to see wrought iron used for decorative purposes. Both wrought and cast iron are often used in combination for boundary railings and gates, with wrought iron being used for its more malleable properties.

56. Ornamental wrought iron grave memorial, Stirling

Compared to cast iron, wrought iron is more susceptible to rust and is more likely to require physical repair in addition to any removal of rust and prevention of corrosion. For the softer wrought iron, removal of any rust or paint prior to repainting, can be most suitably done with flame cleaning, followed by use of a wire brush. For repair work, the use of matching quality wrought iron is always recommended for any repair work needed. Though missing wrought iron pieces should be replaced only with wrought iron, not much pig iron is currently being worked into wrought iron and any new pieces may need to be made by salvaging and reworking any extant remains. Use of welded mild steel as a substitute material to repair wrought iron can increase future maintenance requirements because it corrodes at a faster rate and can promote rust in previously sound ironwork. The use of this material cannot be recommended.

4.8 Timber

In some rural areas it is possible to find graves marked by simple timber crosses inserted into the ground. The two pieces are joined together using simple half lap joints. To assist with weathering the edges might also be slightly chamfered. The timbers were seldom treated and, as such, are prone to wet rot decay on prolonged exposure, particularly where the timber comes into contact with the earth. The life span of such grave markers is short and where they have survived, they should be recorded.

4.9 Composite Stonework

It is quite common to find gravestones erected by joining two or more stones of the same material or by using two different stones, such as a marble slab on a sandstone base. In such cases, it is usual to find iron cramps holding the stones together. The normal technique was to set the tangs of the cramps into the edge of the stone pieces so that they bridged the join to give it added strength. To secure the cramps, the holes were filled, or run, with molten lead which solidified and sealed the built-in iron, preventing rusting and spalling of the stone. However, in many cases corrosion of the iron cramps has caused damage resulting in fracture or spalling of the stone. Wherever possible, iron cramps should be replaced by non-ferrous clamps such as those made of phosphor-bronze. Replacement of embedded cramps would require the monument to be dismantled, followed by the lead drilled out carefully, ensuring that the adjoining stone is not damaged. The replacement non-ferrous clamps would need to be bedded in lime mortar or resin.

In cases where two similar stones were joined, the inscription was incised down the face of the stone from one piece to the other in the normal way, care being taken to ensure that the adjacent lines of lettering were not broken through their middle by the join.

In gravestones made of two different stones, most commonly a slab of white marble 3-5cms thick tightly fixed in a sandstone framework, the slab was generally

57 (a). Timber grave marker, Edzell. (Front)

57 (b). Timber grave marker, Edzell. (Rear)

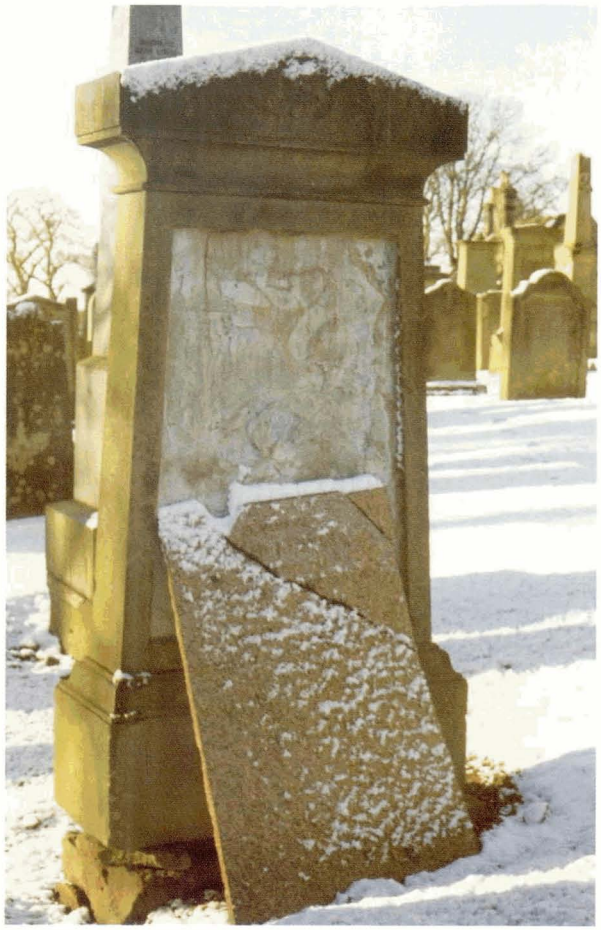
placed vertically and firmly inserted into the framework, with little or no room for expansion. This tended to result in the bulging out of the marble accompanied by a series of fractures.

58. Sandstone memorial built by joining two stone slabs. Note the iron cramp across the joint, Greenlaw

Where marble has been used in conjunction with other stones it is also possible to find that an interaction has taken place, leading to more specific decay run-off patterns in the form of channels cutting into the body of the stone. Once created, these set up established drainage and discharge runs which encourage enhance run-off patterns on the same routes, thereby adding to the amount of localised erosion. Acidic run-off from biological activity can further increase this effect, as can water-channelling routes caused by surface growth or a broken arris on the masonry above the marble panel.

In some cases the marble or granite slab also tends to come off the sandstone support, often cracking in the process (Illus 59). Where this has occurred, the slab should be reinserted in its original position and if required, a better support system should be put into place. However, care should be taken to ensure that this does not disfigure the memorial or alter the character of the graveyard.

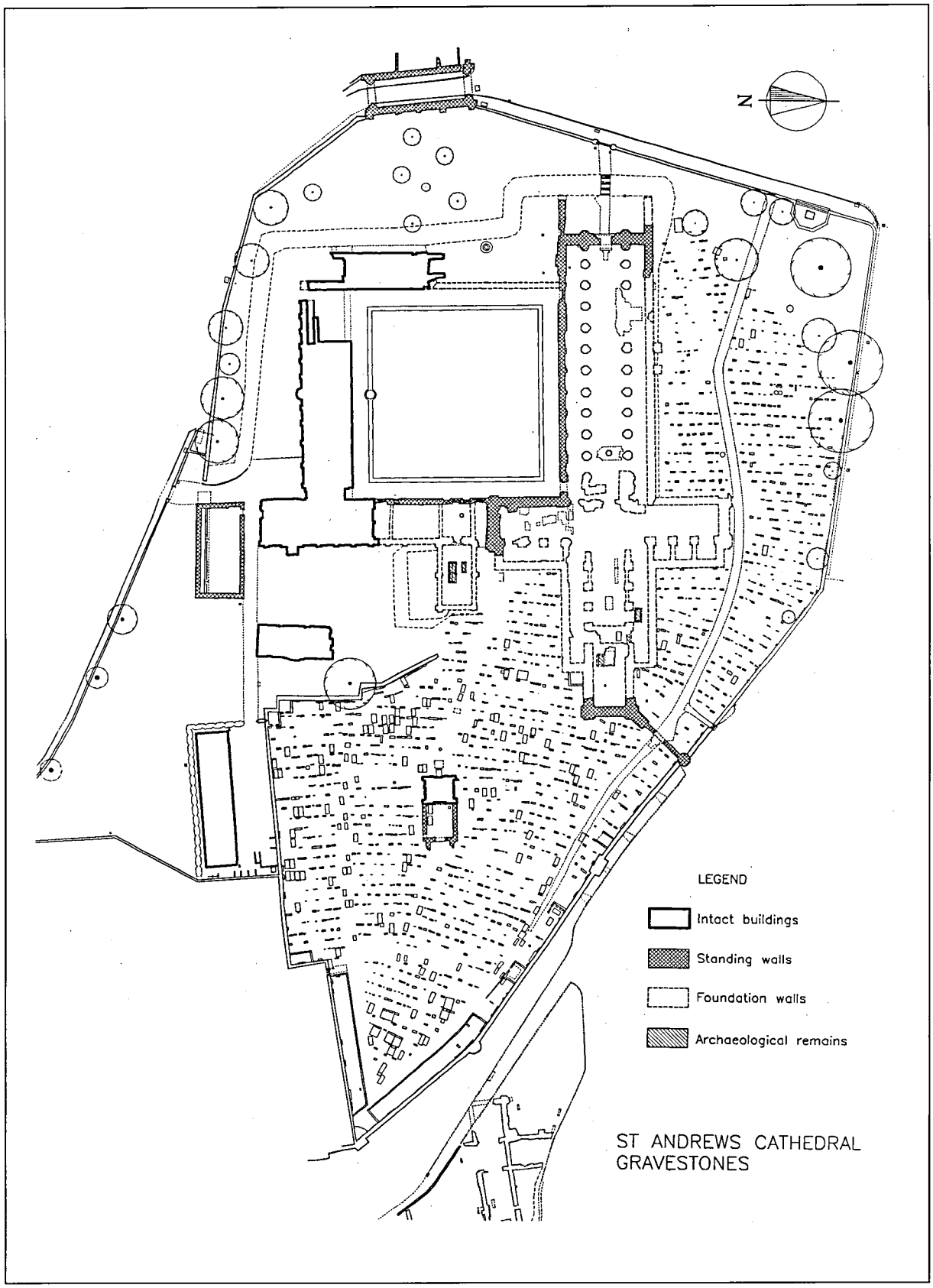
Marble or sandstone, slabs are also often found in cast iron frames. The rusting of the iron work and subsequent water run-off causes damage to the memorial. Also, the contraction and expansion of the iron work may also cause the stone to crack and spall. Here, it would be essential to dismantle the stone, repair the iron work as indicated in section 5.23, and subsequently reinstall the stone. Prior to reinstallation, measures should be taken to ensure that the stone is not affected by the thermal movement of the iron work.



59. Sandstone support with detached granite inscription slab

4.10 Summary

As a result of the high risk of loss of stone surfaces, especially on sandstone monuments, and consequent loss of inscriptions it is imperative that inscriptions are carefully recorded. Such records may form part of the graveyard inventory and should be available for inspection and research. Work by various family history societies and related bodies needs to be expanded to create a national database.



60. Plan of St Andrews Cathedral, St Andrews showing position of gravestones

5 REPAIR GUIDELINES

The need to encourage the upkeep of graveyards has arisen from recognition of their importance as part of our local and national heritage. While graveyards must be treated with utmost respect, visitors should be able to enjoy visiting them for their special, often tranquil character. The provision of any form of protection for gravestones is comparatively complex. Often their quality is well worthy of a museum type regime, but, with factors such as the number of stones at risk, that level of care is not realistic to achieve. A large number of stones will remain exposed to the elements and to the ongoing effects of naturally occurring decay cycles. Given the diversity of conditions prevalent in Scottish graveyards, no single practical conservation approach can ever cover all the eventualities with which those responsible will have to contend. Above all, however, the future well-being of the stones should remain paramount.

Over the years, a variety of interested groups, with a range of conservation schemes, have sought to improve cemeteries. These schemes include projects ranging from simple recordings and 'quick clean-ups' to total reconfigurations of the original layout. In some cases gravestones and even stone coffins have been repositioned and re-erected against walls.

Indiscriminate cleaning, the common use of cement in the re-erecting process, and other, sometimes ill-informed work may do more harm than good. The repair or restoration of damaged monuments should be undertaken only after obtaining professional advice, even for minor repairs as well as for major ones such as repair of snapped headstones. It should be recognised that any attempt to realign leaning graveslabs and headstones will disturb the adjacent ground and should be avoided. Any attempt to 'tidy-up' a graveyard by realigning gravestones should be avoided as this may adversely affect the character of the graveyard.

Local authorities and other parties responsible for the maintenance of graveyards are encouraged to develop a sensitive and long-term management strategy that will promote the effective care and conservation of vulnerable sites. If the necessary expertise is not available within the organisation, specialist advice should be sought.

61. Aerial view of St Andrews Cathedral graveyard. (Copyright RCAHMS)

In ideal circumstances a conservation plan should be prepared (see Appendix B for guidelines on preparing a plan).

5.1 Documentation

As all graveyards are threatened by natural decay, it is important to compile full and accurate documentation while the stones still survive. The most urgent task, therefore, is to record and prepare a detailed inventory of all gravestones, memorials, other buildings, and vegetation in the graveyard. The aim of any record should be to assist in the present and future understanding of the history of the site and its development, the determination of its needs and the preparation of a plan of action to deal with these. In many cases the inscriptions will provide significant historical information on the genealogy, life-spans, customs and attitudes of earlier communities and of particular individuals and families. For inventory purposes, gravestones should be recorded both individually and in the context in which they occur. Much of this valuable work can be, and has been, carried out by enthusiastic volunteers, under professional direction or supervision.

Students and volunteers, for example, could be encouraged to produce measured drawings of the graveyard as a whole. However, in order to avoid duplication, and before work begins, previous local surveys should be examined. Such records could be in the ownership of the local authority or kirk. Permission to undertake a graveyard survey should always be obtained from the director of the local authority department responsible for graveyards and the minister of the kirk should always be consulted prior to recording in kirkyards.

Graveyards are an integral part of virtually every rural and urban community, varying enormously in size, shape and location. The range can be readily seen on even the most cursory assessment of available information. Reference can be made to large scale Ordnance Survey maps and aerial photographs. The development of the graveyard over the years might also be found in the records held at the National Archives of Scotland or in the National Monuments Record of Scotland.

Any inventory should comprise written descriptions and photographic evidence. Ideally, the text should include for each monument details of:

- its place in the graveyard, cross-referenced to a plan of the graveyard, preferably measured;
- the type of memorial;
- its orientation and dimensions;
- the number of inscribed faces;
- the inscription;
- details of symbolic carvings;
- identification of the stone;
- evidence of polychromy.

A recording form can also be prepared to suit a particular survey; but a common format would more easily enable comparative assessments to be made across the country. An example of a comprehensive recording form, together with more information on the recording process, can be found in *How to Record Scottish Graveyards* (Willsher B, 1996). Such a form should be expanded to include information relating to the present state of preservation of the stone and any intervention carried out.

A methodology for assessing carved stone is contained in *Assessment Methodology Handbook* published by Historic Scotland (1999) (Appendix C). All recorded information should furnish data that can be used in further research by scholars from a variety of disciplines including historians, conservators, genealogists and geologists. If a full measured survey is not possible, all built elements should at least be photographed.

A detailed plan will be required in order to locate the stones in their setting. Again, an outline plan might be available from the local authority or the church. However, with a little professional help, a measured plan could be prepared. This could also, with a little practice, be made by volunteers but may prove to be too difficult a task for graveyards on steep slopes. If an existing plan is not available, and it is not possible to prepare a measured drawing, a plan could be constructed from an outline based on the Ordnance Survey map. However, this might result in a drawing which lacks the required degree of accuracy. If an Ordnance Survey map has been used as the base drawing, this should be indicated on all subsequent drawings and the level of accuracy should also be indicated.

Once a plan is available, the position, orientation and spatial relationship of features such as grave memorials, boundaries, entrances, the kirk, footpaths, and vegetation should be plotted. Each memorial should be given a number which should ideally be linked to the lair sequence used by the local authority. This could also be cross referenced to the descriptions of the state of preservation of other elements such as sections of boundary walls. Numbering cards or identification tags should never be stuck on to gravestones. Garden plant markers set into the ground are probably the most efficient method of identifying gravestones for the purposes of the survey. Surrounding features such as roads, car parks, pathways or earthworks, which might have a

relationship with the graveyard, should also be indicated on the plan.

The written descriptions should be supplemented with key black and white photographs of each stone. Even though black and white photographs fail to indicate the colour of the stones and the presence of any polychromy, they are to be preferred for their archival quality. A scale bar included in each photograph will enable the photographic record to clearly indicate the size of the gravestones. Some headstones, particularly seventeenth-century headstones, are carved on all sides and in such cases all the faces should be photographed. Details not clearly visible on site may become apparent on the photograph. The number allocated to the gravestones on the plan should appear on the corresponding photograph. Further advice on photographing gravestones is available in the publication *Photographing Carved Stones* (Gray TE and Ferguson LM, Historic Scotland, NCCSS 1997)

In keeping with good conservation practice, each memorial should be photographed before any conservation or repair works begins, in order to record its condition and environment. A photographic record should be made during the works, culminating in a final survey on completion.

The documentation process should never be detrimental to the physical condition of the gravestones. For example, stones should never be cleaned to obtain 'better' photographs, and even the physical removal of moss and lichens to make the reading of inscriptions easier can be damaging. Also harmful and almost impossible to remove is the use of permanent inks or paints to highlight the letters of the inscription. Rubbings can also cause severe damage to the stone and can never be justified; not only can they cause surface loss, but chemicals contained in the material used for the rubbing may be left on the stone, causing discoloration. Where stones have partially sunk, digging away the surrounding earth in order to record the inscription in full can risk destabilising the stone and cause it to topple.

Prior to undertaking the survey, a library reference system should be created. The text, drawings and dated photographs could be kept together in box files. A copy of the documentation should be deposited with the Royal Commission on the Ancient and Historical Monuments of Scotland and the Scottish Record Office. These organisations should be approached well in advance of any work so that their criteria is understood and respected. The record should make it a great deal easier to decide the appropriate conservation policy for each individual monument, to judge priorities, and to assess the overall scale of the task. It can also be used to identify potential subjects for interpretation, where appropriate, in the Conservation Plan for each graveyard.

62. Crude removal of lichen to aid reading of the inscription

5.2 Conservation Plans

A Conservation Plan is a way of structured thinking about a site, to assess why it is significant, and what should be done as a result of that significance. It forms part of the risk assessment exercise and can minimise uncertainty about a site, paying dividends in the long term by providing a firm foundation for future policies. For advice on the preparation of a conservation plan see *A Guide to the Preparation of Conservation Plans*, published by Historic Scotland. It can be particularly useful for graveyards where there may be many elements of significance such as archaeological, architectural, natural and historical, all of which will need to be retained. A tailored template for the production of such a plan for Graveyards is contained at Appendix B.

When considering later burial grounds and cemeteries thought should be given to the significance of the designed landscape elements such as planting and path layout. Even the number of gravestones of significance are in effect multiple heritage assets. As such, subsequent to the recording process, any conservation work in a graveyard should ideally be led by policies outlined in a Conservation Plan. Clearly articulated policies will help retain the significance of the site.

The documentation process would be an essential pre-requisite for the making of the Conservation Plan. In the case of historic ruins and foundations, advice should be sought from the appropriate central or local government body. Additional research will be required to assess fully the significance and vulnerability of the site before a useful document can be prepared. This, however, will be helpful in the planning of any conservation works, and in the day-to-day management of the site. A Conservation Plan is also an essential pre-requisite for Heritage Lottery funding.

5.3 Management Plans

For larger cemeteries the Conservation Plan should be followed up by a comprehensive Management Plan which should be prepared in consultation with those with responsibility for the graveyard.

The Management Plan, in addition to specifying grass-cutting regimes, should include the following:

- a planned maintenance programme;
- a programme for any major conservation work that might be required;
- a plan for the maintenance and promotion of the natural heritage, but which recognises the overarching need to preserve the significance of the site as a graveyard;
- identification of the measures required to protect gravemarkers and other significant historical features most at risk;
- a plan which balances the operational use of the graveyard (if appropriate) and access for visitors in a manner most suitable to retaining the significance of the site.

Where financial constraints dominate, this may mean that better preserved stones should have priority over poorly preserved stones, unless the latter are typologically important or historically significant.

Though economic factors are often cited as reasons for neglect of the historic value of our kirkyards and cemeteries, it should not be assumed that large financial resources will be necessary. A well worked out Conservation Plan, followed by a Management Plan can help define how much money would be required to achieve reasonable objectives. Most gravestones will probably be best left alone; others need only the minimal preventative treatment such as removal of vegetation and resetting fallen pieces of stone. In a few cases, more major and sophisticated treatment might be necessary. Restoration should be avoided in nearly all cases. However, if a monument is suffering water penetration as a result of a missing carved coping stone, then replacement of the carved stone would be appropriate.

5.4 Identification of Gravestones at Risk

In order to prioritise work to conserve headstones it is necessary to identify those stones that are at most risk. The factors that contribute to an increased risk of loss of heritage are as follows.

a The importance of the stone to the graveyard (refer to section 2.1 for a definition of an important gravestone).

b Whether the stone is sandstone or some other stone type. A sandstone headstone is likely to be at greater risk than other stone types.

c The condition of the stone surface. A stone surface that is decaying to the extent that loss of inscription is imminent is at risk and will be a high priority. A badly decayed stone that has lost all, or almost all, inscription is unlikely to be a high priority for conservation unless it is otherwise important.

d Whether the headstone includes significant carved detail that is in danger of being lost.

e The stability of the stone has been compromised to the extent that it is in danger of collapse and may cause damage to the stone or surrounding monuments or, at worst, create a public safety risk.

5.5 Monitoring

Once recordings have been made and the significance of individual stones or memorials has been established, an extended period of monitoring should follow since constant monitoring will prove cost-effective in the long term. This is imperative for memorials with visible signs of decay. Since even minor decay can trigger the process of erosion and, since the stones are irreplaceable, inspection by a conservator should be undertaken regularly, if possible at least once a year. For stones seen to be decaying, sinking or tilting, extended periods of monitoring may be necessary before deciding on the best possible conservation treatment. There is a need to adopt the practice of carrying out quinquennial surveys of historic graveyards.

5.6 Priority for Repair

With each gravestone that becomes eroded beyond repair we lose part of our heritage, a part which in all probability is not documented anywhere else. As ensuring the survival of every stone is a significant task, striking the balance between what is desirable and what is achievable can sometimes be difficult, especially when funds and skills are at a premium. Where extensive repairs and large funds are required, the simple problems could be dealt with first. These might be of the type that could be carried out by volunteers, which in turn would create an interest in the community, again, a prerequisite for possible Heritage Lottery funding. Where problems are relatively simple and easily dealt with, it would be logical to consider the most serious of these first. Gravestones should not be disturbed unless they are in imminent danger of sustaining damage by falling over.

Though graveyards present unique problems, traditional systems of repair are still valid. The primary purpose of repair is to restrain the process of decay without damaging the character of the gravestones and their setting, or altering the features which give them their historic or architectural importance. Repair works should be kept to the minimum required to stabilise and conserve, with the aim of achieving a sufficiently sound structural condition to ensure the long-term survival of the historic components of the graveyard. While there occasionally may be a case for the restoration of a representative number of the finest monuments, natural decay of the gravestones is in keeping with the historic character of the kirkyard or cemetery setting and appropriately represents the age of construction. Steps should also be taken to restore the historic character of the setting, where this has been considerably altered by later additions. It is also important to take necessary action to prevent vandalism (refer to section 8.4 for further information).

For advice on the definition of words such as repair, restoration and the like reference should be made to *The Stirling Charter* and *BS 7913: 1998 Guide to the Principles of the Conservation of Historic Buildings.*

5.7 Planning the Work

In planning the work, the factors identified previously will influence the urgency and time-scale of the repairs. No work should be initiated until accurate

63. Temporary timber shoring to support a badly constructed backing wall which has separated from the adjacent boundary

costs have been established and an appropriate budget allocated to enable the planned repairs to be completed. In some cases there will be a need to set up consultations with relevant experts, to advise on the extent of the work and on the procedures to be followed. Expert advice may be required on:

- the archaeology of the affected area;
- the likely impact on fauna and flora and the protection measures required;
- stone conservation and masonry repair;
- health and safety issues;
- structural engineering advice in the case of large structures.

5.8 Temporary Props and Protection

Where an original stone of some value has been distressed, a temporary holding framework around the stone might be erected to help keep the stone in position.

If the stone has cracked, this would also hold the different pieces in their original position until a more permanent repair could be carried out. The risk with such an approach is that the temporary measure becomes permanent, and this should be avoided. Appropriate repairs should be carried out at the most opportune moment after the holding measures have been put in place. Though repair procedures will vary, simple wood or metal supports to brace or stabilise a gravestone can be made to look quite satisfactory if only a small percentage of stones is treated in this manner. An example of a well-executed temporary propping structure is shown in Illustration 63. However, if the technique is used in row after row, the visual impact will be detrimental to the site as a whole. If metal is used, it should be non-ferrous. Where galvanised steel caging has been used, there is a distinct risk that the galvanising will break down and the underlying iron will rust. This can then lead to iron run off staining the underlying stonework. Whilst metal caging is meant as a temporary repair, the fact that the immediate problem has been solved often means that such caging is retained permanently. An example of a metal retaining cage is shown in Illustration 64.

All temporary work within a graveyard places a responsibility on the owner to carry out regular inspections to ensure that the works remain in place and retain their stability so that there is no risk to public safety.

64. Galvanised steel retaining cage

65. Blocking access to a burial vault that has become unsafe, Glasgow

5.9 Lifting Stones

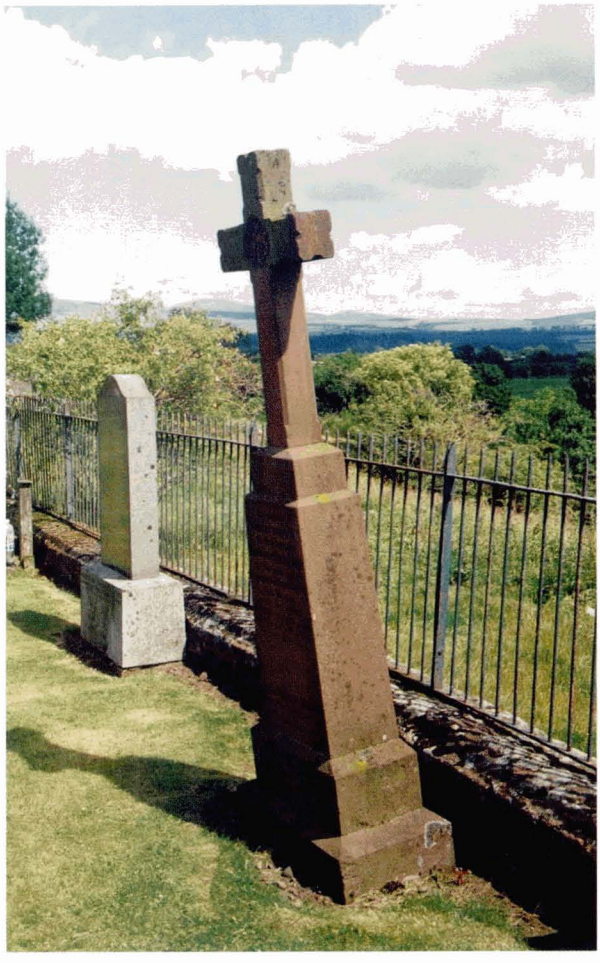
On occasions it could become necessary to lift stones, either to repair or resite them. Since attempts to set fallen stones upright can lead to their breaking-up, this should only be carried out under specialist supervision. If a stone is obviously friable, it should not be lifted. In an ideal situation, a lifting crane should be used, but in many instances it would not be possible to manoeuvre a crane in a graveyard environment. In such cases a lifting frame is an ideal and cheap substitute. Three-legged and 'A' shaped frames, used in conjunction with a rolled steel joist or a H beam, can be used in graveyards where there is a risk of damage to other gravestones. The conservation exercise carried out on graveslabs in Argyll (see Case Study 1) involved innovative methods of lifting stones by volunteers. Alternatively, scaffolding supporting a block and tackle arrangement may be a simpler arrangement for lifting slabs.

5.10 Resetting Tilting Gravestones

Many gravestones and other memorials can be seen to be leaning. This tilt is mainly due to the construction methodology used to erect the memorial in the first place. The whole process of excavating a grave, interring a coffin, backfilling with loose soil, however well done, can inevitably result in soil subsidence over the grave area and thus affect any gravestone adjacent to it. Moreover, since in the erection of gravestones the best practice may not have been followed, foundations are either non-existent or may be poorly made of a few bricks. Any consequent tilting of the gravestone might have occurred immediately after its erection and the stone could have subsequently stabilised in a leaning position. For similar reasons, gravestones can be seen to have sunk, in some cases almost completely, into the ground. In clay soil, shallow foundations can be affected by cyclical expansion and contraction of the clay, causing differential settlement. This may be affected by the presence of trees, particularly in areas of friable clay. It may be possible to stabilise the water level in the soil by providing a French-drain falling to soakaways or to a nearby watercourse, if available. However, since changes in ground conditions brought about by the introduction of drainage may themselves have undesirable effects, engineering advice should always be obtained.

The tilting of gravestones may eventually lead to loss, through bedding plane failure, of the suspended side. Also, should a memorial fall, not only would it be damaged but it would also damage or break any other gravestone it falls over.

The tilting of stones, particularly larger memorials such as obelisks which are built of two or more stones, is a serious health and safety concern. Stones with a pronounced tilt are sometimes made 'safe' by laying flat on the ground. This, however, is not a long-term solution and can result in further erosion due to factors such as water logging.



66. Example of a monument with a tilt that is of long standing. Note that the centre of gravity still lies within the area of the base

Since any tilt may be of long standing and may have stabilised (Illus 66), the memorial should be monitored over a period of time before any action is taken in order to determine whether or not movement is continuing. If the movement is still continuing, a decision should be made whether it is of sufficient seriousness to warrant action being taken. Wherever possible, monitoring should be in excess of one year in order to take into account any ordinary seasonal variations in movement. Subsequent to monitoring, if in the opinion of an architectural conservator the memorial needs to be stabilised, the stone should be lifted and reset on a firm foundation. Ideally, the foundation should be of stone but practical and economic factors might necessitate a pre-cast concrete foundation. Where a concrete foundation is built, the stone should be isolated from the concrete with the help of a damp proof membrane. Care should be taken not to leave any gaps in the groove meant to hold the stone, as this would result in

ponding and subsequent damage. Coarse sand or a lime mortar, which is replaceable, should be used to fill the gaps and hold the stone in the base. Non-ferrous phosphor-bronze wedges and shoes bolted to the concrete can also be used to hold the stones in place. The lifting and resetting of sunken stones would also enable the display of hidden lower carvings.

5.11 Exposed Base Stones

The exposure of supporting base-stones to headstones and monuments is one of the most common features in graveyards. In such cases, the turf around the base has been cut back to leave the soil exposed and the application of chemical weed killer prevents the regrowth of grass and weeds. The purpose of this action is to simplify the grass cutting operation, and reduce costs, by removing the need for hand cutting at the base of the memorial.

As a consequence of the soil exposure, the soil is consolidated and loose particles get washed into the surrounding soil, especially on sloping ground. This has the effect of exposing the stone base and its often precarious brick foundation. When this action is combined with ground settlement over the grave area, instability of the base may occur. This effect is well illustrated in Illustration 67.

67. Soil erosion leading to the exposure of the headstone foundation

Cutting back turf from the base of headstones as a means of simplifying grass cutting can not be recommended as good conservation practice. Some authorities, in an attempt to overcome this problem, replace the turf with cement mortar to enable the mower to cut to the edge of the mortar without causing damage to the headstone. This practice in an historic graveyard detracts from the significance of the site. There is also a danger that interaction between the cement mortar and the stone may accelerate the decay process. Recommended practice is therefore to make up the level with imported soil and replace the turf around the base.

To avoid damage to the base by the mower, the grass cutting specification should stipulate that powered mowers should not encroach within 30 cm of the base and that hand mowers and shears be used to trim close to the stone. To reduce costs, this hand cutting could be restricted to once per year and the 'untidy' longer grass length accepted. A notice within the graveyard, informing the public that this practice is to safeguard the integrity of the monuments, should allay any criticism of lack of maintenance.

5.12 Repairing Gravestones

5.12.1 Repairing Fractured Stones

Gravestones are often seen split into two or more pieces, mostly either as a result of falling over or of vandalism. Tablestones, due to their method of construction, snap more often than headstones, particularly if any of the legs have sunk or shifted.

The repair of snapped gravestones is strongly advocated. A reconstruction programme for any stone can involve a number of innovative techniques ranging from hidden non-ferrous dowels, polyester resins, brick piers, or metal support structures. Needless to say this is a highly specialised process which should only be carried out by a trained conservator. If many stones require reconstruction, the more significant ones (as defined in the Conservation Plan) should be dealt with first.

It is often the case that a headstone will fail again at the original point of fracture and, where dowels have been used in the original repair. The stone may be further damaged where the dowel bursts the stone as it topples. It is vital, therefore, that the correct insertion procedure for the dowels is followed and that a minimum 50mm length (75mm preferred), of threaded non-ferrous dowel is inserted into the stone at each side of the joint.

Clean fractures in stones can be repaired unobtrusively. However, before starting the repair work, the stone must be dry. This would almost certainly require the stone to be repaired under laboratory or workshop

conditions. Case Study 4 describes the fixing process for a graveslab.

The larger portions should be fixed by inserting non-ferrous dowels, such as phosphor-bronze, at strategic points. Any mould or biological growth should be cleaned off. The crack can then be joined using adhesives such as polyester resins in the required strength. The hardening of the adhesive is a chemical process, rather like the setting of cement; to obtain best results the two pieces should be dry and clean. The adhesive that has squeezed out of the joint should be peeled away with a sharp scalpel or a similar tool when it reaches a rubbery state, prior to reaching full strength. A clean joint can then be observed as a good example of honest repair. The stone should not be painted to hide the repair unless there is clear evidence that the surface was previously treated in this manner. Extreme care must be taken to avoid surface contamination by the resin as once it is on the face it cannot be removed. This work should be carried out only by experts, usually in laboratory conditions.

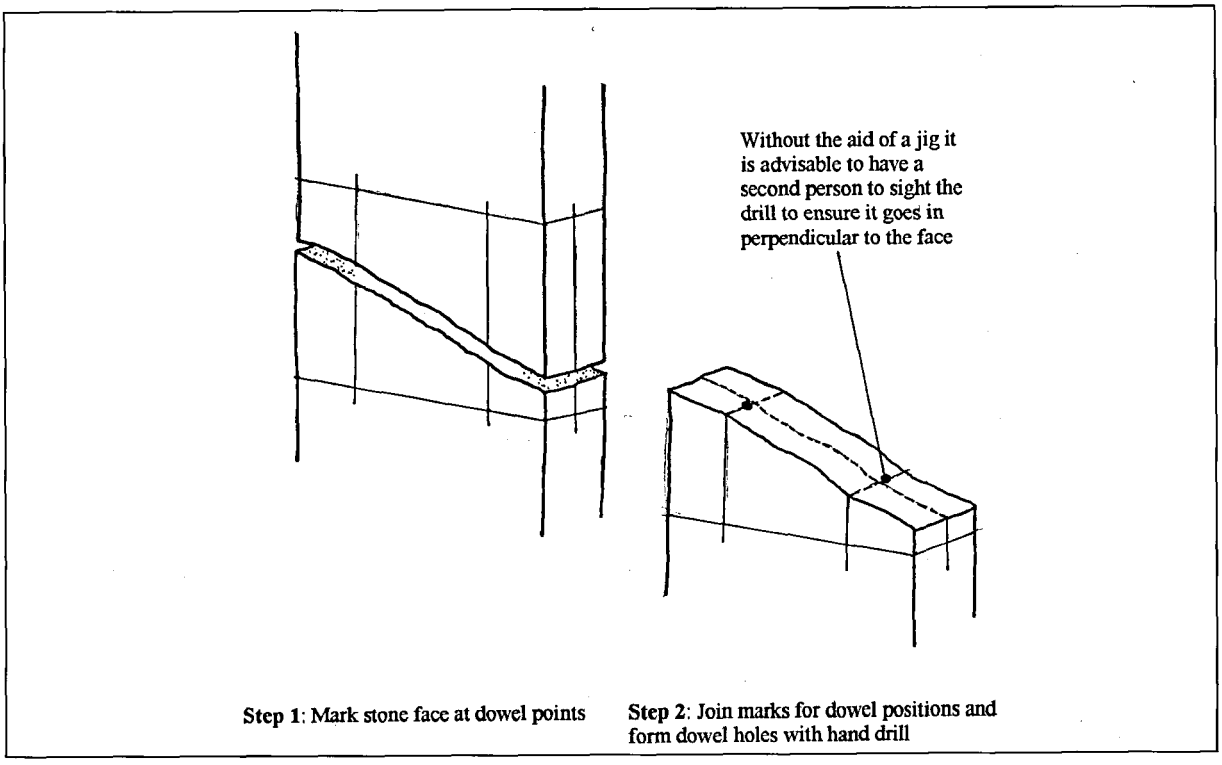
68. Snapped headstone repair with lime mortar joint

69. Example of a poorly executed mortar repair

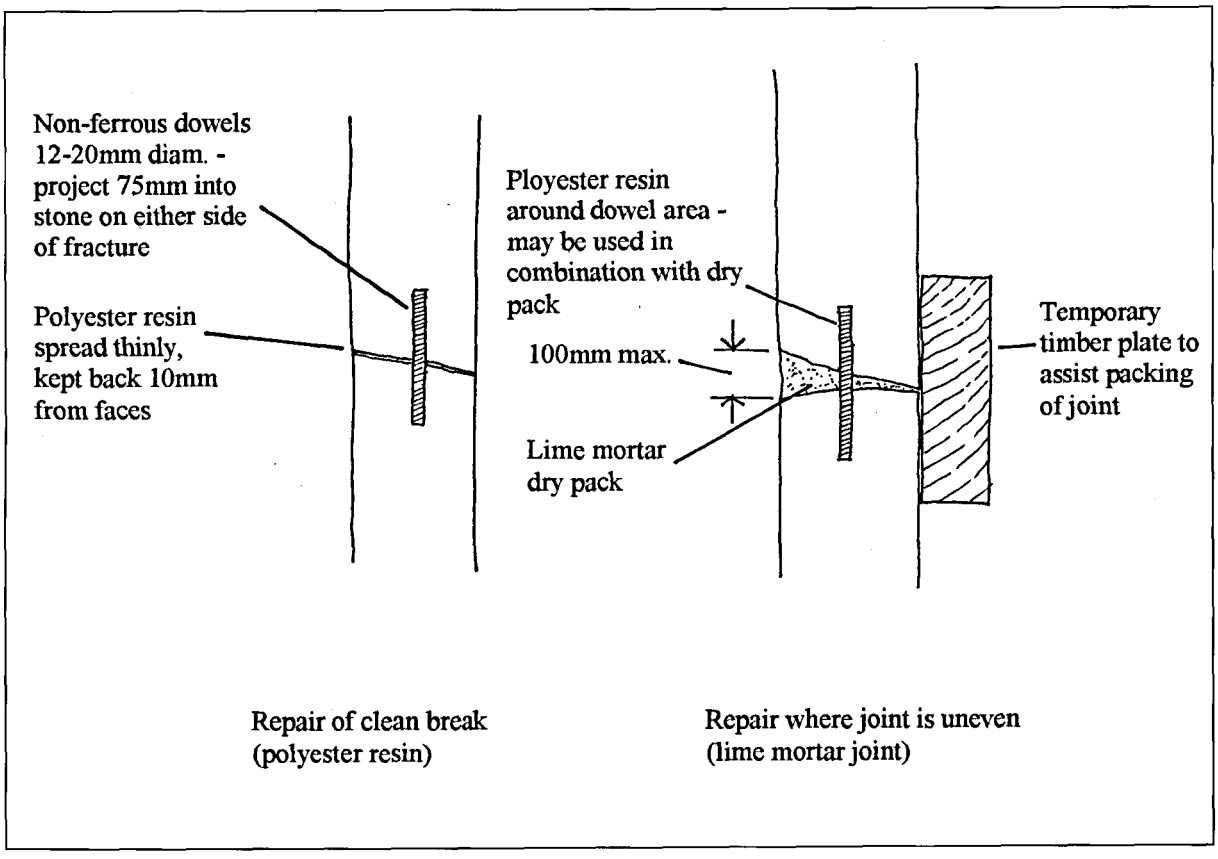
A procedure for positioning the non-ferrous dowels is shown in Illustration 70. Note that the dowels are slightly offset from one another to prevent a plane of weakness forming along a bedding plane.

Flat graveslabs are particularly prone to mechanical damage, due to the passage of machinery, fracture by toppling of adjacent gravestones or by attempts to lift the slab. Illustration 71 shows the sequence of repairs that might be carried out on a shattered graveslab. In this case, where the fractures are clean and a close fit of the fractured edges can be made, resin bonding can be carried out. In other cases, where pieces of stone are missing, lime mortar jointing will be required. Note also that the main non-ferrous dowels should be aligned along the length of the slab and not normal to the fracture line.

In the case of fractures to thin slabs, repair using dowels will not be possible. To effect a satisfactory repair it is advisable to reinforce the back of the slab with one or two flat section phosphor bronze bars fixed with brass screws to plugs in the stone, (Illus 72). This approach requires particular care to prevent damage to inscriptions. An alternative solution is to provide edge support by means of a non-ferrous metal channel plugged and screwed to the rear face of the stone, as shown in Illustration 72(b). To avoid damage to the front face, it is advisable to use a drill with a depth gauge to control the depth of drilling.

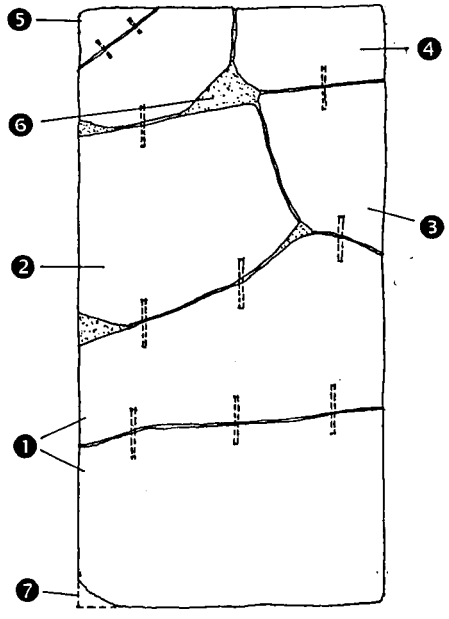


70(a). Method for positioning dowels



70(b). Dowel repair methods for broken slabs

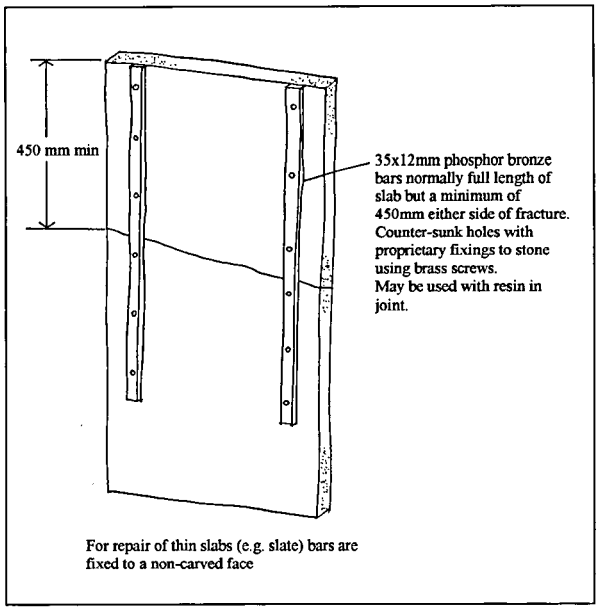
REPAIR OF A FLAT SLAB
(Based on advice contained in *Landscapes of Memories* Ontario Ministry of Citizenship, Culture and Recreation)



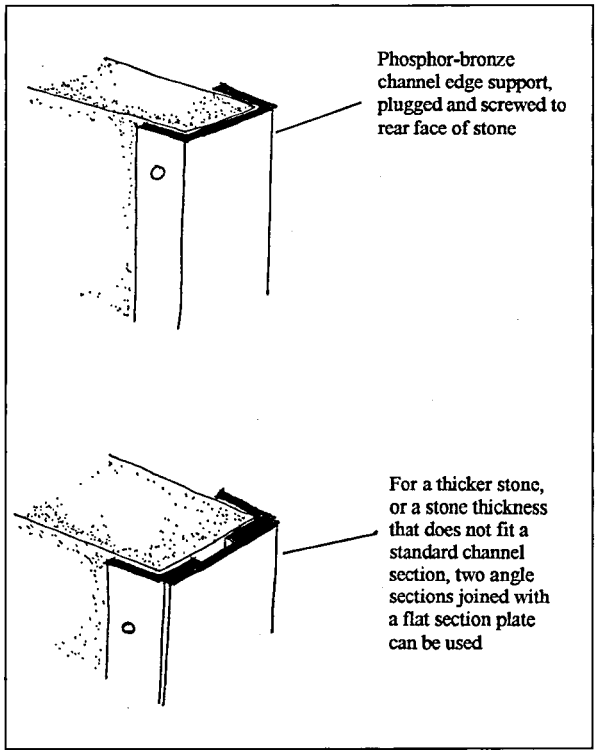
Sequence of Repair

1. Dowel together two largest pieces
2. Dowel larger fragment to the full-width piece
3. Dowel smaller fragment to the full-width piece
4. Dowel two top fragments to lower pieces
5. Use small dowels to fix small corner piece
6. Pack in lime mortar to open joints and missing segments
7. A mortar repair to the missing corner will drop off quite quickly and is best omitted

71. Sequence of repair of a flat slab



72(a). Method of repair for a thin slab



72 (b). Alternative support to a thin slab using non-ferrous metal channels as edge supports

In some cases a monument has been shattered, or is so damaged, or missing so many pieces that its re-erection over a grave in the exposed conditions of a graveyard is not considered practical. In such instances it is still considered desirable that the monument be retained within the cemetery or burial site. Details of the original location of the monument fragments should be recorded.

73. An iron cramp has been used to repair the headstone. A volume expansion of the cramp due to corrosion has caused the stone to fracture and increase the scale of the damage

74. This headstone shows evidence of a previous repair that has failed. In this case no dowels were used and mortar alone has been inadequate to prevent toppling and further damage has been caused to the stone

75. Headstone repaired with mortar. The galvanised strap fixed to the edge of the slab will add little to the stability of the repair

5.12.2 Additional Support

Some repaired stones will require additional support in the form of a supporting metal armature (Illus 76). Only non-ferrous metals should be used, and the supports should be carefully designed to ensure that they do not look obtrusive or disfigure the character of the stone and the setting.

Sometimes stones have been supported by encasing the sides and rear face of the stone with new stonework (Illus 77). Though this alters the visible overall proportion of the stone, it is the most successful method of support. The new material bears the brunt of the direct weathering processes since the original stone is usually lifted above ground level, leaving the new material to take the direct consequences of salt and damp transference from the ground. The casing in Illustration 77 is now itself of historic value.

76. A metal armature fixed to the rear of the stone provides additional support, Greyfriars, Edinburgh

77. An original memorial encased in a later stone frame, Moffat

5.12.3 Plastic Repairs and Stone Indents

Where small portions of a stone are missing, a 'plastic' repair using mortar may be carried out to reinstate its integrity. When undertaking this type of repair, care must be taken to determine the finished appearance of the repair, the mortar must be matched to the surrounding stone and be weaker than the surrounding stone. Alternatively, a stone indent repair could also be carried out. However, since inserting a new stone would require cutting away of the original stone, it would be hard to justify on gravestones.

On scheduled monuments the use of a stone indent should always be used in preference to plastic repair. Where a stone indent is proposed, repairs should be carried out carefully and, wherever possible, in matching natural stone. From the conservation perspective it can be argued that the repair should be obvious and reversible. While it is easy to achieve the former, due to the practical need to key in a new stone object, it is not so easy to honour the latter without creating a permanent change to the appearance of the stone.

Similarly, there is an argument to leave a stone indent piece in a blocked out form so that the repair is obvious. In the case shown in Illustration 78, where the original design can be readily seen, it would have been worthwhile to match the simple pattern of the original. Not doing so has disfigured the appearance of the headstone.

Mouldings should never be simplified to match damaged sections in the belief that the memorial will look better if the detail is the same throughout. This merely results in needless loss of character. Where it is financially possible to carry out a stone indent repair, it is probably best to aim to use as accurate a profiled piece as possible so that the stone is given back its dignity. If the ethical situation dictates, the new piece can always be identified by a small incised date on the surface of the stone.

78. *Blocked-out repair of stone*

5.12.4 Resetting Slab to Base

A very common form of damage to a gravestone is the slab becoming detached from the base. Slabs may be located onto the base stone in two main ways, either by locating into a grooved slot in the base or by means of a simple flush bearing onto the base. In the latter case, dowels may or may not have been used.

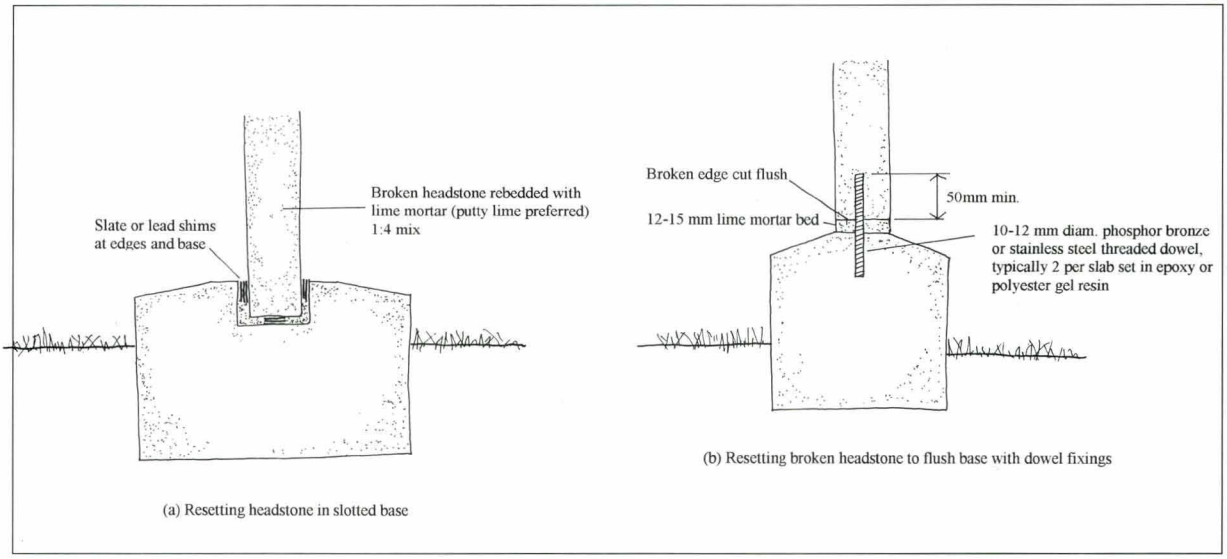
Recommended repair procedures are shown in Illustration 79. When dowels are used, these are set into place using an epoxy or polyester resin in gel form. When using resin repairs, the stone surfaces must be dry. This means that the stones must be taken inside and allowed to dry out before the dowels are inserted.

5.12.5 Repairs to Recumbent Graveslabs

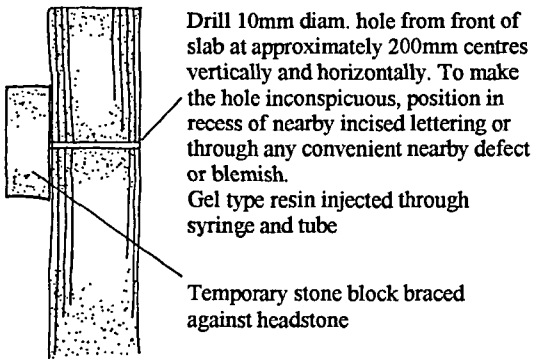
Methods of repair to recumbent stones are similar to the methods described above. In addition, however, it is important to ensure that the slab is replaced on ground that can provide adequate support over the whole area of the slab. An example of such a procedure is explained in Case Study 1.

5.12.6 Repairs to Delaminating Stone

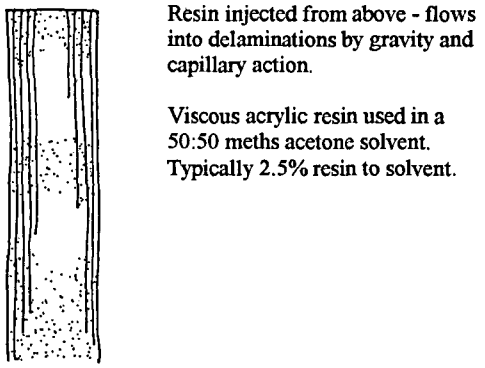
Delamination of sandstone gravestones, due to the vertical alignment of the bedding planes, is common. Where delamination is well advanced and the stone has lost much of its surface, repair is unlikely to be a viable option. Nevertheless, there will be occasions when repair to an important gravestone, that is still in the early stages of delamination, may be required.



79. *Methods of resetting slabs to bases*



Method A: Resin injection into pre-drilled holes



Method B (prefered option):
Resin injection through slab edges using gravity

80. Alternative methods of treatment for stone delamination

Two alternative repair methods are shown in Illustration 80. These repairs require dry conditions and are therefore carried out inside or under cover after the stone has dried out.

a Drill a series of holes through the slab at approximately 200mm centres over the area of delamination and inject a viscous resin into the holes. Temporary stone blocks braced against the back of slab prevent the escape of grout at the rear face. The holes should be drilled at points between lettering.

a Support the slab on its edge and inject the resin into the delaminating joints from above. The resin flows downwards into the voids by gravity and capillary action. Each edge of the slab is treated in the same manner.

Method (b) is the preferred option as this will cause less disruption to the face of the slab, but both should only be carried out by skilled conservators.

5.12.7 Use of Resin in Repairs

Great care must be exercised when using resin to effect repairs to stone to ensure that the resin does not spread onto the face of the stone. Should this occur, the resin is almost impossible to remove without damage to the stone. An experienced conservator should always carry out resin repairs to historic stone.

A procedure for jointing stones using polyester or similar resin and dowels is outlined below:

a Dry joint the stones with the dowel rods in position to ensure that there is a good fit by the dowels into the dowel holes.

b Prepare the resin mix of the suitable consistency and insert into one set of dowel holes.

c Insert the dowels with spacers attached (spacer end first) into the repair dowel holes.

d Insert a similar quantity of resin into the other set of dowel holes, sufficient that the space around the dowels would be completely filled.

e Apply a smooth resin mix onto the cut or fractured faces of the stone, keeping the resin back from the outer edges about 20mm so that the resin does not spread onto the exposed surfaces.

f Jack or lower the two stone pieces together, taking care to ensure that the resin has completely formed around the dowels and that all surfaces and mouldings are in alignment.

g Cramp together the whole assembly for the recommended period so that the resin can cure.

5.13 Repairing Wall Monuments

Several considerations must be borne in mind when dealing with grave monuments that are attached to church or other wall faces. Of significant importance is the stability of the supporting structure which must be maintained as watertight as possible. It is thus necessary to ensure that coping stones are not damaged or missing from the wall head. This may necessitate a complete repointing of the entire wall face, or at least localised repairs, and the careful installation of a flashing over the moulded head of the stone to shed water. As there is a higher risk of debris getting between the monument and the wall face, there is always an increased risk of plant growth within the space.

A variety of techniques were employed in the past to secure such monuments to wall faces, and this creates an added problem when considering any repairs required to the wall itself. Often the monuments are set into the wall structure in recesses specifically created

in the stonework to accommodate their thickness. This can increase their maintenance needs, given the need to ensure the structural integrity of the build overall.

Sometimes an attached memorial will have to be dismantled before any work progresses. This can be a difficult process if the slab or panel has been mortared directly onto the wall, or a recess has been cut out of the masonry to accommodate it. In other cases, it might be possible to support the memorial with protective scaffolding or timber shoring to prevent damage during repair works.

5.14 Mortar Types

Mortar repairs are often required to wall mounted memorials and other gravestones. Occasionally, when snapped headstones are repaired, small missing portions can be replaced by mortars. Regardless of where mortar is used, traditional repair methodology requires that all repair mortars are designed to be slightly weaker than the stone itself. When stones expand and contract with changes in temperature and humidity, the mortars that hold them together or in place must be sufficiently soft, flexible, and permeable to accommodate movements.

In the past, during repair works, cement mortar was often used in place of lime mortar, a practice which may increase the rate of erosion of sandstone. This is due primarily to the dense nature of the cement mortar joint relative to the porous sandstone. The result is a build up of moisture in the stone adjacent to the joint with associated increase in both moisture movement and frost action. Any cement mortar remaining should be carefully removed with tungsten chisels, ensuring that the stone is not damaged in the process. All loose mortar should be raked out of substandard joints using raking picks or chisels, and vegetation removed or treated. This should be followed by repointing all joints using a lime mortar mix. To ensure minimal damage to the surrounding stone during cleaning and flushing out, tamping, pinning and pointing, individual stones may require to be supported temporarily with wooden wedges in order to prevent slippage of stones. It is important to remove mortar which is no longer an effective binder.

The above recommendations are appropriate for wall monuments and repairs to walls. In the case of free-standing graveslabs, the use of a lime mortar joint without supporting dowels will not be successful.

5.15 Repairing Burial Enclosures and Walls

Minimum maintenance needs are to ensure that the wall-head is water tight, therefore cope stones and flashing details should be kept in working order. Broken cope stones or cracked mortar flashing should be replaced. When rebedding cope stones, wall caps may require to be raked out and refilled.

Where the existing mortar has eroded or is loose, resulting in water penetration, wall faces will require repointing, as can be seen on the rear wall of the enclosure shown in Illustration 94(b). Prior to repointing, any remaining mortar should be removed to a depth of approximately 25mm before any new mortar is inserted. Existing mortar should never be removed forcibly as this could needlessly damage the surrounding stone. Loose mortar should be removed manually, using a chisel or hacksaw blade, which is smaller than the joint size, and then flushed out with water. Any remains should be gently brushed off.

The new mortar mix should be lime based and matched to the mix of the original bedding. Where a sound example of the original mix cannot be found for analysis, the new mortar can be prepared in accordance with the Historic Scotland *Technical Advice Note 1: Lime Mortars* (1995). The joint should first be wetted to avoid suction and the mortar then packed firmly into the joint using a pointing key. The mortar should be confined to the joint and not spread onto the face of the stone. If properly built, and if protected from water dripping over the wallface from above, repointing should last for over fifty years.

Dislodged stones requiring resetting should be eased out of their position to allow more effective clearing out of any associated loose or decayed mortar. Any associated growth or root penetration should be cut out and cleared away before resetting the stone, this may require further dismantling and rebuilding. When rebedding the stone, care should be taken to ensure that it is reset to the correct alignment by sighting through alignments from adjacent undisturbed wallfaces.

Walls made of soft stone or those in extremely exposed conditions, may have originally been rendered. In situations where this is evident and any plaster rendering remains, and the stone is seen to be deteriorating, the wall should be re-rendered. However, re-rendering should be done only where there is evidence of the original plaster; care should be taken not to confuse later, more recent plasterwork as the original.

5.16 Replacing Missing Elements

Some important design elements of a memorial, such as urns, portions of statuary, finials and cope stones, may have been lost in the past. Where these are of structural significance, they should be replaced in the course of repair. A repair programme may also offer the opportunity to reinstate missing non-structural elements, provided that sufficient evidence exists for accurate replacement, no loss of historic fabric occurs,

and the necessary statutory consents are obtained in advance. Reinstatement of non-structural, ornamental elements which can significantly enhance the character of the memorial, could be undertaken as an exercise by apprentice stone masons as part of their college training.

5.17 Adding New Elements

On occasions it might become necessary, as a part of the repair process, to add elements such as lead flashings which were never part of the original design. Any additions or alterations to grave memorials should be undertaken only where it is felt that these would significantly deter further erosion. Where such interventions are carried out, they should not be too prominent or alter the historic character of the structure. Sufficient thought also needs to be given to the possible effects any new elements will have on the original material of the memorial. A record of all repairs, with dates, should be kept (see Appendix B, Part 8).

5.18 Relettering of Stones

Continued exposure to the elements often leads to erosion of inscriptions on gravestones. This is in itself an important reason for recording gravestones. Although fading of the inscription is part of the ageing process, on memorials to notable people this would lead to a serious loss of historical value. Also, some families might like to honour their ancestors by keeping the inscription legible.

Recutting the inscription over the original stone should not be undertaken as it inevitably means cutting into the weak substrate of the stone and is likely to lead to an accelerated rate of decay. In addition, it is always difficult to achieve an appropriate finish on the face of a stone which in any way emulates the original tooling or polishing technique.

In some cases where loss of inscriptions has occurred, the inscription has been reproduced on to a fresh stone plaque and this has been fixed to the original monument. However, this leads to a risk of differential weathering which could result in further decay of the surrounding original stone. The juxtaposition of granite and sandstone will produce this effect. If the original stone is friable, fixing of a plaque might require in-depth structural supports, causing further stress to the original stone.

A possible alternative to the above would be to install the new plaque in the ground in front of the original tombstone. This would not alter the integrity of the original gravestone. However, any new plaque should be added only where it is thought to be necessary and where it could add to the significance of the site. Care also needs to be taken to ensure an accurate record of the original inscription.

5.19 New Foundations for Memorials

When a memorial becomes dangerously unstable it may be necessary to reset the gravestone onto a new foundation to prevent damage to the memorial, or to adjacent gravestones. The advice offered here is appropriate for most situations but, where the memorial is on unstable or unusual ground conditions, specially designed foundations may be necessary. This will also apply to very large memorials or monuments.

The National Association of Monumental Masons (NAMM) has developed draft fixing standards for new memorials that, whilst not vandal proof, are designed to:

- ensure memorials are strong enough to withstand all reasonable forces to which they might be subject;
- ensure, as far as is reasonably practicable, that, should a memorial fall as a result of excessive force being applied, it could fall only slowly, i.e. in a manner unlikely to cause an accident.

5.19.1 Foundation Sizes

The NAMM is still conducting tests on foundations suitable for use in Scotland and offers the following advice on foundation types and minimum dimensions. Where it is possible, the length of the foundation should be greater than the width of the grave. Fixing of the memorial to the base should be by means of a minimum of two stainless steel dowels (threaded or plain) fixed with resin. The minimum length of the dowels should be 100mm (12mm diameter) for a plate height of up to 600mm, 150mm (16mm diameter) for 601mm to 900mm height and 200 mm (16mm diameter) for 901mm to 1200mm height.

Brick foundations

In Scotland, brick foundations are traditional for nineteenth and twentieth-century memorials. Where a repair is proposed using brick foundations, the foundation hole should be 600mm deep by 450mm wide with a length equal to the width of the grave area. Frost resistant bricks should be laid in courses on mortar beds up to ground level. Fixing dowels should be provided.

Pre-cast concrete slab foundation

- The minimum plan size should be always larger than the memorial base;
- Minimum thickness of slab - 65mm;
- Minimum plan width - 375mm.

Other foundation types

- Minimum plan size should always be larger than the memorial base;
- Minimum thickness of foundation - 75mm;
- Minimum plan width - 375mm.

For foundations over 900 mm wide, where a concrete slab is used, it should be reinforced.

In addition, a damp-proof membrane should be positioned between a new concrete foundation slab and the existing stone base of the memorial. This is essential where the memorial is constructed from a porous stone such as sandstone. The purpose of the membrane is to prevent the movement of salts from Portland cement into the stone.

The above recommendations are suitable for monuments on level ground. Monuments on sloping ground will require additional support foundations.

5.20 Cleaning Gravestones

The primary purpose of a gravestone is to commemorate and record the identity or identities of the deceased. The ability to read the inscription on a grave marker is therefore an important consideration. This then provides a rationale for cleaning of the stone and is therefore different from the factors influencing the decision to clean the stone façade of a building. When names are added to an existing stone, the opportunity is often taken to clean-up the stone. Unless the memorial is of major significance, cleaning of individual gravestones is most likely to be carried out by, or on behalf of, the family of the deceased or by volunteers. However, attempts to 'clean' an old stone to read an inscription should be avoided.

In the past gravestones have been cleaned for the above reasons without any realisation of the consequences to the stones themselves. Stonecleaning is a complex process and due consideration should be given to the historic value of the gravestones. As more has become known about the complex process of stonecleaning and its consequences, it has become clear that the historic value of gravestones could be severely compromised by stonecleaning. Concerned at the irreversible damage caused to some buildings by stonecleaning, Historic Scotland has commissioned extensive research on the subject and has printed a number of publications (see Bibliography). It is thus important to be clear about the reasons for undertaking any cleaning of gravestones. Cleaning that is properly carried out by experienced conservators is an expensive process.

The effects of stonecleaning on gravestones are similar to those on buildings, and so are the potential problems associated with stonecleaning. Just as the physical or chemical cleaning of buildings can have a detrimental effect and should best be avoided, so also should the cleaning of gravestones. While the effects of cleaning may appear beneficial in the short-term, sooner or later additional forms of deterioration will be noted. Aggressive cleaning may remove the protective patina from the stones, making them prone to increased levels of decay. Loss of the original surface will expose any underlying weaknesses. Cleaning should only be done when there are conservation grounds for doing so. Surface disruption will take place and enhanced levels of loss will occur. In addition to physical damage, removal of soiling also leads to the loss of the historic character associated with gravestones. Light soiling on stones, particularly on mouldings and other details, adds to their visual complexity by increasing the effects of the play of light and shade.

In the case of marble headstones, panels or carved work, occasional washing can be of benefit. However, the process should be gentle using only a soft brush and de-ionised water. Detergents should not be used.

Exposure to the elements over time helps build up a patina on the stone surface which is not merely the accumulation of soiling material. This patina results from mineralogical changes near the stone surface caused by wetting and drying cycles, combined with pollutants. Often, this develops into a more or less stable surface zone of variable depth. Removal of this patina may reveal underlying decay and hasten the rate of deterioration; or it may lead to serious damage to healthy stone now exposed to the ravages of weathering and pollution. In both cases extensive repair or replacement may become necessary. Once removed, the re-establishment of the stable patina on a stone will take many years.

In many cases soiling is biological, comprising of algae, lichens, mosses and moulds, often in combination. Soiling of this type is different from particulate soiling and gravestones which have predominantly biological soiling should not be cleaned using normal stonecleaning methods. However, whilst such soiling is an aesthetic problem, it can obscure inscriptions and thus encourage visitors to scrape away the offending growths to make the inscription more legible. Uncontrolled and repeated removal of growths can cause grain loss from the stone.

Where deposits are actually causing damage, such as blistering sulphate skins, or where they are of such thickness that it is not possible to decide the scope of necessary repairs, it may be desirable to remove them. Very careful cleaning by a specialist conservator is usually an essential preliminary to conservation work on valuable carved gravestones. Evidence abounds of situations where unskilled operatives, using inappropriate techniques and undue haste have caused permanent damage to buildings.

Stonecleaning can be broadly divided into physical cleaning and chemical cleaning. These methods in turn embrace a wide variety of techniques and effects. Physical cleaning methods work on the principle of abrading the surface layer of stone to which soiling is attached, either with water, with abrasive particles (including minimally abrasive proprietary micro-air abrasive systems), with carborundum discs, or by dry brushing. The roughening and erosion of the stone surface which may take place is particularly important when considering the use of any physical cleaning method. The amount of erosion and roughening that occurs depends on a range of factors, including the type and physical state of the stone, the pressure used and the nature (hardness) and size of any abrading particles used in the cleaning process. The skill and training of the operative employed in the cleaning task is of vital importance.

In skilled hands, micro-air abrasive systems using low pressures and fine grit may be used with minimal damage on some more resistant stone types. However, grit blasting can cause severe damage and should not be used to clean gravestones, unless used by a specialist conservator.

Disc cleaning involves the use of carborundum discs and brushes attached to power tools and applied directly to the surface of the stone. Undoubtedly this is extremely damaging and its use on gravestones can never be justified.

More sympathetic is dry brushing which involves manually brushing the stone with a medium bristle brush or nylon brush to remove loosely bound surface deposits. Wire brushes should not be used as they can cause severe damage to fragile surfaces. However, the least damaging and sometimes an effective process is to simply wash the stone with water to soften surface deposits, such as bird droppings and biological growths, supported by gentle brushing. Even here care is required, no cleaning with water should take place where there is a danger of freezing before the stone has dried out.

Chemical cleaning can have dramatic effects on gravestones, particularly where porous and permeable sandstone is involved. No matter how carefully the sandstone is washed down afterwards, some chemicals will inevitably be left behind in the stone. One of the most noticeable effects of using chemical cleaning agents on sandstone is the subsequent appearance of efflorescence on the stone surface. Efflorescence consists of soluble salts, which are mobilised when the stone is wet, then drawn to the surface of the stone where they crystallise as the stone dries out. More damaging is the formation of salts within the pores of the stone (subflorescence or cryptoflorescence). These soluble salts are capable of generating high stress within the stone and often cause or accelerate decay on an affected stone.

Chemical stonecleaning can cause dramatic changes in colour, especially to sandstone. Staining, bleaching and other colour changes may be caused by chemical mobilisation of iron or manganese bearing minerals in the stone. If these are washed out of the stone this results in bleaching. If they are redeposited close to the surface this results in staining. Staining does not always occur immediately on cleaning, it may appear slowly over several months. Staining and bleaching can be aesthetically detrimental to the appearance of stones. Stains are often partly hidden by soiling and become noticeable only after cleaning. Cleaned stones also begin to resoil almost as soon as the cleaning process has come to an end.

Some chemical cleaning agents contain substances (e.g. phosphates) which can act as nutrients and thereby accelerate biological growths on stone after cleaning. Different stones react to cleaning in different ways, sandstones are highly variable and some can deteriorate considerably on cleaning. Any cleaning of gravestones, which are often of irreplaceable value, should be carried out only by specialists and only on the recommendation of a conservator.

5.21 Water Repellents and Consolidants

Water repellents are intended to prevent or reduce water penetration into stone and so reduce the rate of decay. Consolidants are intended to strengthen weakened stone and slow the rate of surface loss by binding loosened stone through bridging of gaps between grains. Many treatments have a mixture of consolidant and water repellent characteristics. Some are predominantly water repellents with little consolidative effect, others are mainly consolidants but also have a water repellent effect. Where a stone or carved detail is in immediate danger of loss through decay, treatment with a consolidant and/or water repellent can be a potential mechanism for its preservation and in some circumstances treatment can stabilise decaying surfaces. However, there are a large number of different treatments available which differ widely in their effects.

Given the number of potential problems associated with use of consolidants and water repellents treatments, they should only be used by specialist conservators. Problems which can arise through inappropriate treatment include:

- acceleration of stone decay due to salt crystallisation or frost damage below the treated layer;

- discoloration of the stone or of the applied treatment;
- formation of a glossy coating on the stone surface;
- long term chemical instability of the treatment.

Water repellent treatments can affect moisture absorption and evaporation rates in unpredictable ways. While water repellents can prevent or reduce ingress of liquid water through the stone surface, they cannot prevent ingress of water in the vapour phase through cracks at mortar joints, by rising damp or by transfer from surrounding stonework.

Therefore, although a water repellent could reduce the amount of moisture penetrating a stone, it cannot guarantee to exclude all moisture. Many applied materials will also reduce the rate of evaporation of moisture from a stone. In addition, it should be noted that some of the chemicals and solvents used are extremely hazardous and should only be used with appropriate protective equipment.

5.22 Relocating Stones

Gravestones should be retained in their original location wherever possible. However, where it has been clearly established by a conservator that continued exposure would lead to deterioration of an important gravestone beyond repair, then for its safety and long-term survival it should be moved under cover. An example is the removal of the Faichney Tomb to the relatively stable indoor environment of the kirk (Case Study 3). Where in the past memorials originally from within the kirk have been moved outdoors, resiting of the memorials in an indoor environment is justifiable as these stones were never meant to be exposed to the elements.

Before stones are moved, it is important to get the consent of the owner wherever possible as well as any necessary legal permissions. The involvement of both an archaeologist and a conservator is also essential. It should be ascertained if the stone is too friable to be moved or if there are any other risks involved. Prior to transporting a stone to a new location, a condition assessment of the stone should be made. This might involve the prior removal of slime mould and general soiling. The presence of salts should also be ascertained as salts may begin to crystallise with a change in environment. Following this, the stone should be lifted safely and carefully from its base. The base should be removed using the most effective excavating technique, with the minimum disturbance. Where a gravestone has to be dismantled, each individual stone should be discreetly marked with a number in reversible pigment. A corresponding number should be shown on a detailed drawing in order to ensure accurate reinstatement.

Even when stones have to be moved, they should be retained in their local environment, preferably within the graveyard setting. Possibilities range from rehousing them within the kirk, if in a kirkyard, or in a mausoleum if one exists in the cemetery. This would ensure that even while being protected from the environment they are still within the area to which they belong.

Some stones can be carefully covered up during the harsh winter months as a short-term measure. Indeed, some of the early medieval stones which have an important relationship to their setting have had enclosures built around them as the only way of protecting them. However, such measures might not be justifiable for the more recent and more numerous seventeenth and eighteenth century gravestones.

Movement of stones to more remote locations, including museums, should be a last resort, though there may be cases where particularly vulnerable stones can only be given adequate protection by moving them into a museum environment. When gravestones, previously in a very exposed environment, are subsequently moved into different environmental conditions, they should be monitored carefully as they go through a transitional drying out phase. There should be no additional heat supplied, as this could create large thermal stresses, which could lead to the breakdown of the stone. The best interests of the stones must always be the paramount consideration and, in general, the least disruptive and lowest level of intervention is to be preferred.

Where a stone has been removed, a suitable plaque or small memorial, recording its details and indicating the former presence of the gravestone should be placed on the original site. If, in the future, it is desired and is made possible to return the stones to their original site, this could then be done. To avoid disfiguring the historic character of the site, plaques or signs should be designed and placed sensitively.

In some cases, where important early medieval or other stones many centuries old have been removed, replicas or casts have been erected in their place. Again, such treatment will not be justifiable for more recent gravestones. In addition to the costs involved, factors such as the possibility of damage to the stone through casting, and the difficulties of achieving a successful replica, need to be considered.

Stones can be protected from the worst of the weather by a simple shelter comprising a pitched roof supported by a few columns. A number of significant stones of early medieval date have been brought together in Argyll. In some places specially built free-standing shelters have been constructed, in others roofs have been replaced over ruined chapels. In the enclosure shown in Illustration 81 care has been taken to ensure

81. Protection to the stone Sacrement House in Deskford Churchyard, Moray, allows natural air movement around the monument whilst protecting it from rain

that there is sufficient ventilation to allow natural air movement around the stones. These collections of stone preserve vital local heritage. Stones which have been brought together in these and similar collections have generally been set upright, or on an inclined presentation so that their surfaces can be inspected more easily.

Stones which are displayed upright must be made to stand on a low plinth and be securely fixed. A hardwood rail secured at convenient joints in the wall, in order not to damage stonework, can be used to fix the stones. The rail should be at an appropriate height so that it can provide a cushion against which the stones can lean. This prevents abrasive damage to the

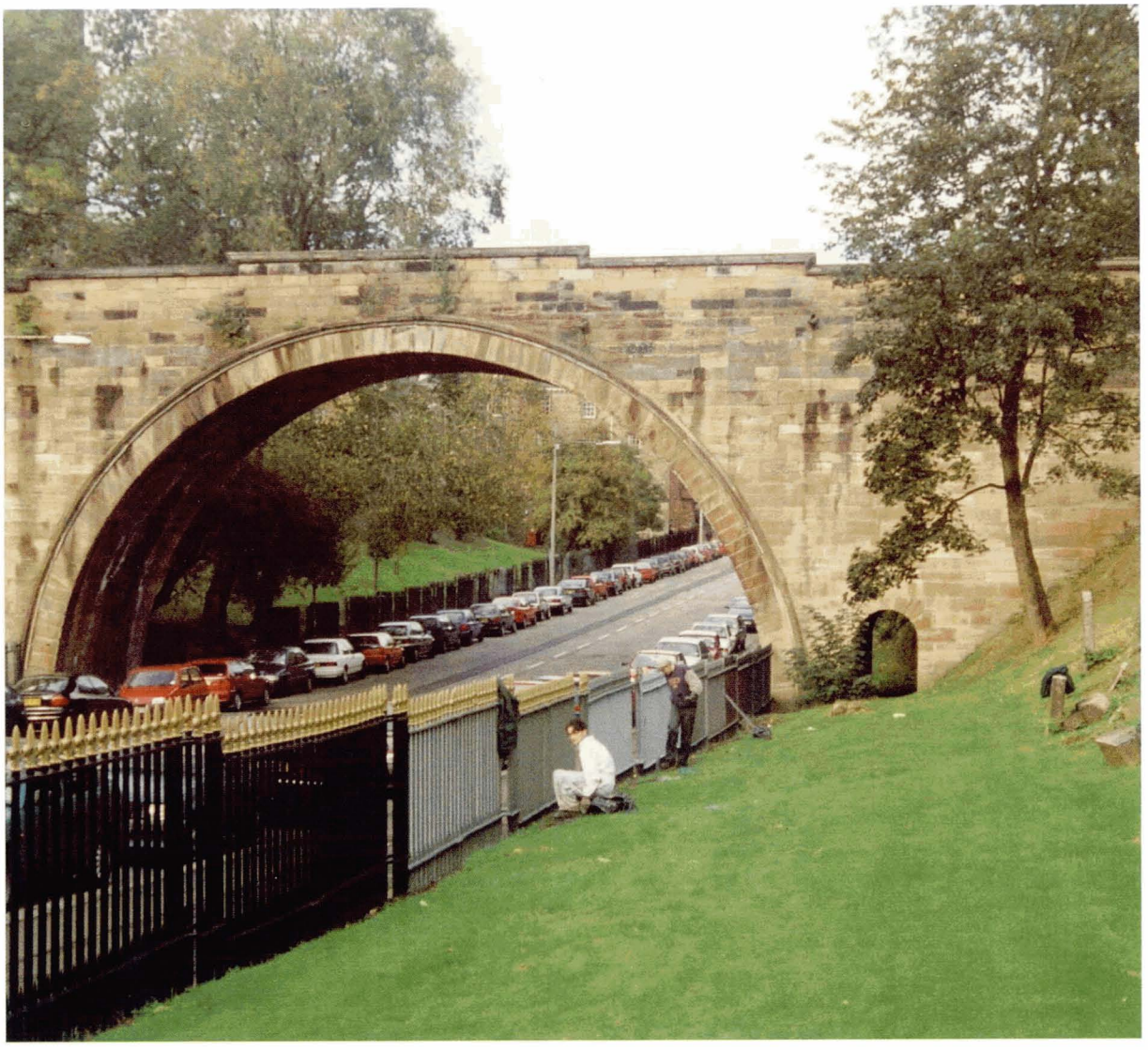
82. Well-maintained cast iron railings at St Nicholas Kirkyard, Aberdeen

rear of the slabs and to the wall surface itself. The rail also provides a continuous fixing strip so that securing cramps can be located with complete flexibility to accommodate the variable widths of the stones. The cramps should be manufactured from a strong unyielding non-ferrous metal and secured to the rail with tamperproof fixing screws or bolts. A high-density foam rubber such as 'neoprene' should be used at the interface between supporting cramps and the face of the stone. If securing cramps to a historic wall, they should be bedded in the mortar joints rather than in the stones. Adequate care should be taken to support the substantial mass and weight of the stones and decisions on the number of cramps required should err on the side of caution. Stones which are to be displayed horizontally are best laid on strong but fairly low plinths perhaps about 300 mm high. This facilitates viewing while also raising them out of reach of cleaning equipment.

5.23 Maintenance and Repair of Iron Work

In the exposed graveyard environment, rust can be prevented only by ensuring that all iron work is painted. However, once rust has set in, on no account should it be overpainted. It is important to carefully prepare the surface to receive the paint. This would involve removal of rust and any existing paint, which can be done by mechanical means such as wire brushing, hand sanding or scraping. Though this can be very effective on flat surfaces, abrasive cleaning could be required on any areas with deep crevices. Any abrasive cleaning should be carried out only by experienced operatives.

A paint system for ironwork generally requires three layers of paint known as the primer, the undercoat and the top or finish coat. Each paint layer has a specific purpose and has been formulated for this particular purpose. However, it is essential that the three coatings



83. Repainting iron railings, Glasgow Necropolis

used are mutually compatible. The paint system chosen must also be compatible with the ironwork, act as a protective barrier to the elements and inhibit corrosion. In general, it is advisable to use an oil based paint system on cast iron, both for new castings and on existing ironwork. Advice should be sought from the paint manufacturer when selecting the paint system. For ironwork in graveyards it is also sensible to apply two coats at every layer.

The quality of the paint application is an important factor in determining the success or failure of the paintwork. Coating must be applied on a dry surface and in the Scottish climate this might only be possible in laboratory conditions. If it is not possible to remove the iron element, painting should be avoided in the winter months and in high humidity levels. The application of paintwork should ideally be done by brush since bristles will coat the craters and the rough spots. The Glasgow West Conservation Trust (1993) offers excellent advice on painting ironwork in their *Conservation Manual, Section 4, Ironwork.*

Unfortunately, there is little contemporary documentation of paint colours used for grave memorials and other ironwork in graveyards. It is also unlikely for any of the original paint to be left on historic metalwork in the exposed environment. If any paint remains, this should be tested for colour chronology of the historic paint layers. This could help to select the paint colour, in accordance with what was originally used. Where reliable information does not exist, the chosen colour should not be garish, and black seems to be a popular and a safe choice. It has been said that 'green is a safe choice for most Victorian work, and blue or white for Edwardian' (Brooks C, 1989).

Once iron work has been painted, good conservation policy will require regular inspections and any loss of paintwork or any rusting should be locally treated. Repair to iron work in graveyards should follow traditional conservation principles, with the fundamental objective being the arrest of natural decay processes to prevent any original detail from being lost. Since the authentic value of the original material is paramount, every effort should be made to retain rather than replace.

Being brittle and thin, cast iron elements are prone to accidental damage, such as that caused by grass cutting equipment striking the ironwork. Broken pieces can be welded; though welding can be a successful repair method only if undertaken by an experienced operative. There is the danger of the metal heating up differentially which can cause fracturing and, for aesthetic reasons, there is a need to carefully ground down the welds to meet the original surface. Like painting, the area to be welded must be properly prepared so as to ensure that a clean surface will be available to take the welding filler material and provide a strong bond. Besides removal of impurities, the iron section must be shaped to take the weld.

In extreme cases it might become necessary to disassemble and subsequently reinstate iron elements. This would require much labour, and is justifiable only when deterioration is too severe to be remedied with minor consolidation works in situ. Dismantling the ironwork into its original individual components allows for thorough cleaning of all pieces, as well as the renewal of fixings. Any missing pieces can also be recast from the original, though it would require good understanding of the original manufacturing process before any recasting is undertaken.

Compared to cast iron, wrought iron is more susceptible to rust and is more likely to require physical repair in addition to any removal of rust and prevention of corrosion. For the softer wrought iron, removal of any rust or paint prior to repainting, can be most suitably done with flame cleaning, followed by use of a wire brush. For repair work, the use of matching quality wrought iron is always recommended for any repair work needed. Though missing wrought iron pieces should be replaced only with wrought iron, not much pig iron is currently being worked into wrought iron and any new pieces may need to be made by salvaging and reworking any extant remains. Use of welded mild steel as a substitute material to repair wrought iron can increase future maintenance requirements because it corrodes at a faster rate and can promote rust in previously sound ironwork.

6 OTHER BUILT ELEMENTS

6.1 Types of structures

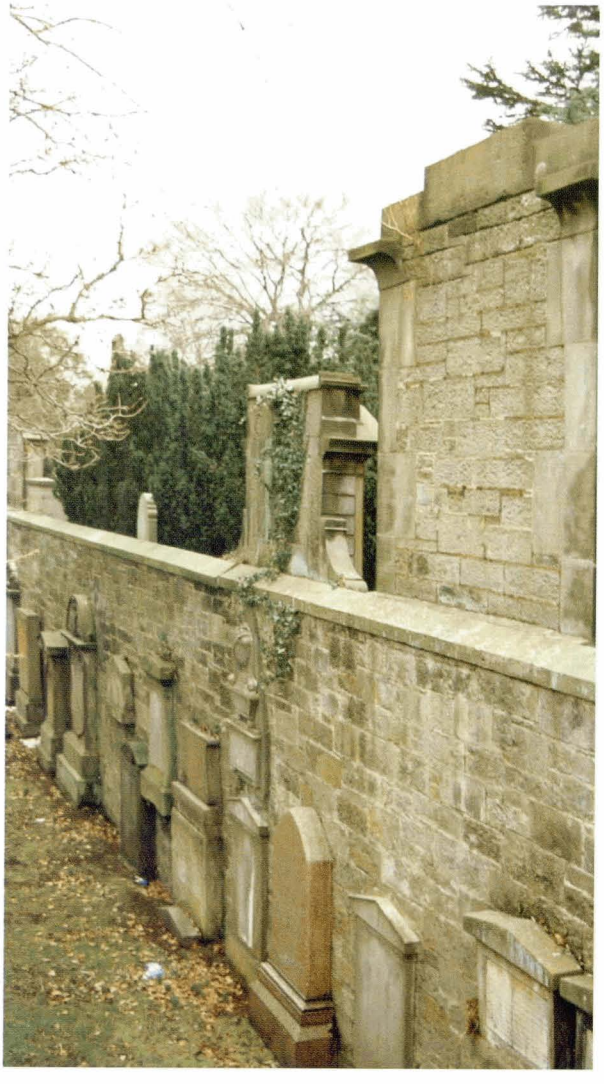
As well as containing mausoleums, catacombs, and burial vaults, graveyards are the sites for other buildings and structures not built as memorials. Conservation of these buildings should receive due attention since they contribute to the cultural importance of the graveyard. In addition, new buildings may have been erected within a graveyard to address new needs.

Historic buildings in kirkyards, in addition to the kirks or ruins thereof, can include bell towers, watch towers and houses, hearse houses, morthouses, and enclosure walls. These structures pose repair and maintenance problems similar to those of other historic structures, therefore traditional principles of regular repair and maintenance should be followed. All buildings, even if unused, should be kept weatherproof and watertight. The appearance of neglected buildings can encourage vandalism or misuse. Gutters and downpipes should be cleared regularly, lead flashings and valleys renewed or patched, doors and iron fixtures kept free of rust, and invading vegetation removed. Masonry structures will on occasions require repointing as explained in section 5.15. While restraining the process of decay, care should be taken not to alter features of any historic building. Any fracturing or cracks seen on a building should be carefully investigated to determine the cause. This will sometimes be obvious, particularly where tree roots underlie the wall. For comprehensive advice on repairs refer to Historic Scotland's publication *The Repair of Historic Buildings in Scotland* (Knight J, 1995)

6.1.1 Boundary and Retaining Walls

Graveyard boundary walls often have a unique character, with an array of wall monuments towards the interior and the wallhead assuming the profile of these monuments towards the exterior. Graveyard enclosures also present specific problems; not least of these, especially on sloping sites, is the potential change and increase in the loading on the wall. This is due to an increase in the height of the retained soil as a result of continuous reburial. Difference in level means that the wall has to perform structurally as a retaining wall. In such cases the wall could require additional support or strengthening.

The structural repair of a stone boundary wall may require digging for foundations. As there is a possibility of this leading to the disturbance of graves, any excavations should be undertaken carefully, under the supervision of an archaeologist. The repair process also gives the opportunity to understand the history of the wall and to identify any fragments of monuments or memorials that have been used in building it. Observation by an archaeologist should continue while works are ongoing.



84. Boundary wall supporting memorials on two different levels while also acting as a retaining wall

If a wall has to be dismantled and rebuilt, it should not be reduced in height. Care should be taken to re-use the stones in a manner that matches the original build in order to maintain the historic character. Gridding the wall prior to downtaking and a reference photographic survey can help achieve this.

In some places, adjacent properties may have been constructed very close to the boundary wall making the rear face inaccessible and impossible to maintain. Indeed the same might be true if gravestones have been erected against the boundary wall. Where this has happened, care must be taken to ensure that vegetation does not take root in the gaps as it could damage the structures. Such memorial stones may have to be removed carefully and set aside, vegetation and any tree growth cleared, the wall rebuilt and memorial reset to original position. During rebuilding, measures should be taken to prevent debris from accumulating in any remaining gaps in the future.

Boundary walls, like burial enclosures, should also be protected from water penetration from the wallhead and will occasionally require to be repointed. (See section 5.15).

6.1.2 Fences and Railing

Graveyard boundaries and extensions can be marked by iron fences and railings. The replacement of missing railing pieces should be encouraged. (Repair of iron work is dealt with in section 5.23). In the original setting of the railings, a series of cast iron uprights, made to a common profile and height, were leaded into a masonry base course profiled as a stone cope. The fixing holes were made larger than the diameter of the cast verticals so that molten lead could be run into the hole to secure the banded rails. Unfortunately, the bond between the lead and the cast members is often imperfect. Over time, rust action causes the iron to expand in the lead filled hole. As the corrosion products build up, a continuous shear stress over the length of the copestone develops and, ultimately, this may lead to its fracture.

The only realistic way to repair this defect is to dismantle the entire assembly, clean out the securing holes, dowel joint the fractured stone and reassemble the railing by reversing the process. Where this is impractical, it is now possible to set uprights in a resin plug, coloured to look like a traditional repair. Care must be taken to ensure that no resin is smeared over the face of the stone as a result of overfilling the hole or by inadvertent spillage. Contamination of this sort is extremely difficult to remove and can actually create differential weathering due to the impervious nature of the resin.

85. Iron railings fixed to a stone coped wall. In this case ground maintenance behind the graveslabs is difficult

6.1.3 Gateways

Entrance gateways to graveyards and cemeteries can range from a simple wooden or iron gate in a wall or fence to an elaborate stone structure with a high degree of carved detail, supporting large iron gates (Illus 86).

Gates to graveyards have obvious symbolic as well as practical value Unobtrusive repair and restoration is called for to protect the fabric and retain the sense of enclosure. Lych gates, roofed and originally designed as resting places for biers, are occasionally found in historic Scottish graveyards. Where they still remain, care should be taken to preserve all original materials and to follow the techniques of the original builders. A professional familiar with working with historic buildings should supervise this. Missing gates should be replaced, to a design matching the original, to maintain both character and security. Loose hinges should be re-secured in order to ensure that neither the jamb nor the cill-stone is damaged. An experienced blacksmith should carry out these and other minor alterations, such as fixing wheels on swing gates.

Gateways can also have ornamental wrought iron work. Any such work can be of much value in its own right and should also be kept well maintained and repaired. (See section 4.7).

86. The imposing gateway to the Neocropolis, Dundee

87. A lych gate, Fogo, Scottish Borders

6.1.4 Entrances

Entrances can be subject to excessive wear and tear and will require regular routine maintenance, such as infilling of potholes. In many respects the 'softer' the ground surface material, the more sympathetic it will be to the setting of the graveyard. Although requiring regular maintenance, such an approach avoids the risk of creating too much of a 'municipal' design imposition through the use of tarmac and concrete kerbing as ground finish materials.

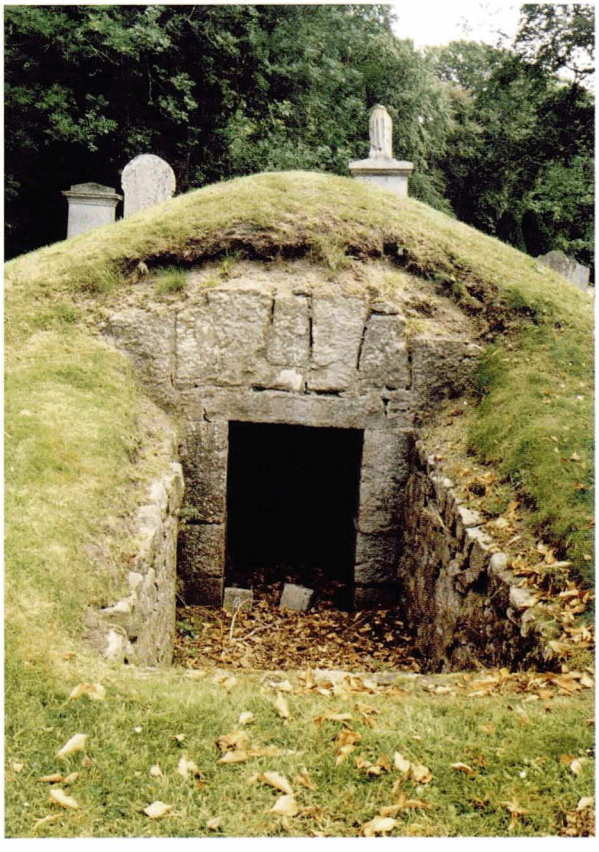
88. A simple iron kissing gate, Penpont, Dumfriesshire

6.1.5 Morthouses

In the early nineteenth century, morthouses were erected in some graveyards to protect the bodies of the deceased from the Resurrectionists. Their object was to obtain human bodies for anatomical dissection and for medical education, as no legitimate provision existed for this at that time.

Morthouses are of substantial construction with a stout door which would not be broken down easily. In the example shown in Illustration 89 the stout oak door has a protective bar arrangement for the keyhole. When used, the coffin was placed on a revolving platform, which moved round one space each time a coffin was brought to the graveyard. By the time the first coffin reached the door again, the body was too decomposed to be of any use for dissection.

89. Morthouse, Udny, Aberdeenshire (circa 1830). Renovated by Gordon District Council in 1976-77



90. Morthouse (1830), Hatton of Fintray, Aberdeenshire

6.1.6 Watch Houses

As with morthouses, watch houses and watch towers were built in the eighteenth and nineteenth centuries to protect bodies from graverobbers. Their purpose was to provide shelter to watchmen and to provide a good view of the graveyard. Watch houses were usually positioned near the entrance to the graveyard so that all comings and goings could be monitored. Numerous examples of watch houses exist in Scotland and many are listed buildings.

91. Watch house at Kirkton Old Burial Ground, Ardersier, Inverness

6.1.7 Redundant/Ruined Churches and Chapels in Graveyards

Graveyards may include the visible remains of redundant churches and chapels. Such masonry structures, perhaps surviving as no more than low foundations, may need conservation for which specialist advice should be sought. Removal and control of harmful vegetation will help to limit structural damage (see sections 7.1 and 7.2). Invisible archaeology is also likely to be associated with these remains and will also benefit from control of harmful vegetation. Unnecessary ground and fabric disturbance should always be avoided. In the case of listed and scheduled remains, advice and necessary permissions should be sought from the local authority and/or Historic Scotland, as appropriate.

6.1.8 Mausoleums

Of all funerary monuments, mausoleums are the most grandiose and architecturally accomplished. With a limited operational function to perform, mausoleums can be highly ornate and sculptural. Architects were given free rein to express their design flair and this resulted in a wide range of spectacular structures. Illustration 92 shows examples of elaborate mausoleums in the Glasgow Necropolis.

Unfortunately, lack of maintenance can cause critical deterioration and decay. The materials used in the construction were limited to stone, mostly fixed with iron dowels. This limited palette created a range of decay difficulties as the normal methods of protection from the elements were usually not employed. This results in an increased need to keep the basic structure in good order. Stones can become dislodged, with moss, grass and tree growth taking hold and enhancing decay processes. If little or no money has been spent on a structure since it was built, a decaying mausoleum can create the need to resolve particularly significant structural problems.

Mausoleums should be recorded in detail, to the extent of preparing templates of mouldings for future replacements. The stone should be carefully surveyed and, if necessary, tested for soundness by careful finger tapping. It is imperative that the roof-work performs, therefore joints in the slabs should be checked for watertightness and where necessary, pointed with a lime-based mortar. Where larger gaps exist, portions of the roof might need to be dismantled and, depending on the original construction methodology, reset with appropriate materials. Minor gaps could also be filled with polysulphide mastic. Any missing stonework should be repaired with matching mortar. Stones with a significant amount of decay might need to be replaced

with matching stone which should be secured only with non-ferrous ties and lime mortar. Any replacement should be carefully carried out in a manner which is least harmful to the original surrounding stonework and in no case should the surrounding stone be drilled through. Painting stonework is not an acceptable substitute for repair or replacement, but any remaining traces of decorative paint should be analysed and the carved work carefully repainted in the original colours after restoration.

Consideration could be given to rehousing deteriorating gravestones from the graveyard within mausoleums. However, this approach should be undertaken only after much thought has been given to the relevance of this approach, and after the fabric of the structure has been made weathertight. Any blocked up openings may have to be reopened and resecured with a non-ferrous, bird proof wire-mesh.

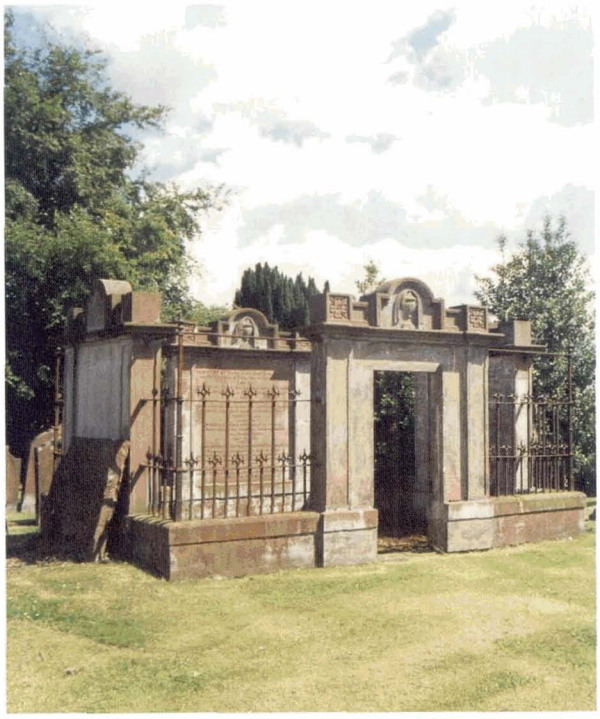
Though the approach to the repair and maintenance of mausoleums is similar to that of other historic buildings, mausoleums pose unique problems because of accessible coffins within them. Unfortunately, in many cemeteries mausoleums have been desecrated. Public health legislation requires that coffins kept above ground should be secured from vandalism.

92. A group of mausoleums in Glasgow Necropolis

6.1.9 Burial Enclosures

Family burial lairs often have an enclosure built around them. Most enclosures are of simple construction comprising an ashlar stone wall and a gateway. Unfortunately, many burial enclosures have fallen into a state of decay through lack of maintenance over many years. Illustration 94(b) is a typical example of dilapidation. The original iron railings on the top of the wall and for the gate have been removed.

93. Patrick Allan Fraser Mausoleum, Western Cemetery, Arbroath



94(a). Burial enclosure with iron railings

94(b). Typical burial enclosure now badly dilapidated

Mausoleums and burial enclosures are often subject to vandalism. This ranges from graffiti to use of the structures as shelters. Lighting fires within the structure can result in the creation of thermal stresses and the resulting delamination of stonework. Because the structures are privately owned, there are legal constraints on local authorities seeking to take preventive measures against vandalism. However, to reduce the level of damage, doors or gateways must be maintained in working order and where missing, should be replaced. Metal grille doors provide necessary security and allow the contents of the enclosure to be viewed. They also provide adequate ventilation.

6.2 Ancillary Artefacts

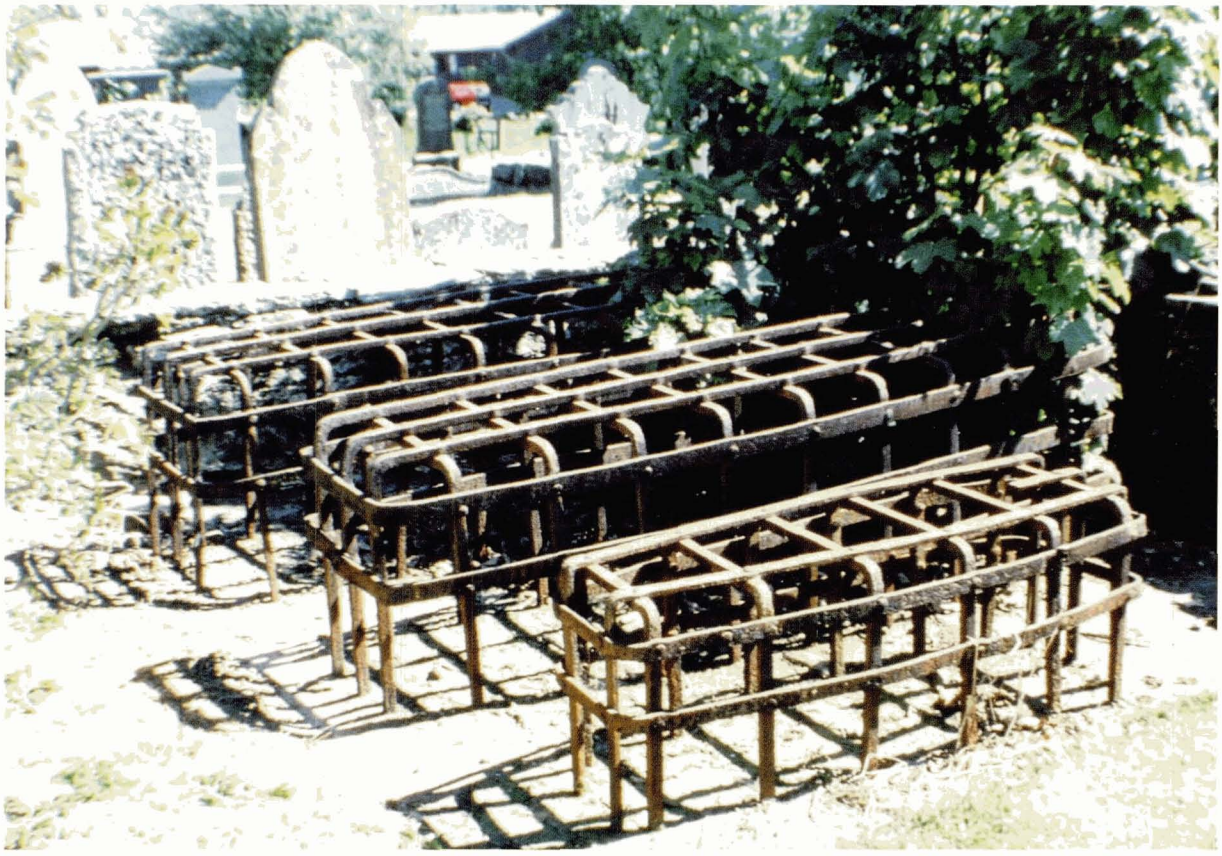
Kirkyards may also contain valuable artefacts such as fonts, sundials, and other moulded or carved stones of historic significance. These elements can be of notable value themselves and should be carefully maintained. Their characteristics may be similar to those of gravestones. Discarded fonts, for example, collect water and debris resulting in accelerated decay if left exposed to the elements. However, the security of such artefacts must be ensured and may require rehousing . While ancient fonts and similar objects can be rehoused within kirks or mausoleums. Sundials, however, should ideally not be removed from their original location due to their functional link with their setting.

95. Stone font in a neglected corner of a kirkyard

Mort safes, constructed like a cage of iron, covered the entire grave when placed into the ground. They were used to protect graves during the time of the Resurrectionists when bodies of the dead were being robbed for purposes of dissection. Very few mort safes remain in their original position. (Repair of iron work is dealt with in section 5.23 of this note).

6.3 Proposed developments in Graveyards

Graveyards are sacrosanct places for interment and remembrance of the dead. Therefore, new proposals for development work should respect the nature of the site. Proposals that necessitate the disturbance of burial sites and human remains can arouse much opposition.



96. Mort safes

Development proposals, therefore, must consider legal and procedural requirements, the archaeological and historical importance of that to be disturbed and encroached on, and the sensitivities of the local community. Proposals should be located and sized in a manner which does not disrupt existing graves and be designed sensitively.

While new work might include sheds, stores, toilets, or wheelchair access ramps to the kirk, the historic character of the graveyard should not be disfigured as a result. New build and extensions should be designed sensitively. While the adoption of modern materials can be considered, their use should be approached with caution as they have considerable potential to alter the character of the site. Graveyards can be very challenging settings for the design and construction of new buildings, but the special function of the site, the sense of enclosure, and the presence of artistically unique stones should be respected.

6.4 Utilities

Graveyards, like any other public spaces, require seating and utilities such as wastebins and storage areas. Again, care should be taken to design and place these sensitively. Bins should also be easily accessible and easy to clear. They should be of sturdy design and construction to resist vandalism.

6.5 Floodlighting

Floodlighting is often used in order to help the public enjoy the built heritage. Though there will be night time benefits of floodlighting churches, there is a daytime penalty to be accepted. This is due to the need to accommodate the visual consequences of the specified equipment; a factor often ignored in the detailed design of the proposed scheme. The visual intrusion that results in the graveyard can be considerable and should be avoided.

In particular the positioning of lamp units can be exceptionally utilitarian. This happens when only the overall lighting effect on the building is considered and can crudely manifest itself in the shape, position and number of lamp installations set uniformly around the walls. In addition to lamps, there will be connection and starter boxes, securing brackets, cabling and foundation blocks to contend with. To give a spread of light, lamp units are inevitably left free-standing. Often designs require a row of lights to be set at a common distance from the wall. Whilst this may offer an easy method of achieving the determined lux level on the facade, the resulting line of fittings, positioned irrespective of gravestones or other features, can be insensitive in the extreme. Cost often plays a part, with schemes designed to achieve maximum visual impact with minimal expenditure.

97. Floodlighting fixtures can be a significant visual intrusion in a churchyard

Where floodlighting cannot be resisted, effort should be made to reduce the effect of lamp housings. Lighting in kirkyards should be simple. Carefully designed housing boxes, blinded by tamped earth, will integrate more appropriately. Placing the units near the base of trees or bushes will also help. Care and sensitive detailing to ensure that little ground disturbance takes place is also required. Greater use should be made of lamp and lens technology to reduce the required number of fittings. In the more venerable graveyards, installation of a lighting scheme may dictate the need for an archaeological excavation to be carried out beforehand, especially along intended cable points. A competent lighting designer should be involved. In some cases prior Scheduled Monument Consent (see section 2.3) or Listed Building Consent (see section 2.2) will be required.

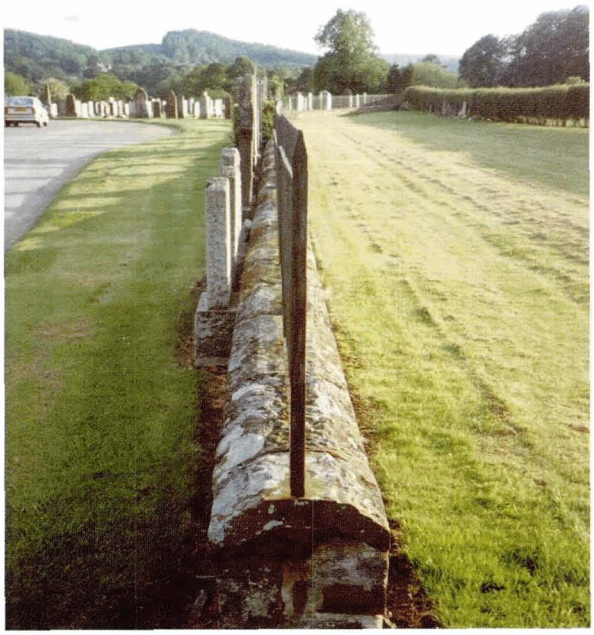
Though lighting up the graveyard at night can deter vandalism, the converse is also true as lamps may also attract the attention of vandals. Protective lamp housing may therefore be necessary. This increases the visual bulk. Therefore, when specifying the scheme care should be taken to keep the size to the minimum. Unfortunately, the visual impact of the fittings and their positioning has not always been given adequate consideration and the result is to the detriment of the graveyard setting. The choice of the finishing paint colour is also significant as this can help mask the visual built.

It is also extremely important that follow-up maintenance is considered at the outset in order to avoid future replacement difficulties. It is not uncommon to discover at the time of first maintenance that out of date or foreign units have been specified. This can lead to a mixture of unit designs being brought into service. Such a possibility should be considered when agreeing to the proposals. But, as lamp unit designs are constantly being upgraded, this approach cannot always guarantee to resolve the problem.

6.6 Extensions to Graveyards

Extensions to listed or other historic graveyards require very careful planning, in terms of the scale of the development and in the selection of materials to be used for enclosure walls, roads, paths and other features. It is important to remember that many churchyards and cemeteries are listed as a whole, and any proposals affecting them will require listed building consent (churchyards are not covered by ecclesiastical consent). Every effort should be made to ensure that any new construction will not affect adversely the historic significance of the graveyard, for example by the use of materials and finishes that are not sympathetic to the original. Whilst it may not be economically viable to construct new boundary walls in natural stone to match the original wall construction, a rendered wall with a suitable lime-wash finish and a

natural stone cope, for example, is likely to provide a more sympathetic match than an unrendered concrete block wall with a precast-concrete cope. Existing high walls and gateways should not be reduced, nor original cast-iron gates removed. In some circumstances, planting a new hedge may provide a suitable boundary enclosure that is in keeping with the original setting. Such a solution is shown in Illustration 98.



98. Graveyard extension where a hedge has been used to form the boundary

Forming openings in existing boundary walls to provide access to the new extension will also require careful attention to detail. In constructing the jambs of the opening every effort should be made to make use of materials that have been removed to form the opening. Patching-up with concrete blocks or bricks is not an acceptable solution. Similarly, where railings have to be removed to form an opening, the adjoining sections of railing should be carefully dismantled at the nearest convenient joint and matching ironwork fixed in place to form suitable stop ends. The whole assembly should then be refixed, prepared and painted to match the original. Any ironwork not reused at the time should be safely stored to permit reuse in future repairs.

Where roads and paths are required to integrate with existing access routes, similar construction and materials should be used to maintain the integrity of the historic setting. Clearly the juxtaposition of a new tarmacadam path with existing stone paving, for example, would not be an acceptable solution in this instance.

Where planting and landscaping is proposed, there should be continuity of design between the old and the new where appropriate. Trees, hedges and shrubs should be of similar species to those of the original planting.

6.7 Notice Boards

Notice boards in the vicinity of historic graveyards need to be considered carefully if they are not to detract from the setting of the graveyard. The following examples may help to identify the issues to be considered:

- In the positioning of notice boards, especially church notice boards, wear and tear of the ground around the board may cause a hazard, as well as being unsightly;
- The method of support and fixing of the board should recognise the importance and sensitivity of any historic surfaces;
- The board and its supports should be well maintained, especially painted wooden and iron surfaces;
- Glass should be cleaned regularly and broken glass replaced as soon as possible.

7 NATURE IN THE GRAVEYARD

Where graveyards have not been the focus of strict maintenance regimes, they present a rich natural legacy, the result of many years of interaction between people and nature. In many parts of the country, where modern agricultural practices have led to a loss of the traditional diversity of flora and fauna in grasslands, graveyards are an important sanctuary for wildlife

While the built heritage located within graveyards is of prime importance, it may be questioned whether absolute tidiness is always desirable. Areas of natural vegetation, if disturbed or 'tidied', can take years to recover in the harsh Scottish climate. A slightly overgrown churchyard can be attractive, and may often provide a habitat for animals, plants, insects, and birds. Wildlife in a graveyard can significantly contribute to the sense of solitude, making the setting more attractive to visitors.

99. An historic graveyard, whilst kept tidy, has not prevented colonisation by a range of plants which have overwhelmed a mausoleum

However, the sensitivities of visitors to unmown grass in graveyards can complicate the issue. A further consideration is the need to maintain and respect the designed landscape qualities of our great nineteenth-century cemeteries, especially where these are or may be included in the extended Inventory. There is a need for greater commitment to resolving problems through management, environmental education and interpretation. This would require environmental organisations and local nature clubs to take the lead in turning public opinion towards tolerance of a balanced approach *vis-à-vis* natural heritage in Scottish graveyards.

In a world where natural environments are under ever increasing pressure, nature requires to be nurtured in order to flourish. Graveyards can easily support butterflies and rare birds such as barn owls and bats, but not ivy and wooded plants, which can be very damaging. Graveyards should not be allowed to become overwhelmed by vegetation. It must be remembered that the interests of the built heritage in graveyards will nearly always be more important than the natural heritage. Woody vegetation will damage and obscure visible and invisible archaeology, for example.

100. An example of damage due to uncontrolled tree growth

Urban cemeteries can be managed for environmental reasons i.e. they can be minimally and selectively maintained to provide the best natural habitats for indigenous flora and fauna. This would require educating members of the public in order to assure them that a valuable community space was not being neglected. The balance achieved in maintenance

should enable all visitors to cherish both the sculptural memorials and their natural setting. Local authorities will need access to additional expertise and community support to attain such a balance.

The first task, to encourage nature conservation in a graveyard, is to develop and maintain records on wildlife present. Such a survey should help to discover the plants and animals already living there. Links should also be established with local environmental organisations and Scottish Natural Heritage, the statutory body.

A few graveyards may already be within legally designated Sites of Special Scientific Interest (SSSI). Some urban cemeteries have been included in the *Inventory of Historic Gardens and Designed Landscapes in Scotland* and more could be added to the list. By their very character, one could suppose that some graveyards would also qualify as Natural Heritage Areas.

7.1 Trees and Hedges

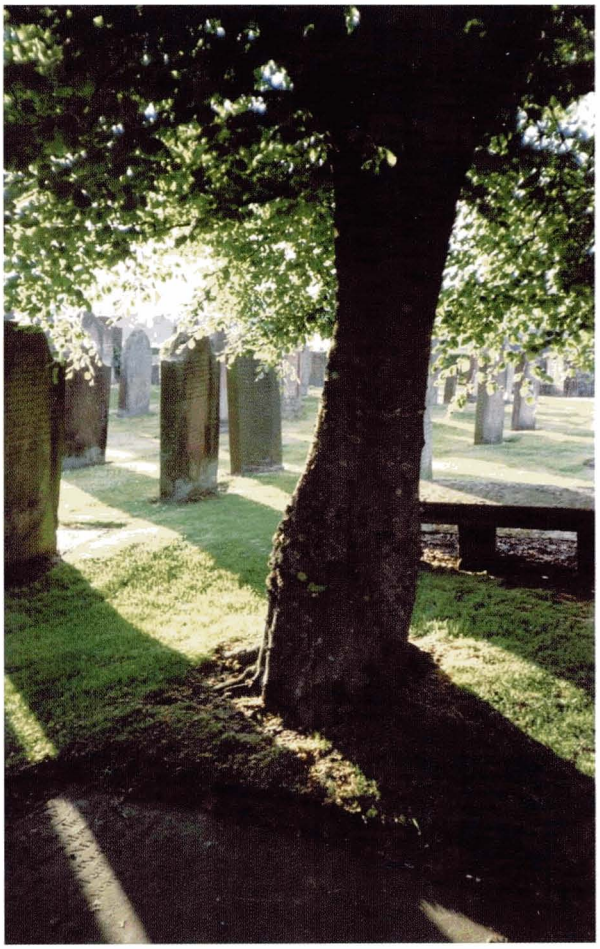
Trees and hedges are important for wildlife. They provide nesting and roosting sites for birds and food in the shape of fruit and seeds. They also host many insects, caterpillars and other smaller living organisms thereby supporting the food chain.

An interesting mix of mature trees, small coniferous shrubs and other bushes can soften what might be an otherwise harsh environment of walls and stones, and create a varied pattern of light and shade, adding character to the enclosure. Bushes, however, must not be too dense or too numerous to obstruct the view of the stones.

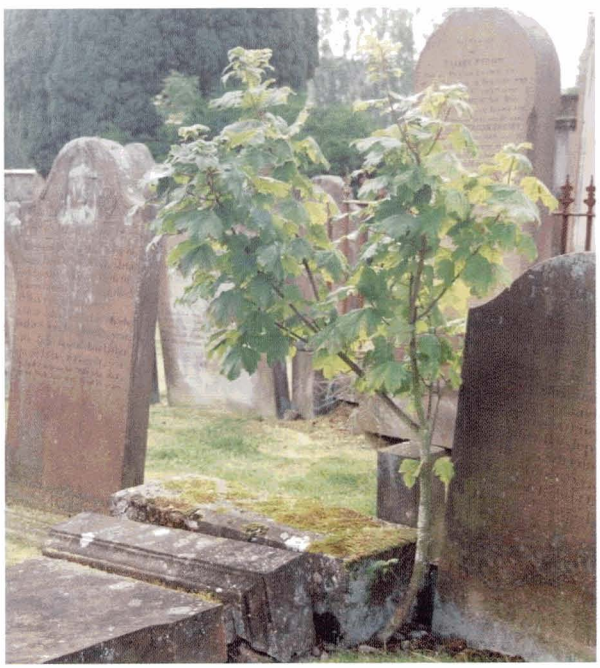
Tree canopies can occasionally help to emphasise the layout of a cemetery and can create a partial 'roof' over the burial ground, complementing the horizontal enclosure of the walls.

Conifers and yews tend to be the predominant planting in burial grounds. Where these have been clipped into topiary, they provide a visual contrast and complement the scale of the monuments and should be maintained. Evergreens are often used in such settings as symbols of everlasting life.

As with buildings, minimal change would seem to be the best nature conservation policy. This would mean that trees should be removed only when clearly dangerous or diseased, causing damage to buildings or gravestones, or are obvious recent self-seeded arrivals.



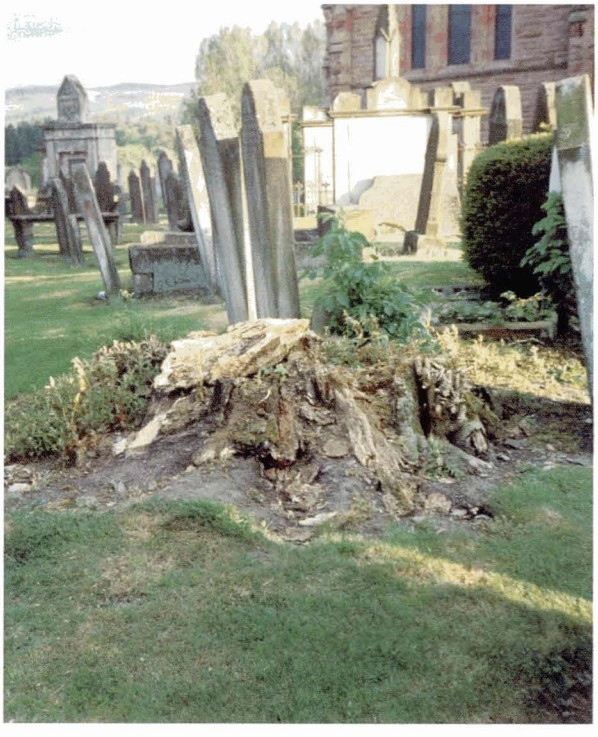
101. The character and ambience of the graveyard is enhanced by the shade cast by mature trees



102. Recently self-seeded tree will damage adjacent gravestones and should be removed

Where woody vegetation threatens gravestones or other historic buildings, saplings scrub and trees should be removed. However, the stumps must be left in the ground and roots not dug up or pulled out as this may cause further damage. Felling of diseased, mature trees and other tree surgery work requires to be carried out with considerable care to prevent damage to graveyard monuments. Trees and hedges which have been planted in recent times, not taking into account the historic layout, may also require to be removed. Under normal circumstances, tree felling requires the permission of the Forestry Commission. However, certain types of felling do not need permission from the Forestry Commission, including felling of trees growing in a churchyard or designated public open space.

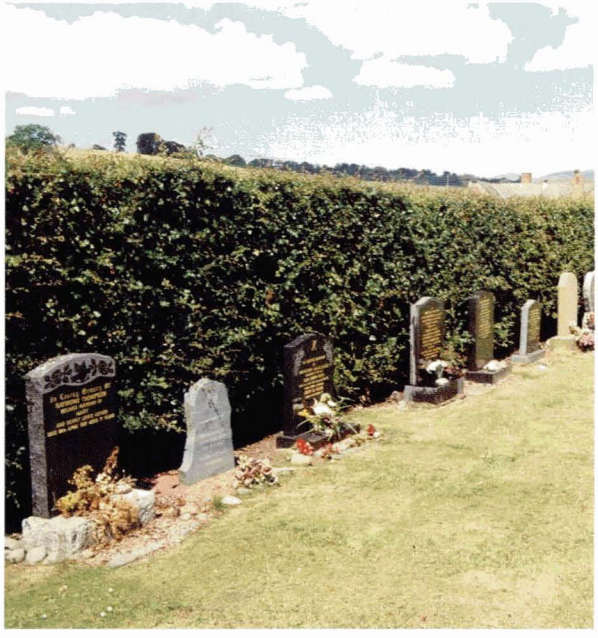
Tree felling or surgery work should be timed to occur within the period November to March, with site work taking place during a period of heavy frost when the ground is hard. Where trees are to be totally felled the trunks should be cut within 150 mm from the ground where possible and the stumps treated with an approved herbicide.



103. This diseased tree has been felled and the stump left to rot

Any trees removed because of disease or because of the likelihood of toppling should be replaced. If they were damaging historic structures, however, a decision may be taken not to replant. It should be noted that prior Scheduled Monument Consent will be needed for replanting on a scheduled ancient monument. If such a decision is taken, factors such as changes in water absorption must be considered. Hedges and trees will also require seasonal or annual maintenance by trimming.

Placing new gravestones directly against a hedge can also create access difficulties for hedge cutting and creates a risk of damage to headstones when using mechanical hedge trimmers.



104. New gravestones placed in close proximity to a hedge makes hedge cutting difficult and risks damage to the stones

105. Fallen tree causing damage to headstones. This tree should have been carefully removed before it was allowed to collapse and cause damage to headstones

Caring for the natural heritage should not translate into the random planting of new trees where none existed previously. Though new trees should be considered when old trees are felled, planting new trees is not always environmentally friendly. The introduction of new species could disturb the natural distribution patterns of species and obscure historical features in the original or existing tree pattern. Even replacements of original trees should only be considered when there is documentation available as to species and location which can be referred to. Professional horticultural and landscape advice should always be sought when planting new trees as many factors require to be considered. These include possible harm to memorials, character of area and tree when fully grown, choice of site, and effect of shade on lesser plants.

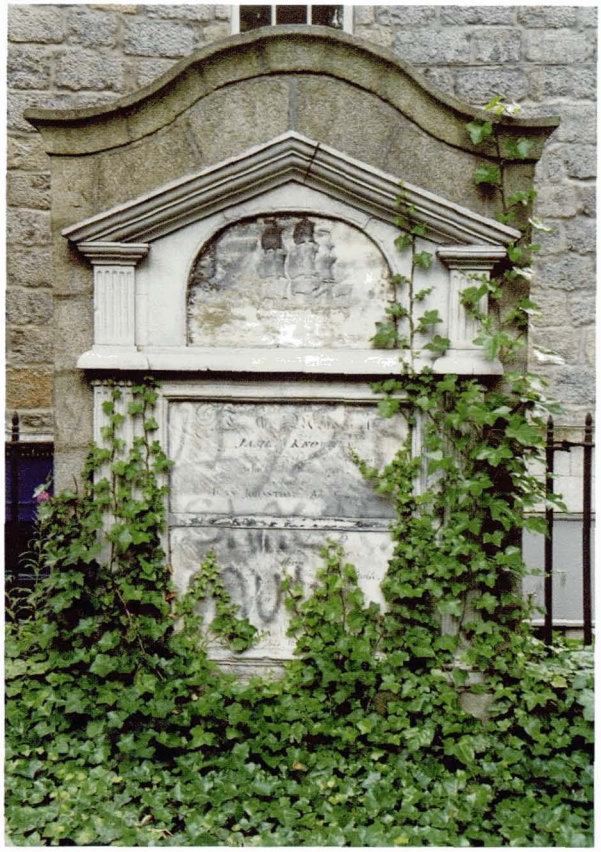
Thus, conserving trees and hedges within graveyards should be an important feature in management regimes. Particular care should be taken to conserve, or where necessary replace, tree species which have been found to be significant elements in the original layout of a graveyard. Any planting which survives from the original layout can also be of historic interest.

Though cemeteries may have been planted originally with flower-rich swards, these require very high maintenance and would disfigure the character of the burial ground if neglected. Such swards should be planted only when adequate maintenance funds are available. Plants such as ferns should be tolerated to an extent on minor stonework, but weeds and plants with woody stems should always be removed. An effective alternative to chemical weed killers is to cut the grass when the weeds are coming into flower. Organic waste from graveyards can be used for compost, which will reduce the need for chemical fertilisers.

7.2 Ivy

Ivy can be very damaging, particularly on soft thinly bedded sedimentary rocks. It can cause the entire inscription to be 'lifted' from the main body of a memorial and left in fragments. Ivy can also be established on walls. On the other hand, ivy can be of value to wildlife, providing winter food and shelter and there may be instances where its growth on historically insignificant walls adds character to the graveyard. As usual, it is a question of balance; in some cases it may be left to grow.

Ivy which is just starting to grow up a wall should be removed. In the case of well-established ivy, a section of the stem should be cut out near root level and a poison applied to the cut. The ivy should be allowed to die and then be removed carefully from the masonry. Since it can take two years for a well-established plant to die, it could also be sprayed with a systemic herbicide to speed up the process. To prevent regrowth the root system should be dug up carefully, if this can be done without disruption to the graveyard, or a herbicidal paste such as ammonium sulfamate crystals could be applied to the stumps. This may necessitate removing and temporarily wedging stones in order to clear organic debris from the masonry. Voids in the masonry should then be repointed. Total eradication of ivy may take several attempts. However, the removal of ivy from a ruined wall may cause further rapid deterioration as the ivy is providing a measure of support. Immediate repair will then be required to avoid collapse of the wall. Ivy must never be pulled off by a rope attached to a tractor mower etc. as this can bring the wall down. Professional advice should be sought before removing ivy.



106. Wall monument in danger of becoming obscured by ivy. The ivy will help to protect the monument from further graffiti attack but will also cause damage to the stone

Ivy on trees should not be removed as it provides a valuable habitat for other wild life.

7.3 Micro-organisms

Stone, as an environment for growth, favours organisms which do not require large amounts of organic nutrients from the substrate. Since sandstone can hold water and nutrients in its network of pore spaces, it provides an ideal foundation for a variety of

forms of surface colonisation and biological activity on and just below the surface. Much research on the subject has been commissioned by Historic Scotland and findings have been published in the research commission report on *Biological Growths, Biocide Treatment, Soiling and Decay of Sandstone Buildings and Monuments in Scotland* (1995) and Technical Advice Note 10, *Biological Growths on Sandstone Buildings : Control and Treatment* (1998).

Gravestones, as they are situated on the ground, can be a relatively damp environment thereby encouraging biological activity. In addition to absorbing rain water and moisture condensation from mists they can absorb water by capillary action and through splashback of rain water. Biological growths such as algae, bacteria, fungi, lichen and mosses are commonly found on gravestones. They will colonise stonework wherever conditions of moisture, light, temperature and nutrition are suitable. Many of these organisms can withstand drying out for relatively long periods, but active growth usually requires relatively high moisture levels in the stone or high humidity in the surrounding atmosphere. The range of species encountered reflects the climate and microclimate of the locality. Biodiversity increases as levels of atmospheric pollution decreases, thus gravestones in rural areas will show greater species diversity. The dark staining, which could be mistaken for particulate soiling, on the stone in Illustration 107 is a mould which grows on nutrients emanating from a nearby whisky distillery.

In urban areas, for example, the diversity and abundance of biological growths has been greatly reduced by atmospheric pollution. As a result it is generally only the more pollution tolerant species that are found in urban areas. Cleaning of stone can be a cause of damage. In addition, the rate of biological colonisation of surfaces may be increased by some forms of stone cleaning. Some chemical cleaning methods (those containing phosphates) can leave residual nutrients in porous stone (e.g. sandstone) which can increase the amount of biological growth.

The high points of gravestones are ideal perches for birds. This leads to an associated 'fall-out' zone which is subject to the fertilising effects of bird droppings. This can actively encourage localised areas of intense biological activity, created as a result of rainwater running over the droppings and carrying the nutrients further down the face of the stone. Routine removal of solid build-up droppings by water washing, aided by soft bristle brushing, will reduce the effect and risk of future damage.

107. The dark staining on this stone is mould growth

The issue of biological growth on stone is, to a large extent, a matter of aesthetics. It is important to bear in mind that biological growths do not necessarily damage stone and, in most cases, it may not be necessary to remove them. However, damage to stone may be initiated by the presence of biological growths, though the extent of their contribution is not clear. Biological growths can be responsible for physical weathering of a stone caused by the physical penetration into and around grains, or changes to the porosity to the stone; influencing the stone's response to other, non biological decay processes. Biological growths can also enhance the moisture retention properties of stone surfaces by clogging pores and reducing the rate of drying of the surface and thereby encouraging damage due to enhanced freeze-thaw cycles. The growth of organisms inside cracks and crevices of the stone may lead to the cracks expanding due to the expansion and contraction of growths and their mucilage during their wetting and drying cycles.

Biological growths which have a deep-seated hold on the stone structure should under no circumstances be pulled off manually as this could lead to much damage. Also, the removal process may be more damaging than

the growths themselves. Superficial growths (including moss, algae and some lichens) may be removed using water washing and a soft brush. Harder growths may first be softened using a poultice. Brushing will not kill off the organism but will retard growth. Lichens or other organisms which have a more deep-seated hold on the stone structure may not be removable without causing damage to the stone. Biological growths may need to be removed in order to assess the condition of the gravestone, this must be done only by a conservator.

Biocides vary widely in their characteristics and effective life span. Some will kill organisms on contact but have no longer-term effectiveness, others may be effective for up to two years. Some organisms can be resistant to biocides. Repeated application could lead to deterioration of stone, potentially causing discolouration or leaving salt residues on stone. Like cleaning, use of biocides on gravestones should be carried out only if it is necessary for conservation purposes.

7.3.1 Lichens

A patchwork of differently coloured lichens over a stone surface may be considered aesthetically pleasing and indicate a relatively clean atmosphere. Due to modern air pollution, established lichens on older buildings may be increasingly rare examples of threatened species. Many lichens cause no significant decay on stone surfaces and they may, in some circumstances, have a protective effect by helping to bind grains together. However, on some sandstones, the central thallus strands can penetrate deeply into the stone through the pore structure and thereby cause shear stresses in the surface layer due to expansion and contraction with wetting and drying cycles. Their acidic secretions can break down the binding minerals that hold the stone together and decay can be induced leading to the formation of a surface crater. In addition the increased surface roughness caused by the projecting growth can hold water on the face of the stone, thereby adding to the decay cycle through enhanced levels of wetting and drying through the body of the stone. A foundation is also created upon which higher forms of surface growth, such as moss and grasses, can be established.

Since some lichens occasionally damage stonework, their growth on important carved stones should be monitored and controlled if seen to be causing damage. However, since some lichens are rare, the advice of a lichenologist should be sought before removing lichen or relocating a stone with lichen growth, since change in orientation and light conditions can kill lichen.

7.3.2 Moss

Moss requires soil in order to take root and growth can be seen on mouldings, within lettering and on any surface of a gravestone which retains soil. Presence of moss indicates a persistently damp condition which is likely to be more harmful than the moss itself. Flat graveslabs can quickly become covered by moss which merges with the surrounding grass, so making it difficult to see the edges of the stones. This can make grass cutting difficult, with grass cutting equipment damaging carved work standing proud of the stone.

In some cases moss can have a protective effect, especially on flat graveslabs, and indiscriminate removal of moss from such slabs should only be done when there is clear evidence that the growths are having a detrimental effect on the integrity of the stone. The protective effect of moss is shown in Illustration 108 where the inscription is still clearly defined. In adjoining slabs of similar age that are free from moss cover, the inscriptions are much less clear due to surface erosion.

108. Well preserved inscription under moss on a flat gravestone

There are instances, however, where moss can accelerate the deterioration of stone. The damaging effect of moss is shown in Illustration 109. The headstone is located in a damp environment and moss roots have penetrated for some considerable distance into the stone, along lines of weakness in the bedding planes. This effect has contributed to the loss of surface from the stone. It is therefore advisable to remove moss from the top surfaces of sandstone gravestones to prevent the downward penetration of roots.

7.3.3 Algae and Cyanobacteria

Algal and cyanobacterial growth (blue-green algae) is common on relatively damp surfaces that are not exposed to direct sunlight. North and east facing surfaces are likely to exhibit the highest incidence of colonisation. Most algal and cyanobacterial growth are green or blue-green in colour, becoming black or dark brown during dry periods. Other colours including reds and oranges may occur more rarely. Growth is most active during autumn and winter when humidity levels are relatively high. During this time the organisms produce a thin green coating on affected surfaces. During drier periods the algal or cyanobacteria die and blacken. Although algal and cyanobacterial growth may be aesthetically disfiguring, the organisms seldom cause any physical damage to surfaces and their removal is not normally necessary for conservation purposes.

7.4 Fauna

Vegetation in burial grounds can support low level food chains. Grass and a mat of vegetation coupled with high levels of calcium and other nutrients in the soil is ideal for insects and snails which in turn leads to the presence of birds. Owls, swifts and martins, for example, often occupy ancillary buildings in kirkyards or cemeteries. Pigeons can occasionally become a problem but can be controlled by the use of tensioned wires on ledges and openings. However, measures taken to prevent pigeons should not harm other birds and bats which may be protected under the Wildlife and Countryside Act. The installation of pigeon wire deterrents may require Listed Building Consent.

Graveyards can provide habitats for butterflies, provided egg-laying and food plants are available at the crucial stages in the insect's life-cycle. Cutting and removing plants when the insects are at the caterpillar stage, for example, can effectively eliminate butterflies from the area.

Care should be taken to ensure that animals and birds are not adversely affected by activities such as tree felling, building extensions, or blocking openings to buildings.

Encouraging wildlife in graveyards should, however, not imply that burial grounds are areas in which to walk dogs. The Civic Government (Scotland) Act 1982 allows local authorities to restrict access to dogs in any graveyard maintained by them. Cemeteries and kirkyards deserve respect, therefore dogs are out of place in such settings. Dog fouling is an offence and liable, on conviction, to a fine.

7.4.1 Bats

Many species of bats depend on the built environment for their habitat. In burial grounds they are likely to inhabit churchtowers, mausoleums, wall cavities and holes in trees.

All bats in Britain are legally protected. It is an offence to kill or injure them; destroy, damage or obstruct their roosts; or disturb them while they are roosting by entering known roosts or hibernation sites. If disturbed during their winter hibernation, they might not be able to survive as flying in winter uses up energy that they cannot replace easily.

If work is to be undertaken on a mausoleum, a tree, or other building used by bats, it is a legal requirement to consult Scottish Natural Heritage in advance of the work. This is valid even if the bats are not present at the time when work is being carried out as bats return to their roost year after year. Care should also be taken to ensure that repair work on wall crevices does not unintentionally entomb bats.

7.4.2 Burrowing Animals

Rabbits and other burrowing animals such as moles can imbalance and thereby cause terrible damage to gravestones by burrowing beneath them. They also destroy sub-surface archaeology. Foxes may be present in graveyards and often form dens from active or old rabbit warrens. Filling in burrows, however, is a sensitive issue due to the nature of burial sites. Though everything possible should be done to keep such animals out of graveyards, any action requiring ground disturbance should be avoided.

Mole hills should be pressed back carefully into the ground and soil imported to level the ground. For further information on how to deal with burrowing animals on historic sites reference should be made to Historic Scotland, Technical Advice Note 16: *Burrowing Animals and Archaeology* (1999).

109. Moss root penetration into delaminating sandstone headstone

8 GROUND MAINTENANCE

The routine maintenance of burial grounds is of prime importance. Graveyards, besides their use as places for burial, need to be maintained in a manner that enhances the character of the site, makes them welcoming and secure for visitors, and allows easy interpretation of the significant elements.

With ever increasing and understandable economies demanded from maintenance budgets, there has been an increasing tendency among local authorities to effect savings in basic grounds maintenance. While loss of monuments has been a common occurrence throughout the centuries, recently the practice of many local authorities on keeping graveyards in good order has led to 'over-tidying', and to the removal of collapsed or damaged stones. Yet these stones are as much part of the pattern of a churchyard's growth as the better preserved examples and they should be left in position.

Similarly, there is the issue of dealing with collapsed masonry from other structures in the graveyard. Stones from collapsed masonry should not be allowed to become lost in an expanding undergrowth, or to become slowly buried. In the event that reconstruction cannot be carried out within the short-term, the stones should be identified, carefully collected and removed to safe storage. This, ideally, should be within the graveyard, so that they are available at a later date when resources may become available to permit rebuilding. This measure should be seen as a last resort and taken only after obtaining professional advice.

Kirkyards also frequently contain archaeological remains of an early church or other buildings, sometimes visible only as unroofed shells, low foundation walls or subsurface mounds, where few graves are evident. This can impose restrictions on how to maintain the area. Appropriate advice should be sought from either local authority or Historic Scotland professional staff. In graveyards protected by either Scheduled Ancient Monument or Listed Building legislation the appropriate consent will be required prior to any alteration work being carried out. Ground maintenance and other works should be based on a sound conservation policy which outlines a 'statement of significance'.

8.1 Grass Cutting

Natural decay is not the only threat to gravestones. These memorials face many threats, some of which arise as a result of deliberate policy decisions, taken in ignorance of the consequences. Cost-effective horticultural practices, often come at the expense of respect for monuments which, in these circumstances, are regarded as impediments rather than valued community resources. Gravestones are not obstacles which prevent the speedy manoeuvre of lawnmowers, but are memorials to the individuals buried beneath, and unique documents of much historic value.

The use of mechanised lawn mowers, in particular, can cause considerable damage to gravestones. Where there is a policy of laying upstanding memorials horizontally on the ground, damage can be considerable as machines run over both grass and stone with equal ease. Any surface projecting above ground level is liable to be chipped, if not totally removed, by the rotating cutting blades of the mower. After a series of such passes the physical loss inflicted on the stones can be dramatic. Such a policy leads to the overall loss of the local heritage.

110. The risk of damage to flat gravestones from mechanical mowers running directly over the stones is well illustrated here and is not recommended

Particular care should be exercised when cutting grass in graveyards in order to prevent damage being caused by machinery colliding with gravestones. Although in most cases it is not economically feasible to trim the grass manually, there are invariably areas in kirkyards where this is the only correct option. The areas immediately around gravestones, boundary walls and tree bases, for example, should be trimmed carefully using appropriate equipment such as edging shears.

111. Historic headstone with arris damaged by grass-cutting equipment

Ground maintenance specifications for contractors should clearly state that the prime concern must be to ensure that gravestones and other significant elements are not damaged. In high-risk areas contractors must use alternative methods in order to prevent damage. The rate for grass cutting should provide for manual cutting in areas where there is a possibility of machines inflicting damage. Ideally, smaller mowers, meant for domestic use, should be used in preference to industrial mowers meant for large areas of bracken. The use of ride-on mowers near grave memorials should never be permitted. Although also potentially harmful, a more sympathetic approach would be to use hand-held grass cutting machines such as Strimmers®. Again, these must be used with care to ensure that no damage is inflicted on the lower edge of stones, particularly at the corners. All necessary safety precautions should be taken when using these machines.

112. The potential to damage these historic gravestones by careless grass cutting is clear. In such cases hand trimming around the stones is recommended

The ever increasing demand to keep maintenance costs as low as possible can diminish the sense of place and character of graveyards. The complete removal of grass to avoid cutting, for example, can have a significant visual impact. This approach reduces maintenance costs but at the expense of completely disfiguring the historic character of a burial ground.

The imposition of a uniform colour of gravel can create a sense of uneasy urbanisation and should be avoided. Also, loose gravel set on ground reinforcing geotextile material can be worked under foot traffic to such an extent that it can be ground into surrounding stones, physically and irretrievably damaging the surface. The use of gravel in the proximity of recumbent slabs is not advisable. Gravel picked up on the soles of shoes can damage severely any inscription on the slab

Recently there has been a tendency to remove turf from around gravestones, leaving bare patches of loose soil which is then poisoned with broad spectrum weed killers in order to prevent vegetation taking root. Though this practice ensures that mowers do not damage gravestones accidentally, it does lead to rapid soil erosion, often exposing the flimsy foundations and leaving memorials unstable. The application of

113. Replacing grass with gravel has ruined the historic character of this burial ground

chemicals to surrounding soil may also promote the uptake of damaging salts into the stone. Erosion of topsoil can create a sensitive situation in burial grounds. The practice of turf removal is in any case historically inappropriate as in the past grass was always allowed to extend right up to memorials. Furthermore, the poisoned earth is harmful from the ecological point-of-view.

Where turf removal has been carried out, first stabilising foundations then importing soil and finally returfing should rectify the situation. This should generally help to arrest erosion of monument foundations. The monuments should then be inspected periodically.

There have been occasional instances over the years where gravestones have been moved in order to create an obstacle free path for lawn mowers. Once moved, their treatment varied from relaying them in neat rows to stacking them in corners, or, worse still, re-using them to make paths. Moving stones separates them from their personal, historical and archaeological context. In addition, there is an increased risk of damage and break-up of the slab during lifting. Grave memorials should never be shifted to make maintenance more convenient. However, if they are of high significance and require protection from the elements, they might have to be moved. Whilst sensitive maintenance may result in higher costs, an increased number of visitors coupled with the enhanced amenity, cultural and educational value make the extra effort involved much better 'value for money'.

114. Significant erosion, as a result of turf removal, has led to this memorial becoming dangerously unstable

8.2 Water Drainage

Waterlogged soil and excessive water flows over surfaces can have a detrimental effect on the graveyard environment. The effects can include increasing maintenance difficulties, such as grass cutting, erosion of paths, soil erosion around monuments, increased water uptake into porous stone and increased corrosion rates in ironwork in contact with the ground. It is essential, therefore, to ensure that water drains quickly from burial grounds. Concentrated rainwater discharge should be dispersed quickly and effectively through surface channels or gullies to soakaways or ditches. Drainage channels and drains should be kept free from blockage with litter or loose soil. Compost heaps should be kept well away from drainage areas.

115. Inadequate design of the path to accommodate surface water run-off has resulted in disruption of the tarmac. In this case the use of tarmac has increased maintenance problems and is inappropriate in a graveyard setting of this type

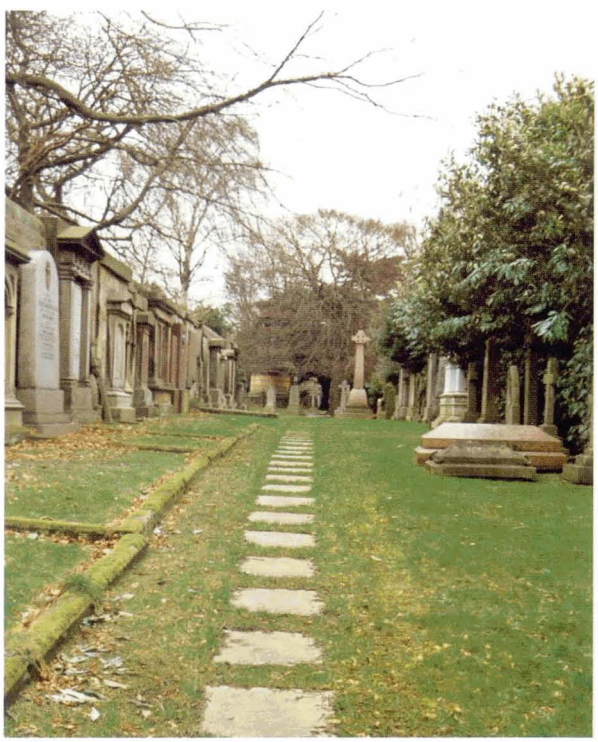
The laying of new drains has serious archaeological implications due to the likely presence of building remains and graves. Excavation for drainage work should therefore always be supervised by an archaeologist. Where appropriate, prior Scheduled Ancient Monument Consent may be required.

In winter, care should be taken to ensure that water supply pipes located within graveyards do not freeze and subsequently burst. The down pipes in any buildings should always be kept clear and in good working order. These should also be subjected to at least one annual inspection.

8.3 Paths and Roads

Much of the character of a burial ground depends upon the design and layout of the paths. Good pedestrian circulation is required in order to encourage public access and interest in the graveyard.

116. The wide tarmac road detracts from the character of the graveyard



117. A sensitively designed maintenance-free pathway

118. Steps formed from natural stone are becoming overgrown through lack of maintenance and may pose a danger to visitors although they integrate well in their setting

Like other historical elements, pathways may be an integral part of the original design and should not be altered. Similarly, new pathways should be placed and surfaced sensitively. Over-engineering is unnecessary and can result in disturbance of shallow graves and buried stones. A too conspicuous surface on pathways will dominate the kirkyard and be seen as a jarring intrusion into the mellow solemnity of the scene. As a rule of thumb, a kirkyard is no place for a tarmac pathway. The example shown in Illustration 116 identifies the conflict of interest that is sometimes the case. The hard surfaced roadway is thought necessary to provide access to the church but is not in keeping with a historic graveyard environment. Note also the way in which the gravestones have been unwisely realigned along the edges of the road.

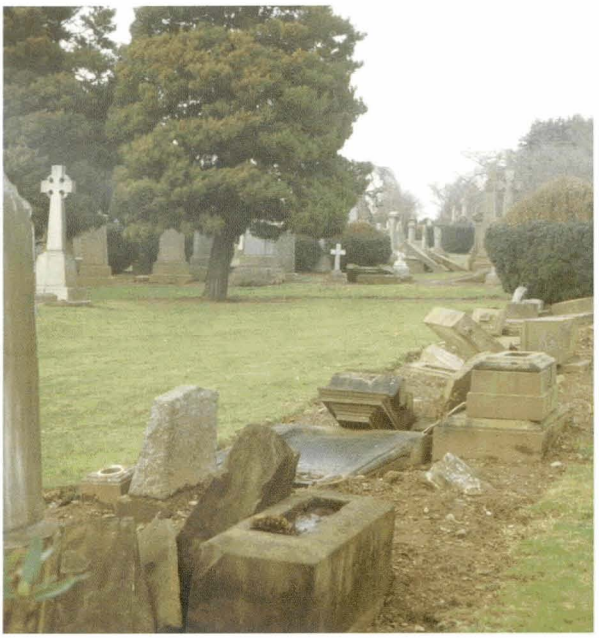
Even in larger urban cemeteries, the pathways should provide a suitable transition from the outside environment. They should help to enhance the landscape character and to interpret the site.

Excavation carried out to lay new footpaths should be supervised by an archaeologist. When repaving or relaying churchyard paths, a careful watch should be kept for monumental slabs which have been re-used in the past as paving or foundations of paths.

8.4 Vandalism

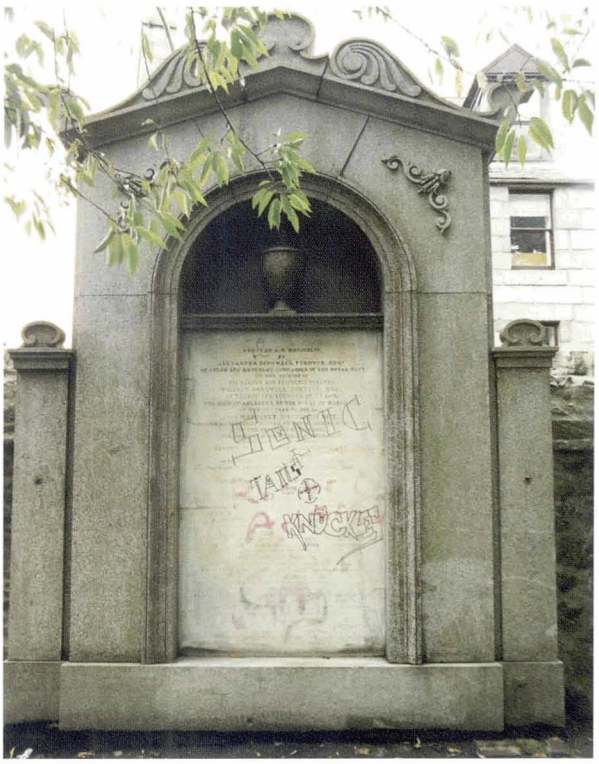
Vandalism in graveyards can take many forms; toppling, breaking stones, breaking portions of statuary, damaging floodlights, benches, and other built elements, and defacing surfaces with graffiti. Considerable and permanent damage can be caused as a result of a single attack. Legally, it is the responsibility of the lairholder to make the necessary repairs to a vandalised lair. Often the family might be unaware that damage has taken place, and in many cases there might not be any family left alive to effect the repairs. It is quite often the case that no remedial action takes place other than local tidying up by the cemetery maintenance squad. Posters pointing out the penalty for vandalism could act as a deterrent. Vandalism is a crime punishable by law and it is important that people responsible are punished if caught.

Stones which have been toppled but are unbroken can be put back. Older tablestones, however, are particularly prone to greater physical damage as a result of vandalism as they have often become soft as a result of water penetration. Fractured stones will encourage a greater uptake of moisture and therefore may be more susceptible to processes of decay.

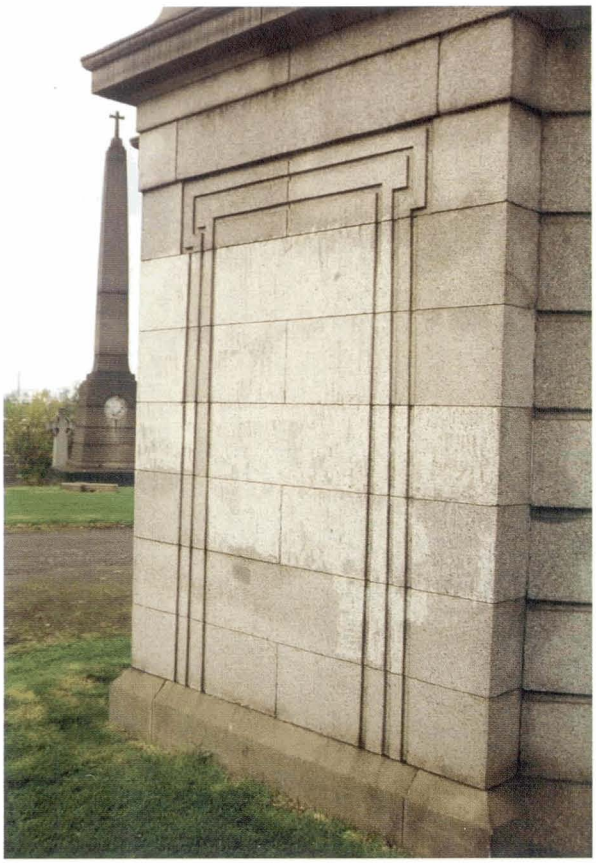


119. Vandalised graveyard

Graffiti, can be specially unsightly in graveyards. Since graffiti is a very broad subject, Historic Scotland has published Technical Advice Note 18 *The Treatment of Graffiti on Historic Surfaces* (1999) to offer suggestions on how the problem might be treated. The processes involved in the removal of graffiti can result in erosion of the stone surface and loss of inscription. The example in Illustration 120 shows a marble slab that is subject to repeated graffiti applications.



120. Loss of surface on a marble slab as a result of repeated graffiti removal



121. Cleaning graffiti from the granite base of a mausoleum has not necessarily damaged the stone but has left an unsightly 'patchwork' effect

Proper maintenance is a crucial factor in preventing vandalism as neglected graveyards can attract vandals. In localities where vandalism is a serious problem, regular maintenance, fencing, lighting by night and regular patrols are effective deterrents though financial resources are not always available to pay for them.

Vandalism can also be minimised by enlisting the support of school and church group, families and individuals, to care for a particular site. Local authorities should encourage greater public interest in their local graveyards by providing interpretative material. Well-maintained graveyards, the value of which is understood, will be less susceptible to vandalism than those which are neglected.

Whatever measures are in place, it is impossible to guarantee the eradication of vandalism. It is vital, therefore, that existing monuments be photographed, and inscriptions recorded before further damage is sustained.

8.5 Public Spaces in Graveyards

Within an urban context, especially in city and town centres, many kirkyards and cemeteries perform an important role as public open spaces for use by residents and visitors. They are places of refuge from the bustle of city life and provide comparatively quiet or secluded spaces for private contemplation or as a convenient place for office and shop workers to enjoy a lunch-time break, as represented in Illustrations 47 and 123. The quality of the spaces provided for use by the public are therefore important. They require to be sympathetic to the setting of the graveyard and to the needs of the public, and maintained to standards that are as high as possible. In this context, there is a need to provide well-designed fittings and fixtures that are inconspicuous but functional and robust enough to withstand heavy use.

The presence of litter in such spaces can be unsightly and objectionable, especially discarded food, which will attract feral pigeons and seagulls and further contribute to the soiling of pathways and gravestones. Effective measures to control litter must be part of the management plan for the graveyard. Such measures will include well-designed litter bins which do not allow wind, animals and birds to remove materials deposited in the bins, therefore, open-topped litter bins are not recommended. Bins should be sited in close proximity to seating areas and at other strategic locations, but must not obscure gravemarkers.

Graveyards that are heavily used for recreational purposes should be provided with lighting to the main footpaths and other public spaces. A wide range for suitable fittings is available, ranging from lights on posts and pedestals to light housings set into the ground surface. As with other fixtures in the graveyard, lighting units need to be able to resist the activities of vandals, although completely vandal-proof fittings may not be possible. Considerable care must be exercised when installing cabling or ducts for lighting within a historic graveyard. It is strongly recommended that the excavation is overseen by an archaeologist to ensure that hidden archaeology is not disturbed.

Whilst the use of tarmac and concrete finishes for paths and other open spaces can detract from the character of historic graveyards, there is, nevertheless, a need to ensure that the finishes selected for public footpaths in heavily trafficked areas are both sympathetic to the setting and hard wearing. Graveyards of this type should be accessible to disabled persons and therefore the use of soft or gravel surfaces will present difficulties, as too will setts and cobbles. Stone paving, brick, and quarry dust are acceptable finishes for wheelchair use and are compatible with a churchyard environment. For further information on access see Technical Advice Note 7, *Access to the Built Heritage: Advice on the provision of access for people with disabilities to historic sites open to the public*, published by Historic Scotland in 1996.

As the general public becomes more aware of, and interested in, historic graveyards; those graveyards that are of particular interest to visitors may require the installation of additional notice boards. As with other new features, the design, construction and location of notice boards requires careful consideration. Increasingly, there will be the need to provide interpretation of the graveyard to the visitor and this need may require notice boards that are of larger scale than the normal small notices at the entrance to a graveyard. As a general rule, such interpretative panels should not be so prominent that they detract from the vistas within the graveyard; neither should they be of a scale that will overwhelm nearby gravestones. It may be appropriate for such notices to be installed in panels that are fixed at a low level, which will also render them more accessible to wheelchair users. This approach should also be used where interpretation is required at individual gravestones, monuments and other features.

8.6 Education and Interpretation

In addition to their historical value, historic graveyards are valuable for many other reasons and have aptly been referred to as outdoor museums. They illustrate demographic changes, tell us about changing attitudes to death and religion, changes in art forms, and record in brief the story of local people. Graveyards with well-managed vegetation tell us about local flora and fauna. The gravestones made of different rocks; sedimentary, igneous and metamorphic, demonstrate much about geology. In the case of older gravestones, they also provide evidence of the durability of local stones. All these factors make graveyards ideal places for study trips. For students of every age they offer many possibilities for education in many disciplines. Schools could combine a visit to the kirk with an exploration of the surrounding kirkyard. Graveyards must be treated with respect and are not places for ball games.

122. Path detail in a city centre kirkyard that is heavily used by the public. The use of granite paving and edging setts is sympathetic to the graveyard environment and reduces life-cycle costs, although the edging setts perhaps bring too much of an 'urban' feeling to the setting

123. A corner of the kirkyard featured in Illustration 122. Note the sympathetic design of ancillary features for seating, litter bins and path lighting

The increasing interest in genealogy has also resulted in an increase in the number of visitors to graveyards. Such interest is further enhanced by the large number of sites on the Internet that are devoted to this subject.

It is recommended that the relevant authority is notified in advance of a proposed visit by any large group.

For a graveyard to be effective as a 'museum', the elements of significance and of interest within it must be well presented and explained:

- Interpretation can range from a simple brochure or article in the parish or community magazine to a permanent display describing the elements of significance, the growth of the graveyard and perhaps including descriptions of gravestones that have been relocated indoors to protect them from the elements;
- On-going or proposed conservation work can be explained fully, as can any Management Plan prepared for the long-term maintenance of the graveyard;
- For added interest, displays can include information on local dignitaries or worthies buried within the graveyard;
- Discreet directional signs can be used to direct visitors to the interesting and important stones and other elements;
- Sympathetically designed notice boards and interpretation panels can be used to explain conservation issues such as the possible harm that can be caused to stones by taking rubbings;
- Some cemeteries promote recreational use of their grounds by maintaining extensive and well-labelled collections of plants and trees.

Interpretative material should be designed sensitively in order not to disfigure the character of a graveyard or any building in it. Small markers at ground level are more appropriate than large signs which can be obtrusive in such a setting. The purpose of signposting is simply to direct visitors. They should not be used to advertise. Interpretation panels should be positioned carefully to allow easy access, yet not clutter areas.

The choice of materials for panels is also important. They should be durable but not visually overpowering. Choice of materials and location of panels should also take vulnerability to vandalism into account.

124. The entrance to the kirk is subject to heavy foot traffic and the flat graveslab has had to be incorporated into the paved area to improve access. Whilst the graveslab is granite there has been sufficient wear to result in a loss of inscription

9 CHECK LIST OF GOOD PRACTICE

The following points identify the key issues that need to be considered when undertaking conservation and maintenance of historic graveyards.

9.1 Conservation Strategy

- Prepare appropriate documentation for the graveyard. This will include an inventory of each monument or memorial and the preparation of a conservation plan, a management plan and identification of gravestones at risk. The Conservation Plan should provide the overview on the strategic approach;
- All survey and recording work, including recording of inscriptions, should be carried out using appropriate methodologies;
- The management plan should identify the priority for repair in the graveyard;
- Within a graveyard, identify all the 'important' features; including gravemarkers, buildings, gates, enclosures and flora and fauna that contribute to the significance of the graveyard. Many features will be classified as listed buildings, scheduled ancient monuments, sites of special scientific interest or designed landscapes controlled within the Inventory;
- As far as possible, gravestones should be preserved in their original setting;
- Ensure that all necessary consents, i.e. Listed Building Consent or Scheduled Ancient Monument Consent, are obtained before starting work.

9.2 Administration

- Before any work within a graveyard is undertaken seek appropriate professional advice. Professional advice may be required from:
- *An archaeologist, historian or other appropriate person to prepare a conservation plan;*
- *A conservation architect to survey and prepare conservation proposals for any buildings within the burial ground;*
- *A conservator in connection with resiting, resetting or repair of gravestones;*
- *An archaeologist where any ground disturbance is planned;*
- *Specialists to advise on possible disruption to plant and animal life in the graveyard;*
- *Historic Scotland and the local authority to check the requirements for necessary permissions on protected monuments.*

9.3 Care of Gravestones

- Particular attention should be paid to gravestones formed from sandstone as, of all the stone types, they are most susceptible to decay as a result of a number of decay processes. They are also particularly vulnerable to further damage due to inappropriate intervention;
- As a general rule, gravestones should not be cleaned. If, however, cleaning is thought to be essential this should be done only by an experienced conservator. Unless cleaning consists of gentle brushing with a soft bristle brush and rinsing with clean water, there is the potential to cause irreversible damage to porous stone;
- As a rule, no attempt should be made to realign tilting markers, unless they are in danger of collapse, as this may disrupt adjacent graves and detract from the character of the graveyard. Before any resetting is undertaken the monument should be monitored for a period of at least one year to establish whether or not the movement has stabilised;
- Seek specialist advice to deal with graffiti on gravestones, especially porous stones, and other stone features. Inappropriate treatment can be damaging to the stone;
- Gravestones or gravestone inscriptions should not be painted as this may cause further damage to the stone. Where there is evidence that paint was applied as an original feature seek professional advice before undertaking any remedial work.

9.4 Gravestone Repairs

- Lifting stones must be only carried out under specialist supervision and it should be recognised that friable stones are liable to break-up if lifting is attempted;

- Repair of fractured gravestones will require the use of non-ferrous dowels of suitable length and either polyester resin (for clean breaks) or lime mortar (for wider joints);
- For repairs to stone, hard cement mortars should be avoided and lime mortar only used;
- Where inscription has been lost from a stone, recutting the stone should not be undertaken. It is preferable to position a new plaque, with the text reproduced, in the ground at the front of the original tombstone.

9.5 Funding

- Ensure that sufficient funds are available to complete any work proposed. Do not start work which cannot be completed within the planned budget.

9.6 Safety

- Ensure that all volunteer workers are fully informed about the nature and dangers of the work and have received appropriate training to enable them to undertake the task, including health and safety;
- Temporary stabilisation of elements may be necessary to prevent collapse. Features that have been temporarily supported must become priority items for permanent repair or stabilisation. The design of temporary support should not be detrimental to the site as a whole.

9.7 Ground Maintenance

- Do not cut back turf from the bases of gravestones and, if practicable, re-turf exposed soil where this has been done to simplify grass cutting in an historic graveyard;
- Where a gravestone that has been concealed below grass is uncovered, it should be recorded, assessed and then re-turfed, where appropriate, to prevent further deterioration;
- Do not use ride-on mowers for grass cutting in close proximity to memorials, due to the risk of damage. Hand-held equipment only must be used;
- Paths are part of the original design and, generally the alignment of existing paths should be retained. Avoid 'over-engineering' and the use of tarmac surfaces which are unsympathetic to the character of the graveyard.

9.8 Nature

- Adopt a policy of minimal change with regard to nature conservancy in the graveyard. Trees and hedges should not be cut down unless they are diseased, in danger of toppling, recent plantings not in keeping with the historic layout or causing damage to the built heritage.

10 CASE STUDIES

This chapter describes five instances where conservation work has been carried out on gravestones or monuments. Though many more projects have been undertaken, these case studies have been chosen to illustrate examples of the diverse conditions which might be encountered with gravestones. Before undertaking any work on important gravestones and monuments, advice should be sought from local authority conservation officers, the local authority archaeologist or Historic Scotland.

125.Baroque carved gravestone: a good example of where conservation expertise will be required to ensure the future well-being of the stone and the detail

Case Study 1

Late Medieval Graveslabs, Argyll

Location: Graveyards of Kilarrow, Kilnave, Kilchoman, Keills and Kidalton on the Isle of Islay

Date of Conservation Work: 1998

Description: Many carved late-medieval gravestones in churchyards around Islay lie directly on the ground with their upper face flush with the turf. As a result their fabric was suffering from a combination of erosion by feet, breakage by lawnmowers and the consequential effects of waterlogging, ponding and biological growths.

Conservation Treatment: Many stones in the Argyll area might be considered to be well worth preserving in a museum environment. However, given the huge numbers of such stones, it was considered impractical and undesirable to give each one of them a new home under cover.

In order to improve the conditions of a number of stones (without having to move them from their original location) a trial project was arranged in 1998. This was carried out mainly by volunteers trained by and under the supervision of Historic Scotland staff. Care was taken to cause only the minimum disturbance to the ground level. Shown in Illustration 126 it introduced the following process:

1. At the outset, stable stones, not in an obvious friable condition were identified to be lifted;

2. The earth was cleared from around the top edge of the stone. This was done in a way that disturbed only the absolute minimum of turf;

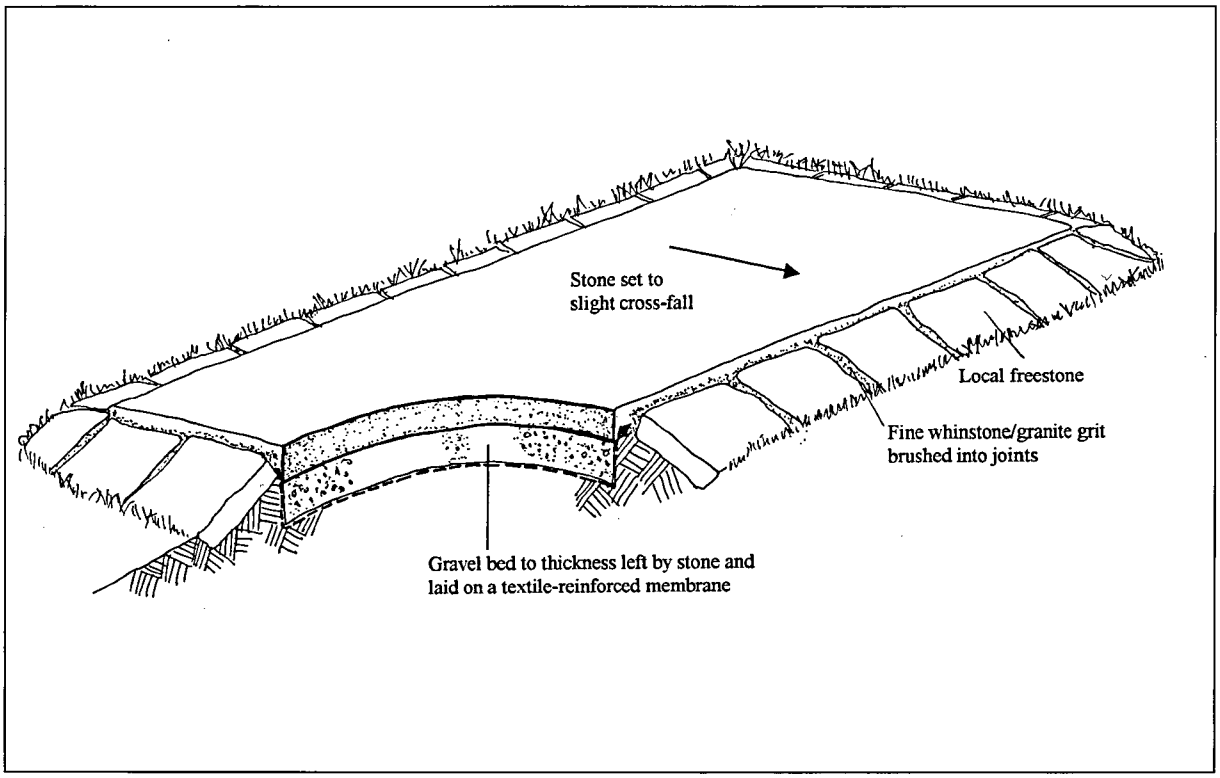
3. One end of the stone was raised with the help of timber props used as fulcrums;

4. Nylon slings were slipped underneath the stone to help lift and move it. For the heavier stones a second option of inserting timber batons underneath a padded aluminium roller was used to carefully roll the stones to a temporary position;

5. The bed of the stones was then backfilled with a woven nylon matting which helps to prevent the gravel from sinking. Gravel was then filled in over the porous nylon matting and a layer of locally available coarse sand was spread over the gravel. This was filled up to match the level of the adjoining turf;

6. The stone was then brought back into position;

7. The stone was edged with rubble, using fairly flat stones resting on top of the turf. No mortar was used to bind the rubble; it was stabilised in position using locally available coarse sand.



126. Detail of bedding of the slabs

127. Support and lifting of a slab

128. Slab on sand bed with textile based membrane

129. Completed rebedding of the slab

Case Study 2

Annand Monument, 17th century

Location: Ellon Kirkyard, Aberdeenshire

Date of Conservation Work: July–August 1995

History and Description: The early-seventeenth century monument was erected by Alexander Annand, the last Annand laird of Auchterellon, to the memory of David Annand, who died in 1326, the ancestor of the Angus branch who settled in Auchterellon. The monument is divided into three panels. The upper central panel has the Annand coat of arms with the motto *Sperabo*. The initials DA are visible on one end of the shield while the other end is inscribed *obiit 1326*. The panel on the left is a memorial to Alexandre Annand and Margaret Fraser, the parents of the builder of the monument, who died in 1601 and 1602 respectively. This left panel has the Annand arms quartered with those of Fraser. On the inscribed panel below only the words *MONUMENTUM* and *HONRABILIS* remain. The right panel is a memorial to Alexander Annand and Margaret Cheyne and has the Annand arms quartered with those of Cheyne.

The monument is a free-standing, sandstone panel backed by a rough random rubble wall built with a local igneous stone. It was originally in the interior of the kirk. The monument measures 4100mm in length, 2500mm in height and 680mm in depth. Each of the five principal carved panels measures 1100mm x 700mm.The monument consists of 44 individual stones and is capped with six slabs of steel reinforced concrete, pitched to shed rain water over the back of the structure.

Condition Prior to Conservation: The monument was under extensive decay with only two of the five panels remaining clearly legible. The monument, which was designed to be indoors, has been exposed to the elements for over 200 years. The panels are face bedded and water had been running between the open joints of the capping slabs and down the face of the ornament. Well-meaning conservation work was undertaken in the 1950s which is when, in all probability, it was pointed with a hard, cement-rich mortar. As a result of all these factors, delamination, fissures, contour scaling and blistering were evident almost all over the monument

Conservation Treatment: The monument was never intended to be exposed to the elements. Ideally, it should be dismantled, individual stones treated, and re-erected indoors. However, this would have been an expensive solution, even if a suitable location to re-erect it had been found. Thus the conservation work was carried out in the following sequence:

1. Friable areas were faced up with acid free tissue supports, attached with polyvinyl alcohol;

2. All old cementitious pointing material was removed carefully from the north elevation to a depth of 50mm without damage to stone edges;

3. Preliminary consolidation and re-attachment of distressed carved ornament was carried out using acrylic resin 'PB 72', at strengths of no more than 5%, in solvent;

4. Beds and joints of the north elevation were repointed using a lime putty mortar mix in accordance with Historic Scotland *Technical Advice Note 1: Lime Mortar*;

5. Temporary tissue supports were removed;

6. Acrylic resin in solvents, at strengths of no more than 5%, was injected with hypodermic needle and syringe into areas of delaminations and scaling;

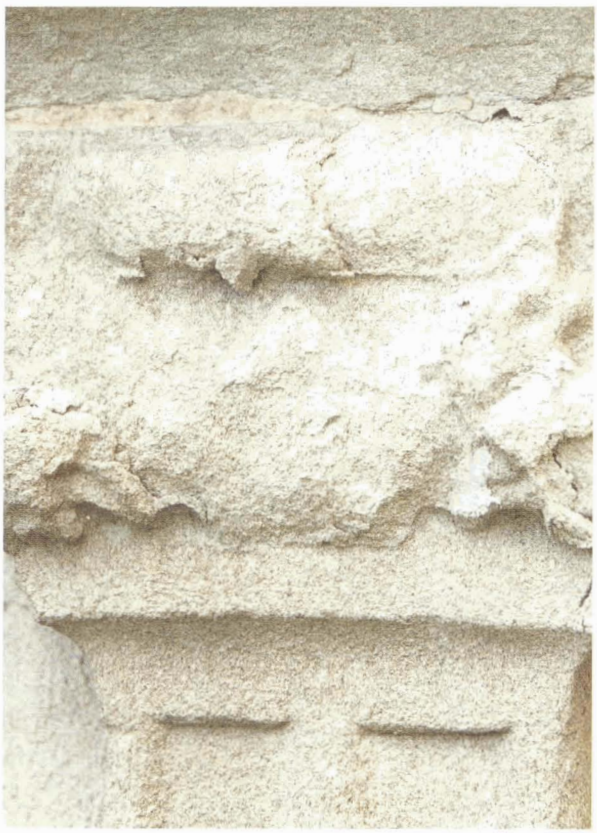
7. All other areas of decay activity were edge pointed using finely graded aggregate mixed with 'PB 72' in acetone and IMS;

8. The joints of the capping stones were sealed with an elastomeric high modulus silicon sealant to prevent channelling of rain water.

These conservation treatments were designed to be sacrificial and have an expected life expectancy of 20 years. A follow-up conservation commitment to a management regime requiring annual inspections (at least for the first few years) was suggested. Some minimum maintenance was also considered likely to be required in five years time.

130. Annand Monument, Ellon, Aberdeenshire, four years after restoration

131. Annand Monument, right panel



132. Carved pilaster capital requiring consolidation

Case Study 3

Faichney Tomb, 18th century

Location: Innerpeffray Church, Perthshire

Date of Conservation Work: 1997

History and Description: The stone is said to have been carved in 1707 by the mason, John Faichney, in readiness for use as a family memorial (Willsher & Hunter 1978).The memorial is composed of ten sections of red sandstone and is 2400mm high, 1300mm wide and 330mm deep. It is topped with a full-faced head, below which is a panel depicting two figures, perhaps John Faichney and his wife. This panel is flanked with figures balancing enormous seedpods. On either side of the bottom panel are depicted ten children, in two rows of five. The bottom central panel contains two Resurrection angels above a shield depicting the family arms, below which are the Memento-Mori consisting of hour-glass, book and hand, skull, and a portrait of Mrs Faichney.

Condition Prior to Conservation: The monument was built into the boundary graveyard wall. The red sandstone monument was painted with grey gloss oil paint. The stones were embedded in a dense concrete and rough rubble walling. The concrete appeared to have been poured between the tomb and wall shuttering and had ingressed into all the beds and joints of individual stones forming the tomb. Furthermore, it appeared that expanding fixings and coach bolts had been drilled into the stones prior to pouring the concrete. The sandstone was heavily overpainted and, in portions, there was blistering of the stone surface. The main panel was severely cracked, as was the architrave above it. The surface was dirty, with evidence of slime mould, algae and lichen. The bottom panel was cracked and friable.

Conservation Treatment: Taking into account the importance of the stone and the degree of decay, it was decided that it should be resited in an internal environment. The conservation work was carried out in the following sequence.

1. The monument was initially faced up with a protective layer of acid free tissue and temporarily shored up with timber;

2. The wall on either side and to the rear was dismantled carefully to allow access to the reinforced concrete around the back of the tomb;

3. Some of the concrete from the monument back was removed to reduce the weight on component stones;

4 Careful cutting allowed each stone to be individually released, with some of the concrete still remaining in place. In the case of the main panel, which also had a fracture extending through the face, the remaining concrete served as additional support to prevent movement distortion and further distress;

5. The individual stones were then protected, crated and transported to the Historic Scotland Conservation Centre in Edinburgh;

6. The paint layers were removed using methanol, dichloromethane and deionised water;

7. Local consolidation of loose stone pieces was implemented using Paraloid B72 in solution;

8. The stone was clamped to prevent movement then the remaining concrete was carefully removed from the back of the main panel;

9. A slate backing was applied to the main panel to stabilise the central fracture;

10. The conserved individual stones were transported back to the site and the monument was re-erected within Innerpeffray Church. The monument was attached to a specially made free-standing masonry wall, below which a lead DPM had been inserted;

11. The various parts were bedded in lime mortar. Stainless steel dowels, held with polyester resin, were used to fix strategic points, top and bottom of piers, the rear of the main panel, small figures, ball finials, upper head and to create cramps into the top of the lintel;

12. A phosphor-bronze bracket was used to attach the upper panel to the new supporting wallhead.

133. Faichney Tomb before conservation treatment

134. The dismantled Tomb with attached concrete backing

135. The Tomb post-conservation and relocated within the Church

Case Study 4

Graveslab, 18th century

Location: St Bridget's Church, Dalgety, By Aberdour, Fife

Date of Conservation Work: 1988

History and Description: The eighteenth-century graveslab is dedicated to the wife and two daughters of Reverend James Bathgate, who was a minister at St. Bridget's. His daughters died in 1744 and 1750 and his wife died in 1755. The slab is a coped type, and measures 2130mm in length, 1020mm in depth and 155mm in height.

Condition Prior to Conservation: As a result of a car crashing into the graveyard, the graveslab was broken into four pieces with various minor fragments. There was bad scuffing and deep scores to the surfaces and some lettering had been lost. Also, the surface along major fracture lines was showing signs of distress and flaking. The stone was covered with slime mould which, coupled with its size and weight, made handling difficult.

Conservation Treatment: The decision was taken to repair the stone and redisplay it in its original location. The various stone fragments were transferred to the Historic Scotland Conservation Centre for conservation treatment. Once there, conservation work was carried out in the following sequence:

1. The loose flakes were re-attached using an adhesive, allowing enough time to dry and ensuring a firm fixing;

2. The stone was then given a light clean and treated with a, proprietary biocide, allowing sufficient time for the graveslab to dry out and the biocide to work;

3. The stone was re-aligned in a trial assembly to determine the best position for supporting and connecting dowels. It was established that each joint would require three dowels, of phosphor-bronze, 600mm long and approximately 30mm in diameter;

4. Each section was marked and drilled to accept the dowels, which were bedded in polyester resin;

5. The separate fragments were then offered up to each other, jointed, aligned and fixed. Cramps were used to apply pressure to the fractured joints to ensure a tight realignment of the pieces;

6. The smaller fragments were attached and the distressed areas filled with acrylic mastic and the lettering recut where necessary;

7. The stone was then cleaned and re-installed on its original external site.

136. Fractured graveslab in the workshop prior to dowelling

Case Study 5

Monteith Mausoleum

Location: Glasgow Necropolis

This case study does not describe conservation work carried out on the monument. It is a record of an inspection carried out by Historic Scotland and recommendations for repair and maintenance work required to conserve the mausoleum.

Description and Condition: A massive Ravenna-type two storey circular mausoleum with polygonal open lantern storey in blonde sandstone supported on a rusticated base. It is one of the most conspicuous monuments on the Necropolis. A very elaborate carved exterior contrasts with a roughly-hewn arcaded interior supporting a brick dome. Attached columns are missing from the right hand pier of the doorway, the upper blind arcade in the south west quadrant and an adjacent lower "window" opening. The building appears structurally sound at present but erosion of the carved ornament is taking place due to the exposure of the site and, internally, wind erosion is causing cavern decay in the base of the lantern. The roof slabs, however, appear in excellent order from ground level inspection. The windows have been crudely built-up with concrete blocks. The timber door has unusual wooden nail-head ornament, but is rotting at the base.

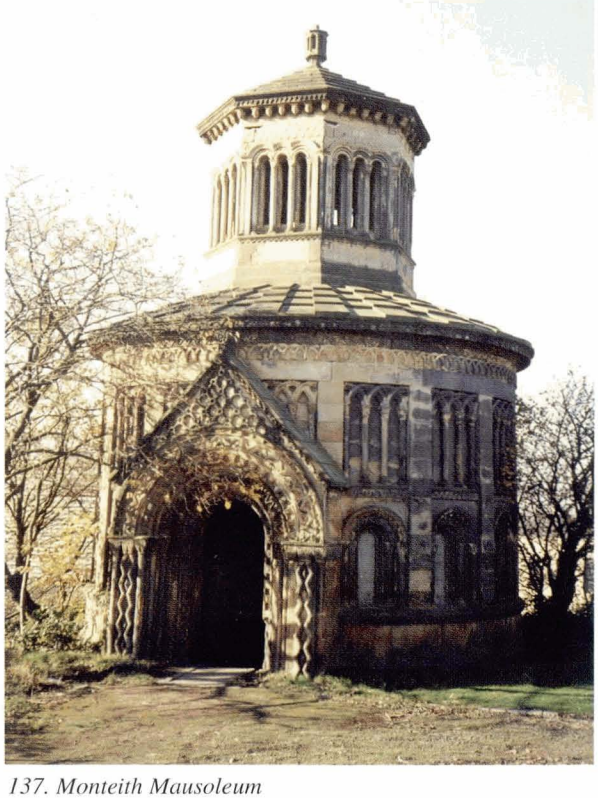
Recommended Conservation Treatment

1. Remove the tree growing out of the foundations on the south side and all adjacent saplings. Cut back vegetation generally;

2. Scaffold and work over the entire monument testing stones for soundness with a light rubber-coated hammer;

3. Check all joints in the stone roof slabs for watertightness and point where necessary in an hydraulic lime mortar;

4. Indent two or three stones, with characteristic fishscale carving, to lantern drum. Note, plastic repairs are not grant-eligible;



137. Monteith Mausoleum

138. Carved detail on sandstone showing significant stone decay

5. Lightly de-scale spalling ornament to the external arcading;

6. Some indentation, for example to the capitals and label mouldings, would be worthwhile but is not essential in the medium term. Templates should be taken, however, to record mouldings for future carving;

7. Missing colonettes should be reinstated to the arcade, particularly if found to be lying under the vegetation but there would seem to be little need to replace the larger columns missing from the doorcase;

8. Selective repointing is required to all open joints and to all external walling where mortar is loose and crumbling. Carefully rake out the joints by hand, not machine tool, to ensure the joint is not widened and repoint with lime mortar without spreading mortar on the face of the stone (use tape if necessary);

9. Internally, some indentation is called for to areas affected by cavern decay to ensure the protection of the surrounding stone. This has been exacerbated by the hard cementitious mortar. The use of this type of mortar for repointing should not continue. To remove it will, however, be too damaging to the soft sandstone;

10. Open joints in the brickwork dome should be repointed from the scaffold. This is a difficult process as much of the mortar will drop out, but can be propped with, for example, hardboard profiles propped from the scaffold until it is cured;

11. Blocked-up windows should be re-opened and secured with a heavy duty non-ferrous wire mesh. Whilst pigeons do not appear to be a problem at present, a similar treatment to openings in the lantern would probably be worthwhile;

12. Piece-in replacement rails to the bottom of the door and treat/paint rusting furniture. It would seem sensible to leave the door to the mausoleum open, in which case it should be fixed back to prevent closure. A coat of preservative would be worthwhile.

139. Interior view showing lantern windows

Case Study 6

Carved Stone Methodology

This case study has been included to show the application of Historic Scotland's Methodology for Assessing the Decay of Carved Stones to a gravestone in the kirkyard at Colinton Parish Church, Edinburgh. The publication, *Assessment Methodology Handbook*, published in 1999, is reproduced in its entirety as Appendix C. The approach to preparing a record of a graveyard and gravestones is further refined and defined in Appendix B, Graveyard Conservation Plan which incorporates carved stone record forms. The case study demonstrates ease of use of the Methodology by interested lay persons. The structure of the proforma presents the surveyor with a series of questions and prompts relating to the site and the individual gravestones. The questions then take the user through the assessment so that the non-specialist is able to make a valid judgement in areas such as geology and environment.

The form was completed by Mr and Mrs F Bennetts and is included here with their permission, and that of the Colinton Local History Society.

140. The gravestone in the kirkyard at Colinton Parish Church, Edinburgh, assessed using the Historic Scotland Methodology

Carved Stone Decay in Scotland - Carved Stone Record Form (1)

SITE NAME: Edinburgh. Dell Road CARVED STONE NO. 15 on burial ground plan
Colinton Parish Church
~~St. Cuthbert's Church~~

7. TYPE OF CARVED STONE (tick the appropriate box): Natural Outcrop ☐ Free Standing Stone ☑ Architectural ☐

8. FURTHER DETAIL:
Gravestone.

9. PERIOD (tick the appropriate box):
Prehistoric ☐ Roman ☐ Early Medieval ☐ Medieval ☐ Post-Medieval ☐ Victorian and later ☑

10. DESCRIPTION:
Upright gravestone with ornate carved foliage at top and raised margin. Carved plinth. Centre of stone badly weathered

11. DEGREE OF SHELTER: (tick the appropriate box)
Enclosed (Inside a building) ☐ Covered but still open in some places ☐ Sheltered ☑ Exposed ☐ Very Exposed ☐

12. MEASUREMENTS:
(a) Number of stones: Two.

(b) Orientation Stone(s): East (carved face).

(c) Number of carved faces: one

(d) Dimensions: (these should also be included on the Carved Stone Detail sketch):

Stone No.: Slab			
Overall height (cm): 180	Width (cm): 55	Depth (cm): 17–20	
Stone No.: base			
Overall height (cm): 28	Width (cm): 69	Depth (cm): 31	
Stone No.:			
Overall height (cm):	Width (cm):	Depth (cm):	

13. CARVING:
(a) Surface preparation: (tick the appropriate box(es)) Prepared ☑ Unprepared (rough) ☐

(b) Type of carving: (tick the appropriate box(es)) Relief ☑ Incised ☑ lettering

(c) Depth of carving: – (i) Coarse features: 15 mm (ii) Fine detail: 5mm Dressed margin. Centre of stone is badly weathered. Incised letters can be deciphered at ends of lines.

(d) Is the carving making some areas decay at different rates?
No. The incised lettering has probably weakened the surface of the stone.

Carved Stone Decay in Scotland - Carved Stone Record Form (2)

GEOLOGY AND DECAY

SITE NAME: Edinburgh - Dell Road. CARVED STONE NO. 15 on burial ground plan. Colinton Parish Church.

14. LITHOLOGY: Tick the appropriate boxes after completing the identification key opposite:

(a) State whether the stone is: Sedimentary ☑ Igneous ☐ Metamorphic ☐ Unknown ☐

(b) State whether the stone is: Limestone ☐ Granite ☐ Slate ☐

Sandstone ☑ Other Igneous ☐ Schist/Gneiss ☐

(c) Colour: White ☐ Clear ☐ Red ☐ Brown ☐ Grey ☑ Blue ☐ Green ☐ Pink ☐ Other ☐ (specify)

15. FABRIC: Tick the appropriate boxes after completing the identification key opposite and comment:

(a) Veins ☐ Comments:

(b) Bedding planes ☐ Comments: Vertical – main stone
Plinth probably carved with bedding plane horizontal.

(c) Layering ☐ Comments:

(d) Cleavage planes ☐ Comments:

16. GRAIN SIZE AND SHAPE: Tick the appropriate boxes after completing the identification key opposite and comment:

(a) Size: Fine ☑ Comments:

Medium ☐ Comments:

Coarse ☐ Comments:

Pebbles/Rock Fragments ☐ Comments:

(b) Shape: Rounded ☐ Comments:

Angular ☑ Comments:

17. OBSERVED DECAY:

Refer to typical types of decay for the particular stone type identified (these can be found in the Key to Lithology), for example dissolution, delamination, formation of crust. Note: some forms of neutral decay eg. alteration of minerals, may require advice from a geologist before they can be identified.

Delamination has occurred at centre of stone, east elevation
Back of stone is plain but is also subject to delamination.
Plinth is in good condition.
Biological growth slightly more above than below carved fold

Carved Stone Decay in Scotland - Carved Stone Record Form (3)

BIOLOGICAL GROWTHS AND HUMAN INTERVENTION

SITE NAME: Edinburgh Dell Road CARVED STONE NO.: 15 on burial ground plan.
Colinton Parish Church.

18. BIOLOGICAL:

(a) Algae/lichens/mosses:

Mainly at top of stone.

(b) Plants/Trees:

Large tree adjoining.

(c) Birds/animals:

(d) Effect on stone:

Drips from tree augments rainfall.

19. PAST HUMAN ACTIVITIES:

(a) Repairs: cramps, dowels, cement, others

(b) Cleaning:

(c) Rubbings:

(d) Other: —

(e) Effect on stone:

20. PUBLISHED HISTORY:

21. PHOTOGRAPHIC RECORD:

Colinton Local History Society holds photographs also.

Carved Stone Decay in Scotland - Carved Stone Record Form (4)

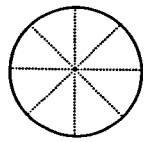
CAUSES OF DECAY AND UNDERLYING FACTORS CONTRIBUTING TO DECAY

SITE NAME: Edinburgh - Dell Road, Colinton Parish Church CARVED STONE NO.: 15 on burial ground pl

Step 1	Type of Stone (Section 14)	Sandstone						
Step 2	Decay Observed (Section 17)	Delamination.						
Step 3	Tick the potential forms of decay for the stone type (see Table 1)	Dissolution	Erosion	Delamination	Change in properties	Change in structure	Alteration of minerals	Formation of crust
			✓	✓	✓			✓
Step 4	Tick the potential environmental parameters associated with the Decay Observed noted at step 2 (see Table 2)	Rainwater	Frost	Temperature/ Humidity	Salt Crystallisation	Acid Deposition	Biological	Human
			✓	✓	✓			✓
Step 5	What environmental parameters are relevant for this stone and why? Y/N (Reason)		Y Danger of frost	Y Fluctuation in temperature stone in sun	N No evidence of salt near base			N No evidence
Step 6	Causes of decay	Humidity level high. Expansion of water in stone may be due to frost or temperature fluctuations. Incised lettering at east elevation may have weakened the surface of the stone. The carving may be influencing the extent of the decay. Both faces are delaminating.						
Step 7	Underlying Factors contributing to decay	Softness of the sandstone.						

Site name: Edinburgh. Dell Road. Colinton Parish Church Sketch No.

Date: Drawn by: F. V. Bennett



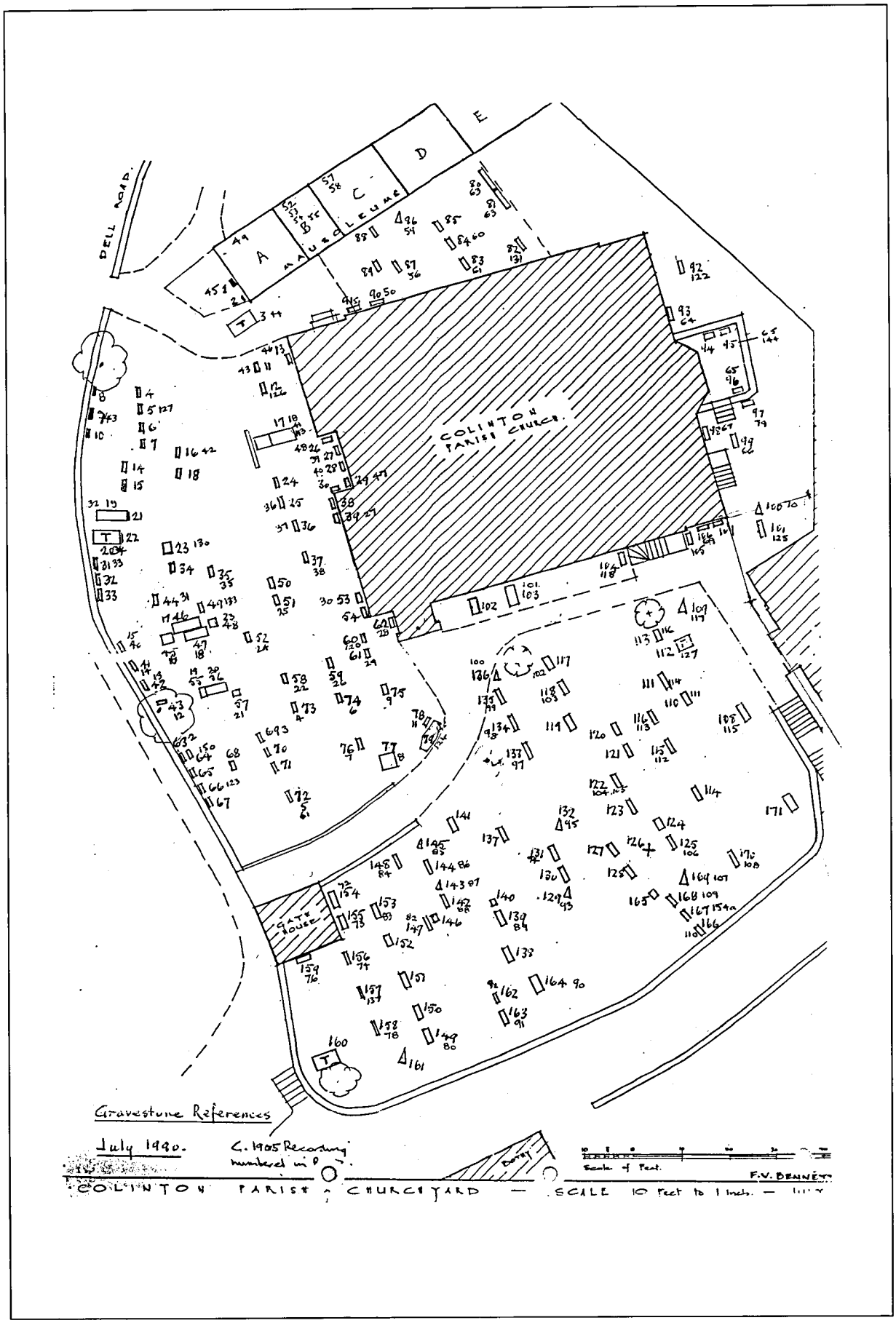
Indicate North

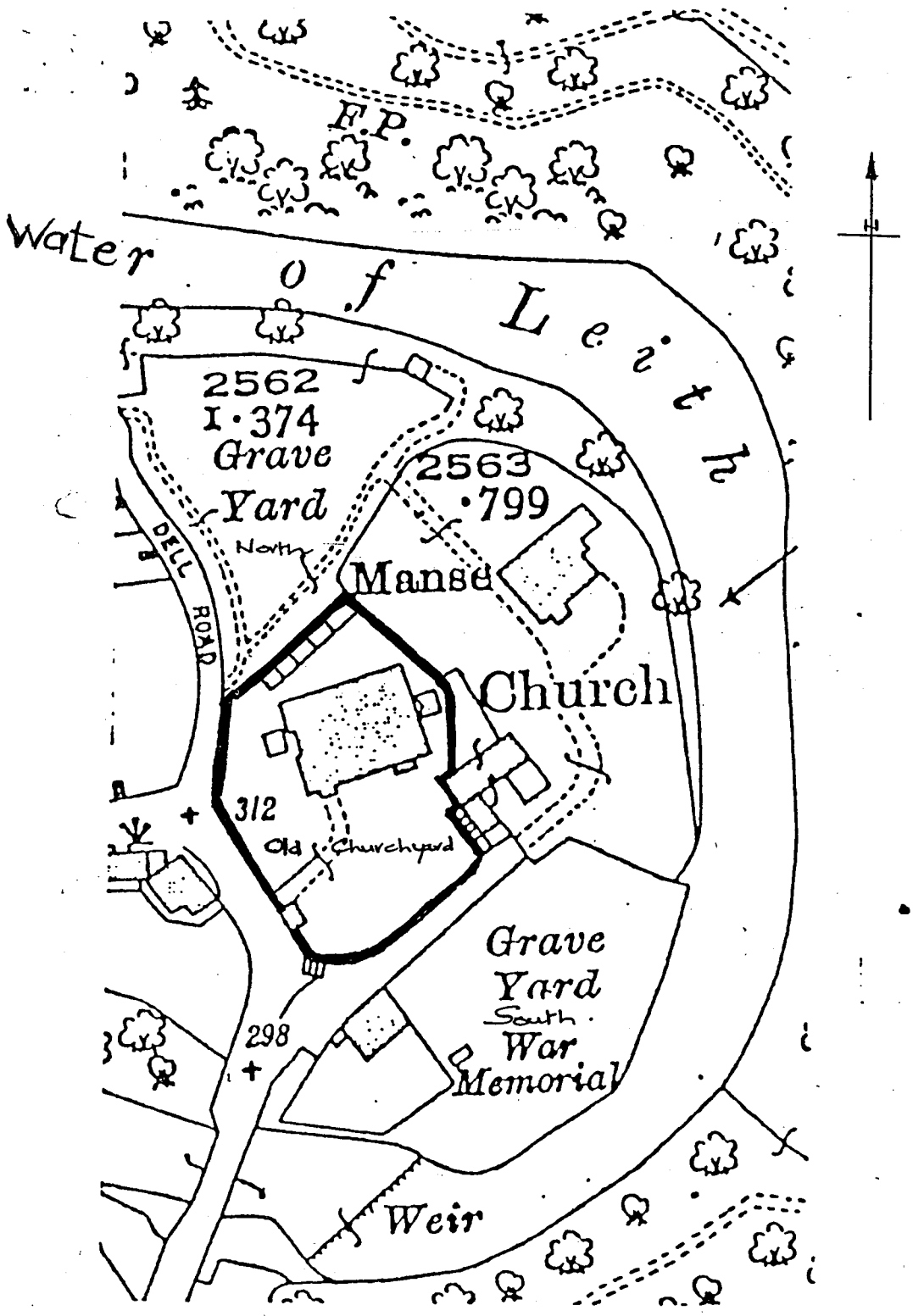
Location Plan

Location Plan
Burial Ground Plan
} Attached.

If the stone has not been visited previously, prepare a location plan to show the approximate location of the stone relative to the surrounding features (for example other stones, buildings, trees and walls). In some cases, the surrounding environment will include masonry work or other carvings and all of these need to be included on the location plan and if further detail is required then it should be noted on the recording form. In preparing the drawing some indication of scale must be given and if reference is being made to distant objects (eg a house 100m away) then the approximate distance and direction should be included.

Note: Experience in the field suggests that it is better to make a rough sketch in a note book or on sheets, and to prepare the final diagram at a later time. Use fine black pens for the final version, making appropriate use of different thicknesses of point.


DELL ROAD
COLINTON PARISH CHURCH
GATE HOUSE
Gravestone References
July 1990.
C. 1905 Recording numbered in pencil
COLINTON PARISH CHURCHYARD — SCALE 10 Feet to 1 Inch. —
Scale of Feet.
F.V. BENNETT



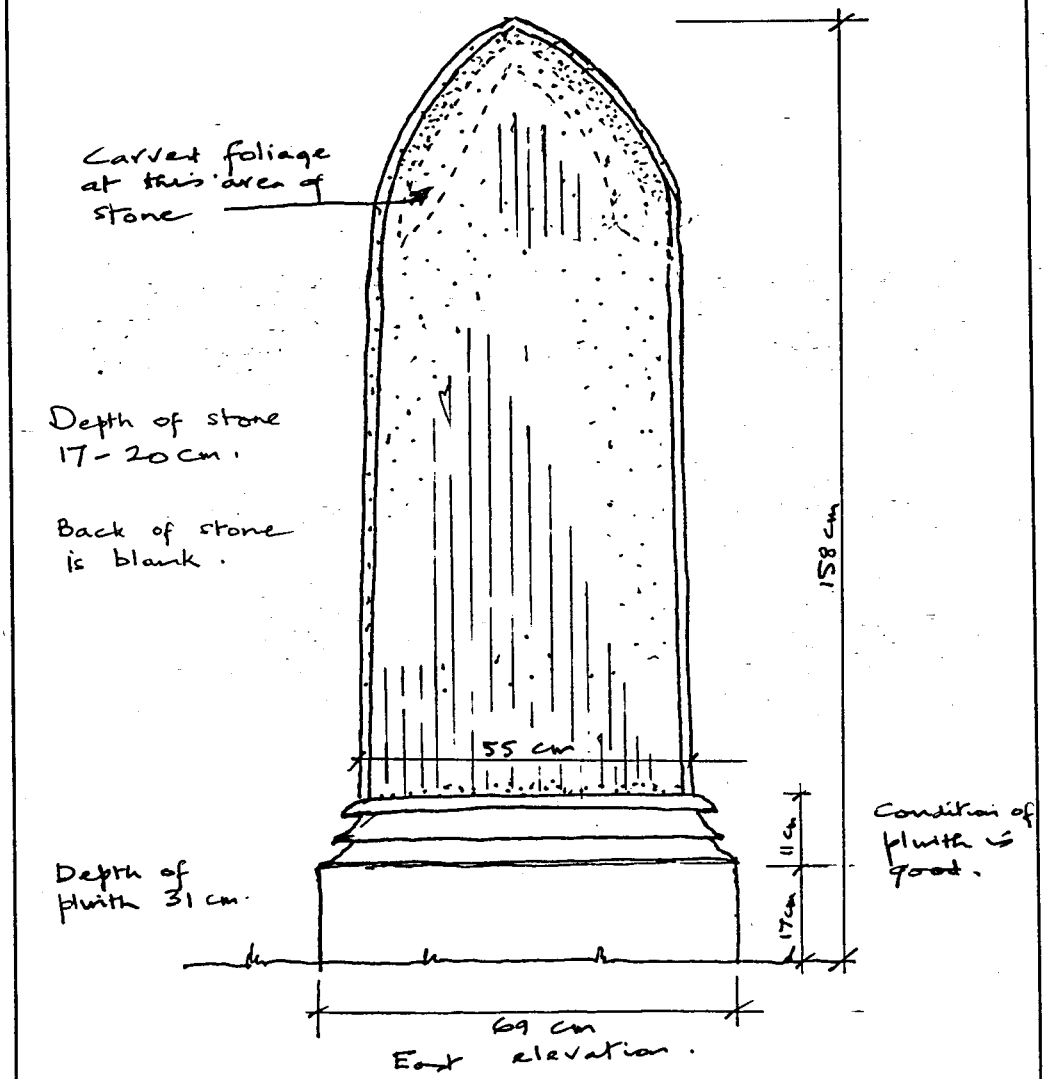
COLINTON PARISH CHURCH
Dell Road, Edinburgh.

Site name: Edinburgh, Dell Road Colinton Parish Church Sketch No. Stone No.: 15 on burial ground plan

Date: Drawn by: F. V. Bennett.

Indicate North

Carved Stone Detail



A carved stone detail sketch should be made to identify the number of pieces of stone and their relative positions, and a record made to show the outline of the carved stone and, where appropriate, to identify the number of decorated faces. Where it is necessary to describe each face separately, identify each one by the direction it faces. It will be helpful to add overall dimensions to the sketch, in addition to noting these on Carved Stone Record Form (1)

First draw the outline of each stone face to be recorded, then annotate the following:

Key: -------- extent of carving

area of decay by dissolution

area of decay by erosion

area of decay by delamination

area affected by formation of crust

area of algae/lichen/moss cover

Carved Stone Decay in Scotland - Site Record Form

1. TITLE BAR: Edinburgh. Dell Road.

Site Name: Colinton Parish Church

National Grid Ref: NT 21576913

No. of carved stones on site: 171

HS. Index No. (if relevant): Building 26875

NMRS No. (if relevant): NT 26 NW2

Other Ref. No. (if relevant): Nat. Monument Record Computer No. 51762

Parish: Colinton

Local Authority Area: Edinburgh, City of.

Status: Scheduled ☐ Listed ☑ Neither ☐

Other Names (if relevant): St. Cuthbert's Church

2. LOCATION: (Record detail on location plan)

(a) Position: The Old Churchyard, adjacent to Colinton Parish Church. 300 ft. above sea level.

(b) General Aspect of the site: Sloping ground near the water of Leith. bounded on south side by retaining wall.

3. SURROUNDINGS/LAND USE: If rural go to (a), if urban/suburban go to (b)

(a) Rural

(i) Land Use:

< 5m

> 5m up to 100m

(ii) Soil type: Sand ☐ Silt ☐ Clay ☐ Peat ☐ Water logged ☐

(b) Urban/Suburban

(i) Land Use: Burial ground

~~< 5m~~

> 5m up to 100m

4. ENVIRONMENT

(a) Exposure to wind and rain (Driving Rain Index): Low exposure. Site being near river is subject to dampness.

(b) Frost: Moderate frost.

(c) Pollution: Low.

5. DATE(S) OF VISIT: 6 July 2000.

6. NAME(S) OF SURVEYOR(S): Frank and Frances Bennett

BIBLIOGRAPHY

Anson-Cartwright T 1997 *Landscapes of Memories: A Guide for Conserving Historic Cemeteries: Repairing Tombstones*, Ontario Ministry of Citizenship, Culture and Recreation, Ontario.

Andrews, C 1994 *"Stonecleaning a Guide for Practitioners"*, Historic Scotland, Edinburgh.

Bourke, E et.al., Office of Public Works, 1995 *The Care and Conservation of Graveyards*, Stationery Office, Dublin.

BRE Digest 418 1996 *Bird, Bee and Plant Damage to Buildings*, Building Research Establishment, Garston.

BS 7913 1998 *Guide to the Principles of the Conservation of Historic Buildings,* British Standards Institute, London.

Brooks, C 1989 *Mortal Remains: The History and Present State of the Victorian and Edwardian Cemeteries*, Wheaton, Exeter.

Cameron, S, Urquhart, D, Wakefield, R and Young, M 1998 *Biological Growths on Sandstone Buildings : Control and Treatment*, Technical Advice Note 10, Historic Scotland, Edinburgh.

Dunwell, A J and Trout, R C 1999, *Burrowing Animals and Archaeology* Technical Advice Note 16, Historic Scotland, Edinburgh.

Geikie, A 1901 *The Scenery of Scotland* Macmillan, London.

Glasgow West Conservation Trust 1993 *Conservation Manual, Section 4 Ironwork*, Glasgow West Conservation Trust, Glasgow.

Gray TE and Ferguson LM 1997 *Photographing Carved Stones*; Historic Scotland, NCCSS, Edinburgh.

Historic Scotland and Scottish Natural Heritage 1982 onwards *Inventory of Gardens and Designed Landscapes*, Historic Scotland, Edinburgh.

Historic Scotland 1997 *The Treatment of Human Remains in Archaeology*, Operational Policy Paper, Historic Scotland, Edinburgh.

Historic Scotland 2000 *The Stirling Charter, Conserving Scotland's Built Heritage,* Historic Scotland, Edinburgh..

Historic Scotland 2000 *Conservation Plans: A Guide to the Preparation of Conservation Plans,* Historic Scotland, Edinburgh..

Historic Scotland 1999 *Scheduled Ancient Monuments: A guide for owners, occupiers and land managers,* Historic Scotland, Edinburgh..

Historic Scotland 2000 *Scotland's Listed Buildings: A Guide for Owners and Occupiers,* Historic Scotland, Edinburgh..

Historic Scotland 1995 *The Carved Stones of Scotland: A guide to helping in their protection* (leaflet), Historic Scotland, Edinburgh..

Jones, J 1984 *How to record graveyards*, Council for British Archaeology and RESCUE London, London.

Knight J, 1995 *The Repair of Historic Buildings in Scotland*, Historic Scotland, Edinburgh.

Linden-Ward, B 1989 *Silent City on a Hill: Landscapes of Memory and Boston's Mount Auburn Cemetery*, Ohio State University Press, Columbus, Ohio.

Macmillan, A 1997 *"Quarries of Scotland"*, Technical Advice Note 12, Historic Scotland, Edinburgh.

McCombe, C 1977 *Cast-iron Graveslabs Reveal Seventeenth-century Founders' Skills*, Foundry Trade Journal, Nov 24, 1977, pp 1125-1130.

Masonry Conservation Research Group, The Robert Gordon Institute of Technology Research Report 1991 *"Stonecleaning in Scotland"* 5 Vols, Historic Scotland, Edinburgh.

Masonry Conservation Research Group, The Robert Gordon University Research Report, 1995 *Biological Growths, Biocide Treatment, Soiling and Decay of Sandstone Buildings and Monuments in Scotland*, Historic Scotland, Edinburgh.

Proudfoot, E V W., Willsher, B 1995 *Understanding Scottish graveyards: an interpretative approach*, Canongate Books, Edinburgh.

Rogers, C 1871, *Monuments and Monumental Inscriptions in Scotland*, Charles Griffin and Co., London.

Scottish Lime Centre (revised 1995) *Preparation and use of Lime Mortars*, Technical Advice Note 1, Historic Scotland, Edinburgh.

Torraca, G 1981 *Porous Building Materials - Materials Science for Architectural Conservation*, ICCROM, Rome.

Treasure Trove Advisory Panel, Archaeology Department, National Museum of Scotland, *"Treasure Trove in Scotland, Guidelines for Fieldworkers"*, National Museum of Scotland, Edinburgh.

Urquhart D Young, M and Cameron S, 1997 *"Stonecleaning of Granite Buildings"* Technical Advice Note 9, Historic Scotland, Edinburgh.

Urquhart, D 1999 *The Treatment of Graffiti on Historic Surfaces*, Technical Advice Note 18, Historic Scotland, Edinburgh.

Willsher, B 1996 *How to Record Scottish Graveyards*, The Council for British Archaeology Scotland, Edinburgh.

Willsher, B 1985 *Understanding Scottish Graveyards*, W & R Chambers Ltd, Edinburgh.

Willsher, B and Hunter, D 1978 *Stone: Eighteenth Century Scottish Gravestones*, Canongate, Edinburgh.

Yates, T., Butlin, R. and Houston, J 1999 *Assessment Methodology Handbook: Carved Stone Decay in Scotland,* Historic Scotland, Edinburgh.

Young, V and Urquhart, D 1996, *Access to the Built Heritage. Advice on the provision of access for people with disabilities to historic sites open to the public,* Technical Advice Note 7, Historic Scotland, Edinburgh.

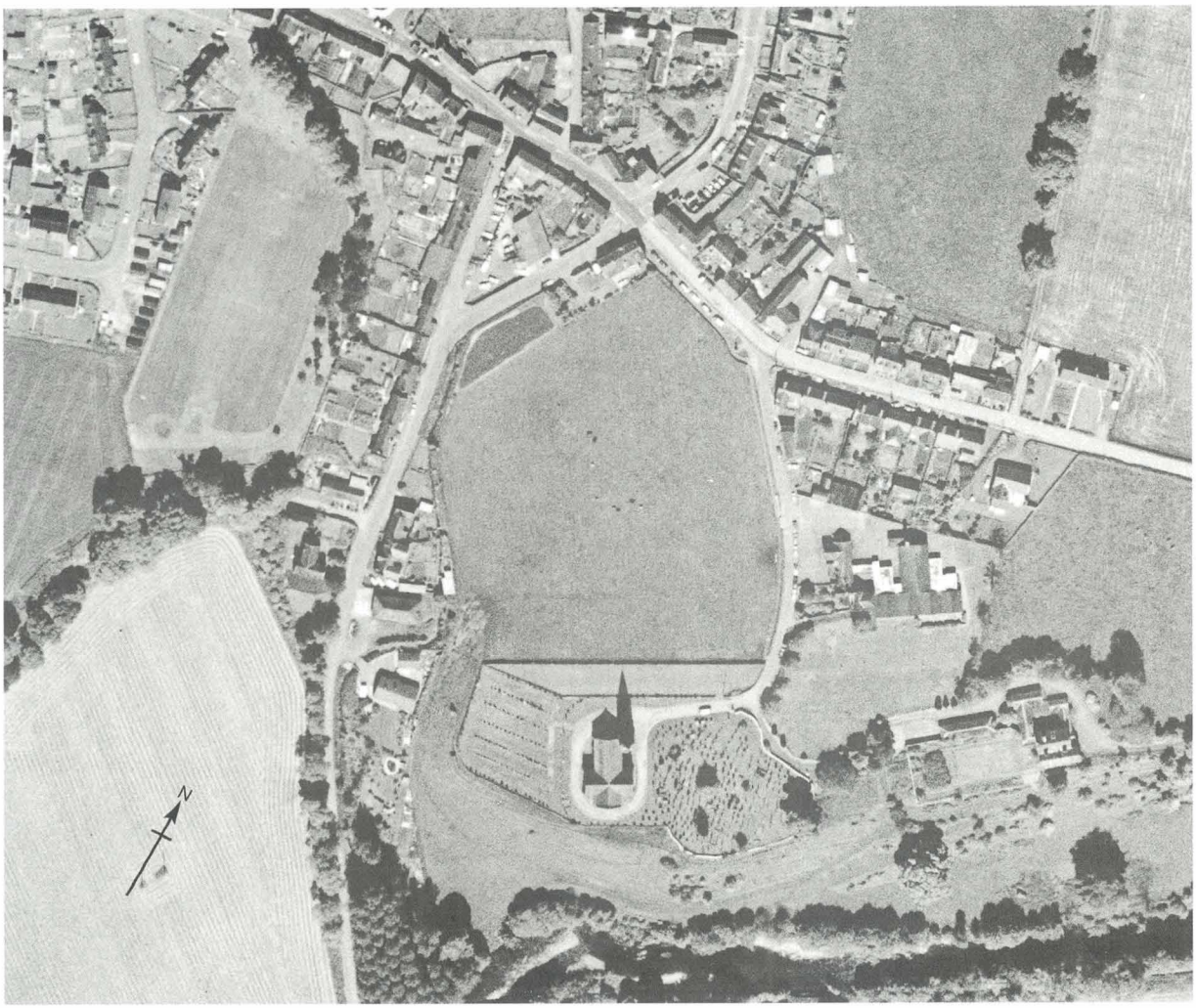
APPENDIX A
INVENTORY OF GRAVEYARDS WITH STATUTORY PROTECTION

Scheduled Ancient Monuments

It should be noted that a number of individual memorials, graveyards and burial places (including a number of abandoned churches that were later put to use as burial enclosures) are protected as monuments of national importance under the terms of the Ancient Monuments and Archaeological Areas Act of 1979. Others may form part of properties in the care of the state, and are similarly protected.

Any works on such graveyards or memorials will require Scheduled Monument Consent from Scottish Ministers through Historic Scotland.

A 'List of Ancient Monuments in Scotland' is regularly updated, and is available from Historic Scotland. This schedule categorises all monuments according to council area and type. If there is any doubt as to whether or not a monument is scheduled, it is advisable to seek the advice of Historic Scotland.



141. Penpont, Dumfriesshire, Category B Listed Graveyard and Church (Copyright RCHAMS). This vertical air photo well illustrates the relationship of the Church, graveyard, church glebe and village. The earlier graveyard appears as a circular walled enclosure lying to the east of the present church. The pre-nineteenth century church stood in the centre of the enclosure. The intermediate nineteenth century graveyard lies predominantly to the west of the church, whilst the twentieth century expansion extends northwards into the glebe

Listed Churchyards in Scotland

Notes

There follows a near-comprehensive list of graveyards, churchyards, cemeteries, necropolis and burial grounds on the Scottish Ministers' lists of buildings of special architectural or historic interest as at 30 June 2000. There will be others which are not cited here which fall within the curtilage of a church, chapel or residential property. While care has been taken in its preparation, The Scottish Ministers shall have no liability in respect of any error, inaccuracy or omission in such information, or in respect of any costs, expenses or losses incurred by reason of any such error, inaccuracy or omission. The lists are a living archive and changes to them are constant: it is advisable to contact the local planning authority or Historic Scotland for an up-to-date report on the status of any site before considering any works to its fabric.

In Map References, where an * is shown six figure grid references were not available at the time of printing and four figure references are given as an aid to location. Visitors seeking the actual location of these sites should be guided by the list descriptors.

ABERDEEN, CITY OF

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Aberdeen	Allenvale Road, Allenvale cemetery, including lodge and James Saint monument	NJ 934 044	B
Aberdeen	March Stone no. 3, N. End Nellfield Place adjoining Nellfield cemetery wall at Great Western Road junction	NJ 929 053	B
Aberdeen	27 Great Western Road, Nellfield cemetery lodge and gates	NJ 930 053	C(S)
Aberdeen	St. Peter's cemetery gates, King Street	NJ 841 004	B
Aberdeen	St. Peter's cemetery, Moir of Scotstoun mausoleum	NJ 841 004	C(S)
Aberdeen	Snow churchyard college bounds	NJ 939 080	B
Aberdeen	St. Fittick's church (old ruin) and churchyard St. Fittick's Road	NJ 962 049	B
Aberdeen	St. Nicholas church, churchyard. Enclosing walls, gates and tombs Union Street, 9 Back Wynd, Schoolhill and Correction Wynd	NJ 940 063	A
Aberdeen	St. Machar's Cathedral, churchyard, Chanonry	NJ 939 088	B
Aberdeen	St. Clement's (East) church, and churchyard St. Clement Street	NJ 950 062	B
Dyce	Old Parish Church of Dyce with churchyard wall and watchhouse	NJ 883 137	A
Newhills	Chapel of Stoneywood graveyard	NJ 866 111	C(S)
Newhills	Friends burial ground W.N.W. of Kingswells House	NJ 856 066	C(S)
Newhills	Churchyard of Newhills (old part only)	NJ 872 094	B
Peterculter	St. Peter's churchyard, Peterculter	NJ 841 006	C(S)

ABERDEENSHIRE

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Aberdour	New Aberdour, (Elphin Street) Aberdour Parish church (Church of Scotland) and burial ground	NJ 885 634	B
Aberdour	Old Aberdour, old Church of Scotland (St Drostan's) and burial ground	NJ 884 644	B
Aboyne & Glen Tanar	Aboyne, Huntly Road, Aboyne and Dinnet Parish church, St Machar's, (Church of Scotland), including church hall, burial ground, gates, gatepiers and boundary walls	NO 524 983	B
Aboyne & Glen Tanar	Glen Tanar Estate, old Glen Tanar church, burial ground and boundary walls	NO 476 983	C(S)
Alford	West (old) Parish churchyard	NJ 167 571	B
Alvah	Kirkton of Alvah church with walled graveyard, gates and gatepiers and Ogilvy burial enclosure	NJ 678 602	B
Auchindoir & Kearn	Kearn churchyard	NJ 47 24*	C(S)
Auchindoir & Kearn	Old parish church of Auchindoir churchyard	NJ 477 244	B
Auchterless	Duff of Hatton mausoleum, Auchterless churchyard	NJ 714 406	B
Auchterless	Auchterless churchyard	NJ 714 406	C(S)
Banchory	Parish kirkyard - watchhouse	NO 706 957	B
Banchory	Parish kirkyard - mausoleum	NO 706 957	B
Banchory-Devenick	Stewart vault, St Devenicks kirkyard	NJ 912 017	C(S)
Banchory-Devenick	Watchhouse, Parish kirkyard	NJ 906 024	B

Banff	High Shore, old St Mary's burial ground and railings	NJ 690 640	A
Belhelvie	Morthouse at S.W. corner of churchyard	NJ 94 17*	B
Belhelvie	Belhelvie churchyard	NJ 94 17*	B
Birse	Birse and Feughside Parish church, (Church of Scotland), including churchyard gates, gatepiers and boundary walls	NO 554 072	B
Bourtie	Churchyard of Bourtie	NJ 78 23*	B
Bourtie	Bourtie churchyard, sundial	NJ 78 23*	B
Boyndie	Inverboyndie St Brandon's church (old Parish Church of Scotland) and burial ground	NJ 666 645	B
Cairnie	St. Carol's church, Ruthven burial ground	NJ 48 44*	B
Cairnie	Botarg and Pitlurg Aisle, Cairnie churchyard, Cairnie	NJ 489 446	C(S)
Chapel of Garioch	Logie Durno church and churchyard	NJ 71 23*	C(S)
Chapel of Garioch	Chapel of Garioch, churchyard gateway. (Pittodrie's gate)	NJ 71 23*	A
Chapel of Garioch	Chapel of Garioch, churchyard	NJ 71 23*	B
Chapel of Garioch	Logie Durno churchyard, Dalrymple Horn Elphinstone burial enclosure	NJ 71 23*	B
Cluny	Fraser mausoleum old churchyard of Cluny	NJ 07 53*	A
Cluny	Old churchyard of Cluny	NJ 07 53*	C(S)
Crimond	Old parish church of Crimond and graveyard	NK 054 568	B
Crimond	Rattray, St Mary's chapel and graveyard	NK 086 575	B
Cruden	Cruden old parish church, graveyard	NK 093 363	B
Culsalmond	Culsalmond old parish church Culsalmond burial ground	NJ 648 327	A
Culsalmond	Mort House Culsalmond burial ground	NJ 648 327	C(S)
Daviot	Parish Church of Daviot, churchyard	NK 749 283	C(S)
Drumblade	Drumblade parish churchyard	NJ 588 403	C(S)
Drumoak	Old parish Church of Drumoak, churchyard	NO 814 985	B
Dunnottar	Dunnottar Castle - graveyard walls	NO 881 838	B
Duris	Parish kirkyard - Fraser burial aisle	NO 772 965	B
Echt	Echt parish churchyard	NJ 739 056	B
Ellon	Annand memorial, Ellon parish churchyard	NJ 95 30*	B
Ellon	Ellon parish churchyard	NJ 95 30*	C(S)
Fettercairn	Fettercairn village parish church and churchyard of Fettercairn	NO 651 737	B
Fetteresso	Kirkyard walls	NO 852 856	B
Fintray	Old parish church burial ground Hatton of Fintray	NJ 846 161	C(S)
Fintray	Morthouse, burial ground, Hatton of Fintray	NJ 846 161	C(S)
Fordoun	Fourdoun parish churchyard Auchenblae	NO 726 784	C(S)
Fordoun	St Palladuis chapel within Fordoun parish churchyard Auchenblae	NO 726 784	B
Fordyce	Fordyce village, old parish Church of St Talorgan and walled burial ground	NJ 555 638	A
Forglen	Old church, Forglen, with walled graveyard, gatepiers and gates	NJ 697 499	B
Forgue	Forgue parish church - churchyard	NJ 491 452	C(S)
Foveran	Udny family vault, old churchyard, Newburgh	NJ 97 23*	B
Foveran	Foveran churchyard	NJ 97 23*	C(S)
Fraserburgh	Philorth churchyard within Fraserburgh cemetery	NJ 99 67*	B
Fyvie	Fyvie parish church, old churchyard, (excluding modern cemetery)	NJ 768 378	B
Gamrie	St John's church and burial ground	NJ 791 644	B
Gamrie	Gamrie parish church (Church of Scotland) and burial ground	NJ 792 626	B
Glass	Parish church of Glass, churchyard	NJ 42 39*	B
Glass	Walla kirk graveyard	NJ 42 39*	C(S)
Glenbuchat	Old parish church graveyard	NJ 376 152	B
Glenmuick, Tullich & Glengairn	Bridge of Gairn churchyard	NO 352 969	C(S)
Glenmuick, Tullich & Glengairn	Invermuick graveyard	NJ 365 948	C(S)
Glenmuick, Tullich & Glengairn	Tullich churchyard	NJ 390 975	B

Huntly	Kirktown of Kinnoir graveyard	NJ 55 43*	C(S)
Huntly	Graveyard, Dunbennan. (original S.E. half only)	NJ 504 409	C(S)
Insch	Old parish Church of Insch, churchyard	NJ 63 28*	C(S)
Inverkeithny	Inverkeithny parish church and graveyard walls	NJ 629 470	B
Inverurie	Inverurie churchyard, group of 4 symbol stones	NJ 77 21*	A
Inverurie	Old Inverurie churchyard, (north-western part of Inverurie cemetery)	NJ 77 21*	B
Keig	Old Church of Keig and churchyard	NJ 61 19*	B
Kennethmont	Old churchyard of Kennethmont	NJ 53 28*	B
Kildrummy	Old parish church (St. Bride's) churchyard	NJ 47 17*	B
Kincardine O'Neil	Kincardine O'Neil old churchyard	NO 592 996	B
Kinellar	Parish Church of Kinellar, including churchyard walls	NJ 81 12*	B
King Edward	King Edward, old parish church, walled burial ground and gateway	NJ 709 577	B
Kinneff & Catterline	Catterline old burial ground	NO 867 784	C(S)
Leochel-Cushnie	St. Bride's churchyard	NJ 52 10*	B
Leochel-Cushnie	Leochel churchyard	NJ 52 10*	B
Logie Buchan	Churchyard of Logie-Buchan	NJ 988 298	B
Logie-Coldstone	Coldstone churchyard	NJ 432 056	C(S)
Logie-Coldstone	Logie churchyard, Kirkton on Galton farm	NJ 436 024	C(S)
Logie-Coldstone	Migvie churchyard	NJ 436 068	B
Longside	Churchyard gateway, Longside parish church	NK 02 46*	A
Longside	Churchyard of Longside parish church	NK 02 46*	B
Lonmay	Churchyard of Lonmay	NK 01 58*	B
Lumphanan	St Finan's churchyard	NJ 579 038	B
Macduff	Church Street, Doune Church of Scotland, church cottage and burial ground	NJ 701 643	B
Marnoch	Marnoch graveyard with watchhouse, burial enclosures and gravestones	NJ 505 499	A
Maryculter	Old parish kirkyard walls	NO 844 999	B
Marykirk	Thornton aisle in churchyard of Aberluthnott (formerly Marykirk) Marykirk	NO 686 655	B
Marykirk	Aberluthnott (formerly Marykirk) parish church, churchyard, Marykirk	NO 696 655	C(S)
Methlick	Methlick old parish church churchyard	NJ 85 37*	B
Midmar	St. Nidian's church graveyard	NJ 67 07*	B
Midmar	Old Kinnernie, churchyard	NJ 67 07*	C(S)
Monquhitter	Monument to William Cumine (Gulielmi Coming) of Auchry Monquhitter churchyard.	NF 802 505	B
Monquhitter	Monquhitter churchyard	NO 803 505	C(S)
Monymusk	Monymusk churchyard	NJ 685 153	B
New Deer	God's Acre (churchyard of deer)	NJ 88 46*	C(S)
Old Deer	Old parish church and churchyard	NJ 97 47*	B
Old Meldrum	Churchyard of old Meldrum, excluding modern cemetery extension	NJ 46 29*	C(S)
Ordiquhill	Ordiquhill parish church with burial enclosure and graveyard walls	NJ 564 556	B
Peterhead	Old St. Peter's graveyard	NK 13 46*	B
Pitsligo	Peathill, burial ground	NJ 935 662	B
Rathen	Old parish churchyard	NK 001 609	C(S)
Rhynie	Rhynie old kirkyard, two symbol stones at gate	NJ 49 27*	A
Rhynie	Rhynie old kirkyard	NJ 49 27*	C(S)
Rhynie	Rhynie old kirkyard. Alex Gordon tomb and adjoining coffin	NJ 49 27*	B
Skene	Skene churchyard	NJ 76 09*	B
Slains	Churchyard of Slains	NK 05 30*	B
St Cyrus	Parish Church of Garvock-St Cyrus, including area walls, Churchyard gates and railings, and remains of previous church	NO 750 647	B

St. Fergus	Old churchyard of St. Fergus, St. Fergus links	NK 094 519	B
Strathdon	Parish church graveyard	NJ 35 12*	C(S)
Strichen	Old parish church graveyard	NJ 94 55*	C(S)
Tarves	Tolquhon monument, Tarves churchyard	NJ 86 13*	A
Tarves	Tarves churchyard	NJ 86 13*	C(S)
Tough	Tough parish churchyard	NJ 12 61*	C(S)
Towie	Parish church churchyard	NJ 12 43*	B
Tullynessle & Forbes	Bellcote of old parish church set up within churchyard of parish church	NJ 19 56*	B
Turriff	St. Congan's churchyard and gateway	NJ 722 498	B
Tyrie	Tyrie churchyard	NJ 92 62*	B
Udny	Udny churchyard	NK 879 269	C(S)

ANGUS

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Aberlemno	Kirkyard cross stone	NO 52 55*	A
Aberlemno	Parish kirkyard	NO 52 55*	B
Airlie	Airlie parish kirkyard	NO 514 315	B
Arbroath	Arbroath abbey - monument in burial ground	NO 64 41*	B
Arbroath	Mortuary chapel - western cemetery	NO 64 41*	A
Arbroath & St Vigeans	Kirkyard walls	NO 428 638	B
Auchterhouse	Kirkton of Auchterhouse parish church including churchyard	NO 342 381	B
Brechin	Bridge to cemetery off Southesk Street	NO 60 59*	B
Brechin	Gateway to cemetery off Southesk Street	NO 60 59*	B
Brechin	Brechin cathedral graveyard Church Lane	NO 60 59*	B
Brechin	Lodge at cemetery off Southesk Street	NO 60 59*	C(S)
Careston	Kirkyard walls	NO 60 59*	B
Cortachy & Clova	Kirkyard walls	NO 39 59*	B
Cortachy & Clova	Kirkyard walls	NO 39 59*	B
Cortachy & Clova	Glenprosen kirkyard	NO 39 59*	B
Craig	Chapel Mill - burial ground	NO 704 554	B
Dun	Old churchyard of Dun	NO 66 59*	B
Dun	Old churchyard of Dun mausoleum	NO 66 59*	B
Eassie & Nevay	Nevay old kirkyard walls	NO 33 35*	B
Eassie & Nevay	Eassie old kirkyard wall	NO 33 35*	B
Edzell	Old churchyard, Edzell.	NO 598 698	B
Edzell	Old churchyard, Edzell, burial vault	NO 598 698	B
Farnell	Kinnaird park - old parish kirkyard	NO 62 65*	C(S)
Farnell	Kinnaird park - private burial ground	NO 62 65*	B
Fern	Fern parish kirk including churchyard	NO 48 61*	C(S)
Forfar	Forfar parish churchyard east High Street	NO 45 50*	B
Fowlis Easter	Fowlis Easter parish church including churchyard cross and Graveslab and boundary wall	NO 322 334	A
Glamis	Glamis village, Kirkwynd, parish kirk, graveyard, walls and gravestones	NO 386 468	B
Glenisla	Kirkyard walls	NO 19 67*	B
Guthrie	Kirkyard gateway and enclosing walls	NO 567 506	B
Inverarity	Meathie graveyard	NO 45 44*	B
Inverarity	Kirkbuddo old graveyard	NO 45 44*	C(S)
Inverkeilor	Carnegie mural monument, parish kirkyard	NO 66 49*	C(S)
Inverkeilor	Rait mural monument, parish kirkyard	NO 66 49*	B
Kingoldrum	Kirkyard - Farquharson mausoleum	NO 331 554	C(S)
Kinnettles	Kirkyard walls	NO 42 46*	B
Kirriemuir	Collection of cross-slabs within timber shelter cemetery of Kirriemuir	NO 38 53*	B

Kirriemuir	Former south church (now chapel of rest and furniture store - Wm. A. Lawson) including walls and railings of churchyard, Glamis Road	NO 38 53*	B
Kirriemuir	Kirriemuir Barony parish churchyard, High Street and Bank Street	NO 38 53*	B
Kirriemuir	St. Ninian's chapel burial ground (on Fletcharfield Farm)	NO 38 53*	B
Lethnot & Navar	Lethnot parish church, churchyard	NO 542 682	B
Lethnot & Navar	Churchyard of Navar	NO 529 675	C(S)
Liff & Benvie	Liff, parish church including churchyard, boundary walls and gatepiers, and old font	NO 333 328	B
Lintrathen	Parish kirkyard walls and tombstones	NO 285 548	C(S)
Lintrathen	Parish kirkyard - Hearse House	NO 285 548	C(S)
Loch Lee	Loch Lee parish church, churchyard.	NO 42 47*	C(S)
Loch Lee	Ruins of old parish Church of St. Drostan and churchyard	NO 42 47*	B
Logie Pert	Church of Logie, churchyard	NO 66 64*	B
Logie Pert	Pert church, churchyard	NO 66 64*	B
Lundie	Parish church, including Duncan burial enclosure, churchyard wall and gatepiers	NO 290 366	A
Mains & Strathmartine	Kirkton of Strathmartine, old graveyard	NO 378 352	B
Menmuir	Parish churchyard	NO 534 644	B
Monifeith	Church Street, St Rule's parish church with churchyard	NO 495 323	B
Montrose	High Street, Montrose parish church (Church of Scotland), including churchyard, boundary walls and gatepiers	NO 714 577	A
Montrose	Rosehill Road, Rosehill cemetery including lodges, boundary walls, gatepiers and gates	NO 718 588	B
Montrose	Provost Scott's Road, St Mary's and St Peter's episcopal church including churchyard, boundary walls, gatepiers and gates	NO 717 577	A
Murroes	Murroes, Murroes and Tealing parish church, churchyard, including walls and gatepiers	NO 461 350	B
Newtyle	Newtyle parish kirkyard	NO 29 41*	B
Oathlaw	Parish kirkyard walls	NO 47 56*	B
Panbride	Loupin'-on-Stane, parish kirk, courtyard	NO 57 35*	B
Rescobie	Kirkyard walls	NO 50 52*	B
Rescobie	Chapelton - burial ground	NO 50 52*	B
Stracathro	Parish churchyard	NO 62 65*	C(S)
Tannadice	Cortachy castle - private burial ground	NO 47 58*	C(S)
Tealing	Kirkton of Tealing, former Tealing parish church, including churchyard	NO 403 379	A

ARGYLL AND BUTE

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Arrochar	Ballyhennan, burial ground, monuments and boundary wall	NN 313 045	C(S)
Bonhill	Arden policies, Buchanan graveyard	NS 363 843	C(S)
Bonhill	Darleith kirk and kirkyard	NS 346 805	B
Campbeltown	Kilkerran Road, Kilkerran churchyard and cemetery, including Calen MacEachern's cross and Cristin's cross, boundary walls, entrance gates and gatepiers	NR 728 194	B
Campbeltown	Kilchousland chapel (St. Constantine's) chapel Kilchousland burial ground	NR 751 220	B
Campbeltown	Kilkivan chapel (St. Kevin's) Kilkivan burial ground	NR 651 201	B
Cardross	Cardross, Main Road, former parish church with graveyard and boundary walls	NS 349 772	B
Colonsay & Oronsay	St. Catan's chapel Kilchattan burial ground. Lower Kilchattan	NR 362 950	C(S)
Dunoon & Kilmun	Douglas of Glenfinart mausoleum, Kilmun kirkyard	NS 165 820	B
Gigha & Cara	Kilchattan chapel (St Catan's) Kilchattan burial ground	NR 643 481	B
Gigha & Cara	Boundary wall (with 2 gate-ways), Kilchattan burial ground	NR 643 481	C(S)
Helensburgh	Old Luss Road, Helensburgh cemetery including boundary walls, lodge, gatepiers and gates	NS 309 821	B

Jura	Campbell of Jura mausoleum, Kilearnadale burial ground.	NR 524 687	B
Kilchoman	Kilnave Cross, Kilnave burial ground	NR 285 715	B
Kilchoman	Kilchoman cross, Kilchoman burial ground	NR 216 632	B
Kilchoman	Kilnave chapel (Cill Naoimh), Kilnave burial ground	NR 285 715	B
Kilchrenan & Dalavich	Robert Macintyre monument, Kilchrenan kirkyard	NN 036 238	C(S)
Kildalton & Oa	Kildalton chapel Kidalton burial ground	NR 458 508	B
Kildalton & Oa	Kildalton great cross. Kidalton burial ground	NR 458 508	A
Kildalton & Oa	St. Nechtan's chapel Kilnaughton burial ground	NR 344 452	B
Kildalton & Oa	Kidalton small cross outside Kidalton burial ground	NR 458 508	B
Kilfinichen & Kilvickeon	St. Ewen's chapel, Kilvickeon burial ground	NM 411 196	C(S)
Killean & Kilchenzie	St. Kenneth's chapel, Kilchenzie burial ground	NR 673 248	C(S)
Killean & Kilchenzie	Killean chapel (St John's) Killean burial ground	NR 695 445	A
Kilmichael Glassary	KilMichael churchyard wall, Kilmichael village	NR 858 935	B
Kilmore & Kilbride	Macdougall burial enclosure, Kilbride burial ground	NM 857 257	B
Kingarth	Mount Stuart, mausoleum and graveyard	NS 110 605	A
Kingarth	St Blane's church including graveyard, cauldron and boundary wall	NS 094 534	A
Lismore & Appin	Portnacroish, St Cross churchyard, Stalcaine memorial	NM 927 472	C(S)
Luss	Luss village, St Mackessog's church (Church of Scotland) with burial ground, lych gates and boundary wall	NS 361 928	B
North Bute	St Colmac's church including graveyard, boundary wall, gatepiers and gates	NS 053 673	C(S)
Rhu	Rhu village, Church Road, Rhu and Shandon parish church with graveyard sundial, boundary wall and gatepiers	NS 267 840	B
Rhu	Faslane, St Michael's chapel including graveyard with caretaker's lodge and variety of 20th century grave monuments and sundial	NS 248 898	B
Rosneath	Rosneath village, St Modan's old church with graveyard and boundary walls	NS 253 831	B
Rothesay	High kirk of Rothesay including outbuilding, graveyard, boundary wall and gatepiers	NS 086 637	B
Saddell & Skipness	Saddell burial ground, Campbell of Glen Saddell burial enclosure	NR 784 320	B
Saddell & Skipness	Saddell burial ground, Campbell of Glen Carradale burial enclosure	NR 784 320	C(S)
South Knapdale	McNeill Campbell of Kintarbert and Druimdrishaig mausoleum, Kilnaish burial ground	NR 773 614	B
Southend	St Columba's chapel Kilcolmkill burial ground	NR 673 077	B
Strathlachlan	St Maelrhubas' chapel, Kilmory burial ground	NS 010 951	B
Tiree	St. Kenneth's chapel (Cill Choinnich) Kilkenneth burial ground	NL 943 447	B
Tiree	Kirkal chapel (St Peters) Cladh Beag, Kirkapol burial ground	NM 042 472	B
Tiree	St Columba's chapel, near Kirkapol burial ground	NM 042 473	B
Torosay	Pennygown chapel, Pennygown burial ground	NM 604 432	B

CLACKMANNAN

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Alloa	Old parish Church of St Mungo, Alloa old kirkyard, Kirkgate	NS 88 92*	B
Alloa	Mar and Kellie mausoleum, Alloa, old kirkyard, Kirkgate	NS 88 92*	B
Alloa	Tullibody old kirkyard	NS 86 95*	B
Alloa	Alloa old kirkyard, Kirkgate	NS 88 92*	B
Alva	Alva-Johnstone mausoleum, Alva churchyard	NS 88 96*	A
Dollar	Old parish church, Dollar and adjoining building at churchyard gate within the churchyard of present parish church	NS 96 98*	B
Dollar	1 Manse Road, Keeper's Cottage in corner of graveyard	NS 96 98*	C(S)
Muckhart	Parish church of Muckhart, graveyard		C(S)
Tillicoultry	Old churchyard. Tillicoultry House	NS 91 97*	B

DUMFRIES AND GALLOWAY

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Annan	High Street, Annan old churchyard, walls and gatepiers	NY 192 666	B
Annan	High Street Annan parish church and churchyard boundary walls and gatepiers (Church of Scotland)	NY 195 666	A
Annan	High Street Annan parish churchyard, statue to Edward Irving	NY 195 665	B
Anwoth	Anwoth old church, Gordon tomb and churchyard	NX 582 562	A
Applegarth	Sibbaldbie old churchyard	NY 146 878	B
Applegarth	Applegarth parish church, Jardine burial enclosure and churchyard walls and gatepiers	NY 104 843	B
Balmaghie	Balmaghie parish church and churchyard (Church of Scotland)	NX 722 663	B
Borgue	Borgue parish church and churchyard	NX 629 483	B
Borgue	Kirkandrews old church and churchyard	NX 600 481	B
Borgue	Kirkandrews chapel, burial ground and boundary walls	NX 600 482	B
Buittle	Buittle parish church (Church of Scotland) and walled churchyard	NX 807 588	B
Caerlaverock	Caerlaverock parish church and churchyard	NY 025 691	B
Canonbie	Morton churchyard (Sark Tower churchyard)	NY 332 750	B
Canonbie	Canonbie village, Canonbie parish churchyard and Donaldson monument (Priory Sedilia)	NY 394 762	B
Carsphairn	Carsphairn parish churchyard and McAdam mausoleum	NX 562 931	B
Closeburn	Closeburn old church, Kirkpatrick of Closeburn mausoleum and churchyard enclosure	NX 903 923	B
Closeburn	Dalgarnog old burial ground	NX 876 936	B
Colvend & Southwick	Colvend church (Church of Scotland) and churchyard	NX 861 542	B
Colvend & Southwick	Southwick old church and churchyard	NX 907 569	B
Crossmichael	Crossmichael parish church and churchyard (Church of Scotland)	NX 729 669	A
Cummertrees	Trailtrow burial ground and Murray aisle	NY 155 722	B
Cummertrees	Cummertrees village, Cummertrees parish church with churchyard and lych gate	NY 140 664	C(S)
Dalry	Dalry parish church and churchyard (Church of Scotland)	NX 618 812	B
Dalton	Dalton village, Dalton old parish church, churchyard and gatepiers	NY 114 739	A
Dalton	Little Dalton church and churchyard	NY 089 746	B
Dornock	Dornock village, Dornock parish church and churchyard	NY 230 659	B
Dryfesdale	Johnstone burial ground	NY 129 839	B
Dumfries	St Michael's Street, St Michael's churchyard Burns' mausoleum	NX 976 756	A
Dumfries	St Mary's Street, St Mary's church and churchyard and gatepiers	NX 975 762	B
Dumfries	St Michael's churchyard and Main gate and Holy Cross churchyard	NX 97 76*	A
Dumfries	Troqueer Road, Troqueer church, churchyard and Session House	NX 974 750	B
Dunscore	Dunscore old churchyard (near Farthingwell)	NX 926 832	B
Dunscore	Dunscore village Dunscore parish church and churchyard	NX 866 843	A
Durisdeer	Kirkbride churchyard	NS 854 056	B
Durisdeer	Durisdeer village Durisdeer parish church, Queensberry mausoleum, former school/vestry and churchyard	NX 894 037	A
Eskdalemuir	Eskdalemuir parish churchyard	NY 252 979	B
Eskdalemuir	Bankhead burial ground	NY 252 964	B
Ewes	Ewes parish church and churchyard	NY 369 909	B
Ewes	Unthank old churchyard	NY 387 947	B
Girthon	Girthon old kirk and churchyard	NX 605 533	A
Glasserton	Kirkmaiden old church and burial ground and walled churchyard	NX 365 399	B
Glasserton	Glasserton parish church Church of Scotland Session House churchyard mausolea and monuments	NX 421 380	A
Glencairn	Kirkland village Glencairn parish churchyard including Gillespie of Peelton monument	NX 809 904	B
Gretna	Gretna Green, Gretna parish church and churchyard	NY 319 680	B
Half Morton	Half Morton parish church and churchyard	NY 320 745	C(S)

Hoddom	Ecclefechan village, Johnstone churchyard	NY 192 744	B
Hoddom	St Kentigern's churchyard	NY 162 726	B
Hoddom	Hoddom church and churchyard	NY 178 736	B
Hoddom	Luce churchyard and Irving burial vault	NY 192 712	B
Holywood	Holywood parish church and churchyard	NX 955 796	B
Hutton & Corrie	Boreland village, Hutton and Corrie parish church, churchyard and gatepiers	NY 170 908	A
Hutton & Corrie	Corrie churchyard	NY 197 842	B
Inch	Greenloch House (formerly Meadowsweet) including graveyard, gatepier and gate	NX 105 587	B
Inch	Lochinch Heritage Estate, old parish church graveyard including gatepiers, gates, railings and boundary walls	NX 102 608	B
Inch	Inch parish church including monument to John Alexander, graveyard, gatepiers, gates and boundary walls	NX 105 603	B
Inch	Lochryan graveyard including mausoleum and boundary walls	NX 062 689	C(S)
Johnstone	Johnstone parish church and churchyard	NY 100 913	B
Keir	Keirmill village church crescent cottages at churchyard main gate	NX 859 931	C(S)
Keir	Keirmill village Keir parish old graveyard	NX 862 931	B
Keir	Keirmill village Keir parish church and churchyard	NX 85 93*	B
Kells	Kells parish churchyard	NX 631 783	B
Kelton	Kelton old church in old churchyard	NX 760 751	C(S)
Kirkbean	Kirkbean village sundial at churchyard gate	NX 979 592	C(S)
Kirkbean	Kirkbean village Kirkbean parish church & churchyard	NX 979 592	B
Kirkcolm	Ervie-Kirkcolm church, graveyard, graveyard walls war memorial	NX 027 686	B
Kirkcolm	Kirkcolm church graveyard	NX 030 688	B
Kirkconnel	Kirkconnel village Kirkconnel parish church & churchyard	NS 728 123	B
Kirkcowan	Krkcowan village Kirkcowan old parish church and churchyard	NX 329 605	C(S)
Kirkcudbright	Old kirkyard	NX 690 511	B
Kirkgunzeon	Kirkgunzeon parish church, churchyard walls and tombstones (Church of Scotland)	NX 866 667	B
Kirkgunzeon	Kirkgunzeon parish church graveyard, McWhire monument	NX 866 667	B
Kirkinner	Kirkinner parish church (Church of Scotland) St Kennera and churchyard wall	NX 423 514	B
Kirkmabreck	Kirkdale mausoleum and Kirkdale kirk and graveyard	NX 512 540	A
Kirkmabreck	Creetown Kirk brae Kirkmabreck parish church and graveyard	NX 476 585	B
Kirkmahoe	Kirkton village Kirkmahoe parish church, churchyard and gatepiers	NX 974 815	B
Kirkmaiden	Old parish Church of Kirkmaiden, with graveyard, graveyard walls and gatepiers	NX 124 369	A
Kirkmichael	Kirkmichael parish church and churchyard	NY 004 883	B
Kirkmichael	Garvald churchyard	NY 041 903	C(S)
Kirkpatrick Durham	Kirkpatrick-Durham parish church (Church of Scotland) and churchyard	NX 786 699	B
Kirkpatrick Irongray	Kirkpatrick Irongray parish church and churchyard	NX 915 795	B
Kirkpatrick-Fleming	Kirkconnel old church and churchyard	NY 250 754	B
Kirkpatrick-Fleming	Kirkpatrick Fleming parish church and churchyard including Woodhouse burial enclosure	NY 273 703	B
Kirkpatrick-Fleming	Kirkpatrick Fleming parish churchyard, Graham of Mossknowe burial enclosure	NY 273 703	A
Kirkpatrick-Juxta	Kirkpatrick-Juxta parish church and churchyard	NT 082 009	B
Langholm	Langholm old churchyard	NY 36 84*	C(S)
Langholm	Wauchope churchyard	NY 354 840	B
Langholm	Staplegordon old churchyard	NY 352 879	B
Leswalt	Old Leswalt church and graveyard	NX 015 638	B
Lochmaben	St Mary Magdalene's churchyard	NY 081 825	B
Lochrutton	Lochrutton parish church, churchyard, walls and tombstones (Church of Scotland)	NX 912 736	B
Lockerbie	High Street, Dryfesdale and Trinity parish church, churchyard and lodge (Church of Scotland)	NY 135 816	B

Middlebie	Carruthers old churchyard (Crowdieknowe)	NY 257 801	B
Middlebie	Middlebie parish church and churchyard	NY 214 762	B
Middlebie	Pennershaughs old churchyard	NY 207 744	B
Minnigaff	Monigaff parish church, graveyard and graveyard walls	NX 410 666	B
Minnigaff	Monigaff parish church graveyard, Heron monument	NX 409 665	A
Mochrum	Mochrum, Kirk of Mochrum, with graveyard, graveyard walls and gatepiers	NX 347 463	B
Moffat	High Street, old parish churchyard	NT 08 05*	C(S)
Morton	Morton old church churchyard enclosure and gatepiers	NX 890 969	B
Mouswald	Mouswald parish church, churchyard and gatepiers	NY 065 726	C(S)
New Luce	Graveyard, graveyard walls and war memorial	NX 175 645	B
Newton Stewart	Windsor Road, Roman Catholic Church of Our Lady and St Ninian and churchyard	NX 408 658	B
Newton Stewart	Church Street, Penninghame graveyard with mausoleum	NX 409 653	B
Old Luce	Graveyard walls, gatepiers and gates	NX 197 574	B
Parton	Parton parish church (Church of Scotland) and churchyard	NX 696 699	B
Penpont	Penpont village Penpont church and churchyard	NX 848 944	B
Portpatrick	St Patrick Street, old parish church graveyard, boundary walls and gates	NX 999 541	B
Rerrick	Rerrick old churchyard and ruins of old church	NX 761 466	B
Ruthwell	Ruthwell parish church and churchyard	NY 100 682	B
Sanquhar	Church Road, Sanquhar parish church, St Bride's, including churchyard and Provost Hamilton monument	NS 78 09*	B
Sorbie	Kirkmadrine church and burial ground	NX 475 481	C(S)
Sorbie	Millisle Sorbie parish church (Church of Scotland) and churchyard	NX 468 463	C(S)
Sorbie	Cruggleton church and walled burial ground	NX 477 427	A
Sorbie	Sorbie old parish church and churchyard	NX 439 468	B
St Mungo	St Mungo old churchyard and fragments of former church	NY 127 756	B
Stoneykirk	Kirkmadrine church including graveyard, McTaggart memorial, boundary walls, gatepiers and gates	NX 080 483	A
Stoneykirk	Stoneykirk parish church graveyard including boundary walls, gatepiers and gates	NX 089 532	B
Stranraer	London Road, St Andrew's church (Church of Scotland) and graveyard including boundary walls, gatepiers, gates and railings	NX 064 606	B
Stranraer	Leswalt High Road, the High kirk of Stranraer (Church of Scotland) including graveyard, boundary walls, gatepiers, gates and railings	NX 055 608	B
Stranraer	Church Street, graveyard including boundary walls and gate	NX 059 608	B
Stranraer	Bridge Street, Stranraer parish church hall including graveyard and boundary walls	NX 060 607	C(S)
Stranraer	Dalrymple Street, reformed presbyterian church and church hall including graveyard, boundary walls and gatepiers	NX 062 606	C(S)
Terregles	Terregles parish church and Queir and churchyard	NX 930 770	B
Tinwald	Tinwald parish church, and churchyard	NY 002 816	B
Tinwald	Trailflat churchyard	NY 048 840	C(S)
Tongland	Tongland Abbey, Tongland parish churchyard	NX 698 539	B
Tongland	Tongland parish church (Church of Scotland) and churchyard	NX 698 539	B
Torthorwald	Torthorwald village Torthorwald parish church, churchyard and gatepiers	NY 035 782	B
Tundergarth	Tundergarth parish church, churchyard walls and gatepiers and shell of former parish church (Church of Scotland	NY 174 808	B
Twynholm	Twynholm parish church (Church of Scotland), and graveyard	NX 664 542	B
Urr	Urr parish church (Church of Scotland) churchyard with retaining walls and gates	NX 816 668	B
Wamphray	Wamphray parish church and churchyard	NY 130 964	B
Westerkirk	Bentpath village, Westerkirk old churchyard	NY 312 903	B
Westerkirk	Bentpath village, Westerkirk old churchyard, Johnstone mausoleum	NY 312 903	A
Whithorn	Whithorn parish church (Church of Scotland) and graveyard	NS 444 403	B
Wigtown	Wigtown parish church (Church of Scotland) and churchyard	NX 435 555	B

DUNDEE, CITY OF

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Dundee	Caird Park, Old Mains churchyard with Graham of Fintry vault	NO 411 330	C(S)
Dundee	Broughty Ferry Road, Roodyards burial ground with Guthrie mausoleum	NO 418 309	B
Dundee	Broughty Ferry, 408 Brook Street, St Aidens church, including churchyard, walls and gatepiers	NO 465 307	B
Dundee	Barnhill, Strathmore Street, Barnhill cemetery, Gilroy mausoleum	NO 473 319	B
Dundee	St Peter's Street and Perth Road, St Peter's churchyard including McCheyne monument	NO 297 390	C(S)
Dundee	Balgay Park, footbridge between Balgay Hill and the western necropolis	NO 376 307	B
Dundee	315 Perth Road, western cemetery entrance screen boundary walls, lodges and monuments	NO 379 298	B
Dundee	Arbroath Road, eastern necropolis and north lodge, 1 Old Craigie Road	NO 425 316	B
Dundee	2 King Street, St Andrews church, including graveyard, gatepiers, railings and gates (Church of Scotland)	NO 404 307	A
Dundee	Barnhill, Strathmore Street, Barnhill cemetery including boundary walls, gates and gatepiers	NO 473 317	C(S)
Dundee	Broughty Ferry, Chapel Lane, off Fisher Street, old burial ground	NO 466 305	B
Dundee	Old Glamis Road and Calverhouse Road, Mains parish (Church of Scotland) and churchyard	NO 402 336	B
Liff & Benvie	Benvie church ruin and churchyard	NO 328 314	B

EAST AYRSHIRE

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Auchinleck	Remains of old church and graveyard	NS 551 215	B
Cumnock & Holmhead	Strathclyde regional supplies department (former United Session church), Tanyard.	NS 567 200	C(S)
Cumnock & Holmhead	Graveyard Barrhill Road	NS 570 203	C(S)
Dalmellington	Old kirkyard	NS 482 061	B
Dalrymple	Parish church and graveyard.	NS 357 144	B
Dunlop	Parish church and churchyard	NS 40 49*	B
Dunlop	Hans Hamilton's tomb, in churchyard	NS 40 49*	A
Fenwick	Parish church and graveyard	NS 46 43*	B
Galston	Old Galston church and graveyard	NS 49 36*	B
Kilmarnock	Grassyards Road, west lodge and gates to Kilmarnock cemetery	NS 42 37*	B
Kilmarnock	St Andrews Street, St Andrew's Glencairn (Church of Scotland) and church yard	NS 42 37*	B
Kilmarnock	Soulis Street, High church, churchyard and walls	NS 42 37*	A
Kilmarnock	Bank Street, Laigh kirk graveyard	NS 42 37*	B
Kilmaurs	Parish church and graveyard	NS 42 37*	B
Loudoun	Loudoun kirk and graveyard	NS 49 37*	B
Mauchline	Mauchline old parish church and graveyard	NS 497 272	B
New Cumnock	Ruins of old church and graveyard	NS 617 137	B
Newmilns & Greenholm	Loudoun old parish church, Main Street, and graveyard	NS 53 37*	B
Ochiltree	Cemetery	NS 507 213	B
Sorn	Parish church and graveyard, Sorn	NS 550 267	B
Stewarton	St. Columba's church and graveyard	NS 42 46*	B

EAST DUNBARTONSHIRE

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Bishopbriggs	Parish church and graveyard	NS 615 723	B
Campsie	Old parish church and churchyard	NS 610 796	B
Campsie	Lennox family vault and waiting room, graveyard of old parish church, Clachan of Campsie	NS 610 796	B

Kirkintilloch	Quaker's cemetery Gartshore	NS 689 734	B
Kirkintilloch	Spider Bridge south of Old Aisle cemetery	NS 65 73*	C(S)

EAST LOTHIAN

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Aberlady	Aberlady Main Street parish church Church of Scotland with graveyard	NT 461 798	A
Athelstaneford	Athelstaneford, Main Street, Athelstaneford parish church with graveyard and burial enclosure	NT 533 773	B
Bolton	Bolton parish church with Stuart mausoleum, hearse house, graveyard walls and gates	NT 507 700	B
Dirleton	Dirleton village, Dirleton parish church, gateway and graveyard walls	NT 512 842	A
Dunbar	Queen's Road parish church and graveyard (Church of Scotland)	NT 681 785	A
Gladsmuir	Gladsmuir old parish church with graveyard walls	NT 457 733	B
Gladsmuir	Gladsmuir church with graveyard gatepiers and gates	NT 458 732	B
Haddington	St Mary's parish church and churchyard	NT 51 73*	A
Humbie	Humbie parish church with Broun Aisle and graveyard walls	NT 460 637	B
Inveresk	Inveresk village, St Michael's kirk (Church of Scotland) with graveyard walls, railings and piers	NT 344 720	A
Morham	Morham parish church with graveyard walls	NT 556 726	A
North Berwick	Law Road, old parish church, graveyard walls and monuments	NT 553 852	B
Oldhamstocks	Oldhamstocks parish church (Church of Scotland) with graveyard walls and watch house	NT 738 706	A
Pencaitland	Pencaitland parish church with gatehouse offertory houses and graveyard walls and gatepiers	NT 443 690	A
Prestonpans	High Street, old west burial ground	NT 384 743	B
Saltoun	East Saltoun parish church with graveyard walls and railings	NT 474 688	A
Spott	Spott church with session house, graveyard walls and railings (Church of Scotland)	NT 673 755	B
Stenton	Stenton parish church with graveyard walls and gatepiers	NT 622 743	B
Tranent	Tranent parish church (Church of Scotland) with graveyard walls, gatepiers, gates and gravestones	NT 402 733	B
Whittingehame	Whittingehame parish church with graveyard walls and piers	NT 603 736	B
Yester	Yester parish kirk with hearse house and piers, gates and graveyard walls (Church of Scotland)	NT 681 534	A

EDINBURGH, CITY OF

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Currie	Currie parish church, churchyard (original area only) Kirkgate, Currie	NT 18 67*	B
Dalmeny	Dalmeny village Dalmeny churchyard	NT 14 77*	B
Edinburgh	11 Drum Terrace, eastern cemetery, the lodge, gates, railings and gatepiers	NT 270 750	B
Edinburgh	3 Seafield Avenue, Seafield cemetery gate lodge with pavilion, boundary wall, gatepiers and railings	NT 282 758	B
Edinburgh	60 Grange Road, superintendent's lodge to Grange cemetery	NT 257 720	B
Edinburgh	7 Restalrig Road South, Restalrig parish church (Church of Scotland) including St Triduana's aisle, graveyard, gatehouse and boundary walls	NT 283 744	A
Edinburgh	31 East Preston Street and Dalkeith Road, Newington old burial ground, including boundary walls and watchtower	NT 266 724	B
Edinburgh	5a, 5b and 5c Kirkgate, Liberton parish church with memorials, session house, graveyard, gates and gatepiers, walls and railings	NT 275 695	A
Edinburgh	Frogston Road East, Mortonhall House with terraces, fountain statue plinth and burial ground	NT 262 683	A
Edinburgh	Warriston Road, Warriston cemetery, with all monuments, catacombs, bridge, boundary walls, gates and gatepiers	NT 252 757	A

Edinburgh	Rosebank cemetery, Pilrig Street	NT 261 756	C(S)
Edinburgh	Coburg Street, North Leith burial ground	NT 267 765	B
Edinburgh	18 Cramond Glebe Road, Cramond parish church (Church of Scotland) including graveyard, gatehouse, gatepiers, gates and boundary wall	NT 189 768	A
Edinburgh	Kirk Loan and 2a Corstorphine High Street, Corstorphine old parish church and churchyard including boundary walls, vault and gate house, gatepiers, gates and war memorial	NT 200 727	A
Edinburgh	Dalry Road Dalry cemetery lodge	NT 236 726	B
Edinburgh	Ardmillan Terrace North Merchiston cemetery with lodge gates and boundary walls	NT 234 722	C(S)
Edinburgh	194 Glasgow Road, former Gogar parish church and graveyard	NT 168 724	B
Edinburgh	Kirkliston village, High Street, Kirkliston parish church with watch house and graveyard, walls and gatepies	NT 124 743	A
Edinburgh	Ratho village, Baird Road, Ratho kirk, St Mary's church with session house, graveyard, walls and gatepiers	NT 138 710	A
Edinburgh	Gogar parish church (formerly Church of Scotland). Churchyard Glasgow Road	NT 16 72*	B
Edinburgh	Colinton St. Cuthbert's parish (Church of Scotland) and churchyard Dell Road	NT 21 68*	B
Edinburgh	Dean cemetery Belford Road Dean Path and Queensferry Road	NT 237 740	B
Edinburgh	St. Cuthbert's churchyard, lodge, Dell Road, Colinton	NT 21 68	C(S)
Edinburgh	Quaker meeting hall (formerly) and burial ground, off Pleasance within court at Pollock Institute (Pleasance Trust) buildings	NT 263 7332	B
Edinburgh	Greendykes Road, Niddrie Marischal House, burial ground	NT 299 713	C
Edinburgh	Dalmeny village, 20 Main Street, Dalmeny kirk, St Cuthbert's, Church of Scotland, including churchyard	NT 144 775	A
Edinburgh	Dalry Road Dalry cemetery gatepiers boundary walls and railings	NT 236 726	C(S)
Edinburgh	St. Cuthbert's churchyard, the Dell, Colinton	NT 21 68*	B
Edinburgh	Mercat Cross Canongate churchyard Canongate	NT 264 738	B
Edinburgh	St John's church (episcopal) and churchyard, Princes Street and Lothian Road	NT 248 736	A
Edinburgh	St Cuthbert's churchyard watch tower at junction of King's Stables Road and Lothian Road	NT 247 734	B
Edinburgh	St Cuthbert's church (Church of Scotland) and churchyard Lothian Road	NT 248 736	B
Edinburgh	Duddingston parish church (Church of Scotland) including Churchyard and watch tower old church lane Duddingston	NT 283 725	A
Edinburgh	Canongate parish church churchyard	NT 264 738	B
Edinburgh	Greyfriars churchyard (Church of Scotland) Candlemaker Row	NT 256 733	A
Edinburgh	Dalkeith Road, Newington (Echobank) cemetery, including 222 Dalkeith Road (lodge), vaults, gates, gatepiers and boundary walls	NT 272 716	B
Edinburgh	Grange Road and Beaufort Road, Edinburgh southern cemetery (Grange), including boundary walls, railings, gates and gatepiers	NT 257 720	B
Edinburgh	Sciennes House Place, Jewish burial ground with graveyard walls, gates and railings	NT 262 722	B
Edinburgh	5a-5c Kirkgate, St Mary's (South Leith parish) church (Church of Scotland) with graveyard, walls, gates and railings	NT 270 760	A
Edinburgh	200 Milton Road East, Portobello cemetery and lodge house with gates, railings, gatepiers, boundary walls and pavilion	NT 319 730	B
Queensferry	The Vennel, old burial ground, gatepiers, gates, wall and churchyard monuments	NT 12 78*	B

FALKIRK

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Bo'ness	Churchwynd churchyards	NS 996 814	B
Bo'ness	Carriden churchyard (old part only)	NT 018 812	C(S)
Denny	Church and old graveyard Dennyloanhead	NS 810 801	B

Dunipace	Church site and old graveyard Dunipace park	NS 837 817	C(S)
Falkirk	Parish church churchyard	NS 887 800	B
Falkirk	Falkirk parish churchyard gate	NS 886 799	B
Larbert	Larbert, old church, churchyard monument to James Bruce of Kinnaird and Mary Dundas, his wife	NS 855 821	B

FIFE

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Abdie	Approach to Abdie kirk yard, gate, 2 flanking buildings, and kirkyard	NO 259 163	B
Auchterderran	Bowhill, 22 Main Street, cemetery lodge with gatepiers, gates, boundary walls and railings	NT 214 958	B
Auchterderran	Auchterderran, Woodend Road, Auchterderran parish church crypt and graveyard	NT 214 960	B
Auchtermuchty	Parish churchyard including bridge over Auchtermuchty burn	NO 239 117	B
Auchtertool	Auchtertool parish church graveyard, stones, boundary walls, gatepiers, and gates	NT 208 902	C(S)
Balmerino	Old churchyard of Balmerino (excluding modern cemetery extension)	NO 360 249	B
Balmerino	Bridge, Balmerino on Road from abbey to old churchyard and cemetery	NO 358 248	B
Buckhaven & Methil	Methilhill, Holly Bank, Methilhill cemetery (NW) with gravestones	NO 358 006	C(S)
Burntisland	Kirkton Road, St Serf's kirk, with graveyard, boundary walls, gatepiers and gates	NT 230 863	B
Burntisland	Kinghorn Road, cemetery lodge, hearse house, boundary walls, gatepiers, railings and gravestones	NT 246 865	C(S)
Burntisland	East Leven Street, Burntisland parish church graveyard, walls and gravestones	NT 233 856	B
Cameron	Cameron parish churchyard	NO 484 116	B
Carnbee	Carnbee village Carnbee parish church, cemetery, walls and gatepiers	NO 531 065	B
Carnock	Sepulchral monument and burial enclosure carnock burial ground	NT 04 88*	B
Carnock	Carnock old parish kirk Carnock burial ground	NT 04 88*	B
Ceres	Kirk Brae Ceres parish churchyard Main Street, Ceres	NO 399 116	B
Ceres	Kirk Brae Lindsay vault, parish churchyard Main Street, Ceres	NO 399 116	B
Collessie	Collessie village Collessie kirkyard dyke	NO 286 132	B
Crail	Parish churchyard walls and gravestones	NO613 079	A
Crail	Parish churchyard deadhouse	NO 613 079	B
Creich	Creich parish kirk including churchyard, walls and gates	NO 328 199	B
Creich	Old parish kirk of St Devenic and churchyard, Creich (excluding modern cemetery extension)	NO 327 214	B
Cults	Cults church, cemetery walls gatepiers and session house	NO 347 099	B
Cults	Springfield village church, churchyard walls and gatepiers	NO 341 118	C(S)
Cupar	Cupar old and St Michael of Travit parish church graveyard	NO 372 142	B
Dairsie	Dairsie old church (St Mary's) former session house, cemetery walls and gatepiers	NO 414 160	A
Dalgety	Watchhouse, St. Bridget's churchyard	NO 60 59*	B
Dunbog	Kirkyard of Dunbog	NO 285 180	C(S)
Dunfermline	Rosyth old kirk Rosyth burial ground	NT 10 87*	B
Dunfermline	Morthouse Rosyth burial ground	NT 10 87*	B
Dunfermline	Halbeath Road, entrance gateway to Dunfermline cemetery, including cemetery dividing wall and gateways to north west and boundary wall to Bellyeoman Road	NT 105 879	C(S)
Dunino	Dunino churchyard and walls	NO 541 109	B
Dunino	Dunino churchyard, sundial	NO 541 109	C(S)
Elie & Earlsferry	Elie parish church, gateway, churchyard wall, and former session house now public shelter, High Street	NO 491 000	B
Elie & Earlsferry	Elie parish churchyard mural monument High Street	NO 491 000	B

Falkland	Graveyard, High Street West Port	NO 250 072	B
Falkland	Parish church manse including garden wall and offices, Chapel Yard	NO 258 068	B
Inverkeithing	St. James's chapel and graveyard	NT 13 82*	B
Kennoway	Kennoway village, the Causeway (east side), old Kennoway churchyard with old session room and watch house, boundary walls, gatepiers and gates	NO 350 024	B
Kettle	Kingskettle, old cemetery enclosure	NO 310 083	C(S)
Kilconquhar	Kilconquhar parish churchyard, Main Street	NO 484 020	B
Kilmany	Kimany parish kirkyard	NO 388 217	B
Kilrenny	Anstruther wester parish churchyard and gravestones	NO 564 035	B
Kilrenny	St Adrian's churchyard walls and monuments	NO 566 037	B
Kilrenny	Kilrenny churchyard - walls and monuments	NO 575 048	B
Kilrenny	Kilrenny churchyard Lumsdaine burial enclosure	NO 575 048	B
Kilrenny	Kilrenny churchyard-Beaton burial enclosure	NO 575 048	B
Kilrenny	Kilrenny churchyard-Scott of Balcomie mausoleum	NO 575 048	B
Kinghorn	Nethergate, Kinghorn parish church graveyard with stones, boundary walls, gatepiers, gates and railings	NT 272 869	B
Kinglassie	Kinglassie, church lane, Kinglassie parish church gateway, graveyard and boundary walls	NT 227 985	B
Kingsbarns	Kingsbarns parish churchyard sepulchral monument to Corstorphine of Kingsbarns	NO 592 120	B
Kingsbarns	Kingsbarns parish churchyard The Square and Main Street	NO 592 120	B
Kirkcaldy	Nether Street, Sinclairtown feuars graveyard including boundary walls	NT 290 925	C(S)
Kirkcaldy	Abbotshall Road, Abbotshall parish church graveyard with mort-house, boundary walls, gatepiers and gates	NT 274 914	B
Kirkcaldy	Loughborough Road, cemetery lodge with boundary walls	NT 300 932	C(S)
Kirkcaldy	Mid Street, Pathhead feuars' graveyard with boundary walls, gatepiers and gates	NT 286 925	B
Kirkcaldy	Dysart, West Port, St Serf's churchyard, dovecot	NT 301 931	B
Kirkcaldy	Dysart, townhead, Dysart barony, with graveyard and boundary walls	NT 302 932	B
Kirkcaldy	Dysart, Shore Road, St Serf's kirk, tower and graveyard including boundary walls	NT 303 929	A
Kirkcaldy	Kirk Wynd, Kirkcaldy parish church, churchyard with boundary walls, gatepiers, gates and steps	NT 280 917	B
Kirkcaldy	Bennochy Road and Balsusney Road, Bennochy cemetery including lodge, gravestones, boundary walls, gatepiers and gates	NT 276 920	C(S)
Kirkcaldy & Dysart	Raith estate, secular burial ground	NT 264 916	B
Largo	Upper Largo, Largo parish church and church yard	NO 423 035	B
Leslie	Greenside, Christ's kirk on the green, old parish church with lychgate, boundary walls, graveyard and monuments	NO 255 021	B
Leslie	Greenside, Christ's kirk on the green, kirkyard, Rothes and Douglas vaults	NO 255 022	B
Leuchars	Vicarsford cemetery, lodge, boundary walls, gates, gatepiers and railings	NO 437 252	B
Leuchars	Parish kirkyard	NO 455 213	B
Leuchars	Vicarsford cemetery chapel	NO 438 257	B
Leven	Scoonie Brae, Scoonie cemetery, Christie burial enclosure, gravestones, boundary walls, gatepiers and gates	NO 383 016	C(S)
Logie	Logie village Elizabeth Sharp memorial hall (former parish church) cemetery walls and gatepiers	NO 404 204	C(S)
Markinch	Milton of Balgonie, Main Street (Church of Scotland) church with graveyard, boundary walls, gatepiers and gates	NO 323 007	B
Markinch	Northall cemetery with gravestones, boundary walls and gates	NO 301 024	C(S)
Markinch	Kirk Brae, St Drostan's parish church graveyard with boundary walls gates and railings	NO 297 019	B
Monimail	Monimail cemetery walls and gatepiers, and fragments of old church and north aisle	NO 298 141	B

Newburn	Newburn old church, cemetery walls, and gatepiers, and Lorimer family mural monument	NO 453 035	B
Pittenweem	Churchyard walls and gravestones	NO 548 026	B
Saline	Saline parish session house, Saline kirkyard, Saline	NT 02 92*	B
Saline	Night watchhouse, old grave yard Bridge Street Saline	NT 02 92*	C(S)
St Andrews	Well-house, eastern cemetery	NO 514 165	B
St Andrews	Cathedral graveyard	NO 514 166	A
St Monance	St Monan's church and churchyard	NO 522 014	A
Strathmiglo	Strathmiglo parish kirk grave yard	NO 217 102	B
Tayport	Parish kirk churchyard Castle Street	NO 458 286	B
Tulliallan	Former churchyard and Keith mausoleum, Tulliallan	NS 933 8808	C(S)
Wemyss	East Wemyss, Main Street, St Mary's By-The-Sea graveyard, walls and gravestones	NT 340 967	B
Wemyss	West Wemyss, St Adrian's church (Church of Scotland) with boundary walls, graveyard and monuments	NT 328 948	C(S)

GLASGOW, CITY OF

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Glasgow	Linkwood Crescent, Campbell Colquhoun burial ground	NS 522 712	B
Glasgow	1264 Gallowgate, Eastern Necropolis, including lodge gateway and boundary walls	NS 622 642	B
Glasgow	1088 Tollcross Road, Tollcross central church churchyard,boundary walls and gatepiers	NS 640 632	B
Glasgow	1035 Balmore Road, Lambhill cemetery, entrance arch, railings and gates	NS 682 700	B
Glasgow	868 Govan Road, Govan old parish church burial ground	NS 553 658	B
Glasgow	102 Ingram Street St Paul's and St David's church (Church of Scotland) and churchyard and boundary railings	NS 595 651	A
Glasgow	70 Cathedral Square, Glasgow cathedral and cathedral graveyard, boundary walls and railings	NS 601 605	A
Glasgow	19 Tresta Road, western necropolis crematorium	NS 575 697	B
Glasgow	Carmunnock, kirk Road, Carmunnock parish church and churchyard including gatepiers and watch house	NS 599 574	B
Glasgow	Springburn Road, Sighthill cemetery memorial to Baird and Hardie	NS 602 670	B
Glasgow	201 Springburn Road, Sighthill cemetery, including lodge and gatepiers and gateway at Keppochill Road	NS 602 670	B
Glasgow	309-341 (odd numbers) Abercromby Street, burial ground	NS 605 642	B
Glasgow	Cathedral Square, the necropolis	NS 605 655	A
Glasgow	118 Carmunnock Road, Kilmailing Road, old Cathcart parish church (frag), churchyard and boundary walls	NS 587 606	B
Glasgow	316 Caledonia Road, Rutherglen Road, southern necropolis	NS 594 634	B
Glasgow	200 Thornliebank Road, Eastwood cemetery	NS 553 602	B

HIGHLAND

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Abernethy & Kincardine	Nethy Bridge, Abernethy (old) parish church and burial ground Church of Scotland	NJ 006 218	C(S)
Abernethy & Kincardine	Kincardine church, and burial ground (Church of Scotland)	NH 938 155	C(S)
Alness	Alness old parish church and burial ground	NH 644 691	B
Alvie	Alvie parish church and burial ground (Church of Scotland)	NH 864 093	B
Alvie	Balavil, obelisk and burial ground	NH 787 020	B
Applecross	Applecross, old parish church and burial ground	NG 714 458	B
Ardclach	Ardclach old parish church and burial ground	NH 954 450	B
Ardersier	Kirkton, old burial ground and watchhouse	NH 780 566	B

Ardgour	Ardgour parish church (Church of Scotland) and burial ground	NN 011 642	B
Ardnamurchan	By Glenborrodale, Camus Nan Geall burial ground.	NM 560 618	B
Ardnamurchan	Kilchoan, old parish church and burial ground	NM 484 640	B
Ardnamurchan	Archaracle Church of Scotland parish church and burial grounds	NM 675 683	B
Arisaig & Moidart	Eilean Fhianain, St Finnan's chapel and burial ground	NM 752 683	A
Arisaig & Moidart	Arisaig village, old church and burial ground	NM 658 869	B
Assynt	Inchnadamph, former Assynt parish church (Church of Scotland) with graveyard, walls and gate	NC 249 219	C(S)
Assynt	Stoer church and old burial ground	NC 041 285	C(S)
Auldearn	Auldearn parish church, remains of former medieval church, burial ground and sundial	NH 918 555	B
Avoch	Avoch village Braehead Avoch parish churchyard	NH 701 552	B
Boleskine & Abertarff	Boleskine parish church (Church of Scotland) and burial ground	NH 506 183	B
Boleskine & Abertarff	Boleskine, old Boleskine church, burial ground and watchhouse	NH 507 222	B
Bracadale	Borline, Kilmory churches and graveyard	NG 375 261	B
Canisbay	Canisbay parish church, kirkstyle and burial ground. (St Drostan's Church of Scotland)	ND 343 728	A
Canisbay	Stroma dovecote and burial ground	ND 357 764	B
Cawdor	Cawdor village Cawdor parish church and burial ground	NH 843 499	A
Clyne	Clynekirkton, old parish church and burial ground	NC 894 060	B
Contin	Contin parish church (Church of Scotland) and burial ground	NH 456 557	B
Contin	Kinlochluichart Church of Scotland and burial ground	NH 316 626	B
Cromarty	The Paye, Gaelic chapel graveyard and graveyard wall	NH 788 673	B
Cromarty	Church Street east parish churchyard and churchyard walls	NH 790 672	B
Cromdale, Inverallan & Advie	Cromdale parish church burial ground and watchhouse (Church of Scotland)	NJ 066 289	B
Croy & Dalcross	Croy parish Church of Scotland, watchhouse and burial ground	NH 796 499	B
Daviot & Dunlichity	Daviot parish Church of Scotland and burial ground	NH 723 394	B
Daviot & Dunlichity	Dunlichity parish Church of Scotland, watchhouse McGilleveray burial enclosure and burial ground	NH 659 330	B
Dingwall	Tulloch Street, St Clements church (Church of Scotland parish church), gatepiers and burial ground	NH 549 589	A
Dores	Dores parish Church of Scotland, Sunday school room (former watchhouse) burial ground and war memorial entrance	NH 601 350	C(S)
Dornoch	Castle Street Dornoch cathedral and walled grave yard. (cathedral of St. Mary and St Gilbert. Church of Scotland parish church)	NH 797 896	A
Dornoch	Church Street free Church of Scotland, church room (former school), burial ground and gatepiers with front retaining wall	NH 799 795	B
Dunnet	Dunnet parish church (Church of Scotland) and burial ground	ND 220 712	A
Durness	Balnakeil, Durness old church and burial ground	NC 391 686	B
Duthil & Rothiemurchus	Rothiemurchus, old church and burial ground	NH 885 092	B
Duthil & Rothiemurchus	Rothiemurchus, episcopal Church of St. John the Baptist and burial ground	NH 900 111	B
Duthil & Rothiemurchus	Duthill, old parish church, burial ground	NH 935 243	B
Edderton	Old parish church and burial ground	NH 71 84*	A
Farr	Bettyhill Farr old church (former Church of Scotland parish church) and burial ground	NC 714 623	B
Fodderty	Fodderty old burial ground	NH 512 594	C(S)
Fort William	The Craigs burial ground, Ewen Maclachlan obelisk and gateway	NN 108 742	B
Fort William	High Street, St Andrew's episcopal church, burial ground, Lych gate (to High Street) and entrance to Bank Street	NN 103 740	A
Fortrose	Fortrose Cathedral Square, Fortrose cathedral (St. Peter and Bonifacius) graveyard and walls	NH 072 056	A
Fortrose	Rosemarkie parish churchyard wall, gates and gatepiers	NH 72 56*	B
Gairloch	Gairloch old kirkyard	NG 805 760	B
Glenelg	Glenelg church (Church of Scotland) and graveyard	NG 813 193	B
Glenelg	Knoydart, Kilchoan Square burial ground	NM 778 992	B
Glenelg	Knoydart, Kilchoan round burial ground	NM 778 992	B

Golspie	Golspie Main Street St Andrew's parish church (Church of Scotland and burial ground)	NC 837 002	A
Golspie	Dunrobin Castle private burial ground	NC 854 010	B
Halkirk	Halkirk village old parish church and burial ground	ND 135 596	B
Inverness	Robertson mausoleum, old high churchyard, Church Street	NH 066 045	B
Inverness & Bona	Dochfour house obelisk and private burial ground	NH 610 399	B
Inverness & Bona	Killianan burial ground	NH 571 346	C(S)
Inverness & Bona	Dochfour, Bona free church and burial ground	NH 602 385	C(S)
Kildonan	Kildonan old parish church and burial ground	NC 909 207	B
Killearnan	Milton Killearnan parish church burial ground, dyke and gatepiers	NH 576 495	B
Kilmallie	Corpach, old Kilmallie church and burial ground	NN 090 769	C(S)
Kilmallie	Onich, Nether Lochaber episcopal Church of St Bride and burial ground	NN 052 610	C(S)
Kilmonivaig	Achlauchrach, Glen Spean Roman Catholic Church of St Cyril and burial ground	NN 307 813	B
Kilmonivaig	Gairlochy burial ground	NN 176 840	C(S)
Kilmonivaig	Kilfinnan burial ground and McDonnell mausoleum	NN 278 957	C(S)
Kilmorack	Kilmorack old parish church and burial ground	NH 494 443	B
Kilmorack	Beauly, Roman Catholic church, burial ground and presbytery	NH 527 466	B
Kilmorack	Kilmorack old burial ground	NH 493 443	C(S)
Kilmuir	Kilmuir graveyard	NG 399 717	B
Kilmuir Easter	Kilmuir Easter parish church (Church of Scotland) and burial ground	NH 757 732	A
Kiltarlity & Convinth	Convinth burial ground	NH 512 374	C(S)
Kiltarlity & Convinth	Erchless castle burial ground	NH 410 410	C(S)
Kiltarlity & Convinth	Eskadale, St Mary's Roman Catholic church and burial ground	NH 453 399	B
Kiltarlity & Convinth	Kiltarlity parish Church of Scotland and burial ground, Tomnacross	NH 512 413	B
Kiltarlity & Convinth	Kiltarlity old parish church and burial ground	NH 497 439	B
Kiltearn	Kiltearn old parish church and burial ground	NH 617 653	B
Kincardine	Strathcarron Croick parish church (Church of Scotland) and burial ground	NH 456 915	A
Kincardine	Kincardine church (former parish church) and burial ground	NH 605 894	B
Kingussie	High Street, old burial ground and gatepiers	NH 758 006	C(S)
Kingussie	High Street, parish church, burial ground and gatepiers Church of Scotland	NH 760 007	B
Kingussie & Insh	Insh parish Church of Scotland and burial ground	NH 835 053	B
Kintail	Kintail old parish church, graveyard and Macrae war memorial	NG 945 210	B
Kirkhill	Kirkhill, old Wardlaw church with Lovat burial aisle and burial ground	NH 549 547	A
Kirkhill	Kirkton burial ground	NH 605 452	C(S)
Knockbain	Kilmuir old church and burial ground	NH 677 502	B
Knockbain	Suddie old church and burial ground	NH 665 546	B
Laggan	Glentruim house Macpherson of Glentruim burial ground (by Newtonmore)	NN 679 953	C(S)
Laggan	Laggan Bridge, Laggan parish church and burial ground, Church of Scotland	NN 615 943	B
Laggan	Cluny Castle, burial ground	NN 642 940	C(S)
Laggan	Kinloch Laggan old St Kenneth's church and burial ground	NN 535 896	C(S)
Lairg	Lairg burial ground with Matheson memorial	NC 581 073	B
Latheron	Latheron old parish church and burial ground	ND 202 333	B
Latheron	Berriedale (Church of Scotland) and burial ground	ND 121 232	B
Lismore & Appin	Ballachulish burial ground surrounding St John's episcopal church	NN 066 584	B
Lismore & Appin	Keil chapel and burial ground	NN 971 537	B
Lismore & Appin	Duror (Church of Scotland) parish church and burial ground	NN 993 553	B
Lochalsh	Kirkton of Lochalsh Lochalsh parish church (Church of Scotland) and walled graveyard	NG 819 272	B
Lochalsh	Innes Street Plockton free church and churchyard walls	NG 803 333	B
Lochalsh	Plockton Innes Street Plockton church (Church of Scotland) and graveyard	NG 802 333	A

Lochbroom	Inverbroom Lochbroom parish church (Church of Scotland), and burial ground	NH 176 847	B
Lochbroom	Ullapool Argyle Street former Ullapool parish church and burial ground	NH 127 942	A
Logie Easter	Logie Easter former parish church and burial ground	NH 777 760	B
Morvern	Killintag burial ground, Stewart mausoleum	NM 564 538	B
Morvern	By Lochaline, Keil church burial ground and remains of medieval church	NM 671 452	B
Moy & Dalarossie	Moy Church of Scotland, watchhouse and burial ground	NH 771 342	B
Moy & Dalarossie	Dalarossie Church of Scotland and burial ground	NH 767 242	B
Nairn	Geddes St Mary's chapel and graveyard	NH 888 528	B
Nigg	Nigg parish church (Church of Scotland) and graveyard	NH 804 716	A
Reay	Reay old burial ground	NC 969 648	B
Resolis	Kirkmichael remains of Kirkmichael church and burial ground	NH 705 658	B
Resolis	Kirkmichael graveyard dyke and gatepiers	NH 70 65*	C(S)
Resolis	Old Cullicudden burial ground, dyke and gatepiers	NH 649 650	B
Rogart	St Callan's church (Church of Scotland) and burial ground	NC 73 03*	B
Rosskeen	Old Rosskeen parish church and burial ground	NH 688 693	A
Sleat	Former parish church, Kilmore, and graveyard	NG 657 700	B
Small Isles	Isle of Eigg, Church of Scotland and burial ground	NM 481 855	C(S)
Small Isles	Isle of Eigg, St. Donnan's church and burial ground	NM 488 853	B
Small Isles	Isle of Canna, Church of Scotland and burial ground	NM 277 054	B
Snizort	Uig church, Church of Scotland, churchyard walls and gatepiers	NG 398 641	B
Strath	Kilchrist church and graveyard	NG 207 616	C(S)
Tain	Castle Brae St Duthus collegiate church with St Duthus church, graveyard and retaining wall	NH 780 821	A
Tarbat	Portmahomack Tarbat old church and burial ground	NH 915 840	A
Thurso	Wilson Lane, old St Peter`s church and burial ground	ND 11 68*	A
Tongue	Tongue parish church (Church of Scotland) burial ground and gatepiers	NC 59 56*	A
Urquhart & Glenmoriston	Invermoriston, burial ground and 2 pairs of gatepiers	NH 422 166	B
Urquhart & Glenmoriston	Drumnadrochit, old Kilmore burial ground and watchhouse	NH 515 295	C(S)
Urquhart & Glenmoriston	Drumnadrochit, Kilmore parish Church of Scotland and burial ground	NH 509 294	B
Urquhart & Glenmoriston	Drumnadrochit, Cnocan Burra burial ground	NH 505 293	C(S)
Urquhart & Glenmoriston	Glenurquhart, Corrimony burial ground	NH 376 300	C(S)
Urquhart & Logie Wester	Urquhart old burial ground and remains of previous parish church	NH 579 586	B
Urray	Kilchrist chapel (now mausoleum) and burial ground	NH 533 493	B
Urray	Urray (west) parish church (Church of Scotland) and burial ground	NH 508 525	B
Wick	High Street, Wick old parish church churchyard, Dunbar memorial	ND 361 511	A
Wick	Ulbster Sinclair mausoleum and St Martin's burial ground with gatepiers	ND 335 418	B
Wick	High Street, graveyard with remains of old St Fergus church and enclosing walls	ND 361 511	B

INVERCLYDE

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Greenock	Greenock cemetery gates	NS 270 761	B
Greenock	Greenock cemetery, 'Highland Mary' (Mary Campbell) monument	NS 264 763	B
Greenock	Inverkip Street burial ground	NS 273 761	C(S)
Greenock	Summer-house tempietta, within grounds of crematorium, Greenock cemetery (former garden of Hill House)	NS 266 763	B

MIDLOTHIAN

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Borthwick	Borthwick churchyard	NT 369 596	C(S)
Carrington	Carrington burial ground, including Whitehill aisle (Ramsay mausoleum), gatepiers and boundary walls	NT 321 611	B
Cockpen	Cockpen old parish church and burial ground	NT 326 633	B
Dalkeith	Old Edinburgh Road, new burial ground, watch tower	NT 330 672	B
Dalkeith	Cemetery Road, bridge	NT 327 669	B
Dalkeith	Cemetery Road, water tower	NT 327 670	B
Dalkeith	Cemetery Road, new cemetery, lodge, gatepiers and gates	NT 327 670	C(S)
Dalkeith	High Street, old kirk (Church of Scotland, formerly east church (St Nicholas), with graveyard walls and watch house	NT 332 674	A
Glencorse	Woodhouselee policies, burial ground, Fraser Tytler memorial	NT 235 643	C(S)
Lasswade	Rosslyn cemetery, including gates, gatepiers and boundary walls	NT 273 630	C(S)
Lasswade	Rosslyn chapel (episcopal), formerly collegiate Church of St Matthew, including vaults, burial ground and boundary walls	NT 274 630	A
Lasswade	Pentland burial ground, including watch house, vault and boundary walls	NT 262 663	B
Lasswade	Lasswade old kirkyard, including boundary walls, burial aisles and enclosures	NT 302 661	B
Lasswade	Lasswade cemetery; lodges, gatepiers, gates and boundary walls	NT 301 660	B
Newbattle	Newbattle Abbey policies, Lothian burial ground	NT 332 661	C(S)
Newbattle	Newbattle, Newbattle Road, Newbattle graveyard including boundary walls	NT 331 662	B
Penicuik	Broomhill Road, St James the less church (episcopal), including churchyard and boundary walls	NT 232 597	B
Penicuik	High Street, St Mungo's parish church (Church of Scotland), including hearse house, churchyard, boundary walls, gatepiers, railings and gates	NT 236 599	B
Penicuik	St Kentigern's kirkyard, clerks of Penicuik mausoleum	NT 237 599	A
Penicuik	St Kentigern's church, kirkyard and boundary wall	NT 237 599	B

MORAY

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Aberlour	St Margaret's episcopal church and burial ground	NJ 271 431	A
Aberlour	Aberlour burial ground, remains of former parish church of St Drostan, (Dunstan or Durston) and Macpherson Grant mausoleum	NJ 263 427	B
Alves	Old parish church and walled burial ground, including Russell burial enclosure	NJ 134 629	B
Bellie	Chapelford, St Ninian's burial ground, chapel and Dawson mausoleum	NJ 590 599	B
Bellie	Bellie burial ground	NJ 352 610	B
Bellie	Bellie burial ground, Gordon tomb	NJ 353 610	A
Birnie	St Brendon's Church of Scotland, Birnie parish church, burial ground, and gatepiers	NJ 206 587	A
Boharm	Boharm burial ground and ruin of former Church of Scotland	NJ 321 463	B
Botriphnie	Drummuir, Botriphnie parish church (Church of Scotland) and burial ground with remains of former church and monuments.	NJ 375 440	B
Burghead	Grant Street, old burial ground	NJ 110 691	C(S)
Cabrach	Cabrach parish church and burial ground (Church of Scotland)	NJ 386 267	B
Cullen	Cullen old church (parish Church of Scotland) and burial ground	NJ 507 663	A
Dallas	Dallas parish church (Church of Scotland), watchhouse, cross and burial ground	NJ 122 518	B
Deskford	Kirkton of Deskford, old Church of St John and burial ground	NJ 508 616	A
Drainie	Gordonstoun, Michael kirk (St Michael's Ogstoun) burial ground and walls, cross	NJ 193 690	A

Drainie	Kineddar cross and Kineddar burial ground walls	NJ 223 696	B
Duffus	Duffus old parish church (Peter kirk), parish cross, morthouse and burial ground	NJ 175 687	A
Dyke & Moy	Brodie castle, burial ground	NH 973 574	B
Dyke & Moy	Dyke parish church (Church of Scotland), church hall, (former mausoleum), burial ground and war memorial gate arch	NH 990 584	A
Edinkillie	Edinkillie parish church (Church of Scotland), watch house and burial ground	NJ 019 465	B
Forres	High Street, St Lawrence's church, gatepiers and kirkyard walls	NJ 035 588	B
Grange	Grange burial ground	NJ 479 515	C(S)
Inveravon	Inveravon parish church (Church of Scotland) burial ground and gatepiers	NJ 183 376	B
Inveravon	Tombae, Roman Catholic Church of the incarnation and burial ground	NJ 217 256	A
Inveravon	Braes of Glenlivet, Chapeltown, Roman Catholic Church of Our Lady of Perpetual Succour, chapel house and burial ground	NJ 241 209	A
Inveravon	Braes of Glenlivet, Buiternach burial ground	NJ 220 224	C(S)
Keith	Old Keith, burial ground and site of former parish church	NJ 427 506	B
Kinloss	Kinloss abbey and burial ground	NJ 065 615	A
Kirkmichael	Tomintoul parish church (Church of Scotland), and burial ground	NJ 166 190	B
Kirkmichael	Tomintoul, Roman Catholic Church of Our Lady and St Michael (incorporating presbytery) and burial ground	NJ 169 185	B
Kirkmichael	Kirkmichael parish church (Church of Scotland) and burial ground	NJ 144 238	C(S)
Knockando	Macallan old burial ground and Elchies mausoleum	NJ 279 442	B
Knockando	Knockando watch house and burial ground to parish church	NJ 186 428	C(S)
Mortlach	Mortlach parish church, (Church of Scotland), watchhouse	NJ 323 392	A
Rafford	Rafford burial ground	NJ 060 561	B
Rathven	Rathven old burial ground and Rannas aisle	NJ 443 656	B
Rothes	Orton, mausoleum, enclosing burial ground walls and St. Mary's well	NJ 323 551	B
Rothes	Dundurcas old church and burial ground	NJ 302 510	B
Rothiemay	Milltown of Rothiemay, parish church (Church of Scotland) and burial ground	NJ 547 484	B
Speymouth	Essil burial ground	NJ 339 634	C(S)
Speymouth	Dipple burial ground	NJ 328 578	C(S)
Spynie	Spynie burial ground	NJ 228 655	B
St Andrews Lhanbryde	Kirkhill burial ground	NJ 249 627	C(S)
St Andrews Lhanbryde	Lhanbryde burial ground	NJ 271 612	B
St Andrews Lhanbryde	Lhanbryde burial ground, Innes enclosure	NJ 271 612	A
Urquhart	Urquhart village, burial ground	NJ 288 626	C(S)

NORTH AYRSHIRE

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Ardrossan	Kirkhill burial ground	NS 23 42*	C(S)
Ardrossan	Old burial ground, Castle Hill	NS 23 42*	B
Beith	Beith the cross, old parish church and graveyard	NS 34 53*	B
Dalry	West Kilbride Road cemetery lodge and gatepiers	NS 24 49*	C(S)
Dreghorn	Parish church and graveyard	NS 35 38*	B
Dreghorn	Session house at gate of churchyard	NS 35 38*	B
Irvine	Knadherhill cemetery, gate lodge, including entrance, gates, gatepiers and railings	NS 332 401	C(S)
Irvine	Kirkgate, Irvine old parish church and graveyard, including boundary walls and gatepiers	NS 322 386	A
Kilbirnie	Kilbirnie auld kirk and cemetery walls	NS 30 54*	A
Kilbride	Brodick, near Glensburig Bridge, graveyard	NS 003 368	C(S)
Kilbride	Kilbride chapel and graveyard	NR 974 206	B
Kilmory	Kilmory church and graveyard	NR 704 753	C(S)
Kilmory	Lochranza church and graveyard	NS 93 50*	B

Kilwinning	Abbey church and churchyard	NS 30 43*	B
Largs	Skelmorlie aisle and cemetery wall and gatepiers	NS 202 594	A
Largs	Kilbirnie Road, cemetery lodge and walls	NS 314 536	B
Millport	Old graveyard, Kirkton	NS 157 531	B
Saltcoats	Museum. old Ardrossan parish church (including old graveyard)	NS 24 41*	B
Stevenston	Parish church (High) including graveyard gateway	NS 26 42*	B
West Kilbride	Monument in cemetery to Dr. Robert Simpson	NS 206 487	C(S)
West Kilbride	West Kilbride Barony parish church and graveyard	NS 206 484	C(S)

NORTH LANARKSHIRE

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Cambusnethan	Cemetery enclosure and mausolea at medieval site of Cambusnethan parish church	NS 767 540	B
Coatbridge	Graveyard	NS 717 632	B
Kilsyth	Old graveyard and watchhouse, Howe Road	NS 717 772	B
Motherwell & Wishaw	Cambusnethan village Kirk Road/Greenhead Road former parish church, cemetery walls and gatepiers	NS 806 553	B
Motherwell & Wishaw	Dalziel Park Hamilton of Dalziel mausoleum and cemetery enclosures (at site of St Patrick's chapel	NS 755 548	B
New Monkland	Watch house and churchyard	NS 752 679	B
Shotts	Kirk of Shotts and graveyard	NS 87 60*	B

ORKNEY ISLANDS

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Holm	St Nicholas's church, former Holm kirk, including walled churchyard, gatepiers and outbuilding	HY 510 006	B
Hoy & Graemsay	Greaemsay kirk including graveyard	HY 256 045	C(S)
Kirkwall	Road Street, St Magnus cathedral, (cathedral Church of St Magnus the martyr), (Church of Scotland), including boundary walls, railings, graveyard and war memorial	HY 449 108	A
Shapinsay	Balfour burial aisle south churchyard	HY 50 17*	B
South Ronaldsay	South kirk (St Mary's) and kirkyard gateway	ND 44 89*	B
St Andrews & Deerness	Deerness, Skaill, St Ninian's church, (Church of Scotland) including walled churchyard and railings	HY 588 063	B
St Andrews & Deerness	Hall of Tankerness, St Andrew's burial ground, and Baikie burial vault	HY 523 088	B
Walls & Flotta	Moodie burial place Kirkhope burial ground.	HU 243 493	B

PERTH AND KINROSS

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Aberdalgie	Dupplin graveyard.	NO 07 20*	C(S)
Aberdalgie	Aberdalgie church yard and war memorial	NO 07 20*	C(S)
Abernethy	Abernethy parish church graveyard.	NO 19 16*	B
Abernyte	Parish church, churchyard	NO 25 31*	B
Alyth	Old parish kirk of St. Moloc's including churchyard	NO 24 48*	B
Arngask	Old parish church of Arngask, churchyard	NO 14 10*	C(S)
Auchterarder	Old parish church tower and graveyard.	NN 94 12*	B
Auchterarder	St. Mackessog's church and churchyard	NN 94 12*	B
Auchterarder	Montrose mausoleum St. Kattan's churchyard Aberuthven	NN 94 12*	A
Auchterarder	St. Kattan's churchyard Aberuthven (old part only)	NN 94 12*	B
Auchtergaven	Logiebride churchyard	NO 04 34*	C(S)
Bendochy	Bendochy parish church graveyard	NO 218 414	C(S)
Blackford	Old parish church of Blackford, churchyard (original section only) and gateway	NN 89 08*	B
Blackford	Gleneagles chapel, and graveyard	NN 89 08*	B
Blair Atholl	Struan church and churchyard	NN 87 65*	B

Blairgowrie & Rattray	Hill Church of Scotland, churchyard	NO 17 45*	B
Blairgowrie & Rattray	Rattray east church, churchyard, (original part only) High Street, old Rattray	NO 18 45*	C(S)
Caputh	Caputh parish church churchyard walls and gate dismantled	NO 08 40*	B
Caputh	Caputh old kirkyard, mute hill	NO 08 40*	C(S)
Cargill	Cargill, old churchyard	NO 15 36*	B
Cargill	Cargill, monument to Thomsons and MacGregors of Wolfhill and Newbigging, in old churchyard	NO 15 36*	B
Cargill	Cargill, Wright vault in Cargill old churchyard	NO 15 36*	B
Cleish	Cleish kirk, churchyard Kirkton of Cleish	NT 09 98*	C(S)
Clunie	Clunie churchyard	NO 10 43*	B
Collace	Nairne mausoleum (former parish church) Collace churchyard	NO 20 32*	B
Collace	Morthouse Collace churchyard	NO 20 32*	B
Collace	Collace churchyard	NO 20 32*	B
Comrie	Old parish church churchyard	NN 77 22*	B
Comrie	St Fillan's church (ruin) and graveyard	NN 77 22*	B
Comrie	Aberuchil Castle burial ground, Strageath's graves	NN 77 22*	C(S)
Coupar Angus	Abbey churchyard	NO 22 40*	B
Coupar Angus	Ardler churchyard, railings and gates	NO 22 40*	C(S)
Coupar Angus	Ardler churchyard, Carmichael enclosure	NO 22 40*	C(S)
Crieff	St. Michael's churchyard, Church Street and Bank Street	NN 86 21*	C(S)
Crieff	Innerpeffray churchyard	NN 86 21*	B
Crieff	Faichney monument, Innerpeffray churchyard	NN 86 21*	B
Crieff	Churchyard	NN 86 21*	C(S)
Crieff	Monzie parish church, gatepiers to churchyard	NN 86 21*	B
Dron	Dron churchyard	NO 142 159	B
Dull	Amulree and Strathbraan parish church with graveyard, gates and gatepiers	NN 899 366	B
Dull	Foss and Tummel parish church, graveyard	NN 89 36*	C(S)
Dull	St Adamnan's parish church graveyard	NN 89 36*	B
Dunbarney	Dunbarney churchyard	NO 11 18*	C(S)
Dunbarney	Dunbarney old churchyard, near Dunbarney house	NO 11 18*	B
Dunning	Parish churchyard, walls, monument and session house	NO 02 14*	B
Errol	Old churchyard	NO 25 22*	B
Findo Gask	Churchyard of Findo Gask	NO 00 20*	C(S)
Findo Gask	Old Gask churchyard	NO 00 20*	B
Forgandenny	Forgandenny parish churchyard	NO 08 18*	B
Forteviot	Parish church of Forteviot, churchyard.	NO 05 17*	C(S)
Forteviot	Pathstruie graveyard.	NO 05 17*	C(S)
Fortingall	St. Blane's chapel, Lassintullich cross-slab at S.W. corner of graveyard	NN 73 47*	B
Fortingall	Fortingal churchyard	NN 73 47*	B
Fortingall	Invervar, burial ground	NN 73 47*	C(S)
Fortingall	Graveyard, Killichonan	NN 73 47*	C(S)
Fortingall	St. Blane's chapel, Lassintullich graveyard	NN 73 47*	B
Fortingall	War memorial churchyard gate	NN 73 47*	B
Fortingall	Fortingal churchyard, Fortingal Yew and Stewart of Garth burial enclosure	NN 73 47*	B
Fortingall	Burial ground near Kerrowmore (Brenudh)	NN 73 47*	B
Fossoway	Wellwood - Moncreiff monument Tulliebole Kirkyard	NT 05 99*	C(S)
Fowlis Wester	Tomenbowie, burial ground near Conyachan farm	NN 93 23*	C(S)
Fowlis Wester	Churchyard walls, gate and gravestones	NN 93 23*	B
Glendevon	Glendevon parish church, churchyard	NN 99 04*	C(S)
Inchture	Inchture parish church, churchyard	NO 28 28*	B
Kenmore	Parish churchyard wall and wall running N.W. from it to grounds of Bridge house	NN 77 45*	B

Kettins	Kirkyard walls	NO 23 38*	B
Kettins	Parish kirkyard - Lych gate	NO 23 38*	B
Kettins	Parish kirkyard - sculptured stone	NO 23 38*	B
Kilspindie	Stuart of Rait mausoleum. Kilspindie churchyard	NO 21 25*	B
Kilspindie	Kilspindie churchyard	NO 21 25*	B
Kilspindie	Rait churchyard	NO 21 25*	C(S)
Kinclaven	Kinclaven churchyard war memorial Lychgate	NO 15 38*	B
Kinclaven	Kinclaven churchyard wall, tombs etc.	NO 15 38*	B
Kinclaven	Kinclaven churchyard monument to Alexander Cabel (Campbell) Bishop of Brechin, in churchyard wall	NO 15 38*	B
Kinfauns	Kinfauns churchyard	NO 16 22*	C(S)
Kinloch	Kinloch churchyard	NO 26 44*	B
Kinnaird	Kinnaird parish church, churchyard and session house	NO 244 286	B
Kinross	Bruce mortuary chapel, east burial ground.	NO 12 02*	C(S)
Kinross	Watch tower, east burial ground.	NO 12 02*	C(S)
Kirkmichael	Glenshee church churchyard	NO 08 60*	C(S)
Kirkmichael	Kirkmichael and Straloch churchyard	NO 08 60*	B
Lethendy	Lethendy kirkyard	NO 12 28*	B
Liff and Benvie	Invergowrie, St Peter's church, including churchyard, Cocks/Cox tombs and standing stone	NO 350 301	B
Little Dunkeld	Lagganallachy grave yard	NO 02 42*	C(S)
Little Dunkeld	Little Dunkeld churchyard	NO 02 42*	B
Logierait	Cross slab, Logierait churchyard.	NN 97 51*	A
Logierait	Logierait churchyard	NN 97 51*	B
Longforgan	Longforgan, Main Street, Longforgan parish church, including churchyard, gatepiers and outbuildings	NO 309 291	B
Madderty	Parish church of Madderty, session-house, churchyard	NN 95 21*	C(S)
Meigle	Meigle churchyard	NO 28 44*	C(S)
Methven	Methven aisle Methven parish church graveyard	NO 02 26*	A
Methven	Glenalmond Mercer burial ground	NO 02 26*	C(S)
Methven	Methven parish church graveyard	NO 02 26*	B
Methven	Lynedoch mausoleum Methven parish church graveyard	NO 02 26*	B
Moneydie	Moneydie parish church and churchyard	NO 06 29*	B
Monzievaird & Strowan	Church of Strowan churchyard	NN 84 24*	B
Monzievaird & Strowan	Ochtertyre graveyard	NN 84 24*	B
Muthill	Muthill old parish churchyard	NN 86 17*	B
Orwell	Horn of Thomanean mausoleum old Orwell kirkyard	NO 15 04*	C(S)
Perth	Kinnoul aisle, Kinnoul old churchyard or graveyard, Dundee Road	NO 112 230	A
Perth	Kinnoul old churchyard or graveyard, Dundee Road	NO 117 233	C(S)
Perth	Greyfriars burial ground, Canal Street and Speygate	NO 11 23*	B
Pitlochry	Moulin churchyard	NN 94 58*	B
Portmoak	Michael Bruce memorial Portmoak kirkyard	NO 17 01*	B
Redgorton	Churchyard	NO 08 28*	B
Rhynd	Old parish Church of Rhynd and churchyard	NO 157 207	B
St Madoes	Churchyard		C(S)
St Martins	Cambusmichael church, graveyard	NO 15 30*	B
St Martins	St. Martin's churchyard	NO 15 30*	B
Tibbermore	Tibbermore parish church graveyard	NO 05 23*	B
Trinity Gask	St. Bean's church, and churchyard, Kinkell	NN 93 16*	B
Trinity Gask	Churchyard of Trinity-Gask	NN 95 17*	C(S)
Weem	Weem old parish kirk graveyard	NN 84 49*	B

RENFREWSHIRE

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Houston	St Fillan's church and churchyard	NN 69 24*	B
Johnstone	Quarry Street, high parish church. (including graveyard (etc.)	NS 43 62*	B
Kilbarchan	Former parish church, (now hall of west parish church) Kilbarchan (including surrounding churchyard)	NS 40 63*	B
Lochwinnoch	Church Street Calder UF church and hall, gatepiers and churchyard wall	NS 35 59*	B
Lochwinnoch	St Winnock's church and church yard	NS 35 59*	B
Lochwinnoch	Low Beltrees farm Beltrees private burial ground	NS 35 59*	B
Paisley	Broomlands Street, Woodside cemetery, martyr's monument (1 of 2)	NS 471 638	B
Paisley	Castlehead, Main Road, Castlehead church (Church of Scotland) with graveyard	NS 435 636	B
Paisley	Canal Street church and burial ground: Tannahill's monuments	NS 475 636	B
Paisley	Broomlands Street, Woodside cemetery, martyrs memorial	NS 47 63*	C(S)

SCOTTISH BORDERS

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Abbey St Bathans	Abbey St Bathans church (Church of Scotland) including graveyard, boundary walls, gatepiers and gates	NT 758 622	B
Ancrum	Old Bridge near churchyard leading to lintmill	NT 622 248	B
Ancrum	Old graveyard, Briseslees	NT 577 273	C
Ashkirk	Graveyard	NT 466 220	B
Ayton	St Dionysius' church (remains of), graveyard including gatepiers and gates	NT 928 609	B
Bowden	Bowden church and graveyard	NT 554 301	A
Bunkle & Preston	Bonkyl church (Church of Scotland) including graveyard, boundary walls, quadrant walls, gatepiers and gates	NT 808 596	B
Bunkle & Preston	Bunkle old kirk in Bonkyl church graveyard, including railings	NT 808 595	A
Bunkle & Preston	Preston church including graveyard, boundary walls and gatepiers	NT 786 570	B
Caddonfoot	Burial ground and chapel site, Torwoodlee	NT 464 376	C
Caddonfoot	Caddonfoot parish church (Church of Scotland) including graveyard, boundary walls, gatepiers and gates	NT 450 347	B
Castleton	Castleton churchyard	NY 508 898	C
Castleton	Ethleton churchyard	NY 473 863	C
Cavers	Cavers church and graveyard	NT 538 159	B
Cavers	Kirkton church and graveyard.	NT 540 139	C
Channelkirk	Parish Church of St Cuthbert & churchyard, Channelkirk	NT 481 545	A
Chirnside	Chirnside, Kirkgate, Chirnside parish church (Church of Scotland) including graveyard, mort-house, war memorial, boundary walls, gatepiers, quadrant walls, memorial gateway and gates	NT 869 560	B
Chirnside	Chirnside, Kirkgate, brewery house including ancillary structure, cobbled courtyard, boundary walls, gatepiers and gate	NT 868 560	B
Cockburnspath	Cockburnspath church and graveyard	NT 774 710	A
Cockburnspath	St Helen's kirk and kirkyard	NT 804 707	A
Cockburnspath	Outbuildings lining east side of churchyard adjoining old manor house	NT 774 710	C
Coldingham	Coldingham, Coldingham priory (Church of Scotland) including transept arch, former hearse house and gravedigger's store, graveyard, boundary walls, gatepiers and gates	NT 903 659	A
Coldingham	Houndwood, Houndwood church (Church of Scotland) including graveyard, boundary walls	NT 843 638	B
Coldstream	Willowbank Marjoriebanks of Lees burial ground	NT 843 396	C(S)
Crailing	Crailing church and graveyard	NT 68 24*	B
Crailing	Old churchyard, Nisbet	NT 68 24*	C
Crailing	Old burial ground, near Crailing house	NT 68 24*	C

Cranshaws	Cranshaws church (Church of Scotland) including graveyard, gatepiers and gates	NT 692 618	A
Drumelzier	Drumelzier parish church and graveyard	NT 134 343	B
Duns	Preston Road cemetery	NT 790 545	C(S)
Duns	Preston Road, Christ Church (episcopal) with steps, boundary wall, gates, lamp standard and burial ground	NT 785 542	B
Duns	Church Square, old parish church with boundary wall, gatepiers and graveyard	NT 786 538	B
Earlston	Earlston church and graveyard	NT 581 388	C
Eccles	Eccles church (Church of Scotland) including graveyard, mounting stone, boundary walls and gatepiers	NT 764 413	B
Eckford	Eckford church and graveyard.	NT 706 270	B
Eddleston	Eddleston parish church and graveyard	NT 244 472	B
Ednam	Ednam church and graveyard.	NT 736 371	B
Ettrick	Graveyard	NT 259 144	B
Eyemouth	High Street and Albert Road old churchyard and watchhouse	NT 943 644	B
Fogo	Fogo kirk (Church of Scotland) including inner and outer graveyards, boundary walls and lych gate	NT 772 491	A
Foulden	Foulden church (Church of Scotland) including graveyard, boundary walls, gatepiers, gates and mounting stone	NT 931 557	B
Galashiels	Aisle and tombstones, Galashiels churchyard	NT 494 057	B
Greenlaw	Old market cross in churchyard	NT 711 461	A
Hawick	Wilton churchyard	NT 503 152	C(S)
Hawick	St Mary's parish church and churchyard, St Mary's place	NT 501 143	B
Hobkirk	Hobkirk church & graveyard	NT 587 109	C
Hownam	Hownam church and graveyard	NT 777 192	C
Hume	Churchyard and site of St Nicholas's church	NT 700 408	C
Jedburgh	Castlegate and Galahill, Castlewood cemetery with steps, gates, gatepiers and surrounding wall	NT 647 201	C(S)
Jedburgh	Edgerston church with graveyard, gatepiers, graveyard wall and railings	NT 684 117	B
Kelso	Abbey Court St Andrew's episcopal church and churchyard walls	NT 727 337	B
Kelso	Abbey Row and the Butts, Kelso old parish church, churchyard wall and gates	NT 729 339	C(S)
Langton	Langton, St Cuthbert's churchyard	NT 762 525	B
Lauder	St Mary's church and graveyard	NT 530 475	A
Legerwood	Ledgerwood church and churchyard	NT 594 434	B
Lilliesleaf	Lilliesleaf church and graveyard	NT 539 253	C
Linton	Parish Church of St Andrew and graveyard	NT 149 516	B
Linton	Linton church (Church of Scotland) including graveyard, boundary walls, gates and gateposts	NT 773 262	B
Longformacus	Longformacus church (Church of Scotland) including lampstand, graveyard and boundary walls	NT 694 572	B
Makerstoun	Graveyard, Makerstoun house	NT 671 317	C
Makerstoun	Makerstoun church and graveyard	NT 668 331	B
Maxton	Maxton church and graveyard	NT 610 303	B
Mertoun	Old churchyard	NT 624 317	B
Mordington	Lamberton church and graveyard including boundary walls	NT 968 573	B
Mordington	Mordington, burial vault including graveyard and boundary walls	NT 951 558	B
Mordington	Mordington, old graveyard including boundary walls, gatepiers, gate and style	NT 944 553	C(S)
Morebattle	Parish Church of St Lawrence and graveyard.	NT 772 250	B
Nenthorn	Old graveyard, Nenthorn	NT 678 369	C
Newlands	Mackay of Scotstoun tomb in kirkyard	NT 161 465	B
Oxnam	Oxnam church and graveyard	NT 701 190	B
Peebles	St Andrews Road, cemetery lodge with boundary wall and gates	NT 246 406	C(S)
Peebles	Old town, St Andrew's cemetery with boundary wall, gatepiers, gates and railings	NT 246 406	C(S)
Polwarth	Polwarth church (Church of Scotland) including graveyard, boundary walls and gates	NT 749 494	A

Roberton	Graveyard and chapel site, Borthwick, Wa'as	NT 416 132	C
Roxburgh	Roxburgh church and graveyard	NT 700 306	B
Selkirk	Kirk Wynd, Auld Kirkyard, old parish kirk, boundary wall, railings, gates and gateway	NT 470 283	B
Skirling	Churchyard entrance gate	NT 075 389	B
Skirling	Churchyard, minister's gate	NT 075 389	B
Smailholm	Smailholm church and graveyard	NT 648 364	B
Southdean	Remains of old church in graveyard at Chesters	NT 626 107	B
Sprouston	Graveyard and church site, Lempitlaw	NT 788 328	B
Sprouston	Sprouston church and graveyard	NT 756 351	B
St Boswells	St Boswells' church and graveyard	NT 606 305	C
Stichill	Parish church and graveyard	NT 711 383	B
Stobo	Churchyard	NT 180 370	B
Swinton	Simprim church including graveyard and boundary wall	NT 852 454	C(S)
Swinton	Swinton church, Church of Scotland, including graveyard, boundary wall, gatepiers and gates	NT 838 476	B
Teviothead	Old graveyard, Teviothead.	NT 404 051	C
Tweedsmuir	Tweedsmuir parish church and churchyard	NT 105 245	B
Westruther	Ruin of old church and graveyard, Westruther	NT 634 501	B
Whitsome	Whitsome, old churchyard, including watch house	NT 862 503	C(S)
Yarrow	Graveyard, Yarrow kirk	NT 357 277	B
Yarrow	St Mary's chapel and graveyard	NT 253 236	B
Yetholm	Parish church and graveyard, including gatepiers and boundary walls	NT 825 280	B

SHETLAND ISLANDS

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Bressay	Gunnista graveyard, including burial enclosure and boundary wall	HU502 438	B
Bressay	Bressay kirk (Church of Scotland), including kirkyard wall	HU 493 410	B
Delting	Voe, old Olnafirth kirk, including kirkyard wall, gatepiers, and enclosures	HU 404 638	B
Dunrossness	Brew, Dunrossness kirk (Church of Scotland), including kirkyard wall and gatepiers	HU 391 152	B
Fetlar	Fetlar kirk, including kirkyard wall and monument	HU 608 905	B
Lerwick	Gulberwick church (Church of Scotland), including kirkyard wall, gate and gatepiers	HU 443 389	C(S)
Lerwick	Knab Road, Breiwick Road, and Lover's Loan, Lerwick old cemetery, including boundary wall and entrance gate	HU 478 409	C(S)
Lerwick	Quarff church (Church of Scotland), including kirkyard wall and gatepiers	HU 428 355	B
Nesting	Lunnasting, Lunna, St Margaret's (Lunnasting) kirk (Church of Scotland), including kirkyard wall	HU 486 691	B
Northmavine	Hillswick, Northmavine kirk, including kirkyard wall, gate, and gatepiers	HU 283 771	B
Northmavine	Ollaberry, Ollaberry kirkyard monument	HU 366 805	B
Sandsting	Sand, St Mary's chapel chancel arch, including graveyard wall	HU 347 472	C(S)
Unst	Lund, St Olaf's chapel, including kirkyard walls and enclosure	HP 567 041	B
Unst	Baliasta, old Unst kirk (Church of Scotland), including memorial enclosures, kirkyard wall and gatepiers	HP 602 097	C(S)
Unst	Uyea, Uyea chapel, including memorial, table tombstone, and graveyard wall	HU 609 985	B
Walls & Sandness	Walls, Walls methodist church, including churchyard walls, railings, gates, and gatepiers	HU 244 497	C(S)
Walls & Sandness	Papa Stour, Papa Stour kirk, including kirkyard wall	HU 177 600	B
Walls & Sandness	Sandness, St Margaret's kirk, including graveyard wall and gatepiers	HU 192 577	B
Yell	Sellafirth, Sellafirth kirk, including churchyard wall and gatepiers	HU 517 985	C(S)

Yell	Hamnavoe, St Magnus (South Yell) kirk (Church of Scotland), including graveyard walls and post box	HU 495 804	B
Yell	Mid Yell, St John's (Mid Yell) kirk (Church of Scotland), including church hall and churchyard wall	HU 515 908	C(S)

SOUTH AYRSHIRE

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Ayr	Alloway, Alloway parish church (Church of Scotland) including graveyard, gatepiers, gates, railings and boundary wall	NS 332 180	B
Ayr	Alloway, Alloway kirk graveyard including Hughes mausoleum, gatepiers, gates and boundary wall	NS 331 180	B
Ayr	St Quivox, St Quivox parish church, graveyard including gatepiers, gates, railings and boundary wall	NS 375 240	B
Ayr	Holmston Road, Ayr cemetery entrance and lodge (no 56 Holmston Road) including ancillary structures, gates, gatepiers, railings and boundary wall	NS 345 211	C(S)
Ayr	Kirk Port, auld kirk of Ayr graveyard including boundary walls and lamp standard	NS 338 219	B
Ayr	23 John Street, St Margaret's Roman Catholic church and graveyard including boundary wall	NS 340 221	B
Ballantrae	Graveyard	NX 08 82*	B
Barr	Old churchyard	NR 39 60*	C(S)
Colmonell	Parish church and churchyard	14 85*	B
Coylton	Fragments of previous kirk in old graveyard	NS 41 19*	B
Craigie	Parish church and graveyard	NS 43 32*	B
Dailly	Old Dailly church and churchyard	NS 27 01*	B
Dailly	Parish Church of new Dailly and churchyard	NS 27 01*	B
Dundonald	Parish church and graveyard	NS 36 34*	B
Girvan	Old Street, Girvan old church yard	NX 18 97*	B
Kirkmichael	Lych gate and graveyard	NS 34 08*	B
Kirkoswald	Ruin of old church and graveyard. Kirkoswald	NS 24 07*	B
Maybole	Old cemetery gate and walls	NS 29 09*	C(S)
Monkton & Prestwick	Ladykirk house, stable courtyard	NS 387 267	C(S)
Monkton & Prestwick	Ruined Church of St. Cuthbert, Monkton, and old graveyard	NS 38 26*	A
Monkton & Prestwick	Burial ground, Fairfield	NS 38 26*	C(S)
Prestwick	Ruin of St. Nicholas' church and graveyard, Kirk Street	NS 34 25*	B
Straiton	Parish church and graveyard	NT 27 66*	A
Symington	Parish church and graveyard	NS 99 35*	A
Tarbolton	Tarbolton, Cunningham Street, Tarbolton parish church graveyard including gatepiers, gates, railings and boundary wall	NS 430 270	B
Troon	Monktonhill Road, ruins of Crosbie church and churchyard including boundary wall, gatepiers and gates	NS 344 294	B

SOUTH LANARKSHIRE

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Biggar	St Mary's church graveyard kirkstyle	NT 04 37*	B
Blantyre	Old churchyard	NS 679 566	B
Bothwell	Bothwell, Main Street, St Bride's collegiate church, (Church of Scotland), including graveyard, boundary walls, gatepiers and gates	NS 704 586	A
Cambuslang	Cairns Road, Cambuslang old parish church including churchyard, boundary walls, gates and gatepiers	NS 645 599	B
Carluke	St. Lukes church and churchyard	NS 84 50*	B
Carmichael	Parish church and graveyard	NS 93 39*	B
Carnwath	Old collegiate church, St. Mary's aisle, and graveyard	NS 98 46*	A
Carstairs	Parish church and graveyard	NS 93 46*	B
Covington	Parish church and graveyard	NS 97 39*	A

Crawford	Old graveyard, Kirkton	NS 95 20*	B
Crawfordjohn	Parish church, and graveyard	NS 87 23*	B
Culter	Parish church and graveyard	NT 028 342	B
Dalserf	Larkhall, Duke Street, Larkhall cemetery, including gates gatepiers, boundary walls and railings	NS 765 519	C(S)
Dalserf	Dalserf village, Dalserf parish church (Church of Scotland) including walled churchyard, gatepiers and gates	NS 799 507	A
Dolphinton	Parish church, and graveyard	NT 10 46*	B
Douglas	Douglas village St Bride's chapel & churchyard walls	NS 83 30*	A
Dunsyre	Parish church, and graveyard	NT 07 48*	B
East Kilbride	Parish church, and graveyard	NS 635 545	B
Glassford	Parish church, and graveyard	NS 739 465	B
Glassford	Ruin of old church and graveyard	NS 732 470	B
Hamilton	Bent Road, Bent cemetery, monument to Dukes of Hamilton	NT 712 551	C(S)
Hamilton	Churchyard Ann Street	NS 723 555	A
Hamilton	69 Wellhall Road, cemetery lodge, including gatepiers, gates, adjoining walls and waiting room	NS 705 553	C(S)
Hamilton	Bent Road, Bent cemetery, monument to Robert Brown	NS 712 551	B
Lesmahagow	Old Lesmahagow church, and graveyard	NS 81 39*	B
Liberton	Parish church and graveyard	NS 98 43*	B
Pettinan	Parish church and graveyard	NS 95 42*	B
Rutherglen	Main Street Rutherglen, old parish churchyard including Kirk Port and gateways	NS 613 617	B
Stonehouse	St Ninian's church and graveyard	NS 748 470	B
Symington	Watchhouse and church yard	NS 99 35*	B
Walston	Parish church and graveyard		B
Wandel & Lamington	Parish church and graveyard	NT 978 309	B
Wiston & Roberton	Parish church wiston, and graveyard	NS 95 32*	C(S)

STIRLING

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Aberfoyle	Old parish church and churchyard	NN 52 00*	B
Balquhidder	Churchyard	NN 53 20*	B
Callander	Old graveyard at confluence of Eas, Gobhain and Garbe Uisge	NN 63 07*	C(S)
Callander	Kilmahog graveyard	NN 63 07*	B
Callander	Burial ground Brig o' Turk	NN 63 07*	B
Callender	Bridge Street, graveyard	NN 63 07*	C(S)
Dunblane	Cathedral Church of St Blaan and St Laurence churchyard	NN 78 01*	B
Dunblane & Lecropt	Keir, old Lecropt churchyard	NN 78 01*	B
Dunblane & Lecropt	Mortuary chapel of Campbells of Aberuchill and Kilbride and surrounding graveyard near Torrance	NN 78 01*	C(S)
Killearn	Walls of old kirk and graveyard	NS 52 85*	B
Killin	Killin parish church graveyard N.E. of church	NN 57 32*	C(S)
Killin	St Fillans, graveyard	NN 57 32*	C(S)
Kilmadock	Kilmadock church (ruins) and graveyard	NN 706 024	B
Kincardine	Kincardine graveyard	NS 93 87*	B
Port of Menteith	Parish church - churchyard	NN 58 01*	B
Port of Menteith	Cardross house - graveyard	NN 58 01*	C(S)
Port of Menteith	Parish church - churchyard, Graham of Gartmore mausoleum	NN 58 01*	B
Stirling	St. Ninians old parish kirk kirkyard	NS 79 93*	A
Stirling	Valley cemetery	NS 79 93*	B
Stirling	Valley cemetery star pyramid	NS 79 93*	B
Stirling	Church of the Holy-rood churchyard	NS 79 93*	A
Stirling	Valley cemetery Wilson monument (or martyr's monument)	NS 79 93*	B

WEST DUNBARTONSHIRE

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Bonhill	Alexandria, Overton Road, Vale of Leven cemetery with monuments, bridge, boundary wall, gates and gatepiers	NS 384 797	B
Bonhill	Alexandria, Main Street, Saint Andrew's parish church with gatepiers, railings, graveyard and Smollett mausoleum	NS 391 799	B
Bonhill	Bonhill parish church with boundary wall and graveyard	NS 394 796	B
Dumbarton	Stirling Road Dumbarton cemetery, walls gates and gatepiers	NS 769 409	B
Dumbarton	High Street, Dumbarton riverside parish church, cemetery walls and gateways	NS 76 40*	A
Kilmaronock	Ross Priory, Buchanan burial ground with memorial and gatepiers	NS 419 874	B
Kilmaronock	Kilmaronock parish church with graveyard, boundary wall and gatepiers	NS 452 874	B
Old Kilpatrick	Parish church and graveyard	NS 463 731	B

WEST LOTHIAN

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Bathgate	Jarvey Street, High Church of Scotland with graveyard, boundary walls, railings and gatepiers	NS 976 691	B
Kirknewton	Maconochies of Meadowbank burial enclosure Kirknewton burial ground	NT 10 66*	B
Torphichen	Gate-house Torphichen kirkyard	NS 96 72*	B

WESTERN ISLES

PARISH / BURGH	ADDRESS	MAP REFERENCE	CATEGORY
Barra	Barra parish church and churchyard	NF 68 01*	C(S)
Harris	Rodel St Clement's church and churchyard	NG 047 831	A
North Uist	Kilmuir burial ground (Hougharry)	NF 70 70*	B
South Uist	Benbecula Nunton former chapel & cemetery enclosure	NF 766 537	B
South Uist	Howmore parish church and churchyard walls	NF 758 364	B
South Uist	North Boisdale burial ground	NF 736 173	B
Stornoway	Ui church and graveyard St Columba's	NB 484 322	A

APPENDIX B
GRAVEYARD CONSERVATION PLAN PROFORMA

Background

Preparation of a conservation plan encourages those with responsibility for the graveyard to think about it in a structured way, to assess how and why it is significant, and how it should be managed in order to conserve that cultural significance. Conservation plans should meet the needs of the graveyard and be as comprehensive as is appropriate for its size and complexity. The plan required for a Category C listed village graveyard will be a very different (and much shorter) document than that required for a larger city complex.

A conservation plan must be a living document, having a clearly defined purpose, and which is used and updated as required. The preparation of a conservation plan must not be an end in itself, but be considered as a necessary management tool. A conservation plan should pay dividends in the long term by providing a firm foundation for management and expenditure decisions.

The objectives of a conservation plan are:

a) to identify the cultural and historic significance of the graveyard and

b) to set out a policy and strategy for the management and conservation of those physical attributes of the graveyard that contribute to that significance.

For some conservation plans, specialist reports and detailed research may be required where circumstances dictate. Consultation on the conservation plan and the action it proposes may also be required in some circumstances.

The following guidelines are based on, and closely follow, those set out in *'Conservation Plans. A Guide to the Preparation of Conservation Plans'* published by Heritage Policy Group, Historic Scotland, January 2000. They are also in compliance with the broad principles for conservation of the built heritage as set out in the Articles of *'The Stirling Charter: Conserving Scotland's Built Heritage'*.

GRAVEYARD CONSERVATION PLAN PROFORMA **Sheet 1 of 7**

INTRODUCTION

• State the address and give a brief description of the graveyard to which the plan relates;

• Specify the authorship of the conservation plan, its date of preparation, the interested parties and the intended recipients;

• Identify all those who were consulted on, and contributed to the preparation of the conservation plan, and note any proposed future consultations.

SUMMARY

Summarise the main conclusions and recommendations made in the plan, whether for physical interventions or management strategies, under the categories of Urgent, Necessary and Desirable, with a programme and timetable for implementation.

GRAVEYARD CONSERVATION PLAN PROFORMA **Sheet 2 of 7**

PART 1

1.1. The Site

Name of Graveyard/Cemetery .....

Address .....

Parish ..... Local Authority Area .....

National Grid Reference .....

HS No (if relevant) ..... NMRS No (if relevant) .....

Current Ownership .....

Status (tick all that apply):

Listed Graveyard/Cemetery	In use
Scheduled Monument/s	Not in use but maintained
Listed building/s	Abandoned
Other Listed elements	Site of Special Scientific Interest
Unlisted	

1.2. Location (Record detail on location plan)

(a) Urban (b) Suburban (c) Rural

(d) General Aspect of Site

1.3. Recorded History Of The Site And Its Contents
(Any gaps in the knowledge of the site should be identified)

GRAVEYARD CONSERVATION PLAN PROFORMA **Sheet 3 of 7**

PART 2. ASSESSMENT OF SIGNIFICANCE

Schedule Of Elements Of Interest Within The Site

Provide a brief description of all elements deemed to be of interest within the graveyard. Include, where appropriate, quantitative information such as number, area, length etc.

2.1 Built Elements (Identify Listed/Scheduled status and current use of buildings on the site)

Free-standing Gravestones/Gravemarkers (types and numbers)

Burial Enclosures

Wall Monuments (types and numbers)

Watch House/Tower

Memorials (other than gravemarkers)

Graveyard Enclosure

War Graves

Lodges/Gate Houses

Kirk/Chapel

Gateways

Ruins

Railings and Gates

Archaeological Remains

Other Built Elements

Mausoleums

GRAVEYARD CONSERVATION PLAN PROFORMA **Sheet 4 of 7**

2.2 Ancillary Buildings and Elements

2.3 Hard Landscaping

2.4 Soft Landscaping

2.5 Flora and Fauna

2.6 Other Observations

2.7 DATE/S OF VISIT/S

2.8 NAME/S OF SURVEYOR/S

GRAVEYARD CONSERVATION PLAN PROFORMA **Sheet 5 of 7**

PART 3. CARVED STONE DECAY IN SCOTLAND: CARVED STONE RECORD FORMS

(Forms 1 - 4 of the *Assessment Methodology Handbook Carved Stone Decay in Scotland* can be used to record to be completed for all significant carved stones)

PART 4. ASSESSMENT AND ANALYSIS OF CONSERVATION NEEDS

Having identified the cultural significance of the graveyard an assessment of its particular problems and sensitivities is required, along with consideration of the options available for its conservation. Issues to consider will include:

a identification of the anticipated use of the graveyard and consideration of any need for an extension;
b the condition of the graveyard and any need for repair;
c any constraints imposed by statutory consent requirements;
d actions needed to conserve or restore the setting of the graveyard;
e identification of any development issues and threats;
f any public access requirements or limitations;
g servicing needs;
h the costs of various recommended measures;
i the likely resources available for the graveyard, both immediate and in the future.

Having considered the options available, the proposed actions should be identified and justified. An assessment of the effect on the graveyard of any proposed works should be prepared, for example by way of a table, checklist or other form.

GRAVEYARD CONSERVATION PLAN PROFORMA **Sheet 6 of 7**

PART 5. ACTION PLAN

The Action Plan should be based on the risk assessment conducted in Part 4.

Having identified what needs to be done, a statement should be prepared setting out actions necessary to preserve the cultural and historic significance of the graveyard. These might include:

- Repairs needed to any structure, finishes and contents, setting out priorities and categorising them as Urgent, Necessary and Desirable, as appropriate;
- Actions required to conserve or restore the setting of the graveyard;
- Identification of appropriate materials and technical skills and their sourcing;
- An ongoing maintenance schedule;
- A management plan appropriate to the graveyard;
- Provision or retention of public access, and its promotion;
- Presentation of the site to enhance public understanding;
- Creation of a framework for site management and any future interventions;
- Recording of change, and the maintenance of an archival resource;
- Design parameters.

The Action Plan should identify clearly who has responsibility for the actions proposed. It should also identify possible sources of funding for the implementation of the action plan, with any time restrictions on expenditure.

PART 6. REVIEW ARRANGEMENTS

The conservation plan should set out the arrangements and timescale for a periodic review of the contents of the plan and the implementation of the action it recommends.

PART 7. SUPPLEMENTARY INFORMATION

Depending on the length and nature of the graveyard conservation plan, some information may be better put in Appendices, which, if they are lengthy, may be best contained in a volume separate from the conservation plan itself.

The Appendices should include the following, as appropriate:

A. Bibliography and references

B. Specialist reports and documentation

C. Plans, photographs and other site data

D. Gazetteer (systematic site survey)

E. Routine maintenance schedule, to include:

- clearing leaves, snow, controlling plant growth, removal of bird soiling
- removal of graffiti
- minor repairs to ancillary buildings
- repairs to masonry and internal finishes
- maintenance of hard and soft landscaping
- maintenance of any interpretative panels and presentation schemes

F. Management plan, for example might include:

- management of grounds maintenance
- erosion control and repair
- rabbit control
- conservation of flora and fauna
- drainage
- fencing
- vehicles, tracks, services storage and construction
- impact of visitors.

GRAVEYARD CONSERVATION PLAN PROFORMA **Sheet 7 of 7**

PART 8. RECORD OF CURRENT INTERVENTION

8.1 Details of Intervention

Date of intervention .....

Organisation or person/s carrying out work .....

Supervisor of the work ..... Position .....

Describe the nature of the intervention and details of the specifications (photographs and sketches should be provided where appropriate)

8.2. Cost of intervention £

8.3. Details of financial support

List all sources of support in table below

Name	Nature of support	
	Financial £	Other (Identify)

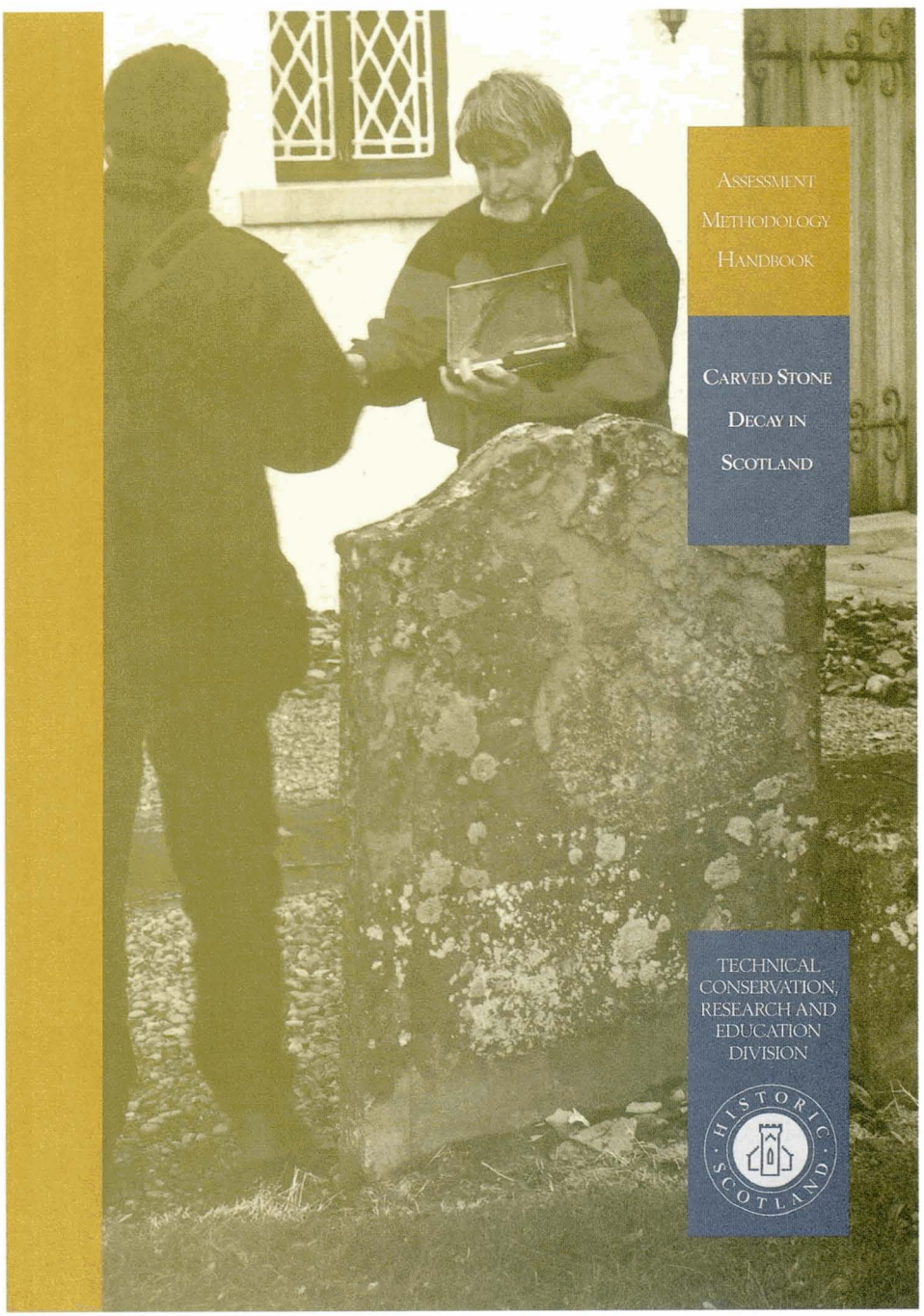
8.4. Details of any residual damage as a result of intervention

8.5. Signature of supervisor .....Date .....

APPENDIX C
ASSESSMENT METHODOLOGY HANDBOOK
CARVED STONE DECAY IN SCOTLAND

Carved Stone Decay in Scotland

This handbook, published by Historic Scotland in 1999, is reproduced here in its entirety. Its use is strongly recommended as a means of recording carved stones in graveyards and was used as the basis for Case Study 6. Forms 1-4 of the Methodology handbook can be used to Part 3 of the Graveyard Conservation Plan Proforma (Appendix B).



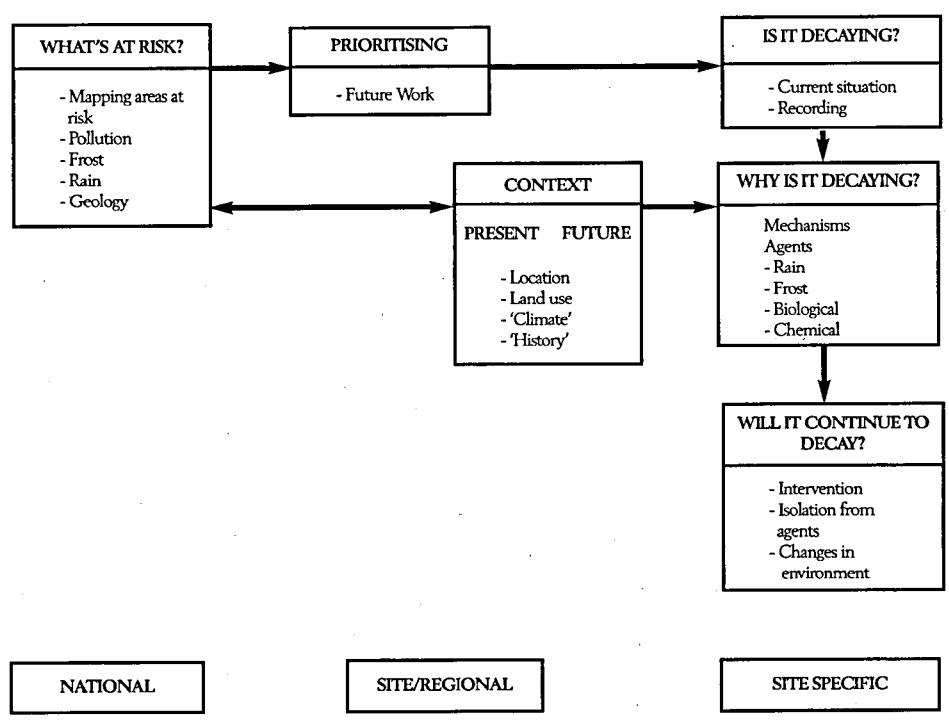
Methodology for Assessing the Decay of Carved Stones

1. Introduction

Scotland possesses an extraordinary variety of carved stones that have been produced over the last five thousand years. In many cases there is now a need for positive action to ensure that important stones do not suffer further decay. The overall aim of the Carved Stone Decay in Scotland Project is to identify, quantify and propose solutions to the problems of decay of carved stonework in Scotland. The first stage of this Project has resulted in the production of this methodology that allows the environment surrounding the stone to be recorded and its condition described so that the causes of decay of carved stones, both free-standing and in buildings are identified. A wide range of techniques have been applied to determine and isolate causes of decay and to produce a straightforward workable recording and assessment system that can readily be applied in the field and in museums. The publication of this methodology marks the onset of the next stage of the overall Carved Stone Decay in Scotland Project. The Methodology is being used by Historic Scotland conservators, but we also wish to encourage its use by interested individuals or groups outwith Historic Scotland. We shall compile all the records that are generated into a national database. The final stage of the Project will be to analyse the survey database in order to propose solutions to the problems found and to identify particular stones at risk.

The overall methodology for the project is shown in Figure 1. This figure illustrates the importance of approaching the assessment of the carved stones by determining both the causes of decay of individual stones and those geographical locations where stones should be considered at risk from exposure in their present environments. It should be emphasised that any assessment must consider both the **evidence** for decay and degradation and their causes based on observation of the stone **and** the **potential risk** to the stone from salts, rain, human effects, etc.

Figure 1 **Methodology for Assessing Decay of Carved Stone**



This document will form the 'handbook' for the recording and assessment of carved stones. It is in the form of a series of questions and prompts relating to the site and individual stones. Each question has a 'help' section that contains text and tables to guide the user in answering the questions. The questions take the user through the assessment and are structured so that the non-specialist is able to make a valid judgement in areas such as geology and environment. The assessment is in five parts that are designed to insure that the whole context of the carved stone is considered. These parts are:

(a) Background research - what is already known about the site and/or carvings.
(b) Assessment and recording of the environment of the site.
(c) Visual inspection and measurement of the carved stone.
(d) Detailed description of the carved stone.
(e) Assessing the condition, the causes of decay and the underlying factors contributing to decay.

All of the observations should be recorded on the proforma sheets (blank copies of which are provided with this handbook) and additional notes kept if necessary. A full photographic record should be made and the location and position associated with each photograph recorded at the time. The stone should not be cleaned in any way nor should samples be removed from the stone or the immediate surround without the written permission of Historic Scotland.

This handbook contains a complete set of the forms required for the assessment as well as some worked examples. When recording on site, a Site Record Form (see page 5) and Location Plan (see page 6) should be completed for the site where the carved stones are located. A separate set of Carved Stone Record Forms (pages 9, 13, 15 and 19) and a Carved Stone Detail sketch (see page 7) should be completed for **each** carved stone on the site (eg for each outcrop on a 'cup and ring' site or each grave marker in a church yard). In cases where a number of stones form a discrete unit, for example in a fireplace, this should be treated as a single carving and be recorded on one set of Carved Stone Record forms.

(a) Background research - what is already known about the site and/or carvings.

This information is essential as it will give data on the history of the stone being studied (for example, when it was found, has it been moved) and on the current location (some are difficult to find when described as 350m north of a wall 600m east of a road). Obvious sources of background information are the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) and the National Museums of Scotland (NMS). There will probably be specialist published works on a specific monument type. In addition, information is often held in local museums and collections. Research carried out suggests that, in time, it should be possible to include much of this information, or at least the full references to the stone's location, in a database for automatic downloading to a disk or recording sheet prior to a site visit. In the meantime the following sources should be consulted:

Historic Scotland - Scheduled Ancient Monument and Condition and Management Records (Monument Warden records)

Historic Scotland - Conservation Records

Royal Commission on the Ancient and Historical Monuments of Scotland - National Monuments Record of Scotland (NMRS)

National Museums of Scotland

Regional and local collections and museums

Studies of specific carved stone types - for example books by R W B Morris on rock art in various areas of Scotland and by J R Allen and J Anderson on The Early Christian Monuments of Scotland

Local History Studies

Existing records will often include photographs or illustrations of the carved stone that will allow some estimation of changes in its condition during a fixed period of time to be made. Records could also uncover data on the land-use, soil type and environment of the site. Any information on the lithology of the monument is of interest, but should not be allowed to prejudge the assessment made on site.

Before any inspection takes place it is essential that permission to visit the carved stone is obtained and that all relevant health and safety precautions required by the site agent or owner are observed. For reasons of security, and for ease of working, you may find it advantageous to work in pairs. Finally, it will be useful to take the following equipment:

Tape measure (5m)
Ruler
Pencil/Pen
Compass
Hand Lens (x10 magnification)
Camera (with **print** film)

(b) Assessment and recording of the environment of the site.

This should include the surrounding land-use - up to 100m away - and environment. If the stone has not been visited previously then this will include the preparation of a location plan to show the approximate location of the stone relative to surrounding features (for example other stones, buildings, trees and walls). In some cases, the surrounding environment will include masonry work or other carvings and all of these need to be considered and recorded. These should all be included on the location plan and if further detail is required then it should be noted on the recording form. In preparing the drawing some indication of scale must be given and if reference is being made to distant objects (eg a house 100m away) then the approximate distance and direction should be included.

(c) Visual inspection and measurement of the carved stone

This stage of the assessment is a visual inspection of the stone to note its carving type, degree of shelter, dimensions etc. It should also include time for the assessor to become familiar with the monument and to identify the important features of the carving. In cases where carving is found on several stones a carved stone detail sketch should be made to identify the number of pieces of stone and their relative positions, and a record made of the number of decorated faces. Where it is necessary to describe each face separately, identify each one by the direction it faces.

If maps, diagrams, photographs or drawings already exist then time should be spent in becoming familiar with the site and in relating the existing material to the actual site and carvings.

(d) Detailed description of the carved stone

This section will cover four key questions:

What type of stone? eg sandstone, granite etc.

What decay/degradation forms are present and what are their physical manifestations?

Are biological growths present ?

Is there evidence for human intervention (conservation, rubbings, vandalism, etc.)?

The four questions are interlinked and can be used to confirm or refute ideas/answers generated in this part of the assessment, for example the type of stone will suggest possible forms of decay which can then be confirmed or denied by further observation. However, it is important that the questions are considered by an iterative process until a solution that agrees with all observations is found. Answers to one question should not be used as a short cut to answer a second one - for example if the stone is sandstone it cannot be immediately concluded that the decay type will be delamination. There will also be some links to the other three parts - for example, if possible salt damage is observed what, if any, are the possible environmental sources. It may also be necessary to go back and reassess the answers to the earlier parts in the light of the detailed assessment of the stone.

(e) Assessing the condition, the causes of decay and the underlying factors contributing to decay

The final part of the recording is to make an assessment of the condition of the carved stone. This will take the form of a series of comments on observed damage and observed changes in the condition relative to earlier records or earlier condition assessments. Whenever possible the assessment should be objective and should be justified by the observed facts. If the stone is found to be suffering damage, then the observed decay or damage should be linked to the underlying factors contributing to it and an estimate made of the relative importance of each factor.

Our experience in piloting this methodology has been that this section is initially percieved by surveyors as the hardest to fill in. However, all have found its use becomes easier with practice. We believe it is important that each surveyor attempt this section, so that the analysis of the causes of decay is made by someone with first-hand knowledge of the condition of the carved stone. If you are having difficulty in completing this section, please contact us at the address below for advice.

2. Recording Carved Stones

The following pages contain examples of Location Plan and Carved Stone Detail sketch sheets and the Site and Carved Stone Record Forms with accompanying text that should be used as a reference when recording a site. The completed assessment should contain a Site Record Form and Location Plan for the site and a set of Carved Stone Record Forms and a Carved Stone Detail sketch for each carved stone assessed on that site. Blank copies of all the sketch sheets and forms are provided with this handbook. If more are required they can be photocopied or obtained from Historic Scotland at the address below.

3. Completed Forms

Completed forms should be sent to Technical Conservation, Research and Education Division, Historic Scotland, Longmore House, Salisbury Place, Edinburgh, EH9 1SH in the reply paid envelopes included at the back of this handbook.
If you have any queries regarding the completion of the record forms, please contact us at the above address or by telephone on 0131 668 8668, or e-mail on cbrown.hs.scb@gtnet.gov.uk

Carved Stone Decay in Scotland - Site Record Form

The Site Record Form is designed to contain the information on the location and environment of the site. It allows the assessor to put the carved stone in its context and to assess the potential impact of its environment

1. TITLE BAR:

Site Name: This should correspond to the name used by Historic Scotland.

National Grid Reference: 6 or 8 figure grid reference.

No of carved stones on site: If more than one carved stone is present, each stone should be numbered, with the number marked on the location plan (see below). Use existing HS or NMRS numbers where possible.

HS Index No.: This is the Historic Scotland Number (for scheduled monuments).

NMRS No.: This is the reference number used by the RCAHMS and can be obtained from them.

Other Names: Some sites are known by several names, which should all be recorded.

2. LOCATION: Record details of the site on a location plan.

(a) Position: Information that describes the location of the site, for example 300m north of A888 cross-roads. If necessary, the general location of the monument relative to other monuments, buildings or features should be noted to supplement the location plan. This could also include an indication of whether the carved stones under investigation are in their original positions.

(b) General Aspect: The general orientation and aspect should be included here, for example north facing outcrop on lower valley slopes.

3. SURROUNDINGS/ LAND USE: This section on the environment covers the area around the site. It may be necessary to collect data for a radius of up to 100m if the surroundings are very varied.

3.(a) Rural Sites:

(i) Land Use: Select which of the following land use types occur within 5m of the site, and from 5 to 100m from the site.

Seaside
Machair
Rough Grazings
land containing semi-natural vegetation used or suitable for grazing
Grassland not disturbed
includes unimproved grassland and species-rich grassland
Grassland not recently disturbed
created grassland not reseeded for more than 10 years
Cultivated land
created grassland or grassland reseeded in last 10 years, arable, allotments
Wetlands
normally saturated with water for a significant proportion of the year
Native or semi-native woodland
Amenity woodland or orchard
Plantation Woodland
includes new native woodland
Scrub
low growing woody vegetation
Bracken
Parkland
Golf Course
Amenity Grassland
small private gardens, recreation grounds
Natural exposures
inland cliff, scree, cave, other exposure
Artificial exposures and waste tips
mineral quarry, spoil, mine, refuse tip, demolition sites
Peat extraction
Waste ground
Constructions
Structure forming own land use, such as a castle, abbey or unvegetated part of a chambered cairn
Built Over
public or private housing, or a monument surviving under a building
Burial Ground
Thoroughfare
Verge of thoroughfare
Land boundary
Running Water
Other

(ii) Soil type: Tick one or more of the boxes. For the purposes of this form a simple description of the soil is required using the following definitions: Sand - the grains can be seen and felt; Silt - the grains cannot be seen but can be felt; Clay - the grains cannot be seen or felt. A peat is easily recognised by its dark colour and high organic content. If the soil is waterlogged then this should be noted.

(b) Urban/Suburban Select the land use types as described above for rural sites.

4. ENVIRONMENT

(a) Exposure to wind and rain: Ideally this will be established from existing records, for example the Driving Rain Index or local meteorological data, which may be available in the reference section of your local library. If these are not available then some estimate can be made (eg severe exposure, moderate exposure, low exposure).

(b) Frost: Ideally this will be established from existing records, for example the Macaulay Land Research Institute records or local meteorological data which may be available in the reference section of your local library. If these are not available then some estimate can be made (eg severe frost, moderate frost, low frost).

(c) Pollution: Ideally this will be established from existing records, for example Netcen or local authority data which may be available in the reference section of your local library. If these are not available then some estimate can be made (eg high, moderate, low).

5. DATE OF VISIT: When the assessment was carried out.

6. NAME(S) OF SURVEYOR(S): Who carried out the assessment.

Carved Stone Decay in Scotland - Site Record Form

1. TITLE BAR:

Site Name: | National Grid Ref: | No. of carved stones on site:

HS. Index No. (if relevant): | NMRS No. (if relevant): | Other Ref. No. (if relevant):

Parish: | Local Authority Area: | Status: Scheduled ☐ Listed ☐ Neither ☐

Other Names (if relevant):

2. LOCATION: (Record detail on location plan)

(a) Position

(b) General Aspect of the site:

3. SURROUNDINGS/LAND USE: If rural go to (a), if urban/suburban go to (b)

(a) Rural

(i) Land Use:

< 5m

> 5m up to 100m

(ii) Soil type: Sand ☐ Silt ☐ Clay ☐ Peat ☐ Water logged ☐

(b) Urban/Suburban

(i) Land Use:

< 5m

> 5m up to 100m

4. ENVIRONMENT

(a) Exposure to wind and rain (Driving Rain Index):

(b) Frost:

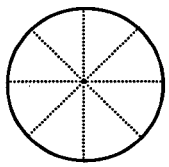
(c) Pollution:

5. DATE(S) OF VISIT

6. NAME(S) OF SURVEYOR(S)

Site name: Sketch No.

Date: Drawn by:



Indicate North

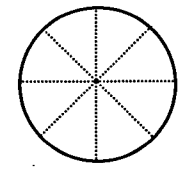
Location Plan

If the stone has not been visited previously, prepare a location plan to show the approximate location of the stone relative to the surrounding features (for example other stones, buildings, trees and walls). In some cases, the surrounding environment will include masonry work or other carvings and all of these need to be included on the location plan and if further detail is required then it should be noted on the recording form. In preparing the drawing some indication of scale must be given and if reference is being made to distant objects (eg a house 100m away) then the approximate distance and direction should be included.

Note: Experience in the field suggests that it is better to make a rough sketch in a note book or on sheets, and to prepare the final diagram at a later time. Use fine black pens for the final version, making appropriate use of different thicknesses of point.

Site name: Sketch No. Stone No.:

Date: Drawn by:



Indicate North

Carved Stone Detail

A carved stone detail sketch should be made to identify the number of pieces of stone and their relative positions, and a record made to show the outline of the carved stone and, where appropriate, to identify the number of decorated faces. Where it is necessary to describe each face separately, identify each one by the direction it faces. It will be helpful to add overall dimensions to the sketch, in addition to noting these on Carved Stone Record Form (1)

First draw the outline of each stone face to be recorded, then annotate the following:

Key: -------- extent of carving

area of decay by dissolution

area of decay by erosion

area of decay by delamination

area affected by formation of crust

area of algae/lichen/moss cover

Carved Stone Decay in Scotland - Carved Stone Record Form (1)

This sheet of the form is designed to provide the basic information on the carved stone when it is first seen. It allows the assessor to look at the stone and to record some initial impressions. Much of the information required for this form may be available from the background research.

SITE NAME: Use the HS name on the Site Record Form. If no HS name exists use the "Other Name".

CARVED STONE NO.: This number is important as it provides a unique identification number for each carved stone on a site. Use existing HS or NMRS numbers where possible.

7. TYPE OF CARVED STONE: Natural Outcrop where the carving is on an outcrop of stone that is (or appears to be) joined to the surrounding geology.
Free-standing Stone where a carving is on a free standing stone or stones (for example a carved boulder, gravestone or Pictish stone).
Architectural where the carving forms part of a building or structure, for example a fireplace or coat of arms.

8. FURTHER DETAIL: Give further detail in terms of one of the following:-

Cupmarks or cup-and-ring mark and similar rock art *on horizontal rock outcrop*
Cupmarks or cup-and-ring mark and similar rock art *on vertical rock face*
Cupmarks or cup-and-ring mark and similar art *on stone/boulder*
Altar
Symbol stone (including Class 1 Pictish sculptures)
Cross slab (including Class 2 Pictish sculptures)
Cross-incised stone
Market cross
Tombstone (assume used as recumbent)
Gravestone (assume used as upright)
Refuge stone
Effigy
Sculptured stone (not ascribed to a more specific type)
Cave
Fountain
Sundial
Other free standing cross (not ascribed to a more specific type)
Other inscribed stone (not ascribed to a more specific type)
Other sculptured stone (not ascribed to a more specific type)
Other (describe)

9. PERIOD: This should be one of the following:
Prehistoric
Roman
Early Medieval (includes all Pictish, Gaelic, Norse, Anglian, British and Early Scottish stones)
Medieval
Post-Medieval
Victorian and later

10. DESCRIPTION: A brief description of the monument, for example ll cup and ring marks

11. DEGREE OF SHELTER: Tick one box.

12. MEASUREMENTS:

(a) Number of stones: Some carvings will be constructed from a number of stones, for example a fireplace will contain at least three separate stones. The number of stones should be recorded. A sketch should be made to show their relative positions and allow each to be identified by a number (eg Stone 1A, 1B, 1C).

(b) Orientation: The orientation of each stone and face should be determined and recorded.

(c) Number of carved faces: Some stones will have more than one carved face or surface. Each face should be identified by the direction it faces. For example, Stone 1A, NE.

(d) Dimensions: The greatest height, width and depth (to the nearest centimetre) for each stone where possible. The dimensions should also be included on the Carved Stone Detail sketch. If the carving contains more than one stone, the basic dimensions of each stone should be recorded.

13. CARVING: Information should be recorded on the following four areas:

(a) Surface Preparation: The stone(s) should be examined to determine whether the surface was prepared prior to use ie the surface was dressed prior to carving. Tick the appropriate box(es).

(b) Type of carving: Incised or relief. Tick the appropriate box(es).

(c) Depth of carving: The depth of carving or incision should be estimated and recorded for coarse and fine detail (give a range of depths in millimetres). If some areas are weathered then a range of depths may need to be given. In cases where the stone is part of an architectural detail, for example a cornice, this should be noted but not used in determining the depth of carving.

(d) Is the carving making some areas decay at different rates?: If the carving is causing the stone to weather, for example by channelling rainwater flow in some areas or causing pooling of water in others, then this should be noted.

Carved Stone Decay in Scotland - Carved Stone Record Form (1)

SITE NAME: CARVED STONE NO.

7. TYPE OF CARVED STONE (tick the appropriate box): Natural Outcrop ☐ Free Standing Stone ☐ Architectural ☐

8. FURTHER DETAIL:

9. PERIOD (tick the appropriate box):

Prehistoric ☐ Roman ☐ Early Medieval ☐ Medieval ☐ Post- Medieval ☐ Victorian and later ☐

10. DESCRIPTION:

11. DEGREE OF SHELTER: (tick the appropriate box) Enclosed ☐ (Inside a building) Covered but still ☐ open in some places Sheltered ☐ Exposed ☐ Very ☐ Exposed

12. MEASUREMENTS:

(a) **Number of stones:**

(b) **Orientation**
Stone(s):

(c) **Number of carved faces:**

(d) **Dimensions: (these should also be included on the Carved Stone Detail sketch):**

Stone No.:
Overall height (cm): Width (cm): Depth (cm):

Stone No.:
Overall height (cm): Width (cm): Depth (cm):

Stone No.:
Overall height (cm): Width (cm): Depth (cm):

13. CARVING:

(a) Surface preparation: (tick the appropriate box(es)) Prepared ☐ Unprepared (rough) ☐

(b) Type of carving: (tick the appropriate box(es)) Relief ☐ Incised ☐

(c) Depth of carving: (i) Coarse features: (ii) Fine detail:

(d) Is the carving making some areas decay at different rates?

Carved Stone Decay in Scotland - Carved Stone Record Form (2)

GEOLOGY AND DECAY

This section, relating to the geology and petrography of the carved stones, is one of the key areas and also one of the most difficult because of the very varied range of rock types found in Scotland. Evidence from the research has shown that the stone type and how it is used will control the forms of decay to which a carving may be susceptible, whilst the environment will control the rate at which decay takes place.

SITE NAME: Use the HS name on the Site Record Form. If no HS name exists use the "Other Name".

CARVED STONE NO.: This number is important as it provides a unique identification number for each carved stone on a site. Use existing HS or NMRS numbers where possible.

14-17. LITHOLOGY, FABRIC, GRAIN SIZE AND SHAPE, AND DECAY

It is important that the stone type is determined during the assessment. If the carved stone has been researched and recorded at other times, then there may well be a description, however brief, of the type of stone used. This information can be used as an indicator but it is important to either check this or to make a judgement of the type of stone during the assessment on site. **It is proposed that this is done by following a decision tree in the form of the identification key given below.** For the first part of the key choose an area of stone that seems sound and does not have too much decay as this should make the identification easier. The key is for indigenous stone types. If the stone in question does not seem to fit or is likely to be imported then go straight to (12).

The answers are used to complete **SECTIONS 14 - 17** of Carved Stone Record Form (2).

IDENTIFICATION KEY TO LITHOLOGY

Sedimentary stones:

The commonest sedimentary stones are limestones and sandstones. The clearest features to look for in a sedimentary stone are the bedding planes which are natural layers formed as the stone was deposited. Many stones will contain a combination of narrow and wide layers. The important ones for this key are those that show a distinct change in grain size, colour or texture. Limestones are generally white, cream or buff in colour and may contain fossil remains. Sandstones are usually yellow, brown or red and the grains of sand are often visible.

Igneous and Metamorphic stones:

The other groups of stones that are likely to be found are igneous and metamorphic. Igneous rocks are formed during volcanic and seismic activity. They are generally more dense than sedimentary stones and contain discrete crystals which are often white, pink, brown or black. The commonest igneous rocks used for carving and building are granites. Metamorphic stones are derived from igneous or sedimentary rocks that have been subjected to heat and pressure. The group includes slates, marbles, gneisses and schists and the commonest colours are grey, blue or green. The slates will contain cleavage planes, but schists and gneisses can appear to be without bedding or cleavage planes.

Record the answers to this identification key in Section 14.

(1) Are individual grains (rather than crystals) visible?	If yes then go to (2). If no go to (4).
(2) Are the grains quartz (sand)	If yes then the stone is a sedimentary **sandstone** go to (7). If no go to (3).
(3) Are the grains like chalk?	If yes then the stone is a sedimentary **limestone** go to (7). If no go to (4).
(4) Are any layers visible?	If yes then the stone is probably a **metamorphic slate** go to (9). If no go to (5).
(5) Are black, white or pink crystals present?	If yes then the stone is intrusive **igneous,** probably a **granite** go to (10). If no go to (6).
(6) Is there some evidence of a fabric, eg veining or mineral separation?	If yes the stone is a **metamorphic schist/gneiss** go to (8). If no the stone is an extrusive **igneous** rock (eg **basalt**) go to (11).

(7) SEDIMENTARY STONE

FABRIC (Record in Section 15)

Veins

The presence of mineral or crystal veins should be recorded and their colour, width and continuity noted.

Bedding planes

These are the natural layers formed during deposition of the stone. The description should include the thickness between planes and the orientation of the planes relative to the stone, ie is the stone standing with the bedding planes vertical or horizontal.

GRAIN SIZE AND SHAPE (Record in Section 16)

The range of sizes can be expressed as coarse (easily visible with the naked eye), medium (can be seen with the naked eye) or fine (only visible when magnified). The shape should be recorded as rounded or angular.

Some sandstones will contain large pebbles and other fragments of rock in the stone. The number (many, some, few) and approximate size range should be recorded.

TYPES OF DECAY (Record in Section 17)

Any stone that has been exposed to the environment will have undergone some weathering. When the weathering reaches a certain point the stone will show evidence of decay. The form the decay takes and its severity are a function of the stone type and of the environment.

Limestone

The most common types of decay associated with **limestones** can be grouped as:

A Negative - loss of material

dissolution eg. in rainwater leading to smoothing of the surface, exposure of fossils and increased porosity between the grains.
erosion eg. by rainwater action
delamination (areas flaking off)

B Neutral - **alteration of minerals** eg. formation of gypsum

C *Positive* - **formation of crust** eg. salts in the form of crystals or combined with black particles.

Sandstone

The most common types of decay associated with **sandstones** can be grouped as:

A Negative - loss of material

erosion eg. smoothing of the surface and increased porosity between the grains occur when crumbling is followed by rainwater action
delamination (areas flaking off, often parallel to the face of the stone).

B Neutral - **change in properties** eg. roughening of the surface occurs when crumbling occurs with no subsequent loss of material.

C *Positive* - **formation of crust** eg. salts in the form of crystals or combined with black particles.

(8) METAMORPHIC SCHIST/GNEISS

FABRIC (Record in Section 15)

Layering

This type of stone can contain some separation of minerals. If so, the description should include the distance between layers and the orientation of the layers relative to the stone, ie is the stone standing with the layers vertical or horizontal.

GRAIN SIZE AND SHAPE (Record in Section 16)

The range of sizes can be expressed as coarse (easily visible with the naked eye), medium (can be seen with the naked eye) or fine (only visible when magnified). The shape should be recorded as rounded or angular.

Some stones will contain large pebbles and other fragments of rock in the stone. The number (many, some, few) and approximate size range and colour should be recorded.

TYPES OF DECAY (Record in Section 17)

Any stone that has been exposed to the environment will have undergone some weathering. When the weathering reaches a certain point the stone will show evidence of decay. The form the decay takes and its severity are a function of the stone type and of the environment.

The most common types of decay associated with metamorphic schists/gneisses can be grouped as:

A Negative - loss of material

erosion eg. smoothing of the surface occurs when crumbling is followed by rainwater action.
delamination (areas flaking off).

B Neutral - **alteration of minerals** eg. formation of clays.

(9) METAMORPHIC SLATE

FABRIC (Record in Section 15)

Veins	The presence of mineral or crystal veins should be recorded.
Cleavage Planes	These are the natural layers formed during the period when the stone was subjected to heat and pressure. The description should include the thickness between cleavage planes and the orientation of the planes relative to the stone, ie is the stone standing with the bedding planes vertical or horizontal.
GRAINS SIZE AND SHAPE (Record in Section 16)	The range of sizes can be expressed as coarse (easily visible with the naked eye), medium (can be seen with the naked eye) or fine (only visible when magnified). The shape should be recorded as rounded or angular.
TYPES OF DECAY (Record in Section 17)	Any stone that has been exposed to the environment will have undergone some weathering. When the weathering reaches a certain point the stone will show evidence of decay. The form the decay takes and its severity are a function of the stone type and of the environment. The most common types of decay associated with metamorphic slates can be grouped as: *A Negative - loss of material* **dissolution** eg. in rainwater leading to smoothing or the surface and increased porosity between the grains. **erosion** eg. smoothing of the surface occurs when crumbling is followed by rainwater action. **delamination** (areas flaking off along cleavage planes) *B Neutral* - **alteration of minerals** eg. oxidation of iron pyrites

(10) IGNEOUS - GRANITE

FABRIC (Record in Section 15)

Veins	The presence of mineral or crystal veins should be recorded.
GRAIN SIZE AND SHAPE (Record in Section 16)	The range of sizes can be expressed as coarse (easily visible with the naked eye), medium (can be seen with the naked eye) or fine (only visible when magnified). The shape should be recorded as rounded or angular.
TYPES OF DECAY (Record in Section 17)	Any stone that has been exposed to the environment will have undergone some weathering. When the weathering reaches a certain point the stone will show evidence of decay. The form the decay takes and its severity are a function of the stone type and of the environment. The most common type of decay associated with granites is: *A Neutral* - **alteration of minerals** eg. formation of clays

(11) OTHER IGNEOUS (NOT a granite type) eg. basalt

FABRIC (Record in Section 15)

Veins	The presence of mineral or crystal veins should be recorded.
GRAIN SIZE AND SHAPE (Record in Section 16)	The range of sizes can be expressed as coarse (easily visible with the naked eye), medium (can be seen with the naked eye) or fine (only visible when magnified). The proportion of fine and coarse crystals should be noted. The shape should be recorded as rounded or angular.
TYPES OF DECAY (Record in Section 17)	Any stone that has been exposed to the environment will have undergone some weathering. When the weathering reaches a certain point the stone will show evidence of decay. The form the decay takes and its severity are a function of the stone type and of the environment. The most common type of decay associated with igneous rocks is: *A Neutral* - **alteration of minerals** eg. formation of clays

(12) UNKNOWN — Note the colour, fabric, grain size and shape and observed decay.

Carved Stone Decay in Scotland - Carved Stone Record Form (2)

GEOLOGY AND DECAY

SITE NAME: CARVED STONE NO.

14. LITHOLOGY: Tick the appropriate boxes after completing the identification key opposite:

(a) State whether the stone is: Sedimentary ☐ Igneous ☐ Metamorphic ☐ Unknown ☐

(b) State whether the stone is: Limestone ☐ Granite ☐ Slate ☐

Sandstone ☐ Other Igneous ☐ Schist/Gneiss ☐

(c) Colour: White ☐ Clear ☐ Red ☐ Brown ☐ Grey ☐ Blue ☐ Green ☐ Pink ☐ Other ☐ (specify)

15. FABRIC: Tick the appropriate boxes after completing the identification key opposite and comment:

(a) Veins ☐ Comments:

(b) Bedding planes ☐ Comments:

(c) Layering ☐ Comments:

(d) Cleavage planes ☐ Comments:

16. GRAIN SIZE AND SHAPE: Tick the appropriate boxes after completing the identification key opposite and comment:

(a) Size: Fine ☐ Comments:

Medium ☐ Comments:

Coarse ☐ Comments:

Pebbles/Rock Fragments ☐ Comments:

(b) Shape: Rounded ☐ Comments:

Angular ☐ Comments:

17. OBSERVED DECAY:

Refer to typical types of decay for the particular stone type identified (these can be found in the Key to Lithology), for example dissolution, delamination, formation of crust. Note: some forms of neutral decay eg. alteration of minerals, may require advice from a geologist before they can be identified.

Carved Stone Decay in Scotland - Carved Stone Record Form (3)

BIOLOGICAL GROWTHS AND HUMAN INTERVENTION

This form covers the possible effects of biological growths and human intervention - both official (eg to conserve and clean) and unofficial (eg rubbings and vandalism).

SITE NAME: Use the HS name on the Site Record Form. If no HS name exists use the "Other Name".

CARVED STONE NO.: This number is important as it provides a unique identification number for each carved stone on a site. Use existing HS or NMRS numbers where possible.

18. BIOLOGICAL:

(a) Algae/lichens/mosses: The location and extent of areas or colonies of algae, lichen or mosses should be recorded on the Carved Stone Detail sketch. The extent of the cover should be described as a percentage here.

(b) Other Plants/trees: The location of plants or trees on the carved stone or nearby (that is within 10m) should be recorded.

(c) Birds/animals: Evidence of bird droppings or damage by animals should be recorded.

(d) Effect on stone: The overall effect of the different biological factors should be recorded, for example loss of surface, pitting etc.

19. PAST HUMAN ACTIVITIES:

Any evidence for human activities that have affected the carved stone should be recorded here under the headings repairs, cleaning, rubbings and other, eg applying weedkiller on adjacent ground. Their effect on the stone should be noted at the end of the section. Background information on previous repairs and cleaning may be available from Historic Scotland.

20. PUBLISHED HISTORY:

References to any relevant published research identified during the assessment should be listed here.

21. PHOTOGRAPHIC RECORD:

Any photographs of the site, carved stone(s), decay or biological growths taken during the assessment should be listed here. The preferred format is 15cm x 10cm (6"x4") colour prints. Each print should be clearly labelled and numbered on the reverse with soft pencil using the site/ stone/ face codes described on Carved Stone Record Form (1).

Carved Stone Decay in Scotland - Carved Stone Record Form (3)

BIOLOGICAL GROWTHS AND HUMAN INTERVENTION

SITE NAME: CARVED STONE NO.:

18. BIOLOGICAL:

(a) Algae/lichens/mosses:

(b) Plants/Trees:

(c) Birds/animals:

(d) Effect on stone:

19. PAST HUMAN ACTIVITIES:

(a) Repairs: cramps, dowels, cement, others

(b) Cleaning:

(c) Rubbings:

(d) Other:

(e) Effect on stone:

20. PUBLISHED HISTORY:

21. PHOTOGRAPHIC RECORD:

Carved Stone Decay in Scotland - Carved Stone Record Form (4)

CAUSES OF DECAY AND UNDERLYING FACTORS CONTRIBUTING TO DECAY

The final part of the recording is to make an assessment of the condition of the carving. This will take the form of a series of comments on observed damage and observed changes in the condition relative to earlier records or earlier condition assessments. Whenever possible the assessment should be objective and justified by observed facts. If the carving is found to be suffering damage, then the observed decay or damage should, if possible, be linked to the underlying factors contributing to it and an estimate made of the relative importance of each factor.

SITE NAME: Use the HS name on the Site Record Form. If no HS name exists use the "Other Name".

CARVED STONE NO.: This number is important as it provides a unique identification number for each carved stone on a site. Use existing HS or NMRS numbers where possible.

The following Steps 1 to 7 are designed to allow connections to be made between observed stone type, form of decay and possible environmental parameters. (It must be remembered that decay processes are not simple and that although the tables provided may highlight one parameter as being important, others will be involved, for example water is essential to salt crystallisation. In some cases the origin of the problem will be obvious but in others detailed observation on site will be required.) A completed example of this form has been included on p18 to guide those new to the methodology. It is recommended that you go through this example before filling in the form.

Steps 1 and 2 are taken from the assesssment carried out as part of Carved Stone Record Form (2), Sections 14 and 17. Steps 3 and 4 are taken from the information given in Tables 1 and 2 and act, in part, as a check on the assessment of the stone type and its decay forms. Step 5 is an assessment of the likelihood of each parameter in Step 4 being relevant in this particular case. Step 6 is a list of the actual causes of decay and deterioration. Step 7 is an assessment of the underlying factors that may be contributing to decay and deterioration.

Step 1 Enter the stone type based on the assessment made in Section 14, eg. sandstone, limestone, etc.
Step 2 Enter the forms of decay/deterioration based on the assessment made in Section 17 eg. delamination, etc.
Step 3 Use Table 1 to check the expected forms of decay/deterioration for the specified stone type. Tick the relevant entries on the form.

Table 1. General forms of decay that are found on different types of stone:

	Negative - loss of material			Neutral			Positive
	Dissolution	Erosion	Delamination	Change in properties	Change in structure	Alteration of minerals	Formation of crust
Limestone	✔	✔	✔	✔	✔	✔	✔
Granite				✔		✔	
Sandstone		✔	✔	✔			✔
Other Igneous eg Syenite/ Basalt				✔		✔	
Slate	✔	✔	✔	✔		✔	
Schist/Gneiss		✔	✔	✔		✔	

Table 2. Links between observed decay and environmental parameters:

	Negative - loss of material			Neutral			Positive
	Dissolution	Erosion	Delamination	Change in properties	Change in structure	Alteration of minerals	Formation of crust
Rainwater	✔				✔	✔	
Frost		✔	✔	✔	✔		
Temperature/ Humidity			✔	✔			
Salt Crystallisation		✔	✔	✔	✔		
Acid Deposition	✔			✔		✔	✔
Biological	✔	✔		✔		(✔)	✔
Human		✔	✔	✔	✔		

Step 4 Use Table 2 to list the environmental parameters associated with the forms of decay observed at the stone and noted in Step 2

Step 5 Assess the likely importance of each environmental parameter for the carving under consideration and enter Yes (Y) or No (N) in the relevant box. Where possible give a reason for the assessment. Further guidance on the parameters associated with particular forms of decay/deterioration are given below:

Rainwater *- the origin of rainwater is obvious but the routes by which it can reach the carving are more complex. If the carving is on a free-standing stone then the only possibility is direct rainfall. If the carving is part of a larger structure then it is worthwhile to examine rainwater goods (gutters, downpipes, drains) and also to look if there are areas of walling above the carving that could be acting as a catchment for rain or if its orientation makes it prone to driving rain.*

Frost *- this should be a straightforward assessment of whether the location is subject to frost and whether the location is particularly exposed and subject to wind chill. It is also important to consider the potential water content of the carving - see above - as frost will only damage stone where the pore structure contains water.*

Temperature and Humidity *- assessment of these should also be straightforward but additional details worth noting are the degree of sheltering and any evidence for long periods of damp - for example heavy biological colonisation. The possibility of condensation in non-rainy weather should also be considered.*

Salt Crystallisation *- this is always associated with the movement of moisture which transports soluble salts to locations where conditions are suitable for evaporation to occur. The moisture can have two sources - rainwater penetrating the stonework and moving down or through the stonework, and moisture rising from the ground. This means it is important to identify possible sources of moisture - for example, is the stone partially embedded in the soil?, is it exposed to direct rain?, etc. - and to identify sources of salts - for example, the surrounding ground, lime mortar, agricultural fertilisers and proximity to the coast. In extreme cases salt crystals will be visible on the surface of the stone and it may be possible to collect small samples for chemical analysis.*

Acid Deposition *- this can have two forms, wet deposition via rainfall and dry deposition of gases and particulates on to wet or damp surfaces. The most important pollutants are sulphur dioxide and oxides of nitrogen, both from the burning of fossil fuels. Information on pollutant concentrations should be available from the recording forms but it is also important to look for very local sources - boilers, chimneys, etc.*

Biological *- biological growth needs moisture so the comments made above on rainwater and salts are relevant. Other things to look for include evidence of neglect (the site is becoming overgrown and root damage is occurring), the site or stone is being used as a roost or perch by birds, sources of nutrients (bird dropping, etc.). Some assessment of the effect of biological growths can be made if the colonised stone is compared to a 'fresh' area of stone.*

Human *- evidence for the causes of decay attributed to human intervention are wide ranging and cover such diverse areas as evidence of reuse, graffiti, the taking of rubbings and castings or vandalism and fractures or cracks associated with the original carving. In some cases very detailed observation is necessary but in others the cause of decay will be all too obvious.*

Step 6 Decide on the likely causes of decay, for example dissolution by rainwater or erosion due to frost damage and enter these in the box provided.

Step 7 Add extra information on the underlying factors contributing to decay, for example why is the rainwater reaching the carving? - poor gutters, exposed location etc, and enter these in the box provided.

Carved Stone Decay in Scotland - Carved Stone Record Form (4)

Worked Example:

Assessing a carved stone monument using the recording form has identified the stone as sandstone which is eroding and delaminating on surfaces sheltered from direct rainfall. Step 3 shows that this is a form of decay typical of sandstone. Step 4 shows that erosion and delamination can be caused by frost, temperature/humidity, salt crystallisation, biological or human effects. However, if it is sheltered, frost damage is unlikely as the stone will not become saturated with water and the conclusion would be that the observed decay is being caused by salt crystallisation arising from fluctuations in temperature and humidity.

Step 1	Type of Stone (Section 14)	Sandstone						
Step 2	Decay Observed (Section 17)	Erosion Delamination						
Step 3	Tick the potential forms of decay for the stone type (see Table 1)	Dissolution	Erosion	Delamination	Change in properties	Change in structure	Alteration of minerals	Formation of crust
			✔	✔	✔			✔
Step 4	Tick the potential environmental parameters associated with the Decay Observed noted at Step 2 (see Table 2)	Rainwater	Frost	Temperature/ Humidity	Salt Crystallisation	Acid Deposition	Biological	Human
			✔	✔	✔		✔	✔
Step 5	What environmental parameters are relevant for this stone and why? Y/N (Reason)		N (Sheltered)	Y (wetting/ drying cycles observed)	Y (Salt seen, rising damp)		N (no biological growth noted)	N (no evidence seen)
Step 6	Causes of decay	Delamination due to salt crystallisation caused by wetting and drying cycles.						
Step 7	Underlying Factors contributing to decay	The main cause of the delamination is the pooling of groundwater leading to salt damage. Poor drainage and the use of road salts in the area is increasing the problem.						

Carved Stone Decay in Scotland - Carved Stone Record Form (4)

CAUSES OF DECAY AND UNDERLYING FACTORS CONTRIBUTING TO DECAY

SITE NAME: CARVED STONE NO.:

Step 1	Type of Stone (Section 14)							
Step 2	Decay Observed (Section 17)							
Step 3	Tick the potential forms of decay for the stone type (see Table 1)	Dissolution	Erosion	Delamination	Change in properties	Change in structure	Alteration of minerals	Formation of crust
Step 4	Tick the potential environmental parameters associated with the Decay Observed noted at step 2 (see Table 2)	Rainwater	Frost	Temperature/ Humidity	Salt Crystallisation	Acid Deposition	Biological	Human
Step 5	What environmental parameters are relevant for this stone and why? Y/N (Reason)							
Step 6	Causes of decay							
Step 7	Underlying Factors contributing to decay							

APPENDIX D
PRINCIPAL LEGISLATION APPLICABLE TO CHURCHYARDS IN SCOTLAND

Ancient Monuments and Archaeological Areas Act 1979.

Burial Grounds (Scotland) Act 1855

Church of Scotland (Property and Endowments) Amendment Act, 1933

Church of Scotland (Property and Endowments) Act, 1925.

Civic Government (Scotland) Act 1982.

Ecclesiastical Buildings and Glebes (Scotland) Act 1868

Forestry Act 1967
c. 10, s.9 Requirement of licence for felling.

General Development Procedure (Scotland) Order 1992.

Local Government, Planning and Land Act 1980
c. 65, sch.28 Urban Development Corporations: Land

Local Government (Scotland) Act 1973
c. 65, s.169 Burial grounds, churchyards etc.

Local Government (Scotland) Act, 1894

Parochial Buildings (Scotland) Act, 1862

Protection of Animals (Scotland) Act 1912.

The Planning (Listed Buildings and Conservation Areas)(Scotland) Act 1997.

The Local Government (Transitional and Consequential Provisions and Revocations) (Scotland) Order 1996

The Waste Management Licensing Regulations 1994

Town and Country Planning (Scotland) Act 1972
c. 52, s.118 Provisions as to churches and burial grounds.

Town and Country Planning (Scotland) Act 1997

Wildlife and Countryside Act 1981.

APPENDIX E
USEFUL ADDRESSES (AS AT 31 DECEMBER, 2000)

Association of Burial Authorities Ltd
139 Kensington High Street
London W8 6SU
Tel: 020 7937 0052

Ancient Monuments Board for Scotland
Longmore House, Salisbury Place
Edinburgh EH9 1SH
Tel: 0131 668 8764)

BTCV Scotland
Balallan House
24 Allan Park
Stirling FK8 2QG
Tel: 01786 479697
Fax: 01786 465359

Cemeteries Research Group
Institute for Research in the Social Sciences,
University of York, Heslington YO10 5DD
Tel: 01904 433689

Commonwealth War Graves Commission
2 Marlow Road, Maidenhead
Berkshire SL6 7DX
Tel: 01628 634221
Fax: 01628 771208

Confederation of Burial Authorities
The Gatehouse
Kew Meadow Path, Townmead Road
Richmond
Surrey TW9 4EN
Tel: 020 8392 9487

Council for Scottish Archaeology
c/o National Museums of Scotland
York Building
Queen Street
Edinburgh EH2 1JD
Tel: 0131 225 7534

English Heritage
23 Savile Row
London W1X 1AB
Tel: 020 7973 3000

Groundwork Foundation
85-87 Cornwall Street,
Birmingham, B3 3BY
Tel: 0121 236 8565

Heritage Lottery Fund
7 Holbein Place
London SW1W 8NR
Tel: 020 7591 6000
Fax: 020 7591 6255

Heritage Lottery Fund Scotland
28 Thistle Street
Edinburgh EH2 1EN
Tel: 0131 225 9450
Fax: 0131 225 9454

Historic Burghs Association of Scotland
PO Box 1124
Stirling
FK9 4ZW
Tel: 01786 833318
Fax: 01786 833318

Historic Scotland
Longmore House
Salisbury Place
Edinburgh EH9 1SH
Tel: 0131 668 8600

Historic Scotland
Conservation Centre
7 South Gyle Crescent
Edinburgh EH12 9EB
Tel: 0131 334 6367
Fax: 0131 334 6810

National Association of Monumental Masons
27a Albert Street
Rugby
Warwickshire CV21 2SG
Tel: 01788 542264
Fax: 01788 542276

National Federation of Cemetery Friends
42 Chestnut Grove,
South Croyden
Surrey CR2 7LH
Tel: 020 8651 5090

National Heritage Memorial Fund
7 Holbein Place
London SW1W 8NR
Tel: 020 7591 6000
Fax: 020 7591 6001

National Museums of Scotland
Chambers Street
Edinburgh EH1 1JF
Tel: 0131 225 7534
Fax: 0131 220 4819

National Trust for Scotland
Wemyss House
28 Charlotte Square
Edinburgh EH2 4ET
Tel: 0131 243 9300
Fax: 0131 243 9301

Royal Commission on the Ancient and Historic Monuments of Scotland
National Monuments Record of Scotland
John Sinclair House
16 Bernard Terrace
Edinburgh EH8 9NX
Tel: 0131 662 1456
Fax: 0131 662 1477(RCAHMS); 0131 662 1499 (NMRS)

Scottish Association of Preservation Trusts
c/o Cockburn Conservation Trust
Trunk's Close
55 High Street
Edinburgh EH1 1SR
Tel: 0131 557 8744
Fax: 0131 557 9387

Scottish Churches Architectural Heritage Trust
15 North Bank Street
Edinburgh EH1 2LP
Tel: 0131 225 8644

The Scottish Civic Trust
The Tobacco Merchants House
42 Miller Street
Glasgow G1 1DT
Tel: 0141 221 1466
Fax: 0141 248 6952

Scottish Genealogy Society
Library and Family History Centre
15 Victoria Terrace
Edinburgh EH1 2JL
Tel: 0131 220 3677
Fax: 0131 220 3677

Scottish Natural Heritage
12 Hope Terrace
Edinburgh EH9 2AS
Tel: 0131 447 4784
Fax: 0131 446 2277

Scottish Redundant Churches Trust
14 Long Row
New Lanark
Lanarkshire ML11 9DD
Tel: 01555 666023
Fax: 01555 665738

Scottish Society for Conservation and Restoration
The Glasite Meeting House
33 Barony Street
Edinburgh EH3 6NX
Tel: 0131 556 8417
Fax: 0131 557 5977

Scottish Stone Liaison Group
Room 133
Pentlandfield Business Park
The Bush
Roslin
Midlothian EH25 9RE
Tel: 0131 448 0313
Fax: 0131 440 4032

Scottish Records Association
Scottish Records Office
HM General Register House
Princes Street
Edinburgh EH1 4YY
Tel: 0131 535 1314
Fax: 0131 535 1360

Scottish Wildlife Trust
Cramond House
Kirk Cramond
Cramond Glebe Road
Edinburgh EH4 6NS
Tel: 0131 312 7765
Fax: 0131 312 8705

The Society for the Protection of Ancient Buildings in Scotland
The Glasite Meeting House
33 Barony Street
Edinburgh EH3 6NX
Tel: 0131 557 1551
Fax: 0131 557 1551