

THE BOOK  
OF THE  
OLD EDINBURGH  
CLUB

---

The Journal for  
Edinburgh History



Alan McKinney and Andrew McMillan, 'The Edinburgh Graveyard Project: A Social Solution and Methodology for Rebuilding Gravestones', *Book of the Old Edinburgh Club*, New Series 9 (2012), pp. 137–142

~~~~~

This article is extracted from **The Book of the Old Edinburgh Club, The Journal for Edinburgh History** ISSN 2634-2618

Content © The Old Edinburgh Club and contributors. All rights reserved.

For information about The Book of the Old Edinburgh Club (BOEC), including contents of previous issues and indexes, see <https://oldedinburghclub.org.uk/boec>.

**This article is made available for your personal research and private study only.**

For any further uses of BOEC material, please contact the Editor, The Book of the Old Edinburgh Club, at [editor@oldedinburghclub.org.uk](mailto:editor@oldedinburghclub.org.uk). The Club has a Take-Down Policy covering potential rights infringements. Please see <http://oldedinburghclub.org.uk/oec-take-down-policy>.



*Digitised by the Centre for Research  
Collections, Edinburgh University  
Library from the copy in the Library  
Collection*



THE EDINBURGH GRAVEYARD PROJECT: A SOCIAL SOLUTION AND  
METHODOLOGY FOR REBUILDING GRAVESTONES

ALAN MCKINNEY AND ANDREW MCMILLAN

THIS PAPER FOCUSES on the needs of relatively new graveyards, in use for less than 100 years or so, which will, in time, eventually be elevated to the status of 'historic graveyards'. In the United Kingdom responsible management of graveyards includes the assessment of stone memorials and the mitigation of risk of possible injury or death to people caused by collapsing or toppling monuments. In Scotland, although the responsibility for the condition of a grave and its headstone lies with the named lair holder and their descendants, in practice the necessary remedial work is seldom undertaken. Thus, in recent years, Scottish councils have taken action to eliminate the risks arising from unstable graveyard monuments. Effectively, this involved laying potentially unstable headstones flat on the ground. As many such headstones are made from porous rocks such as sandstone, inscriptions can degrade rapidly, and it is therefore desirable that the gravestones be rebuilt as soon as possible.

At Liberton Cemetery in Edinburgh a pilot project was developed to devise an innovative methodology to rapidly rebuild flattened gravestones using stainless steel pins in holes drilled into pre-set concrete bases. The pilot scheme, using those sentenced to 'Community Service' (effectively petty criminals), has been successful. It is now being promoted as an ideal project for a Scottish Government initiative where those sentenced under new 'Community Payback Orders' (equivalent to short custodial sentences of less than 3 months) will provide their labour for the duration of their sentence. As well as encouraging a worthwhile work ethic to be developed amongst those so sentenced, graveyards will be satisfactorily restored. In Edinburgh alone, over nine thousand headstones have been laid over and in Scotland as a whole there are tens of thousands of monuments that have been

treated in this manner. The pilot project offers a template for others to follow.

HISTORIC AND NEW GRAVEYARDS

It is thought that it was Confucius who once said that a 'Civilisation can be judged by the manner in which it looks after its elderly' but, whilst not seeking to compete with that renowned philosopher, perhaps it is possible to develop that thinking and suggest that 'Civilisation can be judged by the manner in which it respects its dead' and a cursory survey of the general condition of many of Scotland's graveyards clearly shows that the present generation is failing in every respect (fig. 1).

The government agency responsible for built heritage in Scotland, Historic Scotland, in its publication *Conservation of Historic Graveyards*, details the maintenance difficulties of older



Fig. 1. Liberton Cemetery, South Edinburgh, 2008. (© Alan McKinney.)

headstones and monuments (pre-1900) and, whilst that is very important, the present paper concentrates on the needs of relatively new graveyards, perhaps in use for less than 100 years or so but which, by the passage of time, will eventually be elevated to the status of ‘historic graveyards’.<sup>1</sup> In other words, by addressing the current problems of fallen or laid over headstones, we can restore the resting place of past generations and, at the same time, leave a legacy of which we could be proud.

Defining a graveyard as ‘historic’ presents a conundrum as every graveyard, from the time of the first interment, is immediately ‘historic’ from some family’s point of view and particularly when the fact that a headstone on a grave of someone who died in 1940 may well, within the next 30 years, be considered an ‘historic’ grave – effectively someone buried the year before the senior author of this paper was born becomes historic! Life is indeed short.

#### TRADITIONAL STONE MATERIALS

In Scotland historic gravestones (especially pre-1900) were constructed mainly from locally obtained stone. Scotland’s varied geology meant that a variety of sandstones, igneous and metamorphic rocks were employed both for building and monumental work.<sup>2</sup> Regional geological variations are reflected in the use of granite in the north east and south west of the country, with schist, psammite and slate memorials being popular choices in parts of the Highlands. Ease of working meant that sandstones were used more widely, but most particularly within the Central Belt of Scotland and in parts of Southern Scotland. Varying structural, lithological and mineralogical characteristics of these stones, combined with the effects of a maritime climate have resulted in a range of weathering phenomena. Some of these deterioration effects are well illustrated in Historic Scotland’s *Conservation of Historic Graveyards* and the ICOMOS-ISCS *Glossary of Stone Deterioration Patterns*.<sup>3</sup> With new technologies and increased importation of stone, granites and a range of other crystalline ‘hard rock’ has been used for Scottish 20th century memorials.

#### MANAGING THE SAFETY OF BURIAL GROUND MEMORIALS

A report entitled *Managing the Safety of Burial Ground Memorials* indicated that ‘over the last 30 years, 8 people in the UK have been killed when a memorial fell upon them’.<sup>4</sup> This report resulted in local authorities throughout the UK addressing the risk possibilities within the graveyards they manage and taking what is considered as ‘appropriate action’.

Whilst it is recognised that the actual responsibility for the condition of a grave and its headstone lies with the named lair holders or their descendants, Scottish councils, responsible for ground maintenance and cemetery furniture in the majority of Scotland’s graveyards, took action to eliminate the safety risks arising from unstable graveyard monuments in the cemeteries under their control. In Scotland, councils still issue ground rights in perpetuity but, with the passage of time, research has proven that it has become virtually impossible to trace the descendants and councils have stepped in to address the public safety issue arising from unstable monuments.

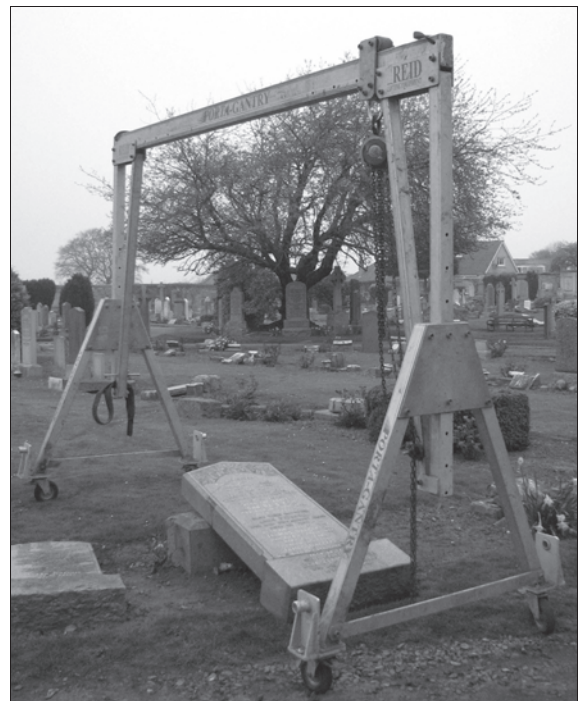


Fig. 2. Lifting gantry. (© Alan McKinney.)

## THE EDINBURGH GRAVEYARD PROJECT

### TAKING ACTION

The initial research sought to establish how each council in Scotland tackled the issue of unsafe gravestones and responses were received from every Scottish council. It is apparent that, whilst the scale of the problem varies around the country, councils covering a large rural area have additional challenges. For example, although not all are now open for new burials, Highland Council is responsible for some 258 cemeteries.

To determine the stability or otherwise of the headstones all monuments have been subjected to a visual and physical inspection. Unsafe monuments, to a height of 2.5m, were then submitted to a ‘topple test’ (the use of an appliance which delivers a prescribed force of 350 Newtons [c. 35 kg] against a stone to determine if the acceptable tolerances are exceeded) and if the stone in question failed such a test then it is lifted and laid flat in such a manner as to enable any inscription to be read (figs 1 and 2). For headstones of granite this may be a reasonable solution but, for those of sandstone, any inscription is subjected to excess rain water and can degrade.

The following lists some of the more significant comments from the Scottish councils:

*Aberdeen City Council*, having written to the last known address of some 100 lair holders and getting a nil response, abandoned any such search and now takes the ‘appropriate action’ if a headstone is deemed unsafe. The council has also spent £50k per annum re-erecting memorials which it had laid flat when they were deemed unsafe.

*Aberdeenshire Council* assessed the condition of the memorials within its graveyards in 2004 and categorised them as High, Medium or Low Risk. Contractors, from an approved list of memorial specialists, tender for this inspection work and contracts for the rebuilding of these memorials are awarded at an annual expenditure in the area of £100k per annum. An inspection of all memorials is undertaken every 5 years.

*Angus Council* has spent £28k per annum on its memorial repair/stabilisation programme. The Council, to minimise risks to the public, also ‘digs in’ memorials which have been categorised as ‘unsafe’ (fig. 3).

*Argyll & Bute Council*, a large rural area, has rebuilt some 2500 memorials and has allocated £24k over the past two years, but future funding was not specified. Having spent considerable sums rebuilding headstones (for example, *Perth and Kinross Council* spent £400,000 over the last 10 years) most councils are now abandoning any such programmes.

*Midlothian Council*, having placed hazard notices on faulty stones, simply locks the cemetery gates when 30% of the stones fail this test and become unsafe and those wishing to visit a grave must make an appointment to gain access to the locked cemetery.

*Dundee City Council* drives a wooden stake behind the faulty headstone and binds the stone to the stake by means of a tensioned plastic binder to keep the stone upright.

*East Dunbartonshire Council* considers memorials which have fallen, or perhaps been pushed over by vandals, as ‘safe’ and does not undertake any rebuilding work. It does carry out work on memorials which have been deemed unsafe.

A significant number of councils attempted to ‘guesstimate’ the number of unsafe monuments, with *East Ayrshire* suggesting that one in three of the 50,000 headstones in its cemeteries is at risk.

*North Ayrshire* (in 32 cemeteries) indicated that of its 67,000 headstones 35% posed a serious risk.

Only the *City of Edinburgh* could actually quantify the number of memorials it had laid flat – some 9483 headstones had been treated in this manner.



Fig. 3. A ‘dug in’ headstone. (© Alan McKinney.)

It is a matter of regret that, whilst a number of councils – over a number of years – have financed some valuable restorative work, the research indicates that such funding has now ceased.

Further research indicates that, in Scotland, there is no uniform approach to the erection of memorial headstones, with each council having its own rules and regulations, but the majority state that such work must be completed to the standards required of the ‘Code of Working Practice’ of the National Association of Monumental Masons (NAMM). However, it is also apparent that greater attention is now paid by councils to the manner in which new monuments are erected with the nature of the foundations, the heights of the memorials and the method of fixing now being stipulated. The stability of monuments is checked every five years.

Many councils clearly state the permitted maximum height of new memorial stones and this ranges from three feet (91 mm) up to 5 ft (150 mm)

or even to 6 ft (182 mm). Some have no height restrictions and permit larger memorials but many, where larger stones are permitted, state that new memorial stones must be in keeping with the existing memorial stones. This is particularly stated when new memorials are erected in older cemeteries.

The use of brick foundations is not now acceptable and poured concrete bases are required in all graveyards. In the preparation of new graveyards many councils install preformed reinforced concrete strip foundations and this enables a 100% accuracy in the placing of new memorials. Only solid stainless steel pins (grade 303 or higher) can now be used for the erection or re-erection of monuments.

#### ADDRESSING THE PROBLEM

Graveyards, by their very nature, are sad places but, with so many headstones now having been laid flat, visiting graveyards has certainly become a more depressing and distressing experience. How future generations assess the manner in which this generation has looked after these graveyards we can only speculate – but it is unlikely we would have any pride in such an assessment.

At the same time as the initial research was being undertaken, the Scottish Government, within the UK devolved system of government, developed the idea of ‘Community Payback Orders’ as an alternative to prison for crimes that would normally attract a three month jail sentence or less.<sup>5</sup> Whilst not denigrating the work involved in rebuilding a gravestone – although it is not ‘rocket science’ – it was suggested to the Minister that, with the appropriate supervision, such a scheme could make use of this labour force.<sup>6</sup>

As this project has two benefits (positive contribution to the community and an attempt to deflect people from a life of crime), it is perhaps appropriate to record the following information from the statistics from the Scottish Centre for Crime and Justice Research, 2008:

- The cost of keeping one person in prison for one year is £41,000;
- 66% of those so sentenced lose their jobs;
- 33% lose their accommodation;
- 40% lose contact with families and external support;

- Community Service sentences accounted for 13% of all sentences in 2006–07 compared with 8% in 1997–98.

Pursuing the Graveyard Project, the senior author developed the concept of rebuilding these stones with the head of Edinburgh Cemeteries and, subsequently, with the Criminal Justice Department officials within the City of Edinburgh Council. The officials, being convinced of the merits of this scheme, held a number of meetings and, after a demonstration of what was involved in the lifting of a headstone, had a number of its Justice Department supervisors trained to the standards required of the NAMM. A pilot scheme at Liberton Cemetery has resulted in over 200 headstones being successfully rebuilt (see figs 4 and 5).



Fig. 4. Before. (© Alan McKinney.)



Fig. 5 After. (© Alan McKinney.)



Fig. 6. Previously a brick foundation. (© Alan McKinney.)

The work involved lifting the stone from the immediate area, digging out the 7 layers of bricks on which the headstone stood (to a depth of some 30 inches, 76 mm), and filling the hole with the concrete base which is then left to ‘cure’ for 14 days (fig. 6). After this, with the use of the appropriate templates, holes are drilled in the concrete and into the base of the gravestone with stainless steel rods then inserted in the holes at the base of the stone which is then lifted and positioned over the concrete base (figs 7 and 8). The height and width of the stone determines the diameter and length of the pins as well as the appropriate drill sizes, and these details are all covered within the NAMM Code of Working Practice.

A layer of soft concrete is then spread over the dry concrete base, as a bed, and the stone then lowered with its stainless steel pins entering the concrete base (fig. 9). The concrete does not ‘cement’ the pins into the holes – it simply provides a bed for the stone. The force of gravity, the weight of the stone and the strength of the stainless steel pins keeps the stones upright.

In the pilot scheme, those sentenced under Community Service Orders (very low level crimes that would not warrant a prison sentence – vandalism, graffiti, etc) operated under the instruction of the council officer who had been trained to the appropriate standards for the rebuilding of old gravestones. On 25 August 2010 the Justice Minister, Kenny MacAskill MSP, visited the site, where he was interviewed for television. One of the young persons undertaking the work was

also interviewed and indicated that he would like to do this as a job. Unfortunately there were no vacancies. Other newspapers also published the story and the project is publicised on the Scottish Government website.<sup>7</sup>



Fig. 7. Using templates, drilling into concrete. (© Alan McKinney.)

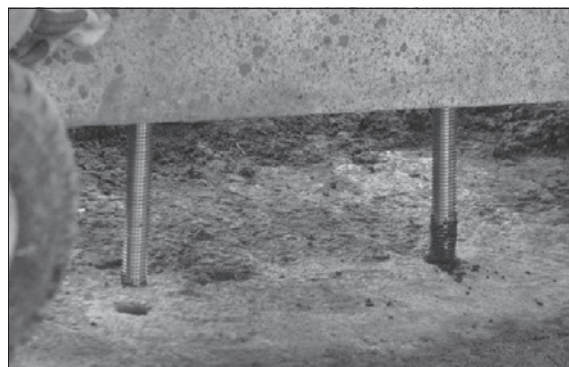


Fig. 8. Stone, with pins, offered to drilled holes. (© Alan McKinney.)



Fig. 9. Soft concrete bed in place. (© Alan McKinney.)

The positive result of the above is that a young person who had committed some misdemeanour against society and, in serving his sentence by undertaking work which benefited the community, now wished to continue with such work. So this pilot project demonstrated that those sentenced to Community Service Orders can, and did, make a positive and constructive contribution to society undertaking work which would not otherwise have been done. It is hoped that this project will now be rolled out across the country making use of those sentenced under the new Community Payback Orders.

In conclusion, it is appropriate to suggest, that by addressing the current problems of fallen or laid over headstones, we can restore the resting place of past generations and, at the same time, leave a legacy of which we could be proud.

#### NOTES AND REFERENCES

This paper was presented in June 2011 at the International Conference in Paris, 'Jardins de Pierres – Conservation de la Pierre dans les Parcs, Jardins et Cimetières'.

Alan McKinney pursued the concept Graveyard Project with George Bell, Head of Edinburgh Cemeteries, and, after a very positive meeting, subsequent discussions were held with City of Edinburgh Council officials in the Criminal Justice Department, Harry Robertson, Mike Scannell and Frank Brown. In addition the National Association of Monumental Masons (NAMM) supplied technical information and assistance. The authors acknowledge the ready cooperation of all these officials and organisations.

- 1 I. Maxwell, R. Nanda and D. Urquhart, *Conservation of Historic Graveyards*, Historic Scotland Guide for Practitioners No. 2 (Edinburgh 2001), ISBN 1-900168-74X.
- 2 See A. A. McMillan, *Quarries of Scotland – An illustrated Guide to Scottish Geology and Stone Working Methods based on the British Geological Survey Photographic*

*Archive of selected Building Stone Quarries*, Historic Scotland Technical Advice Note No. 12 (Edinburgh 1997), ISBN 1-900168-47-2. See also Maxwell *et al.*, *Conservation of Historic Graveyards*.

- 3 ICOMOS-ISCs, *Illustrated Glossary on Stone Deterioration Patterns*, English-French version (Paris 2008), ISBN 978-2-918086-00-0.
- 4 UK Ministry of Justice, *Managing the Safety of Burial Ground Memorials* (January 2009): [www.justice.gov.uk/guidance/docs/safety-burial-grounds.pdf](http://www.justice.gov.uk/guidance/docs/safety-burial-grounds.pdf).
- 5 Scottish Government, *Criminal Justice and Licensing (Scotland) Act* (Edinburgh 2010): <http://www.legislation.gov.uk/asp/2010/13/contents/enacted>.
- 6 Such work activities must not replace any paid work, but without some action these headstones would never be rebuilt. Certainly, descendants of the deceased had shown no interest in these graves.
- 7 See <http://www.scotland.gov.uk/News/Releases/2010/08/25130630>.