

**Historic Scotland Technical Conservation, Research and
Education Group (TCRE)**



**Historic Scotland Board Briefing Paper
October 2006**

Technical Conservation, Research and Education (TCRE)

TCRE Group operates with two inter-linked Divisions: the HS Conservation Bureau, and the HS Conservation Centre. Central to the Group's activities is the need to address the integrated approach the right knowledge, the correct skills, and the appropriate materials to hand to undertake effective conservation (repair and maintenance) work. Current Divisional structures are illustrated in Appendix A.

TCRE HS Conservation Bureau (HSCB)

TCRE's HSCB aims to approach the current threat to the built environment by re-establishing a greater understanding and awareness of the need for appropriate knowledge, skills and materials in traditional building technology, and promote good practice through effective networking. TCRE has enabled, funded and supported extensive research on traditional materials. This published material has led to a better understanding of the problems, and more effective conservation practices. Maintaining the supply of traditional skills and materials with which to sustain the built environment is a central component of the Divisions work, as is promoting good practice through various outreach and educational initiatives.

TCRE HS Conservation Centre (HSCC)

HSCC operates a demand-led service from two locations in West Edinburgh to provide hands-on specialist conservation services, research and Advisory Report work in:

- Structural Paintings and Heraldic Conservation
- Easel Painting and Picture Frame Conservation
- Paint Analysis and Conservation Science Support
- Environmental Monitoring and Management Surveys
- Outreach Specialist Training and Student placements

TCRE Corporate Plan Resources

2005-06 £ (m)	2006-07 £ (m)	2007-08 £ (m)
2.241	2.462	2.654

Whilst introducing the two Divisions that make up the TCRE Group, this paper focuses mainly on the work of the HSCB. A follow-up visit to the Stenhouse and South Gyle Edinburgh premises of HSCC is suggested to view the range of practical work that is carried out there.

TCRE key Objectives:

- 1: To develop and define technical conservation standards and policy;
- 2: To address the lack of appropriate technical and professional knowledge;
- 3: To address the lack of relevant conservation craft skills;
- 4: To address the shortfall in availability of traditional building materials;
- 5: To provide specialist conservation expertise in stone, structural painting, easel painting, scientific support, and environmental monitoring techniques.

Activities in Support of Objective 1

To develop and define technical conservation standards and policy

TCRE will work with others through partnerships and sharing knowledge and resources.

The main activities in support of this objective will include:

- Driving research initiatives that will lead to the production of technical publications, and the promotion of appropriate standards and good practice
- Providing financial support, through Minutes of Agreement, to key organisations such as the Scottish Stone Liaison Group, the Natural Stone Institute and the Scottish Lime Centre Trust;
- Enabling and supporting network groups to provide sounding boards for draft technical publications offered for peer review, including the Scottish Conservation Forum in Training and Education and the Scottish Historic Building Fire Liaison Group;
- Participating in projects funded by others such as the slate and lime projects with the University of Paisley and the Department of Trade and Industry;
- Representing Scottish interests on International conservation networks such as COST (Fire Loss to Historic Buildings), BIODAM (Biodeterioration on the surface of stone) and ICOMOS (International Scientific Committee on Stone); and
- Promoting through official links technical conservation requirements to the Architecture Policy Unit and the Scottish Building Standards Agency.
- Staff will continue to present at national conferences and seminars to define conservation standards and further research.

Activities in Support of Objective 2

To address the lack of appropriate technical and professional knowledge

As it takes a minimum of two years to research new areas of conservation activity, and a further year to prepare and produce the technical results, TCRE will concentrate over the first half of the Plan period on finalising and printing research work already in progress. New research projects will be initiated during 2006/08. Emerging results will be promoted through the production of 6-monthly Publication Catalogues, attendance at trade fairs, and seminars and conferences. Other activities in support of this objective will include:

- Continuing to provide an on-demand enquiry service, to field c1500 technical enquiries per annum. Steps will be taken to ensure that the data is up-to-date and valid. Preparation to migrate the Building Conservation Register for Scotland to a web interface will be undertaken in 2006.
- Continuing to develop the scale and scope of our specialist conservation library resource facilities and promoting these to a wider audience of trainers, educationists, students, practitioners, researchers and academics;
- Producing a series of free Inform Guides which will concentrate on “translating” the scientific and technical material in TCRE’s current Research Reports, Technical Advice Notes and Practitioners Guides, as well as providing introductory guidance to a range of building maintenance issues. A digital platform will be developed in 2006 to provide increased accessibility for building owners via a 3-D interactive house.
- Arranging a major International Conference on the Conservation of Stone in 2007.
- Providing industry specific seminars at trade fairs and conferences.
- Presenting technical lectures at appropriate venues, seminars, conferences and workshops. Following a development pilot, seminars will be arranged to target building and home owners via the City Heritage Trust network, THI projects and other heritage trusts.
- Continuing to play educational host to UK and International students and building conservation professionals.

Activities in Support of Objective 3

To address the lack of relevant conservation craft skills

Fundamental to this objective is understanding the true extent of the traditional craft skills deficit. TCRE is working jointly with the Construction Industry Training Board and the National Heritage Training Group to undertake a Scottish Craft Skills Audit. The results will be published in 2006/07 and will be used to assist in determining a forward strategy for the TCRE Craft Fellowship programme. The subsequent analysis will help reveal skills missing

from the traditional building material supply chain that will need to be resurrected to support the development of building craft skills.

Other activities in support of this objective will include:

- The Fellows and Interns Programmes. Each year 5 research/teaching/craft Fellows will be targeted towards building conservation craft needs, and 3 research Interns towards the conservation of building fabric. The programmes will be revised in 2006 to meet the new challenges and opportunities facing the Agency.
- Small-grant awards to focus on providing specialist workshop equipment set up assistance, specialist training, and support for conference attendance by private sector practitioners;
- The successful bid to the Heritage lottery Fund to run their 4-year Bursary Scheme to support the building conservation, repair and maintenance training sectors needs in Scotland and Northern Ireland. This will be established in 2006.
- Meetings of the pan-professional Edinburgh Group, and its associated York Group to enable a cohesive approach to be adopted in the Accreditation of professional building conservation expertise; and
- Investigate the level of support required to effect the provision of 2 Academic Chairs in Scottish Conservation (Repair and Maintenance): one in professional education, and the other in vocational training.
- Participate in the Learn Direct and Build Forum to develop innovative training projects for the traditional skills sector.
- Develop a new vocational masonry qualification with partners in masonry training in Scotland.
- Develop electronic learning units for masonry conservation with the Scottish Lime Centre Trust and Learn Direct and Build.
- Undertake a pilot craft skills ‘taster’ session with PIC Education, and roll out across the country to promote traditional skills as a career option for P7 / S1 pupils.
- Establish a Sector Skills Agreement with CITB Construction Skills – NHTG to address craft skills issues in Scotland and deliver against the findings of the craft skills audit.

Activities in Support of Objective 4

To address the shortfall in availability of traditional building materials

The main activities in support of this objective will include:

- Promoting the use and development of Scottish stone and slate alongside the SSLG. In conjunction with other bodies, strategic support will also be given to enhance the number of operational building stone quarries in Scotland.
- Producing, with the British Geological Survey, a series of Regional Guides to the different geological properties and characteristics of the Building Stones of Scotland. This series will follow an index volume on the location of Scottish Building Stones that will be jointly published by 2006 through UNESCO and IAEG;
- Determining what future traditional building material supply needs will be required to sustain any emerging skills development programme, based on the findings of the 2006 National Skills Audit.
- Participate in the National Skills Group formed by ProSkills to address skills issues associated with the production of building materials.

Activities in Support of Objective 5

To provide specialist conservation expertise in stone, structural painting, easel painting, scientific support, and environmental monitoring techniques

The main activities in support of this objective will include:

- Providing a specialist practical and preventive conservation service through the Historic Scotland Conservation Centre (HSCC).
- Providing an on-demand specialist conservation Addendum Report service in support of Historic Environment Grants, Scheduled Monuments and Listed Building Consent issues;
- Accommodating periodic short-term specialist work placements for appropriately trained and qualified individuals, Interns and Fellows, and provide, where appropriate, scientific conservation support work for HSCB research projects; and
- Undertaking, in exceptional and limited circumstances some pre-payment practical conservation work for the private sector where no such expertise currently exists.

Much of what TCRE can achieve is reliant upon the work of others outwith the Agency. Considerable goodwill, effort and mutual support are freely given by a variety of organisations, bodies and individuals. Effective networking is at the heart of what has been produced to date and this will continue.

TCRE Key Areas of Networking Activity

Professional Accreditation

The principle intention of the architectural, surveying and engineering professional body accreditation schemes is to improve the competence, quality and standard of professional work on conservation projects. The aim is to provide consistent information and transparency for commissioning clients, making it easier for them to choose and appoint an appropriate, competent, lead professional.

To assist co-ordinating these activities TCRE established the pan-professional “Edinburgh Group” in 2001. Joint agreement has been reached by the professional bodies, the key public sector clients, and training providers on the adoption of a UK wide common accreditation framework of competences. In support of these initiatives Historic Scotland and English Heritage required the appointment of an accredited lead professional as a condition of all grant aided projects from April 2004. Under pan-professional ownership, the “Edinburgh Group” will continue to assist in this process by going on to monitor future implementation and development of this joint initiative.

Historic Scotland welcomes the Accreditation initiative, and the lead being taken by the professional bodies to improve quality and standards in building conservation work. It will continue to enable and support the Group until a degree of uniformity in approach to the required standards are agreed between the disciplines.

Scottish Conservation Forum in Training and Education (SCFTE)

TCRE has developed and maintains close links with a wide variety of teaching and training organisations in the building conservation world through the SCFTE. This includes heritage bodies, government departments, training establishments, colleges, universities, and industry and professional lead bodies. Established in 1994, the SCFTE operational framework states that: *With regard to developing the best in Scottish Education and Training in Building Conservation HS shall host and service a Forum with the aims of:*

- *Keeping members informed as to relevant national and international developments*
- *Acting as a focus group for all interested parties*

- *Exchanging appropriate information and data*
- *Co-operating across trade, technical, professional and industrial boundaries*

Involving a considerable amount of goodwill by members and their parent organisations, meetings of the SCFTE are held 6 monthly. This approach has greatly assisted TCRE address the deficit in conservation education and training, and traditional building material technology. Network members also provide Historic Scotland with free inclusive specialist expertise in support of its research project work, and through endorsing the quality, content and relevance of emerging technical publications. TCRE is due to further develop the SCFTE networking activities in support of its technical conservation research and publication activities by addressing the needs of electronic support material for the education and training providers.

TCRE/NHTG Scottish Skills Audit (2005 – 2006)

Like Historic Scotland, a number of UK wide Industry-lead and grant-giving bodies (Construction Industry Training Board, National Heritage Training Group, Heritage Lottery Fund, English Heritage) have recently recognised the significant level of traditional craft skills shortages in the country. A variety of nation-wide essential new initiatives are beginning to emerge to help address this significant issue.

Those involved in trying to resolve the skill deficit are also increasingly recognising that it is inappropriate to only consider addressing that failing without also addressing the requirement to obtain appropriate traditional building materials for the skills to be exercised upon. Following the launch of the English Skills Audit Report the Scottish exercise was initiated at the end of 2005. A Report on the Audit findings is due by December 2006

Once the report findings are to hand developmental work and solutions will be sought via a Sector Skills Agreement between HS/TCRE and CITB/NHTG that was signed in March 2006.

Scottish Stone Liaison Group

Funded by TCRE, through a Minute of Agreement, and Industry the SSLG was formally established in 2000. It has since become a nationally recognised body in the promotion of the use of stone and masonry training.

It provided the inspiration for the establishment of the Welsh Stone Forum, and is currently involved in supporting the embryonic establishment of the English Stone Forum. The SSLG MoA's are guided by the recommendations contained in the TCRE *Future for Stone in Scotland Research Report* published in 1997 and works to support the core TCRE objectives of the effective integration knowledge/skills /materials in the masonry world. The SSLG has recently completed a significant Building and Skills Audit of masonry needs in the City of Glasgow. Funded by Scottish Enterprise the findings of this detailed study are feeding into the TCRE/NHTG Scottish Skills Audit.

TCRE will continue to support SSLG activities through a revised MoU where the intention will be to relocate the SSLG offices with the Scottish Lime Centre Trust at Charlestown in Fife

Falling masonry and Scottish stone supplies

All building materials decay with time. Different stones degrade at different rates due to a variety of circumstances – their mineralogical composition, exposure, weathering, detailing of their use on buildings, and previous maintenance (if any). The associated safety risks can be reduced by routine inspection by building owners, but this is seldom carried out despite check-list information and guidance being available from TCRE on how to do this.

Recent falls of masonry and slates from tenement buildings are not unexpected. These incidents are liable to increase given that the emerging consequences of previous stone cleaning operations are adding to the naturally occurring problems that need to be addressed. The use of synthetic repair materials on stone has also increased the level of subsequent decay. Effective repair works require the replacement of damaged stonework in a matching material. This will require access to matching stone sources and to appropriately skilled masons. Both are in short supply.

Whilst recognised by Historic Scotland as being a major problem for some time, the recent stone-falls from buildings that have resulted in fatalities are coinciding with an increased awareness by other bodies and agencies that the Scottish traditional masonry industry has been run-down to an un-acceptable low level. TCRE has been participating in “Falling masonry Group” along with other industry interests to try to recommend a way forward in this area of concern. A Report from the Group has recently been published.

Distance Learning Support Activities for Vocational Skills

Agreement has been reached with Glasgow Metropolitan College through the Learn Direct and Build Forum to utilise all of TCRE's technical publications in a programme that will convert the published knowledge and guidance into electronic support materials to assist with distance learning and developing innovative learning tools.

This material will be used to promote training support activities into rural areas where individuals currently have to travel considerable distances to attend training courses (where evidence has shown that a high level drop out rate occurs). TCRE staff will work with Learn Direct and Build partners to deliver a range of specific projects.

Commissioning research into conservation issues

Historic Scotland TCRE Group generally commissions research through entering into topic-specific partnerships with universities, research organisations and others. It aims to develop its programme of scientific understanding of traditional building construction, building material sources and their performance in use. Where ever possible, such an approach is designed to be mutually beneficial to participating partners. Increasingly, as a result of the successes of this approach, TCRE has been invited to join in other Research Institute activities at a national and international level. Currently over 40 different research projects, partnership agreements and publications are in place or progressing.

To enhance knowledge and to raise the standards of Scottish conservation practice, Historic Scotland will maintain a forward programme of research topics. Further jointly-funded partnership agreements will be developed where mutually-beneficial returns can be expected. Technical conservation guidance will continue to be published as resources permit. In – house research will be increasingly developed in the period to target specific areas and enhance areas of expertise. The research potential of HSCC will be increasingly utilised in support of HSCB research activity.

Published technical guidance on building conservation

Informed technical conservation work, and repair and maintenance guidance, requires a sound knowledge and researched understanding of traditional materials and methods of construction. Since 1992 TCRE has published almost 100 Technical Advice Notes, Guides for Practitioners,

Research Reports and other documents. These have been targeted towards other researchers, education and training providers, building owners and users, contractors and conservation practitioners. Topics have been generally supported by an associated research programmes.

In September 2006, HS Senior Management Team endorsed the results of a TCRE publications survey and forward plan. A renewed focus on education is planned, with a flat rate charge of £6 for each publication initiated as of 1st November 2006, with a 50% discount to those in full time education. Current overstocked titles will be distributed to relevant students free of charge over the next six months, and we will seek for all educational outlets to have free issue of our technical publications, as well as local authorities and those international organisations with which we have reciprocal publication exchanges in place. A digital strategy for our publications output will be developed over the coming year. The future publication programme will be informed and developed in response to users needs for researched conservation advice.

Conservation guidance for lay use

To increase the accessibility and value of researched and published technical guidance TCRE has also started to publish a series of short guides where there is an identified specific need. These Short Guides include:

- *Maintaining your Home: short guide for homeowners*
- *Looking after your sash and case window: short guide for homeowners*
- *Emergency measures for historic memorials: short guide for cemetery managers.*

In addition, the new INFORM leaflet series which will be developed following documents produced on:

- *Monumental Bronze, Boundary Ironwork, Graffiti removal, Masonry Decay, Lime vs. Cement, Sash & Case Windows, Stained Glass, Architectural hardware and a range of other titles. An interactive digital model is being developed to engage the target audience.*

Dissemination of conservation understanding through conferences and seminars

From 1992 TCRE has arranged 7 major conservation conferences covering issues such as stone cleaning, lime technology, fire protection of historic buildings, roofing, and traditional building materials. These events have been timed to coincide with the launch and promotion of new technical conservation publications.

A related series of annual seminars have also addressed the topic of current research work in progress. Technical workshops have been held on promoting the correct approach to graffiti treatments and the repair of sash and case windows. TCRE will continue the programme of conferences seminars and workshops to address major conservation issues as required, and a major Conference on Stone is currently planned for February 2007. Homeowner's seminars will be provided across Scotland in 2006/07 as part of National Maintenance Week through the City Heritage Trusts, with pilot projects for technical staff in local authorities developed in 2006.

Stone Supplies

Major difficulties exist in this area. Some 700 Scottish quarries were commercially producing building stone 150 years ago. This figure has now reduced to about 30, thus severely restricting both the selection and supply of matching stone for historic building repair, and new build activity, in Scotland. Similarly, there has been no indigenous Scottish slate produced since the early 1950's. Roofing repair needs have only been carried out through the unsustainable approach of robbing the roof coverings of other older buildings or, increasingly, by importing new inappropriate slates from half-way round the world. Historic Scotland's 1997 *The Future of Stone in Scotland Research Report* findings identified the potential means of developing the Scottish stone industry to help address these dilemmas.

TCRE has been working with industry and professional lead bodies to redress this imbalance in the construction industry over the past 14 years. It will continue to support activity in the sector through technical research projects and publication work.

The Rediscovery of Lime Technology

This essential ingredient of traditional building techniques was virtually replaced in the 20th century by the ill-suited use of Portland cement. The damaging and detrimental consequences of that approach are now adding significantly to the cost of future maintenance bills of masonry structures.

TCRE in conjunction with the Scottish Lime Centre Trust (SCLT) at Charlestown, Fife, and other conservation bodies, has been actively promoting the reintroduction of lime-based products over the last 14 years. It has supported training, initiated research, and produced a

number of publications to help practitioners and craftsmen develop the necessary understanding of the benefits of using the material.

TCRE will continue to endorse and promote the use of lime-base products for conservation and new-build projects. It will encourage a greater up-take in the availability of appropriate training initiatives for the industry through its HLF Training Bursary links with the SLCT and their related initiatives. A new Minute of Agreement with the Scottish Lime Centre Trust will be completed in September 2006.

Historic Scotland Conservation Bureau (HSCB) Databases

To raise the standard and quality of conservation work the Bureau maintains and promotes a number of relevant databases of conservation information. These have been developed to assist owners, professionals and other enquirers:

- The Building Conservation Register has details of over 750 Scottish firms and practices across a wide range of craft and professional disciplines. It also reveals where skill deficits exist. This is currently being rebuilt to provide a higher quality service, and to be placed on the HS website in due course.
- The Training and Education database held details of all conservation training and academic courses in Scotland. It will be updated in 2006.
- The Materials supplies database will be initiated to build a record of where traditional building materials can be sourced and where specialist conservation materials can be obtained.

TCRE makes Database information available for all to consult, and will continue to develop and expand the database entries with the aim of putting the electronic details on-line.

HSCB Conservation Enquiry Service

To release database information the HS Conservation Bureau has acted as a comprehensive enquiry point since 1992. On average, staff respond to some 120 enquiries per month from the public, owners, professionals and other interested in conservation matters. The aim is to put enquirers in touch with available information on skills, materials and knowledge concerning the built heritage in Scotland. TCRE will continue to maintain and promote its HSCB enquiry service to all enquirers via telephone, internet, correspondence and personal contacts.

Historic Scotland TCRE Internship Programme

The Internship programme aims to increase the availability of specialist conservation skills and knowledge by encouraging talented individuals to work, and set up business in Scotland. Since 1987, 65 conservators have benefited from their one year commitment to the scheme and the majority of individuals are still employed in Scotland as a result of it.

TCRE will continue to fund the conservation Internship programme to help expand the pool of specialist conservation expertise in Scotland, with an emphasis being put on research support activities to address conservation problems associated with the key areas of paint, science and stone, and mentored by HSCC staff.

Historic Scotland TCRE Fellowship Programme

The Historic Scotland Fellowship scheme was started in 1996 to help train young people in building conservation and traditional craft disciplines. Fellows are placed with experienced craftspeople and receive supporting conservation education in their chosen discipline during the programme. Of the 6 people trained to date, 5 remain working in Scotland to specialise in the repair of traditional plasterwork, stonework, and vernacular buildings.

In conjunction with other partners TCRE will continue to investigate ways of expanding this much needed conservation Fellowship programme to help increase the number, and competences, of the traditional craft skill base in Scotland. Two Research Fellows have been appointed this year in architectural ironwork and historic shop fronts.

The Fellowship Programme will be developed in three strands; Craft Fellowships, Research Fellowships, and Teaching Fellowships.

HLF Training Bursary Scheme (Scotland + Northern Ireland) 2006 – 2010

Over the next 4 years Scotland will benefit from a £2.28 million investment in traditional skills training with £1 million being awarded by the Heritage Lottery Fund on 18 January 2006. The rest of the funding is being provided by Scottish Enterprise Glasgow, Historic Scotland and the Scottish Lime Centre Trust in Fife, and through support from the Glasgow Metropolitan College, Mourne Heritage Trust, National Trust for Scotland and Telford College, Edinburgh.

TCRE and the Scottish Lime Centre are lead partners in the project. Using the new masonry qualification in development, satellite training will be delivered at locations across Scotland over the next four years.

The 154 training opportunities will be divided up into one month training courses and one year placements. The focus of the training will be on traditional vernacular stone, lime construction and associated finishes and will qualify participants for Scottish Vocational Qualifications appropriate to the level of training received.

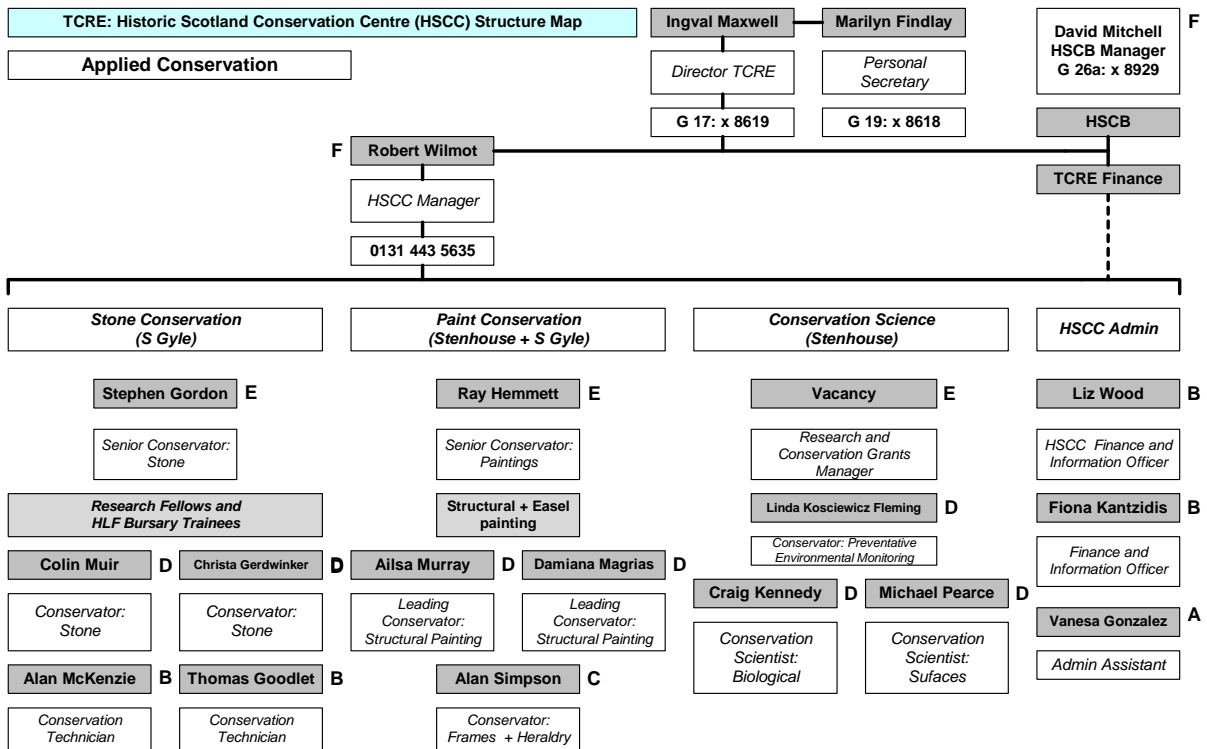
Ingval Maxwell OBE

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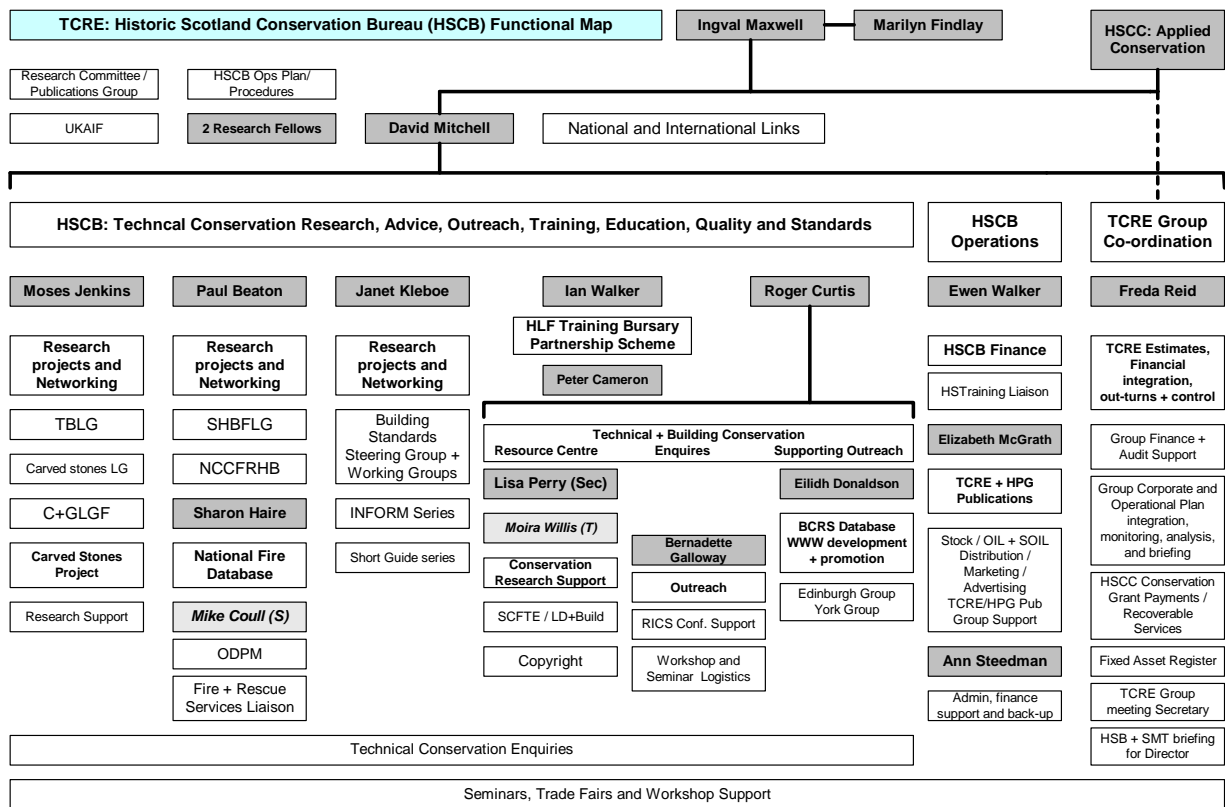
12 October 2006

Appendix A: Current Divisional Structure (2006)

TCRE Historic Scotland Conservation Centre



TCRE Historic Scotland Conservation Bureau



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