The Research Assessment Exercise (RAE)

The Research Assessment Exercise (RAE) is a periodic, national audit of the quality of research undertaken by Higher Education institutions (HEIs) in the UK. The RAE 2008 was conducted jointly by the Higher Education Funding Council for England (HEFCE), the Scottish Funding Council (SFC), the Higher Education Funding Council for Wales (HEFCW) and the Department for Employment and Learning, Northern Ireland (DEL). The first RAE was undertaken in 1986, with further exercises in 1989, 1992 and 1996 and 2001. The information is used to determine each HEI’s block grant for research.

Research conducted by academics at the TCC was submitted to the RAE of 2001 and 2008 under the Unit of Assessment 64 (History of Art, Architecture and Design). In 2001 TCC research was rated as of "national excellence with some evidence of international excellence". A different scale was introduced for the RAE 2008: 1*, 2*, 3* and 4*. The TCC's GPA (grade point average) was 2.55. The highest GPA at the University of Southampton was 3.25; the lowest was 1.75.

The spread of the grades for the TCC’s return was as follows:

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<th>Grade</th>
<th>Percentage</th>
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<tr>
<td>4*</td>
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<td>3*</td>
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This shows that 50% of the TCC's return was assessed as internationally excellent: 4* Quality that is world-leading in terms of originality, significance and rigour; 3* Quality that is internationally excellent in terms of originality, significance and rigour but which nonetheless falls short of the highest standards of excellence.

TCC’s return for RAE 2008

The following report is based on the TCC’s return for RAE 2008; surnames of TCC staff returned in the RAE are in highlighted in bold in non-italic script.

1. THE RESEARCH ENVIRONMENT

1.1. Strategy


The research strategy of the Textile Conservation Centre (TCC) for 2001-2007 was to establish a funded Research Centre dedicated to interdisciplinary research in textile conservation and the history of textiles and dress. This was achieved when the application (led by Eastop) to establish the AHRB (now AHRC) Research Centre for Textile Conservation and Textile Studies (2002-2007) was successful. The application was the subject of rigorous academic scrutiny and intense competition: 100 applications; 15 short-listed; 7 awards made. When the £948,000 grant was awarded it the largest ever made by the AHRB.

The Research Centre was a partnership between three UK universities. It was based at the TCC with the active involvement of its two partners: the Universities of Bradford (Division of Archaeological, Geographical and Environmental Sciences) and Manchester (Whitworth Art Gallery and the School of Arts, Histories and Cultures). The Research Centre had clearly defined research aims and ‘milestones’ (academic and public outputs: publications, exhibitions, conferences, related research and public outreach) and has met or exceeded all these
milestones. It also attracted additional funding for complementary research and outreach activities. [The end of award report was assessed by external advisors who assessed the Research Centre as outstanding, the highest grade possible for end of year reports.]

The Research Centre had four interlinked themes: 'Textile Materials', focusing on the material properties of textile artefacts, and particularly on ways of characterising their deterioration; 'Textiles and Text', focusing on investigating links between surviving textiles and written records, notably textiles and dress at Henry VIII’s court; 'Modern Materials', focusing on the characterisation and conservation of objects made with man-made and synthetic materials, e.g. regenerated protein fibres, polyurethane foam; 'Worldly Goods', focusing on the philosophical and technical challenges of preserving textiles.

Research outcomes include: effective methods of characterising the degradation pathways of fibres; the refinement of X-radiography and transmitted light photography for the documentation and analysis of historic textiles; enhanced understanding of the material and archival evidence for dress at the court of Henry VIII, and of 17th English embroidered pictures; enhanced understanding of the material and symbolic properties of modern works of art, and of furniture and jewellery based on synthetic polymers; detailed knowledge of tapestry conservation policies and practices in north America and western Europe; the identification and analysis of anomalous 'objects' (human bodies in museums; string figures; and, garments deliberately concealed within the structure of buildings) which help to understand how objects are attributed significance, essential for developing appropriate preservation strategies; the identification and recording of hundreds of garments and other objects found concealed within buildings, including rare examples of 16th and 17th century dress; the creation of a virtual collection of garment finds at www.concealedgarments.org


A dissemination event with senior representatives of the heritage sector marked the successful completion of the pilot project between the TCC and the School of Engineering Sciences on monitoring strain in tapestries (2005). Research was also disseminated via the Southern Conservation Network, a regional network of heritage organisations (led by Wyeth), which fosters the development of collaborative research. www.soton.ac.uk/~conserve.

The Research Centre’s public outreach strategy resulted in extensive media coverage (www, international and national TV, radio and popular press). See 1.1.2 below.

As well as numerous peer-reviewed articles, the publication ‘milestones’ included the following books: *Tapestry Conservation: Principles and Practice* (Lennard and Hayward, eds, 2006), *X-Radiography of Textiles, Dress and Related Objects*
(O’Connor and Brooks, eds, 2007), Dress at the court of King Henry VIII (Hayward, 2007), and the peer-reviewed postprints of the Research Centre’s three international conferences, noted above. All research projects undertaken by the Research Centre’s Research Associates and Research Conservators were also completed successfully, including the investigation of the only surviving sail from Nelson’s flagship H.M.S. Victory (Garside), and the preliminary investigation of Textiles excavated at Quseir-al-Qadim, Egypt (Handley).

Fourteen Research Assistant posts were established: 9 with the Research Centre: Band; Garside; Handley; Malcolm-Davies; Mitchell; Zhang (all based in the University of Southampton); Kramer (based in Manchester); O’Connor, Wilson (based in Bradford); 2 with Pockets of History (White; Denbo) and 3 with the Engineering project: Dokos; Sahin; Ye. Research was undertaken by these post-doctoral research assistants; by academic staff at the TCC and, by Research Conservators. The last category is unique to the Research Centre; they are conservators, based at the TCC and elsewhere, with post-graduate conservation qualifications and extensive experience of investigating collection care issues, but without PhDs.

The university’s established procedures for research supervision, monitoring and evaluation were complemented by the procedures established for AHRC-funded Research Centres. The Research Centre’s Management Committee, which included AHRC nominees, senior academics from the partner universities and an external chair, oversaw the management of personnel and budgets. The Research Centre’s Director, the three Associate Directors and the Academic Advisory Board, made up of experts from the heritage sector, AHRC nominees and an external chair, provided research leadership. The annual report on the Research Centre was sent by AHRC for external review, and each year was approved as satisfactory, the highest category.

1.1.2. Strategy: Sustainability of the research environment

The establishment of the Research Centre was an important strategic and financial investment by the AHRC. The effectiveness of the Research Centre was sustained via the huge commitment of the Centre’s academic staff; via the partner universities’ support for research staff and research students; and via the provision of specialist facilities. A SRIF award of £209,000 was made by the University of Southampton for instrumental analytical equipment to enhance the TCC’s conservation science laboratory. This award was supplemented by the Clothworkers’ Foundation (£40,000) and the Dyers’ Company (£10,000). External funds were also secured to employ a part-time Administrator for the Research Centre for one year, and to create a new post to catalogue the Janet Arnold collection. One of the strengths of University of Southampton Libraries is its focus on textiles, the history of dress and fashion, and its nationally important textile collections (see 1.3.1 below).

Brooks and Wyeth benefited from research leave (in 2001/2002 and 2005/6 respectively), funded by AHRC and external sources, including the British Academy. A university grant to support a post-doctoral research assistant was strategically important in sustaining the pilot project which fostered the collaboration between the university’s School of Engineering Sciences (SES) and the TCC (Monitoring tapestry degradation using whole-field non-destructive measurement techniques, £22,844). See 1.1.1 above and 1.1.4 below.

The TCC’s work (research, teaching and provision of conservation services) is supported by the Textile Conservation Centre Foundation (which offers strategic advice, links to potential funding sources outside the Research Councils, and funds for specific projects) and an outreach strategy, which includes an annual
Open Day and the promotion of public interest in our research. For example, the Deliberately Concealed Garments Project was reported in: the web-based 24 Hour Museum (2005); the newsletter of the Society for the Protection of Ancient Buildings (2006); Radio 4’s Making History (2006); and, South Today, BBC TV (2007). There was also extensive media coverage of Hayward’s discovery that Henry VIII had a pair of shoes for playing football (e.g. The Times, 2004).

1.1.3. Strategy: Research grant applications and other forms of research income
The university has established procedures for managing Research Council grant applications and awards. These include close liaison with the Faculty accountants, who must approve all applications and monitor spending.

Our research has attracted resources from a diverse range of sources. In addition to attracting 7 Research Council awards (six from AHRC and one from NERC) we have attracted resources from the following external sources: the Society for Nautical Research, The National Trust, The British Academy, the Korean Research Foundation, the Barbara Whatmore Trust, Peter Moores Foundation, The British Academy, Mercers’ Company and the Pasold Research Fund, The Paul Mellon Centre for Studies in British Art, the L J and Mary C Skaggs Foundation, Bulldog Trust, Hampshire County Council and the Esmée Fairbairn Foundation. Support for the Research Centre’s first conference was provided by industry partners, including Willard Developments Ltd, Perkin Elmer Ltd and Instron Ltd.

1.1.4. Strategy: Outline research strategy from 2007 onwards
Our strategy is to build on the research environment and momentum of the AHRC Research Centre. This will be achieved by developing the existing Research Centre and integrating it with the university’s Centre for the History of Textiles and Dress. The main aim will be to support the understanding and preservation of textiles and dress by integrating an object-based approach with a collections-based focus. The emphasis will remain integrating information gained from objects, archival sources, oral history and scientific investigation. This will involve inter-disciplinary collaboration between the arts, humanities and the physical and social sciences. The development of technologies for portable, non-invasive material characterisation and condition assessment is a particular priority.

The successful research collaboration with the university’s School of Engineering Sciences (SES) continues, with an award of £386,000 plus a PhD studentship for three years, 2007-2009 (Lennard), for the following project: Towards in-situ monitoring of tapestry degradation using strain-based engineering techniques. This project aims to integrate two techniques, optical fibre sensors and digital image correlation, to monitor strain in tapestries, and to develop equipment that can provide in-situ monitoring. The National Trust and the Historic Buildings and Monuments Commission for England [English Heritage] are partners in this research. See 1.1.1 above for pilot project.

The research strategy will be sustained by establishing teams of identified researchers within the University of Southampton and with the Research Centre’s partners in the UK and overseas. We plan to establish up to five international networks of researchers from different disciplinary and institutional backgrounds. Topics include the deterioration pathways of fibres and modern polymers (e.g. AHRC £187,431 Investigating the effect of silk weighting, 2007-2009, Wyeth). The research projects will be based on museum and historic house collections which will provide primary material. We are partners in the Early Modern Europe Dress and Textiles network led by Evelyn Welch of Queen Mary’s (AHRC £12,714, 2006-2008) (Hayward and Miller). The current programme of international conferences will continue with In the loop: knitting past, present and future (15-
17 July 2008) co-organised by Hayward. The conference will be complemented by an exhibition (with catalogue) at the University library, called In the loop: highlights of the Montse Stanley Collection (from 28 April 2008), co-curated by Burman.

1.2. People
The TCC’s intellectually challenging and socially supportive research environment results from academics and practising conservators working alongside one another.

1.2.1. Support and training for research staff
The university’s HR policies, guidelines and practices are followed, e.g. in arranging induction programmes for newly appointed researchers, and using staff appraisal systems to monitor and support research staff. Participation in discussion and dissemination events is encouraged, ranging from informal lunchtime updates to presentations at regional, national and international conferences. The TCC’s Conservation Science Group hosts two seminars each year; everyone at the TCC is invited, including visiting scholars from overseas. Training in research supervision is mandatory for all PhD supervisors; supervisory teams ensure continuity and inter-disciplinary expertise. Research staff were funded to attend courses, e.g. on X-radiography; Scanning Electron Microscopy; and, weave analysis.

1.2.2. People: Support and training for research assistants and research students
The university’s HR policies, guidelines and practices, and its quality assurance procedures are followed. Specialist training is provided as required, e.g. research assistants attended custom-designed courses in tapestry-weaving and weave analysis (funded by external sources). The Research Centre provided funding for researchers new to conservation to attend meetings and conferences in the UK and overseas, as well as to visit collections and conservation laboratories. It also provided opportunities for the secondment of staff to and from museums (mainly via the Research Conservator scheme).

Research assistants are encouraged to join colleagues (academic, administrative and Conservation Services staff) for social events and to participate in the discussion and dissemination events noted above. The annual conferences of the Graduate School of Winchester School of Art and of the Faculty provide opportunities for PhD students to present and debate their work (see 1.3.3). Mentoring is provided on presentation techniques and preparing material for academic publication. Opportunities are also provided for a limited amount of undergraduate teaching.

The total number of PhD students in the period was 15: 4 have completed their PhDs; 11 are in progress with 8 having upgraded to MPhil. Topics range from: the scientific investigation of materials and their deterioration (including silks, archaeological textiles, and polyurethane foams); comparative studies of conservation and museological practices in Western Europe and sub-Saharan Africa; archival and material sources for the study of the history of dress. The four completed PhDs are: Garside (2002) Investigations of Analytical Techniques for the Characterisation of Natural Textile Fibres Towards Informed Conservation (Supervisor: Wyeth); Macdonald (2005) Raman Spectroscopy and the Conservation of Historic Painted Textiles (Supervisor: Wyeth); Clatworthy (2006) Henry Temple, first Viscount Palmerston (1676-1757): the man and his household examined through the Broadlands Estate Papers (Supervisor: Hayward); Deisser (2007) Investigating Partnership between local and
institutional communities for the preventive conservation of cultural heritage in East Africa (Supervisor: Eastop).

1.2.3. People: Other research activities

TCC academics served as external examiners for graduate programmes in the UK and on MPhil and PhD panels, e.g. Brooks (UCL: MSc in Conservation); Eastop (UCL: MA Principles of Conservation; UCL and Royal College of Art: PhD examiner); Hayward (Roehampton Institute: PhD examiner). Eastop also served as one of three international advisors commissioned by the Swiss state to review textile conservation education at the University of Berne and the Abegg-Stiftung. Hayward provided expert advice for Export Licences. Consultancy services were provided to The National Archive (Brooks, Eastop and Wyeth, 2005-2006) and to English Heritage (Wyeth, 2005-2006).

The touring exhibition Hidden House History, one outcome of the Deliberately Concealed Garments Project (Eastop), was arranged in conjunction with Hampshire County Council Museums and Archive Services (July 2005-September 2006). The catalogue and the exhibition Curious Works: English 16th and 17th century embroidery were undertaken for the Ashmolean Museum (Brooks, 2005).

Outcomes of Pockets of History (AHRC £148,147) (Burman) included an exhibition at the Museum of Costume and Assembly Rooms, Bath (September 2006-September 2007) Research into the Fundamental properties of new fibres and their future (AHRC Innovations Award, £40,000, in conjunction with the V&A) was completed (Brooks). Analysis of archival records of pre-Reformation textiles is underway with over half the archives studied (Hayward).

1.3. Structure

1.3.1. Structure: The intellectual infrastructure

The TCC is a centre of excellence for the conservation of textiles, for textile conservation research and for career-entry education for the heritage sector. Its intellectual infrastructure was promoted and sustained by the AHRC Research Centre. See 1.1.1 above. The university’s policy and practices of research-led teaching play an important role in sustaining the intellectual infrastructure. Our three distinctive research fields are: the conservation of textiles, upholstery and related materials; museums, galleries and historic house collections; the history of textiles and dress. Characteristics of our research include: a material culture approach which links the physical and social sciences; the integration of research findings derived from surviving textiles with those from archival sources; the analysis of philosophical and technical problems arising from conservation and museological practice; and, combining research into historic and modern artefacts and their collection, care and interpretation.

The university’s scholarly infrastructure includes the TCC’s specialist laboratory facilities for conservation science and its Special Collections. The latter include the Wellington Papers, the Montse Stanley [Knitting] Collection and the Richard Rutt [Knitting] Library, the Knitting Pattern Collection, and the Janet Arnold Collection (History and Technology of Dress). The Deliberately Concealed Garments Project has created a huge database; some data is available via the project website www.concealedgarments.org

Joint research projects with the heritage industry include the three collaborative PhD studentships: with: the Victoria and Albert Museum (AHRC 2004, Richardson); English Heritage (AHRC 2006, Luxford); with the Tate Gallery (The Public Sector Research Fund 2006, Thomas). Collaborative research with Category C staff includes: Miller (V&A) PhD supervision and Early Modern Europe Textiles and Dress network; Burman (Honorary Research Fellow, University of
Southampton) PhD supervision and co-curation of the *In the loop* exhibition 2008; and, *Rogerson* (British Library) PhD supervision.

1.3.2. Structure: The wider context of the research infrastructure

World-wide, much conservation research takes place in state-funded national institutes (e.g. the Canadian Conservation Institute) or in university departments linked to museums (e.g. the RCA/V&A; the University of Berne/Abegg-Stiftung, Switzerland; University of Delaware/Winterthur, USA). Most research is published in journals and conference publications issued by national and international bodies or by the profession’s membership organisations, e.g. the International Institute of Conservation of Historic and Artistic Works (IIC) and the international Conservation Committee of ICOM (the International Council of Museums).

Two international organisations are very influential in the heritage conservation sector: ICCROM and the Getty Conservation Institute. ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property) was founded as an intergovernmental organisation, based in Rome, with a world-wide mandate to promote the conservation of all types of cultural heritage, both movable and immovable. TCC academics have strong links with these organisations. See 2.1 below. They also have strong links with other parts of the heritage sector, and provide conservation services to the sector (e.g. The National Archive), and are therefore part of the ‘heritage industry’. The TCC’s own Conservation Services section (which provides conservation services to textile collections world-wide) provides another important link. Wider links are sustained via consultancy to national and international bodies (e.g. ICCROM) and via involvement with the heritage sector’s national and international professional bodies (e.g. ICOM and IIC), and via the TCC’s alumnus network.

Collaborative research with museums, galleries and historic houses forms another important research link. Examples include researching whether *H.M.S. Victory* foretopsail could be hung on display (*Wyeth* and *Garside*); the three collaborative PhDs noted above; the AHRC-funded research into ‘Smart and Techno Textiles’, a collaboration with the V&A (*Brooks*); the research into the hanging of tapestries undertaken by the TCC in collaboration with the School of Engineering Sciences and English Heritage, the National Trust, and Historic Royal Palaces (*Lennard*; *Eastop*).

The Research Centre’s Research Conservator scheme has fostered excellent research links with the heritage sector, by providing research opportunities for conservators working in the public and private sectors. One notable outcome was the research which underpinned the exhibition *Wrapping the Globe: British South West Tradecloth Around the World*, curated by Research Conservator Stephens, at the Royal Albert Memorial Museum, Exeter and at the Museum in the Park, Stroud (April 2004-March 2006). The transfer of the exhibition to Stroud was made possible by a Heritage Lottery Fund grant.

1.3.3. Structure: The operational infrastructure

The University of Southampton is ranked in the top ten for HEFCE QR income (£46.5M in FY 07/08), UK Research Council income (£37.5M in FY 04/05) and UK Research Council success rates (average 35% in FY 04/05). The institution is strongly committed to sustaining excellence in research across all disciplines, spending £9.5M (FY 04/05) per year on IT infrastructure, £6.4M (FY 03/04) per year on library facilities, and £236M on capital developments over the next five years.

As part of the Faculty of Law, Arts and Social Sciences (LASS), the TCC benefits from its quality assurance functions and promotion of inter-disciplinary research.
collaborations (e.g. by funding research seminars); the research and personal development training provided for postgraduate and postdoctoral researchers through the Faculty Graduate School; the student-led Annual Conference brings together around 250 PGRs from across the Faculty, which provides students with valuable experience of attending and presenting at a large interdisciplinary conference.

Facilities for research staff and research students include: a dedicated, quiet workstation and computer for each PGR; a wet chemical laboratory with 'state-of-the-art' instrumental analytical equipment; dedicated office space; specialist conservation laboratories; access to other laboratories and equipment in Chemistry and Engineering; administrative and technical support of the ICT and Library Services, including its Special Collections.

Resources and facilities gained through collaboration with organisations external to the university include: x-radiography and amino-acid analysis at the University of Bradford; access to museum collections and expertise at the V&A, Hampshire County Council Museum and Archive Service, English Heritage and Historic Royal Palaces.

2. INDICATORS OF ESTEEM

2.1. Recognition
TCC academics are recognised nationally and internationally as leaders in the conservation (preservation, investigation and presentation) of textile and dress collections. Hayward is a Fellow of the Society of Antiquaries; Brooks, Eastop, Gill and Lennard are Fellows of the International Institute for Conservation (IIC); Wyeth is a Fellow of the Royal Society of Chemistry. Invitations to lecture at national and international conferences include: Brooks at Winterthur and Historic Deerfield, both USA; Eastop and Gill at the University of Sao Paulo, Brazil; Hayward, Eastop and Gill at the Abegg-Stiftung, Switzerland; and, at the North American Textile Conservation Conference in the USA, Eastop 2003; Brooks 2007. They contribute to the international Triennial Meetings of ICOM's Conservation Committee (den Haag 2005 and Rio de Janeiro 2002). Eastop was an expert advisor for the 2003 and 2005 biennial reviews of the Collections Unit of ICCROM (see 1.3.2 above) and for ICCROM’s CollAsia 2010 programme for the conservation of S.E. Asian collections (Malaysia, 2004; Thailand 2005; The Netherlands 2005; Laos 2007).

Members of the TCC’s academic team were commissioned to write core texts by Butterworth-Heinemann/Elsevier, the leading international publisher for conservation and museology: Upholstery Conservation: Principles and Practice (Gill and Eastop, eds, 2001); Tapestry Conservation: Principles and Practice (Lennard and Hayward, eds, 2006); X-Radiography of Textiles, Dress and related Objects (O’Connor and Brooks, eds, 2007). Chemical Principles of Textile Conservation (Timar-Balazsy and Eastop, 1998) was reprinted in 1999, 2002, 2004. Brooks and Eastop have been commissioned by the Getty Conservation Institute to prepare its Reader in Textile Conservation.

2.2. Influence
TCC academics contribute to many editorial boards, e.g. of Reviews in Conservation, IIC’s annual publication (Eastop); of Studies in Conservation, IIC’s quarterly journal (Hayward); of Costume, the journal of the UK Costume Society (Hayward). Brooks is a Governor of the Pasold Research Fund; Eastop was a member of the Board of ICOM-UK, 2003-2006; Hayward is a member of the Library and Collections Committee of the Society of Antiquaries, and of the UK
Costume Society. **Lennard** is an Assessor for Professional Accreditation for the [UK] Institute for Conservation (Icon). **Eastop** is an expert advisor for ICCROM’s Collection Unit and for ICCROM’s CollAsia2010 programme for the conservation of S.E. Asian collections (see 1.3.2 above).

### 2.3. Benefit

The TCC’s research has been sustained by the support of the AHRC, primarily through the AHRC Research Centre. Other AHRC-funded projects include research into ‘Smart and Techno Textiles’ (**Brooks**), ‘In-situ monitoring of tapestry degradation using strain-based engineering techniques’ (**Lennard**) and ‘Investigating the effect of silk weighting’ (**Wyeth** see 1.1.4 above). Externally funded projects include the many research projects undertaken with museums and heritage bodies outlined in 1.1.4 above. The Deliberately Concealed Garments Project was supported from non-research council sources, e.g. the Skaggs Foundation, the Esmée Fairburn Trust and Hampshire County Council. The acquisition of the Janet Arnold, Montse Stanley and Richard Rutt collections has provided new primary sources for research (see 1.3.1 above). Externally funded studentships include the AHRC Collaborative PhD candidates Luxford (with English Heritage), Richardson (with V&A) and Thomas (Tate Gallery). **Brooks** was Jane Wildgoose’s mentor for NESTA’s Dream Time Fellowship Scheme 2005-6.