THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

A Joint Conference of ICOM-DEMHIST and three ICOM-CC Working Groups: *Sculpture, Polychromy, & Architectural Decoration*; *Wood, Furniture, & Lacquer*; and *Textiles*

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Abstract

Recent research carried out for the preparation of a book in the Getty Readings in Conservation series on 'Historical Perspectives in Preventive Conservation', published in April 2013, has enabled the author to re-evaluate the relationship between fine and decorative art collections housed in historic interiors, their environment and the way in which visitors and other stakeholders access them. This combined with recent work carried out by the National Trust (England, Wales and Northern Ireland) in 'bringing places to life' has shown that it is possible to combine appropriate standards of preventive conservation with a more engaging and interactive approach to the visitor experience. Traditional methods of housekeeping when historic houses were lived in by their owners combined the needs of the family to use the furniture and furnishings on a daily basis with methods of care passed down through generations of servants. These traditions carried on uninterrupted until the twentieth century when social change such as the industrial revolution, the world wars and taxation meant that few families could afford to continue to live in historic houses which were then demolished, sold and put into other uses or became historic house museums. The houses in which the collections commissioned or collected for them survived were presented in a

Historical and Current Perspectives on the Care, Presentation, Interpretation and Use of Collections in Historic Houses

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Introduction

For the past five years I have been working on a book for the Getty Readings in Conservation series on 'Historical Perspectives on Preventive Conservation' which was published in April 2013 [Staniforth 2013]. This has given me the opportunity to reflect on and re-evaluate the relationship between collections and the context in which they are now presented in historic house museums compared with when the houses were lived in.

In this paper I will cover the origins of historic house museums, the end of family ownership, opening historic houses to visitors, care of collections in historic houses when they were lived in and as museums, and the presentation, interpretation and use of collections.

The origins of historic house museums

It is worth reflecting on why we have historic house museums that are open to the public. All of these houses were once lived in by the families who owned them, their friends - for some of the time - and their servants. Collections were made through commissions from artists and craftsmen, by inheritance and were added to from century to century. Some houses survive with collections largely intact, for example at Kedleston Hall, which was designed by Robert Adam and completed in 1765. Robert Adam was responsible for every element of the design, including creating niches in the walls with plaster frames to house the Curzon collection of paintings (Figure 1).

new context in which their historic, architectural and artistic significance was interpreted to the public as museum collections. By and large, collections were there to be looked at rather than to be used. During the twentieth century, thanks to increased scientific understanding of materials and their interaction with the environment, a sophisticated understanding of preventive conservation, including demonstrating why many historic and traditional housekeeping methods had been effective, has been developed. In the twenty-first century the National Trust is moving away from a risk averse presentation of historic houses in which the precautionary principle is exercised and all objects are treated as being equally fragile, to a risk assessed approach in which objects which are sufficiently robust are used by the visitors. This can mean that visitors walk on carpets, sit on chairs, play pianos and engage more fully with the collections to enrich their experience. This paper will look at the relationship between the history, significance, scientific understanding of preventive conservation, curatorship and the visitor experience of National Trust houses and their collections at the beginning of the twenty-first century. It will draw on the experience of looking after and presenting to visitors collections in over 300 historic houses open to the public.

Keywords

Preventive conservation; precautionary principle; visitor experience; presentation; interpretation

Fig. 1 The Dining Room at Kedleston Hall designed by Robert Adam and completed in 1765. Robert Adam was responsible for every element of the design, including creating niches in the walls with plaster frames to house the Curzon collection of paintings. ©National Trust

In the Los Angeles area there are some fine examples of twentieth century houses with largely intact interiors and furniture including the 1908 Gamble House, Pasadena, designed by Greene and Greene for David Gamble, of Proctor and Gamble fame, and lived in by generations of the Gamble family until the family gave the house and its contents to the City of Pasadena and the University of Southern California Architecture department in 1966.

Some important historic houses still have uncertain futures. The Arts and Crafts House, Stoneywell, was designed by Ernest Gimson for his brother Sydney and completed in 1898 (Figure 2). The site foreman was Dettmar Blow, who like Ernest Gimson, had studied under William Morris and John Ruskin. Dettmar Blow restored the first historic house owned by the National Trust – Alfriston Clergy House acquired in 1896, one year after its foundation. Stoneywell is furnished with furniture made by some of the heroes of the Arts and Crafts movement including Sidney and Ernest Barnsley and Ernest Gimson. The chest in the spare bedroom is by Joseph Armitage and bears an oak leaf carving very similar to the one he entered into the competition to design the NT logo in 1935. He won and the oak leaf symbol remains in use today. There are one or two pieces made by Donald Gimson, the present owner and great nephew of Sydney Gimson. Donald is elderly and his health is failing and he has offered the house for sale to the National Trust with a gift of the furniture which was gratefully accepted in December 2012.

Fig. 2. Stoneywell, an Arts and Crafts House designed by Ernest Gimson for his brother Sydney and completed in 1898. © National Trust

But many houses, particularly in continental Europe and Ireland, have lost their collections, often because of war and revolution. The empty French chateaux bear witness to the violence of the French revolution, and subsequent wars. Not only did the majority of houses in Ireland lose their collections, but many were also burnt down. So the houses that have survived with some or all of their collections intact in Great Britain, the United States and other countries are precious and something to be celebrated.

The end of family ownership

In the twentieth century the social changes brought about by the Industrial Revolution, which resulted in a movement of the workforce from country estates into factories in town and cities, and the loss of a whole generation of men in the First World War, sons of land-owning families as well as the men working on farms and in houses, meant that country estates were no longer self-sustaining. Changes in inheritance tax and other taxes sounded the death knell for many historic house estates in Great Britain. Other calamities affected the occupation of houses by the families who owned them. Throughout the centuries, there have been sales of chattels from historic houses. Financial disasters have befallen owners, sometimes self-imposed through gambling or drinking, and in other cases through poor investment and lack of financial prudence in estate management. In some cases, this resulted not only in the separation of collections from houses, but also the loss of the houses themselves.

Fig. 3. Portrait of Nancy Astor by John Singer Sargent.
©National Trust

One solution, that addicts of Downton Abbey know only too well [1], was to find an injection of cash. American heiresses were a popular source of income for English country house owners at the beginning of the twentieth century. Many houses now in the hands of the National Trust have also benefited from American cash. In 1893 the Cliveden estate was purchased by a very wealthy American, William Waldorf Astor (later 1st Lord Astor), who made sweeping alterations to the gardens and the interior of the house, but lived at Cliveden as a recluse after the early death of his wife. He gave Cliveden to his son Waldorf on the occasion of his marriage to Nancy Langhome in 1906 (Figure 3) and moved to Hever Castle, which had been owned by the Meade Waldo family from 1749 to 1903 when it fell into a poor state of repair. William Waldorf Astor restored the castle. In 1942, the Astors gave Cliveden to the National Trust with the proviso that the family could continue to live in the house for as long as they wished. With the gift of Cliveden, the National Trust also received from the Astors one of their largest endowments at the time (£250,000 in 1942 which is equivalent to £8.6 million today). The Astors ceased to live at Cliveden in 1968. Today Cliveden is leased to a company who run the house as a hotel; the garden and park and ground floor of the hotel are open to NT visitors.

The National Trust (England, Wales and Northern Ireland) was founded in 1895, to preserve countryside from encroaching development. Octavia Hill, one of the three founders, wrote about the need for 'outdoor living rooms for the poor' and she campaigned for the purchase of green spaces on the outskirts of towns and cities, which lead to the development of urban green belts. By the start of the Second World War, it was apparent that country house estates were in serious financial difficulty, and many houses were being pulled down because their owners could not afford to look after them. The country houses scheme (begun by the National Trust in 1937) was designed to enable country houses and their collections to be kept together, and in most cases for the donor families to stay living in their houses. The country house scheme was a partial saviour for houses, which could be operated in surplus, or with sufficient endowment for income from investments to sustain the estate. The 1975 V&A exhibition 'The Destruction of the Country House' drew attention to the crisis of houses being demolished or put into inappropriate use. The National Trust came to the rescue of many but by no means all of these furnished houses. The website Lost Heritage records a total of 1,842 country houses that have been destroyed from the eighteenth century to the present (2).

Opening historic houses to visitors

Some houses were open for visitors from when they were built. A visit to Kedleston Hall in 1794 by Samuel Johnson and James Boswell described Mrs Garnett, Housekeeper from 1766 to 1809, who took them round the house with a copy of the inventory in her hand, as 'a well-drest housekeeper, a most distinct articulator'.

This low level of visiting went on through the nineteenth and early twentieth century. By the mid-twentieth century some owners of houses reacted to the downturn in their fortunes by opening for longer and more enthusiastically. Probably the highest profile example of this was at Longleat when the 6th Marquess of Bath opened the first safari park outside Africa in 1966. Expert opinion was divided about whether the venture could ever succeed. The lions would fight, they would escape, visitors would be hauled from their cars and eaten. 'No amount of soothing assurance,' The Times leader proclaimed, '... can persuade sensible people that a quite gratuitous and unnecessary risk to life is not contemplated.' Needless to say this scaremongering guaranteed queues of cars on opening day which have continued ever since. Of course, as a bi-product of this some of the visitors also went into the house!

Most National Trust houses were open to the public as soon as they were acquired, although some, particularly those that came with very few or empty of contents, were leased to tenants who opened on an occasional basis or by written request. In the early days, the membership of the National Trust was tiny. There

were 100 members in 1895, the year of its foundation; 7,850 by 1945; just under quarter of a million by 1970; half a million by 1975; one million by 1981; two million by 1990; three million by 2007; and four million in 2012. The National Trust has a target membership of five million by 2020. The rise in visitor numbers mirrors this exponential growth in members (members get free admission to over 300 pay for entry sites, houses and gardens). A million members roughly equates to five million visits. Numbers for 2012 were 19.5 million visits and 25 million visits are anticipated by 2020. The National Trust does not need the lions of Longleat! In fact the Trust's challenges are the reverse of those facing the owners of country houses in the middle of the twentieth century and the paper presented by my colleague Helen Lloyd at this conference will show how the Trust will capacity plan and manage for this number of visitors [Lloyd et al 2012].

Care of collections in historic houses

My research for the Getty Conservation Institute Readings in Preventive Conservation book [Staniforth 2013] has given me a wonderful opportunity to review traditional methods of housekeeping when houses were lived in by their owners. The needs of the family, to use the furniture and furnishings on a daily basis, has resulted in methods of care that have been passed down through generations of servants. These traditions carried on until the twentieth century until the changes in fortunes already talked about meant that few families could afford to live in historic houses with the armies of servants they had employed in the nineteenth century.

The philosophical background of preventive conservation can be found in the mid nineteenth century writings of John Ruskin and William Morris. In 'The Seven Lamps of Architecture', John Ruskin presented the seven principles that he believed should govern the practice of architecture [Ruskin 1849]. In the chapter titled 'The Lamp of Memory', focussing on the importance of tradition, Ruskin passionately advocated the importance of proper maintenance of monuments so that restoration, which he believed caused damage to historic buildings, would not become necessary. The most pertinent words are: 'Take proper care of your monuments, and you will not need to restore them. A few sheets of lead put in time upon the roof, a few dead leaves and sticks swept in time out of a water-course, will save both roof and walls from ruin.' In 1877 William Morris published a manifesto stating the principles of the Society for the Protection of Ancient Buildings (SPAB). Morris co-founded SPAB in protest of the practice, widespread in Victorian England, of intrusive restoration of old buildings, a practice that had also alarmed Ruskin. Morris promoted what has become known as the 'little and often approach' putting 'protection in place of restoration, to stave off decay by daily care' [Morris 1877].

Traditional housekeeping embodies the philosophy of daily care, and predates either Ruskin or Morris. There are writings about practices of care that date back to the sixteenth century, but traditions of housekeeping practice were mostly handed down by word of mouth and only recorded from the seventeenth century in a number of housekeeping manuals. Very often these manuals took the form of instructions for servants and included recipes as well as instructions about household care. Susanna Whatman (1753-1814) originally wrote her manual in a small quarto notebook between 1776 and 1789 [Whatman 1789]. The directions for the housemaid include a number on instructions about keeping the sun out of rooms using blinds, with quite specific notes about the time in which sun comes into rooms.

Time and time again, modern preventive conservation practices, that are based on scientific understanding of the agents of deterioration on museum collections, are seen to replicate the recommendations of traditional housekeeping practice. For example, the science underlying light damage, and why high levels of illumination, and shorter wavelengths of radiation have a particularly potent effect are understood, and a number of methods to reduce visible light levels and eliminate ultraviolet radiation are used. In fact, the only measure taken now that was not a traditional housekeeping practice is to use ultraviolet filters, which were not

invented until the twentieth century. The National Trust Manual of Housekeeping, first published in 1985 and published as a new edition in 2006, updated in 2011, draws heavily on traditional housekeeping practice as well as injecting a dose of late twentieth century science and technology [National Trust 2011]. For example, the concept of conservation heating, humidistatically-controlled heating, replicates the sort of gentle heating that houses would have received when heated by open fires and kitchen ranges with their flues passing up through the building.

Presentation, interpretation and use of collections

Once houses came out of family ownership and were managed by institutions, charities or run as museums, their use changed dramatically, as did the number of people who visited the house each year. I have already touched on the challenges of hundreds of thousands of visitors each year to some houses. Historic houses are presented in a new context in which their historic, architectural and artistic significance is interpreted to the public as museum collections. The collections are there to be looked at and studied, not used. This new context can make it more difficult for visitors to understand how these houses are used. Even the existence of town houses and country houses is alien to most people nowadays. State bedrooms cause immense confusion, and the idea of having a bedroom which was only there in expectation of a king or queen's visit, which invariably never happened, is not a challenge that most people encounter in the twenty-first century. Visitors relate more easily to kitchens and other servants rooms. Contrary to many visitors belief, the National Trust is not showing below stairs as a result of the current popularity of Downton Abbey! The first house to be turned 'upside down' was Erddig on the Welsh-English border. In his 1978 book 'The Servant's Hall: Domestic History of Erddig', Merlin Waterson describes the ground-breaking work of redesigning the visitor route so that visitors enter through the estate yard and kitchens and come into the house by the servants stairs [Waterson 1978].

Many visitors find the palatial formality of Kedleston a cold place and have little emotional engagement with it. This is particularly the case as they only see the formal state rooms, and not the family wing, where the Scarsdale family, descended from Lord Curzon, now live.

In order to address this lack of emotional engagement the National Trust has been working on a strategy to present the houses in a way more like they would have been when they were lived in. The Trust has called this initiative 'bringing places to life'. Where possible the Trust has removed barrier ropes, and allowed visitors to play pianos, sit on chairs and read books in libraries. Conservation in action is how the Trust does conservation nowadays, and Siobhan Barratt will describe how this is built into the major conservation project at Knole [Barratt 2012].

At Lyme Park the Trust recently acquired the Lyme Missal, printed by Caxton in 1485, for the collection. This enabled a complete re-presentation of the Library from its rather dull mid-twentieth century decoration to a restoration of the Victorian decoration with re-created wallpaper, re-upholstered chairs which visitors can sit in and a re-organisation of about half of the book collection into shelves from which the visitors can select volumes to read (Figure 4). The Missal has been digitised and can be read on a computer console in the room, and it is also available as a facsimile.

Bringing places to life presents challenges for conservators since it increases access to collections and the use of some objects, which means that custodians and conservators have to make decisions about the fragility of objects in their collections. The National Trust has moved away from a uniform approach, in which all objects in historic interiors were considered equally fragile, to one in which decisions have to be made to distinguish between the fragile and the more robust. In other words, the National Trust is no longer exercising the

precautionary principle in which it assumes that in the absence of evidence to the contrary all objects are fragile and must be treated as such. Helen Lloyd and I wrote about this in our paper 'Use it or lose it: the opportunities and challenges of bringing historic places to life' at the IIC Vienna Congress in September 2012. [Staniforth and Lloyd, 2012] Siobhan Barratt will cover some aspects of bringing places to life in her paper 'Inspired by Knole' [Barratt 2012].

Fig. 4. The Library at Lyme Park, Cheshire. Visitors can sit on chairs, read books from the Library shelves, and learn about the Lyme Missal, printed by Caxton in 1485 and recently acquired for the collection. The Missal is also available as a facsimile which visitors can read in digital form.
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In the absence of other methodologies, the precautionary principle is a safe position to adopt, particularly in an organisation such as the National Trust where the day to day care of collections is provided by local staff and volunteers, few of whom have professional conservation qualifications. Until recently, our training for housekeeping staff recommended the same high levels of preventive conservation care for all objects in a room. The National Trust is now moving to a risk-based approach in which it assesses an object's fragility and tailor its preventive conservation measures accordingly.

The idea that not all objects have equal significance requires museum professionals to think about collections in a way that resembles the approach of heritage professionals, who ascribe values to the historic environment in order to make choices about what to preserve. Yet museum professionals tend to resist such hierarchies when considering objects in their collections, whether of fine or decorative art.

One of the few examples at a national level, of grading collections in terms of value and significance, was carried out in The Netherlands in the 1990 Delta Plan for the Preservation of Cultural Heritage. [Talley 1999]. The plan assessed the conservation needs of all of the country's collections, and graded them in terms

of their importance, leading to a practical programme for clearing conservation backlogs.

There is no internationally agreed way of evaluating the significance of collections, and while this would inevitably be problematic to introduce, not least because we must accept that the significance of an object may change with time, it may become more of an imperative as museum managers struggle with the demands of maintaining ever increasing collections in the context of diminishing resources.

Conclusion

In this paper I have talked about the origins of historic house museums and the care of collections while they were lived in, the end of family use and opening these houses to the public. I have covered presentation and interpretation of houses and opened up the possibility of using collections more to increase visitors' emotional engagement with the houses. None of these issues are straightforward but I think that conservators who work with objects in the context of historic houses should consider moving from the relatively safe ground of treating all objects as fragile and rare to the less comfortable place where the relative significance and fragility of objects are considered so that historic places may be presented and interpreted in a way that enables visitors to understand their use before they became museums.

Endnotes

1. Downton Abbey is a popular BBC programme first shown on television in the UK in 2010.

2. www.lh.matthewbeckett.com/lh_complete_list.html (accessed 30 October 2012)

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Conservation for Access Redux: Narrative, Visitor Flow and Conservation

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Abstract

How can ever-increasing numbers of visitors enjoy their experience of a historic house and understand its significance, without compromising the physical survival of its interiors? The National Trust for England, Wales and Northern Ireland, a UK conservation charity, is fostering the collaboration of conservators with gardens advisers, learning and interpretation consultants, and property staff. They are developing methodologies which combine an assessment of how visitors can be physically accommodated in sensitive interiors with 'story-telling' narratives, to build a planned, coherent, emotionally engaging experience for visitors.

Keywords

Historic house, preventive conservation, visitor, access, experience, capacity, sustainability, interpretation

Introduction

As the leisure industry grows more competitive, and people become more discriminating in how they spend their time and money, how can heritage bodies refresh what they offer to maintain and grow support, whilst preserving historic assets for the long term? This paper presents methods developed by the National Trust to tackle this challenge. As a private charity whose purpose is '*….promoting the permanent preservation for the benefit of the nation of lands and tenements (including buildings) of beauty or historic interest*' [1], the National Trust is independent of government and state funding. Instead, it relies on membership subscriptions, gifts, legacies, income from its commercial and investment activities, and admissions to the historic houses and gardens it opens to the public at a charge (Figure 1).

Fig. 1 The Vyne from across the lake in 1755, by Johann Heinrich Muntz (1727-1798) © National Trust Images/Derrick E. Witty. Founded in 1895, the Trust now owns over 300 historic houses, 250,000 hectares of land and 700 miles of coastline visited by over 90 million people each year – 17 million to houses and gardens.

The National Trust recognises that people value its work but do not necessarily feel personally committed to supporting it. So the Trust now aims to nurture 'people's love for special places' so they form a more emotional connection with its properties, feel closer to its work, and thus more inclined to provide support [National Trust, 2010]. The Trust's measurement of how enjoyable visitors find the time they spend at properties through exit questionnaires demonstrates that enjoyment is improved by getting the basics right, by providing high quality customer service, and creating richer experiences through a compelling narrative and excellent presentation, all based on sound research and high standards of conservation. This paper explores how professionals in conservation and access can use each other's skills to manage visitor flow in historic houses. By combining goals - preventing overcrowding and telling a great story through optimising the use of space –two activities, which are often cast in opposition, can be united.

Conservation for Access (C4A) toolkit

Over the past 30 years, visitor numbers at National Trust properties have increased dramatically, from 6 million in 1978 to 19.4 million in 2011 [National Trust, 2012]. Targets become ever more ambitious, seeking another 10% visitors each year, and prompting national and regional managers to open properties for longer hours per day, and more days per year, to maximise revenue from sales of tickets, refreshments, gifts and books [2].

Meanwhile, collections conservation and gardens advisers identified a related increase in wear - damage to surfaces caused by overcrowding and lack of maintenance - particularly at properties where teams of property staff were too small to support visitor access as well as care for the house or its garden [Calnan, 1999]. At the same time, property managers felt under pressure, being pushed and pulled in different directions: urged by conservation and gardens advisers to hire more staff to maintain conservation standards and by operational managers to control or reduce staffing costs [Lithgow, 2011].

In 2000, collections conservation and gardens advisers agreed with the head of customer services that it was time to resolve a growing conflict between conservation and access. Cross-functional collaboration between national advisers, regional managers and local operations staff generated the concept of a 'toolkit'. Its purpose would be to help property managers to assemble the information required to make effective decisions, balancing greater access and higher standards of presentation with conservation for a more sustainable future.

The 'Conservation for Access' (C4A) toolkit is in three parts:

- An initial flowchart 'decision tree' - prompting managers to establish whether they already have sufficient data to assess whether the property has sufficient resources to achieve conservation, staffing, access and income targets for a given pattern of opening;

- Where this information is lacking, a series of spreadsheets are used to gather this data consistently, and assess objectively the impacts of access on housekeeping and gardening;

- A report draws the data together for collaborative discussion by a multi-disciplinary team (curator, conservator, gardens adviser, financial and marketing consultants and property staff); it establishes the costs of maintaining conservation standards, while optimising the amounts and different types of access, which a property might provide. The report concludes with a summary of this discussion, and an agreed strategy for future growth, in which income from greater access contributes directly to the associated costs of preventive and remedial conservation [National Trust, 2011].

Since the introduction of C4A toolkits in 2005, over 150 reports have been completed by properties proposing to change or increase their access arrangements. It takes on average 26.5 days over the course of a year to collect benchmark data for the initial toolkit, and each subsequent review requires another 5.5 days.

Visitor Experience Design (VED)

At the same time, properties were making improvements to visitor facilities, such as reception areas or the restaurant, without considering their effect on visitors' experience of the whole property. Such incremental changes in presentation and management which address one issue at a time can, cumulatively, result in a negative impact on the 'spirit of place'. 'Visitor Experience Design' (VED) is the National Trust's most recent approach to planning intellectual as well as physical access in a more holistic way. The intention is to create a vision for the place lasting ten or more years into the future, with potential changes mapped onto all spaces across the site to understand their interaction. When an opportunity to make an intervention arises (for example, when funding becomes available, or the end of a tenancy brings a building back into National Trust management), the vision informs the property manager's decision.

VED aims to consider all aspects of the visitor journey at the same time. Presentation, conservation management, visitor flow and interpretation are combined and the inter-relationships between these explored and understood. The process starts with a deep understanding of the theme and spirit of each place and a detailed analysis of the audience. It takes an integrated approach, which uses techniques from both interpretive planning and commercial master-planning. For example, the Trust has worked with VisionXS, a company which regularly surveys leisure customers across the UK, to get a snapshot of what appeals to different age groups, and then assesses the psychometric appeal of the existing or proposed elements of the visitor experience, by rating the psychological appeal of these elements against the site average and the leisure industry benchmark (Table 1).

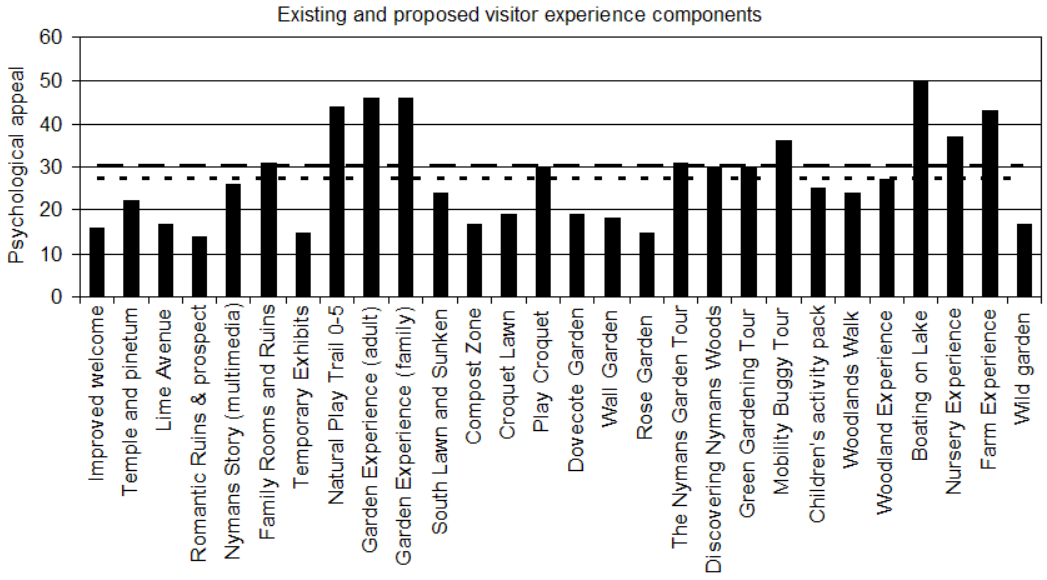

Table 1: Example of analysis commissioned from VISIONXS by the National Trust. The psychological appeal of current and potential components of visitor experience are rated against the site average and the leisure industry benchmark.

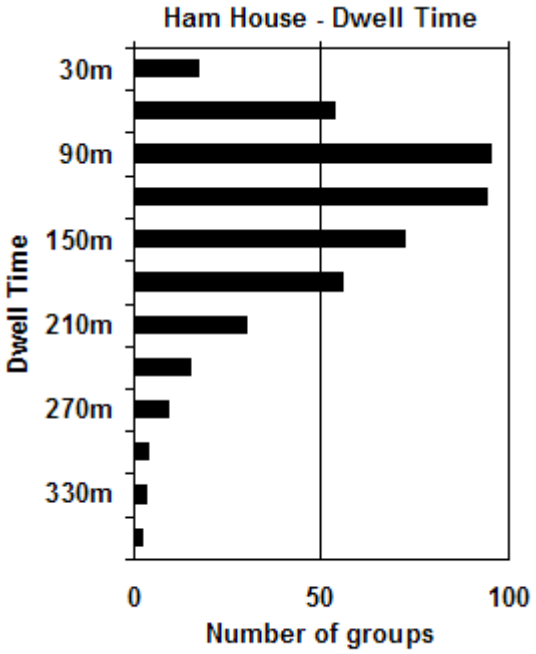

Table 2: Investigating visitor dwell time at Ham.

This partnership revealed some gaps in our knowledge of visitor behaviour. Until this year, most properties could only guess at the average time visitors spent on site (dwell time); this was usually overestimated, unless specifically researched, as at Ham House in 2011. Here, the admissions team used numbered vouchers to record visitors' time of entry and departure to measure dwell time accurately. Graphing the data shows in minutes the amount of time spent on site, varying from 30 minutes to five hours (Table 2). However, the measurement was of the time spent by visitors on the whole site, rather than in individual elements, such as the house or garden.

Visitor behaviour revealed in C4A data

Property managers and visitor experience consultants soon realised that property staff and conservators had already collected data useful for VED, including dwell time, visitor capacity and flow in houses and gardens through the C4A toolkit. This assesses the desirable capacity of each space for visitors and the total capacity of the house or garden at a moment in time. The toolkit also monitors dwell time in individual spaces, and the average length of stay in a house or garden. Using the data for total capacity and average length of visit, property staff can calculate a rate of entry to the property which delivers an enjoyable experience for visitors without creating overcrowding and risks to historic objects and surfaces. This information also enables property teams to plan the capacity of other visitor facilities (car parks, lavatories, restaurants), and consider opportunities for developing attractions on the wider estate, which might relieve visitor pressure on the house and garden and generate more revenue.

Audience development at The Vyne

The Vyne is a small estate near Basingstoke, Hampshire, visited by both Henry VIII in 1510 and 1535 and Elizabeth I in 1569 and 1601. The house, originally built between 1500-1520, is valued for its association with Strawberry Gothic; its owner, John Chute, contributed to the Committee of Taste which from 1749-1776 advised Horace Walpole on the remodelling of his country house, Strawberry Hill, in Twickenham [Howard, 2006; Chalcraft and Viscardi, 2007]. The Vyne's significance encompasses notions of past grandeur, antiquity, high taste, outstanding talent, romanticism, simplicity and domesticity. The spirit of each era has been honoured by every successive generation and is still discernible in fragments, but needs recognising, nurturing and celebrating.

The market potential around The Vyne is almost seven million people (Figure 2). This number includes the population living within 60 minutes' drive time, and domestic and international holiday makers visiting the area. There are currently around 115,000 paying visitors to the property, around 1.5% of the local market. Consumer analysis of populations whose profiles match those of National Trust members, but who are not yet members, and who live within 20, 40 and 60 minutes' drive from The Vyne, suggests that the National Trust might expect a property on this scale to attract 1.75% of its market potential. A really successful site of a similar size might draw 2.5%, equivalent to another 60,000 visitors per year at The Vyne [3]. In terms of the

number of visitors which can be accommodated without damaging sensitive interiors, the house is currently operating close to capacity, so the challenge is how to create a visitor experience which can satisfy this increasing demand.

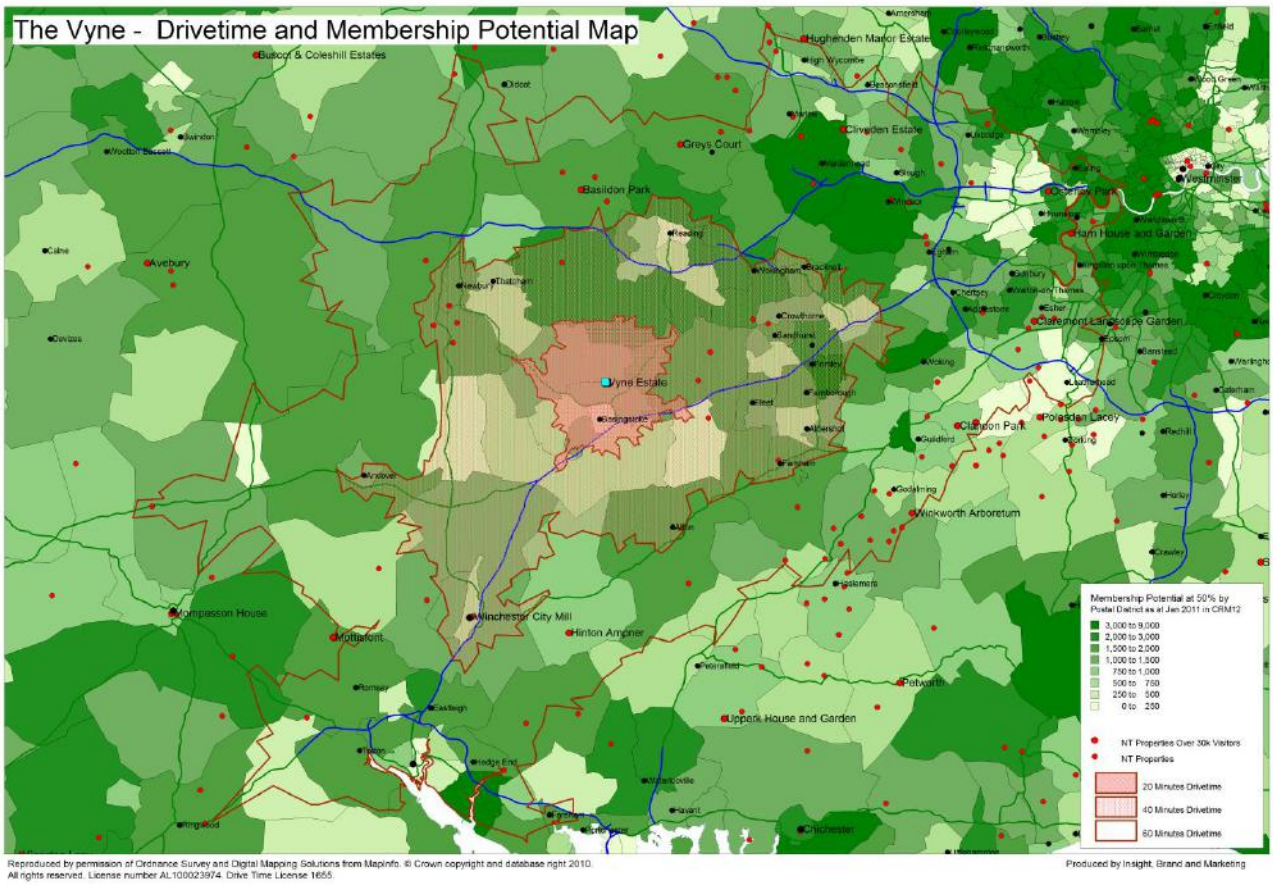

Figure 2: Assessment of market potential for the Vyne, based on cross-referencing MOSAIC data on populations whose profile matches that of National Trust members, but who are not yet members, and who live within 20, 40 and 60 minutes' drive from the property [3].

Visitor impacts on conservation

Higher visitor numbers increase the rate of cumulative wear to floors and vulnerable decorative surfaces close to the visitor route. At pinch-points overcrowding also leads to accidental damage. The same is true in gardens, where path edges are trampled into the lawn, and patches of wear occur around seasonally flowering plants and shrubs ('admiration points'). Dust research [Lloyd et al, 2003] has shown that daily deposition is proportional to total visitors, so cleaning needs to respond to the rate of dust coverage, whilst being aware that fragile surfaces, such as textiles and gilding, can be easily abraded by repetitive cleaning. Examining data on visitor capacity and flow in houses and gardens prompts property managers and their staff to consider how they might manage visitor dwell time in individual spaces and thus help prevent or mitigate damage by reducing overcrowding and risks of over-cleaning.

At The Vyne, normal visitor capacity is estimated to be 248 people in the house at any one time; a higher capacity is calculated for public holidays when visitor demand exceeds sustainable capacity, but when turning visitors away would be unpopular. This figure takes into account the physical impact of people on collections and interiors, visitor enjoyment, and the ability of each room guide to monitor the security of the room to which they are assigned. The average length of a visit to the house is 50 minutes, suggesting that daily capacity over 5 hours could be as great as 992 people. However, assessments of visitor flow indicate that not only smaller rooms, such as the South Bedroom and Strawberry Parlour, but also larger ones with dense displays, are frequently overcrowded, for example the Tapestry Room and Oak Gallery (Figure 3). Overcrowding occurs throughout hours of access from 11 am to 4 pm, even on quieter weekdays, causing damage to scagliola and gilt tables in the Oak Gallery (Figure 4), where visitor traffic also causes vibration and cracks in the Stone Gallery ceiling below (Table 3).

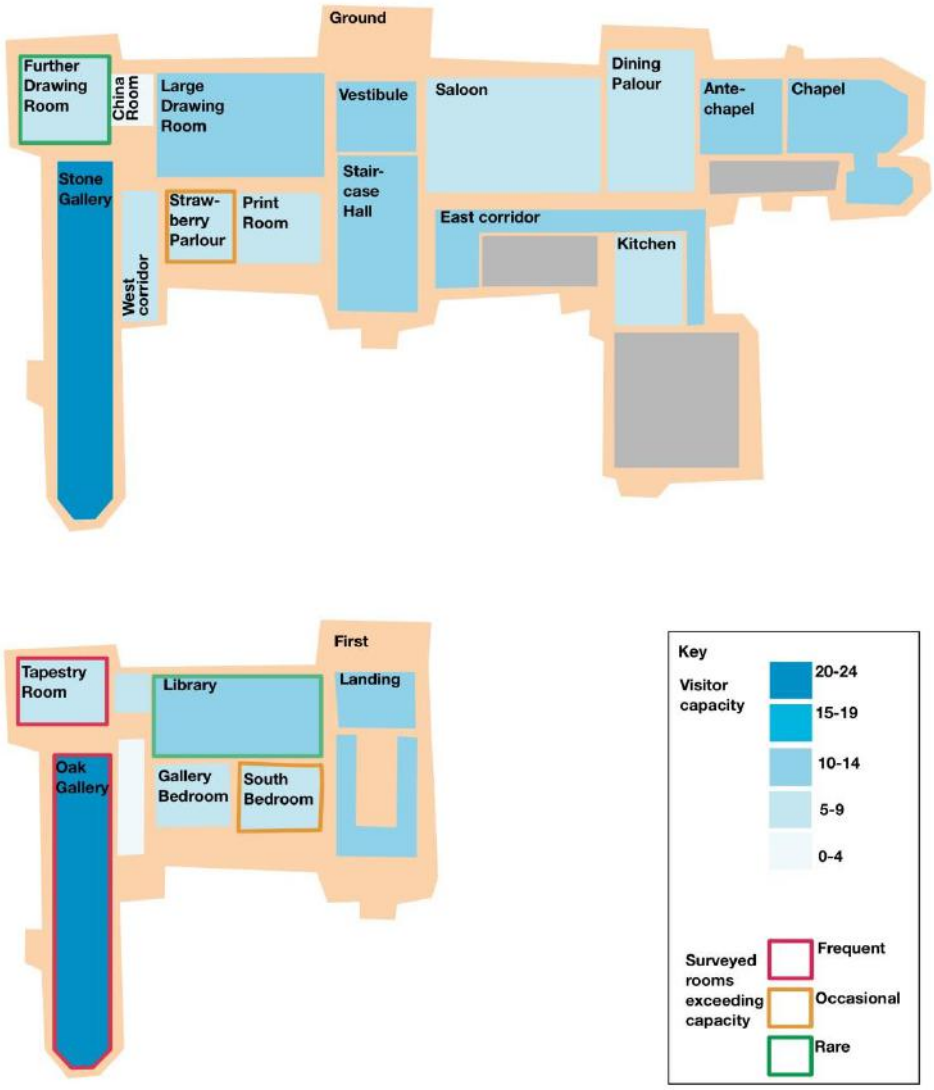

Figure 3: Floor plans for The Vyne, where the C4A assessment of visitor capacity shows which rooms become overcrowded.

Figure 4: The Oak Gallery at the Vyne ©National Trust Images/Andreas von Einsiedel

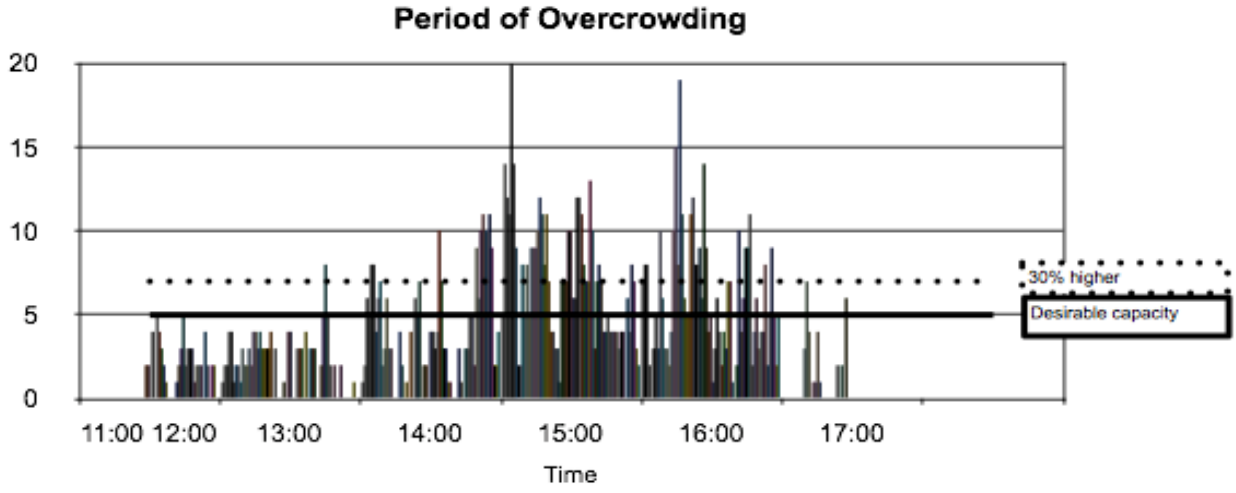

Table 3: Graph of visitor flow from a C4A worksheet. The amount of overcrowding is indicated by the peaks above the two thresholds; the higher capacity threshold applies only to public holidays when visitor demand exceeds the lower desirable and sustainable capacity, but when turning visitors away would be unpopular.

The data for dwell time, visitor capacity and flow between rooms suggests that more formal methods of controlling visitor flow could be adopted throughout the house, for example:

- putting surfaces and objects vulnerable to abrasion out of reach;
- using timed tickets to regulate entry to the house, and/or
- equipping room stewards to communicate directly with colleagues along the visitor route, for example to regulate entry to the Chapel.

The need for significantly larger preventive and remedial conservation budgets required to maintain and protect the showrooms during visitor access was also identified. However these controls, if imposed without reference to the story which the visitor route is trying to tell, might impair visitors' enjoyment of, and emotional engagement with, the spirit of place.

Managing visitor flow without VED

In the absence of the systematic planning required by VED, piecemeal visitor management decisions taken to solve immediate problems without considering wider implications created an approach to the house never taken by historic visitors. Instead the route pours all our visitors, as soon as they arrive, into the most fragile part of the property: the house. The house has not one but two impressive fronts, to the North and South, but visitors are asked to approach from the East, seeing nothing of either of the principal façades, and to use the servants' entrance. Visitors pass the walled garden on their approach to the house and go through most of the formal gardens without giving them a second glance. This decision reflects a presumption that the house and collection are of greater value to visitors than the gardens and estate.

Although there are some benefits to using the servants' entrance - it is robust, with step-free access – visitors are deprived of a glimpse of either façade and made to feel like servants. This would not be a bad thing if there was an impressive 'below stairs' story to tell, but the service entrance does nothing to celebrate The Vyne's 'spirit of place'. If visitors were offered the historic approach to the house, they would have more opportunities to disperse and enjoy the woods, watch birds in the wetland reserve, or picnic while admiring distant views of the house across the lake (Figure 5).

Figure 5: The preferred entrance route into the Vyne, giving views across the lake towards the North front (compare with Fig.1) ©National Trust Images/Nick Daly

The challenge of mapping story to space

Like many writers on the art of story, Vogler [2007] makes it clear that engaging stories are constructed around a sequence of exciting peaks of "crisis", interspersed with troughs of quieter reflection. That he writes for film and about screenwriting is surprisingly appropriate for heritage sites because, at many properties, visitors spend no more time engaging with the site than they would watching a film in a cinema.

But there is one crucial difference, the story in cinema is revealed in exactly the sequence that the director intended. National Trust surveys show that many places where visitors report deep emotional engagement with the story, and thus a more enjoyable visit, occur on guided tours whereas, where visitors flow freely, elements of the story may be encountered out of sequence. Although interpretation methods are a factor, the principal challenge is to map the story of the place to individual spaces so that, even if visitors do not follow the story in chronological order, they will still experience the "wow" moments separated by more reflective spaces. C4A can help map those spaces.

At The Vyne, most of the interpretation is provided in the house. Over the years layers of interpretation have accumulated, making the story confusing and less emotionally engaging than it might be. VED provides an opportunity to revisit the story, identifying a single main 'theme', the 'spirit of place' filtered through the lens of the target audience. Taking a cue from Rand [1993] three primary sub-themes have been drawn out of the main theme under which some key messages and stories are listed (Table 4). But how can this story be mapped to the spaces at The Vyne?

Main Theme	**Lose yourself in a little legend**		
Primary Themes	Did that really happen here?	The Courtier, the Connoisseur and the Country Squire	Treasure hidden in plain sight
Secondary and Tertiary Themes	Henry VIII, Jane Austen, World War II and the Lord of the Rings	Lord Sandys, the Courtier John Chute, the Connoisseur and Changing Fortunes	Woodlands, Wetlands and the Designed Landscape
Notes	Popular cultural icons that may (or may not!) have connections with the Vyne, and a great way to introduce all our visitor segments to the story.	Curious Minds and Live Life to the Full visitors can explore the development of the house and collection through these three contrasting lives	No-one has ever found all the playful surprises, wonders of nature, and creative treasures that the Vyne Estate has to offer. This theme is a great way for non-core audiences to fall in love with the Vyne.

Table 4: Themes and sub-themes at the Vyne

Using C4A data, the emotional peaks of the story can be synchronised with the "wow" spaces of greatest sensory stimulation, together with spaces for reflection around the more spectacular spaces, to ensure that people do not want or need to spend time with the story in the most fragile or cramped rooms. The data also encourages thought about interpretation methods so that, for example, time-consuming interactive media are not located on busy thoroughfares or at pinch-points but, instead, more appropriately in quieter spaces, at dead ends off the main visitor route, such as the Oak Gallery. C4A data demonstrates that, by increasing the attraction of this space, pressure on the adjacent Tapestry Room door could be relieved, although additional measures may be needed to prevent increased traffic causing further cracking of the ceiling plaster below. Also, to maintain good visitor flow, extending dwell time in the Oak Gallery should be followed by a short dwell time in the smaller South Bedroom next door (Figure 6).

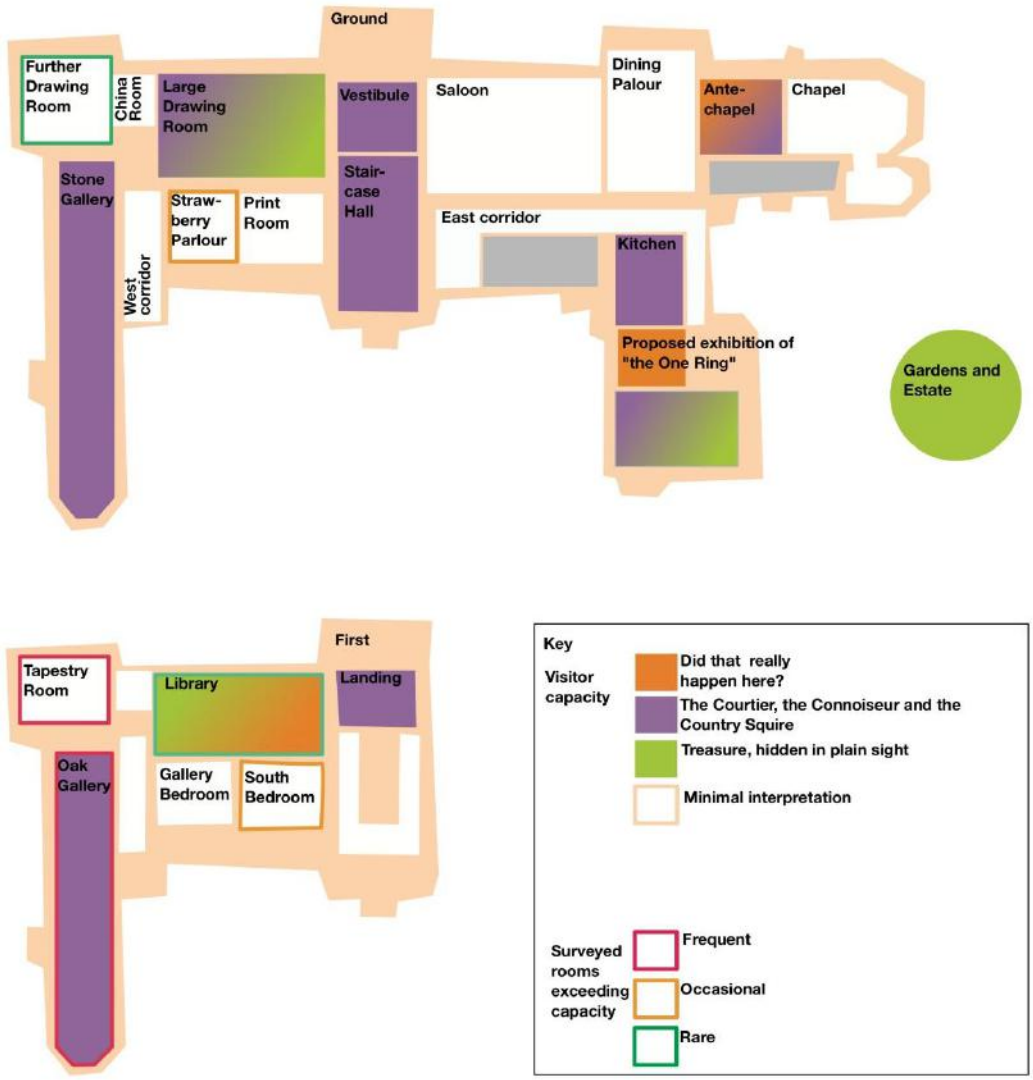

Figure 6: Mapping interpretive themes onto spaces, taking account of C4A capacities and story flow.

Conclusion

To increase income whilst maintaining the condition of its properties to ensure a sustainable future, the National Trust must continually develop its business and respond to the needs of changing audiences. Currently, it aims to do this by creating a deep emotional connection between people and place through better storytelling, which engages visitors more profoundly with the place (or property), and develops longer term support for the Trust. A multidisciplinary approach can design the unfolding of the narrative in ways that avoid damaging the fabric of the place, by calibrating the way stories are told to the physical sensitivity of the spaces. So rather than trying to tell all a property's stories everywhere, complex stories which require prolonged dwell time can be told not in spectacular but sensitive spaces, but in adjacent robust rooms, either to prepare visitors - by telling a complex story in advance - or for visitors to reflect on what they have just seen. C4A data can help manage visitors' activities through spaces, to modulate interpretation to the constraints of the physical fabric, in tandem with the VED process influencing where and how people spend their time throughout the whole property. By focussing on a shared goal – how to manoeuvre visitors safely and enjoyably through space – two potentially conflicting objectives, conservation and access, can be successfully integrated to create a sustainable outcome.

Acknowledgment:

The authors thank Madelaine Abey-Koch for facilitating the 2008 Conservation for Access toolkit at The Vyne; the London & South East consultancy team; property staff and volunteers at The Vyne; and external consultants, VisionXS and Allyson Rae.

Endnotes

[1] The National Trust's core purpose is summarised in The National Trust Acts 1907-1971, London: National Trust, 2005. http://www.nationaltrust.org.uk/how-we-are-run/ (accessed 24 May 2013).

[2] A National Trust 'property' comprises the land, buildings, historically associated chattels and other assets. Entry tickets are sold at pay barriers usually located near a house and/or formal garden. To develop audiences and generate income, there is a desire to change the open season (April to October, with winter devoted to care and maintenance), to year round opening of some elements of a property.

[3] MOSAIC data classifies UK consumers in terms of location, demographics, lifestyles and behaviours http://www.experian.co.uk/business-strategies/mosaic-uk.html (accessed 24 May 2013).

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

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Three Historic Houses, Three Conservation Approaches: Three Decades in the National Trust for Scotland

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Abstract

This paper examines three properties in the care of the National Trust for Scotland that reflect three different approaches taken to their conservation over the course of three decades. The different approaches reflect changing attitudes as well as the benefits of implementing continuously developing sector standards. The authors conclude that comprehensive scholarly and technical research is essential to achieving a coherent and holistic philosophy, which can then be used to inform all stages of project planning and delivery. Preventive conservation measures and activities are core to the on-going operational life of each of these three historic houses.

Keywords

Significance, preventive conservation, conservation management plan, project

House of Dun

The opening of House of Dun to the public on 12 May 1989 can be seen as one of the most successful initiatives by the National Trust for Scotland (NTS), not least in fund raising terms. The house is exquisite, a miniature classic pavilion anchored by giant Wellingtonias within the wider landscape. The plan of the house resembles an intricate nest of Chinese boxes, fitted around the surprisingly spacious central Saloon with its exuberant stucco-work projecting in 3-D. The late Queen Elizabeth the Queen Mother, Patron of the NTS, was alleged to have said after cutting the ribbon at the opening "one could imagine living here oneself" (Figure 1).

Fig. 1. House of Dun, looking towards the house with Montrose Basin behind, 1999. © National Trust for Scotland/Jonathan Smith

Fig. 2. House of Dun, Saloon, 1981.
© National Trust for Scotland/J.G. Burgess

And yet, behind these official celebrations, there was disquiet. At the press preview, the late David Learmont, the Trust's Curator at the time, explained the extent of his interventions: dado rails had been introduced where none had been, grates stripped out, and more. Certainly William Adam's published design had been restored, but there was unease that day that a significant nineteenth century layer had been completely erased [Adam, 1812]. Not a single surface texture came through the restoration process, and much of the eighteenth century furniture that filled the rooms had been introduced from elsewhere; Chippendale horsehair chairs, for example, having been borrowed from the Duke of Atholl. A 'before' and 'after' comparison of the Saloon reveals the extent, not just of the colour change from blue to green, but of how almost none of its earlier contents had been returned (Figures 2 and 3). Viewed from the perspective of 2012, it is clear that the Saloon (conceived as William Adam's great Dining Room), had become the Drawing Room by the early nineteenth century and, as new contents were introduced by the Erskine family, items were selected which did not diminish the splendour of the stucco-work. In 1829, the heir to Dun married Lady Augusta FitzClarence, an illegitimate daughter of King William IV, and many of the contents must have been princely if not actually royal, for example, the "King's breakfast service from Windsor Castle" recorded in the 1966 inventory [1] [NTS Archive].

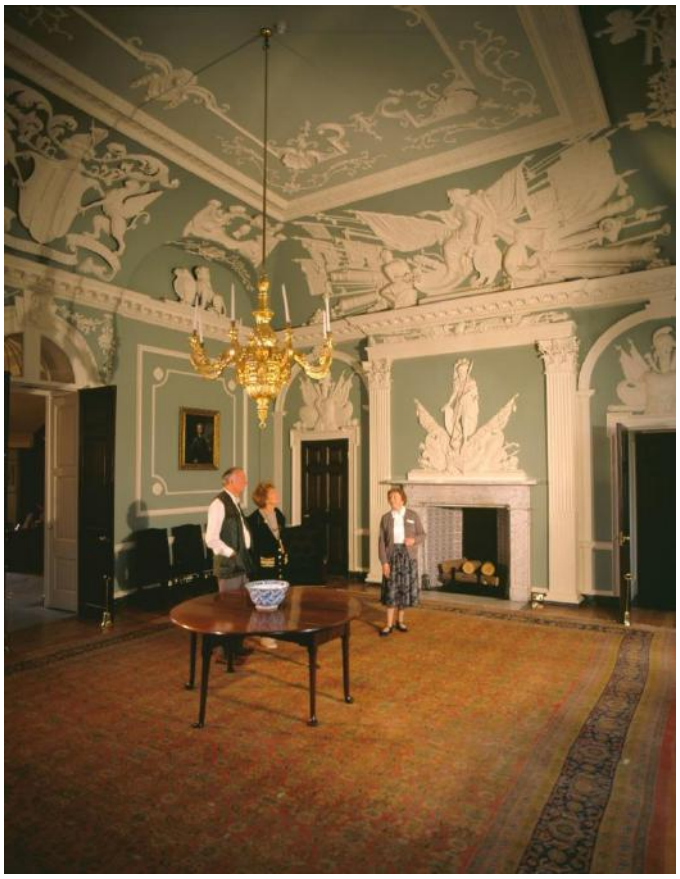

Fig. 3. House of Dun, Saloon, 1995.
© National Trust for Scotland/Harvey Wood

Few of these nineteenth century contents were returned to the principal rooms in 1989, and the few that were suffered to remain at House of Dun were exiled to the bedrooms, along with all the nineteenth century portraits. But, in these bedroom settings, their significance as material culture components was diminished, if not rendered meaningless. An eighteenth century ambience had been created on the principal floor at the expense of rich layers of history and meaning and, today, the 1989 arrangement looks like the work of an

interior decorator, reflecting the taste of the 1980s and at odds with the integrity of the Erskine family's arrangements. In retrospect too, this imbalance seems reflected in NTS' research that underpinned this restoration. The Trust had benefited from recent academic research into the period c.1720-1750 of the history of House of Dun and, perhaps understandably, focussed on the eighteenth century story and restored much that could have been conserved, whilst the significance of the royal connection went overlooked [Kay, 1987].

Newhailes

As a direct consequence of the wider unease, the then President of the National Trust for Scotland, the late Marquess of Bute, strengthened the Trust's Curatorial Committee and brought together a group of experts advocating conservation, which resulted in an immediate shift of approach throughout the Trust. These events were timely because, during the early 1990s, discussions had begun with the Trust over the future of Newhailes, a late seventeenth century classical villa on the outskirts of Edinburgh (Figure 4). Newhailes contained the most important collection of decorative art from the second quarter of the eighteenth century, still in situ in Scotland in splendid rococo interiors, and the house and its wider estate finally passed into the care of the Trust in 1995 with the support of the Heritage Lottery Fund (HLF) [2]. Newhailes was home to the widowed Lady Antonia Dalrymple whose Trustees were protective of her security and privacy and, although so close to Edinburgh, the villa remained sequestered and little known. The palpable 'sleeping beauty' aura of the house was however long standing and, as early as 1917, Sir Lawrence Weaver, architectural editor of Country Life, wrote "it is the more pleasant, therefore to be able to illustrate a house which shows the decorative art of the first half of the eighteenth century untouched by the hand of the 'restorer'"[Weaver, 1917].

Fig. 4. Newhailes, seen from the front, 2004.
© National Trust for Scotland/Mike Bolam

The view of Lord Bute's new Curatorial Committee was that it did not want another House of Dun, and the wider world was changing too. For example, at both Brodsworth Hall in Yorkshire and Chastleton House in Oxfordshire, English Heritage and the National Trust had pursued a conservative approach to these two houses with their parallel histories to Newhailes of 'untouchedness'. Furthermore, Historic Scotland and the HLF, as well as other funding bodies, insisted that the National Trust for Scotland set out the significance of Newhailes and establish a 'Newhailes philosophy' before any work could begin.

The Trust employed Drs Bill and Eila McQueen, a husband and wife team of historical researchers, to go through the family papers; a management plan was embarked upon; a comprehensive body of reports was commissioned from specialist conservators; and 'Newhailes Study Days' provided a focus for debate and ideas, presenting the new research alongside technical papers [University of Edinburgh, 1997 and 1998]. Jonathan Marsden, now Director of the Royal Collection but previously with responsibility for the National Trust's Chastleton House, gave key advice that NTS frame a solution tailor-made for Newhailes, and not be unduly dazzled or distracted by Brodsworth or Chastleton.

'As little as possible, but as much as necessary' became the philosophical *leitmotif* guiding the planning and delivery of the project phase of work at Newhailes, 1999-2002. And the phrase still holds true today for informing the extent of on-going care and maintenance, as well as the future presentation of not only the fabric of the house and its collections, but also of Newhailes' designed landscape. Whilst finding its clearest expression in the revised Burra Charter, the phrase surely has its origins in William Morris' 1877 call to arms against the "reckless stripping [of] a building of some of its most interesting material features" [ICOMOS, 2000; Morris et al., 1877]. In preparation for work getting underway at Newhailes, the phrase helped the Trust's conservator determine appropriate levels of cleaning and surface intervention and, once work began, informed those day-to-day activities overseen by the project conservator on site. All contractors were inducted in working within Newhailes' exceptional and fragile environment, and all who crossed the threshold or worked on the external fabric conformed to procedures designed to protect and preserve.

The conservation philosophy for Newhailes had depended on the assumption that the green paint in the Dining Room was eighteenth century, as described in the 1739 bill for painting the room olive colour. It therefore came as a shock to learn, through the McQueens' research, that an extensive programme of repairs had taken place during 1872 so that the house could be let to tenants for ten years, and that

Fig. 5. Newhailes, Dining Room, 1993.
© National Trust for Scotland/John Batty

Moxons, the leading house painters of the day, had been commissioned to repaint all the rooms. This disappointment was tempered by the knowledge that the Dalrymples had insisted on the careful repetition of the original colourways, and that Moxons' men carefully cut around the original gilding [3] [Newhailes Guidebook, 2004] (Figures 5 and 6).

Fig. 6. Newhailes, Dining Room, 2004.
© National Trust for Scotland/Mike Bolam

The Trust's policy, therefore, was to retain all existing surface textures and that no repainting could be contemplated. Remedial treatments, for the conservation of the contents (dispersed to freelance conservators' studios), were carried out in accordance with the agreed philosophy and this sometimes meant that collection items had to be returned to the house and re-assessed in situ. This cohesive and consistent approach ensured that an overall harmony was achieved when contents and room settings were reunited. Surprises of course lay in wait: one such was that the portrait collection, with its outstanding series of inset portraits by Allan Ramsay (1713-1784), had been previously lined and cleaned when loaned by the Dalrymples for major exhibitions. By

contrast, the Dining Room's decorative overdoor paintings had never been removed from their panelled surrounds and, with 250 years of accumulated dirt on their fragile unvarnished surfaces, were the subject of lively discussions between curators and conservators regarding the extent of cleaning [Sheldon, 2000].

In the light of the Newhailes experience, it is interesting to reflect on how different House of Dun might have been if subjected to the 'Newhailes approach'. But, paradoxically, the future of Newhailes may be less static than this account might suggest, as items thought to have been lost, known to have been sold, or accepted as having been transferred, might one day be returned [4, 5, 6].

Canna House

The third historic house considered here is found on the Isle of Canna, one of the 'Small Isles' of the Inner Hebrides, off Scotland's west coast. In 1938, Dr John Lorne Campbell bought Canna and its neighbouring island Sanday, and Canna House became home to Dr Campbell and his American wife, Margaret Fay Shaw. John Lorne Campbell gave Canna and Sanday to the Trust in 1981, but Canna House remained the Campbells' home until his death in 1996 and Margaret Fay Shaw's, at the age of 101, in 2004. Canna House is, therefore, a completely different conservation proposition for the Trust, being not the seat of a great Scottish dynasty, but a private treasure house of the lives of John Lorne Campbell and Margaret Fay Shaw [Campbell, 1984; Shaw, 1994] (Figure 7).

Fig. 7. Canna House, seen from the ferry, 2012.
© National Trust for Scotland/John Sinclair

Canna House was built around 1865 and, with its orthodox layout and generous rooms, would not be out of place in a Glasgow suburb. Once through the front door, however, the visitor is transported to the worlds of two scholars. John Lorne Campbell was the pioneer of the modern collection and preservation of Gaelic song and story, the author of 16 books and a great many articles, and the assiduous collector for over 40 years of Hebridean butterflies and moths. He amassed a remarkable sound recording archive of some 1,500 Gaelic songs and 350 folktales, a library of over 3000 items (including rare Gaelic texts and first editions), and over 30 cabinet drawers of Hebridean *Lepidoptera*. Margaret Fay Shaw was, too, a distinguished collector and editor of Scottish Gaelic song and folklore, and also a noted photographer, musician and prolific correspondent (Figure 8).

Fig. 8. Margaret Fay Shaw in her study, 1991.
© National Trust for Scotland/Patxi Bello

Canna House sits within an exceptional Hebridean walled garden, with the house now the repository of everything connected with the Campbells' scholarly work and wider enthusiasms. Their elegant and idiosyncratically decorated home remains stuffed to the gunwales with personal manuscripts, a scholarly Gaelic library, many hundreds of other books, sound recordings (wax, wire and tape), the eighteenth century family archive, musical scores, personal diaries, farm records, objects d'art, spools of film alongside thousands of photographic slides, negatives and prints, reference notebooks, a splendid family portrait attributed to George Romney (1734-1802), early Christian archaeological finds, china cats and feline ephemera galore, taxidermy, fine Georgian furniture, the field equipment and clothing of an entomologist, and an eclectic collection of musical instruments (including the Steinway celebrated by the poet Kathleen Raine) [Raine, 2000].

John Lorne Campbell's own wishes for future arrangements for Canna House and its collections are expressed in a prospectus drafted by the Trust, where it was first set out that Canna House was to 'remain a centre of Gaelic traditions in music, language and folklore' [NTS, 1973]. Indeed, the material and scholarly assets of Canna are considered 'a concentration of wealth for Celtic civilisation in one place unequalled in the British Isles, and are of national importance and international status' [Canna Advisory Group, 2001]. Local, national and international interest in the Campbells and their collections can now only be assuaged by enabling remote access, and digitisation of discrete parts of the collection is underway in advance of wider decisions [7].

The Trust continues therefore to gather scholarly and technical evidence to help inform decisions regarding Canna House and its collections, fully recognising that issues of access and sustainability are major challenges [Wright, 2007]. The island of Canna is remote and the viability of its community fragile; there is no nearby conurbation from which to attract visitors or, for that matter, volunteers to assist the Trust in its efforts. And visitors? They might arrive by private sailing yacht, be staying in the island's limited holiday accommodation, be passengers on a visiting cruise ship, or on a day trip on the scheduled (but not daily) ferry service. Modest visitor numbers are being achieved since Canna House first opened at fixed hours in 2011, but it is clear that in straightforward financial terms the sums will never add up.

The island of Canna is one of 129 properties in the care of NTS and, by necessity, with so many competing demands resources must be prioritised across the organisation. Until such time therefore that 'the Canna House project' can be formally taken forward, the conservation approach within the house is to implement discrete measures and activities, with minimal impact on the diverse collections which remain in place, as evoked by Raine in her poem [Raine, 2000]. Recent preventive measures include telemetric environmental monitoring, UV filter window film, window blinds, a conservation cleaning regime, druggets, and Integrated Pest Management (IPM). A ground floor spare bedroom has, however, become the archive room, with excellent environmental conditions achieved by a single humidistat-controlled oil-filled radiator.

Such routine preventive conservation measures and activities are core to the on-going operational life of nearly all Trust properties with historic collections. For example, House of Dun, Newhailes and Canna House are in the Trust's IPM programme where agreed procedures are followed consistently and systematically by all properties in the programme [Houston, 2011]. By contrast, the application of UV filter film is considered on an individual basis and, as some window glass at Newhailes was considered too fragile for the comprehensive application of film, UV blinds are an alternative solution for some windows.

Conclusion

In recent years, there has been a discernible raising and embedding of standards of project planning and delivery throughout the heritage sector in the United Kingdom. For this, one needs look no further than the HLF and the impact of the requirements demanded by this public body. HLF wields both carrots and sticks: HLF carrots being the funding, often generous and across a wide range of activities and projects, and HLF sticks being the hoops of sector and industry standards for conservation and project planning through which would-be applicants are required to jump. On-line advice is plentiful, as is published guidance [8] [Hillhouse, 2009]. Fulfilling conditions and meeting standards, such as those demanded by HLF, might appear to be a *sine qua non*, but pressures of time, money and human capacity can so easily lead to other options being taken. The experience of NTS - for the delivery of projects of every scale - is that sound decisions are made and benefits flow when good practice is followed. Furthermore, the focus on significance, or spirit of place, is central when determining what should be the outcome in terms of both the conservation and presentation of an historic house to the public [ICOMOS, 2008]. Once a project is underway, the concomitant energy of a multi-disciplinary team follows inevitably and naturally. But it is at exactly this point, with its myriad distractions,

that an agreed philosophy or *leitmotif* will ensure thinking and actions remain coherent and consistent. And if in stringent times securing the sustainable future of an historic house might appear a chimera, there is comfort in putting in place responsible, but basic, interim measures: to better understand, to monitor, to maintain and to protect.

Acknowledgment:

National Trust for Scotland colleagues, past and present.

Endnotes

1. During her long widowhood, Lady Augusta, embroidered lavish pelmets for the Saloon with huge floral sprays and colourful parrots, fully in keeping with the verve of the stucco-work.

2. The Heritage Lottery Fund, established 1994, disburses funds raised through the National Lottery to support heritage projects throughout the UK.

3. September 1739, account from James Norie to Sir James Dalrymple, "to painting at Newhailes the Dining Olive Colour meas: 136 yds@4d, £2 5s 4d" [NLS MS 25818.ff.77-8].

4. During the project phase, the hangings of the 'best bed' were found in a lacquer chest in the Vestibule and are to be returned to the Best Bedroom.

5. In 1928, a low point in Newhailes' fortunes, trustees sold the Drawing Room suite of furniture with its tapestry depicting shells and coral. If traced and returned, together with the reinstated bed, one of the most innovative suites of early Georgian rococo decoration in Scotland could be presented (see Newhailes Guidebook, 2004, p27).

6. Following the death of Sir Mark Dalrymple in l971, the Government accepted c7000 volumes from the Newhailes Library in lieu of estate duty (tax). The books were allocated to the National Library of Scotland.

7. Digitised sound recordings can be listened to at http://www.tobarandualchais.co.uk (accessed 28 October 2013)

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

A Joint Conference of ICOM-DEMHIST and three ICOM-CC Working Groups: *Sculpture, Polychromy, & Architectural Decoration*; *Wood, Furniture, & Lacquer*; and *Textiles*

The Getty Research Institute, Los Angeles, November 6-9, 2012

Keeping it Real: The Relationship Between Curator and Conservator in Furnishing a Historic Interior

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Abstract

Restoration of the Frank Lloyd Wright Darwin Martin House required collaboration between a curator and conservators, who worked with original collections, period photographs and other documentation to determine how best to preserve the collection and present the house to the public. The state of preservation of some of the pieces in the collection led to the use of some reproductions and replicas. This paper addresses how the decisions were made to introduce these materials and what steps were taken to make them as accurate as possible. Additionally, the paper evaluates how successful these decisions were.

Keywords

Frank Lloyd Wright, upholstery conservation, furniture reproduction, digital prints

The Darwin Martin house, Buffalo

Frank Lloyd Wright's Darwin Martin house in Buffalo, New York, designed for Darwin D. Martin and his family in 1903-05, has been considered a laboratory for Wright's emerging *gesamtkunstwerk* vision of domestic design and one of his most successful Prairie houses. Its design includes strong horizontal lines and planes, deeply overhanging eaves, a central hearth, a prominent foundation, and a cantilevered roof. As he often did, Wright designed much of the furniture for the main floor and specified its placement; he had an immutable vision of how all furnishings would function within his interiors. Darwin Martin, a strong supporter of Wright, said, 'Your tout ensemble is magnifique,' and promised he would never move a footstool from its appointed position. [Darwin D. Martin, 1905] He did not, however, keep that promise. The Martin family lived in the house until 1937; the State University of New York at Buffalo purchased it in 1966. [Jackson-Forsberg, 2005]

In 1992, the university crafted an agreement in which the house would, after restoration, become a New York state historic site. Before restoration, ownership passed to the Martin House Restoration Corporation (MHRC) not-for-profit organization. Per the agreement the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) became a partner in the restoration process. OPRHP's Bureau of Historic Sites (BHS) conservators would treat the state-owned collections.

In 1994 the MHRC, BHS staff, and a panel of scholars decided that the property would be restored to its 1907 appearance, soon after its completion. This led to interesting philosophical conversations about preservation and, eventually, to the restoration of the entire Martin House complex, including the reconstruction of the pergola and carriage house [NYS OPRHP, 2001] (Figure 1).

Fig. 1. Top: 1908 view of Martin House exterior from Summit Avenue.
©Henry Fuermann and Sons, courtesy University Archives, State University of New York at Buffalo and Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal.
Bottom: 2011 view of Martin House from Jewett Parkway.
©Biff Henrich / IMG-INK, courtesy Martin House Restoration Corporation.

In planning the interior restoration, staff drew on a rich archive of letters between Martin and Wright, Wright's drawings, and Wright-commissioned period photographs [1] [Quinan 2004]. Despite the changes in ownership, the house retains nearly 100 objects original to it, many of which Wright designed. We, a team of conservators and the Martin House curator, worked for over ten years preparing the collections for (re)installation. We realized that to make our work successful, we would need to give the importance of 'le tout ensemble' considerable significance in every decision we made. For example, furniture finishes originally were identical to those on interior woodwork. Would it be possible to match original, conserved furniture with new woodwork? Wright had used a palette of greens and golds drawn from the landscape. Paint layer research revealed original paint colors, which could be duplicated. The curator believed that the interior fabrics would have been in the same palette. The furniture, however, did not retain its original covers, and the curtains, portieres, and carpets were only known from black-and-white photographs. What other resources could be used to choose correct fabric colors?

Two issues were constant during the decision-making for collection conservation. One was the question of accuracy and authenticity, as described above. The other was preservation vs. access—how to strike a balance between these essentially opposing needs. In looking at the objects identified for display in the Historic Furnishing Report [Jackson-Forsberg, 2005], we realized that the best way to resolve these issues required conservation of some objects and creation of reproductions/replicas for others. The decorative art objects and most of the non-upholstered furniture were conserved. The projects discussed below—the Japanese prints, the sofa and chair upholstery, and the library and dining room tables—illustrate the various ways in which reproductions were developed.

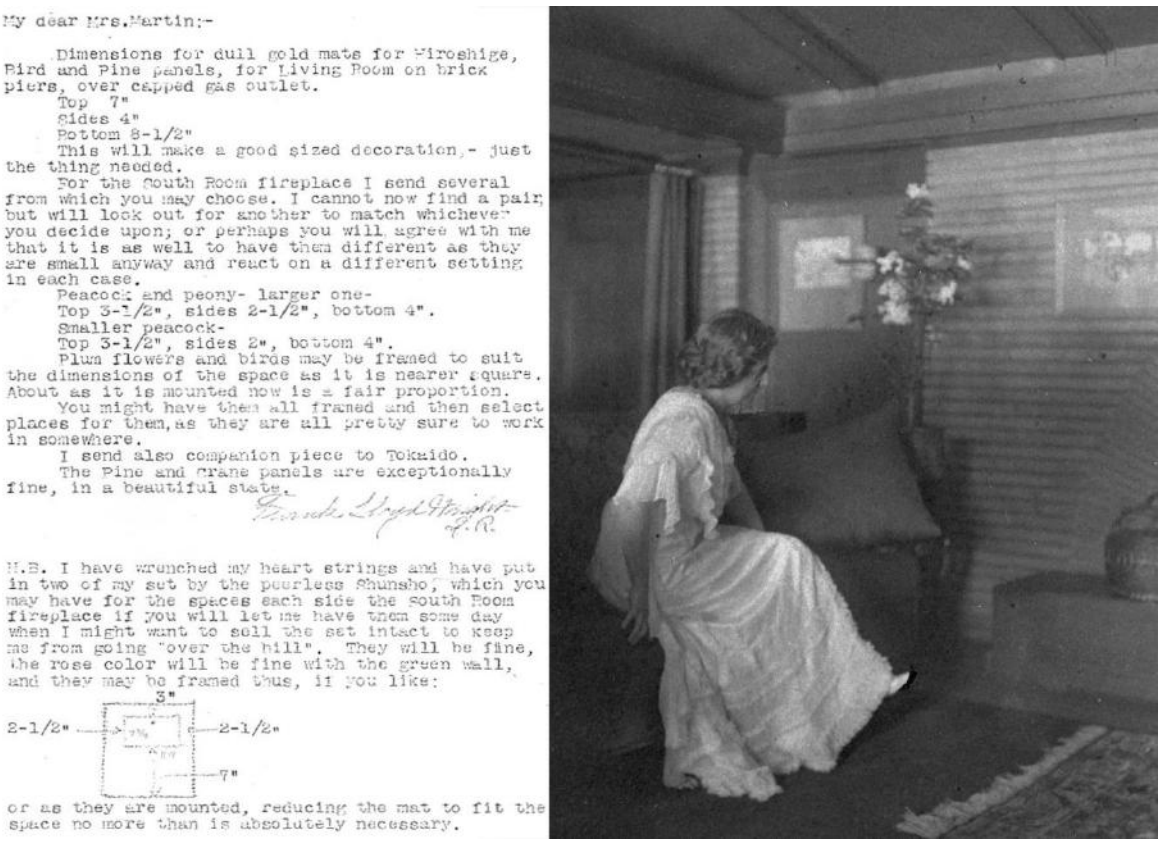
Japanese prints

The Martin House collection includes 24 Japanese woodblock prints, primarily from the Edo period (1603-1868), with works by Hiroshige, Shunsho, Shigemasa, Utamaro, and Kôryûsai. The prints vary in size and format from tall, vertical 'pillar prints' to smaller prints in portrait and landscape orientation.

Wright considered Japanese prints to be organic elements of his interiors. The Wright-commissioned photographs show that he had selected and specified the prints' locations, as he often did in other projects [Meech, 2001]. In a letter to Mrs. Martin, he even recommended the frame style, and the matting dimensions, in addition to their coloration - 'dull gold mats' [Wright, 1906] (Figure 2). Careful examination of historic photographs, research in the archives, and information on the verso of the prints and mounts, allowed us to create a map of their hanging locations during the Martin family's occupancy.

Because of their extreme sensitivity to light, it is challenging to display Japanese woodblock prints in a historic house. The long-term display often desired in historic houses subjects these prints to far more light exposure than is recommended for paper-based materials. In museums, works of art as light-sensitive as these prints are often 'rested' in dark storage for three to five years after being exhibited for as few as 12 weeks at very low light levels. Museums' standard rotation or substitution protocol is often not practical for historic interiors; this was certainly the case in the Martin House, where the prints were over-exposed from years of display.

In the past, historic house museums and some museum exhibitions have substituted photographic copies of prints for originals. Photographs of prints, however, change the aesthetics of the original and thus the visitor's experience of the interior. In a historic house, one element that is 'off' can be jarring in a way that is unexpectedly significant.



My dear Mrs.Martin:-

Dimensions for dull gold mats for Hiroshige, Bird and Pine panels, for Living Room on brick piers, over capped gas outlet.
Top 7"
Sides 4"
Bottom 8-1/2"
This will make a good sized decoration,- just the thing needed.
For the South Room fireplace I send several from which you may choose. I cannot now find a pair but will look out for another to match whichever you decide upon; or perhaps you will agree with me that it is as well to have them different as they are small anyway and react on a different setting in each case.
Peacock and peony- larger one-
Top 3-1/2", sides 2-1/2", bottom 4".
Smaller peacock-
Top 3-1/2", sides 2", bottom 4".
Plum flowers and birds may be framed to suit the dimensions of the space as it is nearer square. About as it is mounted now is a fair proportion.
You might have them all framed and then select places for them, as they are all pretty sure to work in somewhere.
I send also companion piece to Tokaido.
The Pine and Crane panels are exceptionally fine, in a beautiful state.

Frank Lloyd Wright

P.S.

N.B. I have wrenched my heart strings and have put in two of my set by the peerless Shunsho, which you may have for the spaces each side the South Room fireplace if you will let me have them some day when I might want to sell the set intact to keep me from going "over the hill". They will be fine, the rose color will be fine with the green wall, and they may be framed thus, if you like:

or as they are mounted, reducing the mat to fit the space no more than is absolutely necessary.

Fig. 2. Left: letter from Wright to Isabel Martin. Right: Isabel Martin in the Reception Room, c. 1912. Note that the prints shown are mounted and placed as Wright suggested in the letter.
©University Archives, State University of New York at Buffalo.

Advances in digital printing encouraged us to experiment with digital copies of the Japanese prints. We went to great lengths to create compelling digital copies, which we termed 'replicas.' The replicas allow us to display the images Wright specified, while preserving the original prints by protecting them from further light damage in archival storage

Creating a convincing digital imitation woodblock print began with commercially available products, but quickly diverged into the experimental. While a color-correct digital image file was easy to produce, relating that color accuracy to the desired printing substrate was not. Many of the Japanese papers marketed for digital use are non-standard substrates and do not have a commercially available printing profile for ink-jet printing. The paper we chose for the Martin House replica prints was an unprepared (uncoated) Japanese paper with a natural printable finish. This paper was sympathetic in color and transparency to that of the original prints, but did not provide enough color separation or render the colors as closely as we desired. Working with a talented and adventurous printer, we overcame this hurdle by coating the paper before printing to improve the surface finish and make it more receptive to the ink-jet process. While this made the process slower and more expensive, the quality of the final product more than justified the extra expense.

Matting and framing the digital copies was equally challenging. The original woodblock prints were in a variety of frames, from varnished wood and imitation-gold-painted wood frames dating from the early twentieth century to the current millennium. The window matting varied from original imitation-gold-painted mats to modern-day paper laminate mats and decorator-inspired, textile-wrapped mats. We decided to give the replica prints new frames with new mats, rather than put replica prints into historic frames and mats -- some of

which were original to Frank Lloyd Wright, some later. To retain evidence of the prints' history, we placed all the components associated with the original prints—mats, frames, backing boards—in collections storage.

Since commercially available frames did not match the variety of the historic frames, and reproducing those styles and materials would have used too much of the interior restoration budget, we decided to place all replicas in frames that matched one of the original frames. We selected a 2.5 cm-wide, quarter-sawn oak frame because it was aesthetically authentic and readily reproducible by a frame maker.

The woodblock print replicas are an integral part of the experience of the Martin House as well as 'ambassadors' for responsible stewardship of light-sensitive materials. Martin House docents tell visitors that the prints are replicas, and explain that they are a necessary compromise to preserve the originals. These can be viewed, off-site, on request.

Upholstery

At the beginning of the project the upholstered furniture was covered with soiled, utilitarian, 1970s covers, and the profiles of some pieces were distorted from use or re-upholstery. The Wright-commissioned photographs showed the original appearance of the upholstered furniture in black-and-white. To look for evidence of the original covers, we documented and removed the modern covers and saved representative samples in the object files and then carefully examined the under-upholstery (supporting layers) and frames for evidence [2].

Fig. 3. Reception Room arm chair. Left: original cover preserved on inside back. Right: chair after treatment with new cover. ©NYSOPRHP/Darwin Martin House.

Some pieces required a tremendous amount of study to determine the original fabrics and colors whereas others were more straightforward. On one chair there was ample evidence, as the entire original inside back fabric was in situ. This discovery engendered discussion about conserving and exposing this fabric. If we did this, how should we treat the rest of the chair–with a 'neutral' fabric or with one that was similar to the original? Or, should we cover the chair in a replacement fabric? Because the chair would be displayed in the Martin House (vs. in a museum exhibition), the latter option was selected. The original fabric had a fairly generic design, in a still-popular color, so we were able to choose a new fabric from several on the market (Figure 3). The original fabric was retained in situ, and was protected by a Tyvek undercover between the old show fabric and the new.

Decent-sized pieces of the original cover were preserved on another arm-chair; these served as a model for a replacement fabric. The evidence on most of the other pieces, however, was less clear. Six chairs from the Reception Room had fiber/yarn evidence showing that the pieces had been covered with a yellow-gold wool fabric. Knowing this, however, did not make fabric selection easy. Not enough fabric remained to determine its weave structure or quality. Looking for period samples of plain fabrics proved fruitless; as the museum and fabric archives searched only contained fabrics with patterns. In the end, our model was a reproduction of a fabric from another Wright house that Scalamandré, a New York-based fabric house, had made in the 1990s. Based on that fabric, we selected a yellow-gold, satin-weave wool fabric for these chairs.

Fig. 4. Top: 1908 view of Living Room, showing sofa. ©Henry Fuermann and Sons, courtesy University Archives, State University of New York at Buffalo and Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal.
Bottom: sofa after treatment with new cover.
©NYSOPRHP/Darwin Martin House

The four sofas proved even more challenging. The living room sofa was the most puzzling. In Wright-commissioned photographs this sofa cover looked dark, glossy, and crisp. Colleagues who studied the photographs thought the sofa was covered with black horsehair or silk fabric. Examination of the under-upholstery and frame provided absolutely no evidence of either fabric, nor any other conclusive evidence. Instead, our investigation showed that the sofa had been fully re-upholstered at least once and that the re-upholstery had reused some of the under-upholstery materials. A series of yellow and green wool fabric fragments was preserved on the bottom back rail. Closer examination showed that the two

colors were on one piece of fabric. This was either a yellow fabric that had turned green, or a green fabric that had turned yellow. These fragments were the best clue to an early, if not original cover. Because the green color could read as dark in a black-and-white photograph, we decided to cover the sofa with a dark green, satin-weave, wool fabric, which we hoped would produce the desired sheen. Happily, when the sofa was photographed after treatment, the fabric reflected the light in a way similar to the original (Figure 4)

Furniture

The furniture that came to BHS for conservation included a table with two shelves that looked like a possible Wright design (Figure 5). This table did not appear in any of the historic photographs, Wright's drawings, Wright-Martin correspondence, or descriptions of the furnishings. Historic photographs and Wright's drawings did, however, show two other tables; one in the Library and one in the Dining Room. These rooms are at either end of the long, rectangular space that Wright called the Unit Room, composed of the Dining Room, Living Room, and Library (Figure 6). The tables are crucial to the interpretation of the Unit Room, as they not only anchored it, but also counterbalanced the views out the art glass windows. The historic drawings and photographs show the two tables were of similar shape. With twenty legs each, and built-in planters and candelabra, they were altar-like in appearance. Without these unique and complex tables in the furnished spaces, it would be difficult for curators, conservators, and especially visitors, to understand Wright's Unit Room design.

Fig. 5. Top: 'undocumented table' or table fragment. This fragment is now in storage at Peebles Island Resource Center Waterford NY. ©NYSOPRHP/Darwin Martin House.
Bottom: 1908 view of Dining Room, showing table. ©Henry Fuermann and Sons, courtesy University Archives, State University of New York at Buffalo and Centre Canadien d'Architecture/ Canadian Centre for Architecture, Montréal.

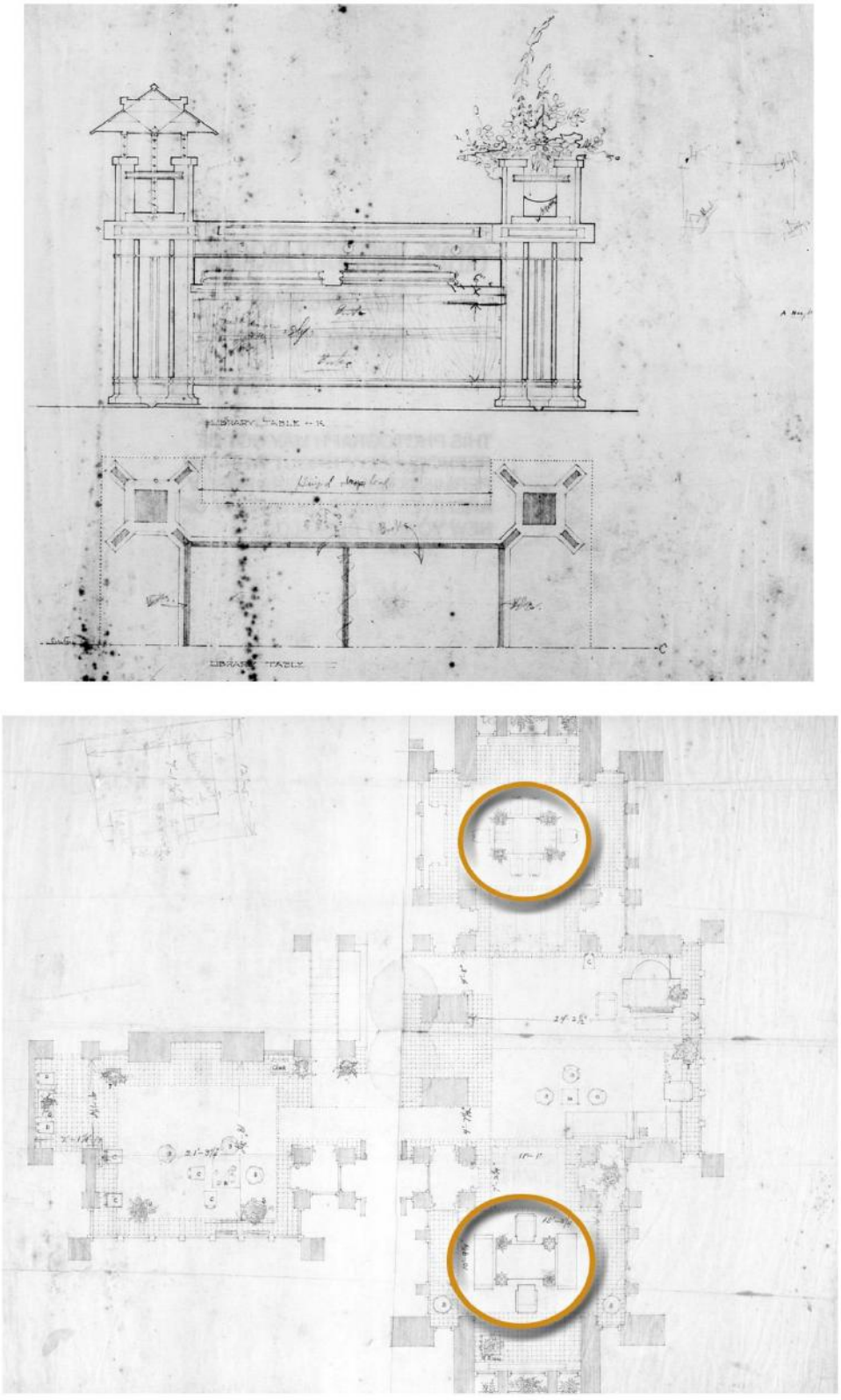


Fig. 6. Top: Wright's presentation drawing for the library table showing stanchions supporting a lamp and plants. A similar drawing exists for the dining table. Bottom: Wright's Martin House first floor plan. The library table (bottom) and the dining table (top) are circled. These drawings are not adequate working drawings and do not portray all the details. ©University Archives, State University of New York at Buffalo.

The furniture conservator began an intensive study that incorporated detailed examination and radiography of the undocumented table and two 'stanchions' (wooden structures that Wright had designed to support the planters at the corners of the tables), including identification of the function of every hole on the undocumented table, as well as close scrutiny of the original Wright drawings and period photographs (Figure 7). The study not only gave the furniture conservator the opportunity to explore in great depth the construction of two pieces of Wright furniture but proved that the 'undocumented' table, now understood to be a fragment, was the extremely modified remains of the library table. The analysis established that both the dining and library tables had been built as Wright had designed them. The study also demonstrated that it would not be possible to reverse the changes that created the surviving fragment. To complete the restoration of the Unit Room, it would be necessary to have reproduction tables.

Fig. 7. Top: radiograph of 'stanchion,' showing hole for electric wiring. Bottom: table fragment top with 'stanchion' place on it; acrylic sheet indicates how corner of original table was cut off. ©NYSOPRHP/Darwin Martin House.

The furniture conservator convinced the MHRC to commission accurate reproductions of the tables and in collaboration with Alex Carlisle, furniture conservator and furniture maker of Williamstown, Massachusetts, made the working drawings. After a national search, Timothy Coleman of Sheffield, Massachusetts was chosen to make the tables. The learning process continued as we worked together on additional construction features. Coleman made the tables using hand-sawn veneers with all the wood coming from a single tree. The result was a high-fidelity match to what remained of the original table, even in terms of the wood grain and ray pattern (Figure 8).

Having a high degree of precision is critical to a successful reproduction project in a historic house museum. The reproduction tables are clearly marked as reproductions, to prevent future confusion about their date of manufacture. Visitors to the Martin House may notice that the tables look somewhat brighter or cleaner than the other, original, conserved pieces in the room. While the reproductions might be perceived as deceptions, their significance in the interpretation of the space, and their importance as landmarks in American furniture justifies their creation. Although a reproduction seldom has a place in a museum, in a historic house interior, especially a designed interior, it is used to give the 'tout ensemble' of the original intent.

Successful collaboration between the furniture conservator and the curator allowed us to develop the designs for the reproductions. The curator had access to the photographs and archival drawings and a deep understanding of Wright's design intention, while the furniture conservator had knowledge of materials and techniques, and the furniture building skills to interpret clues on the table fragment. In the process of researching the tables, much of the struggle between the Martins, Wright, and the original builders of the table was also revealed. The design dialogue between client and patron was preserved and was translated once again into furniture joins and veneers.

Fig. 8. Top: 2011 view of Library showing reproduction table. Bottom: Tim Coleman selecting veneers for table.
©NYSOPRHP/Darwin Martin House.

Conclusion

Over the course of this project, we had many discussions on the use of copies. These included conversations about different products and methods of production. Eventually, we agreed on terms to explain the differences. We adopted the term **reproduction** to describe a copy that was produced with the same materials and methods as the original. We adopted the term **replica** to describe a copy that was made by methods and materials that differed from the original. We called the tables and the oak frames for the prints reproductions and the digital prints and their mats replicas. As for the upholstery fabrics; perhaps it is best to call them **adaptations**, since we do not know, in most cases, exactly what the original fabric was.

This project was successful in part because we had time and two very supportive institutions -- the MHRC and NYSOPRHP/BHS -- on our side; a luxury that not many historic house projects experience. Because reconstruction and restoration of the buildings extended from the original goal of restoring the Martin House proper, to restoration of the entire Martin House Complex, we had over a decade to research, examine, and consider how we might treat the collections so they would best fulfill the site's interpretive goals. Because the field of digital printing advanced during this period, the prints were more successful than they would have been

a decade earlier. Although the cost of reproducing the tables was high, the MHRC board and NYSOPRHP/BHS administration recognized their importance to the interpretation and understanding of the house, allowed time for the research and national search, and raised funds to have them built. Overall, at the Martin House conserved and reproduction pieces work well in achieving the interpretive goal–to present its appearance soon after Wright handed the keys over to the Martin family.

Acknowledgment:

Mary Roberts, Executive Director, MHRC; all BHS staff, volunteers, and interns who helped with these projects; and reproduction/replica makers Tim Coleman, Alex Carlisle and Karen Schlesinger.

Endnotes

[1] Wright commissioned Henry Fuermann and Sons to photograph the house in 1908.

[2] While this paper does not discuss treatment of the under-upholstery, this was part of the project. Under-upholstery treatments followed contemporary upholstery conservation principles, including stabilization of original materials and minimizing the introduction of metal fasteners into frames.

Materials

Replica prints:

Kozo-shi light 24 gsm Japanese paper; InkAID® Clear Matte Precoat

Digital Print Supply, 9596 B Chesapeake Dr, San Diego, CA 92123 USA.

Frames:

Timothy Holton, Holton Studio Frame Makers, 5515 Doyle Street, No. 2, Emeryville, CA 94608 USA

Fabrics:

Stark Carpet – Fabrics, 979 Third Avenue, New York, NY10022 USA

Schumacher, 979 Third Avenue, New York, NY 10022 USA

Drawings for furniture:

Alex Carlisle, A.M. Carlisle Art Conservation, 526 Water St., Williamstown, MA 01267, USA

Furniture:

Timothy Coleman Furniture, 39 Wilson Graves Rd, Shelburne, MA 01370. USA www.timothycoleman.com

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The Getty Research Institute, Los Angeles, November 6-9, 2012

In Private between Consenting Adults? Conservation, Curatorship and Creativity in Nine House Museums

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Abstract

Debates about conservation have often been seen as the preserve of the specialist, steeped in the traditions of Ruskin, Morris and connoisseurship. We jealously guard traditions and moral positions - on restoration, reconstruction or reinstatement, and our version of the one true way. But with Simon Jenkins calling for a pram and a Labrador in the hall of each National Trust property, and Lucy Worsley vamping her way across the Royal Palaces of Britain, is it time to let go and have fun? HHT opens 12 museums to the public, including nine historic houses dating from around 1805 to 1949. Each of those nine houses has different issues, and a different philosophy of conservation from the problem of how to deal with twentieth century fabrics in Rose Seidler House (1949), the fact than the reproduction antiques in Elizabeth Farm are now decaying, to the moral dilemmas posed by a totally inaccessible but highly significant interior and collections in Rouse Hill House (1806). Meanwhile, Government House (1836) that has been a museum for the past 15 years is now being returned to residential use with its own set of conservation challenges, involved in a major intervention into the building. At the end of the day, conserving interiors and buildings is all about what matters, and

Introduction

This paper raises the basic issue of how our approach to conservation might change, in accordance with the significance of the site, drawing on nine of the houses and museums in the portfolio of the Historic Houses Trust (HHT) of New South Wales (NSW). It provides an example of a values-based approach to heritage management in action [Smith, 2010].

A fabric conservation problem

Here is the kind of conservation problem that we, as professionals, all face every day in a house museum. Consider this fragment of the bobble fringe that is currently in the drawing room at Rouse Hill House to the north west of Sydney [1]. The fabric has now been conserved three times and is basically silk dust on a fabric backing. It needs conservation again. What should we do? Should we conserve it again? Should we preserve the original in a box and put in a replica? Should we put it in a box and put up something different or should we do nothing at all, leaving it to gently rot in situ?

There is of course no single answer to this question and no correct answer. But before we try to answer it for Rouse Hill, let us imagine that this piece of fabric is in a different house museum all together.

conserving interiors and buildings is all about what matters, and why, and to whom - what the GCI has dubbed a values-base approach. This approach cuts across the individual professional silos of conservators, architects, archaeologists, planners and architectural historians, and asks much bigger questions. It puts expertise second to understanding what matters and why. This paper will look at what it means to explore different values in historic house museums, how we actually make that process fun, interesting and worth talking about, and more importantly, whether or not we are brave enough as professionals to let go.

Fig. 1. Fragment of a bobble fringe from Rouse Hill House and Farm (Scott Hill). Published with the permission of the author.

Rouse Hill House & Farm is one of 12 properties open to the public by HHT -the Historic Houses Trust of NSW. Founded in 1980 with two house museums, it has grown over 30 years. As well as the properties open to the public, HHT also has another six properties that are currently in the process of being repaired using the model of a revolving fund for building preservation. Each one of its properties is different, with a different history, philosophy and approach to conservation.

Elizabeth Farm - a modern replica interior

Fig. 2. Elizabeth Farm, Parramatta. ©HHT

Let us imagine that the piece of fabric is at another HHT property, Elizabeth Farm at Rosehill to the west of the City of Sydney. Built in 1793 for pastoralist John Macarthur and his wife Elizabeth, this property was rescued by the Swann family in 1905. It remained in the hands of the delightful Misses Swan until they were no longer able to care for it, and then in 1968 it was bought by the government, eventually coming to HHT. Here the philosophy is brutally clear -whilst the building itself has been restored, everything inside that house is a replica. You can sit on the chairs, lie on the bed, eat at the table, cook in the kitchen. Nothing is old and everything can be touched. The reason for this is that there was almost no original furniture or material associated with the house to hand.

Had our fringe even survived at this property - and it almost certainly would not have -, it would have by now been put firmly away in a conservator's box and replaced with a replica in keeping with the rest of the interior.

Elizabeth Bay House - an entomologist's vision

Imagine that this same fragment had been originally associated with another property owned by HHT - Elizabeth Bay House. Conceived as the finest house in the colony by its builder - Colonial Secretary and entomologist Alexander Macleay who began construction in 1835 - it was designed by architect John Verge. Macleay lost his job, relied on his son to cover many of debts. The drawing room furniture was sold to the newly completed (and grander) Government House. Had our hypothetical fabric detail been part of Macleay's interior, it may well have gone to auction with his other effects or, more likely, been discarded. When Elizabeth Bay House came into public ownership as a museum it was initially furnished with 'appropriate' antiques, however over time, HHT has sought to replace those with more authentic items, thus gradually recreating Macleay's interior using historic information and inventories. Had we found a reference to this piece of fabric in such an inventory, we might have sought to acquire something of the right period with which to furnish the house.

Government House - a working State building

Government House is another HHT property. Built in 1836 to a design by the English architect Edward Blore (who never actually visited the site) the house was the residence of the colonial and later State Governors until 1996, when it was passed to HHT to manage as both a working state house and a museum/cultural venue. Our piece of textile would not have survived there - as well as acquiring furniture from elsewhere (including houses such as Elizabeth Bay), each Governor brought or contributed their own furniture to the house, often taking it away afterwards. Building on this tradition, one of HHT's extraordinary achievements has been the creation of a stunning drawing room, drawing on the best of modern Australian craftsmanship in the context of a partly restored historic interior, led by Curator Ann Toy [Toy and Griffin, 2011]. I suspect what we might have done would be to create a modern reinterpretation of that fringe, in a new fabric, specially created by a modern Australian artist.

Fig. 3. Government House, Sydney. ©Catherine Clark

Vaucluse House - nineteenth century taste and mores

Another house in the HHT portfolio is Vaucluse House, the home of William Charles Wentworth and his wife Sarah [2]. The daughter of convicts, she was shunned by the Sydney society of Government House, but nevertheless created a spectacular place in a harbourside setting. When it took on the property, HHT took a conscious decision to focus on the period from 1827-1853, and using an inventory of the sale of Wentworth's possessions, set out to acquire or recreate the taste and furnishing of the family and period, and in particular their souvenirs of the grand tour in Europe. By combining an understanding of Wentworth's own philosophy with the auction inventories, HHT has tried to create interiors that give the visitor not just an impression of nineteenth century life, but an insight into the particular taste of an important colonial family. We would have ideally tracked down Wentworth's original curtain detail through auction catalogues, but failing that might have used extensive research into the period to recreate something appropriate.

Rose Seidler House - one architect's vision

For Rose Seidler house built in 1948-1950 by architect Harry Seidler for his parents Rose and Max who lived there until 1967, many of the textiles and fabrics in the house are original, and all date to a narrow period. The house is one of the purest examples of mid century modern architecture in Australia and therefore the aim has been to recreate those values, following post-1967 changes. In terms of presentation to the public, the primary

story here is the legacy of an individual architect - his design, thinking and influences. The furniture is arranged as Seidler designed it from 1950 to 1967, and much was original including the chairs, either bought or built to Seidler's design by Paul Kafka. Some of the furnishings have been reproduced from original samples - something that is particularly challenging with textiles. The original curtains have not survived, so the current orange and blue curtains are reproductions in a light dress fabric - we are seeking to replace them with a more appropriate and durable fabric that better withstands light damage.

Susannah Place - exploring working class lives

At Susannah Place, a group of working class cottages in the Rocks, HHT has taken different approach, barely touching the fabric, but doing our best to tell the stories of the often overlooked working-class families who lived played and worked there. In the 1970s there were major plans to redevelop the Rocks area - and the story of resistance to these changes by a range of groups including vocal trade unions - remains one of the great and inspiring examples of heritage preservation. The tenants of this row of terraces were caught up in the battles, but nevertheless they remained under threat. Neglected and in poor condition, they remained derelict until 1987 when they began to be restored. The philosophy here was to use oral history, photographs and surviving layers in each of the houses to re-create the lives of individual families of the nineteenth and twentieth centuries. Only the barest minimum of new work has been done, and the aim is to let the building fabric tell its own story. Were a hypothetical scrap of curtain fabric to have survived - we might spend time tracking down the oral history of the fabric, telling the story of the individual who put it there as part of the wider project to document as many of the inhabitants as possible. Our approach to conservation varies across the terraces - there is a recreated corner shop, whilst other areas have been left as they are.

Fig. 4. Susannah Place Museum. ©Catherine Clark

Meroogal - the women's story

Ordinary lives also form the dominant narrative at Meroogal, a small house of 1886 at Nowra to the south of Sydney, where - unusually - several generations of women made their home. Here the collection is as important as the house, and the fact that the collection remains in situ within the building is of overriding significance. The other layer of significance is the fact that it is such an ordinary house - it is intimate, friendly and inviting. The women who occupied it were not wealthy, but created familiar, comfortable domestic interiors. Here the scraps of fabric and furnishings from all periods of the house throughout the last century have been retained in situ. June Wallace, the last of the family to live there, was very conscious of the historical value of the house and its collection, and as custodian took care to retain its character, copying earlier curtains as well as possible. Had she found our hypothetical curtain detail, she might either have kept it or tried to copy it.

Fig. 5. Meroogal. ©Catherine Clark

Throsby Park - a market solution for old buildings

Of course not every historic building should or can be a museum - in fact this is anyone involved in the management of historic house museums is well aware - is perhaps the least sustainable use for a historic building. HHT operates a revolving building preservation trust, which currently has six properties. Buildings are bought, repaired, and sold on, and the funds invested in future projects. Currently two properties have been sold, and four properties are underway as projects. One of these projects is Throsby Park in the Southern

Fig. 6. Throsby Park. ©Catherine Clark

Highlands to the south of Sydney. Throsby Park is a fine house on a 75 hectare estate, that includes a cottage, the homestead of 1834, stables and outbuildings. The estate was granted to naval surgeon Dr Charles Throsby in 1819 and the house built by his nephew. Today the house is being repaired prior to offering a longterm market lease. The collections associated with the house are being reviewed in order to establish which might stay with the property under a new arrangement and which are of sufficient public significance to remain on display. Had a fabric of original textile survived, it would almost certainly have been put into our own research collection as a reference piece to be available to the public, rather than remaining in the house where under a new leasehold arrangement it would be unlikely to be conserved.

Caroline Simpson Library and Research Collection - a resource for you

The HHT also holds a core resource, the Caroline Simpson Library and Research Collection. Focusing on the history of buildings, gardens and interiors in NSW, it holds fabrics, fixtures and fittings as well as books and sources. There is a climate controlled store where textiles and other collection items can be properly held and stored in contrast to the conditions in many of our houses. Our hypothetical curtain detail could be put in one of the boxes in the store and would remain protected from light and other damage. Our emphasis here is on making information as widely available as possible, so it is likely that the drape would be photographed, digitised and added to our online collections resources, perhaps as part of the alphabet of historic interiors that we are developing, and might through that means become available to a much wider global audience as a resource for the general understanding of the history of interiors.

Hyde Park Barracks Museum - the archaeology of a building

Of course another site that was lived in but was not a house is Hyde Park Barracks, built around 1819 to a design by architect Francis Greenway to house convicts, and later used to house Irish immigrants. Beneath the floorboards we discovered a huge collection of fabric and other organic material, hidden there by occupants or dragged there by rats. If found here, our scrap of cloth would have been treated as an archaeological artifact - numbered, photographed, added to the archaeological collections database, and put away in a bag in a box, to be written up in a monograph on the archaeology of the building.

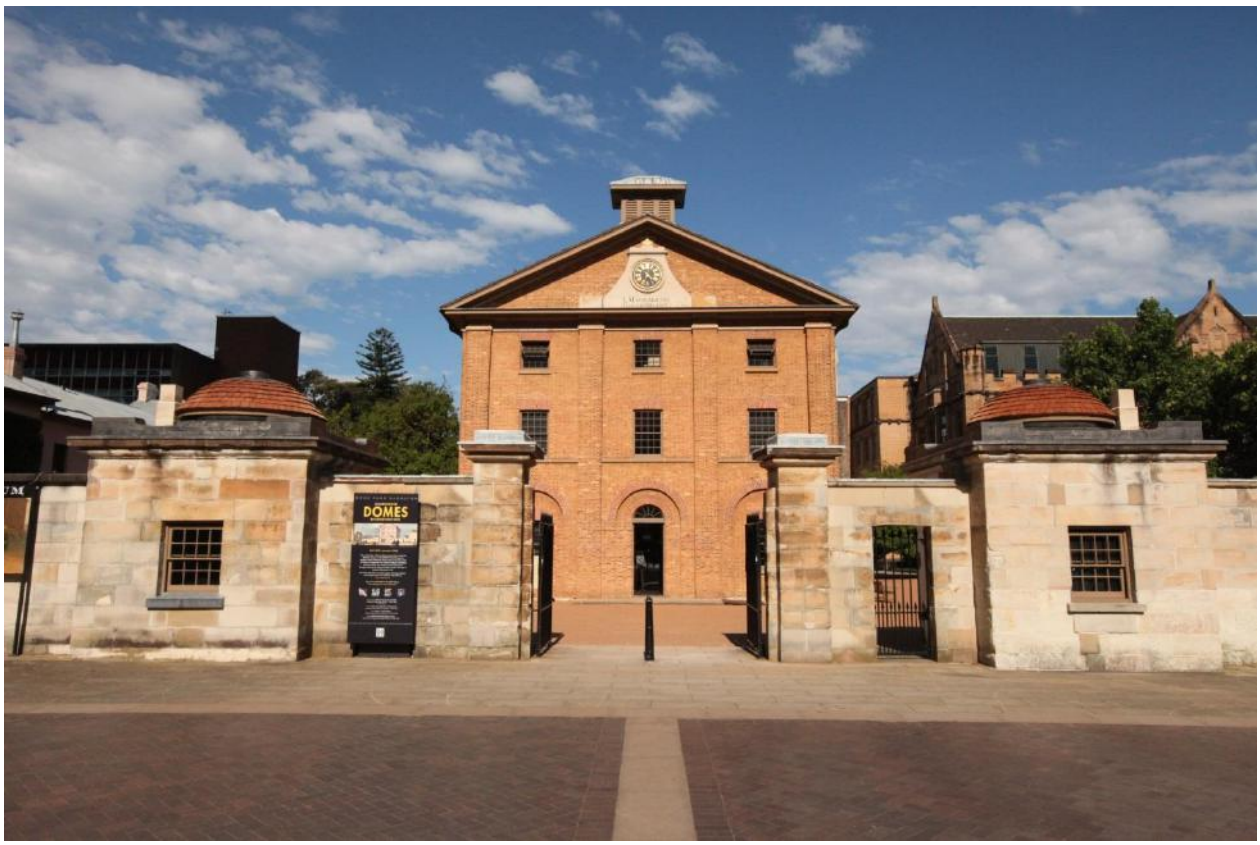

Fig. 7. Hyde Park Barracks Museum. ©Catherine Clark

Values-based conservation in practice

Taken together these case studies illustrate a whole series of theoretical scenarios for conserving a fragment of textile - we can leave it in situ, make a modern reproduction, put it in a library, digitise it, treat it as an archaeological item, or reinterpret it in a very modern form. HHT has used these approaches at various times in each of its different properties.

And the decision is of course based on our understanding of what matters and why. What matters at Elizabeth Farm is the experience of living and using in an old house, at Vaucluse House the headspace of a strong-willed nineteenth century couple, at Elizabeth Bay house the idea of Alexander Macleay, at Susannah Place the working class story, at Rose Seidler the design ideas of one architect and at Government House the tradition of a working state building. For our library the driving philosophy is one of providing a global intellectual resource. For Hyde Park Barracks it is the archaeology of space. For Throsby Park our concern is to sustain the house through finding a market solution.

These issues - of how we think about and conserve and present collections and historic house museums - how we articulate significance and make good decisions keep us endlessly occupied and engaged as heritage professionals. As the Historic Houses Trust of NSW developed through time, the whole philosophy and idea of each property - what it was and set out to do - is in itself a microcosm of the history of ideas about conservation over the past 30 years. From out and out restoration, to the wholesale ‘anti-scrape’ [3] of Rouse Hill House and Farm, and from a fascination with all things Victorian to a recognition that modern may be cool - and from the stories of great men to articulating the history of working class people, and women, or

threading the missing indigenous story into each property, our ideas change, and with them, the approach to conservation.

Added to that, each HHT property is the creation of its past curators - at Government House Curator Ann Toy's extraordinary sensitivity to presentation and her particular aesthetic set the standard for the beautiful drawing room; Scott Carlin's intuition and sense is woven into the interiors of Vaucluse House, whilst the restoration of Elizabeth Bay House has the unmistakeable stamp of heritage architect Clive Lucas. Curator James Broadbent drove the Ruskinian philosophy at Rouse Hill, Robert Griffin and Emeritus Director Peter Watts the good new design in a historic context of another HHT property, The Mint. The legacy of the Historic Houses Trust is a legacy of individual vision, perception and sensitivity, as much as it is the legacy of the houses and collections themselves.

But today this is not enough. The real challenge for us at HHT and house museums in general is of course that a museum is possibly the very worst - and certainly the hardest - way of sustaining a historic building in the long run. Conserving our scrap of fabric requires skills and resources. And generating those resources requires people to be interested in and care about and want to visit historic house museums.

Most of HHT's houses came to the Trust in the 1980s, at the end of a period of passionate heritage campaigning, sparked in the 1960s by the loss of key early houses, and in the 1970s by the well-known campaigns to save historic buildings in The Rocks. When our houses first opened visitation peaked - as people were fascinated by Australian history heritage and buildings. People were also discovering older buildings as families like my own moved from the modern suburbs to inner city Victorian terraces. Another peak of investment in the run up to 1988 and the Bicentenary helped maintain interest in, and infrastructure for, museums. HHT had the luxury of creating these places because of that wider context of political and social support for the idea of historic houses.

As time moved on, HHT responded to the challenge of generating new audiences by developing a wide range of creative programs and activities designed to bring new audiences into house museums. Concerts in Government House, jazz and carols at Vaucluse House, a stunning '50s Fair' at Rose Seidler, a Festival of the Olive at Elizabeth Farm, all helped to bring new generations of people into older buildings. A thriving education program at each property taught children to bake scones, understand the life of a convict, learn decorum at Government House, or experience a historic schoolroom at Rouse Hill. These were ways to keep properties alive and generate new audiences for a generation that no longer wanted to stand behind a red rope.

And HHT found new ways to generate income other than simply waiting for visitors; a retail offer, drawing on our stunning interiors and fabrics to create unique products, and became more commercial, offering venues for hire for weddings, corporate events and other activities.

Today there are new challenges. There are a plethora of things to do and visit in Sydney. Museums, contemporary art galleries but also a whole range of other experiences and places. Every park in Sydney has a food festival or vintage fair, retailing is a commercial challenge, and lots of other places in Sydney now have great restaurants in authentic historic places. HHT competes with graffiti festivals at the gritty industrial heritage space of Cockatoo Island, fine dining amongst the military remains of North Head, public parks and venues that make former railway sheds and water tanks into creative spaces. The kind of heritage that we have - old houses - are pretty unexciting. So what do we do? How do we re-enthuse people about the idea of the house-museum?

Call the experts

In order to solve the problem of finding a way to conserve our scrap of fabric in the long term, we have not turned to conservators, the architectural historians or heritage specialists but to the brand experts. As curators we know what we like, but what do others think? We went back to first principles and spoke to our volunteers and visitors, our staff, members and non-members, people who had visited and those who had not.

The results were quite confronting. Some people loved our sites, but others did not. 'They don't offer enough to keep me interested'. 'Not enough to do'. 'No reason to come back'. 'Can't interact with/touch artefacts'. 'Old fashioned, not contemporary'. 'Not good food or shop'. 'Not social places'. 'They talk down to me/too cerebral'. 'I feel apprehensive, disengaged, confronted, frustrated, bored'. Not all of the feedback was like that - and there was plenty of good feedback - but there was enough to tell us that the niceties of how each site was presented that had so absorbed us, was utterly lost on the majority of visitors.

Six months and a lot of workshops, discussions, research and butchers paper later - we now have developed the beginnings of a new brand position. It has helped us to connect what we have - real houses, real collections, with some current trends that are remarkably relevant.

Think vintage. Think revival. Think crafts. Think the fascination not with old houses but with interiors and living. We love and crave experiences - and that is something that house museums can provide that other kinds of museums cannot. We love poking our noses into other peoples lives. We are knitting and pinning; we are fascinated with food and things hand made. We are social home-loving doers.

The end result is a new way of talking and thinking about ourselves and our museums. It has told us that we need to be more welcoming and sociable, we need to let people discover things rather than talk to them, we need to play on the things people care about now. Some of this we are already doing, through blogs and programs, some we are not. It is also helping us to make difficult decisions with scarce resources about what we do - and do not do.

It seems a long way from a scrap of fabric to a brand position. But ultimately if our role is to ensure that these places are still here in a hundred years' time, people need to care about them, and people will only care about them if they feel a sense of fascination and connection and ownership.

Yes conservation philosophy and approach matters, but what matters much more is not that we talk to ourselves, but that we look outwards and connect. Instead of debating restoration philosophy, we have a core brand molecule with purpose, signatures and behaviours. Yes, we need to continue to research history but we also research our audiences; we occasionally produce books but also need to see the web and screen media as our future, recognising that 70% of our audiences come that way. Our curators are still here, but as well as house curators we have curators of digital images and online collections.

Conclusion

And the answer to that piece of fabric at Rouse Hill House & Farm? We may well leave that bobble fringe in situ until it rots. Rouse Hill House & Farm is one of the few houses I am aware of that has such an intact collection and interior [4]. As you are aware textiles almost never survive. It means that this house may become rather like the Lascaux caves - fragile, only open to visitors sometimes. But its core value lies in that intactness. We will have to use the web, digital collections and other initiatives to create access to it. And in order to sustain the property and find new audiences we will have to find a whole range of new things to do

there, perhaps making better use of the farm buildings, and finding ways to connect to the 1 in 11 Australians who now live in the burgeoning suburbs around it.

House museums are a hard ask in the modern world. So many of them are the product of a particular time, place and political philosophy. In Australia it was the colonial revivalism of the 1960s and 1970s that spawned many of our properties coming into Government ownership; note that in South Africa today resources are being thrown at the often humble houses of key African National Congress personalities. I wonder how they will fare in future years when politics, and the world, has moved on?

At the end of the day, our role is to do our best to hand onto future generations what we have inherited. To quote William Morris:

'*We ought …. to treat with the utmost care whatever of architecture and the like is left us of the times of art. I deny that it can ever be our own to do as we like with; it is the property of the world, that we hold in trust for those that come after us*' [Morris, 1884]

If that involves brand consultants, and audience research, so be it.

Endnotes

[1] Construction of this property began in around 1813 and was completed by 1825 for Richard Rouse, the son of an Oxfordshire carpenter who originally came to the colony in 1801. Today the house is open to the public and contains an extraordinary collection of items from the family from all periods of its history. It has not been restored.

[2] Property details can be explored on the HHT website: http://www.hht.net.au/discover/highlights/guidebooks/ [Accessed March 2013]

[3] A nineteenth century term used by William Morris and the Society for the Protection of Ancient Buildings as short hand for the idea that architects scraped away layers of history from buildings

[4] Other parallel's include the National Trust's Calke Abbey in Derbyshire, which has been retained in a state of decline.

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

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Conserving and Presenting Brodsworth Hall: New Approaches for a Sustainable Future

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Abstract

Brodsworth Hall in Yorkshire was the subject of a major conservation and presentation project following its rescue by English Heritage in the 1990s. Twenty years on, the conservators and curators responsible for the house are beginning to question whether 'conserve-as-found', the overarching ethos, which has guided the presentation and conservation of the interiors and collections, is still valid. Recent research has demonstrated that some of the most fragile materials at Brodsworth are reaching the end of their lives. This paper examines the approaches taken to slow the decay and poses the question are they sustainable in the long term. Is it time for a radical re-think of the way Brodsworth is presented? The paper concludes that 'conserve-as-found' is still useful as a guiding principle but suggests it is inevitable that it will be more loosely applied, as original objects and interiors decay.

Keywords

Conservation, preventive conservation, presentation, Victorian, country house, conserve-as-found, risk-management, English Heritage

Brodsworth Hall is often portrayed as a house which has stopped in time, forever held in a state of suspended animation following its rescue by English Heritage in the 1990s. Needless to say, Brodsworth is far from unchanged and it continues to evolve, decay and surprise us, presenting new challenges as time passes and our understanding of it grows. Twenty years on, we are beginning to question whether the 'conserve-as-found' approach still works interpretatively, and if it is sustainable in the long term. Despite attempts to halt the decay, the artifacts and interiors continue to deteriorate. We need to consider how, or indeed if, we can display and care for materials which are reaching the end of their life. With new research and new interpretative techniques, coupled with ever-increasing expectations from the public, we must also continue to explore new opportunities for visitors to experience historic houses. This paper examines the conservation and presentation of Brodsworth, and poses the question is it time for a radical rethink?

Fig. 1. Brodsworth Hall, Yorkshire. © English Heritage.

Brodsworth Hall

Brodsworth Hall, in Yorkshire, was built in the 1860s, and its sumptuous interiors and furnishings are the epitome of middle-class Victorian taste. The house and its contents represent a way of life which was once commonplace across England. The eclectic collection ranges from Old Master paintings and fine sculpture to jam-jars and early plastic Tupperware and its significance lies in the insights it offers into the lives of its former inhabitants. Brodsworth's stories are those of a country house and its community playing a part in a much larger picture, both locally and nationally [Carr-Whitworth, 2009].

Remarkably, the house and its collection survived largely intact, and it has been described as the most complete surviving example of a Victorian country house in England [Girouard, 1985]. The initial impression this gives, of a place frozen in time, is misleading. Although it is true to say that much has survived, the Hall also bears witness to the challenges which have beset country houses since the late nineteenth century, as its owners updated, adapted, and at times abandoned parts of the house. By the end of the twentieth century, the family's fortunes had waned and Brodsworth was in a perilous state. Sylvia Grant-Dalton, the Hall's last resident, valiantly soldiered on but by the time of her death in 1988, Brodsworth's future hung in the balance. Finally, after two years of negotiations the Hall was given to English Heritage and the contents were acquired with a grant of £3.36 million from the National Heritage Memorial Fund.

Fig. 2. The Library, Brodsworth Hall. © English Heritage

Methodologies in Practice

When English Heritage acquired Brodsworth Hall in 1990, it was in a severely decayed condition. It was one of a group of similar properties, along with Calke Abbey, Tyntesfield, Mr Straws House and Chastleton in England and Rouse Hill House in Australia, which were rescued around the end of the twentieth century. Often described as 'time capsules', they were subjected to more of an archaeological treatment, following the principle of 'conserve-as-found'. There was no attempt to restore missing elements or to go back to a 'defining moment'. Perhaps the most famous of these is Calke Abbey in Derbyshire, an early eighteenth century house rescued by the National Trust. There was a conscious decision to avoid the place looking newly conserved and it was the subject of much debate at the time. It was not universally admired and in Simon Jenkins' opinion 'the National Trust went mad. Every tonic bottle, every match box, every chipped cup and broken chair was catalogued, dusted, wrapped in plastic and stored before being put back exactly where it had been. Nothing - or rather everything - was to be disturbed'. He went on to say it was 'not a time warp, just a house in need of a visit from the dustmen' [Jenkins, 2003].

Fig. 3. The old kitchen, Brodsworth Hall, after conservation. © English Heritage.

The approach taken at Calke Abbey was the model which English Heritage adopted and developed for Brodsworth. The aim was to retain as much surviving material as possible and to allow the entire history of the house to be told. As our understanding grew, it was clear that Brodsworth retained evidence of the many interventions made by the family over the years, as their needs, and fortunes, changed. We decided that we should present the house largely as we had found it, including the undeniable effects of time and neglect, rather than to try to recapture the appearance of its earliest years.

The shocking condition of the building and the collections presented many challenges during the five-year research and conservation programme. Decades of inadequate maintenance had taken their toll and the building was subsiding, undermined by the local colliery. A temporary structure protected the whole building while the roof

and badly eroded limestone walls were repaired, and all the services replaced. Inside, painstaking work was required to clean and stabilise the decoration, as far as possible without renewing or recreating lost elements. As a result, the fragile interiors have a well-worn and dilapidated air.

Fig. 4. Exterior conservation in progress. © English Heritage

Prior to the building works, the collections were documented, packed up and moved off-site to a warehouse and a rolling programme of assessment and conservation treatment was initiated. The aim was to slow the process of decay and to make the objects stable enough to be shown to the public, not to restore them. Since opening the house to the public in 1995, English Heritage has implemented the latest practice in preventive conservation. Relative humidity is controlled by conservation heating using the historic wet radiator system in the house, augmented by portable electric radiators [Staniforth et al, 1984]. Light is controlled by the historic wooden shutters, new blinds and ultraviolet-absorbing window film. There is a rigorous housekeeping plan, delivered by two collections care assistants and insect pest monitoring is also undertaken. Fragile collections, particularly the textiles are surveyed once a year to identify where on-going repairs are required. In common with most historic houses, Brodsworth is 'put to bed' each winter, which gives an opportunity to check and clean every object.

In 2008 we moved to a two pronged approach partly based on risk management informed by research into natural aging and protection strategies, and partly on the analysis of collected environmental data. The conservator and conservation scientist are also now at the heart of the decision making process required to deliver sustainable solutions, working within interdisciplinary teams. The change of approach was driven by

the results of the Brodsworth Collections Risk and Condition Survey [Stanley, 2008]. This survey combined the results from an object condition assessment carried out on a 5 per cent random sample of the collection and a site wide risk assessment. The survey used an innovative methodology, which was developed to identify which risks were causing damage to the collection, or have the greatest potential to do so [Xavier-Rowe & Fry, 2011].

Risk Factors	**Examples**
Dust, dirt and handling	Dust on an object due to insufficient conservation housekeeping; physical damage due to inappropriate handling, such as chips, scratches or losses.
Light	Fading of dyes and paints, embrittlement.
Incorrect Humidity	Cracks, splits, distortion due to low and fluctuating relative humidity (RH); corrosion, mould growth due to high RH
Pests	Damage and soiling due to insect pests, birds, rodents and bats.
Display/Storage conditions	Tarnishing of silver due to inappropriate display case materials; crushing due to overcrowding in storage; Abrasion caused by an inappropriate support.
Documentation	Incomplete or missing documentation, no identifying number marked on an object. A lack of documentation for some objects, e.g. archaeology or natural history specimens can mean a loss of research value. This can be both symptomatic of poor collection care and may result in further neglect.
Disasters & Security	Fire, flood, theft or vandalism.
Inherent Deterioration.	Some materials deteriorate due largely to their composition rather than the conditions in which they are kept. Examples include photographic film and plastic.

Table 1: Risk Factors used by English Heritage

Risks were ranked, taking account of the significance of the collection and the percentage of objects in each location. The results showed that precedence should be given to implementing solutions within the main house rather than the barn, which is used as a store. Not surprisingly perhaps, the highest overall risk to the collection turned out to be from a disaster occurring at the Hall. This was a useful wake-up call and it highlighted the need to upgrade the integrated emergency planning at the site.

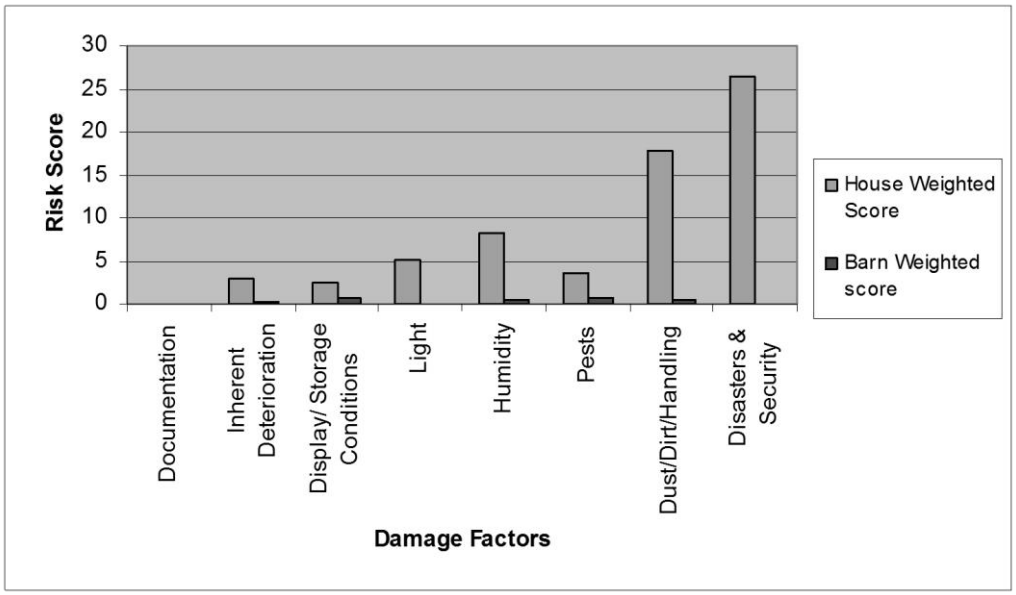

Fig. 5. Brodsworth Hall risk scores 2008

Damage from dust, dirt and handling was the next highest risk to the collection. Dust, is not only visually unattractive, it can also cause damage over a period of time, depending on how damp the environmental conditions are. Relative humidity (RH) consistently above 80 per cent will cause dust to rapidly adhere to surfaces making it harder to remove [Brimblecombe et al, 2009]. Regular and thorough cleaning of objects, whilst keeping dust levels down, also dramatically reduces insect pest activity [Xavier-Rowe, 2011].

The risk from incorrect humidity levels, whilst ranked third highest in the 2008 survey, is becoming more of a concern as analysis of environmental data and materials science research has revealed new information relating to the threat it poses to the collection. At Brodsworth, RH is controlled through the use of conservation heating linked to humidistats. Each room has RH and temperature sensors linked to a Building Management System (BMS) which controls the radiators. There is no method of increasing humidity levels or cooling temperatures in summer. Relative humidity varies throughout the property and some rooms can rise to 70 per cent in summer, resulting in occasional mould outbreaks, whilst in others the RH drops below 40 per cent.

The BMS humidistat sensors have proved to be incapable of accurately reflecting the conditions surrounding the collection as they are fixed at high level [Thickett et al, 2012]. A move to mobile telemetric humidistat and thermostat sensors controlling the BMS heating system is currently being investigated at Brodsworth. The introduction of dehumidifier/humidifier units is also being considered. They use less energy and a combination of heating, de-humidification and humidification may also overcome the main drawback of conservation heating, the slow response time.

During the shoulder months the rooms can be cold, leading to complaints from site staff and radiators being

adjusted to comfort levels. This on-going challenge highlights the need to balance the conditions for objects and people. Local heat sources positioned where stewards are stationed is a potential solution and it is also important to ensure that volunteers, staff and visitors understand why temperatures are controlled.

Fig. 6. Damage caused by water ingress. © English Heritage.

The uncontrolled environment in the house during the latter part of the twentieth century had a particularly detrimental effect on the Victorian silk furnishings. In view of this, we wanted to ascertain the optimum environment for increasing the life of these fragile textiles. The research, which focused on improving preventive conservation of historic silks on open display, came up with some sobering conclusions [Luxford et al, 2010]. The key finding suggested that the long term effects of temperature and humidity appear to be more critical for silks, than light. Therefore, RH levels should be kept low (between 30 and 50 per cent), temperatures should also be kept low (every reduction of ten degrees will double life-expectancy) and, if dyes are stable, the light levels can be raised. This research also predicted that silk could be expected to survive for 250 years at 20 degrees and 50 per cent RH. At 75 per cent RH and 24 degrees the life-expectancy would fall to 125 years. This poses a serious concern for Brodsworth. If we combine historic conditions with current achievable conditions, we have to face the fact that the silks are close to the end of their life. With the predicted rise in temperatures relating to climate change the justification for continued investment in remedial treatment and environmental control is open to question [Lankester & Brimblecombe, 2012].

Fig. 7. Silk furnishings after conservation. © English Heritage.

Another fundamental issue is that other parts of the collection generally require a higher RH than silk, neatly illustrating the complex challenge of displaying mixed objects in historic buildings. The long term care priorities will ultimately be driven by the significance of the objects and interiors, a collaborative decision making process by the conservator and curator. To make more accurate predictions relating to the rate of deterioration, we need data collected over long periods of time. RH and temperature have been systematically recorded for 12 years at Brodsworth. If we knew what conditions the collections have experienced over the past 150 years, judgements could be made as to how vulnerable materials are today and what conservation strategies to employ. Progress has been made towards developing a methodology linking past environmental conditions and damage to objects through the analysis of historic archives with a view to predicting how objects may deteriorate in the future [Cassar & Taylor, 2004].

Light registered as low risk to the collections at Brodsworth. Extensive fading had occurred during the twentieth century when traditional housekeeping practices ceased but now, shutters, blinds, UV-absorbing window film and case covers are used to control the annual light dose. Research by Nottingham Trent University using a micro-fading spectrometer to conduct in situ tests on light sensitive materials provides a method for determining which dyes or colours are especially light sensitive [Liang et al, 2011]. This information is used to develop light protection strategies, based on an assessment of risk.

When Brodsworth was acquired the extent of pest infestation was extreme. However, the risk from insect pests scored low in the 2008 survey which is a direct result of the Integrated Pest Management (IPM) programme which identifies potential issues early. IPM is managed centrally with support and training provided to property staff. Predictions relating to climate change suggest that insect activity is likely to increase and data gathered over the past 10 years by English Heritage supports this [Xavier-Rowe & Lauder, 2011]. The risk of damage from inherent deterioration, storage and display conditions and lack of documentation scored very low.

Whilst the results can only be used as an overview to guide further investigation, combining the evidence of condition and significance with the causes of damage, provides a much clearer steer on prioritising resources as part of a collections care plan.

	Risk	Location	Solutions	Est. Cost	Lead.	Urgency
1	Disasters & Security	House	Update disaster plan	£400	Property Manager	Urgent
			Update salvage plan	£0	Curator	Urgent
			Specify and purchase equipment	£5,000	Conservator	Urgent
			Identify salvage area	£0	Curator	Urgent
2	Dust/Dirt/ Handling	House	Increase CCA staff hours	£2,000	Head of Collections	Urgent
			Improve sealing of cases	£300	Conservation Scientist	Urgent
3	Humidity	House	Talk to staff to prevent over riding system	£0	Conservator & Property Manager	Urgent
			Monitor system to see effectiveness of BMS and adjust as necessary	£0	Estates/Con Scientist	Urgent
4	Light	House	Check detection system is up to date	£0	Conservation Scientist	1-2 years
5	Pests	House	Improve sealing of windows	£10,000	Estates	Short term
			Investigate methods to stop cluster flies	£0	Conservator	Short term
			Improve rodent trapping	£500	Estates	Short term
			Investigate methods preventing rodent ingress	£0	Estates	Short term
6	Display/Storage	House	Replace felt in silver safe	£300	Con. Scientist & Conservator	Short term
			Replace fabric inside display case	£300	Con. Scientist & Conservator	Short term
	Total budget			**£18,800**		

Table 2: Collections care action plan

Looking forward, if we are to improve the life expectancy of collections at Brodsworth, we must gain a better understanding of the aging of historic materials. We have started with investigating the most fragile materials to determine the optimum achievable conditions within an historic building. This evidence will then support the introduction of effective mitigation strategies.

Presentation and Interpretation

The presentation of Brodsworth was, and continues to be, a collaborative enterprise drawing on curatorial, interpretation and conservation expertise, driven by the needs of our audiences and the collection. The approach was as dispassionate as possible but questions of visual balance emerged frequently as objects responded differently to treatment and it was impossible to avoid making subjective aesthetic judgements. Practical considerations had to be addressed too. Inevitably, compromises were made to enable the house to be opened to the public and to function as a visitor attraction. Ticketing and toilets were, sensibly housed in new buildings in the grounds but the shop, offices and café were shoe-horned into the service wing.

The most striking introductions to the house were the replica carpets in the main thoroughfares where the original carpets were most damaged. Partly practical and partly interpretative, they allow visitors to experience the grand circulation spaces without the visual intrusion of barriers. Elsewhere, visitors are guided through the rooms along drugget runways bounded by ropes. Research into the condition of the carpet fibres under the druggets, which are made of wool with a polyester felt underlay, concluded that no significant damage is being caused to the carpets confirming that the carpet protection is working [Tetley, 2012]. However, although the colours and materials were carefully chosen to be sympathetic, they remain very intrusive. Despite this drawback, they seem to be the only way to allow free-flow visitor movement. There has been a campaign recently to remove barriers from historic houses. The jury is out on the long term implications of a 'no-ropes' policy but we do not feel it is appropriate for Brodsworth's fragile interiors.

Fig. 8. Ropes and druggets at Brodsworth Hall. © English Heritage.

Low light levels are a constant cause of complaint. To mitigate this, tinted window film, which reduces UV and visible light, has been successfully used, allowing some blinds to be lifted and giving views of the landscape. Vulnerable upholstery is protected from light and dust using replica case covers, following an historical precedent. We have also introduced replica chintz curtains in the bedrooms to reduce light levels, another shift away from the 'conserve-as-found' principle.

The historic rooms are presented without permanent interpretation. We rely on volunteer room stewards to engage with visitors and answer questions. There is a guidebook and permanent exhibitions about the family and the servants. Temporary exhibitions focussing on various themes and highlighting particular aspects of the collection in the house are regularly programmed. These generate repeat visits and PR opportunities as well providing a catalyst and output for new research. Audience research suggests that visitors are broadly appreciative of the presentational approach.

Research underpins all our work at Brodsworth and we have been part of the Yorkshire Country Houses Partnership, a unique collaborative research venture between the University of York and ten historic houses, since it was founded in 1999. The Partnership brings together curatorial and academic expertise and undertakes coordinated research which is made available through seminars, publications and exhibitions. The next major initiative, 'The Country House in Time of War' will explore the impact of war on country houses across Europe.

The great presentational innovation of Tyntesfield was that the National Trust kept the house open during the repair work, making it visible to the public, treating every aspect of the development as an opportunity for learning and engagement. At Brodsworth the initial conservation was carried out behind closed doors but more recently we have started to involve the public in all aspects of our work. Some conservation is programmed while we are open for visitors to see and we have volunteer teams working with the conservator and the curator. Volunteers have been pivotal in the creation of a remarkable oral history archive and servants database. It was this initiative which demonstrated that research has the potential to be a much more interactive and reciprocally beneficial process, through which people's thoughts can be recognised and valued in our understanding and interpretation of the past. This approach is opening up new possibilities for us to engage with the public, establishing the house as an active and meaningful cultural resource for the local community.

Conclusion

Country houses rarely, if ever, stand still in time and much as we would sometimes like to, we cannot halt the passage of time or its detrimental effects. As we look to the future and more objects reach the end of their lives, difficult curatorial decisions will need to be made about what to 'let go' and whether to display objects which are literally falling to pieces.

As for a radical re-think of the way Brodsworth is presented, the consensus is that 'conserve-as-found' is still useful as a guiding principle but it seems inevitable that it will be more loosely applied in the future as we are forced to introduce more replicas or perhaps equivalent historic objects, as the original ones decay. New methodologies will also be essential for focussing conservation resources, based on a greater understanding of materials and environmental data, coupled with assessments of risk and significance.

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

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Inspired by Knole

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Abstract

This paper introduces Knole, one of the treasure houses of the National Trust. Knole is unquestionably one of the most precious and fragile houses owned by the National Trust and it is poised to undergo its most significant transformation in more than 400 years. This paper outlines some of the issues there are at Knole, balancing the needs for conservation with access and visitor enjoyment. Further it describes how the conservation process and the discoveries made during this long term project are being used to tell the stories of Knole. Thus, the conservation process enables visitors to understand and better enjoy this magnificent house and its internationally significant collections.

Keywords

Historic house collection conservation, preventive conservation, engagement, interpretation, visitor experience

Knole: a treasure house of the National Trust

Knole is one of the great ducal palaces of England and its story, spanning 500 years, also makes it one of the most extraordinary. Knole's footprint is vast, covering four acres; it is the largest private house remaining in the country. Remarkably, architecturally it remains largely as it was by about 1610.Knole is first mentioned by name in a land grant of 1281, referring to properties belonging to the heirs of Robert de Knolle. In the fourteenth and fifteenth centuries the Manor of Knole passed through a succession of owners until it was conveyed to Thomas Bourchier, Archbishop of Canterbury, in 1456. Bourchier was a man of considerable consequence in fifteenth century England and he began work on the creation of his palace at Knole shortly after his acquisition of the estate. It is his archiepiscopal palace that remains as the core of the present extended house. Ownership of Knole was surrendered to Henry VIII in 1538 to be used as a private retreat and hunting ground. After a lengthy campaign to acquire Knole, Thomas Sackville, 1st Earl of Dorset, transformed Bourchiers's medieval building into an early seventeenth century Renaissance palace.

Thomas Sackville used his royal connections to secure the services of the finest craftsmen to rebuild, decorate and furnish his home in lavish splendour. A fine collection of family portraits dating from the first half of the seventeenth century survive, however much of the rest of the collection was seized and sold by Parliamentary order during the Civil War. The significant collection of seventeenth century Royal furniture and textiles seen at Knole today was brought to the house in 1701 by the 6th Earl of Dorset. They were obtained from the palaces of Whitehall and Hampton Court as a 'perquisite' of office in the Earls role as Lord Chamberlain. Further additions to the collections we made in the eighteenth century by successive Sackvilles, the most notable of which, the 3rd Duke of Dorset, who was both a collector of the antique and patron of contemporary artists. During his Grand Tour of Italy he

purchased Old Master paintings and Sculptures. On his return he commissioned portraits from English artists such as Sir Joshua Reynolds.

Fig. 1 Knole ©NTPL

In the late seventeenth century the family created their own living apartments at Knole and the state-rooms became a destination for visitors, allowing the family to show off their wealth and history. The Sackville family still live at Knole, with the National Trust accepting ownership and responsibility for its care in 1946. As a consequence, there are few properties where the house and collection have stayed intact to such an extent and for so long, and the rooms today retain their timeless untouched quality.

Looking deeper at the collections and their history, reveals however the impact that visitors have had on the interiors and the collection therein, and the attempts that have been made to reverse these effects and preserve the collection. By 1874 some ten thousand people were visiting Knole every year, making it one of the most popular show houses in England [Sackville-West, 2010]. This had its down side, Mortimer, the 1st Lord Sackville complained that 'people strayed from their parties, broke into our rooms, tore the fringe off the chairs and couches, and did all manner of things…' [Sackville-West, 2010]. This led to the inevitable need for repair and early attempts at conservation and preservation, many of which are documented in the historic inventories of Knole [Knole Sackville Trust, 1864].

The 1864 Knole Heirloom Inventory has extensive annotations recording movements, modifications and losses to the upholstered furniture collection throughout the house [Knole Sackville Trust, 1864]. Transcription and analysis of the inventory shows that the original entries, written in copperplate script in

black ink, had in some cases been either entirely or partially crossed through. Annotations in purple pencil record movement, damage and loss. Close examination of early historic photographs supports the evidence found in this 1864 inventory For example, the inventory establishes the link between The James II Bed, made in 1688, and objects located in the Brown Gallery that are upholstered with embroidered fabric matching the fabric panes in the head-cloth and panels inside the tester of the Bed. The annotation for the counterpane reads that 'this has been cut up to cover chairs, stools etc' [Knole Sackville Trust, 1864]. The evidence is therefore clear then that some of the upholstery seen today in the Brown Gallery originated as the cover for the James II bed.

Knole, therefore, offers a unique opportunity to glimpse into the past by seeing objects in the settings for which they were intended, but also how conservation and repair has always strived to balance the effects of access. Most regard this as an essential part of the evocative atmosphere of Knole, imparting the Spirit of Place, which is as important to preserve as the physical collection. Vita Sackville West wrote of the Venetian Ambassadors bedroom in 1922, 'It had a bloom like the bloom off a bowl of grapes and figs…Green and pinks, originally bright, now dusted and tarnished over' [Sackville-West, 1934].

Fig. 2. The Venetian Ambassadors Bedroom, Knole. ©NTPL

However, this heavy air of history and antiquity can also viewed as a sign of neglect. Some visitors do not like seeing the worn and decayed fabric of the collection, and respond to it in a negative way. This is not a new phenomenon. Throughout its history Knole has caused extremes of reaction. In 1752 Horace Walpole commented: 'The furniture throughout, ancient magnificence; loads of portraits not good nor curious…' [Sackville-West, 2010]. And in 2009 a visitor to Knole complained that he was forced to peer 'through the gloom resulting from a ridiculous attempt to preserve a mass of already faded and rotten fabrics'.

Conservation in Action: Inspired by Knole

This creates a challenge today in the National Trust. Balancing the needs of conservation and access with ever increasing visitor numbers, and offering a good experience for all visitors, is becoming harder and harder to achieve. One of the key performance indicators used to compare the success of a particular property nationwide is its visitor enjoyment (VE) score. The aim at the National Trust is to have 75per cent of our visitors responding that they have had a very enjoyable visit in surveys carried out at the end of their visit.

The National Trust is the United Kingdom's largest conservation body; but it is a private charity, dependent on visitor income, membership, donations and legacies, and fund raising to support its properties. All National Trust properties strive to operate as far as possible as independent business units. This an increasing challenge in economically straitened times which has seen the amount visitors spend in tearooms and shops drop, despite increasing visitor numbers. Many properties, including Knole, currently operate at a loss. Therefore, Visitor Enjoyment scores are extremely important, as an indicator of the overall performance of a property. Without generating an income the property is unable to finance and manage its conservation needs.

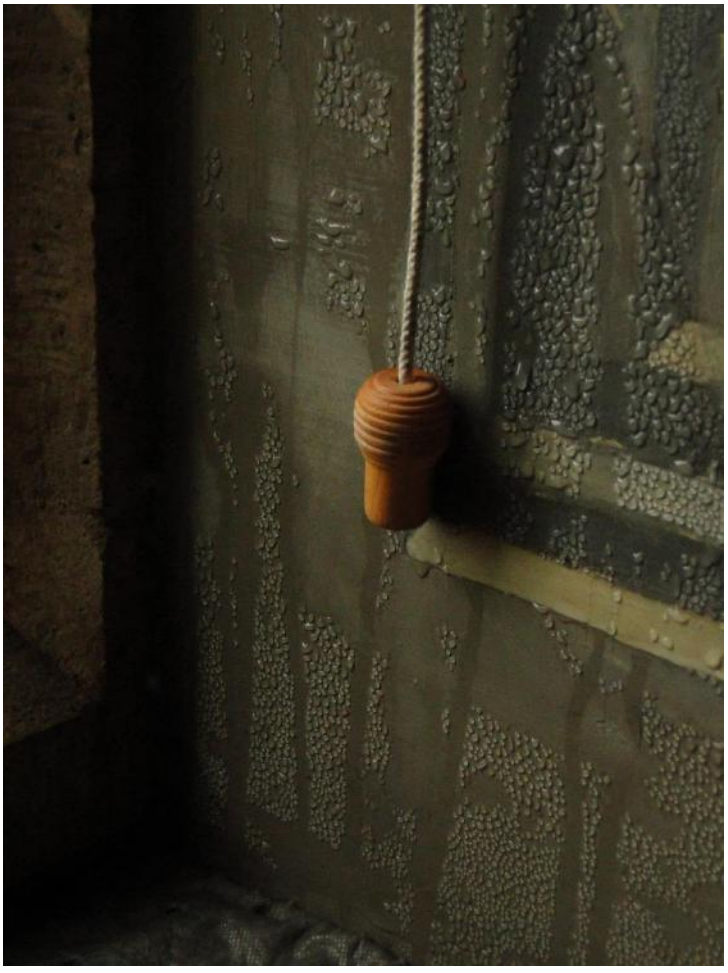

Fig. 3. Condensation on historic wall paintings, Knole. ©Emily Watts

Problems with visitors not understanding what they are observing, and therefore not enjoying their visit to Knole, are compounded by major conservation issues at the property today. The leaking roofs, crumbly walls, failing windows and poor wiring have all contributed to a place that is losing its battle with the outside elements. There is no heating in the showrooms and the relative humidity levels reach 90 per cent and above in winter. As a consequence, the condition of the highly significant collection is deteriorating.

But now Knole is now poised to undergo the most significant transformation since the interventions of Thomas Sackville over 400 years ago. The project, 'Inspired by Knole', will work to secure the future of the house and collections by undertaking work to improve the building envelope, installing environmental

control in the showrooms and starting conservation of the collections. In peeling back Knole's layers, we will understand and repair the rapidly declining house and collections. But this is not just a conservation project, 'Inspired by Knole' is being designed to enable links with local communities to be developed and strengthened, to engage and involve a much broader range of people in the care and conservation of Knole, deepening their knowledge and appreciation of what makes it special. The visitor experience at Knole will, through conservation, be transformed.

The concept of displaying conservation work in progress as part of a property's interpretation has become more widespread in the National Trust [Lithgow and Boden, 2012]. This has been shown to act as a powerful lever to generate support and funding [Kay and Hughes, 2011]. It has been recognised that showcasing the fascinating skills of conservation in a transparent and engaging way can engender huge support for its vital work, by deepening relationships and increasing understanding.

At Knole, Conservation in Action is a tool that has been used successfully in recent years and has given positive visitor feedback. Over the past year where conservation activities have increased, Visitor Enjoyment scores at Knole have risen by 16 per cent. This paper will briefly set out what has been done to date at Knole and how there are ambitions to go much further in developing the concept of Conservation in Action.

It is recognised that people learn and absorb information in different ways – some enjoy reading, others by watching or hands-on activities and therefore information has been delivered in a wide range of format and styles and also to take advantage of new technology available [Measures, 2009]. Handling frames, which have examples of different materials found in historic houses that visitors can touch, have been a good hands-on tool to show visitors the effects of touching fragile objects and surfaces. Digital photo frames are an unobtrusive and user-friendly tool for delivering updates and information on conservation projects. The conservation team at the property now write a hugely popular blog about their everyday work at Knole – in its first year it received 17,000 views [see www.knolenationaltrust.wordpress.com]. They also carry out some of their day-to-day routine in front of the public and hold regular 'meet the team' sessions. Freelance conservators, working in-situ at Knole on remedial conservation, also do as much of their work as possible in front of the public, giving practical demonstrations and showing authentic Conservation in Action. Built into their brief is an allowance of time and resource to talk to the public and provide interpretive material. It is important to do this as it has been found working in front of the public can add up to 30 per cent extra time to complete a project [Lithgow, et al 2012].

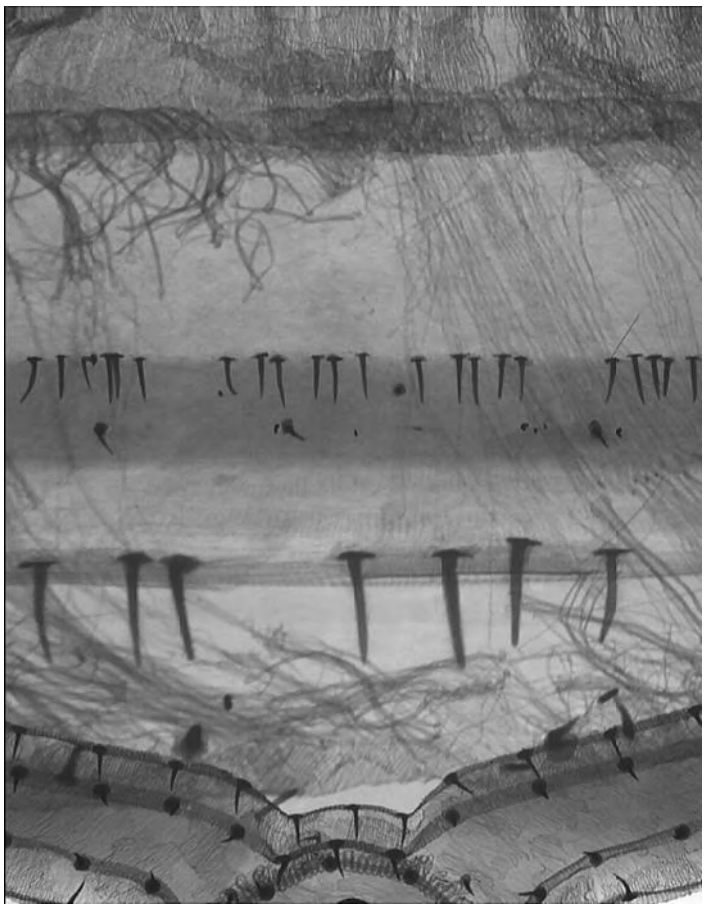

Fig. 4. X-ray image of furniture at Knole. ©NTPL

Wide consultation has been undertaken over the last year with our visitors, and all

conservation related events and activities have been evaluated. It is important to get feedback from the visitors to ensure that we are offering information that is interesting to them and is being delivered in the right way. It is also important to have a range of activities to engage with all ages and abilities and focus activities to target audiences. New technologies are being been looked at, such as the use of apps, but again to inspire visitors to look at Knole in a new light.

X Radiography

Last year, as part of a project to carry out detailed documentation of some key pieces of furniture in the collection, Kate Gill, an independent upholstery conservator worked with a company to produce X-radiographies of furniture. The images show details of construction, tacks used, modern interventions using screws for repairs, the presence of tarnished and degraded gold and silver threads, layers of upholstery and of course the tunnels and damage caused by woodworm. The potential for using X-radiographs as a tool for condition assessment, and to aid conservation decision making and curatorial studies, is well known by conservators and curators alike. The resulting images, beautiful in themselves, were fascinating and provided a focus for a popular exhibition for the uninitiated visitors.

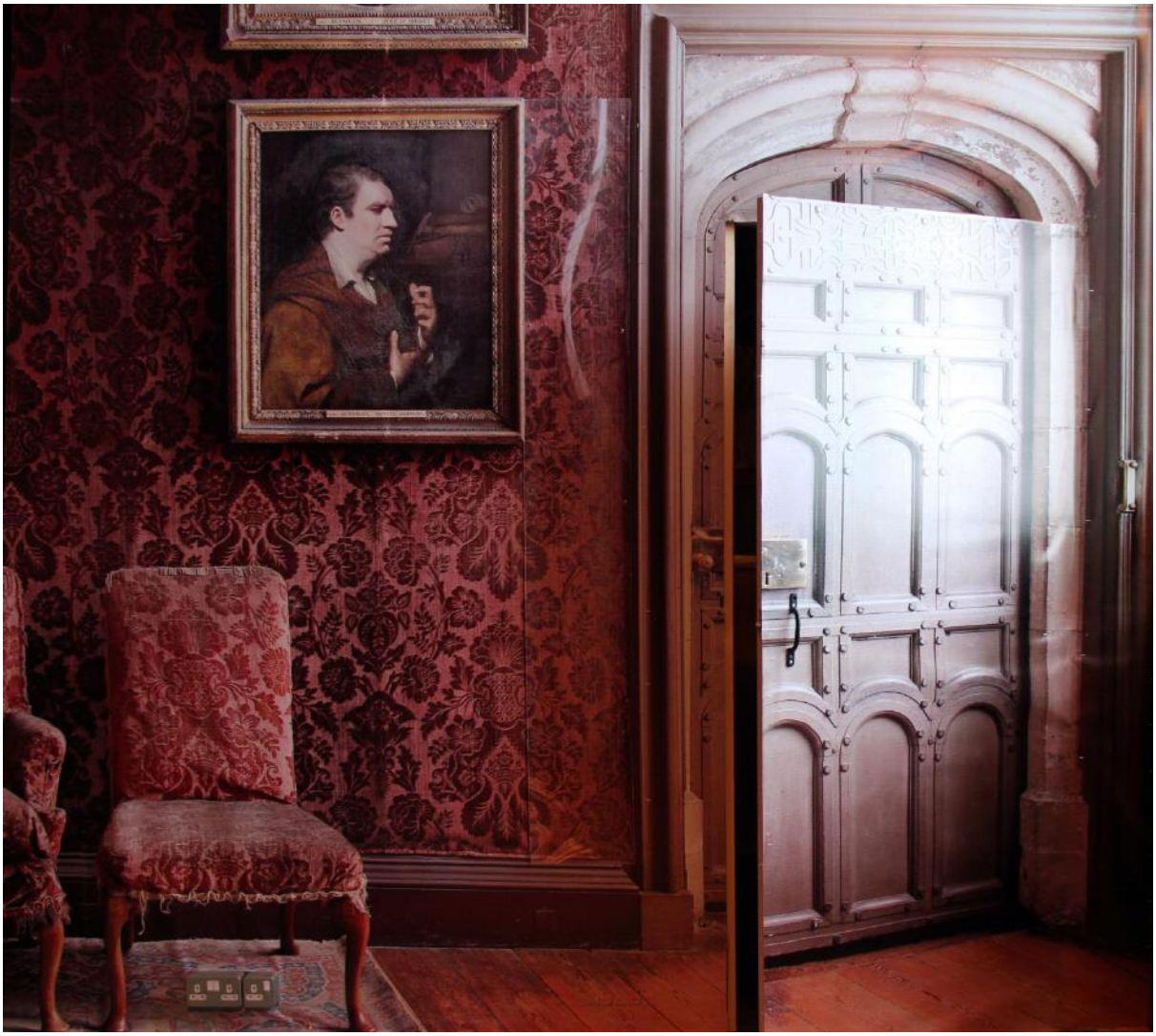

Fig. 5. The Reynolds Room, Knole. ©NT/J Millar

The Reynolds Room Project

The Reynolds Room Project at Knole is another example of how we are using new technologies and equipment and also experimenting and testing visitor's reactions to conservation work and interpretation. In the future the aim is to have environmental control in all showrooms, but before major interventive building work is undertaken, the theories and proposed strategy needed to be tested. The model was to reduce air leakage and introduce low level heating, the combination of these two factors hopefully being sufficient to reduce relative humidity to a more acceptable level. The Reynolds Room has no history of heating apart from its impressive fireplace, now no longer in use, so any intervention would need to be unobtrusive; again an awareness of the Spirit of Place is important at Knole. Heat mats offered a good solution. The mat would sit hidden under the historic carpet, responding to a humidistat and letting out a low level heat when the relative humidity rose to above 65%. A fake room was constructed within the space rather than creating a sterile space. Facsimiles of the walls and paintings were printed onto vinyl screens. The screens imitated the effects of forthcoming building repairs intended to reduce air leakage. Monitors were placed in various locations in the space to monitor changes in temperature and RH and the effectiveness of the heat mat. Results could also be directly compared with conditions in adjoining non controlled spaces [Curteis, 2011]. Visitors were intrigued, and a conservation trial became a great talking point. This year the trial was changed slightly. The heat mat had proved successful in reducing relative humidity but could it withstand our 95,000 visitors walking on it? A fake carpet was produced – an extremely convincing digital representation of the original and visitors are invited in to walk on it. Through interpretation in the room and the presence of trained Room Stewards, this trial has enabled a dialogue to be created with our visitors – giving them an insight into how collections are managed and cared for, but also the debates surrounding conservation, access and authenticity.

Fig. 6. Building repairs to roof, Knole. ©NT/J Millar

Knole in Flux

This year has seen the start of the biggest challenge at Knole so far – to secure the building envelope at Knole through essential roof, wall and window repairs which will stop the rain and elements getting in. The work is extremely interventive: roofs will be stripped of tiles and repaired, inappropriate cement render will be replaced with lime, and windows will be removed and conserved. By carrying out this work, conditions within the showrooms will be improved and progress can then be made on tighter environmental control and collection conservation. However during the work there would be a huge impact both on the collections and the visitors to Knole. Collections needed to be protected from possible dust ingress and impact damage, and visitors have to remain safe, but also informed and excited by the project. Their continued support is vital. After careful risk assessments, it was determined that both collections and visitors could remain in the showrooms affected by the building work. It was hoped that by being allowed to see into the heart of the building work, visitors would understand the scale of the problems at Knole and be supportive of the project being undertaken.

Fig. 7. Protection in showrooms. ©NT/J Millar

Visitors currently walk through a polythene tunnel running through the showrooms, which prevents dust from external repairs entering the house. Windows in the tunnel allow visitors to look out onto the scaffold and see building work in progress and in, to see showrooms. These also allow visitors to view rooms and collections differently. Some are covered up, but in other places secret doorways have been revealed and walls previously hidden behind tapestries. A box surrounding the magnificent Spangled Bed for protection allows the visitor to glimpse into the previously hidden canopy and see the textile in all its unfaded glory. There is an atmosphere

of work in progress, leading to a buzz of activity. New discoveries being made all the time. Furthermore, visitors gain a sense of privilege as they are allowed to see behind the scenes. Outside visitors have been able to go on tours on the scaffold to see the bare bones of Knole and appreciate the scale and urgency of work required. Interpretation will aim to bring visitors into the heart of the building works, expressing their importance, explaining the work and revealing new aspects of Knole's history, while engaging audiences in the next stage of Knole's development.

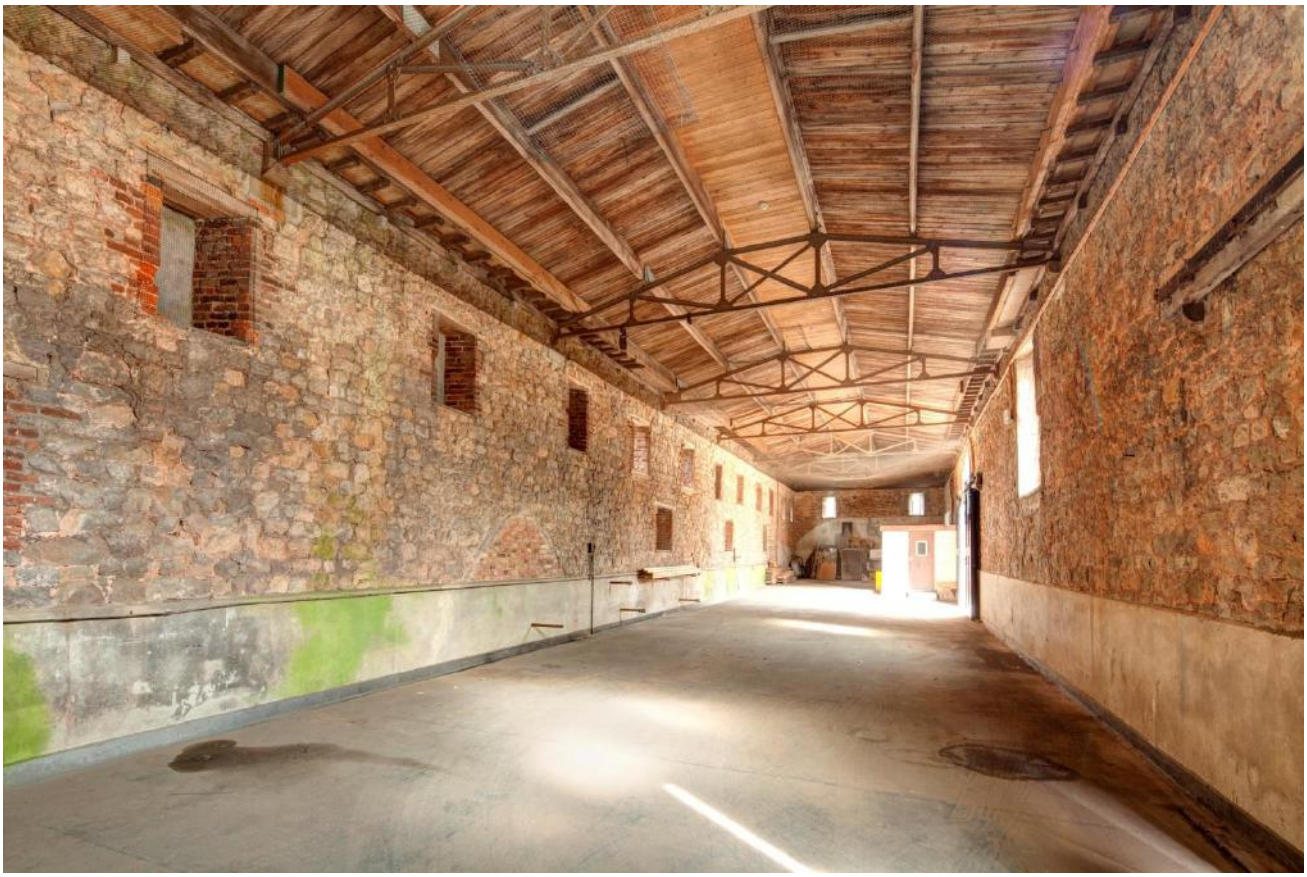

Fig. 8. The Barn, Knole which will be the site of the Knole Studios. ©NT/J Millar

Knole Studios

Finally plans for Knole Studios – the most ambitious part of the proposals for 'Inspired by Knole'. A bespoke conservation studio and learning complex titled 'Knole Studios' will be created. The space will allow conservators not only to work in front of the public on objects from the collection but also to give opportunities for those visitors to view the work and potentially get involved in some projects and gain new skills. By developing and strengthening links with local communities, it is aimed to engage and involve a much broader range of people in the care and conservation of Knole, deepening their knowledge and appreciation of what makes it special. Research undertaken at Knole and other heritage organisations has shown that visitors want to be more involved –not only to 'watch', but to 'learn' and 'do' as well. Visitors want to have direct contact with the experts involved, to talk to conservators and see close up the conservation work in progress. There is a precedent for this at Knole. In the past volunteers have not only been used in opening the house to the public but also in essential conservation work. A fantastic example was the

conservation of the magnificent King's Bed in the 1970s and 1980s. Over a period of seventeen years a group of trained volunteers spent many thousands of hours painstakingly conserving the delicate fabrics of the golden bed. The work they did can be seen today on the King's bed and has ensured its survival for the future. Some of these original volunteers are still volunteering at Knole today.

Knole Studios will allow this tradition to be continued on a more ambitious scale. There will be opportunities for work placements and internships, giving trainee conservators much needed hands on experience and ensuring skills for the future. But there will also be opportunities catering for all levels of skill and interest, whether its basic cleaning, simple conservation work, research, cataloguing, documentation, creating replicas. The Hayloft Learning Centre will complement the studio, providing a facility where a variety of activities can take place - whether schools groups, adult education, art and craft groups – all being inspired by Knole.

Conclusion

Knole is a wonderful property. The building and collections are of international significance and the fact that they have survived and are still on open display today should be celebrated. However it is clear that the condition of the building and collections, and restrictions imposed by preventive conservation measures has made Knole a difficult place for visitors to understand and enjoy. In recent years Conservation in Action activities at Knole have started to address this. Our visitors are starting to understand and enjoy Knole through learning about Conservation. 'Inspired by Knole' will enable this to continue on a bigger scale.

In the past Knole has been compared Knole to being more like a medieval town than a house, full of life and activity. 'Inspired by Knole' will once again bring Knole alive. The project will enable the National Trust to enhance Knole's reputation, raising its profile as a place of extremely important heritage and a centre of excellence for learning conservation and craft skills. It will address the long term conservation needs of the building and collection and enable visitors to Knole to learn about conservation, its importance and relevance today.

Acknowledgments:

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

A Joint Conference of ICOM-DEMHIST and three ICOM-CC Working Groups: *Sculpture, Polychromy, & Architectural Decoration*; *Wood, Furniture, & Lacquer*; and *Textiles*

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Glitter and Gunge. Preserving the Future of JW Evans

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Abstract

JW Evans is the most complete and untouched example of a Victorian silverware manufactory in the Birmingham Jewellery Quarter, England. This paper describes the process of developing a conservation philosophy of minimal intervention and the challenges of implementing such a policy whilst still protecting the 'spirit of the place'.

Keywords

Conservation philosophy, minimum intervention, Victorian, Industrial, Silverware, Factory. English Heritage, Spirit of Place

Introduction

A survey of the Birmingham Jewellery Quarter undertaken by English Heritage describes JW Evans as 'probably the best-preserved example of a manufactory based in what were initially domestic premises in the internationally important Jewellery Quarter' [Cattel et al, 2002]. A secretive business relying on anonymity, the full significance only became apparent when the owner took pity on one of those undertaking the survey, 'the poor lady standing outside in the rain', and invited her inside for a cup of tea. The buildings in themselves were not unusual, but behind the four modest Victorian terraced houses, lay a treasure trove of over 120 years of machinery, handmade tooling, photos, business records and the minutiae of a family run business (Figure 1). The 'spirit of place' was overwhelming with haphazard piles of pressings, and benches covered in layers of dust and detritus with tools lying undisturbed, as if the occupants might return at any moment to finish their task.

The history of the site is well documented, with numbers 54-57 Albion Street built in 1836 as residential terraced houses with open yards or gardens behind. By the 1870's the gardens had been built over to provide workshops for manufacturing (a pattern typical of much of the Jewellery Quarter) [Demidowicz, 2010]. In 1881 Jenkin Evans began trading in 54 Albion Street and by 1901 he had demonstrated his talents as a business man; purchasing all four buildings and buying out his partners. The business passed to his son and finally grandson, Tony Evans, who was involved from 1955 until its sale in 2008. The continuous family association and a self-confessed hoarding mentality

prevented 'cherry picking' of useful items and the dispersal of tools and archives over the years (Figure 2).

Fig. 1. Main Stamp Shop, c.1910. © English Heritage

Fig. 2. Exterior JW Evans, c.1890. © English Heritage

English Heritage became involved in earnest in 2008, when Tony Evans decided it was not feasible to continue operating the business. Several conservation bodies considered taking on JW Evans, but in the prevailing climate none committed to such an intensive project and the property was put on the market. At this point as a 'buyer of last resort' English Heritage acquired the four buildings, collections, archives and silverware. Although JW Evans had a Grade II* listing [1] this only protected the building fabric and fixed machinery. None of the moveable historic contents, including the c. 25,000 dies and cutting tools, hand tools, pressings and extensive archives were included in the listing and were in danger of being lost. The buildings and contents were in extremely poor condition with water ingress, pests and condemned electrics. Although part of the charm of the property was the untouched atmosphere, it was also clear that without carrying out certain works, a future for JW Evans would not be sustainable and public access would be impossible.

The purchase was completed in March 2008 but works did not begin immediately. There was an awareness of the delicate balance required to preserve the atmosphere of the property without losing significant information due to a lack of understanding of the processes. The rooms often showed evidence of their original use as residential spaces, before being subsumed for industry and the subsequent slide into neglect and disuse when they were no longer required during the later years of the less prosperous business. The amount of 'dirt' or dust on the tools often indicated their purpose and the frequency of their usage and the contents were significant because they were complete and in context (and in some cases had been so for over 50 years). It was these associations and wealth of inter-related information that could so easily have been lost by a simple inventory and 'tidying up' without a full understanding of the property (Figure 3).

Fig. 3. Main Stamp Shop, 2008. © English Heritage

Conservation Strategy

To formulate a conservation strategy, cross discipline representatives were invited to share perspectives, which formed the basis of the 'Conservation Philosophy'. The strong argument supporting the retention of the collection in situ led by Amber Xavier-Rowe encouraged the conclusion that minimal intervention or 'conserve as found' was both ethically and practically achievable. To take this to its ultimate conclusion would be to do nothing and allow the stately slide into deterioration to accelerate – already a recent theft of lead from the roof was causing widespread water ingress through the glazed roof of the Main Stamp Shop, causing damage to the benches and machinery below. However it was acknowledged 'there is no point in preserving it precisely as it was on 31 March 2008: the buckets catching the water will no longer be necessary' [Molyneux, 2008]. In conserving JW Evans & Sons, we must ask: 'Will it last if nothing is done?'; not 'Do we like it?'; or 'Is it attractive?' [Molyneux, 2008]. So the questions would be where to stop and how to achieve a compromise between preservation and 'spirit of place'?

Rouse Hill House on the outskirts of Sydney, Australia was cited as taking a minimal intervention approach by principally leaving the collections in situ [2] but nothing on the scale of JW Evans could be found in the UK or elsewhere. Typically, a project of this scale would start with intensive inventory recording, before packing and decanting the contents. In this instance, almost uniquely, the majority of the c. 52,000 objects were protected in situ and, as on an archaeological site, fully recorded only if the surrounding works required their displacement. The objects were accessioned only in rare instances; such as the showroom silverware which had already been relocated from its location in number 52 Albion Street (this property was sold by Tony Evans in 2005). Undertaking a meaningful recording of the objects would, in many cases have necessitated disturbing objects and cleaning them to be able to identify them or differentiate between them, the reverse of minimal intervention.

The first step in assessing the scope of such an undertaking was to assess the building works to ensure that the property could be made water tight and secure. This information would be used to plan the amount of interventive works required to the exterior and interior of the houses [Hill, 2012]. A 'Collections Condition and Risk Assessment' of the contents was also carried out [Xavier-Rowe and Fry, 2011]. Quantifying the number of objects on site and gaining an overview of the main risk factors for the different types of collections was essential as it had already been acknowledged that neither the condition of the objects nor the environment they were housed in was ideal. The principle aim of the Assessment was to quantify the risks actually causing damage; the metal items were dusty, dirty and often corroded, but was this corrosion active? Unsurprisingly the highest risk to the collection was the display and storage conditions, from the leaking roof, unstable shelving or poorly packed and stored archives (Table 1). As well as influencing initial project and building works, the audit has been used to justify and cost continuing works required to the collection.

	Risk	Solutions	Est. Cost	Lead.	Urgency
1	Display, Storage Conditions	Stabilise building structure to prevent deposition onto objects	Ph I project	Project Director	Done or ongoing
		Sample and/or stabilise wallpaper	Ph I	Conservator	Done or ongoing
		Remove hazardous Asbestos/ Chemicals	Ph I project	H&S	Done

		Investigate clearing areas for accessing collections	£1,000	Conservator	Ongoing
		Investigate raising ferrous objects off floor	£1,000	Conservator	Urgent
		Reinforce unstable shelves	£1,000	Estates	Phase II
		Repack stored items for long term, particularly archives	£10,000	Conservator	Ongoing
		Investigate coatings to slow corrosion ferrous items	£1,000	Conservator	Ongoing
2	Humidity	Make building envelope water tight	Ph I	Project Director	Done
		Install environmental monitoring	£7,500	Senior Collections Scientist	Ongoing – extend Phase II
		Consider moving vulnerable items (archives etc)	£100	Conservator/ curator	Done – archives moved
		Investigate improving ventilation	£1,000	Senior Conservation Scientist	Phase II
3	Documentation	Record location of objects in areas where items are to be moved	£10,000	Curator	Done
		Implement system for removing items from site		Curator	Done
		Consider more in depth documentation of certain collections (e.g. Archives)	£1,000	Contents Team	Short term
4	Disasters & Security	Write disaster plan for site		Conservator	Done
		Supply basic salvage kit	£1,000	Conservator	Done
		Consider wireless fire system	£3,000	Project Director	Phase II
		Establish emergency salvage area		Region	Short term
		Write salvage plan		Conservator	Ongoing
		Liaise with fire brigade and other institutions		Conservator	Phase II once protection down
5	Dust, Dirt, Handling	Continue programme chimney sweeping	£300	Phase II	Ongoing

		Provide basic housekeeping equipment	£750	Conservator	Done
		Institute system record new damage		Conservator	Short term
		Write housekeeping schedule / plan works once philosophy established		Conservator	Ongoing
6	Light	Install monitoring to assess light levels	£400	Conservator	Phase II
		Investigate fitting UV film/ other light control methods	£5,000	Conservator	Phase II
7	Pests	Prevent bird ingress to all areas	Ph I	Estates	Done
		Remove bird guano from all objects	£1,500	Conservator	Ongoing
		Begin IPM once areas cleaned and works completed	£50	Conservator	Short term
8	Inherent Deterioration	Carry out condition survey of vulnerable objects	£1,000	Conservator	Short term
		Implement annual % check of objects	£200	Conservator	Short term
TOTAL			**£44,800**		

Table 1: Collections Condition Risks Assessment Audit

Phase 1: Building Works

In order to keep the majority of the collections in situ during building works, senior management at English Heritage were convinced that a conservator must be at the heart of the project working full-time onsite with the design and construction team. The conservator would be based on site to oversee the works and prevent damage to the historic fabric and collections. The early and continuous involvement of a conservator meant that it was possible to trouble shoot issues early by allocating sufficient time and resources.

The scope of works and resulting budget required made the project more practical to split over two years. The external works were extensive; repairs to the roof structure and replacement Welsh slates for all four houses and workshops as well as new roof lights and repaired chimneys. Guttering was renewed (and widened) and all windows and external doors repaired. There was also the added complication of needing to strengthen brick boundary walls in the workshops as they were only a single skin thick and therefore leaning outwards at perilous angles. Asbestos had been used extensively within the spaces and there were also a multitude of chemicals (many in unlabelled bottles) all of which would have to be dealt with.

Although the major works were to achieve a weatherproof building, they had the potential for widespread damage to the interior collections. Much consideration was given to protecting the interiors of the rooms and

their contents. There was a concern that the more common method of protection by 'boxing in' all the ferrous items and wooden shelving might cause an adverse microclimate in what was a very damp space, accelerating mould and corrosion damage. If the items were concealed, monitoring their presence (for security) or further deterioration would present problems. It was also acknowledged that it would be very hard to allow public access and engagement if everything was hidden for over a year. After much discussion and with the knowledge there would be an English Heritage conservator seconded to the project and on site throughout, an alternative strategy was developed for each room by the conservator and architect.

A system of protection criteria was specified and this key was then applied to different areas, for instance protection for stairs and hand rails would be Type G (Table 2). An unusual part of this strategy was to install scaffolding platforms throughout each of the single storey workshops (where the roofs were to be renewed) without first protecting individual items. These access platforms would also be used as false ceilings, protecting the contents underneath from dust, debris or possible Asbestos contamination (as well as contractors!). The scaffold planks were then lined with several thicknesses of polythene and sealed around the edges with pipe lagging. Any items projecting above this level were individually covered over and also tightly sealed. Some individual items underneath the platforms also had further protection, such as soft wrapping with Tyvek® or rigid boxes (some with viewing and ventilation panels) which were built to be sturdy enough to be stood upon (Figure 4).

Fig. 4. In situ protection. © English Heritage

EVANS PROJECT – KEY TO SCHEDULE OF PROTECTION

	Codes of Protection	
A	**FLOORS AND WINDOW CILLS**	These are to be protected with hardboard or thin ply bedded on Tyvek. Where surfaces below are friable or very uneven include foam packing or additional layers of hardboard/ply to make up levels. Where scaffold is also to be erected, floors are to be protected beforehand. *Note: Localised removals may be necessary in these areas before works begin and will need to be co-ordinated with project conservator as items are only to be handled by EH staff. In certain areas the entire windowsill may not be cleared so care will be needed whilst working in these areas and only necessary hand tools are to be brought into these spaces.*
B	**LOOSE DUST SHEETING**	This will apply for example to some die racks, wall surfaces, etc. Supply and install softwood batten screw fixed as a fixing point for the top of a sheet of Tyvek. The loose sheets of Tyvek are to be cut from the roll before hanging to ensure objects are not knocked off shelves. Tyvek will then be hang down over the object to be protected and lap over other protection such as to a floor or a platform. Sheets of Tyvek to be joined with tape.
C	**SOLID BOXING**	This would apply for example to machinery or other objects which need to be protected from impact damage and dust but also need work to take place above, in which case they are to be sufficiently robust to be walked upon. A softwood framework with soft padding are irregularly spaced points of support due to the irregular sub-strate would be clad in sterling board or plywood. Ventilation openings should be included at low level and a vision panel at a position to be agreed with a screw fixed Perspex cover. Ensure that the box is well ventilated. The client team would remove existing contents where points of support are required subject to agreement. A Tyvek sheet would then be tacked over the whole box. Where an edge needs to be sealed against a wall, Plastazote of suitable grade is to be used to form a good dust seal. Pipe lagging may be an acceptable alternative to Plastazote against building fabric but not against fittings. Where Correx or Antinox is stated, the boxing is to be not rigid, i.e, not suitable for walking on.
D	**PLATFORMS**	Where works to ceilings are required, a solid layer of protection may be necessary for the full area of the floor. This could either be constructed of softwood framework (i.e. as 'C' above) or from birdcage scaffolding with a hatch in the platform for access. This platform would have to edge protection to provide a dust seal around its perimeter and then a layer of Tyvek over the top tacked in place to prevent dust migrating through. This Tyvek would need to be lapped around the hatch. Where asbestos is present to ceilings then further protection will be required on top of this platform to form airtight enclosures. The pockets for vents at wall head level could be used to provide support to the platform. The exact height of each platform is to be agreed room by room.
E	**WRAPPING**	This would be suitable for protection against dust for the bearings of machinery. Tyvek is to be used wrapped around and secured with tape against itself but not to the machinery. Alternatively localised bags of Tyvek could be considered. Either method needs to ensure that the wrapping is completely sealed to prevent dust/debris in the working parts.
F	**DOOR FRAMES**	Where door frames are vulnerable to impact damage they are to be protected with a soft boarding with cup and screw fixings forming a "C" in plan to protect all faces of the frame including the head and architrave. In some cases Antinox or Correx could be used in place of soft board.
G	**STAIRCASES**	Only the staircases to No.55 and 56 to be allowed for general access The other areas are clearly marked as no access zones. Where protection is required, hardboard or thin ply is to be used stapled to treads and risers with foam soft packing where treads are uneven pr worn. Balustrades are to be protected with a solid boxing with soft padding at abutments. Where handrails are fixed to walls, solid boxing is to be hooked over so as to protect both the handrail and the wall finish below. The lower part of this boxing can be formed from a batten screw fixed to the plaster at as widely spaced intervals as possible. The lower part of the walls are to be protected with plywood and screw fixed battens.
H	**DUST SHEETS**	Where only light work is to take place such as decoration, use of conventional decorators dustsheets is required. Paint is to be transported around the building in sealed cans. Similarly paintbrushes are to be clean when transported. This type of protection will be required through the project and is not allocated to rooms as has to be practiced everywhere.
I	**BOARDING**	Plywood or Sterling board sheeting, screw fixed, is to be used to protect areas of glazing (or similar) from impact damage. In some areas Correx or Antinox could be used.

CONTRACTOR'S RESPONSIBILITIES

- The contractor is responsible for the maintenance of this protection throughout the course of works, which is to be implemented by means of regular inspections.
- Close liaison with the project conservator is required throughout the contract. Assess and inform the project conservators and their team about possible risks and solutions in good time, should there be any complications during the job.

Rev. A. 16.12.08 Client's Comments

NOTE
1. This drawing is copyright.
2. All dimensions must be checked on site before proceeding.
3. Dimensions of new work are to be adjusted to suit the existing building where necessary. Do not assume that the existing structure or details are plumb, square or level.
4. The contractor must report any discrepancies to the architect before proceeding.

RMP Drawings/Drawings/Evans Project/ Steven's Pending/ 6077WindowSchedule.Sept08.

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Project: English Heritage, Evans Project
54 - 57 Albion Street, Birmingham
Drawing: Key to Internal Protection Schedule

Scale	NA	Job No	6077
Date	Dec 2008	Drwg No	500
Drawn	LS	Rev	A

Table 2. Codes of Protection for building works

The scaffolding strategy proved to be justified. As the roofs began to be stripped and worked upon, it became clear that the plaster and lathe ceilings were in worse condition than the survey had indicated. Large parts of the ceilings were loose and some fell down as works began, but the scaffolding stood up well to these surprises and kept the spaces below clean and accessible. A great deal of supervision was required during installation due to the spaces being very narrow, difficult to negotiate with long poles and crowded with objects (not to mention dealing with the machismo attitude of the scaffolders). However, once in place, the platforms allowed the contractors to work freely above the rooms without being in contact with any contents (Figure 5).

Fig. 5. External works over protected rooms © English Heritage

Certain contents had to be dealt with by external contractors, particularly any deteriorated Asbestos and chemicals, all of which were dealt with in the first phase of works. Examples of two cases in which the importance of supervision are given; firstly, when the collections of all chemical bottles and containers were co-ordinated by the conservator and glass bottles were emptied and cleaned by a chemical hazard company. As requested all were then returned complete with dust still adhering to the outside. In contrast, later in the project, different third-party contractors were less sympathetic during the removal of an Asbestos panel in one of the workshops. A process to clean and remove them had already been discussed and agreed but within the first ten minutes they had removed half the bench and slung the contents into boxes. It took nearly a week to recover from the chaos (as for all removals there were numerous images) and needless to say these contractors were not asked to return!

Phase 2: Collections Care

With the completion of Phase I, attention turned to the internal works. The most pressing need was to renew the electrical system, install a fire system and extend the security system. As the site was not being 'tidied up' all existing defunct systems and wiring were left in place (in some cases there were several). A very conscientious electrician rewired through the existing old metal conduits and reused old switches, again minimising disruption to the ambiance of the site. The electric motor in the Main Stamp Shop was overhauled but the external casing was left dirty and greasy to the bemusement of the engineers.

Research was carried out regarding possible protective treatments for the ferrous metal tools, dies and machinery. Trials were carried out on selected items and left in situ for the year of the building works to assess their effectiveness; there were difficult criteria: needing to be effective in high humidity levels; not be shiny or alter appearance; be easily applied in situ; reversible; be easily available and to have no health and safety concerns. The dies and tools were not treated during the project but working machinery showing deterioration during the project was given very careful surface cleaning and treatment so its appearance resembled its original condition. In contrast, areas where machinery had clearly not been used recently were left even if heavily corroded.

Consolidation (but no redecoration) of the most deteriorated surfaces was carried out, both to slow deterioration and to make maintenance of the building and machinery practical. Vulnerable plaster edges were reinforced with a new plaster edging applied to prevent further crumbling filleted, flaking paint and plaster surfaces consolidated and peeling wallpaper was re-adhered to give greater strength (Figure 6). However a pragmatic approach had to be adopted due to the number and scale of the deteriorated surfaces. In very friable areas the loosest areas were gently brushed down, before the remaining area was consolidated. There was a programme of dust removal in certain areas, for instance in corners where the dust sealing failed and white plaster dust had fallen onto a cluster of objects. As ever this was not as straight forward as it might have been, with comic discussions of what was new and what was 'historic' dust, before a light hand with a pony hair brush and vacuum cleaner was employed.

Fig. 6. Consolidation of interior surfaces. © English Heritage

Alongside building works, attention was given to the two disassociated collections of silverware and archival business and family records. The silverware was removed from storage and its newspaper wrappings, cleaned and installed in a custom built showroom with modern cases that replicated the originals (but with improved security and internal environments) (Figure 7). The archive was removed to a new archive room, which had been replastered and painted and installed with dehumidifiers and archival racking. The process of cleaning and repacking the archive is still underway, although it has been documented and the most significant items digitised. To help us understand the significance of different rooms and equipment, research was undertaken to give a better understanding of the complex processes and how the factory had developed during different phases of the building. English Heritage was able to consult the former owner Tony Evans, and both he and other former employees were extensively interviewed and filmed. This footage has now become part of the JW Evans archive.

Fig.7. Silver Showroom c. 2000. © English Heritage

Public Access

As an evocative industrial property, there was a strong sense of public ownership and widespread support, especially by local communities. Often during open days or tours, we would have visitors recounting stories of family members who had worked in the Birmingham Jewellery Quarter. However, the strategy of how to enable safe and successful public access was not straightforward. At the inception of the project, there had been a strong feeling from some quarters that it would not be possible or desirable to preserve JW Evans, suspecting that once we began to interfere we would lose the very thing we wished to retain. This argument

concluded that the logical solution must be to record the site (and possibly even the processes and machinery working) and accept its inevitable destruction, much like an emergency archaeological excavation [3]. Although given consideration, this view ultimately did not prevail.

The continued public support became the start of a valuable relationship. The desire to share the 'Evans experience' was a priority from the beginning of the project, with visits even during building works requiring the visitors to be dressed in hard hats and high-visibility vests (Figure 8). Allowing public access at this stage, as part of a strictly supervised tour, also helped us to formulate the longer term public strategy; it became clear the only practical way to allow access would be via guided tours [Carver, et al., 2010]. We were already seeing the overwhelming urge to touch and move items (and there was a definite risk of theft and souvenir hunting) and this would only get worse once all areas were accessible.

Fig. 8. Tours during building works. © English Heritage

Once the need for guided tours had been established it influenced other strategies which would affect the site appearance, for instance the fire strategy allowed us to have far fewer modern signs as visitors are always accompanied by a guide. Similarly there would be no interpretation within the historic spaces (which would have been very difficult to articulate due to the complex nature of many of the processes). It also allowed us to assess whether visitors coped successfully with lower light levels, uneven floors and steep stairs; all of which Evans had in plentiful supply. We invited visitor feedback regarding which rooms were most interesting or important to them, whether the tours covered what they were interested in and many other issues. This information was considered when planning the eventual visitor route and visitor requirements. At the same time the team member leading the tour was able to illustrate the conservation works being undertaken and explain why certain things were impractical which helped visitors appreciate the spaces. In some cases, visitors returned

each year from 2008-2011 to see progress during the annual 'Heritage Open Day' event.

The evidence provided by the collections risk and condition survey has informed ongoing care of the collection. The audit, combined with monitoring during the building works programme, informed the decision to leave the majority of the site unheated. The building is now water tight with good ventilation, which has mitigated the greatest risk to the collections. Relative humidity and temperature are monitored and recorded using a radio telemetric system to provide evidence for considering future environmental control. Targeted condition surveys will be undertaken to check on the rate of deterioration of the metalwork. At this stage no further action is required.

Conclusion

So finally the building works are completed and the contents are in-situ, often dirty and dusty and still piled in their haphazard piles. JW Evans is now at the end of its first full season being open to the public, led by our volunteer guides. The drop stamps continue to run and curious visitors are asked politely but firmly not to touch anything. When asked if the project was a success, we think the project team would agree it was incredibly challenging but the frequent discussions and overarching ethos of minimal intervention have made what we believe to be a huge success. Perhaps more important is what our stakeholders think and we are always thankful to hear the same comments from our visitors during guided tours given in 2012 as we did in 2008; 'this looks exactly like where my dad used to work', 'it still smells right' and 'thank goodness you didn't tidy it all up'. Although we explain the conservation works carried out during each tour, it is gratifying that most visitors do not notice the work unless we tell them. Ultimately, the atmosphere which first caught our imagination still speaks to our visitors.

Acknowledgments:

Although a large and diverse team have been involved, in writing this paper special thanks must go to Nick Hill, Dr Sara Lunt and Nick Molyneux of English Heritage and Samantha Hepburn of Birmingham Archaeology.

Endnotes

[1] All buildings in the UK which are considered of special historic interest are placed on a protection list and have statutory protection; Grade I (most significant), Grade II* or Grade II. Grade II* buildings are particularly important buildings of more than special interest and compose of only 5.5% of all listed buildings.

[2, 3] Data given at a Consultation Seminar on JW Evans 27th July 2008.

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Materials List

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Collaboration and Preservation: Historic New England and the Proactive Preservation Interpretation and Planning (PPIP) Process

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Abstract

Historic New England, the oldest and largest regional preservation organization in the United States, understands that there are many conflicting needs within a historic house museum – the structure as artifact, the needs of collections displayed within the structure, and the desire to convey the stories these objects contain to the public. Historic New England has developed an interdisciplinary task force approach to synthesize these concerns, discuss them comprehensively, and come to consensus on the goals for overall conservation treatment and interpretation of each property. The Proactive Preservation Interpretation and Planning (PPIP) task force is an internal group with representatives from across the organization with expertise in building and landscape preservation, collections and conservation, interpretation and visitor experience, and marketing and fundraising. This paper will explain the PPIP process and provide examples of the collaborative work undertaken by the organization. Case studies will focus on the interaction at Historic New England between object conservation and building preservation, including a Save America's Treasures preservation project at Beauport, the Sleeper-McCann House, the institution's approach to environmental

Introduction to Historic New England

Founded in 1910 to protect New England's cultural and architectural heritage, Historic New England is a museum of cultural history that collects and preserves landscapes, buildings, and objects dating from the seventeenth century to the present and uses them to keep history alive and to help visitors, members, and the community develop a deeper understanding and enjoyment of New England life and appreciation for its preservation (Figure 1). The organization is a private non-profit membership based organization that is internationally known as a leader in preservation, collections, research, and innovative programming.

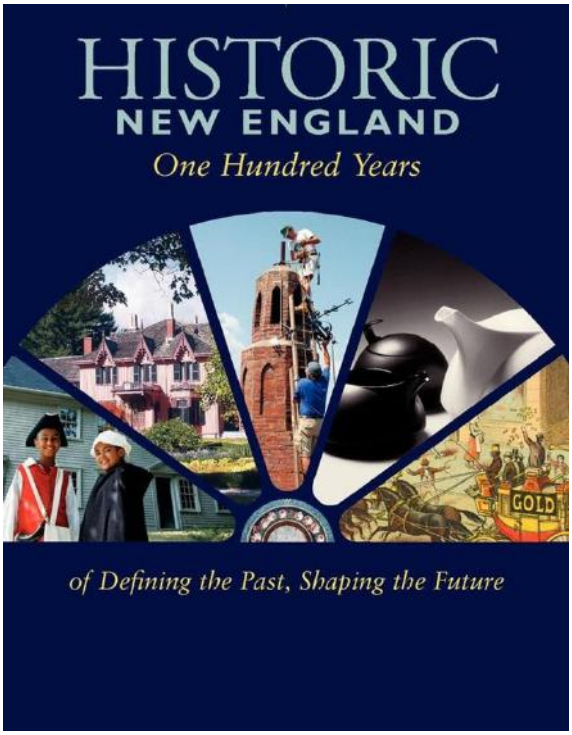

Fig. 1. Cover of Historic New England magazine, Vol. 10. No.3 (Winter/Spring 2010). ©Historic New England

Historic New England fulfills its mission through five distinct yet interrelated

conditions in house museums, and the opening of a twentieth century tenant farmhouse. This paper will demonstrate, in a practical way, how the process is applied, and what kinds of decisions and projects result.

Keywords

Historic house, architectural conservation; building preservation, object conservation; collaboration, interpretation, environmental conditions

program areas:

- Historic Properties: The most comprehensive collection of homes and properties in New England, with 36 house museums and landscapes open to the public, spanning four centuries of architectural styles and five New England states.

- Collections: The largest assemblage of New England art and artifacts in the country, an extraordinarily broad and well-documented collection of 110,000 objects of historical and aesthetic significance represents the region's heritage.

- Archives and Publications: One million items in the collections, including photographs, architectural drawings, ephemera, manuscripts, and institutional archives, document New England's architectural and cultural history. Information is shared through the website, Historic New England magazine, publications, and catalogues. [see http://www.historicnewengland.org]

- Educational Programs: Innovative school and youth programs use primary sources to reinforce and enrich student learning for 42,000 young people each year. Internships, fellowship, seminars and scholarly programs are offered for graduate students and the public.

- Preservation Services: Historic preservation staff works with private property owners to provide guidance and information on how to care for their historic properties and landscapes. As one of the first preservation easement programs in the country, Historic New England's Stewardship Program is a national model, now protecting 83 properties.

Through these five program areas, Historic New England fulfills its mission to serve the public by preserving and presenting New England heritage. It does this by remaining dedicated to its vision of being the national model for the care of regional heritage landscapes, buildings, and collections and for sharing these resources to benefit diverse audiences. Through a faithful implementation of a Strategic Agenda adopted for 2011-2016, Historic New England delivers 245 unique programs and events annually, such as tours, lectures, and specialty events for its 7143 member households from New England, the nation, and the world. In 2011, onsite visitation was 176,132; school and youth programs enriched 42,077 young people from 159 communities; and the number of unique website visits was 394,916 [Historic New England, 2012].

Historic sites and collections

Historic New England's 36 historic sites span five states and four centuries of New England life. The collection encompasses 150 structures located on approximately 1300 acres of land which range in period and style from the Jackson House, the oldest surviving wood-frame house in New Hampshire (Figure 2), to the Walter Gropius House in Lincoln, Massachusetts, home of the Bauhaus architect, and a landmark design in twentieth-century architecture (Figure 3). The diverse properties include working vernacular farms and high-style urban houses; riverfront homes of eighteenth-century merchants and country seats of nineteenth-century politicians. What makes the historic property collection special is the integrity of the entire site including the building, landscape and collections. At 26 sites the houses are furnished, (Figure 4) and regularly open to the public as historic house museums. Nine study houses and a meeting-house are unfurnished and may be visited by appointment or for special programs. These study properties offer opportunities to examine the origins of New England architecture and its old housewright traditions (Figure 5).

Fig. 2. Jackson House, c. 1664, Portsmouth, New Hampshire Photograph by David Bohl. ©Historic New England

Fig. 3. Gropius House, 1938, Lincoln, Massachusetts . Photograph by David Bohl. ©Historic New England

Fig. 4. Billiard Room, Castle Tucker, 1807, Wiscasset, Maine Photograph by David Bohl. ©Historic New England

Fig. 5. Abbott Lowell Cummings leading tour for Program in New England Studies at Gedney House, 1665, Salem, Massachusetts. ©Historic New England

Proactive Preservation and Interpretation Planning (PPIP)

The Proactive Preservation Interpretation and Planning (PPIP) task force is an internal group with team representatives from across the organization with expertise in building and landscape preservation, collections and conservation, interpretation and visitor experience, and marketing and fundraising. Over the past 12 years, Historic New England has established through PPIP a successful multidisciplinary process that:

(a) determines the period of presentation and interpretation for each property;

(b) reviews annual projects and activities to ensure the overall presentation and conservation of each property is consistent and;

(c) provides high level project management and integrated work plans to focus fundraising efforts and staff resources on selected properties.

It is through this process that the group balances the different treatment needs within the overall context of the site and the stories being told.

(a) Determines the period of presentation and interpretation

As part of the PPIP process each site is assigned a period of presentation and interpretation to guide activities on site. A statement outlines how to approach various components of the site: landscape; building exterior; interiors and objects; stories; tours; and visitor services. As part of this process each component of the site is explored, key elements or cornerstones of interpretation are established and methodologies for treatment are determined. Each team does not make these decisions individually; through the PPIP process, all of the stakeholders discuss, react to and influence each other's initial thoughts on approach. This is a lengthy process for each property, sometime taking several years to complete, as background research needs to be completed and thought about, and care needs to go into the decision making process. Once complete, the institution has a road map for that property until the next time research or programming changes the focus of the site.

(b) Project review to ensure the overall presentation of each property is consistent

Every year PPIP reviews the projects each team is planning to ensure the appropriateness of the project in relation to presentation of the property. As guided by an institutional preservation philosophy, the general approach to the sites is to respect the historic fabric and materials that are there and, as in the case more typically of the building preservation work, when an exterior treatment like the roof or paint needs to be renewed or replaced it is replaced with the same material or in the same color that was on the building. The genesis of PPIP in the late 1990s was related to a simple painting project. The building preservation team was preparing to paint the exterior of an early Georgian style house in the yellow base color with white trim it had long been painted (Figure 6). For many years other teams in the organization had been moving towards a 1880s interpretation of the house, which required a different color. Without the central unification under PPIP there was little discussion of work plans and overall interpretation. As painting scaffolding was being deployed at the house discussion began amongst collections and interpretation teams about the opportunity to paint the house in its 1880s paint scheme. The building preservation team, in the end, did not object to this change, but this did represent a shift in both thinking and process. At the end of the project the house was painted in its 1880s palette and PPIP was formed to provide better coordination for future projects (Figure 7).

Fig. 6. Exterior of Quincy House, 1770, Quincy, Massachusetts in late 1990s with Colonial Revival paint scheme. ©Historic New England

Fig. 7. Exterior of Quincy House circa 2009 with 1880s paint scheme. © Historic New England

In any given year there may be many questions raised through routine projects. The same house noted in the example above had an asphalt shingle roof that needed to be replaced in 2011. Now being much clearer on the overall interpretive goals for the property through the PPIP process, it was suggested to change the roofing shingles from the asphalt material to the wood shingles clearly shown in 1880s photographs of the house. This material change is in keeping with the interpretation of the house and was endorsed by PPIP; thus, the change was instituted.

(c) High level prioritization, project planning and integrated work plans to focus fundraising efforts and staff resources.

A key part of PPIP projects is high level prioritization and detailed project planning that takes place to allocate staff time and institutional resources. Although there are a number of projects each year that each team undertakes that are not a part of the PPIP umbrella, the task force merges the overall institutional objectives and strategic agenda with each team's overarching priorities, whether building preservation, object conservation, interpretation, or visitor experience, to develop a multi-year plan.

Each project is broken out into three categories:

- Tier Three represents the waiting list of properties for which Historic New England has a vision statement but perhaps projects are not yet institutional priorities or work is not actually yet required.

- Tier Two projects generally are in the research phase. This research can take many different forms: academic, consultant work or even fundraising.

- Tier One projects are those in implementation phase.

All projects are categorized in this manner and basic scopes of work are developed to establish a sequence of events. Then PPIP reviews funding possibilities, staff time, and other commitments to ensure that there are manageable numbers of projects in both Tiers One and Two.

When projects are in the Tier One or Tier Two phases a PPIP project manager is selected and a project specific team is identified to keep the project moving. The project manager generally is decided by the main component of the project. If the project is focusing on building preservation then the project manager will be from the buildings team; if the project is focused on object conservation or curatorial changes then collection services will provide the project manager; and likewise for visitor experience focused projects. The project specific team, as a subset of the PPIP task force, will also be inter-disciplinary. The different parties that have interest in the project will be involved during project planning as well as implementation to ensure smooth communication and a unified understanding of the projects, goals, and concerns. Generally PPIP project teams include members from collections, building preservation and site management, but perhaps fundraising will be involved at the early stages and public relations might be involved at later stages. If the site hosts events, rental use or educational programs then representatives from those groups will be involved.

Case Studies

Three case studies will be discussed to focus specifically on the interaction at Historic New England between object conservation and building preservation, including: a Save America's Treasures preservation project at Beauport, the Sleeper-McCann House, a high style waterfront building with a wide array of collection types and periods; the institution's approach to the environmental conditions in the house museums; and the opening

of the Stekionis tenant farmhouse, an eighteenth-century farm building interpreted to the late twentieth century.

Beauport, the Sleeper-McCann House, Gloucester, Massachusetts

The preservation project at Beauport, the Sleeper-McCann House, in Gloucester, Mass. shows teamwork, facilitated through the PPIP process, on matters of coordination, interpretation, and technical advancement (Figure 8). Henry Davis Sleeper (1878-1934), recognized as one of America's first professional interior designers, began construction of Beauport in 1907 as a summer retreat. The result is a dramatic two-story, shingle-style house perched on a rocky ledge on Cape Ann overlooking Gloucester Harbor. In consultation with Sleeper, local builder-architect Halfdan M. Hanson expanded Beauport throughout Sleeper's life to create a house that ultimately included over fifty rooms on two floors, three basement spaces and three attics.

Fig. 8. Beauport, Sleeper-McCann House, 1907, Gloucester, Massachusetts . Photograph by Matthew Cunningham. ©Historic New England

In 2003, Beauport was listed as a National Historic Landmark (NHL). According to the NHL nomination, Beauport is *'nationally significant in American material culture as an important early collection of American antiques in distinctive arrangements housed within a unique architectural setting that influenced the appreciation, collection, and interpretation of American material culture, as well as the practice of interior design. This collection and arrangement by nationally noted antiquarian, collector and interior decorator, Henry Davis Sleeper, was influential in the development of Henry Francis du Pont's Winterthur and other museum programs'* [Orwig, 2001].

Beauport's role in the development of the museum period room approach to the interpretation of American decorative arts is nationally recognized. Beauport influenced American architectural practice and inspired others to preserve and reuse architectural details in functional contemporary settings. By extension, it also raised public support for preserving historic architectural detail still in place, thus contributing to the present historic preservation movement advocating restoration or rehabilitation of entire buildings.

The current appearance of Beauport is the cumulative result of changes made by Sleeper and Hanson from 1907 to 1934. The coursed wood shingle roof is a maze of intersecting planes and forms; segments could be identified variously as gabled, cross-gabled, shed, clipped gable, and gable on hip. The roof is further articulated with a turret, cupola, Gothic dovecote, weathervanes, and six large brick chimneys in varying styles. The house includes 106 window openings with 249 individual sash units in varying operation including fixed, casement, and double-hung. They are grouped in singles or banded and include Palladian, Gothic, bullseye, and fanlight designs. Exterior decorative wooden shutters that include small decorative cutouts of roses, thistles, and shamrocks flank several windows.

Fig. 9. Belfry Chamber, Beauport, Sleeper-McCann House, 1907, Gloucester, Massachusetts. Photograph by David Bohl. ©Historic New England

The interior is a labyrinth of approximately 14,800 square feet. Every nook and alcove holds a composition of curiosities with nearly 5,500 objects in diverse media, including textiles, paper, paintings, iron, silver, brass, toleware, ceramic, glass, leather, bone, ivory, lacquer, and wood (Figure 9). Many of the rooms are decorated to evoke historical and literary themes, arranged by Sleeper to amuse and to stimulate the imagination, not necessarily for accuracy. Today, the house and its rooms remain virtually as Sleeper left them.

The history of the landscape is similar to the evolution of the house, changing over time due to the spatial needs of the building additions and from Sleeper's influences in historical garden movements. The Arts and Crafts style landscape is a defining characteristic of Beauport, exhibiting several key features that follow a progression from a naturalistic style to a formal style as one traverses from the land entrance to the sea entrance at the terraces. Landscape materials used to create walls and define the ground plane changed from rough stone to more formal brick. Plant palettes changed from native plants to individual specimens and hybridized plant species. Geometries changed from flowing lines to rigid rectilinear lines. Landscape spaces transition from amorphous volumes to defined garden rooms.

Beauport has been well maintained and cared for over its 100 year life, but suffers from moisture related problems due to the harsh coastal New England climate and to the architectural maze of intersecting planes and forms of its construction [1]. In order to eliminate the damage resulting from the moisture issues and protect the magnificent Sleeper interior rooms, Historic New England began to develop a comprehensive

preservation plan for both the building and the landscape.

In 2006, the Getty Foundation supported a master conservation plan for the site. The roof, installed in 1985, was beginning to leak in many locations. All six chimneys showed evidence of leaks caused by large cracks, open joints, poor flashing or deteriorated mortar. Water entry at these locations affected the chimneys, fireplaces, and hearths. Moisture migrated into the surrounding brick floors and substantial areas of ceilings and walls had been lost due to repeated wetting. Many window components were defective. Glazing putty had lost elasticity, resulting in chipped and cracked glazing that allowed water to penetrate between the interface of the wood and glass. Misaligned sills, casings, mullions, or other parts of the windows permitted entry of snow and rain. Funding for repair of these issues came from sources including federal, state and local government and private donors.

A detailed scope of work for repairs was created for over a three year project that lasted from August 2008 until December 2011. The scope of work was in four parts: window conservation; roof and chimneys; structural and exterior work; and landscape restoration.

This project started as a PPIP project because of the high level of coordination required for the building work, extensive conservation activities for the wallpapers and objects in the house, and for maintaining open hours and positive visitor experience throughout the work. Work on the roof meant collections directly under areas of construction needed to be covered or moved. Work on the windows required collections and window hangings to be moved away from window openings. Keeping the house open to tours during construction required constant communication and coordination as construction schedules and collections safety were cross-referenced with tour schedules and possible routes to maximize the spaces available to the public.

Fig. 10. Windows being removed for conservation work at Beauport. ©Historic New England

On the technical side, the window conservation component of the project provided excellent opportunity to begin discussions about our approach to ultraviolet (UV) protection. In order to maintain objects, historic fabrics, and wall coverings, Historic New England began installing various forms of UV protection in the 1970s and 80s. The installation mainly included thick acrylic panels cut to fit the entire size of the sash and screwed directly into the

frame from the interior. Unfortunately, this approach resulted in a microclimate and created severe condensation issues throughout the house, resulting in interior paint deterioration, failure at the bed glazing, and wood rot. Collections were thus being protected at the expense of building fabric. The damage caused by these installations was well known, but no coherent conversation had taken place to develop a mitigation strategy (Figure 10).

Staff conservators and preservation staff began planning for a better approach to UV protection. After exhaustive research both groups agreed that as part of the window conservation the screwed in acrylic panels were removed and UV window film applied directly on the glass. Where budget did not allow for UV film the group determined that a thinner UV acrylic panel hung in front of the window, instead of screwed into the frame, would be the secondary approach.

Interpretively collections, visitor experience and preservation staff needed to reach consensus on exterior paint colors. With the window conservation and repairs came the need to touch up exterior paint. Over time, colors had faded or yellowed from the weather and the sun's ultraviolet rays. Typically, new exterior painting campaigns visually matched surface colors on site, resulting in a gradual shift from dark browns to more muted browns and purples from the fading. After discovering original sidewall shingles in situ, paint analysis was performed anew and the resulted in the use of a much deeper and darker shade of chocolate brown.

As the culmination of the overall three year conservation project at Beauport, the landscape was restored to the period of interpretation in two phases: the terraces and gardens on the water side were restored in 2008 and the east gardens in 2011. The overall concept and planning for the landscape restoration was twenty years in the making. In 1989, a large-scale drainage and sewerage project disrupted much of the landscape. Recognizing that there was not a clear understanding of the history of the landscape, Historic New England commissioned three research reports. The first report outlined the general history of the landscape detailing the three owners (Sleeper, McCann, and Historic New England) and changes over time. The second report outlined how Sleeper's vision for the landscape fit within the general context of historic garden movements. And the third report outlined the color schemes and planting plans during the period of interpretation of the site. The results showed that Sleeper was not only influenced by different periods in art and architecture for the house but was also planning and evolving the landscape with a similar eye for detail. As the building's footprint would change, the layout of the landscape also changed. However, the basic progression concept of a naturalistic front garden to a formal seaside garden remained constant always. Working through PPIP, a comprehensive landscape restoration plan was developed. Much like the house, the landscape can be divided into several distinct units or rooms. Each unit comprises specific materials and plants that define unique characters. The terrace work focused on restoration of defined formal outdoor spaces on the seaside of the house. The work included rebuilding a knee wall that had fallen about twenty years previous and uncovering a stairway that once connected levels. These projects laid the groundwork for planting restoration focused on reinstating the appropriate scale to the garden and appropriate plants for the period and matching the color palettes in the house. Work in the east gardens reconfigured planting beds and walkways to coordinate with the character zones, removed thick yew bushes, and replanted native plant materials including bayberry, chokeberry, summer sweet, and arrow wood. A new sloping entrance path to the gatehouse allows the grounds to be more accessible to people with mobility difficulty.

Integrated planning and work plans allowed for the intense action and reaction to the project conditions. Not only was coordination key, but PPIP was able to plan out interpretive changes to the landscape and to the exterior paint colors, and develop and implement UV protection changes that are models for other Historic New England sites and for other heritage organizations through our published white papers on this topic. The project not only was a success internally but it was recognized with state and national preservation awards.

Environmental Conditions at Sites (Institute Museum and Library Services grant (IMLS))

Controlling the relative humidity (RH) in a historic house museum is very difficult yet important for the long term health of the structure and the objects within. Having a unified approach is important as the group caring for the building, and its mechanical systems is often different from the team caring for the collection. In the 1990s, Historic New England experimented with eight different mechanical systems in eight different properties to determine the institution's ability to regulate the RH in these properties to 45% RH with a cushion of +/- 5%. By the mid 2000s, it was apparent from the building side that the HVAC equipment and controls were not performing properly and from the collections side that objects were beginning to suffer. The issue had not reached a priority status, so staff members from building preservation and collections and conservation were working on different aspects of the problems without a unified approach. Through PPIP, a strategic agenda was developed to first analyze the 1990s systems, determine their effectiveness and then develop methodologies to improve conditions at the houses. This project was led and implemented in tandem by the building preservation staff and the furniture conservator, and involved two grants and a grant funded project manager.

In 1993, responding to increased concerns about the care of its collections and buildings, Historic New England embarked on a multi-year project funded by the National Endowment for the Humanities (NEH) to improve environmental conditions at eight of its most important properties. Recognizing that controlling RH was the greatest need, Historic New England implemented a plan in four phases to: monitor and identify sources of moisture; eliminate those sources of moisture infiltration; update existing heating systems to humidity sensitive systems; and install modern controls for these systems. In addition to stabilizing the environment at the sites and demonstrating that low cost environmental control could work, the project was intended to spearhead the movement towards state-of-the-art humidity and temperature controls for historic house museums. This project was innovative for Historic New England and focused attention on environmental conditions in all its historic house museums. With the perspective of ten years (1998-2008) Historic New England was able to look back at this project and identify ways in which the program did or did not meet the goals originally outlined.

There were many issues. Monitoring before and after the project was problematic because recording hygrothermographs were expensive, sensitive, and the data was hard to analyze. The original NEH funding proposal concluded that money spent proactively to keep moisture out of a building would be money well spent, and institutionally Historic New England would reach the same conclusion today. Unfortunately not enough monitoring data exists to verify whether the work to eliminate sources of moisture alone was sufficient to stabilize RH at the sites. Seven different humidistatic systems were installed into the eight houses, partially in an effort to determine whether any single system was better than others, but the elaborate ventilation schemes did not seem able to affect a reduction in RH in the museums. There were numerous issues with the equipment installed, which was later found to be inefficient and improperly sized for the applications. Finally, the larger goal of the 1990s project was to usher in a new era of state-of-the-art controls for historic house museums. Unfortunately the controls failed on many levels, some technical, some due to the contractors and some due to Historic New England.

Due to all of these internal and external factors Historic New England has refined its approach to controlling the environment in the historic houses to the following principles:

A perfectly stable environment of 45% RH is not achievable in a historic house museum and it is likely that such an environment would be detrimental to the building fabric through four seasons. Many involved with conservation issues in historic house museums agree that a RH range of 35-60% is sufficient for most objects

and the health of the structure. It must be recognized, however, that not all objects fall into this category and that there may be items considered for removal due to RH conditions. Historic New England has embraced a more elastic approach to stabilizing the environment, but not at the expense of the collections, buildings or finances. A range of 35% RH to 60% RH is now the goal allowing for daily fluctuations and short term spikes or dips but trying to avoid long term exposure to RH levels above or below the range [2].

It is important to not only monitor conditions in the environment but also to save the data for future analysis. Historic New England has undertaken an exhaustive process to assess its current protocols for monitoring, placement of monitors, collection of data and analysis of data. The more equipment installed in a house the more complex it becomes to operate, control and maintain. Complexity is the bane of the historic house museum, especially if site staff cannot operate the system, the local contractor cannot understand its operational guidelines, and, in the case of Historic New England, the technical staff is already stretched thin managing a number of properties in a large area.

In addition to keeping systems simple it is important to take small steps towards goals. Monitor the conditions and make small changes. If the conditions improve assess whether more changes are necessary and if the conditions do not improve look at your original assumptions. One of the failings of the 1990s project was that moisture mitigation efforts were taken and then systems were installed that relied overall on multiple components such as basement ventilation and museum ventilation without monitoring individual pieces. Historic New England is now shutting down one component at a time and monitoring if these individual pieces help the conditions or hinder.

Building on these findings Historic New England began a systematic overhaul of its data-monitoring program. New data-loggers were acquired and placed in their assigned monitoring locations and photographed. ‘Ownership’ of the data collecting process was simplified by shifting staffing to be more efficient. The photographs, site diagrams and downloading instructions were placed in the houses and assigned to the building staff responsible for those properties. A data collection, monitoring, and downloading protocol was adopted.

Historic New England then initiated a two year project to implement the findings on a practical level at four sites: Hamilton House, South Berwick, Maine; Spencer-Peirce-Little Farm, Newbury, Massachusetts; Cogswell’s Grant, Essex, Massachusetts; and Sayward-Wheeler House, York Harbor, Maine (Figure 11). The emphasis was on quantifiable changes as a result of small input. In all four cases systems had been dramatically downgraded or even completely shut down for at least a year so that baseline data could be gathered. Any modification made was based on criteria that included ease of use and ease of maintenance.

Before replacing the Hamilton House system, the building and collections were subjected to mold growth in the summers and extreme drying in the winters. The projected dimensional change of the objects through these periods was well over tolerable limits. Following the 2010 installation of the heat and dehumidification, basement and first floor environmental conditions stabilized.

The overall conditions of the museum at the Spencer-Peirce-Little Farm improved dramatically with the simple addition of dehumidifiers. An underlying drainage issue leading to high levels of moisture in the basement was too complex to resolve as part of this project, however advanced drainage planning has now been completed and the implementation of a site wide system is expected in future.

The removal of previous systems and the sealing of ductwork leading to the upper floors at Cogswell’s Grant was very successful. Conditions were further improved with the installation of a new heating system for the

basement and the subsequent installation of two dehumidifiers.

Fig. 11. Remnants from the decommissioned 1990s environmental system at Cogswell's Grant, 1728, Essex, Massachusetts. © Historic New England

When the system was officially commissioned and installed for the Sayward-Wheeler House the RH in the basement and first floor of this historically damp building immediately began to stabilize. The system continues to be perfected for maximum operation. In order to study the effects and ensure that the system nor collections were overtaxed, the RH set point was originally located high at 65% RH. The system has achieved that number and staff are progressively lowering the set point. The stabilization of the environment indicates the course of action is successful.

The grant funding expired but the institutional shift in the Institution's thinking remains. The data collection process continues efficiently and data is reviewed on a regular basis. Findings are posted on Historic New England's website as well as published in white papers describing the project's data collection processes.

Tenant Farmer's House, Spencer-Peirce-Little Farm, Newbury, Massachusetts

The Tenant Farmer's House is part of Historic New England's Spencer-Peirce Little Farm, a historic house museum in Newbury, Massachusetts, with 230 acres of farmland dominated by a seventeenth-century manor house (Figure 12). The main house was listed as a National Historic Landmark in 1971 and the entire site is

the second most visited property owned by Historic New England, with more than 26,000 people visiting annually, including 6,000 school children. An important part of the site's history is the tenant farmer's house, known as the Stekionis House, which is attached to the 1690 manor house through a breezeway. It was built circa 1800 by then owner Offin Boardman, and has been home to generations of servants, family members, and tenant farmers.

Fig. 12. Installation of a simplified environmental control system includes a thermostat and a humidistat. © Historic New England

In 1913, Jacob Stekionis, a recent immigrant from Lithuania, moved into the tenant farmer's house after being hired by the farm's owner, Edward Little. Stekionis returned to Lithuania in 1923 in search of a bride and within a year married Dorothy Janušević, a woman from a village near where he was raised. They returned to the farm in Newbury. After Edward Little died in 1935, Stekionis took over the farm's cattle and sold the milk, in addition to growing vegetables. The Stekionis family paid no rent and received no pay but operated the farm for their own profit and had an informal agreement to provide the next generation of Littles with milk and vegetables. Jacob and Dorothy raised three daughters on the farm and resided in the tenant farmer's house until Jacob's death in 1984 and Dorothy's in 1993 (Figure 13).

Fig. 13. View of the back of the Stekionis tenant farmhouse, Spencer-Peirce-Little Farm, 1690, Newbury, Massachusetts. ©Historic New England

After five years of extensive research, conservation, and preservation work, the Stekionis House opened to the public on 2 June, 2012. The interpretive goal of the Stekionis House project was to engage visitors in a deeper understanding of twentieth-century history through the lives of a Lithuanian family who lived and farmed in Newbury, Massachusetts.

The preservation and conservation of the historic building materials was a complex undertaking, with the overall goal of protecting the historic fabric, and respecting the evolution of the building and its

finishes. Certain conditions existed that required creative thinking, such as the sensitive addition of structural supports to stabilize the second floor, the stabilization of multiple generations of plaster including repairs made by Jacob Stekionis, and the careful treatment of paint finishes to improve the overall appearance without sacrificing historic material.

Planning for the project included the use of a structural engineer. In order to convert the house from residence to museum, local building officials needed to approve use and occupancy allowances. Working through PPIP, a conceptual plan for the use of the building was developed before the structural engineer was brought in to analyze known structural deficiencies and to calculate load and occupancy capacity. At the close of the structural planning process the original use plan had to be modified, eliminating second floor access. Additional structural supports were required for two of the structural members and PPIP determined an approach that would satisfy all parties without compromising preservation principles or conservation.

There were many building preservation components to the project including window conservation, exterior wood repairs and exterior painting. This work was implemented simply and easily according to Historic New England's building preservation standards. The interior plaster stabilization work, however, was complex and involved intense coordination. The plaster walls were bulging in several sections and needed to be stabilized and consolidated but complicating the issue was the presence of wallpaper that was vital to our interpretation of the site. After the collections team removed all of the objects from the first floor rooms the conservation

Fig. 14. Plaster conservation and repair in kitchen of Stekionis tenant farmhouse, Spencer-Peirce-Little Farm, 1690, Newbury, Massachusetts. ©Historic New England

team was required to carefully remove the layers of wallpaper in the parlor and kitchen. In the parlor the wallpaper was comprised of multiple layers which were removed together, using Teflon spatulas. This treatment allowed for the preservation of the odd patches and mismatched patterns installed by Jacob Stekionis. The paper in the kitchen was a modern self-adhesive paper installed in the early 1990s, and its removal was relatively easy as the paper was stable, without rips or tears, and peeled off the wall surface easily. Members of the building preservation staff then began the process of analyzing the plaster to understand its material properties. Through this process, it was determined that there were multiple layers of repairs, many of which were suspected to be made by Jacob Stekionis, and therefore very significant aspects of the integrity of the building and story. Luckily stabilization and consolidation of the plaster surfaces was possible with minimal loss of material fabric, although some patching was required (Figure 14). Once this work was completed the walls were sized and lined with Japanese tissue and the conserved wallpapers returned to original configuration (Figure 15).

Fig. 15. Installation of conserved wallpaper in parlor of Stekionis tenant farmhouse, Spencer-Peirce-Little Farm, 1690, Newbury, Massachusetts . ©Historic New England

As part of the planning process interior paint analysis was conducted, with all surfaces on both the first and second floors analyzed. The focus of the report was to provide color matches for the existing top layer and immediate layer below. The reason for this is that the period of interpretation PPIP chose for the building is 1984, the year Jacob Stekionis died. Considering how recent this period is, it seemed appropriate that either of these two layers would have been in place during the interpretive period.

Actual treatment of the paint finishes was focused on the minimum of intervention possible to retain as much original fabric as possible. In most cases the goal was to carefully scrape flaking paint, lightly sand to provide

grip and feather the adjacent surfaces, and then infill paint the affected areas. Most paint colors were hand mixed on site to ensure exact color match because the paint analysis identified the pure color used but not the color after several years of exposure and soiling.

All of the furnishings and objects were removed from the first floor rooms and brought to Historic New England's conservation lab for cleaning and stabilization. As with the finishes in the house, the goal of the conservation treatments was to present the pieces as they would have looked after years of use, rather than as they looked when they were new. The furnishings range from an overstuffed set of parlor furniture from the 1930s, to the clothes washer in the kitchen purchased in the 1960s. Using photographs, inventories, and the recollections of the Stekionises' daughters, Historic New England staff reinstalled the family's furnishings to appear as they did in the early 1980s (Figure 16).

Fig. 16. Completed installation of kitchen of Stekionis tenant farmhouse, Spencer-Peirce-Little Farm, 1690, Newbury, Massachusetts. ©Historic New England

Traditionally, Historic New England sites are presented through guided tours. Because of the programming methods used at the site, a new approach was adopted through PPIP, to present a self guided tour at the Stekionis House. Rails to segregate the kitchen and parlor from the entrance hall were discussed, detailed, and then installed. New interpretive panels were created to share the family stories and history with visitors.

Conclusion

Within a complex organization like Historic New England sometimes the agendas of individual teams cloud broader institutional goals, and collaboration can be difficult. The Proactive Preservation and Interpretation Planning task force [PPIP] was established to counteract decisions make in a vacuum and to provide a forum and a methodology for the different teams to interact and reach consensus. Through PPIP representatives from across the organization with different professional expertise work together for the best overall conservation treatment and interpretation of each Historic New England property.

The three projects highlighted in this paper illustrate the achievements of the PPIP process. Each had unique challenges and needed a different collaborative approach to reach a successful result. The Save America's Treasures [SAT] project at Beauport required extensive coordination between building and landscape preservation, collections and conservation, and visitor experience teams to ensure the protection of the collections and a positive visitor experience throughout the two-year preservation project. The environmental conditions project funded by the Institute of Museums and Library Services [IMLS] brought building preservation and conservation staff members together to fully evaluate the results of earlier HVAC and climate control campaigns at several of the properties and develop a protocol for sustainable, cost-effective systems that could maintain manageable environmental conditions for both the historic structure and the collections housed within. And lastly, the opening of the tenant farmhouse at the Spencer-Peirce-Little Farm created innovative access and self-guided interpretation that allowed visitors to experience the lives of the Stekionis family while protecting and respecting the historic fabric and unusual evolution of the building and its finishes over time. Owing to the PPIP process, each of these projects was thoughtfully undertaken and brought to a successful conclusion [3].

Endnotes

[1] Gloucester, Massachusetts can average overnight lows of 20 degrees Fahrenheit (-7 Celsius) in the winter and daytime 80 degrees Fahrenheit (27 Celsius) in the summer and receives between 3.5 inches and 4.8 inches of rain per month. (http://www.weather.com/weather/wxclimatology/monthly/graph/USMA0153 [accessed March 2013]). Average humidity is between 55% and 80% all year round. (http://www.city-data.com/city/Gloucester-Massachusetts.html [accessed March 2013]) The prevalent storm type in New England is the northeaster which manifests itself in wind driven rain and coastal flooding which Beauport is especially prone because of its location directly on the harbor. (http://en.wikipedia.org/wiki/Nor%27easter [accessed March 2013]).

[2] The previously commonly accepted museum environmental standard of 50% RH at 70 degrees Fahrenheit (21 Celsius) was ultimately, and possibly inappropriately, applied to the 1990s HVAC project at Historic New England. Original project material indicates a range of RH was to be acceptable however analysis of set points in the control systems showed a lack of flexibility. Relaxing the RH standards has been a topic for many years. Rick Kerschner's 'A Practical Approach to Environmental Requirements for Collections in Historic Buildings', JAIC 31(1992): 65-76 continues to be an important summary. In recent years this topic is found discussed in many symposia and articles including 'The Museum Environment: Transforming the Solution into a Problem' by Steven Weintraub, Collections: A Journal for Museum and Archives Professionals, Volume 2, Number 3, February 2006, pp. 195–218.

[3] For more information on Historic New England's approach to preservation and conservation issues in historic house museums, including UV protection and environmental conditions, visit the white paper section accessible at http://www.historicnewengland.org/preservation/preserving-historic-sites/property-care-white-papers.

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

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The Getty Research Institute, Los Angeles, November 6-9, 2012

Balancing the Preservation Needs of Historic House Museums and Their Collections Through Risk Management

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Abstract

The Canadian Conservation Institute recently conducted comprehensive risk management projects for two historic house museums in central Canada. Following an intensive site survey combined with dialogue with the clients, risks related to all agents of deterioration affecting the building, interiors and collections were analyzed using the CCI-ICCROM-RCE method. Risks that ranked highest included loss due to fire or theft, light fading of collections, damage to some interior and exterior building finishes, and water issues resulting from poor roof repair. Lower risks in the Canadian context included pest infestation and damage due to incorrect relative humidity and temperature. Methods that could be implemented to reduce the highest risks were shown to be cost-effective even when the estimated cost is very high. The projects were effective in helping clients set preventive conservation priorities for both building and artifacts.

Keywords

Historic house museum, risk assessment, risk management, preventive conservation, value, cost-effectiveness

Introduction

Setting preventive conservation priorities in historic house museums is complicated by the need to preserve both the historic structure and the artifacts within. Comprehensive risk management permits comparison of all risks – whether to building or collections – on a common scale: the loss of heritage value over time. The museum can then devote its limited resources to projects that reduce the largest risks. The Canadian Conservation Institute (CCI) piloted a comprehensive risk management service to Canadian clients in 2009. Projects to date have included two historic house museums in central Canada: Glanmore National Historic Site and Eldon House.

Glanmore is a fine example of Second Empire architecture built in 1882 in Belleville, Ontario for J.P.C. Phillips (1842-1912), a wealthy banker. The house was sold to the city in 1971 for use as a museum. The three-storey, yellow brick house has ornate wood and stone trim and a multi-coloured slate mansard roof (Figure 1). Restoration of the exterior and roof was completed in 1993-2002. Restoration of the interiors is ongoing. The grand, freestanding walnut staircase in the front hall and the decorative finish and mouldings of the ceilings in the principal rooms are of particular importance (Figure 2). The interiors feature some furnishings original to the house and 19th century decorative art objects from the Couldery collection, a private collection donated to the city of Belleville in 1955. The collection of over 20,000 artifacts includes, in addition, objects and documents related to local history.

Fig. 1. Glanmore National Historic Site. © Canadian Conservation Institute (CCI 120118-0001)

Fig. 2. The drawing room at Glanmore showing decorated ceilings. © Canadian Conservation Institute (CCI 120118-0057)

Eldon House is the oldest surviving dwelling in London, Ontario. It served as the residence for four generations of the Harris family from 1834 until 1959 when the house and most of its contents were donated to the City of London. Set on high ground overlooking the Thames River, this two-storey, white wood frame house reflects Georgian and Regency styles (Figure 3).

Fig. 3. Eldon House. © Canadian Conservation Institute (CCI 121683-0179)

Interior finishes of particular note are a late 19th century Japanese anaglyptic wallpaper in the halls (Figure 4) and the decorative wood ceilings of the library and dining room. Artifacts include family heirlooms, English pieces inherited in the 1890s, and furniture and objects collected during travels and work abroad. Opened as a museum in 1961, Eldon House is one of few historic house museums in Canada with original furnishings and decorative objects. Eldon House is currently managed by Museum London, which also operates an art and historical museum in downtown London.

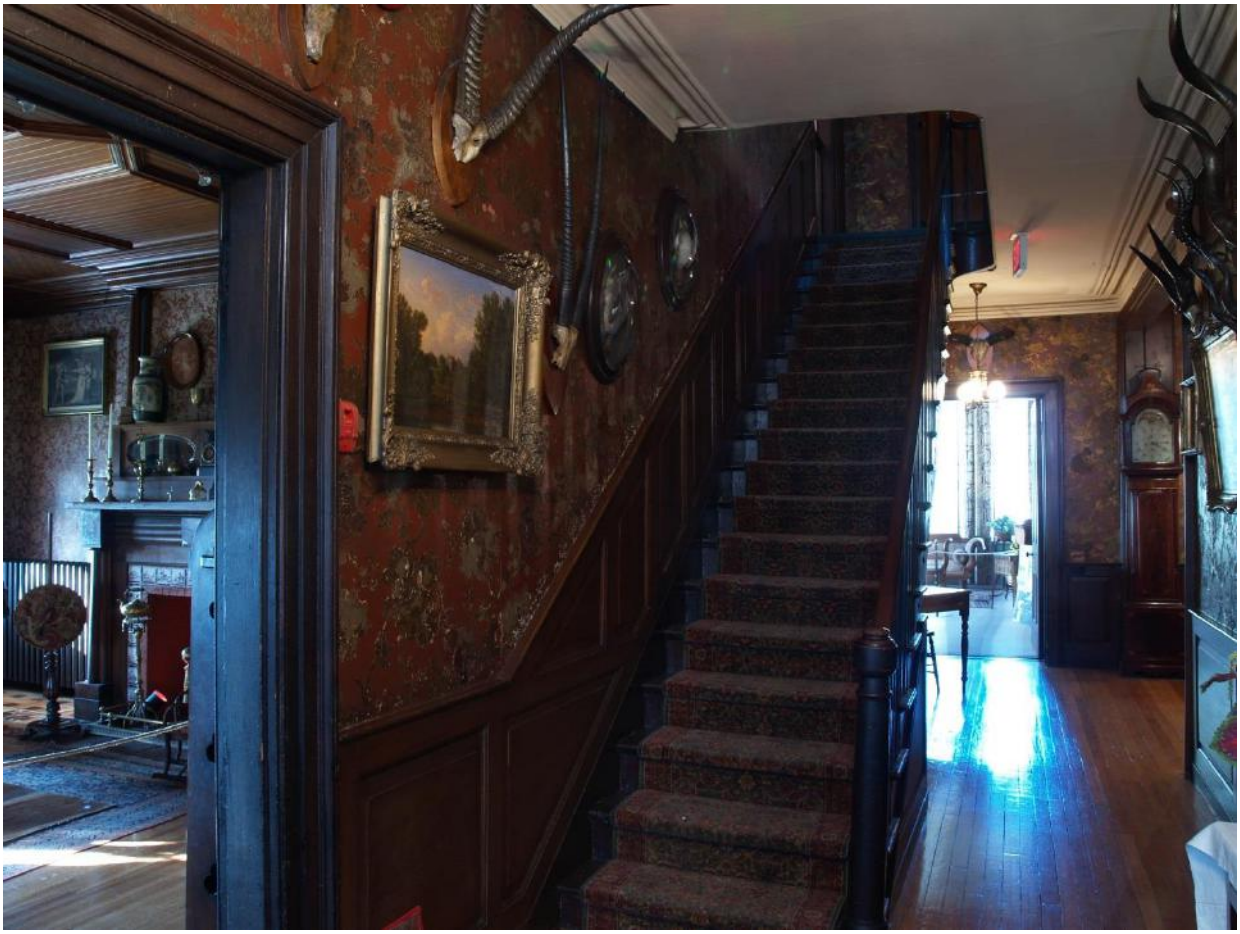

Fig. 4. Front hall at Eldon House with its Japanese wallpaper. © Canadian Conservation Institute (CCI 121683-0068)

Method

The projects were completed using the CCI-ICCROM-RCE risk management method [Michalski and Pedersoli, 2012] and the associated CCI Collection Risk Assessment Database that were developed by the CCI in collaboration with the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) and the Rijksdienst voor het Cultureel Erfgoed (RCE) for the *Preventive Conservation – Reducing Risks to Collections* courses offered through ICCROM from 2005 to 2011. The approach is based on a cyclical process that consists of five sequential steps (establish the context, identify risks, analyse risks, evaluate risks, reduce risks) informed continually by two other elements (communicate and consult, monitor and review) [ISO 31000, 2009].

Project implementation involved three stages: pre-visit preparation, a one-week site visit and post-visit analysis. The precise method and the Database evolved as work progressed. Glanmore was CCI's first comprehensive risk management project, completed in August 2010. Eldon House was the third, completed in April 2012.

Establishing context

Risks are analysed within the specific context of each historic house museum and how it values its building and artifacts. To understand this context, documents that characterized each museum, its mandate, history, organization, policies and procedures were collected and reviewed. In consultation with staff of each institution, a heritage 'value pie' was developed, a pie chart that showed the relative value of the building compared to the collection, as well the relative value of building components and sub-collections.

Risk assessment

The next three steps comprised the risk assessment phase of the projects. All risks expected to cause significant loss in collection value were identified. Risks for each of the ten agents of deterioration [CCI, 2011] were described in summary sentences that stated the hazard, the adverse effect, the path which leads from the hazard to the effect, and the part of the heritage asset that is affected. The risks are specific to each site, although many are common to both historic house museums. These specific risks were analysed by answering three questions:

- How often will the event occur or how soon will the process cause loss?
- How much value will be lost in each affected item?
- How much of the total heritage value will be affected?

Best estimates to answer these questions were derived from research, interviews with staff, institutional history, regional statistics on hazards like fire and earthquakes, comparable case histories, expert knowledge, and observations of the museum, as well as its collections, procedures and maintenance.

Heritage value was defined in a broad sense and included historic, aesthetic, interpretive and monetary value as understood by the staff of each museum. The analyses were specific to each site, its geographical location, the structure of the building, and the nature of the collections. Probable, low and high estimates were determined in order to capture uncertainty. A numerical score between 0 and 5, where 5 represents the highest risk, was derived from the answer to each question by the CCI Collection Risk Assessment Database. Scores for the third question on the fraction of the total value affected incorporated information captured in the value pie. The three scores were added to determine the magnitude of risk score (MR), which has a maximum of 15.

Risks were then evaluated to establish priorities. The specific risks were classified on a scale from low to extreme based on the calculated magnitude of risk (Figure 5). Risks scoring 10 and higher – high to extreme risks – were considered priority risks for reduction. The risk scale used in the CCI method is a logarithmic scale, which expresses values in 'order of magnitude'. Similar to the Richter scale for earthquakes, each step lower indicates a tenfold drop in risk. Graphs from the Database aided this evaluation. Risks were also grouped by agent of deterioration, and the total magnitude of risk score calculated for each group.

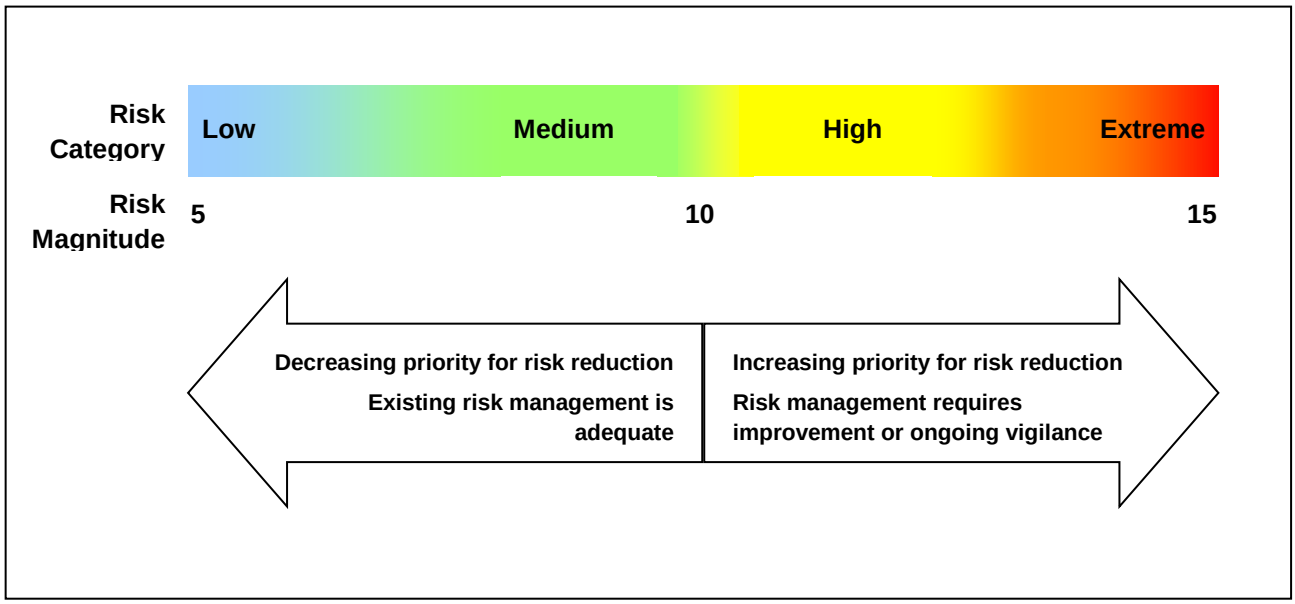

Fig. 5. Schema for risk evaluation

Risk reduction

The final phase of the analysis focused on risk reduction. For each identified risk, options were generated by considering a range of strategies (avoid, block, detect, respond, recover) at different levels (region, site, building, room, fittings, supports) [Michalski and Pedersoli, 2012]. Options were then analysed in the same manner as the original risk to produce a reduced magnitude of risk score should the option be implemented. Dividing the reduction in risk by the estimated cost of the option per year provided a measure of cost-effectiveness. Both one-time costs and ongoing annual costs, such as staff time, were included. Risk reduction and cost-effectiveness were then used to compare options in order to select strategies that maximized both.

Results

Heritage value assessment

Heritage value at Glanmore and Eldon House resides in both the building and collections. For Glanmore staff, the building comprised two thirds of the museum's value, primarily in those features that contributed to its historic designation, such as the mansard roof, decorative ceilings and the main staircase. Almost 60% of the remaining third, the artifact value, was associated with only two collections, original Glanmore material and the Couldery Collection, even though they comprised only 9% of the total number of objects (Figure 6). At Eldon House, buildings and collections were equally assigned 50% of the value. Original material was valued more highly than restored components or non-family artifacts used for interpretive purposes. A small number (4%) of Harris family possessions were considered ten times as valuable as most of the collection due to their high market value or their importance to family history (Figure 7).

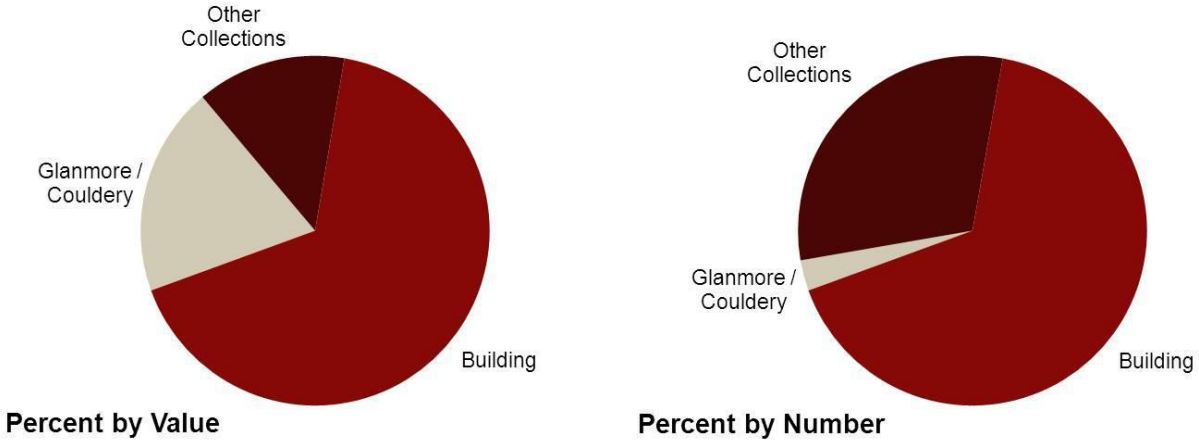

Fig. 6. Value pie for Glanmore (left) showing the concentration of artifact value in the Glanmore and Couldery collections which comprise less than 10% of the total number of artifacts (right).

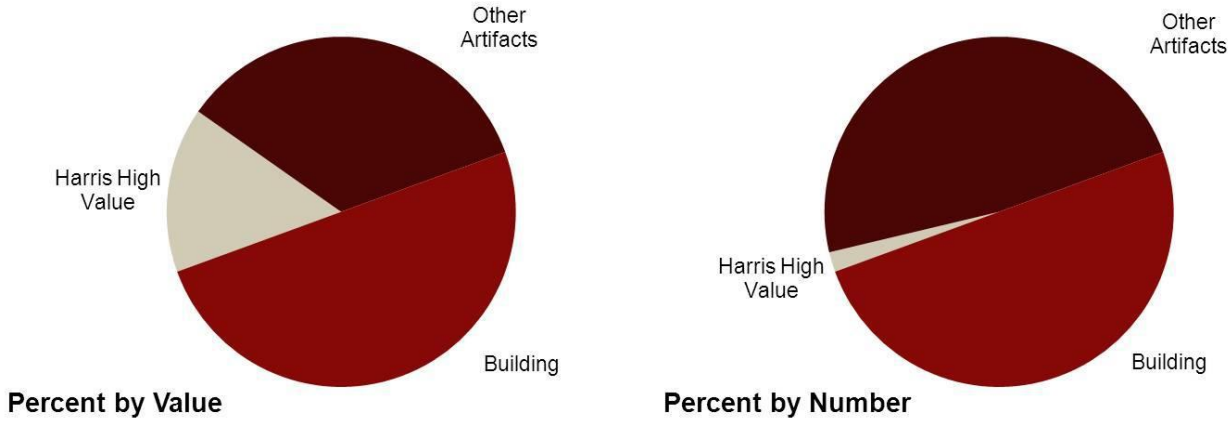

Fig. 7. Value pie for Eldon House (left) showing the concentration of value in a small number of high value Harris artifacts (right).

Glanmore National Historic Site

Thirty-seven risks specific to the site were analysed at Glanmore (Table 1). Three very high and eight high risks were found to be priorities. The greatest risk was fire, damaging either the entire building or one room. Fire risks were estimated following the method developed by Tétreault [2008] using Canadian museum fire statistics. Although the house has a fire-resistive brick exterior plus automatic smoke detection, fire alarms, inspected fire extinguishers, and staff trained in their use, its combustible interior lacks fire-rated separations. The open, grand staircase will function like a chimney flue; fire and smoke will spread quickly to the whole building. There is no fire suppression system. The house meets the requirements of the lowest Control Level, 1. Fires in such museum buildings are expected to occur once every 140 years, with a 43% chance of spreading throughout the building. Loss of at least one thirtieth, if not all the heritage value in a fire incident is probable.

Table 1 Glanmore and Eldon House Specific Risks ranked by Magnitude of Risk Score (MR)

	Glanmore		Eldon House	
Risk Level	**Specific Risk**	**MR**	**Specific Risk**	**MR**
Very high	Fire, building	12.2	Fire, building	12.2
	Water, improper roof repair	11.5	Damage from tornado (F2-F4)	11.0
	Fire, room	11.0	Fire, room	11.0
High	Damage to plaster ceilings	10.8	Fire, coach house	10.8
	Vandalism	10.7	Damage to wallpaper	10.5
	Theft, opportunistic	10.6	Theft of artifacts, opportunistic	10.3
	Theft, paintings	10.3	Light fading on display	10.0
	Incorrect RH, brick spalling	10.2		
	Damage from film shoots	10.2		
	Light , fading previously exposed	10.1		
	Dissociation, staff retirement	10.0		
Medium	Damage from earthquake to ceilings	9.7	Theft of artifacts, planned	9.5
	Light, fading not previously exposed	9.5	Damage from film shoots	9.4
	Water, corrosion of gutters	9.5	Light fading near windows	9.4
	Pests, Glanmore	9.2	Water, building leaks	9.3
	Damage to paintings	9.2	Damage/wear to linoleum floor	9.3
	Theft, other than paintings	9.1	Pollutants, dust	9.2
	Damage to staircase plaster	9.0	Pollutants, SO2, NOx, Ozone	8.9
	Pollutants, silver cleaning cycle	9.0	Pollutants, silver polishing	8.8
	Dissociation, loss of access	8.9	Damage by visitors	8.8
	Theft, internal	8.9	Incorrect temperature, hot attic	8.7
	Damage from earthquake to ceramics	8.8	Water, building rot	8.6
	Damage, handling collections	8.8	Earthquake damage to ceramics	8.5
	Other, loss of pointing	8.6	Pests, vertebrate	8.5
	Damage, accidents by children	8.3	Water, flooding	8.4
	Pollutants, dust on artifacts	8.1	Damage from severe weather	8.3
	RH fluctuations damage furniture	8.1	Damage from staff handling	8.3
	Light, fading Victoria, pastels	8.1	Damage from construction	8.3
	Water, plumbing leak	8.1	Pests, wood-boring	8.2
	Damage, falling over barriers	7.9	Pests, insect	8.1
	Damage, doors lacking stops	7.7	Damage, accidents by children	8.0
	Damage to frames	7.6	Water, plumbing leaks	7.8
			Damage to carpet from visitors	7.7
Low	Damage, ceramic on easel falls	7.5	Incorrect RH fluctuations	7.3
	Damage from snow to south roof	6.7	Vandalism	6.7
	Water, flood	6.5		
	Pests, off-site textiles	6.3		
	Incorrect RH, brown spots on pastel	5.5		

Several high risks emerged due to delayed or poor building maintenance. Risks analysed included the risk to the joists rotting under a poorly redone back roof, the risk to the painted plaster ceilings which were known to be separating from their lath supports, and the risk of renewed spalling of exterior bricks should the museum maintain winter relative humidity above 35%. The potential for total loss of about 5% of original material within the next 30-50 years was sufficient to make these high scoring risks. Also considered was the potential for damage following the retirement of Glanmore's custodian/collections technician, with his in-depth knowledge of both building and collections. Since this retirement was imminent at the time of the assessment, with no plans for mentoring a replacement, the potential for building or collection damage was assessed over the next 30 years assuming zero transfer of his knowledge and experience. This risk scored high.

Theft and vandalism risks also ranked high at Glanmore. Despite its location in a 'good' neighbourhood, vandalism to the exterior had occurred several times in the past and so is expected at least once a decade. The combination of many objects on open display, easily traversed barriers and few guided tours creates opportunities for object removal by visitors. Canadian art theft statistics show that the recovery rate is very low; thus, loss would be total in most incidents. Since more valuable objects are likely targets, and theft once every century is probable, the theft risks scored high.

Although several 'wear and tear' risks were analysed, only one ranked high: damage from film shoots. Glanmore had just successfully completed its first interior film shoot the week before our site visit and would likely do more. Evidence from other museums' experience [Gibbs, 2009] brought this risk into the high category.

With most of the more valuable objects on permanent display, including many paintings and textiles that have light sensitive colourants, light fading ranked high despite measures to limit exposure through motion-activated lighting and closure of curtains after hours. Although the most sensitive colourants have faded in these objects, the next most sensitive range – textile dyes such as madder on silk and pigments such as carmine lake – were estimated to fade completely in a few hundred years.

The remaining risks scored medium to low. Even if these events were expected to occur frequently or the loss per item was large, the value affected tended to be low. The magnitude of risk for all these risks combined was equivalent to only one high risk such as light fading or film shoots. Notable in this group of risks was damage to furniture due to the low winter humidity levels. The small number of cracks in wooden objects were all very old, except for a few associated with recent conservation treatment that did not account for the fluctuating environment in the house. Further cracking is not expected as long as relative humidity fluctuations stay within the broad range experienced in the past. Some risks were low by virtue of geography; for example, the house is situated in a zone that experiences only minor earthquakes [Munich Re, 2011].

Eldon House

Thirty-one specific risks that impact Eldon House were identified and analysed (Table 1). One was very high, and six were high. The greatest risk was the same as that for Glanmore: fire, whether affecting the whole of Eldon House, a single room or the adjacent Coach House. Eldon House currently meets only the requirements of Control Level 1 because the building is combustible, has few fire separations, and only heat detectors [Tétreault, 2008]. Thus like Glanmore, Eldon House is likely to have a fire once every 140 years and has a 70% chance of losing a large fraction if not all of the House and collections in the next 100 years.

Geographical location is key to the other very high risk: tornado. Southwestern Ontario has the highest annual frequency of tornadoes in Canada [Natural Resources Canada, 1999-2009]. The chance of a direct hit is about 1% in 30 years; almost total loss of the house and collection is expected in a tornado classified F2 or greater.

By contrast, risk of earthquake damage is low (slight tremors are the worst expected [Munich Re 2011]) and risk from flooding of the adjacent Thames negligible.

Wear to the wallpaper in the front, back and upstairs hallways has been a concern to staff for some time. Continued abrasion from visitors climbing the stairs and leaning against walls to look into rooms is expected to cause a large loss to a considerable portion of a valued interior finish within the next 30 years. As in Glanmore, light fading of objects on continuous display ranks high despite dimly lit rooms. Staff did stop closing blinds, however, after UV filters were installed on the windows, thinking that only UV was the problem. Total fading of sensitive colourants will take several hundred years (noticeable fading will happen sooner), but the loss would be large when several highly valued items, like watercolour family portraits, are affected.

Opportunistic theft ranked high at Eldon House, as in Glanmore, which was consistent with concerns expressed by staff. Eldon House has good basic security systems and procedures. Artifacts close to the visitor path were secured behind vitrines or tied down. However, some room barriers are easy to traverse and interpreters do not accompany all visitors. Thus occasional total loss of objects is expected in the future, as has happened in the past.

The remaining risks ranked as medium to low risks. As noted before, the risk from all these risks combined is equivalent to only one high risk, like opportunistic theft. Again, risks relating to incorrect relative humidity levels ranked low, although in this case air conditioning prevented winter and summer extremes. But damage due to probable extremes after the introduction of central heating before the house became a museum was notably lacking. Also of interest was the low ranking of the pest risks despite evidence of rodent issues, the discovery of carpet beetle larvae on a carpet during the site visit and the basic level of integrated pest management. The extent of probable damage given the level of housekeeping was expected to be low.

Risk reduction

Although risk reduction options were generated for all risks analysed in each project, regardless of magnitude, the reports focused on options to reduce high and very high risks. In most cases, the reduction in the magnitude of risk scores was 1 or less, but a drop of 1 on the logarithmic scale represents a tenfold decrease. Even costly interventions were shown to be cost-effective for high risks. When risks ranked low, on the other hand, reduction was rarely cost-effective unless the costs were very low.

For both Glanmore and Eldon House, the highest priority was reducing the risk of fire. The single most effective method available, given current understanding, would be installation of an automatic fire suppression system. Fire suppression does not eliminate the risk of fire – the risks remain high in both cases – but the major investment required for installation proved to be moderately cost effective. Additional improvements in detection and compartmentation, particularly at Eldon House, were required to decrease the risk further.

For the same level of risk, the lower the cost of mitigation, the higher the cost-effectiveness. For example, the installation of motion alarms at barriers is expected to reduce opportunistic theft somewhat by deterring tempted visitors and alerting museum staff to possible incidents. Since the cost of alarms can be low, the option is highly cost-effective despite a small drop in magnitude of risk. In a few cases, procedural changes could reduce risk magnitude significantly at very low cost. Avoiding winter humidification at Glanmore, for example, would eliminate further brick spalling at little cost. The small investment required to maintain winter relative humidity levels at 25% would also prevent further brick spalling while at the same time reducing the smaller risk of damage to furniture due to humidity fluctuations. Similarly, reinstating the practice of keeping blinds closed after hours at Eldon House would increase the time to fade of sensitive colourants four times and

drop the risk into the medium category at the cost of making the decision to do so. Although entering the rooms each day involves a risk of damage and wear, analysis showed that these risks were ten times less than the light fading risk and thus not the priority.

Discussion

Comparison of the results of these two projects permits a preliminary look at which risks tend to be highest in historic house museums in Canada. Grouping risks by agent of deterioration creates risk profiles for these two institutions that are alike in many respects (Figure 8). Fire is the greatest risk in both cases. Theft and vandalism and light fading are high risks for both for similar reasons. In both cases, pollutants and pests create similar medium risks that rank lower. Similarity in total risk can mask real difference in the nature of the risks. Both institutions must deal with damage from physical forces, but the specific risks that contribute to the high total vary with context: weak plaster ceilings and film shoots for Glanmore, tornado and abrasion of wallpaper for Eldon House.

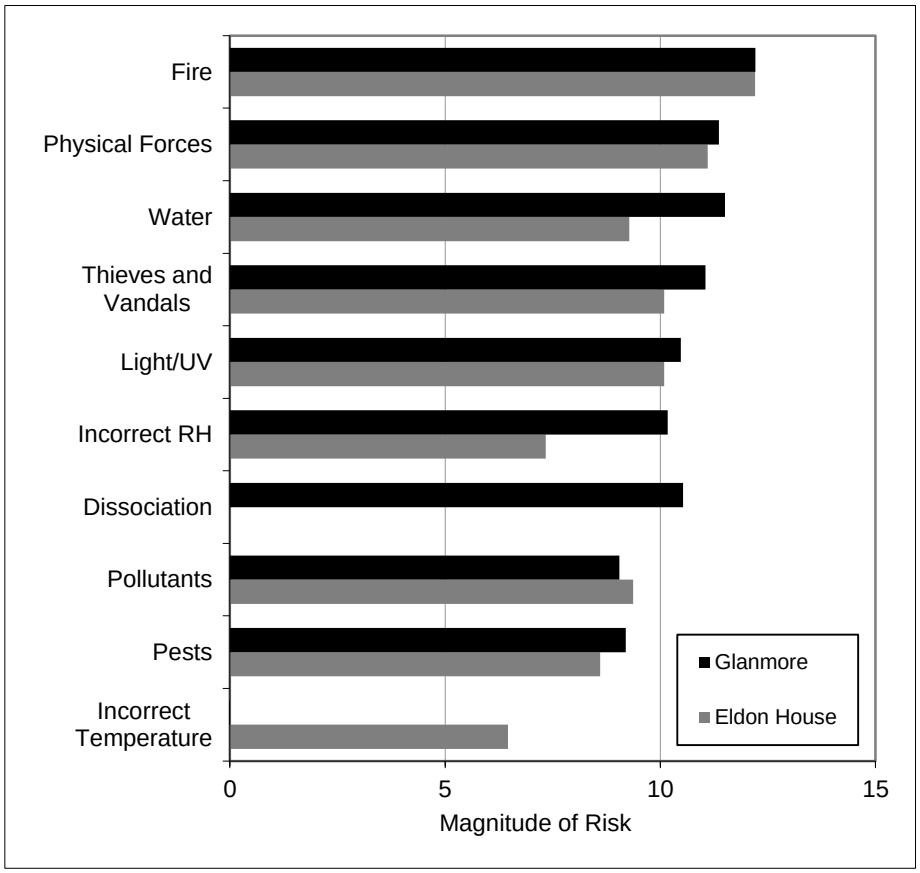

Fig. 8. Magnitude of the risks affecting Glanmore and Eldon House by agent of deterioration.

Where differences are large, there are key challenges specific to an institution. The very high water risk at Glanmore is primarily due to a poorly redone back roof and the potential for joist rot, a maintenance issue that did not affect Eldon House. The difference in impact of incorrect relative humidity is due to the difference in building structure: brick at Glanmore versus wood at Eldon House. The lack of incorrect temperature risk at Glanmore reflects better control of attic temperature, where collections are stored, as compared to Eldon House.

Conclusion

Using a comprehensive risk management approach, the CCI has been able to help two historic house museums set preservation priorities that benefit both historic structures and collection artifacts. Project results give a preliminary look at which risks tend to be highest in historic house museums in Canada; fire in particular, but also theft, light fading, damage to some building finishes and, if maintenance is deficient, water issues resulting from poorly maintained roofs. The analysis of risk reduction options in terms of cost-effectiveness served as a useful guide for clients whose resources are limited. Similarities in the risk profiles point towards general advice that can help other historic house museums in Canada and to topics for conservation science research.

Acknowledgments:

The risk management projects were made possible with the collaboration of staff of Glanmore National Historic Site, Eldon House, Museum London, and the City of London and scientists and conservators at the CCI.

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

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The Getty Research Institute, Los Angeles, November 6-9, 2012

Abstract

Historic Houses interiors are often rich in textile, wood and stone sculpture artifacts. The nature of the buildings and their presentation can be challenging for preventive conservation. In situ monitoring of object deterioration can provide the evidence base for informed decisions. The impact of local radiator heating and under-floor heating have been assessed. Wall mounted control sensors have been shown to deviate substantially from room conditions. Acoustic emission has significant potential to assess micro-cracking on furniture, but the monitoring is complicated by high background levels when visitors are present. Existing cracks in furniture have been shown to respond only to longer term fluctuations. In situ measurements of colour change and micro-fading have proved invaluable in assessing suitable light exposures. Measurements of soiling of marble statues have improved the management regime in a property suffering from very high levels of traffic pollution.

Keywords

Furniture, sculpture, silk, monitoring, preventive conservation

Environmental Management Challenges and Strategies in Historic Houses

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Introduction

English Heritage has in its care 17 very different historic houses and is planning to refurbish four others. Historic house interiors are often rich in wood and textile artefacts. Sculpture forms a significant part of the collections at Apsley House, Chiswick House and Brodsworth Hall. Interiors were often produced by a single designer or company and furnishings were specially commissioned for many houses and rooms.

The environment within an historic building is often strongly influenced by the external climate as window construction and the presence of open chimneys allow ready ingress of the external air. Historic doors can be difficult to open and close and are often left open for visitor ingress. Hence the relative humidity can undergo wide and rapid fluctuations and pollution levels can be high. Whilst such a climate is obviously not conducive to the preservation of sensitive wooden artefacts such as inlaid furniture and textiles, much material has survived several centuries in these conditions and appears to be in reasonable condition.

Within an historic building it is necessary to balance the needs of the building with the requirements of the associated collections, following the provisions of the New Orleans Charter [APT, 1992]. Within English Heritage presentation projects are run by multidisciplinary teams including collections conservators and curators, building curators, mechanical and electrical engineers, interpretation professionals and historians. This multidisciplinary approach allows dialogue about potential problems at the early stages of project formulation and

realistic budget setting. The presentation approach to historic houses often tries to recreate interiors as they were, based on inventories, descriptions or images. This determines the location of objects within certain rooms or locations within a room. This combined with the climate presents significant challenges for preventive conservation of the collections that form the interiors.

Basis for Target Conditions

The environmental conditions specified for each room within a property are derived from three elements:

- Published materials science for the materials that make up the collections or previous research. The complexity and aged nature of materials and composite nature of many objects makes interpreting the materials science a challenge. As a profession, conservation has developed very good limiting arguments for conditions that would cause very little change to materials, ie 50 + 5% RH. What is only just beginning to develop is an understanding of the risk of going outside of these tight, 'safe' bands. Managing a collection within an historic building often requires a knowledge of how much more risk there is at different levels outside the safe bands, for example at 35% RH and at 30% RH.

- Experience of the collections response to the present conditions. The complex and aged nature of objects means it is difficult to extrapolate laboratory studies, often carried out on new materials, to predict object response. Condition monitoring of objects can provide valuable information. However, most surveys have a degree of subjectivity and when damage is observed it is often difficult to assign to a particular event, as many collections are not closely observed. Advances in scientific techniques have produced several non-invasive, non destructive methods that have the potential to provide objective information about chemical and physical rates of change on objects and could be used for periodic monitoring. No damage in the present environment is very strong evidence and has been accepted as a European Standard [CEN, 2009].

- The capacity for each room to hold a particular environment or be controlled to it. This depends on the building fabric, usage (open doors, windows), external environment (T, RH, wind velocity), and any internal water or heat sources. Both interior room finishes, and the collections themselves, can have a significant RH buffering capacity, for example wooden panelling, and in particularly libraries. The capacity is generally determined from past measurement. Building simulation can derive the potential internal conditions under a number of different scenarios. For accurate results a degree of expertise is required as well as a very in depth knowledge of the building fabric. Historic materials properties are often not well known and need to be added to many building simulation packages for accuracy.

The approach adopted at English Heritage to managing these environments encompasses enhanced monitoring of the collections, in situ, to determine real rates of change; scientific research to understand the exact vulnerability of the collections and how the risk increases outside of the tight specifications often developed for museum collections. Research has been undertaken into methods to improve the environment and their carbon footprint.

RH Control

The limits of RH control required for collections has been subject to much debate. Many historic rooms can only maintain wider RH ranges. All instances of observed damage are recorded at English Heritage properties

along with the date when they were first observed. An estimate is made of the last time they were observed without the damage. The environmental data for the previous year is collected. This organisation wide database of damage is then used to verify proposed damage functions, for example there are at least three published algorithms to predict the extent of mould growth [IPI, 2012; Killian, 2007; Isaksson et al, 2010]. In particular the data is used to determine if a particular algorithm would have predicted the damage observed. Direct monitoring of several pieces of furniture has been developed in the AHRC / EPSRC Science and Heritage program funded post doctoral research, 'Change or Damage' [Luxford and Thickett, in press]. Several monitoring methods were assessed in laboratory experiments and then applied to furniture in Kenwood House. This property has issues with low winter RH due to inadequately controlled heating. Preliminary results have been published [Luxford, 2010] and a fuller paper is in press, [Luxford, in press].

Acoustic emission sensors were trialled in English Heritage properties with several wooden pieces, mainly furniture, but also musical instruments and a panel painting. Industrial equipment is quite bulky and quite obtrusive in an historic room setting. Equipment designed for conservation use (Hanwell Woodwatch) has been tested. Unfortunately, there is a lot of background acoustic emission generated from visitor activity in properties. The Woodwatch only has a single sensor and its routine for avoiding background signals (removing low frequency signals) was found to be inadequate. Other researchers have used correlation methods with two sensors to identify background noise. Comparison with an industrial acoustic emission equipment, Physical Acoustics Pocket AE2 with two R15α (1kHz to 1MHz, + 1.5dB) sensors allowed a sensible background threshold to be set. Data could then be used from overnight when the properties were closed and through out the winter period when there were less visitors. Acoustic emission generally uses a contact gel to ensure transmission of the emission to the sensors. This was obviously not appropriate with historic objects. Experiments with a variety of inert materials showed Melinex sheet (50µm, non coated) gave the best results (closest to a commercial contact gel, Sil-Glyde©), and this was used between the wooden surfaces and the acoustic emission sensor weighed down to ensure good contact. Acoustic emission was only observed for long term (over a period longer than 16 days and generally around 30 days) drops in RH exceeding 25%. This is in agreement with other researchers using acoustic emission on furniture. [Łukomski et al, in press]

The response time of objects is important as the high air exchange rate of many historic buildings means a significant portion of the large external diurnal RH cycle propagates indoors. Linear voltage displacement transducers were used to measure crack widths of a gilded wooden, marble topped table [Knight and Thickett, 2007]. The crack width did not respond to short term daily RH fluctuations, Figure 1. Monitoring the cracks occurring in panelling of a wooden bed and mass of a small table gave comparable results, with both only responding to longer term RH fluctuations.

Conservation (humidistatic) heating is frequently used in historic houses. Existing heating equipment can be modified, but wet heating systems have a high thermal inertia and sometimes cannot respond rapidly enough to changing conditions propagating indoors. This is a particular issue when properties are open in the winter. Single electric radiators can respond more rapidly, but can also be overcome by rapid RH changes.

The defined position of objects in an historic interior can mean they are close to radiators or other heat sources. There has been some observed correspondence with damage, cracking of veneer or panels and proximity to radiators. An experiment was undertaken at Fort Brockhurst to determine the likely impact. Wooden panels were fitted with surface temperature sensors (platinum 100) and resistance based moisture content sensors (measured between two screws placed 10 mm apart). The air temperature and RH in front of each panel was also measured. The panels were placed at different distances from an oil filled electric radiator set with a surface temperature of 60ºC in a cold room. Results are shown in Table 1.

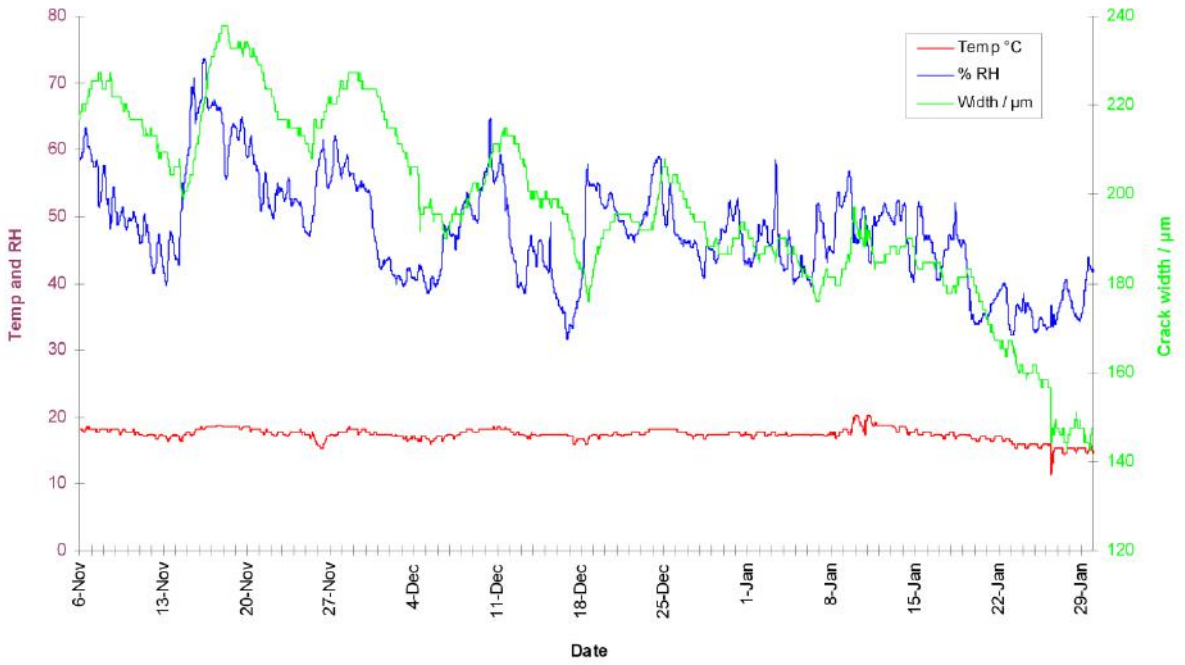

Fig. 1. Crack width on wooden frame of marble top table. © English Heritage

Distance (cm)	Surface temperature rise (°C)	Moisture content decrease (% wt/wt)	Interpretation
10	7.51	2.3	Above plastic deformation limit
20	5.67	1.8	Above plastic deformation limit
30	4.25	1.4	Above plastic deformation limit
40	2.50	0.8	Above plastic deformation limit
50	1.18	0.3	Below plastic deformation limit
60	0.53	0.2	Below plastic deformation limit
70	0.37	0.1	Below plastic deformation limit

Table 1: Effect of proximity to oil filled radiator at 60°C.

Eltham Palace, the home of the Courtaulds, was fitted with all modern conveniences in the 1920s. The heating being concealed in the floors or ceilings. The hall has under-floor heating and contains several pieces of medieval furniture. Concerns about the furniture sitting directly on the heated floor were investigated by measuring the temperature and moisture content of wood placed directly on the heated floor. A piece of oak was fitted with sets of surface temperature and moisture content sensors as described previously at 10 mm internals above its base. Results from the monitoring in situ on the hall floor are shown in Figure 2.

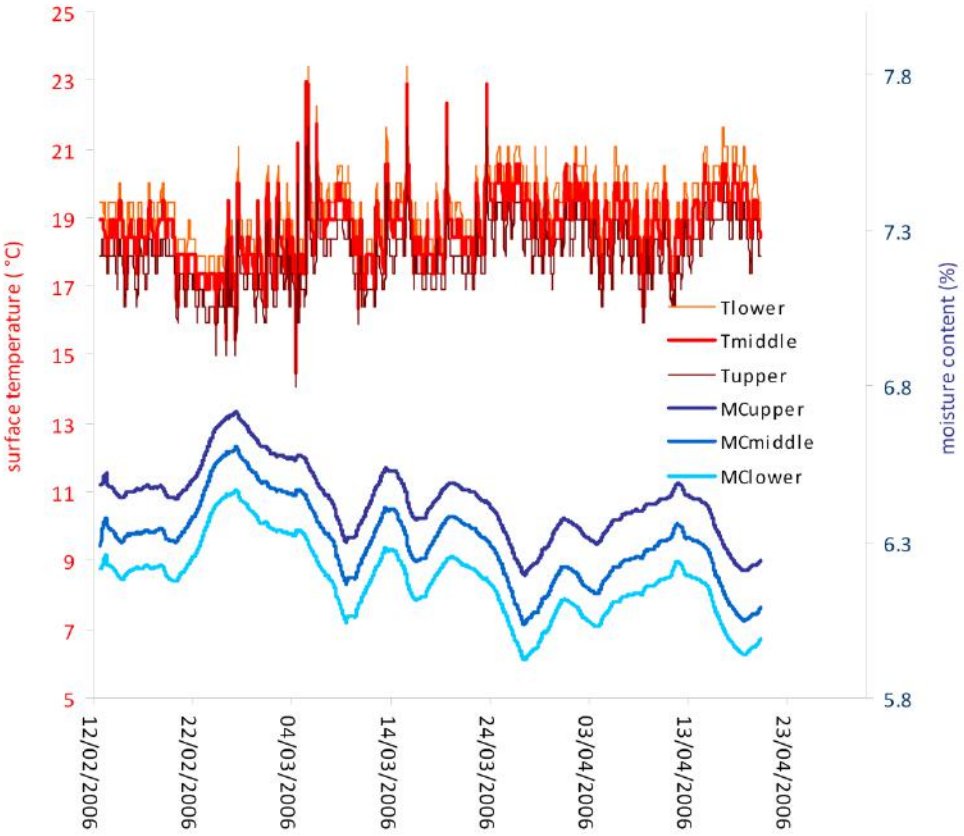

Fig. 2. Surface temperature and moisture content profile up a simulated oak leg on heated floor. © English Heritage

Despite there being a gradient in moisture content vertically throughout the oak piece, the moisture content differences are not sufficient to cause stress levels from dimensional change to overcome the plastic limit of deformation of oak [Erhardt and Mecklenburg, 1994].

Many large houses use some form of Building Management System (BMS) to control existing wet radiators. Sensors for BMS systems tend to be wall mounted. In static conditions a layer of still air exists next to surfaces and the surface has a strong effect on the layers temperature and RH. The differences in measured temperatures and RHs between wall mounted sensors and those deployed in rooms besides the collections were assessed in a particular property.

Calibrated Rotronic Hygroclip probes were placed in several rooms at Brodsworth Hall, on top of the BMS sensor housings and at points in the room next to important objects. From April to October there was little significant difference between the two sets of probes. However, during the winter the probe RHs diverged considerably with the wall mounted probes reading anything up to 15% higher than those besides objects. This is almost certainly due to the cold walls. This has significant ramifications for controlling heating systems with such sensors. If the collection is predominantly wall hung paintings or prints the system would be sensible, but in many conditions it will provide too dry conditions for objects in the room. English Heritage has worked with our main radiotelemetry supplier (Meaco) and BMS engineers to allow the radiotelemetry

signals to feed into the BMS and control the heating from these room based sensors. This also has the advantage of reducing the calibration load, as only one set of sensors are required.

A recent review of environmental control within EH properties assessed each room where the environment is controlled (conservation heating, background heating, dehumidifiers, humidifiers, smart ventilation). The necessity for that control was assessed and, in several instances with robust objects or reasonable environments, the control measures were removed. Monitoring after the removal confirmed the validity of the assessment. The remaining measures now have energy monitoring attached to determine the exact energy usage. Stand alone devices have energy meters. The total usage for wet heating systems is monitored and surface temperature sensors are used to indicate the amount of time conservation heating radiators are turned on compared to comfort heating in occupied zones of the buildings. Three years of data is now available for a range of property and room types to inform future decisions about installing environmental control.

Results from a recent collaborative doctoral thesis strongly indicated that hygrothermal aging is much more important for the chemical degradation of silk than exposure to light [Luxford, 2009]. Light exposure causes extensive fading of dyes, but does not appear to chemically degrade the silk. Monitoring behind tapestries is now carried out in six locations to assess their hygrothermal degradation rates from isoperms developed in the thesis. A series of small samples of silk were taken from a range of objects across six locations and five properties (one set of material in store). The samples were analysed with gel permeation chromatography, Thermo Scientific Finnigan Spectra with BioSEP-SEC-S4000 column. The method had been developed to reduce the sample size to 0.1mg. Results are shown in Figure 3. Analysis with tensile testing indicated an absolute end point of 30,000 Dalton (Da), when the silk would not be able to hold its own weight. Discussion with curatorial colleagues indicated that samples with an Mw slightly above 100,000 Da would not be considered suitable for display without additional conservation or support.

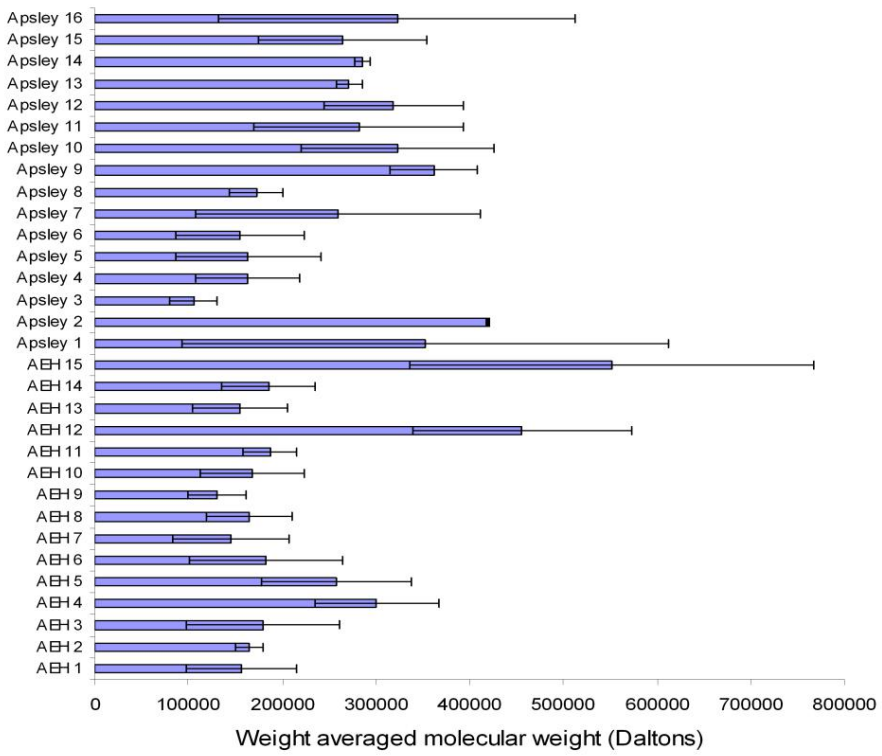

Fig. 3. Molecular Weights of silk samples from objects. © English Heritage

Light Control

Many historic houses rely heavily on natural light from windows, with little artificial lighting present. Windows have UV filters applied and double blinds are often used to control visible light levels with light plans to control the blind positions [Thickett et al, 2007]. This approach can produce annual doses around 584 klux hours suitable for medium sensitivity objects. Manually adjusted blinds are very unlikely to be able to produce doses around 146 klux hours for more sensitive objects depending on opening hours. Comparison of the data from 35 continuous light loggers with light plans indicated that doses were generally between 20 and 45% under those specified on the light plan within English Heritage properties. A series of long term colour monitoring experiments was initiated for a range of object types.

The 3 mm diameter colorimeter head was repositioned using either the pattern on the object or with holes cut in a Melinex mask that then was positioned using the pattern. The ability to view through the colorimeter was of great benefit for this. Repositioning errors were calculated for each point by repeated measurements. The colorimeter calibration was checked before each annual set of measurements using standard colour tiles. Results from three points from the inlaid wooden cabinet at Rangers House are shown in Figure 4. The colour changes slowly for all three points (and similar results were obtained for the other five points monitored on the cabinet). If a linear progress of the reaction is extrapolated then a perceptible change (ΔE_{00}>1.7) would occur in just over 26 years for the fastest changing plot.

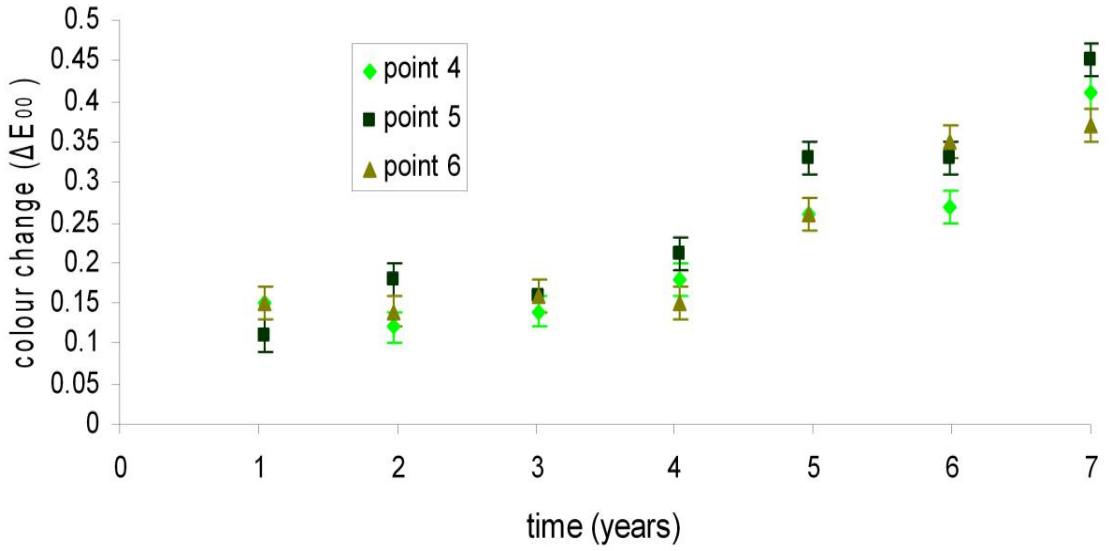

Fig. 4. Colour change of three monitoring points on veneered cabinet. © English Heritage

A common issue with historic houses is that they were designed within their landscape setting, and many windows have important views of that landscape. Views at several English Heritage sites are retained whilst the inner (white) blind is above a certain level, on bright days the blind needs to be lowered to control the lux level, impeding the view. Neutral density films on windows allows the blinds to stay at a higher level. Films with greater than 35% transmission do not appear to affect the view out through the window (results of visitor

surveys). Although the lower transmission films are a definite grey colour and fitting to only some windows on an elevation will be visually intrusive. At Kenilworth Castle a window with historic view is fitted with a screen developed by the Victoria and Albert Museum that retains the view through the window whilst reducing light levels to 50 lux, 1.5 m from the window. [Pretzel, 2006]

Low light levels were an issue for a major representation project at Audley End House. The light plans for many of the rooms are set to produce annual doses of 146 klux hours. This is equivalent to 150 lux with the small number of hours the house is open. A micro-fading research project was developed with Nottingham Trent University to anticipate fading rates if the light levels were increased. Many of the objects of interest were large, such as the State bed furnishings, or the 30 m carpets, and the measurements were performed in situ. Vibration was a problem, particularly with old wooden floors and measures had to be taken to minimise it to allow useful measurements. The results from this study are tabulated below. The light sensitivity categories devised by Reuss et al are included for comparison and their recommended annual light doses [Reuss et al, 2005].

Object	Location	Number points measured
Boule cabinet	Kenwood House	6
Cabinet	Kenwood House	14
Cabinet	Rangers House	12
Lacquer cabinet	Rangers House	8
Lacquer cabinet	Rangers House	8
Lacquer cabinet	Rangers House	8
Lacquer screen	Marble Hill House	8
Silk Carpet	Osbourne House	36
Silk wall hanging	Brodsworth Hall	4
Silk wall hanging	Brodsworth Hall	4
Watercolour	Down House	8
Piano	Down House	8

Table 2: In situ fading measurements.

All three objects contained generally relatively stable dyed colours, but each had a very light sensitive colour present. The present light doses at Audley End from the Meaco system are included for comparison. The data was used to generate a series of colour altered images of the carpet showing the effect of different lighting levels. The images were printed and the colours checked with colorimetry. Scenarios with the windows open and with just sun curtains in place were developed, as this had been suggested to improve ventilation in the property during summer. The images were very powerful in the discussions about the differing options. The project team had proposed opening the blinds and windows to increase ventilation. The very dramatic fading this would induce convinced against this scheme. There were also proposals to increase light levels in rooms containing the objects measured, the evidence was key in demonstrating the level of fading that would occur, which was deemed unacceptable by the project team.

	ISO blue wool equivalent	Category (Reuss 2005)	Recommended annual light exposure, klux hours	Present annual light exposure
State bed				
Blue	Equal to 3	Sensitive 2	146	140
Green	Less than 1	Sensitive 1	29	140
Red	Equal to 2	Sensitive 2	146	140
Yellow	Between 2 and 3	Sensitive 2	146	140
Saloon Carpet				
Brown background	Greater than 3	Sensitive 2	146	103
Light blue	Equal to 3	Sensitive 2	146	103
Pink	Greater than 3	Sensitive 2	146	103
Green	Equal to 1	Sensitive 1	29	103
Banner				
Grey	Almost 1	Sensitive 1	29	239
Red	Equal to 3	Sensitive 2	146	239
Background white	Equal to 3	Sensitive 2	146	239

Table 3: Micro-fading results

Pollution

Apsley House is in central London on an extremely busy traffic junction. The house, unlike most of English Heritage's estate, is extremely close (4 m) to the road. Pollution levels in the house are very high and diesel particulate is a particular problem leading to extremely high soiling rates for a variety of object types. Airborne levels have been measured at between 2000 and 6000 particles per cubic meter for the 0.3-2 micron equivalent diameter range. A series of 19th century marble busts are present in the inner hall, in the room next to the entrance. The soiling rate has been measured with a Minolta 2600D colorimeter over the past seven years since English Heritage took over management of the property. The busts were cleaned six months after the monitoring began. The colorimeter head (3 mm diameter) was relocated onto the side of the bust using a melinex mask with a hole. The edges of the mask were lined up with the edges of the bust base. The relocation error was estimated at $0.2\Delta E_{00}$. Colour difference using the CIE 2000 system was calculated from the initial measurement. The soiling of the busts produces a slight yellowing of the surface and the 2000 system was used as the CIE 1976 system is reported to underestimate yellowing, despite its widespread use in conservation. Results for one bust are shown in Figure 5.

The initial soiling rate is high, with a perceptible change (ΔE_{00}>1.7) within 2 years. The data shows that once the door was closed, after 12 months, the rate dropped dramatically. Cleaning had a dramatic effect on the surface colour (this occurred at 18 months). Records indicate the busts had not been cleaned since at least 1995. The soiling occurred slowly after cleaning. It is estimated that one perceptible change occurs after 8.5 years [Ashley-Smith et al, 2002]. The entrance door to the property is now closed and has to be opened by visitors.

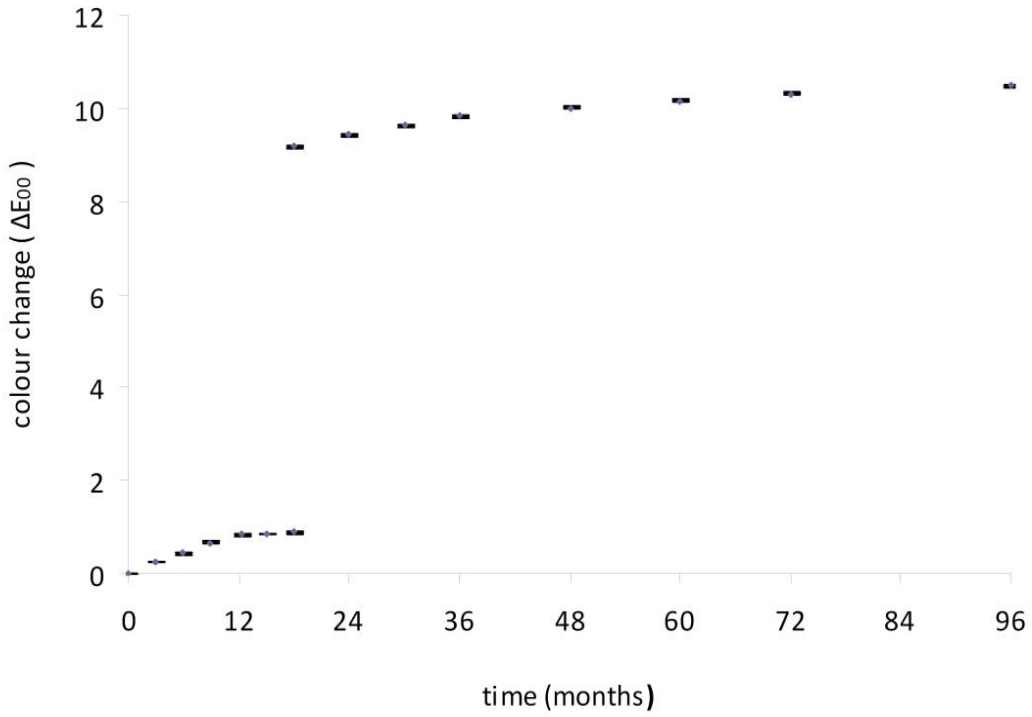

Fig. 5. Soiling on marble bust

Discussion

Scientific research and collection monitoring has been used to provide evidence for decisions and policy relating to environmental control across English Heritage's estate. As with much preventive conservation the detail is extremely important. Within historic houses, with more difficult to control environments than recent custom build museums, this evidence of how much risk exists outside of accepted safe RH bands or illuminance and pollution levels is essential to manage environments efficiently. Case studies have been presented to show the approach. Improvements in techniques and methods of direct object response monitoring can only increase the body of information on which to base environmental decisions. This provides a vital adjunct to and confirmation of laboratory studies.

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

A Joint Conference of ICOM-DEMHIST and three ICOM-CC Working Groups: *Sculpture, Polychromy, & Architectural Decoration*; *Wood, Furniture, & Lacquer*; and *Textiles*

The Getty Research Institute, Los Angeles, November 6-9, 2012

Abstract

The Gamble House, built in Pasadena, California in 1908, is amongst the greatest of architectural treasures designed by Charles and Henry Greene. In 2004 the first comprehensive conservation of the exterior elements was implemented. The project plan was designed to document a course towards a holistic preservation outlook with a customized work scope based in science, art conservation and architectural preservation.

While addressing maintenance and disrepair to ensure the ongoing protection of the house, treatments maintained the original design vision of the Greenes and conserved original historic fabric. This paper presents an overview of the conservation project. The development of treatments, their implementation, and efforts toward ongoing maintenance of one of the most iconic of the exterior features – the 36 inch-long hand split old growth redwood shakes, as a case study.

The teamwork attitude was pervasive among contractor, sub-contractors, consultants, and owner representatives as the strong foundation of strict conservation and preservation guidelines clearly defined the intent of the project through all phases.

Keywords

The Gamble House, split wood shakes, historic preservation, redwood, rot, deterioration, consolidation

Architecture as Artifact: Integrated Approach to Conservation of Finishes at the Gamble House

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Introduction

The Gamble House is the only project designed by Charles and Henry Greene to remain substantially in original condition, with all of its architect-designed furnishings in situ. Those of us close to its ongoing conservation feel that the Gamble House is, in fact, a museum where the house is the most precious artifact in its collection. The institutional goal is not only to conserve the house and its furnishings to nationally recognized standards of conservation, but also to provide an exemplary program of public access that interprets the architecture and collections in a relevant, educational, and engaging way (Fig. 1).

In 1907 David and Mary Gamble, of the Procter & Gamble Company in Cincinnati, Ohio, hired Charles and Henry Greene to design the Gambles' retirement residence in Pasadena, California, where other wealthy Midwestern families had become accustomed to spending the winter months. After only ten months of construction, the house was completed and the first pieces of custom furniture were delivered, and by the summer of 1910 all the furniture was in place.

Fig. 1. Gamble House exterior. © 2014 Alexander Vertikoff | Vertikoff Archive

Three generations of the Gamble family realized the artistic importance of the house and maintained ownership until 1966, when it was deeded to the City of Pasadena in a joint agreement with the University of Southern California (USC) School of Architecture. Since 1968 two senior students from the USC School of Architecture have earned the privilege of residing in the Gamble House as part of the Scholar-in-Residence program, which is still active today. While the city holds legal title to the house, all programs and preservation are the responsibility of the USC School of Architecture.

The Gamble House is listed on the National Register of Historic Places and is designated a National Historic Landmark with international significance. It is a historic house museum dedicated to the preservation, presentation, and interpretation of the signature architecture of Charles and Henry Greene in the context of the American Arts and Crafts movement. It serves the public and scholars, welcoming 25,000 visitors annually from around the world.

Preservation Planning

By the mid-1980s it was apparent that the exterior of the Gamble House needed assessment. Seven decades of weather had put many of the house's character-defining features at risk. The original redwood shakes were splintered and cupped, rafters and beams were rotting, and the roof membrane was failing.

On behalf of the USC School of Architecture, Edward R. (Ted) Bosley, the James N. Gamble Director of the Gamble House, enlisted the support of professionals to help set a course for the preservation project. Peyton Hall, FAIA, John Griswold, and Kelly Sutherlin McLeod, FAIA, joined together under Ted's leadership to develop a customized work scope based in science, art conservation, and architectural preservation.

Development of the 600 page Historic Structure Report (HSR), completed in 2000, was the first step in the campaign. The HSR established standards and criteria, and prioritized findings and recommendations in an interactive database, a tool that lies at the heart of the conservation effort and continues to inform maintenance, operations, and future work at the Gamble House. The scope of work for immediate and short-term needs was couched in language that was meaningful to grantors.

Director Ted Bosley raised the funds for planning and implementation. Significant commitments for project funding were secured from private and public funding including generous pledges from the Gamble family and grants from the Getty Foundation. During the course of five years, four million dollars was raised to cover project management and exterior conservation treatments in addition to consultant fees, other planning and campaign costs, and a modest sum to help endow future maintenance cycles after conservation treatments.

The Gamble House and its detached garage were found to retain a very high level of integrity. Research showed that most of the original surfaces of these buildings were largely unmolested, retaining much technical evidence of the architects' manipulation of materials and finishes to achieve a subtle, sophisticated aesthetic harmony. The project objective was to address maintenance and disrepair to ensure the protection of the buildings, and to interpret the exterior so that they once again resonate with the original vision of Charles and Henry Greene. Above all, the intent was to conserve as much as possible of the building's historic fabric, which meant nearly everything, in the least invasive way.

Project Overview

First, the house's resistance to earthquakes was increased by bolting the frame to the foundation, and adding steel frame stiffeners in the attic. Severe deterioration of timber beam ends and rafter tails was treated with borates and permeable epoxies to stabilize remaining wood and compensate for losses. The roof membrane was replaced to protect the building's structure, interiors, and priceless contents; exterior original split redwood shakes were conserved; 135 window screens were restored; and paint, varnish, dirt, and decay were carefully removed from unpainted wood surfaces such as teak window frames and doors, posts, and railings.

At the conclusion of the project, the goals of the first comprehensive conservation effort undertaken on this historic treasure were met, mitigating the effects of ninety-five years of exposure to sun and weather and preserving the historic fabric for the future. The dynamic scope of work was completed within budget and ahead of schedule.

The extensive project work scope also included subterranean waterproofing and drainage, improvements to roof drainage, and upgrades to building systems. This brief paper will address only a part of the project — the roof, rafter tails, and beam ends. The exterior wood wall shakes, constituting most of the building's exterior surface, and one of the most iconic of the exterior features at the Gamble House, deserve attention as a case study emblematic of the broader assessment, development of conservation treatments and their implementation, and approach to cyclical maintenance.

Roof

The role of the project architect included balancing the conservation team's objective to honor the Greenes' original design, and retain remaining historic materials, with the concerns of tradespeople and manufacturers of contemporary materials, who wanted to use tested standard construction methodologies to ensure functionality.

Four generations of roofing preceded this project; the most recent failed shortly after it was installed during the 1980s. Archival documents report that the original 1908 roof material, 'Malthoid', was a rolled asphaltic composition membrane and adhered slate granules [1]. It failed within the first ten years after installation. Malthoid is no longer produced in this country; current products for sale using this name are not of the same composition. Built-up modified bituminous rolled roofing with a mineral-surfaced cap sheet was selected as a durable contemporary product honoring Charles and Henry's design, taking into account finish texture and color based on the value relationships in archival black-and-white photographs. The soft roll of the roofing around the raised edge of the roof eave is an essential feature of the Gamble House, and is not easily achievable with stiff asphalt roofing.

New roof flashings were fabricated and installed under roofing and at locations not visible to visitors. Existing lead flashing at the two chimneys remained intact; lead flashing was replaced at the exterior wall of the third floor. The original design was followed in all detail, down to the nailing pattern, avoiding additional nail penetrations into the exposed historic wood trim. On the north side of the house the original lead flashing was still serviceable and was therefore maintained as an accessible archive. Repairs were made to decorative copper leader boxes and downspouts, reversing poorly executed patches and returning historic components back to their original locations.

Rafter Tails and Beam Ends

After decades of outdoor exposure, the exposed ends of many rafter tails and beam ends were infected with a common fungus that consumes wood. Previous repairs filled wood losses, and impermeable epoxy exacerbated continuing damage by not allowing water to evaporate. The environment was ideal for fungal growth. Flowering bodies emerged from the surface of some rafter tails (Fig. 2).

Fig. 2. Rafter tails before restoration. Courtesy Historic Resources Group

Rotted wood was removed from 262 rafter tails and beam ends, leaving all sound wood intact. The principal conservator, John Griswold, revised the earlier treatment by using materials that perform better under these circumstances. The wood and new patch repair materials are more compatible to changes in temperature and

to the fluctuating presence of moisture, providing a stable contact between old and new elements. Lightweight permeable epoxy filler was used to replace lost wood. A commercial low-viscosity consolidant and filler epoxy product was deliberately specified for consistent and reliable mixing, application, and performance characteristics.

Using handheld instruments such as dental tools, artisan subcontractors sculpted the tinted epoxy to provide a portrait of the weathered surface of adjacent original wood, extending grain patterns while creating channels for water to escape. Longitudinal cracks in the timbers (or checking of end grain) were left exposed, allowing the wood to continue to age naturally in equilibrium with its environment. The epoxy at the surface of the fill was tinted using color-stable mineral pigments, and then stained on the surface to blend visually with adjacent wood when viewed from the ground. The finished work conveys the appearance of a century-old structure that has weathered in its natural environment. However, there is a clear distinction between historic and new materials under closer view (Fig. 3).

Fig. 3. Rafter tails after restoration. Courtesy Historic Resources Group

Exterior Redwood Shakes

The hand-split exterior redwood wall shakes have been the subject of much concern since the house came under the stewardship of the city and the university. Comparison with early photos shows how they had shifted dramatically from a uniform dark value to a much lighter, uneven finish. Many have speculated about their original finish, still visible on the reverse side of well-protected shakes. [Figure 4] The translucent brownish-green tint optically complements the warm, dark tones of the redwood. It was reasonable to speculate that the green hue was a copper salt-based preservative.

Fig. 4. Shake conditions before restoration. Courtesy Orion Analytical, LLC

Around 1930, the only remaining family member living in the house—the sister of Mary Gamble known fondly as Aunt Julia—had the house painted with a sturdy coat of opaque green lead-based oil paint, save for the doors and windows, board and batten ceiling paneling of the verandas, and porch posts and railings.

At the time of the HSR investigation in the late 1990s, there was a great deal of variation in the condition of the painted shakes. Some exposed faces were warped and splitting, finely cracked with delaminating paint

over heat- and light-damaged wood surfaces. [Figure 5] The paint in these areas was a network of tiny floating islands undercut by dark soiling and fine debris. In contrast, well-protected areas tucked under overhanging sleeping porches or with north-facing exposure retained a dark green-gray paint in relatively good condition. Here, a silvery white efflorescence had developed on the surface, the beginnings of the oxidation and hydrolytic process of paint decay.

Fig. 5. Warped shakes before restoration. Courtesy Historic Resources Group

Other types of conditions were found on the shakes between these extremes, including repeated abrasion from visitors, mineral deposition, and tide lines from rainwater flowing around downspouts. Adding to the complexity of the deteriorating surfaces, local tests with different undocumented methods had been conducted over the years preceding this project in an effort to determine the best way to return the shakes to their intended appearance. On all of the areas, some ill effects were seen. Grain detail was obliterated, wood fibers were raised, or residual efflorescence had formed from products used for stripping.

During the initial investigative phase of the project, it seemed most appropriate to continue the quest for the best methods to remove the non-original paint with the least risk of damage to the shakes themselves. As part of the project implementation plan, it was recommended that a conservator perform paint removal tests, test wood materials, and identify the composition of the original stain for the purpose of replicating the original finishes.

Peer review by the Getty Foundation suggested a focused symposium of advisors who were convened to ask new questions and seek more answers before undertaking an aggressive exterior treatment. Was Aunt Julia's paint a part of the ongoing history of the house? Why remove the sound areas of paint if only to subject the shakes to possible damage? Why not treat the shakes as one might approach the surface of a Renaissance polychromed wood sculpture? This would establish an aesthetic target appropriate to the state of preservation of the original materials and help develop a method to ensure their stabilization where needed locally. It would also visually reintegrate distracting or disfiguring areas to allow the overall surface to read in an authentic but aesthetically pleasing manner. It was agreed that Southern California has the advantage of a particularly benign climate and that a less potentially damaging approach could be investigated.

The results of the symposium supported a specialized approach to fusing esoteric museum conservation and practical construction methods. The team set out to better characterize the original finish, the later paint, and the conditions of the wood substrate. Fourteen different conditions were identified and graphically mapped as color-coded zones for each of the house's exterior elevations. Sample shakes were carefully removed from representative zones, documented, and analyzed by the material analysis scientists at Orion Analytical Laboratory [2]. Besides identifying the original finish, the modes of deterioration were characterized to help develop a treatment strategy that would accommodate subtle variation of technique depending on each zone encountered.

The results showed the original stain dip was wood-based creosote with Prussian blue and chrome yellow pigments composing the transparent green color.

It was observed that Aunt Julia's paint had essentially "fossilized" the wood surface in the most severely degraded areas, forming a delicate "pseudomorph" of the original split grain texture of each shake. Although highly friable in areas exposed to intense sunlight and heat, the cracked and oxidized paint remnants were holding the decayed wood fibers and accumulated soiling in place. After being criticized over the years for painting the house, the late Aunt Julia was exonerated for actually doing the house a favor. The paint bore the brunt of weathering processes, sparing the natural split grain appearance of the shakes so valued by the Greenes.

This information turned the team's attention away from trying to remove the paint to preserving it in situ. Testing began to find an appropriate consolidant or penetrating sealer that would simultaneously protect the substrate wood and strengthen the delicate surface. Initial testing of possible solvent carriers revealed that, when saturated, the light yellow-green oxidized paint hue reverted to the original darker green paint color that remained on more protected surfaces. Aunt Julia was further vindicated as it became clear that her choice of paint color closely resembled the Greenes' original pigmented stain.

After testing various surface treatments, including pine tar [3], a commercial penetrating sealant with UV stabilizers was specified as an overall base treatment to protect the failing wood material by consolidating and shielding both the wood and the deteriorating paint [4]. Various mixtures with stable mineral pigments were mixed with the sealant to better visually reintegrate surfaces that were most yellowed due to sunlight and heat exposure. This tinting was visually measured by the conservator to factor in the age of the house, its original color, and its natural weathering patterns. The aesthetic target, broadly speaking, was a gracefully aging ninety-six-year-old house. The treatment allowed the "natural features" of the house's "patina" to remain. The biggest aesthetic challenge was reintegrating the variously stripped test areas.

The treatment approach for the exterior wall shakes illustrates the difference between restoration and conservation. The exterior wood surfaces were not "restored" to the finishes or appearance of the house in 1908. Restoration would have presented a bare wood surface, which would have then required refinishing

with new materials intended to emulate the original materials. For the exterior wall shakes, a restoration methodology (removal of non-original seventy-year-old lead-based paint as originally planned) would have destroyed the "history" of finishes, with unavoidable impacts on the surface profile of the wood. Resetting the clock to an almost-new appearance would have resulted in a new, destructive cycle of aging and refinishing. The original wood-based creosote dip, specified by the Greenes, would have been lost.

The objectives identified, after thorough consideration, were to conserve the wood, retain the history of existing finishes, avoid treatments that would damage the wood, retain the variations in finish appearance that reflect the natural conditions of the building and site, use materials and methods that are optimally reversible and/or re-treatable, and achieve an aesthetic result that conveys the Greenes' design intent and results.

The preservative treatment brought back to the shakes a dark color value relationship with the windows and porch posts and railings. A negligible number of damaged wood shakes needed to be replaced; the replacements are vintage shakes of matching species and grain.

The appearance of the house and garage will slowly turn toward the pre-treatment appearance, but those treatments were extremely gentle, and re-treatment is feasible and gentle. In keeping with current conservation methods, as few interventions as possible were made, and an area of shakes in a protected location was left untreated as a document in the field. One cycle of re-treatment has already been completed, using the endowment for funding periodic inspection and treatment. Preventive, attentive, highly skilled care preserves historic fabric, and supports a gentle, cautious approach to treatment.

Conservation

The conservation project philosophy used at the Gamble House is based in long-term protection and preservation by applying architectural conservation standards of assessment, documentation, and treatment. The project sought to maintain the highest conservation values and standards of science and artisanship. A fusion of federal guidelines, the Secretary of the Interior's Standards for Preservation, with the Code of Ethics and Guidelines for Practice of the American Institute for Conservation of Historic and Artistic Works (AIC) determined the project treatment criteria. One of the foremost tenets is the concept of 'reversibility/retreatability', or being able to isolate and undo, to the greatest practical extent, whatever interventive treatment is performed on an artwork or artifact. Minimal intervention is another fundamental mandate of accepted conservation practice. Some historic structures, such as the Gamble House, possess such a high degree of significance that they are works of art in the fullest sense, and therefore benefit from the enrichment of the federal guidelines with those of the AIC.

Charles and Henry Greene were involved deeply in every aspect of the design and handcrafted construction while closely directing highly skilled craft workers. For example, the surfaces of natural materials such as split redwood shakes were chosen individually for their interesting grain patterns and other unique qualities, and placed to enhance the visitor's overall aesthetic experience. Archival documentation of the Greenes' subtleties of intent, in letters, written specifications and drawings, and early photographs further confirm that the architects were, in effect, the true artists of the house.

After six years of preparation, the project team had developed a customized work scope based in science, art conservation, and architectural preservation. This fusion depended largely on collaboration among members of the multi-disciplined project team—collaboration unrestricted by egos and boundaries set by areas of expertise. The challenge of bridging between assessment and implementation phases was successfully managed by a teamwork attitude, which was pervasive among the contractor, subcontractors, consultants, and

owner representatives. The strong foundation of strict conservation and preservation guidelines clearly defined the intent of the project through all phases.

John Griswold served a key role in the assessment team: surveying existing conditions, procuring and interpreting scientific analysis and developing conservation techniques. The conservator's contribution was critical to this project in bridging the gap between assessment and implementation phases of the Gamble House project, transitioning into varying roles as conservation strategies developed into a construction context and eventually into the ongoing maintenance program. Because of the team approach, the conservator was allowed to transition between these phases in a 'confluence of interest' going from the architect and owner's side of the project to become a specialist consultant and subcontractor to the general contractor.

The foresight and diligence of the director, Ted Bosley, in securing an endowment for maintenance established the prospect of constant curatorial care, allowing conservation treatments to be minimally interventive. In order for preservation projects to be successful, treatment options must be considered with the ongoing maintenance needs associated with them, such as funding and the availability of treatment materials and skilled tradespeople. At the Gamble House, periodic inspections by the project conservator are conducted as part of the maintenance plan and building elements are re-treated if required. Now, at the ten year anniversary of project completion, John Griswold reports that the exterior treatments and repairs to the Gamble House are holding up well. There is some local fading of color (actually, desaturation, as color was only applied in limited areas) on the more severely exposed areas of the wall shakes and some deterioration at the third-floor rafter tails. This is all to be expected.

Conclusion

Fig. 6. Gamble House exterior. © 2014 Alexander Vertikoff | Vertikoff Archive

Projects such as the Gamble House conservation do not happen without vision and leadership. The Gamble House director, Ted Bosley, had the wisdom to recognize this concerted effort had to be taken if the Gamble House was to survive for future generations. Ted's leadership and steadfast integrity kept all members of the project team, during all phases, focused on the established objectives, schedule, and end goal set for this conservation project: to protect a fragile national treasure while maintaining its authenticity and honoring the original design vision of Charles and Henry Greene (Fig.6).

Resources

Amteco TWP 500 Series wood protectant: Amteco, Inc. 1100 Jefferson Dr., Pacific, MO 63069

Abatron WoodEpox wood replacement compound: Abatron, Inc. 5501 95th Ave., Kenosha, WI 53144

Abatron LiquidWood wood restorer: Abatron, Inc. 5501 95th Ave., Kenosha, WI 53144

Endnotes

[1] Malthoid later contained asbestos.

[2] James Martin, PhD performed the investigation and produced an unpublished report. Visible light microscopy, polarized light microscopy and ultraviolet fluorescence microscopy were combined with FTIR analysis.

[3] Martin Weaver suggested this be included in tests, given the remarkable history of its use as a preservative for the stave churches in Scandinavia.

[4] Mark Knaebe, chemist for the U.S. Department of Agriculture Forest Products Laboratory, suggested trying a modified long oil alkyd with UV stabilizers produced by Amteco, Inc. and sold under the trade name TWP. This product had been tested and put in service by the National Park Service with very good results on redwood structures. Of particular interest was the fact that the product was found to oxidize and gradually break down within the wood substrate, increasing porosity and wettability as it degrades. This fact allows for future re-treatment without having to remove a cross-linked build-up of degraded coating.

THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

A Joint Conference of ICOM-DEMHIST and three ICOM-CC Working Groups: *Sculpture, Polychromy, & Architectural Decoration*; *Wood, Furniture, & Lacquer*; and *Textiles*

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The Gamble House: Conservation, Preservation, and Interpretation of a Historic House Collection

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Abstract

Architects Charles and Henry Greene designed the Gamble House in 1908 for David and Mary Gamble of the Procter & Gamble fortune. The family maintained the house and its architect designed furnishings until 1966, when they gave them to the City of Pasadena in a joint agreement with the University of Southern California. Public tours began that year. Only in 2004 was the first dedicated curator hired, bringing focused collections management and care to the site for the first time. Long-term preservation initiatives begun in the 1990s realized the restoration of the house exterior in 2003-2004. A Getty funded collections conservation survey followed in 2006, and in 2010-2013 a comprehensive collections conservation project funded by the Institute of Museum and Library Services. For the latter project, Griswold Conservation Associates have taken an innovative archaeological approach to the treatment of 267 objects in the collection with condition issues determined largely by context and use.

Keywords

Architecture, arts and crafts movement, decorative arts, Regalrez 1094, stereo-binocular microscopy

Introduction

The Gamble House in Pasadena was designed by architects Charles and Henry Greene, and built in 1908 as a winter residence for David and Mary Gamble of Cincinnati, Ohio. This 762 square meter building, now an architectural icon of the Arts and Crafts movement, remained in the Gamble family for over two generations, complete with its architect designed furnishings and fixtures. In 1966, the Gambles gave their home to the City of Pasadena in a joint agreement with the University of Southern California. Already considered a local landmark, it was designated a state landmark in 1974 and a National Historic Landmark in 1978. As of 2012, The Gamble House has been open to the public for 46 years, both house and furniture over a century old. Its mission is both to preserve the house and educate the public about the vital role of architecture within our nation's cultural history.

The Gamble House currently supports a staff of eight, including a Director, Curator, Archivist, Financial Officer, Operations Manager, Tour Coordinator, and Housekeeper. Until approximately seven years ago, the majority of the staff had offices within the house itself. When the house was opened to the public, two upstairs bedrooms were converted for use as office space, with one serving briefly as the home of the local chapter of the AIA. An HVAC system was also installed to offer a modicum of climate control to these office spaces and to the attic, which is often used for lectures and docent training classes.

Fig. 1. The Gamble House, looking west. © Alexander Vertikoff

The Gamble House has been open for tours since 1966, with an estimated 25,000 visitors per year for at least the last three decades. As revealed by recent archival findings related to the Gamble family's tenure in the house, they did their best to maintain it while living here – re-creosoting the exterior, then painting it, repainting the kitchen, cleaning screen frames, etc. In more recent years, there have been additional attempts at conservation: repainting the interiors in the 1970s; staving off dry rot in the rafter tails by the application of an epoxy compound in 1985; and replacing the roof membrane in 1987.

Preservation Initiative

Beginning in 1998, a new preservation initiative was launched with the establishment of the James N. Gamble Preservation Fund. The Getty Grant Program sponsored the production of a Historic Structure Report, which continues to serve to this day as a valuable reference for the history of the house's maintenance, as well as the condition of all architectural features of the exterior and interior of the house, along with recommended treatments. The report was completed in 2000, produced in conjunction with Historic Resources Group, now of Pasadena, and Griswold Conservation Associates, LLC, of Culver City [The Gamble House et al 2000].

In 2002, the Gamble House received an implementation grant from the Getty Trust, and along with this and other grants from Save America's Treasures, Proposition 12, and private donations, the exterior conservation of the house was undertaken over a nine month period between 2003 and 2004. This secured the house membrane, addressing downspout design failures, replacement of a failed roof application, and severe rot in nearly all of the 262 Douglas fir rafter tails and beam ends. Key to the success of the project was the great care

taken by project staff, which included preservation architect Peyton Hall of Historic Resources Group, project architect Kelly Sutherlin McLeod, and project conservator John Griswold. Their goal was to successfully conserve the house without it taking on the appearance of new construction, adopted from the Secretary of the Interior's Standards for the Treatment of Historic Properties [Weeks and Grimmer 1995] and from the Code of Ethics and Guidelines for Practice of the American Institute of for the Conservation of Historic and Artistic Works [AIC 1994].

In 2004, Anne Mallek was hired as the first dedicated curator of the Gamble House. Previously, the Director had undertaken curatorial duties, which necessarily limited the amount of attention or time that could be devoted to tracking and caring for the collections and house. Having secured the building envelope with the completion of the exterior conservation project in 2004, director, Edward Bosley, determined that the next priority should be the care of the decorative arts collections.

Fig. 2. First-floor hall of the Gamble House, with living-room entrance at left. ©Tim Street-Porter

Collection Care

After completing a computerized database of the collection (using Gallery Systems' EmbARK program), the Gamble House applied for and received a grant for a conservation survey of the collection from the Getty Trust. Completed by Griswold Conservation Associates (GCA) in 2006, this was the first comprehensive conservation survey ever undertaken of the Gamble House collection – a collection that includes not only

original Greene & Greene furnishings and light fixtures, but work by the likes of Rookwood and Weller potteries, Dirk van Erp, Frederick Leuders, Tiffany, Steuben, and Stickley.

For the Getty funded project, a new Filemaker Pro relational database was designed by GCA as a tool for describing the nature and condition of both selected interior architectural elements and features, and the collections. This database was set up to track information about routine household care, past treatments, treatment rationale and goals, recommended treatment steps, and a time and cost estimate for each assessed item. Assignment of a priority rating allowed strategic deployment of resources to accomplish treatment objectives over time. It also allowed crossover searches to identify analytical results common to architecture and furnishings, etc. The project included a limited analytical component, where original coatings and subsequent coating stratigraphy, including any additions, alterations and accumulations, were identified on samples collected from selected architectural elements and furnishings. [1]

Given the close similarity in fabrication and finishing methods and materials found between the house and related collection items, and also given the generally unaltered condition of these surfaces, a unifying philosophy for conservation treatment was established. GCA strived to design conservation treatments that were minimally invasive and highly reversible. This approach indefinitely deferred more intensive repairs, restoration or even eventual refinishing. Repairs and refreshment of furniture surfaces need not be robust, as these pieces are no longer subjected to daily use, and the interior environment of the house has been so substantially improved. Furthermore, with high confidence that the patterns of wear and patina of use seen on the collections bear witness to the daily life of the occupants, such a light touch is required to help preserve the primary historical evidence that the collections retain.

As of fall 2013, The Gamble House and GCA have completed a nearly three year collection conservation treatment project supported by the Institute of Museum and Library Services (IMLS). At project completion, 267 objects in the collection will have received treatment, complete with full visual and written documentation, all to be folded into the Gamble House collection database.

For the IMLS-funded treatment project, the conservation database developed for the Getty funded project was expanded to include detailed information about methods and materials used during treatment, additional observations made during treatment, and the results of any sampling and laboratory analysis performed. A full treatment report is generated within the database for each item treated, in adherence to the AIC Guidelines for Practice [AIC 1994]. Recommendations for ongoing monitoring and maintenance are also included as appropriate. The powerful search capabilities of such a database allows the generation of lists of items having similar issues or made of common materials, and the ability to sort search results to identify upcoming or remaining tasks.

Since the original furnishings remained largely in place, condition information could be directly related to the context of most pieces. For example, localized deterioration of finishes on wooden surfaces could be correlated to sunlight exposure from adjacent windows, and water damage to programmatic placement of flower arrangements, etc. Conservation treatments were designed to preserve this evidence of use and placement, while stabilizing the pieces and visually reintegrating the more distracting aspects of their appearance.

Several interesting challenges required a conservator's touch where routine household maintenance practices would normally simply dispose of the original material, to be replaced in kind. This would include replacing worn leather seat cushions or replacing the rush on a chair seat or back. At The Gamble House, an almost 'archaeological' approach was invoked, where heavily damaged and degraded leather or fibers were stabilized, and damaged or blemished areas were visually reintegrated with reversible means commonly

reserved for delicate ethnographic basketry and hide artifacts in museum collections. In so doing, patterns of wear and use became more legible, interpreted more readily as an aesthetically acceptable and authentic patina of age.

One particularly successful example of this approach was the treatment of the rush fiber seats on two side chairs, one designed by Gustav Stickley, the other by the Greenes. The twisted plant fiber material was particularly degraded, actively shedding fibers and segments of cordage. Initial experiments showed that replica segments of missing cane could be fabricated to match the existing material, and these segments could be painstakingly inserted and connected to the frayed ends of the original cane using bridges of Japanese tissue fibers. Initial treatment revealed further intricacies of the patterning. Right and left hand twists existed on the cane cords on opposite sides of each of the four quadrants of the seats, while the replacement caning only came in a clockwise twist. Select cane segments were masked with ultra thin Japanese tissue to simulate an opposite twist matching the original. Detailed inpainting methods were developed to mimic the wide range of 'patina' and wear found on the seats. This approach permitted the retention of virtually all of the remaining original workmanship, along with physical evidence of household use. For example, what appears to be an India-ink stain on the Stickley side chair remains intact on the seat. Such an 'archaeological' detail would surely had been lost if a more traditional approach to re-caning had been taken.

Fig. 3. Rush seat, detail, before treatment. ©John Griswold, Griswold Conservation Associates, LLC

Fig. 4. Rush seat, detail, after treatment. ©John Griswold, Griswold Conservation Associates, LLC

Some damage was known to have already existed when a particular object was in use. In such cases, consultation between the curator and conservator helped determine the most appropriate goals for conservation treatment. For example, one of the beautifully detailed doors on an exquisite letterbox likely became warped due to previous exposure to the winter and summer conditions in a home in Buffalo, New York (the letterbox re-entered the Gamble House collection through a family member's bequest in 2002). The composite nature of the box, made of different hardwoods, fruitwoods, and exotic materials such as mother of pearl, intimately layered and inlaid, made it especially vulnerable to deformation because of these materials' different dimensional responses to moisture and heat. Gradual reshaping was achieved by carefully establishing the different solubilities of the surface coatings, and subjecting the warped door panel to an alcohol vapor-rich atmosphere, gradually increasing pressure in a specially constructed sandwich-like jig of perforated Plexiglas sheets by tightening a series of miniature bar clamps. The door's deflection was mitigated by approximately 50%. This correction allowed the door to remain closed without springing back open, while still retaining part of the history inherent in the change, much to the delight of the docents who highlight the object during their tours.

Fig. 5. Letterbox, before treatment to correct warped door at right of image. ©John Griswold, Griswold Conservation Associates, LLC

Fig. 6. Letterbox, after treatment, retaining some warping but improved. ©John Griswold, Griswold Conservation Associates, LLC

Light levels have traditionally been low inside the Gamble House, and this is maintained both for the preservation of the contents and for the authentic ambience. These conditions, achievable in the temperate climate of Pasadena in southern California, further reinforce the possibility of a minimally invasive approach to conservation intervention. However, certain furniture items bear the mark of a century of sunlight exposure because of their proximity to a window. This was the case with the settee in the living room. The delicate, translucent finish had faded and oxidized on the back, while contiguous areas of the woodwork remained in excellent condition. Finding a reversible method of applying a subtle gradation of translucent color, feathered into the 'good' areas, required many tests. There were also several disfiguring gouges and one area with a 'halo' of rubbed finish around a blemish, also requiring visual reintegration. The key to the process was finding an isolating resin that could be applied to the wood without overly saturating the existing finish, and that would serve as a readily reversible barrier between the original finish and the subsequent color layers. Solubility testing of the surface finish in a range of organic solvents showed that an applied coating could be delivered, and later reversed, in petroleum ether. This hydrocarbon solvent evaporates quickly, minimizing the 'dwell time' where the solvent would be in contact with the wood. After testing several, RegalRez 1094, a low molecular weight resin, was found to have the desired application properties, plus long-term stability and solubility in the required solvent. [Piena 2001] Once protected, the damaged areas on the back of the settee were gradually reintegrated with dilute acrylic emulsion colors applied with a technical airbrush. Further testing yielded ways to adjust the gloss to blend successfully with the surrounding original surface.

Fig. 7. The settee in the living room, with author. After conservation treatment. ©John Griswold, Griswold Conservation Associates, LLC

The collections conservation project required close examination of the condition of some of the coated metal artifacts in the house. These appeared to have a grimy, darkened coating layer obscuring an intact, golden lacquered surface. In fact, the darkening and opacity were caused by preferential corrosion processes occurring in areas where a translucent, tinted lacquer had been lost due to a combination of gradual deterioration and years of conscientious housekeeping attempts to remove the darkened areas with more polishing. Stereo-binocular microscopy showed that the presumed dark grimy accretions on a fireplace screen were actually copper corrosion products emerging through losses in the lacquer coating. Attempts to remove all of the corrosion in search of an intact, smooth surface would certainly have resulted in a mottled surface, temporarily refreshed but subject to rapid re-darkening, pitting and more build-up of corrosion minerals. GCA developed an approach to reduce the corrosion with a mild organic acid, burnish it slightly to make the porous mineral build up less absorbent, and to apply layers of pigmented microcrystalline wax and synthetic resin coatings [2] that would help protect the remaining lacquered areas while visually integrating the corroded zones.

The kitchen worktable presented a cleaning challenge. The delicate, transparent finish on the blond-colored maple had been compromised by years of use, even beyond the period of historical occupancy when students and others used the kitchen. Very tenacious, greasy and encrusted deposits were found to be residue from food preparation. Careful, gradual removal with scalpels, followed by dissolving the deposits with an ammonia solution, allowed the underlying finish to be saved. The tabletop had also been recoated over the years with wax and possibly a clear varnish, which, once removed, yielded a nicely worn, honest work surface bearing knife marks and other signs of an active kitchen. The cleaned top took a protective wax coating nicely. Also noteworthy was the discovery of generations of tack holes left from multiple campaigns to affix a covering to the tabletop, possibly oilcloth.

The problem of how to treat damaged and deteriorated leather upholstery on various armchairs and side chairs was also addressed. The goal was to retain as much of the original surface as possible, focusing only on the areas where repeated contact and flexure had led to flaking, rot and loss of the outermost grain/finish layer. Reversible means of stabilization and visual reintegration were needed. Finding a consolidant that did not darken the leather or disturb the finish layers, and that did not introduce excess moisture took some experimentation. GCA ultimately chose an ethylcellulose (EHEC) as the consolidant because of its compatibility with the collagen structure of the leather, its inherent flexibility, and its long-term solubility in alcohol, a solvent that was least aggressive to the original surfaces. The EHEC also acted as an isolating barrier to ensure the reversibility of local inpainting and toning measures such as watercolor stippling. The EHEC system was then protected with neutral pH, microcrystalline wax, resulting in more stable, protected, and less visually distracting areas of deterioration. Losses in the grain layer were compensated by adhering shaped pieces of Japanese Gampi tissue, pre-coated with Paraloid B72 resin dissolved in a mixture of acetone and alcohol. Dampening the tissue with alcohol reactivated the coating enough to ensure good adhesion without introducing excess solvent into the leather. The new tissue ‘skin’ was then inpainted with watercolors and fine brushes to closely match the surrounding surface.

While some of the most dramatically damaged areas of original wood finish were addressed during the first year of the project, as in the case of the living-room settee, other minimally invasive, reversible treatments of damaged wood finishes continued to be developed. There were many instances of water related blanching of resin and shellac based finishes, along with sun damaged areas. It had become clear that some surfaces had been maintained over the years with waxes and polishes, and reducing these deposits was necessary to help eliminate oxidized accretions and soiling residues embedded in the grain texture. With the use of pure, pH stable microcrystalline wax as an initial isolating and saturating barrier layer, further aesthetic adjustments could be made by applying traditional tinted waxes, thus reducing the need for tedious and potentially

intractable tinting of abrasions, scratches and other flaws with watercolor and fine brushes. This method also establishes the basis for a simple and straightforward maintenance process, and affords an increased measure of protection against accidental spillage of water from the placement of ikebana flower arrangements.

As the project progressed, close examination of objects in the conservation lab revealed issues not previously or sufficiently assessed during the condition survey process. Where possible, additional hours were contributed toward a satisfactory treatment, while in some cases recommendations were made for a future phase of the ongoing conservation plan, with careful monitoring prescribed in the meantime. Oil paintings and textiles called out for specialized treatments are currently in the care of private conservators Gary Hulbert and Ann Svensen, and their treatment reports will be incorporated into the artifact files as well as the databases. The IMLS-funded conservation campaign yielded critically important baseline condition and treatment information that remains in the conservation specific Filemaker Pro database, facilitating future monitoring and maintenance tracking by conservators. The data has also been exported into the curator's EmbARK collection management database, where historical research, inventory, location tracking, loan history, etc. can be integrated with the conservation information.

Fig. 8. The Gamble House, looking southeast. © Alexander Vertikoff

Conclusion

Throughout the IMLS project, The Gamble House has maintained a commitment to providing information to its staff, visitors, volunteers, as well as to its members, through training sessions, newsletter updates, and bulletin board postings. This has helped to ensure that everyone in intimate contact with the house and collections can participate in their preventive care. Without such support this project would not have been as

successful.

The exterior restoration and collections conservation project have been strategic steps in the overall conservation plan for the Gamble House, in addition to other practical measures such as the addition of blinds and UV filters on windows. The collection's environment overall is more stable and better monitored than it was 10 years ago. The treatment program outlined in this paper provides the Gamble House with an important baseline of condition for more accurately monitoring any changes in future. Further stabilizing the objects will help to ensure its ongoing ability to share them with the public as supreme examples of the Arts and Crafts design as executed by architects Charles and Henry Greene and their craftsmen.

Acknowledgments:

The authors and The Gamble House would like to thank the Institute of Museum and Library Services, The Windgate Charitable Foundation, and The Getty Foundation, for their generous support of the conservation projects discussed in this paper. Special thanks also go to all staff at Griswold Conservation Associates and The Gamble House for their dedication, support, and patience.

Endnotes

[1] Analytical investigations carried out by GCA, with the help of Orion Analytical, LLC (James Martin), underscored the rarity and delicacy of what were found to be largely original finishes that had escaped damage from aggressive maintenance.

[2] Paraloid B-48N. The Dow Chemical Company. Paraloid B-72. Rohm and Haas, a division of The Dow Chemical Company.

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AIC Code of Ethics and Guidelines for Practice 1994, http://www.conservation-us.org/index.cfm?fuseaction=page.viewPage&pageID=858&nodeID=1 (2012).

Materials:

Description: Ammonium Hydroxide

Company Information: Doe & Ingalls of North Carolina Inc., 2520 Meridian Parkway, Suite 500, Durham, NC 27713. T: +1 (919) 598-1986. E: DINCinfo@doeingalls.com. W: http://www.doeingalls.com

Description: Ethulose (EHEC)

Company Information: Akzo Nobel Chemicals, 12900 Bay Park Road, Pasadena 77507-1104. T: +1 (281) 291 2500. E: info@akzonobel.com, W: http://www.akzonobel.com/surface

Description: Paraloid B-48N

Company Information: The Dow Chemical Company, 1776 1 St. NW # 1050, Washington DC 20006. T: +1 (202) 429-3400, W: http://www.dow.com/products/market/construction/product-line/paraloid-b/product/paraloid-b-48n-100

Description: Paraloid B72

Company Information: Rohm and Haas Company, 100 Independence Mall West, Philadelphia, PA 19106-2399. T: +1 (215) 592-3000, http://www.rohmhaas.com/history/index.html

Description: Japanese tissue

Company Information: Hiromi Paper, Inc., Bergamot Station, 2525 Michigan Avenue, G-9, Santa Monica, CA 90404. T: +1 (310) 998-0098. E: washi@hiromipaper.com, W: http://store.hiromipaper.com

Description: Petroleum Ether

Company Information: Hi-Valley Chemical, P.O. Box 69, Centerville, UT 84014. T: +1 (801) 295-9591. E: sales@hvchemical.com, W: http://www.hvchemical.com

Description: Regalrez 1094

Company Information: Eastman Chemical Company, 200 South Wilcox Dr., Kingsport, TN 37660-5280. T: +1 (423) 229-2000, W: http://www.eastman.com/Pages/Home.aspx

Description: Renaissance Micro-Crystalline Wax

Company Information: Picreator Enterprises Ltd., 44 Park View Gardens, London NW4 2PN, United Kingdom. T: +44 (0)208 202 8972. E: info@picreator.co.uk, W: http://www.picreator.co.uk

THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

A Joint Conference of ICOM-DEMHIST and three ICOM-CC Working Groups: *Sculpture, Polychromy, & Architectural Decoration*; *Wood, Furniture, & Lacquer*; and *Textiles*

The Getty Research Institute, Los Angeles, November 6-9, 2012

Abstract

The Japanese House, originally assembled in Southern California in 1903, was moved to its current location in 1911 and is the centerpiece of the Japanese Garden at the Huntington Library, Art Collections, and Botanical Gardens. The Japanese House is the only existing example of an early twentieth century Japanese building that reflects the need and acceptance of the general public, for Japanese architecture and design, in Southern California during this era. As a result of an in-depth scientific/technical and philosophical evaluation of this resource, with its multi-cultural influences, the Japanese House is now based in a more fully realized historic context, offering the public an even richer educational experience. An evolutionary process of preservation planning was followed by implementation of treatments and ongoing maintenance tailored for programmatic needs. The notion of "authenticity" remained central, while weighing concerns of historic fabric, integrity, and significance. Customized treatments, based in art conservation principles and architectural preservation, addressed Japanese style plaster, traditional carpentry and architectural ornamentation. This fusion of strict conservation and practical guidelines clearly defined the intent of the project through all phases.

Peeling Away the Layers: The Huntington's Japanese House Tells Its Story

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Introduction

The Huntington Library, Art Collections, and Botanical Gardens was established in 1919 when magnate Henry Huntington left his 207 acre ranch in San Marino, California, to a nonprofit educational trust. Huntington erected the Japanese House and Garden on his property in 1912. Opened to the public in 1928, the institution now welcomes more than 600,000 visitors per year, with the Japanese House and Garden as one of its most popular attractions. (Figure 1)

Atop a knoll overlooking the celebrated pond, the Japanese House is the centerpiece of The Huntington's Japanese Garden. Traditional sliding screens are retracted daily to open the house for public viewing to display Japanese artifacts in a traditional domestic context; the house itself is recognized as one of the most valuable parts of The Huntington's collection.

An evolutionary process of preservation planning led to implementation of treatments tailored for the house to continue serving The Huntington's programmatic needs. As a result of in-depth technical and philosophical evaluation of this resource, with its multifaceted history and multicultural influences, the Japanese House is now clearly understood in a more fully realized historical and cultural context, offering the public an even richer educational experience.

Keywords

Japanese House, Huntington, restoration, architectural conservation, historic preservation, plaster, wood

Fig. 1. The Japanese House at the Huntington's Japanese Garden, 2012. © johnellisphoto.com

In 2009, Jim Folsom, director of The Huntington Botanical Gardens, provided the vision and leadership necessary to successfully execute The Huntington's investment in the overall restoration of the historic Japanese Garden in preparation for its centennial anniversary. Landscape architects Takeo and Keiji Uesugi of Takeo Uesugi Associates, Inc. were hired for design of the landscape work. Kelly Sutherlin McLeod Architecture, Inc. (project architect) and Griswold Conservation Associates, LLC (principal conservator) worked closely with The Huntington to develop a customized work scope, based on conservation principles, to preserve the Japanese House.

Archival documents and research performed by scholar Kendall Brown record that a substantial portion of the Japanese House was imported from Japan in 1903 by George Turner Marsh, a dealer in Japanese fine art. The house was assembled in Pasadena as a feature in

the G.T. Marsh & Co.'s Japanese Tea Garden, an emporium for imported Japanese goods. (Figure 2) In 1911 Henry Huntington purchased the house and had it, along with most of the mature plant material and statuary from Marsh's garden, disassembled and relocated to his San Marino property.

Fig. 2. The Japanese House in its original location at the Marsh Gardens, 1904. Courtesy of The Archives at The Pasadena Museum of History

Following the death of Henry Huntington in 1927, the estate was opened to the public. It is not known for certain how the house was initially presented to visitors of the Japanese Garden. The house interiors were not on view to visitors during the 1950s when a local women's group approached The Huntington and requested stewardship of the House for their ikebana studies. Limited documentation from this time reports a 'redesign' and 'restoration' without further specifics, documented with only a few photos.

After decades of limited resources for reactionary repairs of damage due to water infiltration, exposure, use, and age, the Japanese House required a comprehensive preservation and maintenance program. (Figure 3) The historical integrity of the house, whether existing conditions were original or altered, was not readily apparent. As a first step in establishing the structure's historic significance, the project team searched for specific information about the Japanese House; however, the absence of original plans, building specifications, and alteration histories presented basic questions that needed to be answered: How closely did today's building resemble the original house that G.T. Marsh commissioned for his Japanese Tea Garden in 1903? How closely did today's building resemble the house Henry Huntington had re-assembled at his ranch in 1912? Had repairs and modifications diminished the building's character and integrity? Which era in the house's long history rose to the level of 'historic significance', in accordance with national, state, and local designation criteria?

Fig. 3. Deterioration at the roof gable, ca. 2010. Courtesy of The Huntington Library, San Marino, California

Project Planning

During initial project phases, the property's significance, existing conditions, and future use, as well as long term maintenance needs, were discussed. The merits of conserving all physical evidence of the original construction of the House, along with traces recording early modifications (in accordance with Western preservation ethics [1]) were weighed along with the client's inquiries about enhancing the building's 'authenticity' by commissioning replacement features from Japan or from artisans skilled in the techniques of traditional Japanese construction. From the preservationist's perspective, historical context and significance are key. The Japanese House reflects a hybrid of American and Japanese architecture, and thus, it was decided to follow standard American preservation practices. The 100 year old Japanese House was determined to be relatively unaltered since it was reassembled at The Huntington site.

The preservation plan considered the ongoing use of the house, balancing concerns of team members and the needs of the institution. In addition to maintaining the historic integrity of the house, preservation treatments addressed practical maintenance strategies to prevent ongoing care from exceeding usefulness. The Japanese House will remain an unoccupied, open-air garden pavilion for public enjoyment and education, and its daily function and exposure were factored into the plan. All preservation treatments were accompanied with guidelines for future maintenance—short, mid, and long term—as well as training for staff members responsible for care of the house.

A property's most historically noteworthy period, known as its 'period of significance,' provides the lens through which to identify features, materials, and finishes that reflect and convey its historic significance. Research pointed to a 16 year period of significance for the Japanese House: from 1911, when Henry Huntington purchased and transferred the house to his ranch, until his death in 1927. This period represents Huntington's vision of the Japanese House in the context of his Japanese Garden. This decision helped to focus the restoration plan not only on physical features dating from this period but also on the historic

relationship of the building to its landscape setting.

Authenticity remained central to preservation of the house that, from the beginning, was a cultural hybrid. One key influence was an article by the Japanese architectural historian Atsuko Tanaka et al. [Tanaka et al. 2006] This comparative study identifies The Huntington's Japanese House as a significant example of early twentieth century Japanese architecture in the United States. Published in Japan, the article surveys three Japanese houses built at the turn of the twentieth century to 'consider the characteristics, differences and reception of Japanese architecture built in the United States.' [Tanaka et al. 2006] Among the three examples, The Huntington's Japanese House was considered 'more authentic' in its connection with the surrounding gardens. Ms. Tanaka explained in an e-mail to the authors on July 25, 2011 the significance of the Japanese House: '[The house] is important because it kept the original form built and reassembled by local Japanese-American carpenters, and because it is the only existing example of [a] Japanese structure that reflected the need and acceptance of the general public [for Japanese architecture and design] in Southern California during that era.' [Tanaka, 2011] Ms. Tanaka provided a much-needed context as the issue of 'authenticity' was weighed against concerns of historic materials, integrity, and significance. Yet, the building itself proved to be the best source of information and details about its original form, which continued to be discovered through the final phases of the project.

Peeling the Layers

Gradual discovery and response is common in architectural preservation and each project presents unique issues. The team conducted noninvasive testing and exploration of finishes, materials, and building systems in order to identify significant features, to evaluate existing conditions, and to plan for repair and restoration. Historic buildings and sites have stories to tell, and these stories often reside in the intimate details of preservation work.

The Japanese House itself clarified the issue of period and regional style. Detailed site inspections with Japanese consultants confirmed that materials, design elements, and construction techniques used at the house were of Japanese origin, as claimed in early 1900 marketing materials for Marsh's Japanese Tea Garden. Reportedly shipped from Yokohama, the house exhibits a mixture of *shoin* (formal) and *sukiya* (natural) styles. Designed to display Japanese art objects, it was intended primarily as an art object itself rather than a residence. The dimensions (sized for *tatami* mat format) and the sequencing of rooms reflect traditional Japanese ideas about space and function in domestic architecture. Japanese consultants clarified the significance of the primary interior spaces and advised on the appropriate placement and positioning of furnishings and decorative elements from The Huntington's collection.

While little is known about the Japanese carpenters who constructed the house in 1903, archival records credit the disassembly and reassembly of the Japanese House in 1911 to Tôichirô Kawai, a local Japanese carpenter with a specialty in shipbuilding who was hired to carry out this work for Henry Huntington. Evidence of handiwork by Japanese carpenters is apparent in the many Japanese characters (*kanji*) painted on wood framing members throughout the house. (Figure 4) These characters reflect the traditional Japanese method for specifying locations of each piece of wood, providing instructions for reassembly. Historic documents report that Kawai made notations on the house before it was disassembled for relocation to The Huntington ranch. It has not been determined if multiple generations of the markings have been made on the structure. The Japanese characters are an older form of *kanji*, so it is possible that at least some of the markings were made before the house arrived in California.

American preservation guidelines for treatment of historic resources offer options based on the level of

significance and nature of the project. Of these options, 'restoration' was selected as the optimum treatment for the Japanese House. Nearly all exterior building features and materials, as well as those in the interior and visible from the garden, were determined to contribute to the building's historic significance. The preservation plan maintained significant features by honoring the original design, restoring building elements and finishes along with missing or altered defining features wherever possible, allowing the Japanese House to reflect the cultural and historical narrative that Henry Huntington displayed to visitors, while contributing to the educational programs and mission of the current institution.

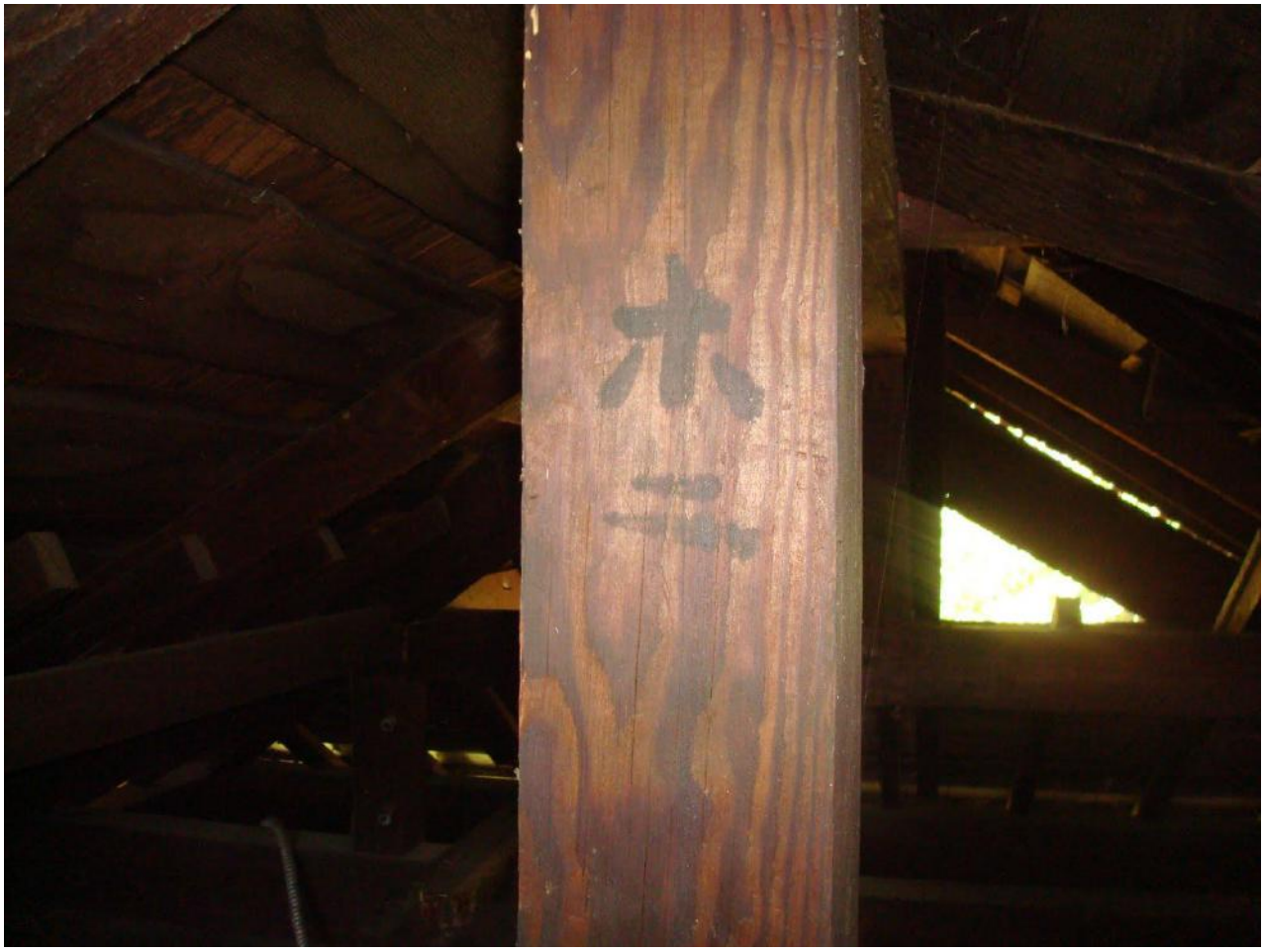

Fig. 4. Japanese characters (kanji) painted on wood framing. Courtesy of The Huntington Library, San Marino, California

Structural strengthening and life safety improvements were installed in concealed areas. The preservation strategy included all of the existing original structure—both seen and unseen. The framing, finishes, and kanji markings are among the historic elements not visible to the visitor but meticulously documented and preserved.

Surrounding Garden and Pond

The historic setting and context represent important features of both the Japanese House and Garden, and thus views to and from the house remained strong considerations for preservation planning. As with the building, planning for treatments to the garden and pond focused on mediating between American preservation tendencies (in which features dating from the period of significance are to be retained) and Japanese landscape

aesthetics (in which original features not in keeping with an 'authentic' Japanese garden might be replaced).

Restoration

Correspondence between Henry Huntington and his property superintendent, William Hertrich, documents that the exterior wood of the Japanese House originally had a stain finish. Isolated areas of wood, found to be stained with a rich brown color, further confirmed this claim. In subsequent years, multiple layers of flat brown paint had been applied to nearly all of the house's exterior wood.

The non-original flat paint was removed from all exterior wood features, including exposed rafter tails and decorative wood elements at the entry. This delicate process eliminated non-original paint and protected the wood from damage while ensuring that original finishes were retained. A penetrating sealer was then applied, providing the appearance of an appropriately aged finish. Decay at rafter tails was repaired while maintaining as much original material as possible.

Removal of paint from wood panels located at the exterior of the house revealed an early twentieth century three-ply laminated wood material, with a highly figured grain pattern, believed to have been deliberately selected for its resemblance to *sugi* wood, also known as Japanese cedar.

A non-original black paint was found on the floorboards of the veranda, which wraps the south and east sides of the house. Close study revealed a heavy-bodied, Asian-style lacquer with a rich brown color beneath the modern black enamel. In order to provide a practical treatment and prepare the veranda for continued exposure, only the black paint was removed and the veranda boards then treated with brown stain (to match remaining remnants of the lacquer), sealer, and wax.

A combination of material testing, archival documentation, and conversations with Huntington staff about ongoing maintenance, factored into the crafting of a treatment approach for the exterior plaster. Ultimately, the treatment selected restored the overall appearance of the plaster to the period of significance while providing a durable, cost-effective, and easy-to-maintain exterior finish. In a November 1911 letter to Henry Huntington, Hertrich described the original exterior finish as a 'very fine Japanese plaster,' further explaining that '[t]he whole House [had] to be plastered over.' [Hertrich 1911] In 2010 the existing exterior plaster was found to be a patchwork of various colors and differing finishes. In addition to recently applied contemporary cementitious sand-float plaster, an epoxy-like coating had also been applied to most of the exterior plaster surfaces. This coating had spalled in many areas, exposing underlying layers of early plaster. Conservator John Griswold examined the underlying material and found it to be made with a high percentage of porous organic material, more consistent with traditional Japanese plaster than with sand-lime or cement-based plaster typical of Western construction. [2] Application of the contemporary nonporous coatings inadvertently trapped moisture in the original plaster, causing deterioration that undermined the stability of the plaster and led to the decision to remove and replace nearly all of it.

Investigations of the coating's stratigraphy revealed an original Huntington-era smooth finish, dark charcoal gray in color, applied to most exterior plaster surfaces, and this scheme became the aesthetic target for treatment. (Figure 5) Finishing coats of naturally hydrated lime plaster and lime paint were applied over a modern reinforced cement-based plaster – reversing the order of permeable and impermeable layers, as the conservators found them. This approach maintained the equilibrium of the interior environment while eliminating the risk of trapping moisture within the wall structure. The lime mixture provides a sensual, soft texture, which emulates the organic quality of the original finish, while also being a practical material that is

simple and cost-effective to repair and maintain.

In the few areas where dark plaster dating back to Henry Huntington's period had not been recoated, they were left intact and protected as accessible archival artifacts. Similarly, and in keeping with the overall preservation strategy, a reversible treatment of lime paint was used at panels adjacent to the entry door to protect the existing plaster, which was found to have an even more complex composition than that from other areas of the house. Samples contained only beige-colored finish layers without any traces of the dark finish layer found elsewhere. This led to a tentative working theory that original Marsh-era plaster may have been retained at the entry and relocated to The Huntington ranch intact. [3]

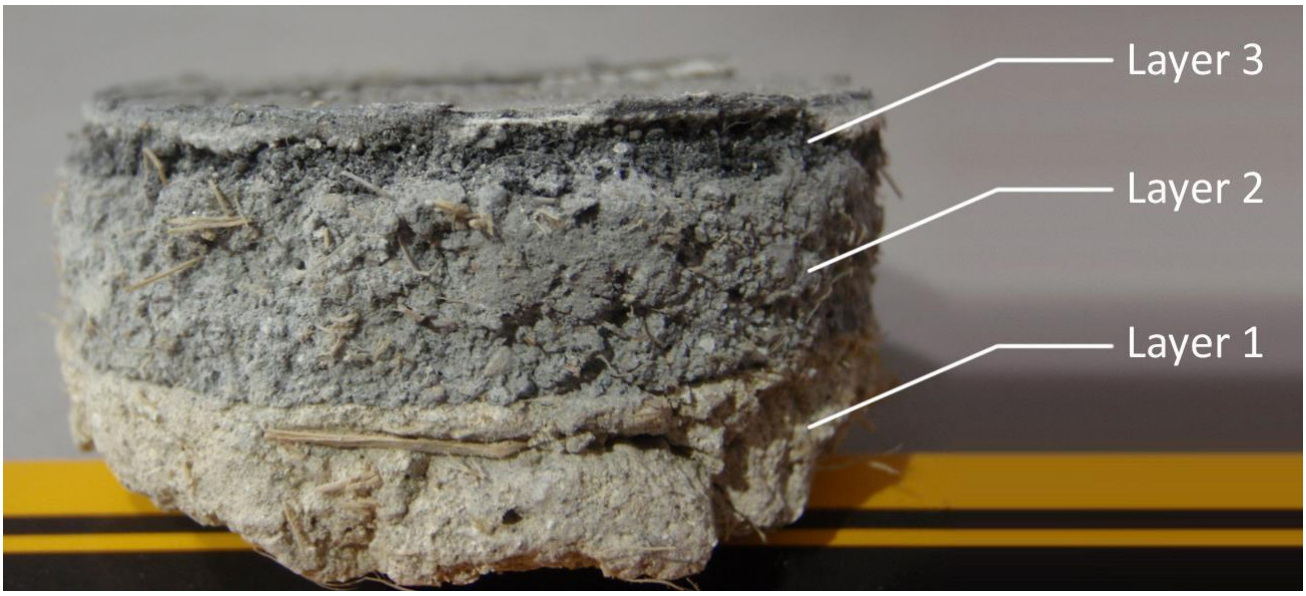

Fig. 4. Cross section of existing plaster, ca. 2010. ©Griswold Conservation Associates, LLC

One of the most prominent features of the Japanese House is its distinctive hip-and-gable roof. The non-original wood shingles found on the house were installed four decades ago and were visibly worn and in disrepair. Given the importance of the roof in the overall design of the house, the treatment objective was to represent as closely as possible the original roof in material, shape, texture, and pattern. The roof's complexity required team members to apply skills in unconventional ways in order to reproduce the original design while meeting contemporary needs and objectives.

Early photos show that the original wood roof shingles were relatively thick and unlike the thinner profile used in Japanese construction. The original shingles recorded in archival photos appear to have been installed in tight courses giving the roof a distinctive look. Fortunately, domestic cedar shingles, recut and resurfaced, met the specifications for thickness, smooth texture, and clean edges seen in the historical images. They also offered affordability, fire resistance, and a reasonable life expectancy. Precisely shaped shingles were installed to re-create the building's challenging compound curves at the roof hips and eaves. The curved, flared-gable portico over the entry, the focal point of the main façade, was one of the most complicated areas of the roof to reconstruct. Numerous shingle mock-ups were closely scrutinized to replicate the original appearance of this important feature.

It is nearly impossible to know the conditions and history of an existing building unless layers are peeled away. The calculated removal process of the house's roof materials revealed severe deterioration in some

areas and a history of repairs including replaced elements and modified configurations of the roof's ridge boxes and gable vents—important character-defining features of the house. The complex layering between decorative and very delicate wood medallions, lattice screens, bargeboards, and roof framing required careful coordination as the original materials and features were treated and missing elements restored.

Fig. 6. Ceramic roof finials prior to restoration, ca. 2010. Courtesy of The Huntington Library, San Marino, California.

Four ceramic finials in the shape of a dog that once adorned the ends of the roof ridges had been vandalized years ago, but fortunately fragments from two of the finials had been recovered and stored. (Figure 6) Restoration-grade mortar was used to replicate the missing ceramic portions of the finials. These restored finials were used to make molds for concrete replicas of the two missing ones. All four finials, slipped over wood mounts and secured to the roof ridge boxes, crown the roof once again. (Figure 7)

The exterior sliding wood storm doors surrounding the perimeter of the house, which protect the paper shoji screens, had suffered considerable damage due to exposure and daily opening to allow interior spaces to be seen from the garden. The original second-floor redwood plank sliding storm doors were restored. First-floor sliding doors were reconstructed, as the existing non-original doors deviated from the sophisticated joinery, design, and materials of the original doors. Intricately crafted Japanese metal hardware, specifically designed for the sliding doors, was restored.

This fusion of conservation and practical construction approaches depended on the collaboration of a multi-disciplined project team. The conservator bridged the gap between the initial assessment and the

implementation phases of the project; once conservation strategies were developed, the conservator took on a new role, working alongside the construction team and contributing hands-on expertise. The project architect balanced concerns of conservation and engineering team members, the contractor, artisan tradespeople, and the client. The teamwork attitude was pervasive among all who participated in the project, and the strong foundation of strict conservation and preservation guidelines clearly defined the intent of the project through all phases.

Fig. 7. Restored roof, gable vent, carved wood medallion, ridge box, and roof finial, 2012. ©Griswold Conservation Associates, LLC

Prior to the start of this project, the historical integrity of the house was obscured; once identified by the project team, it was found relatively unaltered and constructed with traditional Japanese-style plaster, carpentry, building configuration, and architectural ornamentation.

Budget constraints precluded the building's interior from being addressed in this phase; however, the team looks forward to continuing a comprehensive rehabilitation of the interior, conserving original materials and restoring missing elements to complete the project. While interior documentation from the Henry Huntington era is scarce, the Marsh-era photos show period appropriate interior Japanese decor popular during the early twentieth century—'[an] elegantly designed space in the somewhat florid style of the Meiji period (1868–1912)' [Brown In press]—including some artifacts that remain in storage at The Huntington.

Conclusion

After 100 years in the setting of The Huntington Gardens, the Japanese House has attained significance not as an architectural import but as an important historic resource with a unique cultural story to tell about the adaptation of Japanese culture in Southern California. (Figure 8) The subtle process of conservation, architectural and scholarly research, discovery, and response revealed a cross-cultural masterwork. One of the

challenges of this project was to apply best practices in American preservation to a building that reflects many aesthetic traditions and building techniques of another culture.

Fig. 8. The Japanese House, 2012. © johnellisphoto.com

The balanced process developed for this restoration revealed the Japanese House's true significance, providing an insight potentially applicable to other historic Japanese structures in North America. The Huntington's Japanese House and Garden is a living connection with the yearning for Japanese gardens and architecture that existed in the United States during the early 1900s. Still standing today in its original form, as built and reassembled by local Japanese-American carpenters, the Japanese House is the only extant building in Southern California that conveys the widespread admiration for Japanese architecture and culture in the early twentieth century, and one of four from this era remaining in the United States.

Endnotes

1. As embodied in the US in the Code of Ethics and Guidelines for Practice of the American Institute for the Conservation of Historic and Artistic Works (AIC), and the Secretary of the Interior's Standards for the Treatment of Historic Properties, National Park Service, Department of the Interior.

2. Visible light and UV fluorescence microscopy were used to examine cross sections of samples of scratch, brown and finish coats, as well as individual components separated in sediment settling tests. These were documented in an

unpublished report submitted by Griswold Conservation Associates, LLC via CK Arts, Inc.

3. In the black-and-white Marsh-era photos, the exterior plaster of the house appears to be one consistent color and lighter than The Huntington-era plaster.

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The Getty Research Institute, Los Angeles, November 6-9, 2012

Building an Effective Decision-making Model for Conservation of the Acton Collection, Villa La Pietra, New York University in Florence

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Abstract

The Acton Collection, located in Villa La Pietra in Florence, Italy, embodies the collecting life of Hortense and Arthur Acton, an Anglo-American family that settled in Florence in 1903. Bequeathed to New York University in 1994, the custodians of the collection wrote a conservation statement in 2008 in order to guide its preservation according to the family's aesthetic. The multi-disciplinary approach to the conservation of the collection, along with its status as national patrimony of Italy, has necessitated close collaboration between American and Italian conservators, the university, and the Italian government. Three case studies—the treatment of textile wall hangings, renaissance tapestries, and an eighteenth century frescoed room—illustrate the development of the conservation statement over time and in different contexts.

Keywords

Italy, twentieth century, multidisciplinary conservation, authenticity

Introduction

Villa La Pietra is situated in the hills above Florence, approximately two kilometers north of the old city gate of San Gallo in Piazza della Libertà. Since 1994 the Villa, along with 23 hectares of olive groves and formal gardens, has belonged to New York University (NYU). A gift from Sir Harold Acton (1904-1994), this property serves as the university's Florence campus (Figure 1).

Fig. 1. Exterior of VLP façade. © New York University, Acton Collection, Villa La Pietra, Florence

Villa La Pietra houses the Acton Collection, which

comprises over 5500 objects, including artifacts of a twentieth century household as well as an art collection with a wide range of media and dates. It was the wish of Harold and of his mother, Hortense Mitchell Acton (1871-1962), that Villa La Pietra serve to support academic activities. The choice of an American university to implement their vision carries on the expatriate spirit that began with the family's purchase of the property in 1908, and the site benefits from the continuous interest of the Anglo-American world in the city of Florence, its history, and its beauty [Baldry 2009]. From the outset, the administration of NYU Florence has collaborated closely with NYU's Conservation Center of the Institute of Fine Arts on the conservation of the Villa and its collection [1].

Hortense was the daughter of a Chicago banker, William Mitchell. She married Arthur Acton (1873-1953) in London in 1903 and they moved into Villa La Pietra the same year. Built in the 1460s by Francesco Sassetti (1421-1490), a banking advisor to Lorenzo de' Medici, Villa La Pietra was purchased by the Capponi family in 1545. The structure today retains its Italian Renaissance design with seventeenth, eighteenth, and nineteenth century alterations to the façade and the interior courtyard. During the nineteenth century, the original, open, rectangular cortile was enclosed and an elliptical staircase leading to the second floor was built.

The Acton's two sons, Harold and William (1906-1945), were born at La Pietra. Harold studied at Oxford in the 1920s and taught in Beijing in the early 1930s, returning to the house after the Second World War. As the last remaining family member (William was a casualty of the war), it was Harold who lived in Villa La Pietra for the longest time, but the display rooms—around 40 interiors on the first and second floors of the house—were little changed after the parents' lifetimes. Historical photographs from the Acton Photograph Archive document in rich detail the decoration of the Villa including the various arrangements and rearrangements of the interiors throughout the first three decades of the Actons' residence. Their decoration reached a relatively final state in the 1930's, the decade in which they completed the renovation of the formal gardens.

Along with the wish to establish an academic purpose for the Villa, Harold was also concerned about the long-term preservation of the collection. In 1986, he listed it with the Ministero per i Beni e le Attività Culturali (Ministry of Cultural Heritage and Activities), the state entity responsible for protecting Italian cultural heritage. This mandate, or *vincolo*, means that NYU is obligated to maintain the physical integrity of the objects and their arrangement in the rooms.

Shortly after the bequest, in 1995, Margaret Holben Ellis, then chair of the Conservation Center, visited to gain a sense of the scope of the preservation/conservation needs of the collection. In 1996, American conservator Dianne Dwyer Modestini, assisted by Jean Dommermuth, was enlisted by NYU to care for the collection on site. They completed the first condition surveys and established a digital database for the artifacts. Soon thereafter, the university began the daunting task of conservation of the outbuildings, preparing them for the academic program. In 1999 work began in earnest on the main villa where extensive structural repairs and systems upgrades, including replacement of the electrical, plumbing, and heating and cooling systems, were necessary. During this project the contents of the house were packed and stored; in 2002 the collections were reinstalled in their original configuration.

Since the beginning of NYU's stewardship of the site, conservation of the collection has been undertaken by American and Italian conservators. Over time, this collaboration has grown, and a total of 21 conservators have worked at the Villa in six teams: paintings and frescoes, indoor sculpture, outdoor sculpture, decorative arts, textiles and furniture, and paper and books. Beginning in 2000, NYU Florence and the Institute of Fine Arts strengthened their collaboration by supporting projects for the academic program of the Conservation Center; each year, students in different specializations spend one to two weeks at the Villa gaining practical experience through conservation treatment of the collections. Due to the *vincolo*, all projects (consultant conservator and student work) require prior written approval from the representative of the local branch of the

Soprintendenza, the governmental organization that oversees the cultural heritage of Italy under the direction of the Ministero per i Beni e le Attività Culturali. The history of this kind of governmental agency in Italy dates to 1875 when the first institution was formed to protect archaeological excavations and museum collections. In 1907, the first formal Soprintendenza was created, and the organization essentially gained its current form in 1939 [Condemi 1997].

Case 1: Red Patchwork Wall Hangings

The Acton Collection is densely installed. An accumulation of objects arranged with a precise aesthetic by its creators, its many layers play against each other in an orchestrated arrangement of imagery and materials. Scenes of saints and martyrs, the Virgin and Child, and allegorical figures are framed and re-framed in a realm of patterned textiles, gilt sculptures, stone fragments, and glass curios set on intricately carved furnishings upholstered in richly colored velvets and silks (Figure 2).

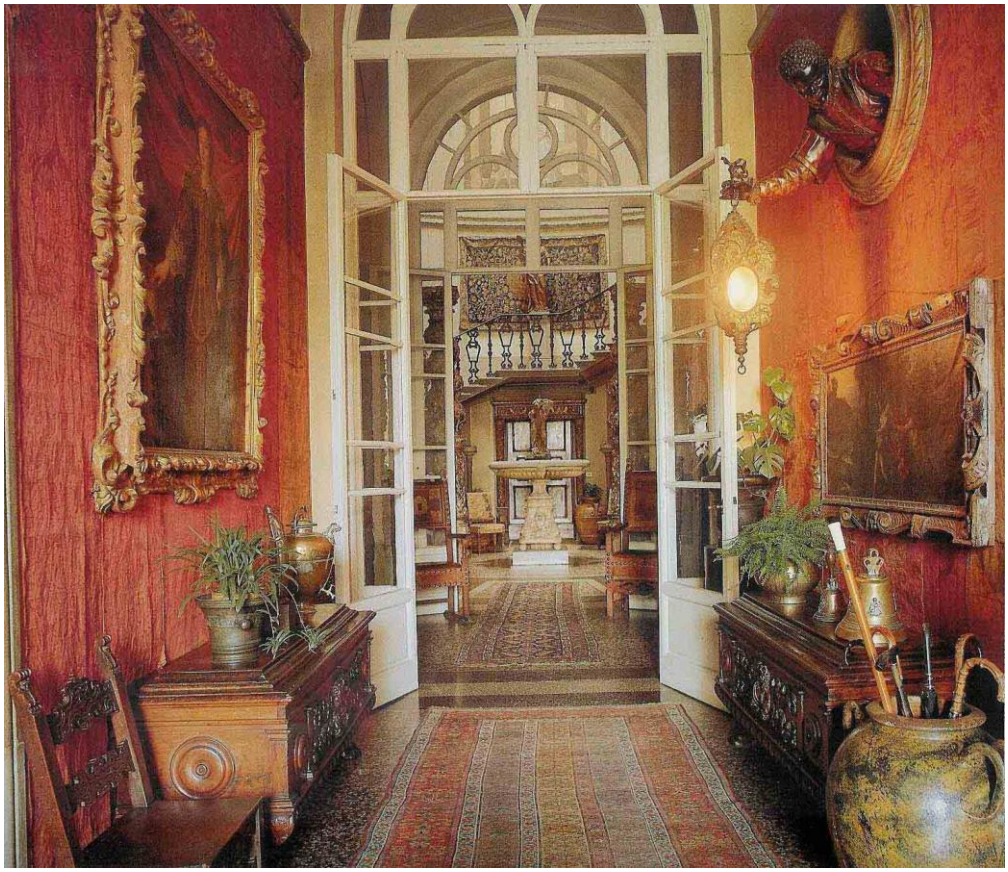

Fig. 2. Documentation of original damask wall hangings in the entrance hall of Villa La Pietra. ©New York University, Acton Collection, Villa La Pietra, Florence

Within this abundance of objects, the textiles were in the most urgent need of attention in the late 1990s. With the imminent necessity of emptying the rooms for renovation work scheduled to begin in 1999, three rooms presented an early and difficult challenge. The walls of the *ingresso* (entrance hallway), *sala rossa* (red room), and *sala del crocifisso* (crucifix room) had all been upholstered in a patchwork, or collage, of red damask and brocatelle fabrics numbering 13 different patterns dating from the sixteenth to eighteenth centuries. Historical photographs show that they had been in place as early as the 1930s. The fabrics—totaling 220 square meters, sewn together piecemeal and nailed directly to the walls—had to be removed for renovation and reinstalled in time for the opening in 2002. The fabrics were in various states of deterioration with some disintegrating at the slightest touch (Figure 3). Several alternatives for the conservation of the wall hangings and the re-installation of the rooms were discussed:

1) Conserving and replacing the original fabrics. Several factors worked against this option: time—restoration

Fig. 3. Documentation of original damask wall hangings during renovation.
© New York University, Acton Collection, Villa La Pietra, Florence

could not be ready in time for the opening—cost, and the fact that the most degraded sections were considered too damaged to treat.

2) Recreating the original patchwork. An expensive undertaking, this option would also not have been ready in time.

3) Choosing one of the patterns and recreating it.

4) Choosing a readily available, similar pattern and using that.

5) Choosing a selection of patterns and creating a patchwork with them, to imitate the original look.

6) Leaving the walls bare. Briefly considered as a permanent solution to the preservation of these rooms, this option was determined to entail too great a loss to the historic display and aesthetic of the spaces.

7) Choosing a 'neutral' fabric, i.e. a non-patterned, red, fabric. Preserving the color of the walls and the tactile sense of a fabric-covered surface, this option was chosen. While not inexpensive, it was much more economical than the others. Three fabric manufacturers were contacted and samples and cost estimates were gathered.

The discussions at the time focused on the importance of the fabric color but not on the role the pattern played in the overall design of the room. One strong voice during the decision-making process held the opinion that the pattern distracted from the paintings. It is clear today, however, that the fabrics were meant to echo the textile patterns seen in the paintings [2]. Options 3), 4), and 5), arguably approximations of the original aesthetic, were ultimately rejected as means of 'faking' the damaged original.

The representative of the Soprintendenza involved in this decision understood that it would be difficult to restore and reinstall the original fabric panels. Indeed, the greater worry was the accumulation of dirt and soot on the walls and the potential for mold growth behind the fabrics. Because of these concerns, the new fabrics were attached to aluminum frames so that they would not be in direct contact with the walls: the installation would be easy to remove while strong enough to support the art works hanging on the walls. In addition, the walls in these rooms have fifteenth century incisions for frescoes, which are an important clue to the first appearance of the house, and installing the fabrics on frames made it possible to access them more easily.

Images of the rooms today show the neutral fabric which serves as a sign that the walls were once red; it is a compromise, like many preservation decisions. Only when confronted with the historical images of the rooms does one gain a feeling for the layer of historical authenticity that is now missing. Ten years later, the

complexity of this decision remains and the result is still a topic of discussion (Figure 4).

Fig. 4. Sala Rossa after installation of new fabric wall hangings.
©New York University, Acton Photograph Archive, Villa La Pietra, Florence

Developing the Conservation Statement

Long-term planning for conservation of the collection, including preventive conservation and maintenance, began in 2002, after the redisplay was completed. This work led to the discovery of treatment needs, which required more frequent collaboration with the Soprintendenza. As experience with the collection and the authorities accumulated, it became clear that a framework would be useful when evaluating decisions to clean, consolidate, repair or restore an artifact as well as for balancing the demands of the different materials within the context of the collection as a whole. Frequently encountered questions included:

- How much surface patina was appropriate given the social history of the objects?
- When does the patina become soiling that contributes to the degradation of the object and therefore should be removed?
- Why does one decide to wet-clean a tapestry but not a sculpture?

- Should replicas be made of particularly vulnerable objects and the originals kept in storage?
- In the case of the red fabric-covered rooms, how satisfactory is the result of the decision in 2000 and, in hindsight, could one have found a different solution? How much did the urgency of the project influence the result?

As a result of these issues, a conservation meeting was convened in 2008 in Florence. The administrators of the university gathered with the American and Italian conservators working on the Villa collections for a day of discussion with the goal of producing a philosophy statement to guide the decision-making process. The following text resulted:

Villa La Pietra Conservation Statement, January 2008

The meeting of conservators at Villa La Pietra January 4-5, 2008 served to clarify the approach to the conservation and preservation of the Acton Collection.

One goal for the conservation of the collection is to maintain it, insofar as possible, with the appearance that it had during the first decades of the twentieth century in which Arthur and Hortense Acton were collecting. This period, roughly up until the Second World War, best represents the aesthetic and taste of the Acton family, a specific style evoked not only by the choice and arrangement of objects, but also by their individual histories. This differs from a typical museum presentation in that the goal is not to reveal the artist's original intent or restore the objects to how they would have looked when created, but rather to portray them in the same way as the Actons would have seen them. As Sir Harold was a self-proclaimed «custodian» of his parents' collection, we are continuing to operate in the same spirit in our efforts to perpetuate the period of Arthur and Hortense Acton. The idea of focusing on a time period is in line with what has been a principle for the garden's restoration where the 1930s have been a guiding timeframe.

This translates into our conservation practice in several ways. In general, we want objects to be free of dust and grime, but surface cleaning treatments should take into consideration the visual context of each room. Silver objects on display should be polished and coated, as the Actons would have perceived tarnish as a sign of neglect. In general, any signs of neglect like mold, dangling fringes, broken objects, prominent stains or general visually disturbing damage would probably not have been acceptable to the Actons and may require treatment. With regards to loss compensation, in some cases damage, which has occurred since the collecting period may be concealed by appropriate filling and retouching, imitating the surfaces that Arthur and Hortense would have seen, leaving the responsibility of distinguishing between new and old surfaces to the documentation process. In many cases, however, worn and battered surfaces were perfectly acceptable to the Actons and unnecessary aesthetic treatments should be avoided. In some cases, our obligation to transmit as much of the collection as possible to future generations may lead us to remove especially vulnerable and important objects from view and the possibility of displaying facsimiles will be considered.

In conclusion, although passing time creates inevitable change, the authors hope that Villa La Pietra remains a place where practice and theory combine to the benefit of spirit of the place.

With the adoption of this statement in 2008, a consensus was reached for the goal of conservation treatment for the Acton Collection—the time period prior to Second World War. In order to ensure an authentic preservation of this period, two sets of information were used as references for the Acton Aesthetic: the state of the collection in 1994 (i.e., the extent to which objects had been treated before the arrival of NYU) and historical photographic documentation of the display rooms [3]. In 2008, two conservation projects were

underway: conservation of the eighteenth century frescoed room, the *saletta delle rovine* (room of ruins), completed in the summer of 2012, and the ongoing treatment of the collection of 18 tapestries. Both of these projects played important roles in the discussions leading up to the writing of the conservation statement.

Case 2: Tapestry Conservation

Tapestries were among the first objects treated at Villa La Pietra. Indeed, some tapestry treatments were done long before conversations on the conservation approach for the collection had begun.

In 1997, Jean Dommermuth, then a Samuel H. Kress Fellow at the Villa responsible for conservation issues, discovered the *feuilles de choux* tapestry in the *rotonda* wet and with plaster debris from a skylight leak, an accident, which highlighted the need for structural renovation of the Villa. Once the tapestry was taken down and laid flat to dry, the then Soprintendente responsible for the Villa's collections, Beatrice Paolozzi Strozzi, was contacted. Strozzi recommended that Costanza Perrone Da Zara, now half of the textile conservation partnership, Restauro Tessile di Beyer e Perrone Da Zara (RTBP), come to look at the tapestry and make a proposal to treat it.

In 1997, the Ente Casa di Risparmo di Firenze (ECRF) began what has become a multi-year program of support for conservation of Villa La Pietra's tapestries. Treatment of the water damaged tapestry and a second one, a *milles fleurs* table cover, was done in 1999. Since then, 12 of the 18 tapestries in the collection have been conserved and treatment has begun on two others. Perrone Da Zara has remained the conservator for all the tapestries, working at first with assistants, including Claudia Beyer, now her business partner.

Looking back, one realizes that the choice of these conservators was a wise one, as even in 1999, Perrone Da Zara had an approach to tapestry conservation that was more attuned to the American approach than the more typical Italian/Florentine approach. In Florence, most tapestry conservators in the 1990s still concentrated on reweaving and restoration. Certainly, they adhered to conservation ethics, doing excellent documentation, but typically removed most or all past reweaving and replaced these with new reweaving (often to compensate for faded yarns from the previous treatments). In her work, on the other hand, Perrone Da Zara had begun to do less reweaving, substituting a "spaced stitching" technique that had been developed in other labs in the US and Europe during the 1980s.

From this beginning with treatment based on an emergency, tapestry conservation at Villa La Pietra evolved in tandem with the conservation approach. Working with their American partners, Susan Mathisen (1998 – 2003) and Deborah Lee Trupin (2004 – present), RTBP has continued to refine and modify tapestry treatments to emphasize the Acton Aesthetic. This work has, of course been done with the review and agreement of the Soprintendenza whose representatives have been supportive of the approach taken for tapestry conservation.

Of the tapestries treated so far, one stands out as illustrating how the Acton Aesthetic guides tapestry conservation at Villa La Pietra. This is the *portiera* (so-called because it was woven to cover a doorway) with the arms of Medici and Austria, woven by the Medici Tapestry Works in Florence, in 1621-22 [Meoni 2010].

The *portiera* is one of four in the Acton collection and is the only one that combines the arms of the Medici with those of another family. Like all the tapestries in the Acton collection, it has been in Villa La Pietra since the 1910s. This tapestry is also unique in the collection because before coming to the Villa; it had been turned, exposing the original reverse as the face. The weft yarns, which tapestry weavers normally either carried between areas of the same color or left hanging on the reverse making it somewhat harder to "read" because

of the hairy appearance, had been clipped. This made the reverse of the *portiera* easier to read, but was also an irreversible treatment. Because this tapestry is also a heraldic design, exposing the reverse as the face also meant that the heraldry was reversed, with the arms of Austria on the viewer's left and those of the Medici on the viewer's right, undermining the heraldry convention in which the woman's arms are on the viewer's right and the man's on the left.

When conservators at Villa La Pietra approached this treatment, they quickly found an answer to why the tapestry had been reversed. The original face of the tapestry was covered with a heavy layer of grey soiling, the source of which could not be determined. Since in the nineteenth century, tapestries had routinely been washed as part of their restoration, this grey layer had been on the tapestry before its last restoration and had remained after washing. Thus, the previous restorer/owner/dealer had decided that the piece would be more attractive (perhaps more sale-able?) if the reverse, which was much less soiled and, like all tapestries, much less faded, were exposed (Figures 5 and 6).

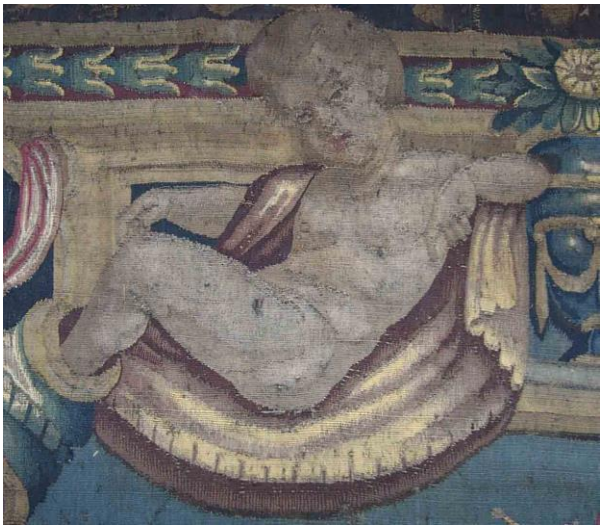

Fig. 5. Tapestry detail before wet-cleaning – figure at top border. © New York University, Acton Collection, Villa La Pietra, Florence

Fig. 6. Tapestry detail after wet-cleaning – figure at top border. © New York University, Acton Collection, Villa La Pietra, Florence

Understanding this, and believing that the Actons had not had restoration done on the *portiera*, the conservators then had to decide whether it was better to re-reverse the tapestry to expose the original face, or to expose the tapestry as the Actons had. The conversations about this treatment took place before the 2008 meeting that formalized the conservation approach to the Acton Collection and were among the significant discussions that led to the meeting. For this *portiera*, the conservators, the Villa's collection manager, Francesca Baldry, and the director of Villa La Pietra, Ellyn Toscano, agreed that it would be best, in the context of the collection, to keep the tapestry displayed as the Actons had. The Soprintendenza supported this decision.

Once this decision was made, most of the treatment of this tapestry was straightforward, following the protocol for tapestries that had been developed at Villa La Pietra over the years. There were, however, two aspects of this treatment that were special. This tapestry, like some others in the collection, had come into the Acton collection with old inventory numbers painted on its linen lining. The conservators did not want to keep this lining on the tapestry, as it was soiled and, even if cleaned and restitched, would add extra weight. (The lining was not suitable for use as the full backing.) But they did want to maintain the information on the

lining. Their solution was to commission a digital print on fabric of a photograph of the old inventory numbers and to sew this print to the new lining of the tapestry.

The conservators also wanted to let future researchers see the original face of the tapestry. To achieve this, they made a "window" in the tapestry's backing fabric. After selecting an appropriate area (one which would reveal an interesting part of the original face but was not in an area that needed a lot of stitched support), they cut a flap in the backing fabric, measuring about 10 cm x 15 cm. The edges of the flap were hemmed, as was the cut area. A band of fabric was stitched to the backing fabric to secure the flap when the "window" was closed (Figure 7).

Fig. 7. "Window" in fabric lining of the tapestry.
© New York University, Acton Collection, Villa La Pietra, Florence

Tapestry conservation treatments do not always follow the Actons' use of the tapestries. Two of the four Medici *portiere* in the collection were actually used by the Actons as *portiere*, hanging across doorways. One was on a doorway between the library and the *studiolo*, while the other hung across a doorway going from the *rotonda* to the northwest corridor. These two doorways are still used, so conserving the tapestries and rehanging them in their traditional locations would lead to serious damage as they were handled and touched by people passing through the rooms. Thus, in planning the conservation of these two tapestries, it was agreed that conservation ethics were of greater importance than following the Acton Aesthetic. These tapestries will not be returned to their original location but may, after treatment, be used to give the other two *portieres* a rest. These are the only tapestries in the collection for which this approach is possible. The others are all too different from one another, hang in places that do not put them at excessive risk, and are an important part of

how the Actons designed their home. Thus, the other tapestries, once conserved, are on long-term display. This is common practice for historic house museums.

The knowledge that the tapestries in the Acton collection would be on long-term display influenced the conservators' treatment decisions. In particular, they decided that all the tapestries would be given a complete fabric backing – a lightweight, but tightly woven linen that would offer better support to the tapestries than strapping, another commonly used technique. The preservation work and approach in the Villa should also help to slow the tapestries' deterioration. The tapestries now hang in a controlled environment, with ultraviolet filtration on the *rotonda* skylight. Other rooms are kept dark with the use of interior and exterior shutters except when there are tours in the Villa (Figure 8).

Case 3: *Saletta delle Rovine*

The final example is the treatment of the frescoes of a small room within the Villa, known as the *saletta delle rovine*, or small room with ruins. The frescoes create a continuous, *tromp l'oeil* landscape inhabited by numerous birds. Based on their style and technique, the paintings are dated to the middle of the eighteenth century; they were part of the house into which the Actons moved. The family displayed furniture and sculpture from their collection in the room, essentially using the frescoes as a backdrop.

Fig. 8. Medici-Austria portiera tapestry after treatment in the rotonda of Villa La Pietra.
© New York University, Acton Collection, Villa La Pietra, Florence

In 2005, examination showed that this room was in need of conservation treatment (Figure 9). The pictorial layer, applied in the *bianco di calce* technique, a variation on the more robust buon fresco, was actively flaking and losses had occurred. In addition, soluble salts in the walls were damaging the frescoes, especially around the window. Daniela Murphy, the Italian partner for this project, carried out a conservation assessment and a treatment plan was developed. The main focus of the treatment was stabilization and elimination of agents of deterioration. Treatment would include consolidation of the pictorial layer and poulticing to reduce the salts, both necessary to prevent further damage. In addition, the animal glue layer that had been applied to the walls in the nineteenth century would be removed because it was, with the force of its contraction, pulling the pictorial layer off the plaster.

Fig. 9. Salletta delle rovine before treatment.
© New York University, Acton Collection, Villa La Pietra, Florence

The project would also address aesthetic issues. Prior to treatment the room looked dirty and neglected. Surface cleaning tests showed that removal of the damaging glue layer would also remove soot and bring the colors closer in tone to their original appearance; poulticing the soluble salts would reduce staining as well as the risk of further damage. Although this project was begun before the conservation statement was formalized, many of the ideas in it were already being discussed by the collection team: it was decided that the dirt and staining, along with the flaking, were signs of neglect that did not reflect the Acton Aesthetic such that even the most necessary stabilization treatment would also improve the look of the room (Figures 10 and 11).

Over the course of the centuries, there had been several restoration campaigns on the frescoes, so as part of before treatment documentation, cleaning tests for overpaint removal were conducted. The cleaning tests indicated that some original eighteenth century paint was covered by overpaint that could safely and easily be removed. On another fresco, it might have been natural from the outset to plan to remove this overpaint and reveal as much of the "original" eighteenth century work as possible. This decision was postponed, but ultimately the lure of the information gained by the cleaning tests would prove to be powerful. The reintegration of losses was not defined at the beginning of the project; there can be significant differences between American and Italian approaches to this issue and an acceptable compromise would have to be reached.

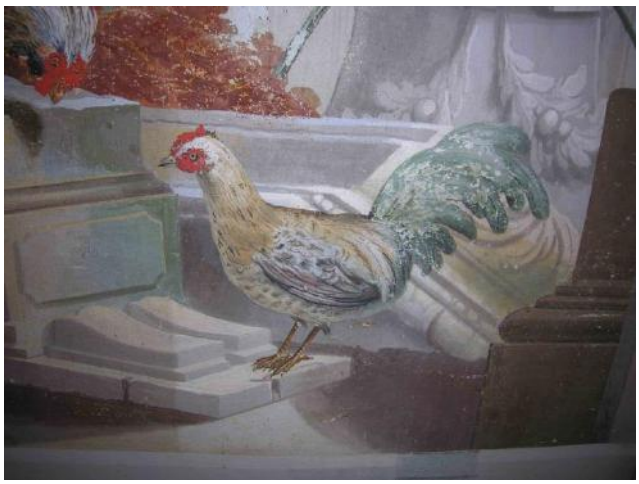

Fig. 10. Detail of surface before treatment.
© New York University, Acton Collection, Villa La Pietra, Florence

Fig. 11. Detail of surface after treatment.
© New York University, Acton Collection, Villa La Pietra, Florence

This treatment also involved students from the Conservation Center during every stage. The students came for two-week sessions every summer, addressing the consolidation and surface cleaning of one wall each year with a final session for inpainting. The original plan was for a treatment that would continue over the course of five years: the furniture and sculpture had to be moved from the room before each session and returned after it, which involved more cost than completing the work in a single, longer session, but allowed more students to benefit from the experience. The plan was discussed by the entire team, including the Soprintendenza, and approved.

Treatment began in 2006 and was finally completed not five, but seven years later. For this reason, the *saletta delle rovine* benefited from the luxury of time. Extensive technical and art historical research was completed, leading to the discovery that the totality of the room was created over many centuries. The frescoes were painted on pre-existing walls, which determined the size and shape of the work, and dated back to at least the thirteenth century; the walls may have originally been part of a medieval tower. In addition, modifications had been made to the room since the eighteenth century, most notably the enlargement of the window in 1881, when part of the design around the original, smaller window was destroyed. At the same time other areas, notably the *zoccolo*, or painted baseboard, were completely overpainted. (It is interesting that these nineteenth century alterations are analogous to those of the tapestry described above.) The Actons further added to the room by decorating it with furniture and sculpture, characteristically creating a visual play by placing an angled mirror to reflect figures on the ceiling.

As with any conservation treatment, unanticipated problems came up along the way. The Portland cement placed around the window in the nineteenth century proved to be a major source of soluble salts, and was removed and replaced with stable lime mortar (Figure 12).

This revealed more of the 18th-century design, but created a problem as to how to reintegrate this area. Treatment also revealed that the overpaint on the *zoccolo* was part of the nineteenth century remodeling of the room. Unlike the glue layer applied at the same time, however, the overpaint was doing no physical harm. There were many losses in this layer, revealing a fairly well preserved eighteenth century layer that was not

only a more elaborate and finely executed design than the nineteenth century overpaint, but its slightly cooler color was more harmonious with the main area of frescoes. The choices to be made thus focused on two areas: the window and the *zoccolo* and on two issues: how much overpaint to remove and how to reintegrate losses. By the time these decisions were addressed, the conservation statement had already been written. In another collection, the *saletta delle rovine* would likely be seen strictly as an eighteenth century work of art and later additions would be removed. According to the conservation statement, however, the room should be preserved, as the Actons knew it – leaving the overpaint on the *zoccolo* and recreating the window according to the nineteenth century scheme.

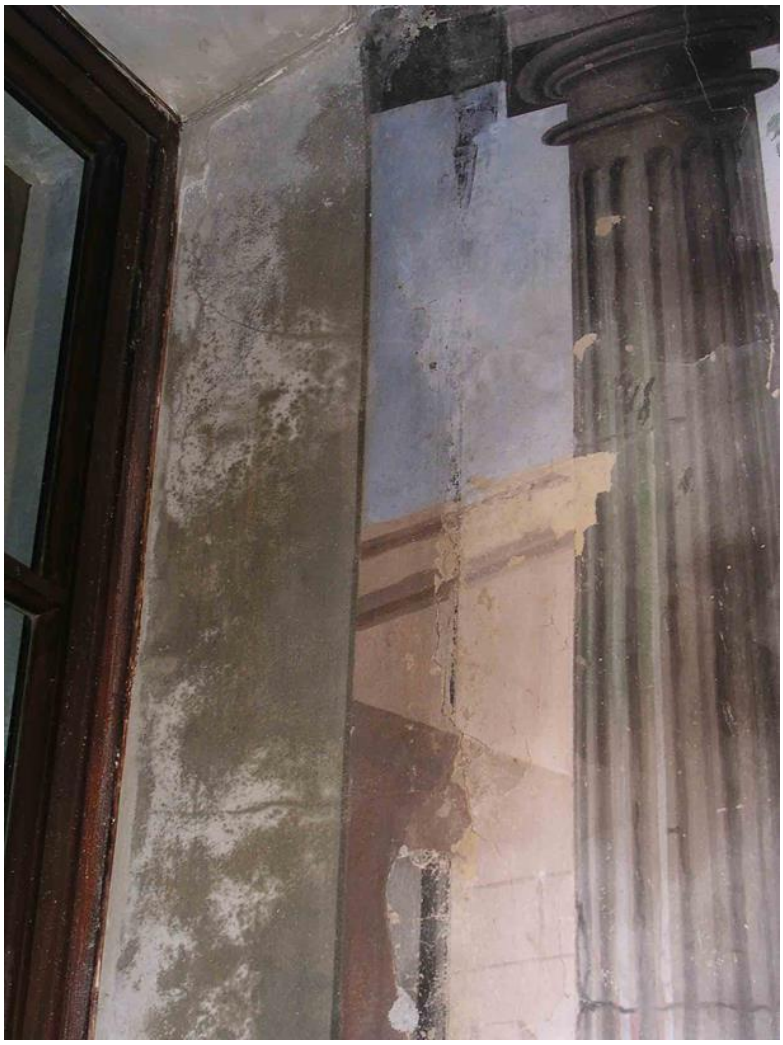

Fig. 12. Detail of deterioration around window.
© New York University, Acton Collection, Villa La Pietra, Florence

The most intense debate was about the overpaint removal. Cleaning, that is the removal of unwanted material, here the overpaint, is irreversible. The overpaint had historical significance; archival photographs indicated that the Actons had accepted the room in this state. On the other hand, removing the overpaint would make the room more harmonious and more "original." There were proponents for both plans and the Soprintendenza sided with the more conventional course of action - to remove the overpaint. A preliminary decision to do that was made at the end of a summer season, to be carried out the following year. During that time, discussions continued. Credit must go to Murphy, who, like Perrone Da Zara and Beyer, has always been particularly open to true collaboration, for brokering a compromise, ideal to no one but acceptable to all: the 19th-century overpaint on the three contiguous walls was removed, while on the remaining wall the overpaint was retained.

The second issue was how to reintegrate the area around the window. In Italy, there are theoretically strict limits on the amount and type reconstruction of lost areas [Mora et al 1984]. Such reconstruction should first, stop where hypothesis begins and second, be distinguished from the original. The idea that compensated areas should be easy to differentiate from the original has led, in current Florentine practice, to two possible retouching techniques. In *selezione cromatica*, individual strokes of color visually blend at a distance. In *velatura* (glazing) *sotto tono* (lighter tone), the color is kept slightly lighter and cooler than the surrounding original. On abrasions only glazing is used. Compensation on top of new mortar fills can be handled in either of these ways. Because of the technique – *bianco di calce* – of these frescoes, it was decided glazing was also appropriate for the new mortar fills. The Italian philosophy - that the retouching not be truly imitative – was

based on theories that postdated the Acton collecting era. This approach is, however, so integral to current Italian theory that it was not negotiable with the authorities. If done well, it is not intrusive and seemed a point on which American practice could concede. Still, the goal of the retouching needed to be decided.

Three options were considered for the window. First, the original eighteenth century design could be completed as much as possible; second, the nineteenth century solution of a fictive window surround could be followed, or third, in a widely accepted practice of the early twenty-first century, the new mortar could be given a neutral tone. Digital mock-ups were created of each solution. The first required the most reconstruction, but this was largely the continuation of architectural lines. According to Brandi's theories, if you can reconstruct a lost area without re-inventing it, you should do so [Brandi 2005]. But the window floated strangely in the design. The third solution– which probably would have been the default Italian option- looked odd when the curtain was re-hung as in the Acton display. Perhaps the curtain, a rather undistinguished textile, might simply have been left uninstalled, but it was part of the Actons' collection and at La Pietra all of the elements that make up the whole must be considered. In the end, a modified version of the 19th-century solution was adopted: a simple gray surround was painted and the eighteenth century design was continued up to it. This is virtually just as the Actons knew it (Figure 13).

Fig. 13. Salletta delle rovine after treatment.
©New York University, Acton Collection, Villa La Pietra, Florence

Conclusion

When a historic house collection leaves the realm of private life and enters that of public viewing—when its organic growth as a home ceases and it assumes a new identity as an object to be preserved—any action taken, even non-action, may be regarded as an intervention, and each intervention is a product of the values of the

moment. The Villa's conservation statement is therefore a formalization of current values. What is clear to the conservators involved is that a formalized value system is crucial to making decisions in an arena of competing meanings, where Villa la Pietra can be seen successively as an art gallery embedded in a house museum, as a relic of Anglo—American aesthetics in early twentieth century Florence, and as a laboratory to train future conservators and art historians. Prior to the 2008 statement, decisions like the replacement of the red fabric panels could proceed in a number of directions, depending on which values were privileged at the moment of treatment. The conservation statement provides a pathway, a generalized theory for the preservation of a valuable, intangible element of the Villa - its aura of a specific time and place, marked for us by accumulated 'patina' on each object. In hindsight, a different decision may have been made if we were to undertake the treatment of the red walls today. The conservation statement, of course, suppresses the value of conserving each object to its fullest potential as a work of art, in favor of preserving the accumulated sediment of the collection as an aesthetic and historical entity [Pendlebury 2008]. Lest this theory become a recipe, however, conservators should remain aware of the values that they are implicitly supporting, at the exclusion of others, and like any mandate, the conservation statement for the Acton Collection should be regularly re-evaluated.

Acknowledgments:

Villa La Pietra Conservators

American: Jean Dommermuth, Paintings; Margaret Holben Ellis, Paper; Aimée Ducey-Gessner, Acton Collection Fellow; Pamela Hatchfield, Decorative Arts; Michele Marincola, Conservation Supervisor; Susan Ann Mathisen, Textiles; Dianne Dwyer Modestini, Paintings; Jack Soultanian, Indoor Sculpture; Helen Spande, Paintings and Conservation Coordinator; Deborah Lee Trupin, Textiles and Upholstery; George Wheeler, Outdoor Sculpture.

Italian: Claudia Beyer, Textiles; Primo Biagioni, Furniture; Sophie Bonetti, Indoor Sculpture and Decorative Arts; Roberto Buda, Panel Painting Conservator and Pest Management; Alessandro Conti, Outdoor Sculpture; Daniela Murphy, Wall Paintings; Stefano Pasolini, Maintenance and Indoor Sculpture; Louis Pierelli, Indoor Sculpture; Costanza Perrone Da Zara, Textiles; Francesca Spagnoli, Maintenance.

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Endnotes

1. Villa La Pietra is led by Director Ellyn Toscano and is part of the Office of Global Programs. The Conservation Center, headed by Chairman Michele Marincola, is part of the Institute of Fine Arts, the university's graduate program in art history, which is directed by Patricia Rubin.

2. The history of the dismantling of the red patchwork wall hangings in Villa La Pietra was gathered from the files of the

collection office of Villa La Pietra, as well through conversations with conservators and staff involved in the project, including Costanza Perrone Da Zara, Claudia Beyer, Franesca Baldry and Barbara Bonciani in July 2012.

3. See Jukka Jokilehto's discussion of the different kinds of authenticity and the sources of information on which they are based in "The Complexity of Authenticity," Kunstiteaduslikke Uurimusi, 18 3/4 (2009) 125-135. Also Helen Glanville's introductory text "Relativity and Restoration," in *A History of the Restoration and Conservation of Works of Art* by Alessandro Conti, Helen Glanville, trans. (Oxford: Butterworth-Heinemann, 2007) ix-xxv.

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

A Joint Conference of ICOM-DEMHIST and three ICOM-CC Working Groups: *Sculpture, Polychromy, & Architectural Decoration*; *Wood, Furniture, & Lacquer*; and *Textiles*

The Getty Research Institute, Los Angeles, November 6-9, 2012

Mrs. Gardner's Tapestry Room: A Floor to Ceiling Conservation Project

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Abstract

Isabella Stewart Gardner opened her museum in Boston in 1903. In 1914-1915 she remodeled the museum, creating a 371.6 m^2 gallery to display Flemish tapestries. This Tapestry Room also functioned as a space for programming activities such as concerts and lectures. During the 1960s, a stage and audience seating occupied most of the room's footprint, requiring all of the collection artifacts arranged by Gardner to be moved to the gallery's perimeter. In response to increasing numbers of visitors and programming, the museum completed a new expansion project in 2012 to reduce wear on the historic spaces. This allowed for several key conservation projects to be carried out in the historic galleries, including a museum-wide lighting project and the restoration of the Tapestry Room gallery.

Keywords

Whole-room conservation, lighting, archival photographs, fireplace, tapestry

Introduction

In 1903 a unique museum opened in Boston, Massachusetts. The building, collection and installations were the artistic vision of one woman, Isabella Stewart Gardner (1840-1924) (Figure 1). Gardner created her Venetian-style palazzo, complete with authentic architectural elements and a flowering central courtyard enclosed by a glass ceiling, as the setting to display the art collection that she amassed beginning in the late nineteenth century. The museum's collection includes over 2,500 paintings, sculptures, tapestries, furniture, manuscripts, rare books, and decorative arts from Europe, America, and Asia. Gardner's installations are uniquely personal and are, physically,

Fig. 1 Isabella Stewart Gardner, 1888. © Isabella Stewart Gardner Museum

quite accessible to the public. There are very few cases, vitrines, or stanchions throughout the museum separating the visitors from the works of art. This requires a delicate balance between providing accessibility as Gardner had intended while preserving the collection for future generations.

When Gardner opened her museum she intended it to be for 'the education and enrichment of the public forever', as written in her will [Gardner, 1921, 3]. Indeed the public continues to be enriched by the collection and unique installations. When the museum first opened, the yearly attendance rate was around 2,000 visitors. By the late 1990s, the attendance was closer to 200,000 visitors per year. This dramatic increase in visitors, along with modern programming demands, began to take its toll on both the collections and the building fabric. At that time, the museum administration began a planning phase for building a new wing in order to alleviate pressures on the historic museum.

After years of planning and design, the museum completed a major expansion project in early 2012 designed by the architect Renzo Piano (Figure 2). The new building has absorbed most of the programming activities from the historic building and provides spaces such as a flexible exhibition gallery, concert hall, art and education studios, as well as amenities, such as a café, gift shop and an orientation space. The new building also houses a purpose-built 325.2 m^2 state of the art conservation laboratory, loading dock and art storage facilities. In conjunction with the opening of the expansion, an eight year museum-wide lighting project was completed to improve the quality of light while also reducing light levels on sensitive works of art.

Fig. 2. New building (left) and historic building (right).

Lighting project

A designated lighting team that included an independent lighting designer and members of the museum staff worked to balance four project goals: maintain an appropriate atmosphere for the historic building; stay true to or return to Gardner's intent for the use of light in the museum; protect the collection from excessive light levels and long-term exposure to light; and improve the visitor viewing experience. The working process for each gallery included an extensive survey of lighting conditions, careful review of design proposals, mock-ups of various lighting options and implementation of new systems. The successful result was a combination of new layered shades on all the gallery windows, the use of historically appropriate lighting fixtures and enhanced ambient lighting. The challenges faced during the project included finding appropriate solutions for unique galleries, installation of all new wiring and fixtures while the museum remained open to the public and satisfying the sometimes competing designated objectives. The solutions in each gallery varied from simple to complex; in some cases adding only one fixture to a gallery; in others a complete gallery de-installation for new wiring, installation of multiple fixtures and ceiling repair. Recognizing that, in the future, preferences for lighting in the galleries and standards for energy efficiency may change, many choices were made with reversibility in mind. As with other preservation projects, the team also learned that sometimes the best solution is simply to retain or replace what already exists. The museum will continue to evaluate the new lighting by conducting a second survey of the lighting conditions, and by making adjustments based on staff and visitor feedback.

The Tapestry Room

Architectural space

One of the primary preservation projects associated with the building expansion was a major conservation effort to return the Tapestry Room to its original function; a grand tapestry hall. When the museum first opened in 1903 the Tapestry Room, which is on the second floor along the east side of the building, did not exist. In its place was a two story Music Room that housed a stage for musical performances and audience seating. Four tapestries were displayed as backdrops along the rear of the stage. However, according to correspondence by Morris Carter, the museum's first Director (1924-1955), Gardner decided to make sweeping changes to this space almost immediately after it was finished. In early 1914, the Music Room was dismantled and the two story space was divided with the Tapestry Room occupying the second floor and the Spanish Cloister, East Cloister, and the Chinese Loggia making up the first floor.

When the Tapestry Room was unveiled to the public in 1916, the predominant feature of the 371.6 m^2 gallery was tapestries from two Flemish story cycles that lined the walls of the room (Figure 3). Anchoring the south end of the room is a large medieval, carved limestone fireplace and above it, a panel painting of the *Archangel Michael* by Pere Garcia Benabarre (1470). The floor was covered in ceramic tiles made at Henry Chapman Mercer's Moravian Pottery and Tiles Works in Doylestown, Pennsylvania, USA. Within the large room, Gardner arranged intimate groupings of tables, chairs and objects.

From 1903-1926, the photographer Thomas E. Marr documented the museum galleries and the changes that occurred in them. These archival photographs provide museum staff with a crucial record and serve as a reference point for documenting the original installations of the objects and galleries, and their condition at that time as well as any changes that occurred after Gardner's death in 1924. Along with primary historical records and correspondence, the judicious use of archival photographs serve as an essential guide for individual conservation projects and whole room treatments that are undertaken by the conservation

department in collaboration with the Curator of the Historic Collection. It is obvious from a review of these archival photographs that this gallery was a wide open space affording visitors ample room to view the tapestries.

Fig. 3. Archival photograph of Tapestry Room, 1926. ©Thomas E. Marr & Son

For the past several decades, the Tapestry Room has functioned as an event space for musical performances and lectures. During the 1960s, the room was taken over by a semi-permanent performance stage, audio-visual equipment and 250 chairs that occupied much of the room's footprint (Figure 4). All of the collection artifacts, previously arranged by Gardner, were moved to the perimeter of the room where they were largely un-viewable. Visitors could walk along two side aisles to view the stanchioned-off artwork, but they could not approach the artifacts in the south end of the room, including the fireplace, because it was blocked by the stage.

With the new Calderwood Concert Hall as the museum's venue for performances and lectures, the main goal of this project was to return the Tapestry Room as closely as possible to its appearance and function during Gardner's lifetime. At the beginning of 2011, the stage, audio-visual equipment and chairs were removed from the space to make room for conservators and tradesmen to carry out work. The gallery became a large laboratory of sorts as all of the conservation work took place in situ. The Tapestry Room was not closed to the public during this work and visitors could walk along the west side of the room to observe the various treatment projects as they unfolded. In addition, there were signs placed at both ends of the gallery explaining the project to the public. The museum also hired a videographer to document the restoration project. The

footage was put on the Gardner Museum's website to help educate the public about the need for, and the process of, the conservation work.

Fig. 4. Tapestry Room used as a programming venue.

The Tapestry Room project encompassed over 45 conservation treatments including objects, textiles, upholstery, and one painting. The project also included the removal of failing and darkened polyurethane coatings on the ceramic floor tiles and upgrading the electrical system including new lighting fixtures. The project was staffed with one full-time objects project-conservator, four staff conservators (objects, textiles, and paintings) an historic upholsterer, and a part-time contract paintings conservator. There were also two part-time advanced conservation technicians and four pre-graduate program conservation interns at various stages of the project.

Stone fireplace

Many of the objects treated were furniture and ironwork and entailed basic stabilization, cleaning and waxing. A sixteenth century Italian polychrome and gilded wood sculpture of the *Madonna della Misericordia* required stabilization, cleaning and in-painting. The major treatment for the objects conservation department centered on the monumental polychrome limestone medieval fireplace including its stabilization, complicated cleaning and replacement of older fills. Gardner understood that this French fireplace came from a chateau of Francis I in Touraine. She purchased the fireplace in Paris from Bacri Frères in1906 and placed it in storage until it was installed in 1914 in the newly designed Tapestry Room. The fireplace was a working fireplace during her lifetime and for several decades following her death. It displays a royal coat of arms in the center with a crowned shield bearing three *fleurs-de-lis* supported by two angels. The piece is distinguished by its

imaginative relief carving portraying figures of a jester, lion, dragon, unicorn, owl, as well as grape vines and floral motifs (Figure 5).

Fig. 5. Fireplace and Archangel Michael painting, 1926. ©Thomas E. Marr & Son

The stone surface was disfigured by a layer of soot and it was only after preliminary cleaning tests that conservators discovered there remained a fair amount of paint on the stone surface. This was a remarkable discovery as remnants of original paint from medieval architectural sculpture are rare. Fourier Transform Infrared spectroscopy (FTIR), Raman and scanning electron microscopy with energy dispersive x-ray spectroscopy (SEM-EDS) were used to analyze the pigment composition. Analysis was performed by conservation scientists at the Museum of Fine Arts Boston, and the results indicate that the pigment palette is appropriate to the age of the object and includes pigments such as azurite, vermilion, orpiment, and goethite [Derrick and Newman, 2011]. Based on the analytical results and the absence of any obvious paint restoration it appears that the paint is probably original to the object.

Surface cleaning was carried out with a variety of methods including saliva, triammonium citrate and laser cleaning in especially dirty areas (Figure 6). In addition to soot and grime there was also a gypsum crust present on top of the paint in parts of the fireplace, particularly the lower horizontal frieze that includes the grapevine motif. The crust was easily flaked off with a scalpel and separated cleanly at the interface of the original surface. In some areas the crust actually preserved areas of paint, but in many areas it also significantly obscured the detailed carving; unidentifiable rounded shapes along the vine were revealed to be articulated grape clusters.

Fig. 6. Surface cleaning the fireplace.

Another condition to be addressed was damage to the stone resulting from exposure to water prior to being at the museum. And although the museum has been vigilant in maintaining water-proofing around this chimney, the roof above the Tapestry Room is flat and, inevitably, there have been water leaks. As a consequence there has been salt migration in the stone resulting in spalling and loss of stone in discrete areas, particularly the proper right vertical jamb. A silicate ester consolidant and stone strengthener product, Conservare® OH100, was brush applied to these areas. The treatment required the construction of a vented fume tent due to the health risks of this product. Two previous plaster fills along the bottom edge of the mantel were removed due to their lack of aesthetic compatibility. These were replaced with detachable WoodEpox® fills that were modeled in place over a Parafilm® M barrier, and then adhered with concentrated Paraloid™ B-72. The fills were toned to blend with the surrounding surfaces with Golden® Fluid Acrylic emulsion paints.

Tapestries and textiles

There are 13 Flemish tapestries dating from the sixteenth century on the walls of the Tapestry Room. A conservation assessment determined that eight of the tapestries were in need of a full conservation treatment. Due to their size and the time necessary to treat them, they will be treated at The Royal Manufacturers De Wit in Belgium as part of a separate IMLS grant-funded project. Meanwhile the textile conservation staff has re-hung two tapestries to be consistent with Gardner's original installations. Here again, the use of the archival photographs and conservation records helped the textile conservator and curator to determine the appropriate installations.

Many of the other textile conservation treatments in the gallery involved textile reproduction projects. Examples of these include: table coverings, hangings and furniture upholstery that over time had been removed to storage and replaced with inappropriate fabric, or were at risk of complete disintegration. In the late 1920s, director Morris Carter hired Ella Siple, the former curator of decorative arts at the Worcester Art Museum, to catalog the Gardner Museum's textile collection. The descriptions of color palette, weave structure and pattern in Siple's records are invaluable tools for selecting the most accurate reproduction fabrics [Siple, 1927-8]. Because it is difficult to find a new show fabric that meets all three of these criteria, the textile conservation department typically aims for a combination of two with the ultimate goal of finding a fabric that mimics the overall effect of the original. In the case of an upholstered Venetian armchair that had undergone several re-upholstery campaigns in its lifetime, the best reproduction fabric ended up being one that the textile conservator and historic upholsterer constructed themselves. In photographs of the armchair from 1926, a striped show fabric is visible, but the object was re-upholstered in the 1980s with a pale green fabric that had faded. Siple's records describe the material as, 'Pale blue satin and yellow moiré stripes about an inch wide. Ornamented with braid of the same color. Much worn and mended.' [Siple, 1927-8]. A modern blue and yellow striped fabric matching the original could not be found and there was no budget to have an exact reproduction fabric manufactured. The textile department successfully constructed their own by sewing blue satin ribbon onto a yellow striped fabric. A reproduction trim was constructed by joining two trims and slightly modifying them to achieve the texture seen in archival photographs and the color description in Siple's catalog entry.

Painting

The sole painting treated was the *Archangel Michael* by Pere Garcia Benabarre that dates from 1470 and hangs over the fireplace. The painting was originally part of an assembly of panels that formed a massive retable in a church in Lleida, Catalonia. The painting depicts the Archangel Michael sitting on a pale blue throne wearing gold studded armor. He simultaneously weighs souls who hope to gain entry into heaven and destroys Satan who is portrayed as a ghoulish two faced monster. The panel painting is composed of tempera, gold leaf and applied relief work. There were numerous paint losses and past restorations and, in many areas, the paint was abraded and very thin from previous cleanings. Many of the old restorations, including wax fills, had darkened considerably. The treatment included the removal of disfiguring restorations and uneven surface coatings, followed by application of a new, protective varnish and in-painting losses. Like the fireplace, the painting and frame had incurred some minor damage over the years due to leaks from the chimney. A protective piece of aluminum flashing was shaped, toned and attached to the top rear of the frame so that there was a slight projection over the front to prevent any future water leaks from damaging the painting or gilded frame.

Floor tiles

The removal of multiple layers of yellowed and darkened polyurethane coatings and black paint on the Mercer floor tiles may have had the greatest visual impact on the room. The coatings had worn unevenly over the years, creating a patchy look to the floor. After testing several options, 3M™ Safest Stripper™ Paint & Varnish Remover was identified as the safest and most effective product for removing the various layers. Once the protocol was established, the work was contracted out to a local painting company that the museum uses regularly for exhibition work (Figure 7). The Safest Stripper™ was applied to an area of the floor, covered with plastic sheeting to prevent evaporation, and after 8-12 hours it was scrubbed with a combination of stiff brushes and Scotch-Brite™ pads and then rinsed with water on sponges. In many areas, paint scrapers were used in combination with heat guns, particularly in the slightly concave grout lines where the coatings

had pooled. The floor tiles were re-coated with three applications of Benjamin Moore Stays Clear® Acrylic Polyurethane coating that was easy to apply and has a minimal environmental impact. The coating is largely considered a sacrificial layer to protect the tiles and can be reapplied when needed. The end result was stunning considering how much of the floor tiles are exposed now that the room is not occupied by the stage and audience seating. The floor work had to be coordinated so that conservation and electrical work could happen simultaneously. In addition, parts of the gallery were also being used for temporary storage of objects that normally reside in the room. At various times, temporary work and storage spaces had to be moved from one end of the room to the other as work progressed.

Fig. 7. Contractors removing old coatings from floor tiles.

Conclusion

The construction of a new building as part of the museum's expansion project provided spaces for taking many auxiliary needs out of the historic museum structure, including the creation of a purpose-built concert hall. The new concert hall eliminated the need to use the Tapestry Room, the museum's largest gallery, as a space to hold concerts and lectures and allowed conservation and other museum staff to return the Tapestry Room as accurately as possible to the appearance of Gardner's original installation (Figure 8). In addition, the electrical wiring was fully upgraded and the gallery lighting was redesigned as part of a museum-wide lighting project. With the opening of the new wing and associated events, attendance has continued to rise over the course of this year and the response from visitors, members and staff has been enthusiastic. The conservation department has already begun to evaluate how the changes to the Tapestry Room, the new gallery lighting and the reduction of programming in the historic building is affecting – or not affecting – the collection. Planning is underway for the next full gallery restoration project, but thus far the Tapestry Room

has been the most comprehensive, including everything from floor to ceiling and many objects in between.

Fig. 8. After treatments and re-installation was completed.

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Siple, E. 1927-8. Internal records. Isabella Stewart Gardner Museum, Boston, Massachusetts.

Will and Codicil of Isabella Stewart Gardner, 9 May 1921, probated 23 July 1924, Suffolk County, Commonwealth of Massachusetts. Clara L. Power, Assistant Register.

Materials list:

Ammonium citrate dibasic (citric acid diammonium salt); Fisher Scientific, 1 Reagent Lane, Fair Lawn, NJ 07410, USA

Conservare® OH100 (ethyl silicate); PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046, USA

WoodEpox® (two-part epoxy putty); ABATRON, Inc., 550195th Avenue, Kenosha, WI 53144, USA

Parafilm® M (stretchable plastic film composed of polyolefins and paraffin wax); Pechiney Plastic Packaging, 8770 W. Bryn Mawr Avenue, Chicago, IL 60631, USA

Paraloid™ B-72 (ethyl methacrylate and methyl acrylate copolymer); Rohm & Haas, subsidiary of The Dow Chemical Company, 455 Forest Street, Marlborough, MA 01752, USA

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The Getty Research Institute, Los Angeles, November 6-9, 2012

Abstract

This paper reflects the multidisciplinary approach to the conservation and renovation of the historic interior ensemble of Amerongen Castle in a revived public context. New insights deriving from a holistic approach were developed to conserve a multi-layered history, respecting all remaining phases of the building's past. The intention of conserving the 'existing fabric' above 'restoring to a former situation' with respect to its aged condition was the starting point for a ten year conservation project. Extensive research into the building and its history, the indoor climate and the interior decorations and the collection of artefacts was carried out. In addition, a housekeeping program was installed. The results and assessments of work carried out were described and correlated for every interior space. This was the basis of a conservation project in which artefacts, context and narratives sometimes prevailed over interventions. The author acted as curator ad interim, project advisor and conservator.

Keywords

Amerongen Castle, interior-ensemble, space book, slow preservation, housekeeping, conservation heating, re-peopling, virtual presentation

Amerongen Castle: The House a Phoenix: The Conservation and Reviving of a Dutch Historic House

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Introduction

Amerongen Castle is a country estate in the centre of the Netherlands, strategically located in the Rhine estuary. The fully decorated house today represents the living history of a single family for over more than 700 years. It reflects an almost complete collection of art and artefacts of this one family until 1977. At which point, the house was sold to the Dutch State and was opened to the public under the care of a trust. Amerongen Castle is a listed building. The house and interiors are valued amongst the most important historical mansions in the Netherlands [Gerretsen and Van der Woude, 2011].

This paper describes the way in which the castle was revived for its reopening to new visitors in 2011 after suffering from disastrous floods in the 1990s. Moreover, this paper concentrates on the analysing and weighing of conservation decisions made in this context. The conservation of the collection was dominant to the restoration of the building. How then, did specialists, advisors and professionals from different disciplines collaborate in the restoration of the building and its collection? This paper looks into that process, its effectiveness and its failures.

The castle - first destroyed

Amerongen Castle, an edifice dating back to the middle ages, suffered its first major catastrophe in 1673 when French troops, then occupying part of the Dutch Republic, burnt the castle down. By 1681, its then owner and resident, the influential diplomat Baron Godard Adrian van Reede, had the castle rebuilt in the fashionable architectural style of Dutch Classicism (Figure 1).

Fig. 1. Birds eye view of Amerongen Castle with the house and moat in the centre.

The mythological bird the Phoenix was (and remains) depicted on a wooden hatch in the vaulted ceiling in new the Long Gallery. The Phoenix symbolises a resurrection from flames and ashes, a restart of life after disaster (Figure 2). This hatch closes off an opening, used to transport via a still existing hoisting pulley, building materials during the 1673-1680 rebuild. The castle has recently undergone a similar parallel to this historic event. Another rebirth of this remarkable house took place in 2011 when the castle reopened for the public after an extensive restoration of the building and conservation of the interior.

Fig. 2. The Phoenix depicted on the wooden hatch.

In 2000 the castle, functioning as an historic house museum, was forced to close and almost went bankrupt. This time the calamity was water, not fire. Two floods in 1993 and 1995 had affected the moat surrounding the building, the electric wiring system and caused biological infestations. This created a high-risk situation for visitors. In addition, driven by new health and safety regulations, the authorities revoked public access because of insufficient evacuation routes. Moreover, the floods had caused cracks in walls and led to an inadequate interior climate. This caused structural defects in the building, deterioration of the interiors, its decorations and collections - a disastrous situation. However, from this dramatic predicament, Castle Amerongen would emerge again, not as a renewed but as a preserved Phoenix.

Preserving authenticity

Although the house suffered from floods and a lack of maintenance, the interiors were still an exceptional ensemble because of their completeness. An independent advisory committee to the Board of Trustees also recognised this at the start of the major restoration that took place these last 10 years. They stressed careful planning and execution of the conservation and restoration campaign. The aged authenticity, the patina of time, of the interior ensemble was regarded as one of the most important and rare aspects of the house. The committee advised coherent conservation of house and collection. The ensemble had grown old together. It is not the individual artefacts or the building itself, but the ensemble in its original setting that makes Amerongen Castle so valuable. This, then innovative, vision determined the conservation plan for the collection, which was used to solicit the necessary funding [Van der Woude, 2003].

It also led to a change in approach of the architectural restoration and renovation of the fixed installations. The focus became conservation, respecting the existing fabric rather than renewing it. Therefore, the architectural finishing of the interior remained an important part of the historic house museum ensemble. All epochs of interior decoration and any architectural changes in the house made before 1977 were respected. The curator took on the task to save-guard completeness and authenticity of the interior ensemble during the planning and execution of the conservation of the building, ensuring that amongst all stakeholders, there was an understanding of minimal intervention.

The family

The context of the castle and the usage of the house changed over time. It developed from a military and defensive keep to a summerhouse, to a family home and finally to a museum with four weekend apartments (for family members). The house had been originally rebuilt as a summer retreat but in the late nineteenth century, the last heir of the Van Reede family, Count Godard van Aldenburg Bentink (1857-1940), decided to take up permanent residence while raising his a large family [Mulder, 1949]. This had consequences for the indoor climate as large stoves were installed to heat the building in the cold and wet seasons. From 1880 until 1940, the seventeenth century summerhouse was lived in the whole year round, whereas previously it had been closed up and put to bed after the summer season. This resulted in more wear and tear of the building, its upholstery and the vulnerable collection of art and artefacts. Housekeeping and regular maintenance could be kept up to standards, but the heating and fluctuating indoor climate situation enhanced deterioration.

The starting point for the conservation of the interiors and collection was to keep the historical integrity and atmosphere as a living house-museum intact. Originally, the goal had been to present the house in the situation of its former full-time resident, Count Bentinck. Policy changed later as the Trust followed the curator's argument to present the collection in the setting of 1977. Count Bentinck's children lived in the castle from 1885 until 1977 and were the last owner-residents. The castle had been extensively photographed before this

sale, providing clear evidence of the arrangement of the collection (Figure 3). Thus, today the castle has been preserved to reflect the period between 1940 and its sale in 1977.

Fig. 3. Grote Zaal, drawing room, photographed in 1977.

Around 1950, the family Bentinck retreated to four small but comfortable apartments, with modern plumbing and central heating. They did not notice the deteriorating conditions in the other parts of the house. The staterooms and some of service rooms in the basement were kept intact but were rarely used and neglected. Damage occurred because of leakages, bio-degradation and insufficient housekeeping. The family could not keep up the maintenance of the castle prior to its sale in 1977. They retained the use of the apartments during holidays and weekends, a situation that continued until the start of the conservation of the house in 2005.

Only six years after being sold, Amerongen Castle in 1983 opened as an historic house museum, almost completely managed by volunteers. Although efforts were made to conserve the textiles, to restore the roof and the facades, there was neither notion of a housekeeping program nor a sense of urgency to deal with the backlog in maintenance. The floods of the 1990s changed this at last. Finally, in 2000, it was obvious that major restoration works were inevitable and the house was forced to close in order for these to be carried out.

The first priority was reorganising the housekeeping and taking preventive conservation actions (Figure 4). Infected pieces of the collection were treated by an O_2 suppression method. At the same time, a thorough documentation was made in which all spaces were described and valued by art and building historians [1]. It

resulted in the so-called *Ruimteboek*: space-book or room-book, a digital database in which all the historical and factual information is ordered per room [Ruimteboek, 2005-2011]. The architect used this database for the conservation plan where all actions and professionals needed are mentioned, it is still being used by the curator for housekeeping, and will be used for maintenance as well.

Fig. 4. Grote Zaal, drawing room in 2004, housekeeping and preparing for conservation

Time machine

It took about five years of research, planning and preparations before conservation of the interiors could start. Although the museum was closed, guided tours around the conservation site were allowed. A portable cabin was placed in the grounds as a conservation-documentation centre and special interest tours were organised. The public was invited to see and follow the progress to both the collection and the building. Visitors loved to see old building techniques and materials that are usually out of sight. The original floorboards in the drawing room, the *Grote Zaal* (drawing room) were normally covered by rugs, but could now be seen and appreciated for their size, quality and the way they are laid to form a smooth ballroom floor (Figure 5). These boards were a gift from the Kürfurst of Brandenburg (1620-1688), cut from one of his forests in Germany. When the floorboards were taken out for conservation visitors were beamed back into history like a time machine. Tangible traces of the seventeenth century carpenters working on the house, such as old tools and wood shavings, came to light. Students and professionals in the field of cultural heritage participated in several

courses, workshops and research highlighting the process of conservation. Participants were asked to share their expertise, meaning valuing and risk analysis. Interns helped in getting the house ready for the winter, for building activities and to protect the collection.

Fig. 5. Grote Zaal, drawing-room, original floor planks are re-positioned with wedges (2007).

Originally, the collection of art and artefacts would stay in the house during the building restoration. Some objects are accustomed to a certain environmental conditions and a change of location could lead to new damages. The spectacular but fragile so-called Van Mekeren cabinets with marquetry inlaid flower arrangements were particularly worrying within this context. Moreover, the collection would be available as reference if required. Thus, some of the paintings and textiles are treated in temporary studios in the house and in the castle grounds. Visitors could observe conservation being executed on location. However, most of the paintings were treated at the Stichting Restauratie Atelier Limburg (SRAL) studios in Maastricht, or in public view by SRAL conservators in a studio at the Bonnenfanten Museum, Maastricht.

The house as a vessel

Castle Amerongen is a vessel with an integrated collection of artefacts as its most important feature. Preservation of the collection and the conservation of the interior as an ensemble are of prime importance. The conservation plan for the building was based primarily on preservation and consolidation and secondly on conservation. The prime concerns were to stop rapid deterioration and to consolidate structural damage. A

first priority obviously was to meet the requirements of the fire department and make the house safe for visitors and residing guests. However, the intention to keep the historic house museum authentic as an old and meaningful artefact can be contradictory to the needs for public access.

Fig. 6. Old Kitchen, the tiles and stones of the floor tell their stories.

Two cases demonstrate such a contradiction. The first one is that of a stone paved floor of Old Kitchen found the oldest part of the building, dating back to the Middle Ages. The floor of the vaulted room in the service basement consists of a variety of tiles, slabs and stones, many of which were either broken or damaged. The diversity of components and their condition tell the story of the household and of the floods which often occurred in past centuries (Figure 6). A drainage pipe above the floor in outer wall at the south side, installed to dissipate the floodwater, is witness to these. While the current condition of the floor shows history in a charming way to the visitors, it also proved quite a health and safety risk. In the initial conservation plan, the decision was to lift the tiled floor in order to install floor heating. Subsequently, the previously unsteady floor would be levelled to improve safety. However, the curator had second thoughts and suggested leaving the room unheated so as to respect the floor in its present fragile state. It was reasoned that the oldest part of the building should stay 'old and cold', as castles usually were. These arguments were convincing and plans were changed. Only a few of the broken tiles and loose stones actually required stabilisation to improve safety. There remain some functional limitations to Old Kitchen, which does not contribute to improving the indoor climate; however, the space retains a sense of historical authenticity for the visitors to see, feel and understand.

The installation of a fire escape was another issue of conflicting intervention, this time where authenticity lost out. Fire and safety regulations required a second escape route. This was created by linking a service staircase to the basement and the attic, however it meant sacrificing a money-vault dating from about 1900 and breaking up a vaulted ceiling in the basement. The placement of modern fire escape meant the loss of an original and unique part of the house; a difficult decision to make. It is hoped that the new stairs will never be used for their intended purpose.

Indoor climate

The context and setting of the complete collection in Amerongen Castle was problematic because of inadequate indoor climate conditions. Placing new installations, such as central heating radiators underneath the windows, would entail (re)moving objects within the fully decorated interiors or affecting the convincing image of the ensemble. The collection should retain its arrangement as of the mid twentieth century.

Indoor climate research by the Technical University of Eindhoven provided a fundamental assessment of the different environmental conditions [Ritmeijer, 2007] (Figure 7). This research is still ongoing. Derived data formed the basis for the renovation of the technical installations. The results showed that temperature and humidity levels can be improved with a combination of:

- a 'slow' floor-heating system under the tiled floors in the basement and the main (first) floor;
- using the stone core of the building for 'thermo storage' during the summertime;
- lifting and spreading warmth through the building, e.g. open staircase and galleries;
- recognising the buffering-effect of heated areas, such as the basement, 3rd floor and former apartments;
- applying indoor ventilation by opening doors between state rooms, halls and galleries;
- re-installing external shutters at the windows on three facades for insulation and sun-reflection;
- closing internal shutters and double blinds to insulate the windows, reducing climatic impact and fluctuations.

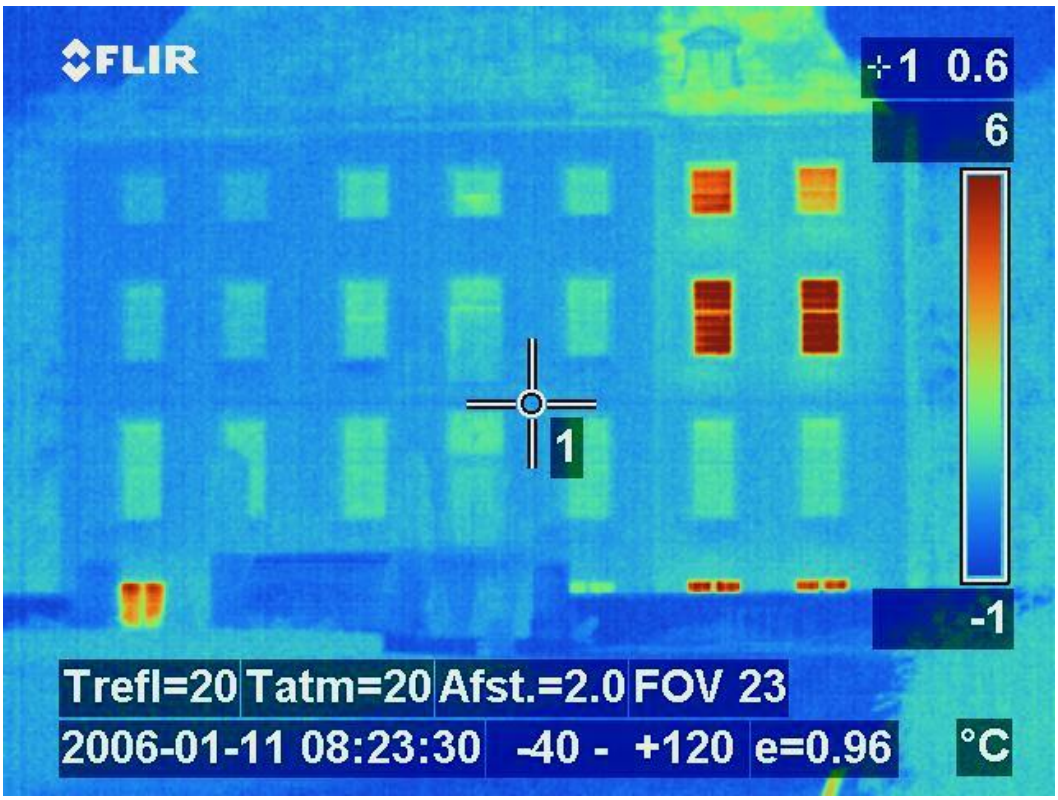

Fig. 7. Front, False colour infrared image showing gradients of cold (blue) and warm (red) surfaces ©TUE.

Under floor heating was installed in some areas. However, this decision meant a major intervention to the historic fabric of the seventeenth century building as most floor tiles had never been lifted before. The floor heating system was not designed for comfort but for conservation heating. It stabilises the indoor climate and reduces high relative humidity levels. The heating system is regulated by hygrostats rather than by thermostats. The climate has been monitored for two years now and the floor heating seems to be working sufficiently. Reduced conservation heating seems to be a success and the indoor climate is now better balanced to the seasonal climate. The house has regained its former role as vessel for the collection, with a heating system safeguarding the conservation conditions.

The state-bedroom or so called *Lodewijkskamer* (a Louis XVI-room) was also much improved because of the new heating policy. The room is named after its eighteenth century baroque state-bed decorated with Chinese silk, hangings and embroidery. It was known to be in good condition in 1977. However, today the textile hangings and the linings of bed frame and canopy are badly deteriorated and in need of restoration. For twenty-five years, water seeped along the west façade due to a leaking gutter, causing an overly damp environment in this room. Sunlight, fungus and bug infestation by carpet beetle did the rest. Today, the historic interior with damaged wallpapers form the early nineteenth century is conserved, but the state-bed has yet to be treated. Three adjoining rooms with central heating now buffer this room, and this should be sufficient to create a better indoor climate for the state-bed, the wallpaper and the other decorations. If not, a central heating element might be considered in the future. The existing iron stove could be fitted with a central heating coil and be re-used. Central heating piping is already installed under the floorboards as a precaution, as throughout the rest of the museum.

A year round housekeeping program is essential in keeping interiors and collection in a good condition. The house will not be closed all together in wintertime. Visitors are welcome during its winter sleep. While the large nineteenth century stoves in the fireplaces are no longer lit, their oxidation due to extreme relative humidity has been stopped due to improved climate conditions and better maintenance. Vulnerable objects like framed prints that hang on outside walls are put into storage during wintertime, avoiding damage by damp. Individual care of solitary objects will remain important.

These points clearly show the intentions of the conservation team to look for solutions from a holistic perspective. The combination of housekeeping practices and innovative technical installations reduces risk to the collection and future interventions to the historic interiors.

‘Amerongen Castle: How it used to be’

Before the reopening of the historic house museum, the Board of Trustees launched this statement to promote the castle. It more or less sums up the focus of the conservation project. It also stresses the intention to preserve the historical function of the castle in today’s society and for the future generations, as the place it used to be: for people to meet, to discuss, to engage, to reflect, to enjoy, to share and to learn. The Trustees intend the castle and the house to explore its historical function in a broad and modern cultural sense. After a ten-year period of conservation and renovation, it has a future again. Conservation will be part of this. The Trust initiated a Restoration Expertise Centre on the estate with conservation facilities for the ongoing preservation of Amerongen and other cultural heritage locations.

The historic house museum reopened in July 2011. The opening festivities commemorated the first rebuilding of the house, more than three centuries ago, with a spectacular and innovative visual presentation by Peter Greenaway. The ‘resurrected’ house is revived with a virtual presentation of the diplomat and nobleman baron Godard Adrian van Reede and his wife Margaretha Turnor (1613-1700) [Greenaway & Bodeke, 2011]. This

couple commissioned and guided the original rebuilding of the castle, so it is fitting that they are involved in the celebration of this new rebirth (Figure 8). In the presentation, this moment is celebrated in a fictional story of mid-summer day in 1680. The first resurrection was symbolically captured in the painting of the mythological bird on the hoisting hatch. Now the house has risen up for a second time. Amerongen is truly a Phoenix.

Fig. 8. Re-peopling Castle Amerongen, 'Godard and Margaretha', still of the multi-media projection (2011). © Greenaway

Conclusion

The conservation of this extraordinary historic house has been an interesting and complex process. It was based on a holistic view focusing on the interior ensemble housed within an historic building. Collaborating professionals decided on the existing building fabric and the collection of artifacts. Sometimes the preservation of an old situation dominated, at other times renovation prevailed. Innovative installations are now fitted in the house based on recent research and using new views on the balance between indoor climate and seasonal impact, called slow preservation [Ritmeijer, 2007].

The overall conservation plan demanded a clear vision of a prioritised and less invasive intervention to the house as it is an important historical artefact in itself. To appreciate this fully, the relevance of the house in the context of the collection was analysed, described and valued before conservation started. The space-book turned out to be an indispensable tool in the decision making process and is still used for curatorial purposes, housekeeping and maintenance. Because of private and public funding, the conservation was an open process in which all administrative, financial and public stakeholders participated. The narrative of the house as historical ensemble and its conservation received much attention. It involved public engagement ranging from visitors to supporting friends, volunteers and the local community who share the interest in the Amerongen Castle as living example of a rich cultural heritage with a future.

Endnotes

[1] Values considered were: Historical value and Authenticity and Uniqueness. Further points considered were if the contents were typical of a particular period of occupation or if the artifact was part of the historical building fabric.

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
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The Walls Can Speak - Understanding the Narrative of the Historic Interior as an Architectural Artefact

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Abstract

Decorative finishes in historic interiors can vary enormously in material, rendering techniques and three-dimensional aspects. The appearance of the interior is also formed by a unifying element that is not necessarily the result of a tangible decorative finish. Conservation or restoration of a historic interior is not only about treating a single element. It is about understanding the synergy between decorative, architectural and spatial components that enables the historic interior to tell its story. In this paper we investigate the synergy of three interiors in the seventeenth century Dutch castle Keukenhof; the castle with its interiors is nationally listed for its unique decoration. Crucial details were revealed while the authors conducted paint and materials analysis to support the initial conservation proposal. The unifying, intangible aspects that became understood while conserving and restoring these interiors are examined. The understanding of these intangible characteristics, that the authors have named 'synergy', substantially changed the direction of the Keukenhof project. The authors argue that this aspect is too often overlooked and needs to be central to the conservation and restoration process.

Introduction: Kasteel Keukenhof

The name 'Keukenhof' can be best translated as 'kitchen garden', reflecting the castle's original function in the fifteenth century when the grounds were used for growing food for the local nobility. In 1635, a classic brick villa was built on the estate, and was named after the grounds: Keukenhof. Nowadays, Kasteel Keukenhof is closely associated with the world famous tourist attraction park, which shows more than seven million tulips, daffodils and hyacinths in Spring each year.

The original villa was built for Jan Maartenszoon Block (1581-1661) who was a commander in the Dutch East India Company (VOC). This villa, with a rectangular floor plan, was the basis of the current castle. It was altered and enlarged in the following centuries and now has a predominantly nineteenth century appearance. The immediate surrounding grounds were transformed into a formal French garden in the late seventeenth century, and again remade as an English landscape garden around 1809. In 1857, the garden was further developed in the landscape style to a design by the famous Dutch landscape architect Jan Zocher (1791-1870). [Breure-op 't Hof, 2007]

Over time the castle has known several alterations and refurbishing campaigns. An extensive modernisation of the castle took place in the latter half of the nineteenth century. The architect Eli Saraber (1808-1878) was assigned to turn the seventeenth century rectangular villa into a neo-gothic nineteenth century castle, complete with several towers (Figure 1). In the 1920's a second campaign took place, at that

Keywords

Conservation historic interiors, nineteenth century decorative interior, wallpaper, architectural paint analysis, decorative synergy, conservation process, holistic approach.

time the façade was altered and a large part of the interiors were redecorated. In the 1950's, after the Second World War (WWII), some rooms were in need of redecoration again.

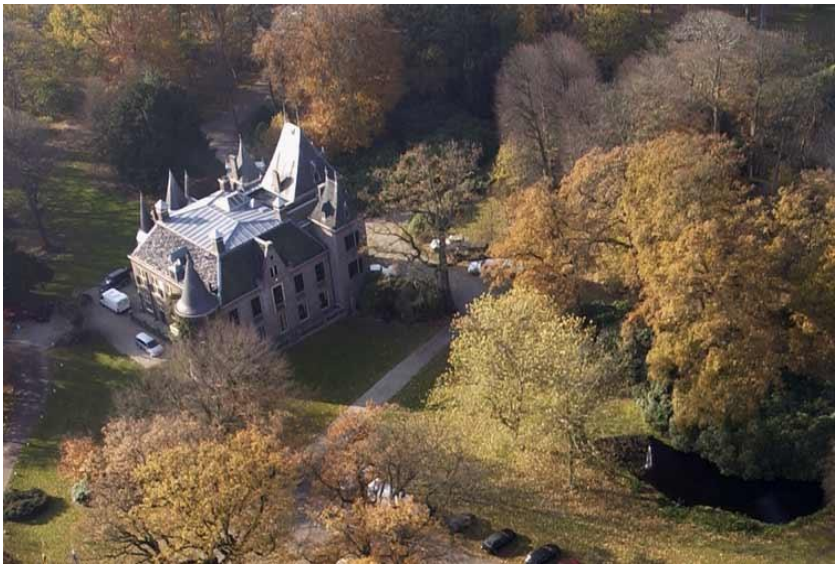

Fig. 1. Aerial photograph of Kasteel Keukenhof. www.basenmandy.nl (accessed May 2011)

The house was privately owned and occupied by the same family until the last Count, Baron Van Lynden, died in 2003. [Viersen, 2008] He left the castle, after his death, to the Keukenhof Foundation. This foundation is now responsible for the maintenance of the castle, and chose to market it as a wedding and events venue. Conservation projects have been ongoing since then: a number of smaller projects took place in 2008, and a large-scale one took place in 2010-2011. This latter was initiated after a one year detailed research of the interiors, and after work on the interiors and exterior of the castle was completed.

Understanding tangible and intangible decorative elements

In general, the conservation of a historic interior involves an element of searching for the decorative entity (or harmony) of the room. In order to preserve or reinstate this entity, a holistic approach is essential: the interior needs to be treated as a complete artefact, rather than a composite of separate elements. In their own conservation practice, both authors try to take this one step further. An interior can only undergo a holistic conservation process when the characteristic unifying element in the room is both recognised and fully understood. The actual decoration of an interior can be unified by the homogeneity of decorative elements, for example in a specific decorative scheme. This can be a repetition of a certain texture, or a contrast in colour or

sheen; for example, when a specific colour scheme or fabric has been used throughout. A single colour can be employed to connect individual interior elements, such as a dye that is used both as a colourant for textiles and (precipitated onto a substrate) as a pigment for painted schemes in the same room. Thus, colour, texture or fabric can be used to create an aesthetic unity in an interior, and a wide variety of research methods and material analyses can help in understanding the tangible aspects of a room.

However, it is not always a tangible finish that pulls an interior together, more often it is an intangible decorative aspect that defines the atmosphere or 'feel' of a room, and is responsible for the actual visual coherence. The understanding of these intangible decorative aspects are difficult to communicate when stakeholders become too strongly focused on the individual (tangible) details of the decorative scheme. This is especially true for interiors from the second half of the nineteenth century, where often prefabricated products were used. The use of manufactured decorations with their multitude of components and materials, make it difficult to understand a decorative finish as a whole, if their origin, coherence and interdependence (intangible aspect) are not investigated. By not recognising this, the room is not understood as a total concept and thus runs the risk of loosing its original identity in the conservation or restoration process.

In this paper, the authors will discuss the importance of researching the tangible details in order to understand the intangible elements of the same interior; the authors identify this as the 'synergy' of a room. The challenges and issues involved in doing such a holistic analysis will also be discussed. Three different rooms in Kasteel Keukenhof are used to illustrate this process and to demonstrate how defining and understanding synergy resulted in dramatic changes in the conservation process.

The conservation process

The 2010 campaign initially focused on badly needed structural repairs of the roofs and walls. This renovation also provided an opportunity for the conservation of several interiors. With the renovation well underway, the conservation architect Leo Wevers (Vlaardingerbroek and Wevers) commissioned the authors to carry out a systematic paint investigation and research into wallpapers used in the castle (a significant number of rooms are papered). [Keppler, 2010; Geldhof and Keppler, 2011] Understanding the relation between the painted architectural elements (window frames and wainscoting) and the papered walls, proved essential for understanding the sequential decorative finishes. Neither a paint investigation by itself, nor an independent study of the wallpapers present would have yielded the required level of understanding. Instead of choosing one of the finishing phases as a basis for restoration, the entire story of each interior was considered and used as the primary criterion for planning treatment. This reflected the desired holistic approach. This is about understanding the sequence of all the different decorative schemes in order to choose one scheme, which does justice to the origin and identity of the room; and, in doing so, understanding the synergy that exists between the elements.

The Blue Salon (Blauwe Salon)

The Blue Salon is the most representative room of the castle. The architectural outline of the room is part of the seventeenth century floor plan. The room is situated on the *piano nobile*. Its most prominent features are the early eighteenth century mantelpiece decorated with a blue veined faux marble, and the coffer ceiling in which twelve paintings by Johannes Stortebeker (1821-1899) are recessed. The decorative strap-work (painted in a dark faux-wood on linen and cut out) is glued on the painted light yellow wainscoting. This dark linen strap-work on a light coloured background on the panelling is mirrored in the ceiling. Here, a light coloured decoration is painted on the dark wood imitation of the beams in the ceiling. (Figure 2) The current light

yellow scheme is a touching-up done after the WWII, based on the previous underlying light yellow phase that is mainly the result of a redecoration in 1860. Initially, at the start of this project, the first light yellow phase was thought to be applied in the early twentieth century. Architectural paint research, together with understanding both the tangible and intangible aspects, has changed these earlier assumptions about the decorative scheme in the Blue Salon.

Fig. 2. Blue Salon: detail of the ceiling and walls with the decorative strap-work. ©E. Geldhof/R. Keppler

Before research even started, both the conservation architect and the castle administrators declared the light yellow finish on the wainscoting unwanted. They were looking for something more exciting, as this room is now used for wedding ceremonies. Architectural paint research and analysis revealed that, prior to the two consecutive light yellow phases, a monochrome dark green phase was apparent. [1] One of the main questions during the conservation process was whether this dark green colour scheme could be reinstalled. In general, dark green was extensively used in the nineteenth century. Therefore, the conservation architect and the castle administrators wanted to have the room repainted in this 'characteristic' dark green colour. The light yellow phase appeared to them to be from a later date, and they disparagingly called this a 'custard colour' that they claimed needed repainting. However, this decision was primarily based on personal taste and a misinterpretation of previous research and analysis.

Further paint analysis showed the presence of finely ground zinc white pigment in the light yellow paint layers. Zinc white is thought to be in use since the late 1850s. [Kuehn, 1986; Gettens and Stout, 1966] Finding this pigment seemed to be fresh proof that the yellow phase must be dated after the 1860 renovation of the castle. The fine grind of the zinc white also seems to date this pigment to post industrial production. It was argued that if this yellow layer belongs to a later period, then the underlying dark green scheme could be

linked to the 1860's redecoration. The dark green scheme would thus connect to the ceiling paintings with the painted decoration on the beams and with the mirrored decorative strap-work on the wooden wainscoting.

The authors strongly rejected these ideas and argued that the Salon consists of more elements than only the painted wooden panelling and the ceiling paintings (tangible aspects). We questioned how the decorative strap-work could be connected in an historical context to the dark green scheme, supposedly applied in the 1860s. More importantly, we also doubted if the decorative strap-work on the wainscoting could be associated with the dark green colour scheme in an aesthetical context (intangible aspects).

Fig. 3. Blue Salon after conservation. This room is now often in use for wedding and conferences. Here the large mantle piece is visible together with the ceiling paintings and the reinstalled replica eighteenth century Caspar Wolff landscape paintings. May 2012. ©E. Geldhof/R. Keppler

If the aesthetical values of the room are observed, it is clear that the linen strap-work on the wooden panelling has a three-dimensional purpose. The dark strips applied on the light background, enhanced with a painted shadow line, give the panelling its architectural three-dimensional features. This pattern is repeated, but mirrored in the ceiling where the decorative motive is painted directly on the wooden beams. Thus, the decorative strap-work on the panelling forms a unity with the painted decoration on the ceiling. If the strap-work was initially glued on dark green painted panelling and later replaced on the light yellow panelling, traces of dark green paint on the reverse of the strips might be expected. Investigation of a few loose linen strips did not show any residues of green paint. Stylistically, it also seems strange to have a dark green panelling with dark decorative strips on it. This would not give as much of a visual three-dimensional effect in the room as it has now (intangible aspects - the synergy). Understanding and clarifying this stylistic aspect of related decorative elements allowed the authors to preserve this light yellow colour, maintaining this decorative scheme and the synergy of the room for future generations.

This example clearly shows how a holistic approach and a close observation of details lead to the decision to

keep the room as found: a light colour scheme enhanced with three-dimensional decorations, painted on the beams and glued as linen strap-work on the wainscoting. A decoration scheme that the authors think captured the identity and synergy of the Blue Salon. (Figure 3) This outcome emphasises that personal prejudice and interpretation of paint analysis results can obscure proper understanding of the decorative synergy of a room.

The Count's Bedroom (Slaapkamer van de Graaf)

A comparable scenario unfolded in the Count's Bedroom. The conservation architect and castle administration followed a similar rigid strategy, attempting to return this interior to the 1860s building phase. The discovery of a tiny fragment of light blue wallpaper (found on a remnant of lattice-work beneath the existing flowery wallpaper) raised the expectation of an earlier decorative scheme. So the authors were asked about reproducing this wallpaper in order to return the room to an earlier historical vision. The blue paper fragment was decorated with a now only slightly discernable trellis pattern, and closer examination failed to determine whether the scrap came from a wallpaper or border. Provenance, pattern and position were difficult to establish, and a convincing reconstruction was regarded as impossible.

Fig. 4. Top: Count's Bedroom: after conservation. © E. Geldhof/R. Keppler

Fig. 5. Bottom: Count's Bedroom: detail of the wallpaper with matching curtains. © E. Geldhof/R. Keppler

This dearth of information allowed focus to shift to the existing wallpaper, a colourful paper depicting flowers, and the matching curtains. This more recent wallpaper had been deemed unacceptable and 'ugly' by the conservation architect and castle administration. But the authors had no idea why this wallpaper was considered ugly and wrong for the Count's Bedroom. The authors observed that the wallpaper was block-printed using a coherent pattern and was in excellent condition. (Figures 4 and 5) By happy coincidence, an unused roll of this wallpaper was found in the attic. This find enabled further research into the provenance of this wallpaper. The paper was hand printed in France by the wallpaper manufacturer Paul D{um}AS[2] in the pre-WWII period. The twelve-colour pattern was applied to *papier continu* that was of a good quality as rag fibres could be distinguished. When comparing the unused wallpaper with the paper on the walls, it was evident that the pattern on the walls had barely

faded. Knowing how the castle rooms were decorated in the 1920s and again around 1956, the authors presume that this flowery wallpaper in the Count's Bedroom was installed in the 1950's, but that it probably was manufactured in the pre-WWII period. The decoration in this room thus reflected the personal approach and taste of the count in the most personal room of the castle, his bedroom.

Communicating these intangible findings in their coherent context during many discussions, finally convinced the conservation architect and castle administration to keep the existing wallpaper. Rather than attempting to recreate something from a tiny fragment of which the origin and placement was completely unknown. By doing so, the function and appearance of the room as intended by the count survives and the synergy of the room is preserved for future generations.

The Tower Room (Torenkamer)

The round Tower Room, added to the existing villa around 1859 at the same time as the other towers, is situated on the first floor and has a vaulted stucco ceiling with a faux closed lantern. The ceiling is painted with a geometrical pattern of small squares in perspective, which are highlighted with gilding. This gilding, together with the gilded trim on the stucco cornice, glimmers beautifully in the sunlight. The plaster walls are wallpapered above a low wooden wainscoting, decorated in 1859 to imitate a dark wood grain, which is still preserved. The original 1860s wallpaper has a dark trellis motive with brown shadow lines on a dark blue-green background (Figure 6) and was papered over in the 1950s with a lighter wallpaper with a similar trellis pattern.

Fig. 6. Tower Room: wall with original 1860s wallpaper, and later 1950s wallpaper. ©E. Geldhof/R. Keppler

The room has an entrance door that leads to the adjoining Red Salon (Rode Salon), with an allegorical scene with *putti* painted in grisaille (a 'witje'), as a over-door painting. The room has two windows, which are curved with the walls, which show traces of cames in the window frames. These cames were originally set in diamond pattern and would have reflected the trellis of the original wallpaper. In this way, the walls and the window cames of the

room formed one continuous trellis motive that would have surrounded the visitor just like a garden arbour.

The Tower Room was refurbished as part of the 2008 conservation work (which for the Tower Room was limited to the conservation of the ceiling decoration). The original 1860s wallpaper was discovered during this work, hiding beneath the 1950s wallpaper. It seems that the 1950s wallpaper had been carefully chosen for this room, with its similar trellis pattern enhanced with light green bows against a very light silvery pearl-coloured background. However, the effect of this light wallpaper colour completely deprived the room of its original function and meaning.

The original function of the room was to establish a connection between indoors and outdoors, between the interior of the castle and the beautiful English landscape garden. This was created by carefully leading the eye of the spectator from the dark (the room) to the light (the garden via the windows). The original trellis wallpaper combined with the trellis-patterned windows gave the room its garden arbour essence. This vital, intangible element was lost when the room was redecorated in the 1950s. The new wallpaper with its lighter background created a lighter room, but caused the room to loose its original meaning. The intense contrast between the dark room and the light exterior was lost, and with that, the synergy of the decorative scheme. Changing the interior colour scheme showed that the function or context of this room was not fully understood when it was redecorated.

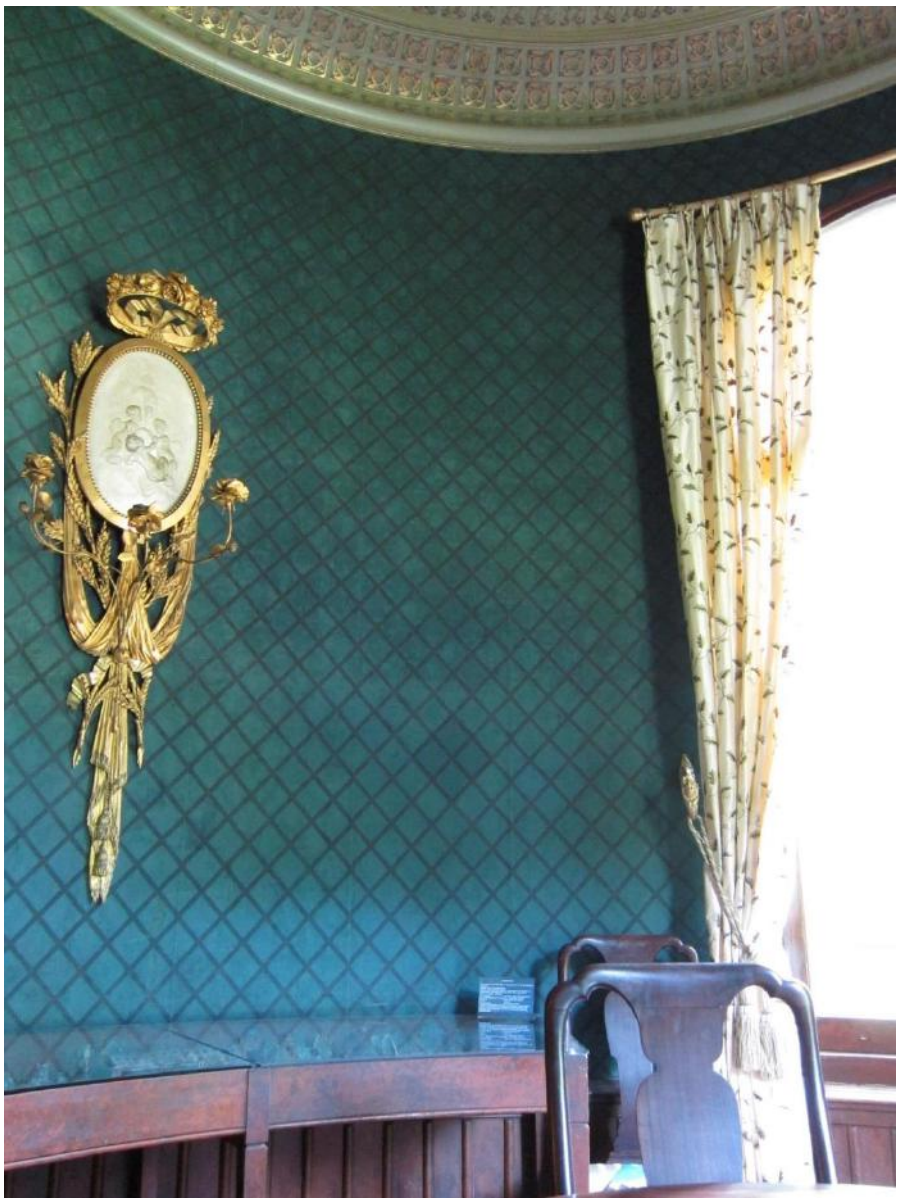

Fig. 7. Tower Room: after conservation. May 2012. ©E. Geldhof/R. Keppler

The main goal of the second conservation campaign in 2010 was to return the meaning and function of the Tower Room by uncovering the original wallpaper. In this case, there was sufficient time between 2008 and 2010 to carry out a pilot study. The pilot project allowed all stakeholders to assess the proposed result and see how the original appearance would work in reality. This allowed time to discuss treatment options and results before a long and complex treatment began. The function of the decorative scheme in the room as a binding element between the garden and the castle was explained by the

conservators and understood by the architect, the castle administration, visitors and other people involved.

Conclusion

These case studies show that understanding the decorative synergy of a room is the key to preserving the function, context and aesthetics of an interior. This synergy can be enhanced by a single decorative element in a room which has a unifying role, like the linen strap-work in the Blue Salon. It can be the relationship between a decorative finish and its cultural or material value, as is the case in the Count's Bedroom. It can also be the understanding of the context of the room within the broader setting of the castle and the surrounding grounds, as in the Tower Room. Each of these three case studies show how an initial rigid conservation strategy was revised, by considering and understanding the decorative synergy that is formed by intangible characteristics such as origin, coherence and interdependence of their interior decoration. This was made possible by communicating a collective understanding of the decorative synergy within individual interiors, using a holistic approach, material analysis, material knowledge, and intuition.

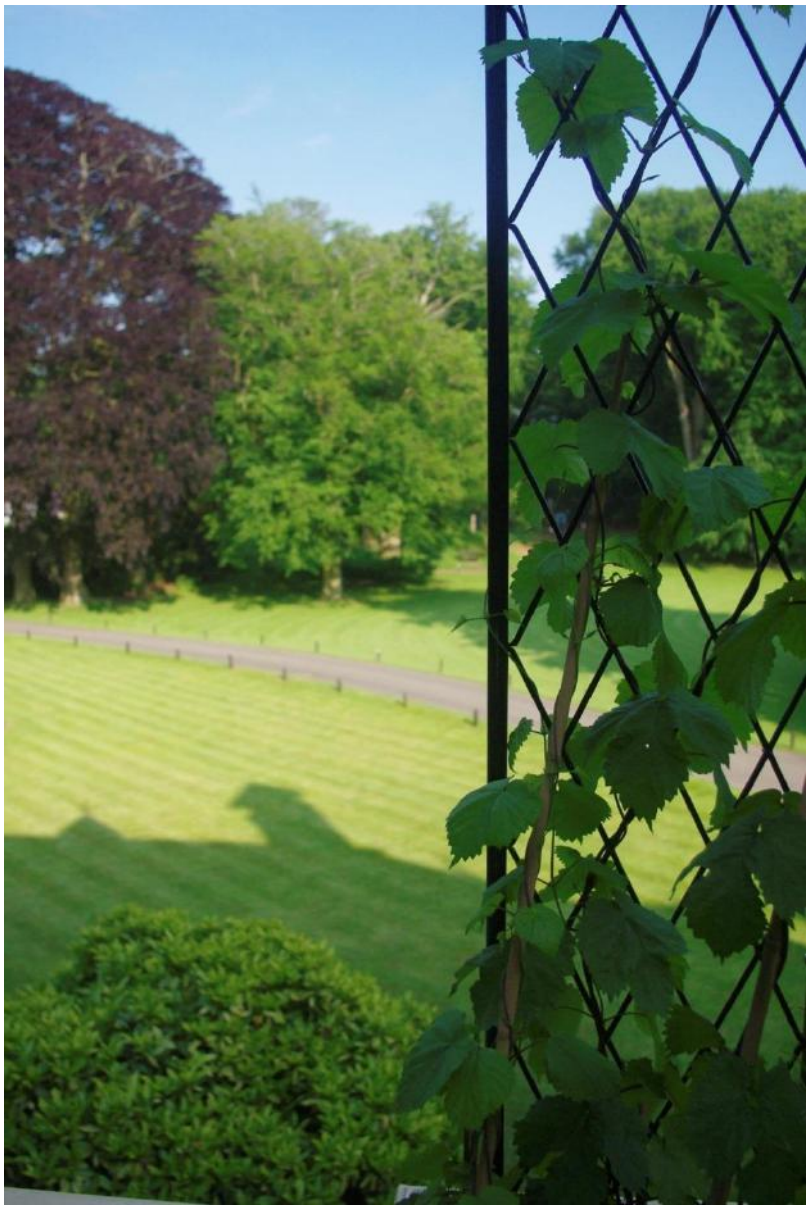

Fig. 8. Detail 1860s pergola on the balcony of Kasteel Keukenhof, showing how the original trellis wallpaper would have worked in the Tower Room. ©E. Geldhof/R. Keppler

Acknowledgment:

The Castle Management, House Keeper Marco Heemskerk and personnel at Keukenhof, Leo Wevers and Julia Hennig (Vlaardingerbroek&Wevers), Ben Olde Meijerink en Andre Viersen (Bureau voor Bouwhistorie en Architectuurgeschiedenis), dr. Eloy Koldeweij (RCE/Cultural Heritage Agency), Matthijs de Keijzer (RCE), dr. Luc Megens (RCE), Art Proaño Gaibor (RCE), Robert Weston (Hamilton&Weston), Nico Lingbeek (Lingbeek Papierrestauratie).

Endnotes

1. Cross-section analysis (optical microscopy OM), polarised light microscopy (PLM) and scanning electron microscopy

(SEM-EDX) was carried out by Matthijs de Keijzer en dr. Luc Megens from Rijksdienst voor het Cultureel Erfgoed (RCE).

2. The firm of Paul Dumas began trading in 1906 in Montreuil just outside Paris, selling hand printed papers and textiles. Patterns were based on collection of nineteenth century wood blocks from a discontinued textile printer. The firm flourished in the 1920s and 1930s, and by 1928 had 750 employees. The period after WWII was difficult for many wallpaper manufacturers and the Paul Dumas firm was reduced to 131 employees by 1954. Eventually, in 1978, the firm stopped producing altogether and ceased to exist. Information about Paul Dumas' business in Montreuil can be viewed at: http://www.actuacity.com/usine-de-papiers-peints-dumas--actuellement-hotel-industriel-et-centre-de-formation-professionnelle_m155712/ (accessed 8 January 2011)

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

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The Getty Research Institute, Los Angeles, November 6-9, 2012

Abstract

A late eighteenth century Chinoiserie interior at the Johan de Witt house in The Hague, was severely compromised by a fire in the spring of 2005. A conservation project was commissioned by the Government Buildings Agency to explore revival scenarios. A multidisciplinary team of conservators specialised in stucco, wood, paint, marble and wallpaper design, in collaboration with technicians for climate control and security, developed several scenarios to conserve, restore and reconstruct the intrinsic quality of this room and to meet twenty-first century user requirements. At the same time it was intended that the project should serve as a reference project for future conservation, maintenance and care of interiors within the context of historic houses owned by the Government Buildings Agency. We will describe our experiences in trying to achieve our goals and present initial thoughts and ideas. The project resulted in new opportunities for safeguarding the decorative room and its unique colour scheme.

Keywords

Architectural decorated surfaces research, Chinoiserie, eighteenth century interior decoration, Johan de Witt house

Preserving and Maintaining a Fire-damaged Eighteenth Century Chinoiserie Interior by Adapting its Appearance, Use and Function

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Introduction

Safeguarding an eighteenth century Chinoiserie interior, after it was damaged by fire in the spring of 2005, required an unconventional conservation approach (Figure 1). The need for conservation was not created by negligence or by a 'natural need' for maintenance; it was not budgeted for, and certainly not planned by the Government Buildings Agency [1]. The whole process of planning, choosing, installing, conserving and restoring took almost two years and was completed in 2007. Five years after the conservation project the authors evaluate how the project team defined the goals and describe the options within the conservation process [2].

Chinoiserie interiors were made in all kind of shapes and forms, especially in the period between the late seventeenth and the early nineteenth century. These interiors were often made with either the (re-)use of oriental objects directly imported from the Far East or products which were especially made for export to the West [Bergmans, 1991; Jacobson, 1993; Reepen and Handke, 1996; Morena, 2009]. More recent examples show another popular method, by copying and transforming the decorations into a European presentation, resulting in a style only vaguely resembling the original. Most of the Chinoiserie interiors have disappeared due to modernisations and overpainting; in The Netherlands only a few examples have survived [3].

Fig. 1. Interior after the fire in March 2005. © Edwin Verweij

The Chinoiserie room in the Johan de Witt house

The Chinoiserie room described in this paper is at the Johan de Witt house in The Hague, which is a mid-seventeenth century house that was modernised in the early eighteenth century by adding two small wings onto the garden side [4]. Oak panelled rooms, measuring 4.4m x 8.2m x 3.2m (hxlxw), were created with window shutters made of long grained pinewood, and ornamented stucco ceilings. In the late eighteenth century, probably in the 1780s, another modernisation was commissioned for one of those dark panelled rooms [Brouwer, 1988]. This resulted in a Chinoiserie interior painted with vivid colours and gildings painted on a slightly greyish, lead white-based oil paint [5]. Archival sources for the creation of this room are limited, but its scale, use of materials and colour scheme indicate the use of local materials and production methods [Jongsma and Verweij, 2002].

Fig. 2. Artistic impression of the chinese cabinet on a 1837 watercolor by Augustus Wynantsz,

©Georg Janßen Germanisches Nationalmuseum, Nürnberg, Germany.

The earliest known depiction of the room is on a watercolour drawing from 1837 by Augustus Wynantsz (1795-1848) painted approximately fifty years after the room's creation (Figure 2). The room can be recognised in the background of the watercolour, with a Chinoiserie pendant lamp hanging from the ceiling. The wall decoration, however, cannot be identified. His Royal Highness Prince Alexander of the Netherlands, Prince of Orange-Nassau (1851–1884) used this interior in the late nineteenth century. He collected fashionable Japanese and Chinese objects, and displayed them probably in a monochrome white painted interior.

An abandoned room with contemporary floral wall hangings is shown on a photographic black and white image, dated in the 1920s (Figure 3). This image proved to be crucial for interpreting the eighteenth century interior style and atmosphere, especially since it provided information of the mouldings.

In the 1960s the whole house was restored and converted into office space for an insurance-company [6]. A new central heating system was installed in the room under the sash windows and covered by reusing the dismantled eighteenth century dado woodwork. The original floor was covered with new parquetry. In 2002 the interior the colour schemes were documented during an architectural paint survey [Jongsma and Verweij, 2002].

Fig.2a. Fragment of the 1837 watercolour by Augustus Wynantsz,

©Georg Janßen Germanisches Nationalmuseum, Nürnberg, Germany.

An unplanned conservation project

During the fire in 2005, the room burned briefly but fiercely, resulting in the loss of parts of the stucco ceiling, the wood panelling and the floor. Collateral damage was caused by firemen trying to locate the source of the fire and making sure it was extinguished. Certain parts were burnt beyond repair, others damaged by exposure to the intense heat. Initial concerns were for the possible development of fungi and/or growth of mould due to increased moisture content, and about the intense odour of the burnt materials. Two separate groups developed simultaneously. These factions had divergent thoughts about how to handle the situation: those who wanted to 'throw out the old and order new' and those who saw this as the 'perfect opportunity' to examine and explore eighteenth century in depth.

Conservation selection process and treatment scenarios

To be able to make a decision about what to do and how much to do, the project team needed a condition assessment of the interior. To what extent was the wood burnt, the stucco ceiling damaged, the paintwork melted or scorched, the floor damaged, the marble fireplace cracked and discoloured? The condition assessment, made by conservators showed that

40% of the wood was destroyed, although half of this could be reused; 20% of the stucco was lost; 75% of the paintwork was affected; 15% of the floor and 5% of the marble fireplace needed repair (Figure 5).

Fig.3. Interior in 1920 before installing a heating system.
© Rijksdienst voor het Cultureel Erfgoed (RCE) Amersfoort, Netherlands.

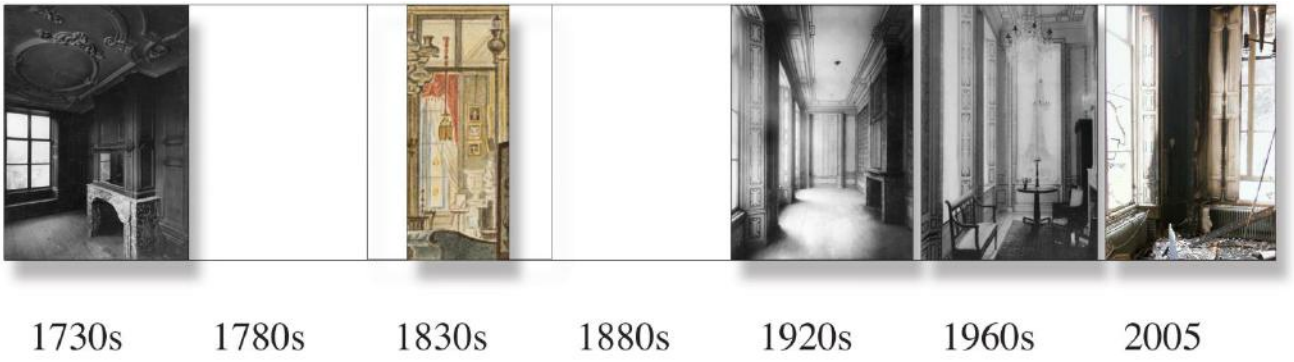

Fig.4. History of colour schemes represented on a timeline. © Edwin Verweij

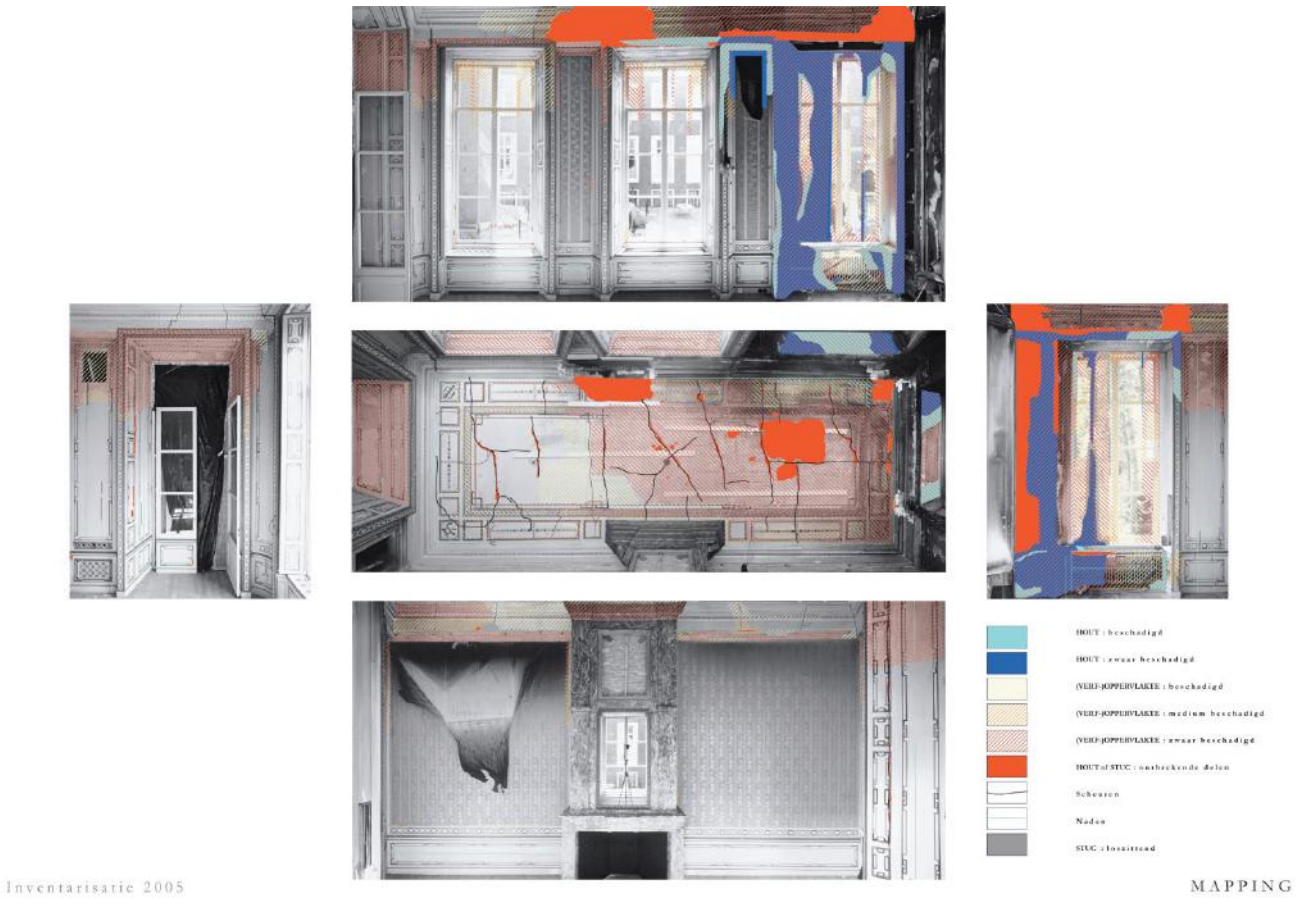

Fig.5. Condition assessment of all surfaces and materials. © Edwin Verweij

Four conservation scenarios were presented to the project team:

Accepting the 'unfortunate' incident

Conserving the current state of the interior by replacing only the most damaged part with new 'repairs and inserts'. This upfront and direct presentation would show the interior as the victim of an unfortunate accident, a low profile restoration.

Preserving the previous state from the 1960s

Restoring to the situation created in the 1960s, the last known state before the fire. This would involve accepting and respecting the restoration decisions made forty years ago: the introduction of a heating system and the alteration of the panelling under the windows, the parquetry floor and the newly created mouldings around the twentieth century wall hangings.

Back to the monochrome nineteenth century

Repainting the interior in a monochrome colour scheme when all the interiors on the ground floor had been given a less elaborate decorative scheme. This would create a homogenous sequence of rooms on the ground floor, all presented in the same phase in history.

Reinstating the late eighteenth century

Reconstructing the original polychromy with vivid colours and gildings painted on a slightly greyish, lead white-based, oil paint to its initial splendour. This meant undoing all later additions and changes and a reconstruction of the wall coverings with matching mouldings.

Different scenarios would have different impacts on an audience (Figure 4). In the first scenario, for example, finding a partially burnt room, after having seen the other rooms in the house, a sequence of French Louis XIV, XV and XVI interiors, would be an anti-climax. In the second scenario, the historical context of the room would be unclear and time and resources would be spent reshaping an old-fashioned and outdated restoration that had changed the character and the atmosphere completely. In the third scenario, the monochrome painted colour scheme would not ameliorate the interior nor have a relation with the Chinoiserie woodcarvings on the panelling and the mouldings. The project team unanimously wanted to explore the fourth scenario: a conservation treatment combined with a reconstruction of the eighteenth century interior [7]. The conservators tried at the same time to convince the commissioners to reconsider the function of the room. Preserving an eighteenth century interior and simultaneously establishing an office-workplace with twenty-first century requirements would be challenging.

Reinstating the late eighteenth century by detailing the architectural elements

An in-depth study into wallpapers and wall hangings of the late eighteenth century was required, as well as information about colours, designs and drawings that could show ‘suitable examples’ since not all details could be found in the room itself [Geldhof, 2006]. Some extant Chinoiserie interiors where visited for examination and discussion. The wooden mouldings could be redesigned based on the 1920s photographs and an extensive pigment and binding media analysis would provide insight in the painting technique. Furthermore, technical solutions needed to be found for a minimalistic climate control and a sinologist was consulted to interpret Chinese characters and mouldings.

The smell of burnt wood and stucco was intense for the first few months after the fire, and the project team considered treating the odour with chemical solutions. Due to the planning process, the conservation treatment started a year after the fire and by that time almost all of the smell had disappeared. All burned parts were either mechanically scraped down or completely renewed and affected areas were impregnated in order to prevent the formation of new odours.

Fig.6. Restoration of woodwork. © Edwin Verweij

As soon as the project team had collected enough information on a specific architectural element, the conservators tried to reconstruct it as accurately as possible, in both the use of materials and techniques [Brouwer and Verweij, 2009]. For example, the decision to use a lead white-based oil paint on the wood-panelling was made after the results of the architectural paint research were combined with the analysis of the pigment and binding media [Jongsma and Verweij, 2002; Verweij, 2005; Keune and Van Loon, 2006]. The paint was coloured appropriately with pigments and gildings were applied in pertinent patterns. The wooden panelling and floor were restored using the same materials as originally were used: oak and pinewood (Figure 6). The quality of the original floorboards after sanding, local wood fillings and a slight treatment with a natural soap. The ceiling had to be conserved by mechanical fixation of the flat field and by reconstructing the missing stucco mouldings. The marble of the chimneypiece had been restored several times and this required therefore individual cleaning and polishing for each marble slab to establish a uniform appearance.

The presumably original wooden mouldings could be seen on a 1920s black and white photograph and the pendant lamp was artistically depicted on the 1830s watercolour. Both were studied thoroughly for the dimensions, use of material and production method. The mouldings seemed to be symmetrical designed at first sight. However, all corner elements had a different length to compensate for dimensional differences of the wall. The colour scheme and/or use of gilding were discussed in-situ with mock-ups (Figure 7). These carved and gilded mouldings proved to be an essential part in the room and served as an indispensable decorative element. The pendant lamp had Chinoiserie features, but any painted and/or inlayed details could not be identified nor the exact dimensions.

Fig.7. Work in progress at the building site determining colours and materials.
© Edwin Verweij

The original decoration scheme for the walls and the hand-painted Chinese characters on the ceiling were both unknown and needed to be invented. Examining the construction of the still existing frame on the wall revealed that a textile had been mounted on it. The sturdy construction made it possible to stretch a course fabric, a suitable support for a fine textile or to glue a ground paper on which wallpaper could be mounted. Here, only a few of the original nails used to attach the textile to the framework were found, some with some threads of the coarse fabric but unfortunately nothing over this was found. However, the room's shape and size gave some precedent. This room, long and narrow, did not allow for a wallpaper to be seen in a single overview. Due to the number and height of the windows a panoramic representation would give more 'depth and perspective' and establish a link with the garden. Therefore several hand-painted designs, in various colour schemes, were discussed in-situ (Figure 7). The characteristic purple-brown colour of the marble chimneypiece looked extremely dominant on all photographs when seen against lightly painted woodwork. This made us realise that a darker colour for the walls would mean that the chimneypiece became a part of the wall and was not singled out as a separate feature in the room. Subdued purplish colours matched the aged state of the mantelpiece well and at the same time an affinity with the light purple colour that had disappeared on the ceiling and panelling [8].

In the corners of the ceiling, four areas were decorated with Chinese characters. In the 1960s these characters indicated the cardinal points of the compass. Archival research revealed that in the 1920s a different set of characters had been used. In the Chinese language, predictions are often made out of four characters but here only one could be identified depicting 'flowers'. A complete saying could therefore not be reconstructed and

now a Chinese poem 'The sunlight shines everywhere' is depicted [Shitao, 1976].

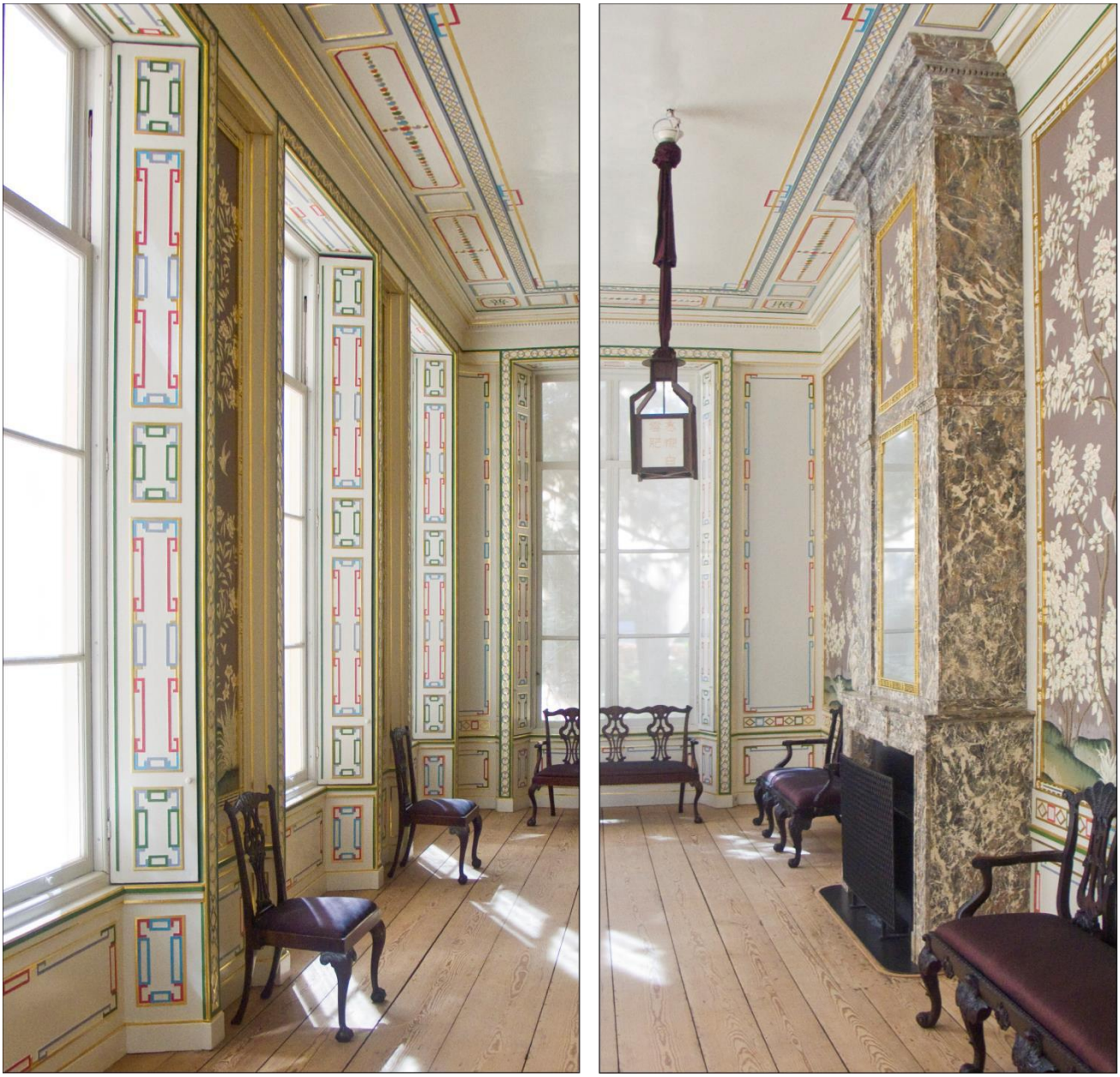

Fig.8. Condition of interior in 2012, five years after restoration. © Edwin Verweij

The restoration took two years. Initially it was planned to be used as an office workplace, but its function has now be changed in a meeting room and is not in everyday use anymore; there are more visitors for the room than actual users (Figure 8). The housekeeping activities are kept at a low profile and only preformed when necessary and mostly depending on the room's use in the previous week [9]. Now that the room has been in use for five years, the overall condition of the room has not changed; the materials and fabrics show no sign of ageing. Yellowing of the paintwork has occurred but only in areas where daylight is limited, for example behind the window shutters. The painted poem on the pendant lamp, with its supposedly stable, water-based ink, has faded and needs to be replaced. Slight glue stains that appeared during the mounting process of the hand-painted gouache wallpaper have partially disappeared [10].

Conclusion

The restoration and reconstruction of this room with its bright colours and gilding work has given it a new eighteenth century character and atmosphere. Developing realistic conservation scenarios lead to an 'informed conservation' decision that gave both the commissioner and the project team an insight into the quality and potential of the original interior. The wishes expressed by the users and/or commissioners of the interior were only partly fulfilled; the function of a fully functional office workplace has now been changed to 'tête-à-tête' meeting room, focussing on a more suitable conservation scenario for the interior itself. The need for care and maintenance has diminished, since the user frequency of the room has decreased considerably. The Government Buildings Agency is currently developing a care and maintenance plan for all their objects. Although there is a restricted access to the house, the use of this room and it is inevitable decline has been slowed down in a controlled way that requires an ongoing active approach, both now and in the future.

Acknowledgment:

The project was commissioned by the Governmental Buildings Agency in The Hague with Roelf Vos as project leader and Henny Brouwer as senior conservation architect, with specific areas of expertise provided by Jaap de Jonge, Fred Balster, Krijn van Popering (climate) and Bert van Bommel (marble). The conservation, restoration and reconstruction of the room took place between March 2005 and May 2007 [Verweij, 2007]. The team of conservators and advisors consisted of Edwin Verweij (architectural paint researcher and project leader for the conservation work), Piet Blokzijl (paint production), Geert van den Brul (marble), Anton van Delden (stucco), Wijnand Freling (stucco), Elsbeth Geldhof (wallpaper research), Bart Gogherman (wood), Anna Hesse (documentation), Frans Hazenbosch (wallpaper), Jurriaan Jongsma (painter), Ruth Jongsma (architectural paint research), Katrien Keune (analysis), Annelies van Loon (analysis), Inez Kretzschmar (sinologist), Tineke Oostendorp (analysis), Maurice and Chris Steemers (wood), Boris Vermeij (painter) and Rogier Zinsmeister (documentation).

Endnotes

[1] The Government Buildings Agency (Rijksgebouwendienst /RGD) is part of the Ministry of Interior and Kingdom Relations of The Netherlands and manages over 2,000 state properties of which 350 have a status as monument. Source: http://www.rgd.nl/english/ [Accessed 19 September 2012].

[2] The project was under the guidance of VERWEIJ | Office for Architectural Paint Research and Conservation in Amsterdam, The Netherlands. The author is currently working as architectural paint researcher at the Norwegian Institute for Cultural Heritage Research in Oslo, Norway.

[3] For example: in Huis ten Bosch Palace, The Hague; Museum Oud-Amelisweerd, Bunnik; Huis Verwolde, Laren Gelderland; and Heeswijk castle, Heeswijk Dinther.

[4] The house was commissioned by Mattheus Hoeufft in 1652 but is named after its most prominent inhabitant, Johan de Witt, grand pensionary, who lived there from 1669 until 1672.

[5] The Quirijn van Strijen family owned the house at the end of the eighteenth century and it is assumed that Mrs Van den Santheuvel commissioned the modernisation based on similarities in the painting technique that was found both in the La Fontaine room and the Chinoiserie room. It is assumed that these were executed at the same time in the 1780s.

[6] The restoration was carried out under the guidance of architect Royaards.

[7] The scale of the project and the expertise required made the commissioner decide not to publicly tender the project.

[8] A light sensitive purplish colour is obtained by mixing the Prussian blue pigment with a cochineal red dye. During the reconstruction paintwork the dye was replaced by a more stable alizarin dye despite the slight colour difference.

[9] Information kindly provided by J. Dondorp, Johan de Witt house in personal communication.

[10] A new policy on maintenance and care for the whole house is currently under development within the Governmental Buildings Agency.

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The Getty Research Institute, Los Angeles, November 6-9, 2012

Lacquer in the Laundry: Behind the Scenes at 'The Elms'

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Abstract

The Elms, built in 1901, is one of 10 historic properties administered by the Preservation Society of Newport County. This paper describes the development and implementation of a multi-year project to address the conservation of a set of large, Asian lacquer panels and smaller overdoors used as wall paneling in the Breakfast Room. Three of the four large panels and fragments of the overdoors are eighteenth century Chinese export. The fourth large panel, also Asian lacquer, was commissioned by the designer to fill out the room. The two year treatment of the panels was preceded by years of preliminary work developing the project as a priority, applying for institutional and private grants, and ultimately incorporating the project into the public education and marketing presentations. The project has become a model for long-range planning at the Preservation Society as well as a catalyst for climate mitigation at the Elms.

Keywords

Historic Houses, Long-Range Planning, Grant Funding, Lacquer, Chinoiserie, Climate

Introduction

The Preservation Society of Newport County was founded in 1945 for the purpose of preserving Hunter House, built in the 1740s, whose paneling, it was feared, was in danger of being collected by a famous museum. Almost 75 years later the Preservation Society owns ten properties reflecting a broad range of historic architecture and welcomes over 800,000 visitors a year [1].

Fig. 1. The Elms, west elevation. © A. Carneiro.

One of the houses is The Elms (Figure 1). In 1898, Edward Berwind engaged Philadelphia architect Horace Trumbauer to design a summer residence modeled after the mid-eighteenth century French Chateâu d'Asnières (c.1750). The interiors and furnishings were designed by Allard and Sons of Paris and were the setting for the Berwind's collection of Renaissance ceramics, eighteenth century French and Venetian paintings, and Oriental jades. Construction of The Elms was completed in 1901 at a cost reported at approximately $1.4 million. The Berwind family owned The Elms until 1962, at which time the house and most of its contents were sold at public auction with the building slated for demolition and a shopping center built on the site. The Preservation Society prevailed upon the buyer, purchased the house, furnished it with loans, and opened it to the public, stepping in to save it much as it had done for Hunter House decades before. Its beautiful rooms and grounds now attract over 125,000 visitors a year. The creation of The Elms was a collaboration of client, architect, and interior designer that produced a remarkable work of architecture and a quintessential expression of the Gilded Age.

Documentation and Planning

The Elms was designated a National Historic Landmark [2] in 1996 and in 2000, a Historic Structure Report was commissioned [Mesick et al, 2000]. In 2003 significant interior projects at the Preservation Society properties were identified through a government grant-funded General Conservation Survey. The results of the survey were incorporated into a Long-range Collections Conservation Plan database (LRP) that provided a framework for identifying and prioritizing projects related to the interior architecture and collections of all the Preservation Society holdings.

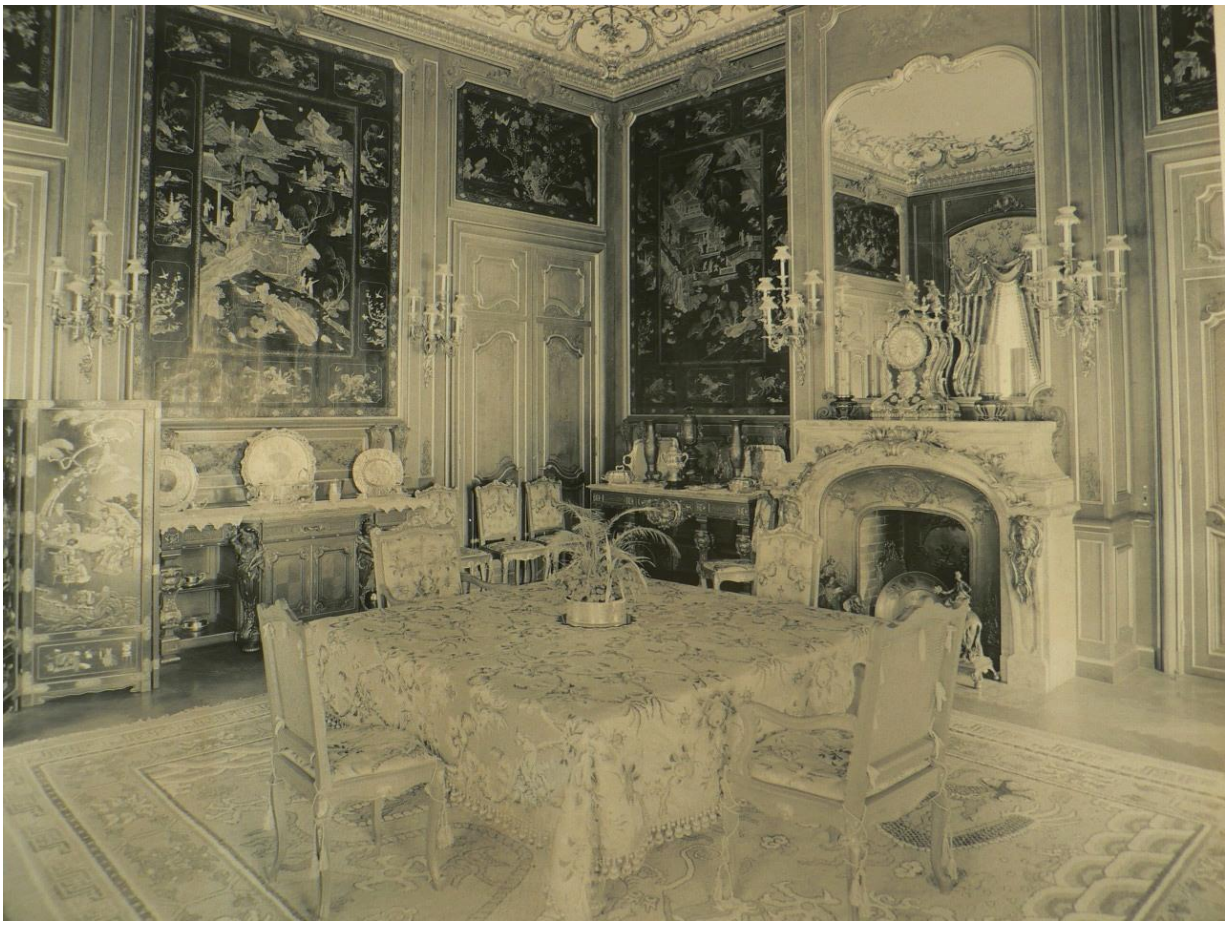

Fig. 2. The Breakfast Room (1901). ©PSNC Archives

Fig. 3. Detail from the South panel. ©C. Moore.

The highest conservation priority at The Elms was determined to be the conservation treatment of a group of black and gold Asian lacquer panels located in the French Regency-style Breakfast Room, which has other Chinoiserie elements as well (Figure 2). There are three large panels and three overdoors that were substantially fabricated in China for export to Europe in the eighteenth century. The large antique panels are approximately 207 cm wide and 300 cm high. Each of them was initially three separate panels - perhaps individual leaves from a folding screen - subsequently glued together. The large panels are in pairs with commemorative or domestic central designs surrounded by cartouches featuring typical landscapes, springtime motifs, and guardian lions. The overdoor panels are 165 cm wide and 115 cm high. They are decorated more generically with rocks, plants, and birds. These have a composite decoration: Asian lacquer fragments are integrated using European methods.

Though viewed at a distance in an architectural context - the visitors see the room, not so much the objects in it - there are beautiful and charming passages of work on the panels (Figure 3). The figures are delicate and the rendering of architectural surfaces and nature is simple and elegant. There is a high level of precision in much of the work. The Preservation Society hopes in the future to be able to present some of the beautiful details on the website.

Funding

Funding for the treatment of the panels has come from a number of sources. The LRP established clear priorities and generated early interest from The Elms House Committee, a volunteer support group. These

stakeholders arranged funding for a visit from a conservator with extensive experience in Asian lacquer to assess the nature and condition of the lacquer panels [3]. Subsequently, an Architectural Planning Grant was won that funded the development of a treatment plan, including site visits to view the eighteenth century. Chinese lacquer panels installed in Vienna at Schloss Schönbrunn and Palais Esterházy and consultation with site staff [4] and the conservator [5] who treated them. This preliminary introduction to traditional and modern materials, conservation treatment strategy, time, and costs was vital for the development of a treatment implementation plan for the panels at The Elms.

Fig. 4. M. Carr and A. Schopfer documenting one of the Chinese panels. ©C. Moore

During the planning a variety of methods were used to assess condition, structure, materials, craft techniques, and history of treatment (Figure 4). These included using visible and ultraviolet light inspection to assess surface topography and treatment history [6]; cross-sectional microscopy to document craft technique and identify original and repair materials through their layer characteristics (Figure 5) [7]; x-radiography to reveal joinery details and structure [8]; scanning electron microscopy/energy-dispersive spectroscopy (SEM-EDS) to identify three campaigns of gilding [9]; Fourier infra-red transform spectroscopy (FTIR) to identify Western varnishes [10]; pyrolysis gas chromatography-mass spectrometry (PY-GC/MS) to identify the particular kinds of Asian lacquer and associated materials [11]; and x-ray fluorescence (XRF) for pigment identification [12]. Cross-section microscopy continues to be important for documenting historic repair techniques as well as revealing the effectiveness of varnish removal; samples removed after treatment can be used to access how precisely layers are removed.

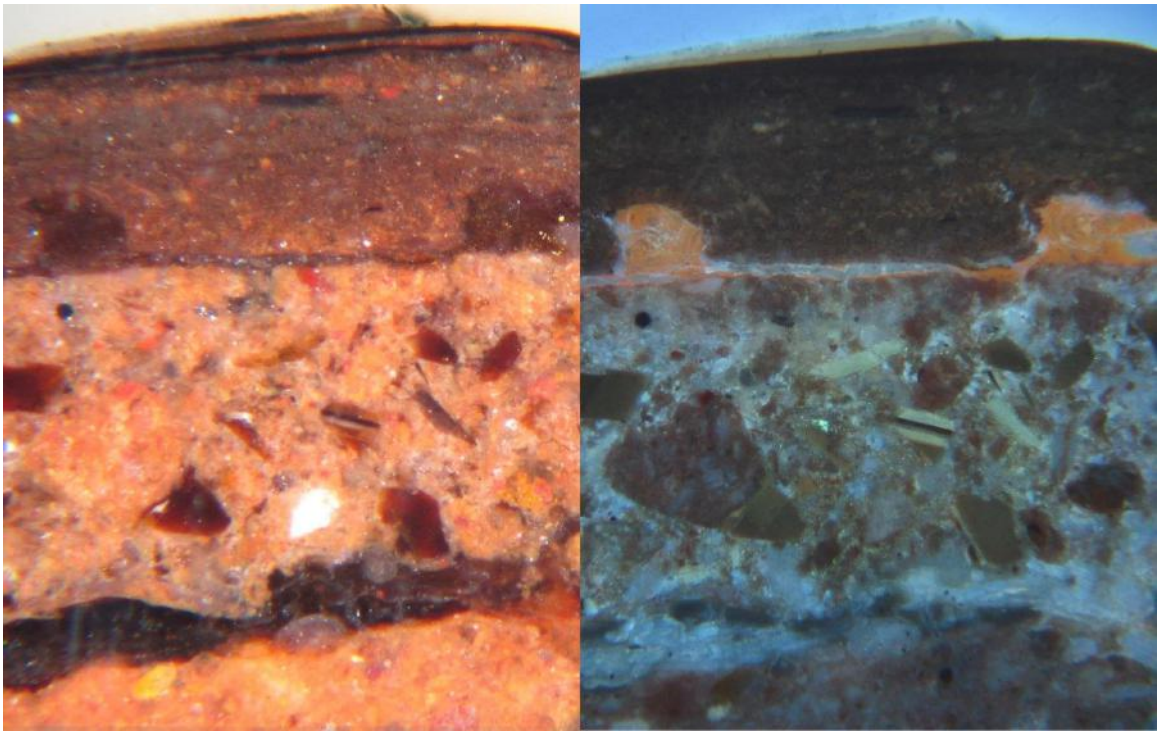

Fig. 5. Cross-sectional photomicrograph of the Allard panel sample in VIS/UV light. © C. Moore

The actual treatment of the panels was funded by a government-administered Conservation Project Support Grant [13], supplemented by generous grants from private foundations. The series of successful grant applications has allowed the project to go forward without interruption. It could be argued that good planning results in successful grant applications and - at least for the right project - successful grants beget more grants.

The Lacquer Project at the Elms

The Panels

The Elms evokes the tastes of eighteenth century Europe when lacquer panels of the scale found in the Breakfast Room would have been among the most exotic, mysterious, and costly materials of the day.

The panels are described in the Preservation Society's Curatorial Database as:

'*A SET OF THREE CHINESE BLACK AND GOLD LACQUER WALL PANELS (Chinese, eighteenth century); (K'ang Hsi Period, 1662-1722); together with three matching overdoors and a wall panel in black and gold lacquer from the workshops of Allard et ses Fils of Paris (French, circa 1900); all finely painted in tones of gold, with figures strolling and conversing within elaborate pavilions enclosed by rockeries and foliage, the larger panels with borders of landscape vignettes, Fu lions and birds, the smaller panels with graceful arrangements of flowering branches enlivened with songbirds; all on black grounds*' [Curatorial Database, 2012].

Made specifically for export, large architecturally engaged black-and-gold Chinese lacquer panels such as these - some originally made as screens but subsequently modified - can be found in their original eighteenth century installations at Schloss Schönbrunn and Palais Esterházy in Vienna, the Chinese Pavilion at Drottningholm in Sweden, Schloss Falkenlust near Brühl in the Rhineland, and Esterháza, in Hungary. The

Elms panels were acquired by Allard as architectural salvage, most likely from a demolished eighteenth century Parisian townhouse. It is interesting to note that this use of antique material is repeated at The Breakers (1895), another Preservation Society site, where Allard used one wall and other fragments of salvaged eighteenth century *boiseries* as the starting point for a small "period" room he designed and installed there.

The Treatment

The Chinese panels suffered from all of the ills one would expect considering their life: shipment from China, an unknown period of installation/use in the eighteenth century with attendant degradation and subsequent repair, a period of decline to the point of salvage in the late nineteenth century, with storage, restoration, reinstallation in 1901 and yet another period of degradation. This included deformation and cracking of support, detaching lacquer, light and water damage, and the idiosyncrasies of several campaigns of repair including applications of varnish. Allard commissioned the fourth Asian lacquer panel specifically for the installation circa 1901- he had three antique panels but four walls. This panel was in very good condition and required little treatment.

The panels were treated in The Elms itself in order to avoid disturbing any equilibrium they might have achieved with the environment in their long-time location. Fortunately, a room in the basement was under-interpreted/utilized. As part of the *Behind the Scenes* tour of the house, it was an open space originally used as the Laundry Drying Room. After some interdepartmental discussion, it was agreed that the treatment of the lacquer panels in that space would provide an opportunity to show the conservation work in progress to the visiting public and still be able to reference the original use of the room. Trunks, baskets, and other exhibition objects were relocated. Appropriate lighting, work tables, tools, and other accessories were brought in to complete the conversion to a project work-space (Figure 6). The environmental conditions of the Breakfast Room were reproduced in the Laundry Drying Room by means of stand-alone humidification or dehumidification units according to the season.

Fig. 6. M.J. Petisca at work on the middle of a panel on the clamping table. ©C. Moore

A team was assembled to do the work: project manager/conservator, contract conservator, consulting conservator, and technician. Two interns spent some time on the project as well. The order of treatment for each panel proceeded as follows: de-installation of the panel in the Breakfast Room and delivery to the basement work space, reattachment of peeling lacquer and other consolidation, varnish removal, filling losses, compensation for missing decoration, application of protective varnish, delivery to Breakfast Room for reinstallation.

The panels were placed on a purpose built clamping table upon arrival in the workspace. Lifting lacquer was reattached: being quite stiff and brittle, the lacquer needed to be humidified and gently heated to make it flexible before attempting to reattach it. The lifting lacquer was then set down using hide glue [14]. This particular glue was selected for its setting time, workability, and solids content. Used warm, it also helped soften the brittle lacquer. Thinner flakes of decorative material were reattached with an acrylic dispersion [15].

Cross-sectional microscopy revealed that the panels had four layers of Western varnishes applied to the lacquer over the many years to brighten it up. The most recent layers had blanched and darkened. Having never really been Asian objects - they were put on a boat to Europe immediately after fabrication - it was decided that the earliest varnishes were historical evidence of Western restoration treatments and would be preserved. The two degraded coatings were removed while leaving two more historical layers intact. Ill-conceived modern repairs such as bronze powder paint and thick applications of wax were also removed.

After filling losses, compensation for missing black and gold decoration was undertaken followed by toning as necessary. The panels received a coat of varnish to protect the surface [16]. The varnish has solubility characteristics that allow it to be removed in the future without damage to the historic varnishes or repairs.

Education/Outreach

The project has been an important educational and interpretive tool, and an 'Aha!' moment for many of our visitors by providing a glimpse into what it takes to do just this one project, and, by projection, what must be involved when one considers the other nine historic houses at the Preservation Society. Visitors taking the *Servant Life* tour come into the work-space and are briefly addressed by one of the practitioners. The focus of the short presentation revolves around the antique nature of the Chinese export panels; the qualities of true Asian lacquer; the character of the gold powder decoration; the time-intensive conservation process; and any interesting discoveries. Individual questions were also encouraged. From February 2011 to November 2012, over 25,000 people have visited the project (Figure 7).

The project has provided a constant source of material to present to visitors, staff, members, supporters, and the greater conservation community. For the benefit of Preservation Society members, the project has been featured at the Newport Symposium (a major annual educational program), the Winter Lecture Series, and three special *Behind the Scenes* tours for the membership. The conservation community was engaged early on by inviting members of the New England Conservation Association (NECA) to critique the project and offer suggestions. An educational component of the IMLS grant supported a day-long Lacquer Roundtable at which our consultants, who happened to be from Canada, Austria, and the United States, along with our project conservator from Portugal, presented their current work to the Preservation Society membership and the regional conservation community (NECA). The international flavor of the presenters reflects a period of international interest in architectural lacquer. The project has been the subject of numerous other presentations that have served to raise the visibility of the Society holdings and allowed the project to come before an

international audience.

Fig. 7. High school students taking the Servant Life tour visit the project. ©M. J. Petisca

Going Forward

A specific investigation of the climate in the Breakfast Room was undertaken concurrently with the initial study of the lacquer panels. The Elms is heated in the winter, but moisture is not added to the environment in our un-insulated houses; instead we keep the temperature (T) as low as practicable. The relative humidity (RH) in the room during the months of June through September can be as high as 80%. High RH was determined to be a major problem affecting the panels, but one which could be reduced.

The decision was made to treat the space by itself and work to achieve a reduction in RH in the room. A dehumidifier was installed in the basement and dry air was blown into the air duct supplying the room. As it mixes with the ambient humid air, it lowers the RH overall. Relative to the Dining Room next door, a 10-15% reduction in RH was achieved in the Breakfast Room using the dehumidifier. This was confirmed using dataloggers to compare the two.

The future needs of the conserved lacquer panels were discussed and a more stable climate has been identified as a goal. A proposal has been made to combine the Dining Room, which contains an important collection of Venetian paintings, with the Breakfast Room and its lacquer panels, into a single climate zone. A system for dehumidifying to a maximum of 60% is being proposed. The system would supply dehumidified air to mix

with ambient conditions in the two rooms to achieve reductions in RH overall and some cooling. A climate without the high levels of RH during the humid months would effectively prolong the lives of the now-conserved lacquer panels and the Venetian paintings as well.

Fig. 8. The Breakfast Room after treatment. ©G. Ashworth.

Conclusion

While lavish late nineteenth century American Gilded Age era gold-leafed and painted architectural decoration abounds at the Society's properties, it was the exotic Chinese lacquer, rare and restrained by comparison, that caught the imagination of The Elms House Committee. Their relatively small, targeted contribution, an expert's report, resulted in making this project stand out and it became a fundable, multi-year initiative that reaped many benefits on an institutional level.

The Preservation Society joined an international community of sites with similar installations of lacquer and with conservators and administrators who have shared expertise and continue to act as resources for future work that may take place here or elsewhere.

By establishing the value of the lacquer panels, a discussion was held regarding climate conditions in the room; perhaps the most omnipresent risk at any historic house museum. By identifying a climate zone rather than a whole-house initiative, the use of simple, stand alone equipment could be used, not to try to control climate, but to make things appreciably better.

Because the work was done in an area visited by periodic tours, there was a steady and ready audience. There was a slowdown of process that needed to be accommodated, but the benefits were judged to be worthwhile. It was perfect opportunity for sharing the conservation process and our visitors seemed genuinely pleased. There

were additional opportunities such as lectures and study visits, sharing with the professional conservation community, Preservation Society membership, and other interested stakeholders.

This project was a learning experience as well for the Preservation Society with unanticipated positive outcomes. None of these endeavors were very complicated, mainly requiring tolerance for an extended time frame and flexibility. It seems fair to say that this kind of model would benefit any house museum with a visiting public.

Acknowledgment:

The authors would like to thank the funders who made this project possible:

The Getty Foundation for providing an Architectural Planning Grant; the Institute of Museum and Library Services for funding treatment implementation and climate assessments through the Conservation Project Support Grant program; and supporters who kept the project going until the end: E. Rhodes and Leona B. Carpenter Foundation, Berwind Fund, Felicia Fund, and John Brooks.

We are grateful as well for the analytical support provided by Michael Schilling at the Getty Conservation Institute and Arlen Heginbotham at the J. Paul Getty Museum and to Marianne Webb and Silvia Miklin for their expertise and advice.

Endnotes

1. The Preservation Society of Newport County, 424 Bellevue Avenue, Newport, RI 02840, USA, www.newportmansions.org [accessed 21 October 2013].

2. A designation awarded by the United States National Park Service for sites with national-level historical significance.

3. Marianne Webb, objects conservator, lacquer specialist, author of *Lacquer Technology and*

Conservation. Webb Conservation Services, 7941 Redrooffs Road, Halfmoon Bay, BC V0N 1Y1 Canada

4. Dr. Wolfgang Kippes, Managing Director and Dr. Elfriede Iby, Head of Research and Documentation, Preservation Society.

5. Silvia Miklin-Kniefacz, Restaurierung Metall/Urushi, Bernardgasse 4/1, A-1070 Vienna, Austria.

6. UV light sources for inspection and photography were a Spectronics MB 100-X photoflood lamp and two Spectronics XX40 fixtures with 2-40W bulbs @48", Long-wave UV.

7. Cross-sectional work done in-house using a Leica DM-LM VIS/UV trinocular microscope w/darkfield objectives.

8. X-radiography was carried out by Baker Testing Services, 22 Reservoir Park Drive, Suite 1, Rockland, MA 02370 USA. www.bakertesting.com [accessed 21 October 2013].

9. SEM-EDS analysis was carried out at Williamstown Art Conservation Center, 227 South Street, Williamstown, MA 01267 USA.

10 & 11. FTIR and p-GC-MS was carried out by Michael Schilling, Senior Scientist and Head of the Organic Materials Research Lab at the Getty Conservation Institute with Arlen Heginbotham, Associate Conservator, J. Paul Getty Museum.

12. XRF analysis was undertaken using a Bruker Elemental, portable XRF, Tracer III-SD, www.bruker-axs.com

[accessed 21 October 2013].

13. Institute of Museum and Library Services, Conservation Project Support Grant.

14.Thick delaminating lacquer was reattached with #192 Bloom gram strength hide glue from Behlen. Recipe: 28.3 g dry hide glue to 46 g water (with 1% LMW polyvinyl alcohol added to improve long-term cohesion).

15. Thinner delaminating lacquer was reattached with Lascaux Medium for Consolidation®.

16. The panels were varnished using Regalrez® 1126 by Eastman, 15% in mineral spirits.

References:

Baker, J. 2000. *The Elms Historic Structure Report.* Mesick, Cohen, Baker Architects, 324 Broadway, Albany, NY 12207, USA

Curatorial Database. 2012. The Preservation Society of Newport County, PSNC.10557.1-.7, 1 November 2012. Unpublished

Materials List:

Behlen Ground Hide Glue B940-00255, RPM Wood Finishes Group, Inc., Hudson, North Carolina 28638, USA

Lascaux Medium for Consolidation®, Lascaux Colours & Restauro, Barbara Diethelm AG, Zürichstrasse 42, CH-8306 Brüttisellen, Switzerland

Regalrez® 1126, Eastman Corporation, 200 South Wilcox Drive, Kingsport, Tennessee 37660, USA

THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

A Joint Conference of ICOM-DEMHIST and three ICOM-CC Working Groups:
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The Getty Research Institute, Los Angeles, November 6-9, 2012

Conservation of Eighteenth Century Lighting Fixtures in The Metropolitan Museum of Art

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Abstract

A major renovation of nine eighteenth century period rooms and three galleries comprising the Wrightsman Galleries for French Decorative Arts at The Metropolitan Museum of Art was driven in large part by a reinterpretation of the role of lighting in the narrative presented in each room. The conservation of the historic lighting fixtures – including 17 chandeliers, 30 sconces and 12 candelabra, mainly of ormolu, rock crystal and glass – was key to the realization of the new lighting scheme. Along with a description of the treatment and rewiring of the lighting fixtures, this paper will discuss collaboration amongst multiple departments within the Museum working in concert with outside contractors, which was essential for completion of the project in a limited timeframe.

Keywords

Candelabra, chandeliers, historic lighting, period rooms, sconces

Introduction

The nine period rooms and three galleries known as the Wrightsman Galleries for French Decorative Arts opened to the public at The Metropolitan Museum of Art in 1969. The Galleries were funded by Charles and Jayne Wrightsman, whose passion for eighteenth-century French decorative arts led to the formation of one of the finest collections of its kind outside Europe. The Wrightsman gift, which included significant objects and furnishings as well as four period rooms, presented the Museum with an opportunity to reconfigure its existing galleries and to highlight its already rich collection of French decorative arts and furniture. The Galleries incorporated an eighteenth-century Parisian shopfront, as well as rooms from some of the most beautiful residences in Paris, Bordeaux and Vienna.

From their inception early in the 1960s, the Wrightsman Galleries were envisioned as a setting for the appreciation of the design and decorative arts of the *ancien régime* rather than an exact reconstruction of original eighteenth-century interiors. Most of the rooms came to the Museum from American collectors who initially purchased them for their private homes where the *boiseries* (carved wood panelling) were sometimes altered to fit new room dimensions. The fine art and furnishings, acquired by the Museum over a span of more than 50 years, were rarely, if ever, original to the rooms themselves. James Parker, former curator in the Department of European Sculpture and Decorative Arts, consulted with Jayne Wrightsman and Stéphane Boudin of the

influential Parisian design firm Maison Jansen on the original layout of the Galleries and interior design of each room [Abbott, 2006; Kisluk-Grosheide and Munger, 2010]. Jayne Wrightsman, now Trustee Emeritus, has remained actively involved since the Galleries opened, making additional donations from her collection and funding new acquisitions and maintenance.

Fig. 1. Evening, the Varengeville Room, boiserie, Paris, ca. 1736-52. The Metropolitan Museum of Art, Purchase, Mr. and Mrs. Charles Wrightsman Gift, 1963 (63.228.1)
© The Metropolitan Museum of Art

Beginning in 2006, with the encouragement and generous funding of Jayne Wrightsman, the Museum undertook extensive renovations of the Galleries. The overall concept was inspired by the 2004 exhibition 'Dangerous Liaisons: Fashion and Furniture in the Eighteenth Century' in which the Wrightsman Galleries were used as a theatrical backdrop for mannequins dressed in period costume and posed in a series of suggestive vignettes. Narratives were enhanced through the use of faux candlelight, window lighting and glowing embers in fireplaces. As a result of the overwhelming success of the exhibition, a new design for permanent display in the Wrightsman Galleries was developed in which the lighting would be artfully manipulated to suggest a different time of day in each room (Figure 1).

The renovation included the addition of new recessed lighting in all of the modern ceilings, fluorescent lighting in windows and adjustable fibre optics in room barriers, all controlled by a computerised dimmer system. The project expanded to include the redesign of some spaces, as well as upgrades to outdated security, fire abatement and air handling systems. A complete de-installation of each room was necessary to provide access to infrastructure, which presented a rare opportunity for study, conservation and reinterpretation of the *boiseries*, furniture and decorative arts on display within the rooms. The historic lighting fixture project, which involved conservation and rewiring of 17 chandeliers, 30 sconces and 12 candelabra, played a pivotal role in the new lighting scheme.

Project Planning

The lighting and infrastructure project required the collaboration of a team comprised of Museum curators, conservators, designers and staff from the Museum's Construction and Buildings Departments, working with a number of outside specialists including exhibition designers, lighting designers and a historic lighting restoration firm [1]. Curators worked closely with designers to select appropriate light levels to suggest the imagined time of day for each room. The designers provided specifications for new auxiliary lamps and spot lights to be positioned in specific locations on the fixtures; the lighting restoration firm then proposed how this could best be achieved. Repeated refinements in the design were necessary to attain realistic lighting effects with minimal impact on the historic objects.

Fig. 2. Deinstallation of fifteen-light Bohemian leaded glass chandelier from the Varengeville Room. The Metropolitan Museum of Art, Gift of Mr. and Mrs. Charles Wrightsman, 1971 (1971.206.42) Photograph by authors. © The Metropolitan Museum of Art

Since most of the chandeliers were positioned above carpets and furniture, they were the last objects removed from the rooms and the first to be reinstalled. In addition, all the lighting fixtures had to be conserved before any rewiring could begin. These time constraints necessitated a tight project schedule. After in situ assessment of the condition of the chandeliers, a decision was made to avoid the typical practice of removing pendants and dismantling ormolu frames for treatment. This conservative approach minimised handling of the objects and significantly reduced time and workspace requirements.

Prior to deinstallation of the chandeliers, all the crystal and glass components were first wrapped with tissue followed by bubble wrap in various bag and sheet sizes, which could be easily slipped around the pendants and festoons. Additional support for pendants was provided using organza bags with drawstrings that could be tied up around the chandelier arms. Once the fixtures were protected, Museum electricians disconnected the electrical wires at the walls or ceilings. Riggers removed the chandeliers using hand-cranked rigs to bring them to floor level where they were hooked directly onto rolling racks, facilitating movement and accessibility of the fixtures from the time they were deinstalled until reinstallation (Figure 2). Wire rolling racks with padded adjustable shelving were used to store and transport the sconces and candelabra.

Fig. 3. Conservators treating one of a pair of twenty-four-light rock crystal chandeliers from the Louis XVI Gallery. The Metropolitan Museum of Art, Gift of Mr. and Mrs. Charles Wrightsman, 1971 (1971.206.41) Photograph by authors. © The Metropolitan Museum of Art

A closed temporary exhibition space was secured to house the 59 fixtures and provide a space for the conservators, curators and lighting restoration firm to work (Figure 3). The objects were moved into the workspace where their condition was further assessed and documented. Along with written reports, annotated digital photographs proved to be particularly helpful in clearly indicating the location and types of various condition issues.

Condition

The chandeliers, sconces and candelabra were generally in good condition and showed typical evidence of a history of use. The ormolu, rock crystal and glass surfaces were extremely dusty due to limited access, particularly to chandeliers, as well as the lack of routine maintenance in the period rooms. There were minor

losses and scattered structural problems; however most of the condition issues were a result of previous alterations, such as the addition of electrical wiring or restorations that were either failing or aesthetically distracting. A number of links on suspension chains had been damaged, lost or replaced with incorrectly shaped links, which had altered the length of the chains, resulting in increased stresses and uneven suspension of some of the chandeliers. Surface details of some areas of ormolu were obscured by lead solder repairs or by sheet metal reinforcements riveted across breaks. Modern nails had been used to replace missing screws, tangles of copper wire held the base finials on two of the chandeliers and cardboard washers were visible in gaps between crystal candle cups and drip pans.

Fig. 4. Before treatment of the Lauzun Room chandelier. Detail of the arm receiving plate showing old electrical wiring. The Metropolitan Museum of Art, Gift of Mr. and Mrs. Charles Wrightsman, 1971 (1971.206.43) Photograph by the authors.
© The Metropolitan Museum of Art

It was not possible to determine with any certainty the original configurations of the Wrightsman chandeliers, which, like many historic fixtures, had complicated histories of dismantling and restoration by successive owners. For instance, many of the suspension wires had been replaced so that the original location of pendants was unclear; some had been moved into the wrong orientations or to incorrect positions causing them to lean against the ormolu rather than hanging freely. In addition, several of the stacked crystals on the stems and arms had been improperly positioned. These inconsistencies were most obvious on the matching pair of chandeliers in the Louis XVI Gallery, which had vastly dissimilar placements of pendants and stem crystals.

Finished rock crystal elements were valuable due to the difficulty of mining, cutting and polishing large pieces of clear crystal and historical reuse was common. Chandeliers typically incorporated previously used rock crystal elements, some dating to over a century before their more frequently updated ormolu frames [Klappenbach, 2001]. This practice was evident on the Wrightsman chandeliers where late eighteenth-century ormolu frames included pendant and stem crystals from the early and mid-eighteenth century, as well as late seventeenth-century rosettes and beads. Many rock crystal elements exhibited old damages indicating that even imperfect crystals were reused rather than refinished or discarded. Damages ranged from minor chipping on pendant edges to large losses on stem crystals. In addition, there were a number of examples in which pendants that had fractured at drill holes were re-drilled near the break edge of the extant fragment and rehung.

Most of the chandeliers, sconces and candelabra had been previously electrified using polyvinyl chloride insulated wires, which had become sticky, attracting dust and leaving residues on the ormolu surface (Figure 4). Wiring was secured to the fixtures with abrasive brass wire ties, adhesive or tape; nests of wires were clustered around arm receiving plates and on tops of canopies. To accommodate the wiring, modern holes had been drilled into some of the ormolu drip pans, candleholders and arms. Hardware was affixed to each candleholder with a variety of materials including paper, plaster and lead. Plastic faux candles were topped with round, bright white light bulbs.

Fig. 5. Detail of modern auxiliary lights with applied rosettes on a Louis XVI Gallery chandelier. The Metropolitan Museum of Art, Gift of Mr. and Mrs. Charles Wrightsman, 1971 (1971.206.41) Photograph by the authors.
© The Metropolitan Museum of Art

Numerous conspicuous auxiliary lights had been attached to the chandeliers to illuminate the fixtures themselves. They came in a variety of shapes and sizes such as funnel-shaped nickel-plated brass cups or polished brass cylinder casings unsuccessfully disguised with cast glass flowers (Figure 5). Pairs of up-lights straddled chandelier arms, and multiple lamps were positioned on drip pans, receiving plates and canopies. The incongruous auxiliary lights added bulk to the chandeliers and visibly interfered with the elegant contours of the gilt frames.

Conservation Treatment

Three conservators worked exclusively on the historic lighting project for a fifteen-month period. In order to complete the project within the allotted timeframe, priority was placed on surface cleaning, structural repair and re-electrification of the fixtures. Aesthetic improvements were addressed as time allowed.

Conservation treatment began with the removal of electrical hardware, wires and auxiliary lights. Ormolu,

crystal and glass surfaces were cleaned with vacuums and soft brushes, followed by distilled water and ethanol on cotton swabs and wipes. Loose elements were stabilised by tightening or replacing missing screws and threaded rods. Individual suspension wires on chain links and festoons were carefully examined to identify areas of potential failure; partially open links were closed with padded pliers. The broken, missing or fractured links in weight-bearing chains were replaced by taking silicone moulds of the originals and casting and gold plating gilt brass reproduction links. Small epoxy shims were adhered at the upper links of slack chains to safely re-distribute stresses and correct hanging angles. Additional structural support was provided by incorporating fine nylon-coated steel wires into the suspension chains.

Unstable or visually distracting restorations such as the tangles of copper wires holding chandelier finials were replaced with more appropriate materials. Gilt brass reproductions were made to compensate for missing ormolu elements such as finials and decorative nuts. Discoloured repairs in crystal or glass elements were removed and new fills were created using a stable transparent epoxy with a similar refractive index. Dark cardboard washers were replaced with new, virtually invisible, washers cast in the same epoxy.

Although some alterations could not be made without dismantling the chandeliers, a remarkable visual improvement was made by repositioning the incorrectly oriented rosettes and pendants. These were rotated to hang with the faceted sides facing inward like cut diamonds, which is the historically correct position and maximizes reflection and refraction of light. Some pendants were moved to more accurate locations by cutting the modern attachment wires and reattaching them with new wires that had been chemically patinated to match the adjacent wires. New suspension wires were applied in the eighteenth century manner using fine round nose pliers to create decorative twists at the wire ends. Repositioning of the pendants was particularly effective on the Louis XVI chandeliers, which are considerably more brilliant from a distance and present a mesmerizing series of concentric light circles when viewed from below.

Fig. 6. After treatment of the Lauzun Room chandelier. Detail of the arm receiving plate showing new electrical wiring. The Metropolitan Museum of Art, Gift of Mr. and Mrs. Charles Wrightsman, 1971 (1971.206.43) Photograph by the authors. © The Metropolitan Museum of Art

Re-electrification

Curators and conservators consulted with the lighting restoration firm on the selection of new electrical wires. To avoid the problem of sticky degraded plastic-coated wiring, braided fibreglass sleeves were used to protect the new thinner polytetrafluoroethylene insulated wires (Figure 6). The sleeved wiring was flexible and could be easily toned with acrylic paints to match

varying shades of ormolu, crystal and patinated bronze on which the wires would rest. The old brass wire ties were replaced by less abrasive nylon monofilament. Conservators worked closely with the lighting restoration firm to ensure that the wires fit snugly yet safely along every curve in order to preserve the profiles of the objects. Great care was taken to place electrical wires in the least visible location on the fixtures, taking into account the sightlines of the visitors in the new galleries.

The adjustable socket hardware was assembled in varying heights to accommodate the different sizes of candles in each room. The hardware included hang straights with ball and socket mechanisms so that all of the candles could be easily adjusted to vertical resulting in a major improvement in the overall appearance of the fixtures. Hardware was secured in the candle cups using cork stoppers individually shaped to fit the interior of each cup (Figure 7). In a few cases this system had to be modified because the pre-existing hardware was embedded in lead and could not be easily removed.

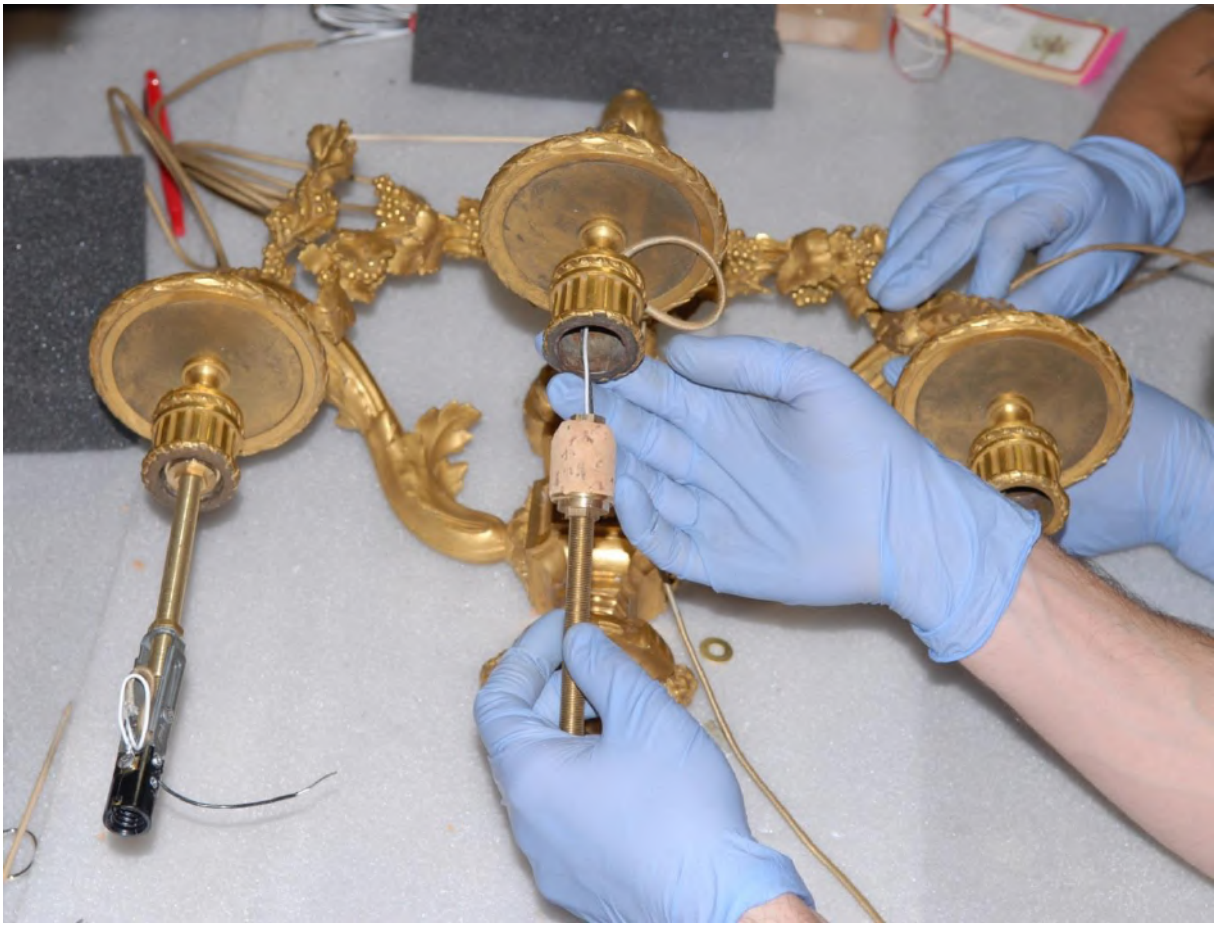

Fig. 7. Installation of electrical hardware and wiring on a three-light sconce. The Metropolitan Museum of Art, Gift of Mr. and Mrs. Charles Wrightsman, 1979 (1979.172.3) Photograph by the authors.
© The Metropolitan Museum of Art

The selection of faux candles and bulbs was carefully considered by curators and designers. Plain ivory beeswax-coated candle sleeves were custom ordered and altered by cutting to specific lengths and applying a specific number of wax drips to indicate the amount of time the candles had been burning in each conceived scenario. Valuable beeswax candles were generally not left in the chandeliers during the day in the eighteenth century [Dillon, 2002]. However, in this case curators chose to show candles in the fixtures in the daytime rooms, a compromise seen today in many historic homes and museums.

The small flame-shaped bulbs chosen for the night-time rooms give off a realistic yellow light and move intermittently by means of a magnetic impulse, as if flickering. A limited number of compact auxiliary lamps with 15 watt Xelogen bulbs were designed to fit into discreet locations on the frames to softly illuminate the chandeliers [2]. Additional gooseneck halogen spot lights were mounted on some of the chandeliers to highlight *boiseries*, sculpture and furnishings that could not be effectively lit with the new recessed ceiling lights.

Fig. 8. Daybreak, the Bordeaux Room, boiserie, Bordeaux, ca. 1785. The Metropolitan Museum of Art, Gift of Mrs. Herbert N. Straus, 1943 (43.158.1)
© The Metropolitan Museum of Art

Conclusion

The success of the historic lighting project was achieved through a collaborative effort resulting in an award-winning lighting system that was thoughtful in its presentation of the fixtures in period rooms where they play a central role in the narrative concept [3]. The conservation of the chandeliers, sconces and candelabra brought about a remarkable aesthetic improvement, and their sensitive re-electrification insured that they remain visually authentic in the context of the historic interiors (Figure 8). The Wrightsman Galleries have seen a marked increase in visitors who linger there to take a closer look at the arts of the *ancien régime*. In this more accessible and dramatic setting, where flickering candlelight reflects in mirrors and animates precious metal surfaces, and light streaming through windows shimmers across silks and crystals, the public might be seduced into stepping momentarily into the eighteenth century.

Acknowledgment:

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Endnotes

[1] Creative consultant, Patrick Kinmonth, Rossetti Studios, London, UK; principle lighting designer, Larry French, Auerbach Glasow French, San Francisco, CA; custom lighting fabrication and historic lamping firm, Aurora Lampworks, Brooklyn, NY, Principal/CEO, Dawn Ladd, wiring and fabrication, Mark Bump and Manuel Cando.

[2] The prototype for the auxiliary lamps was designed by Aurora Lampworks.

[3] International Association of Lighting Designers, 2009 Award of Excellence, http://www.iald.org/about/awards [Accessed April 3, 2013].

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

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The Getty Research Institute, Los Angeles, November 6-9, 2012

Conservation Problems of Some Objects in Francisco de Paula Santander (Colombia), a House Museum

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Abstract

This paper focuses on the development of a conservation strategy for the historic house museum, Francisco de Paula Santander. This house, located in northeast Bogota, Colombia, honours the memory of one of the key figures of Colombia's independence war. Francisco de Paula Santander was also Colombia's first elected president. After an exhaustive analysis of the current conditions of the house and the collection, several problems were detected: three rooms have leaks in the roof; other rooms present elevated levels of relative humidity and particulate material; further rooms are affected by excessive direct exposure to sunlight in the afternoon. All these conditions damage the collection in different ways. The impact of each of these factors is shown in several examples. Finally, an appropriate conservation strategy, aimed at solving the different problems of this collection, is presented.

Keywords

Preventive conservation; Francisco de Paula Santander; Historic museums; Museum policies in Colombia; Environmental agents; Dissociation; Plagues; Preventive Conservation model for museums

Introduction

Francisco de Paula Santander (1792-1840) is one of the key figures in the history of Colombia (Figure 1). He fought side by side with Simon Bolivar during the war for independence. After Bolivar's death, Santander became the first elected president of La Gran Colombia. He is known as "The man of the laws" because, after Colombia gained independence, he consolidated the territories of the new republic, reformed the financial and educational system and established diplomatic relations with other countries [Bushnell, 2007].

Fig. 1. Portraits of Francisco de Paula Santander. Plaster medallion and bronze statue.

The house museum is located in the northeast of Bogota. Built in 1620, it was originally a country house (Figure 2). Currently, the house preserves its spatial conception and its architectural style with four facades, open balconies, stone pillars on the first floor, wood pillars on the second floor and thick walls in masonry built with a mixture of lime, sand bricks and stone. The roof is clad with terracotta tiles.

Fig. 2a and 2b. Facade of the house.

The building was previously known as "Hacienda el Cedro" and was constructed by Spanish conquerors. One of them, Antonio Dias Cardoso, received a vast terrain of forest and named it "El Cedro". Since then, the house has had numerous owners and several important events happened there. In 1891, during one of the many civil wars, Conservative troops used the building as their headquarters. The troops were attacked by Liberal forces, who burned the house. In 1906, Francisco Fernandez Bello bought the house. Bello left the house to his son Jose Fernandez on his death. The inheritance continued to the next generation, Cecilia Fernandez de Pallini. In 1978, work began on the structure to repair the damages of another later fire. The aim was to recover the surroundings of the house and create a museum [Sociedad, 2008].

The museum was inaugurated in 1982. The collection is located in the second floor (Figure 3). It consists of objects and artifacts relating to Santander. The objective of the museum is to honour and preserve the legacy of Santander while educating the public and future generations about him. The museum has sixteen rooms, seven of which are external galleries and nine are internal. The objects and the furniture are exhibited to resemble an eighteenth century house. At the beginning of a visit, visitors learn about Santander and his family by observing some of his personal effects and those belonging to his wife and daughters. Some items that can be seen in this part of the museum are clothes, photographs of Santander's daughters and furniture. The second part of the museum shows Santander as a General of the Republic. Here military uniforms, flags, paintings of Bolivar, Santander and other generals, and weapons are displayed. The visitor can also view scale models of the battles of "Pantano de Vargas" and "Boyaca". The third section of the museum shows Santander as "the man of the laws", exhibiting his private office with furniture, official letters, books about him and images of preliminary versions of the coat of arms of Colombia ordered by Santander. The fourth section of the museum pays homage to Santander and his legacy. Artifacts dating from his death to present times are presented to the viewer. Here, there are images, commemorations, letters, diplomas, flags and coins. The fifth part of the museum consists of a room dedicated to Santander as President of the Republic and also shows pictures of all his successors including the current president. Finally, the visit ends with a room that explains the history of the Hacienda and shows pictures, historical documents, scale models and furniture.

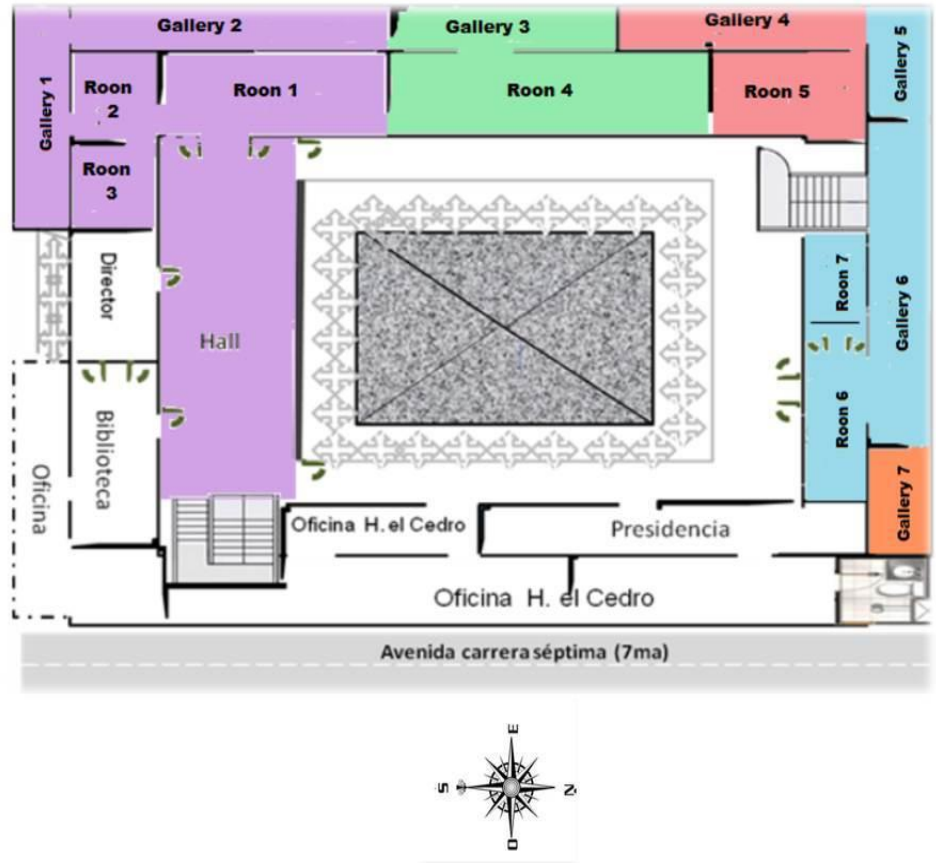

Fig. 3. Map of the house museum Francisco de Paula Santander

GUIDE DE MAPS OF HOME MUSEUM FRANCISCO DE PAULA SANTANDER			
Gallery 1	Estar de Doña Sixta Pontón	**Room 1**	La Sala de recibo de la familia Santander Pontón
Gallery 2	Villa del Rosario	**Room 2**	Habitación de descanso del General
Gallery 3	20 de Julio de 1810	**Room 3**	Oratorio
Gallery 4	Exilio	**Room 4**	Batallas
Gallery 5	Iconografía civil y militar del General Santander. Educación, colegios y universidades Santanderinos.	**Room 5**	Gobierno Santander
Gallery 6	Homenajes 1810- 1919	**Room 6**	Gobernantes
Gallery 7	Hacienda El Cedro	**Room 7**	La sala de la Constitución de 1821
Room 8	Hall	**Room 9**	biblioteca

Table 1: Agenda for the map of the house museum Francisco de Paula Santander

The house museum Francisco de Paula Santander has a mixed collection with around 1500 objects, all of them exhibited. The collection consists mainly of fabrics, furniture, paper, hair samples, photographs, easel paintings and pastel paintings – all organic in nature. The collection also contains some inorganic objects, such as ceramics and metals. This paper will summarise the results of a project implemented to investigate the current conditions of the house and the collection. A selection of 56 high value objects was made, including Santander's bed, a wooden cross, an inkwell, Santander daughter's photo album, hair samples of Santander's daughter and wife (Figure 4). These artifacts are considered important because they were everyday objects used by Francisco de Paula Santander, his wife Doña Sixta Pontón de Santander and their daughters.

Fig. 4a. Personal object of Santander.

Fig. 1 Caption

Fig. 4b, 4c, and 4d. Personal objects of Santander.

The project lasted for one and a half years (2011-2012), the objective being to establish a preventive conservation plan for the house museum. For this it was necessary to know which conservation problems the museum and its collection faced. The guideline used is the *Modelo de análisis de conservación para museos* developed by the Universidad Externado de Colombia [Fernández et al, 2005]. This model divides a museum in four components: administrative, infrastructure and environment, collection and society. Based on this division numerous actions were taken. The first one was drawing the floor plans of the house and identifying the location of the objects in each one of the sixteen rooms. The second was establishing a complete photographic registry of the place and the collection. After that, luminosity and relative humidity were measured in twelve rooms. Finally, a registry of the conservation status of the collection was written. Also, visitors were asked to take a survey and express their opinions about the museum. After analysing these information, a diagnosis revealed the main problems of the collection, among which the most prominent are:

Infrastructure

The building edifice requires repair, especially to the roof. Neglect and decay have resulted in leaks that affect the collection in three internal rooms, so-called *Hall*, *Habitacion de descanso del general* and *Biblioteca*. In the Hall, water drips directly over a piece of furniture of Imperial style, a table and the carpets. In the *Habitacion de descanso del general* water runs over the rails of Santander's bed and continues onto the floor. In the *Biblioteca*, water runs over an old light bulb socket and lands over a table.

Fig. 5. Room 8. The Hall.

Air quality

The museum has sources of pollution nearby, such as a main highway and the chimneys of residential complexes. There are not enough sources of ventilation due to the fact that air enters through two doors with access to a closed patio. The lack of a periodical cleaning program has produced concentrations of particulate material affecting the collection. The collection in open and closed display cases presented high levels of particulate material.

The architectural design of the house has generated different environments in the external and internal exhibition rooms. The internal rooms have thick walls and are cold, with windows near the ceiling so natural light does not fall directly and affect the collection. Relative humidity (RH) and temperature (T) were measured in twelve rooms. In the *Habitacion de descanso del general* records showed a large variation of RH between 63.8% and 55.3% and a T variation between 18.2 and 15.2 degrees Celsius, while the room *Batallas* presented a variation of RH between 63.1% and 59.3% and a T variation between 17.8 and 16 degrees Celsius. As a result, objects consisting of organic materials are being affected by a white-coloured fungus. In the first room, the fungus is present in a box containing hair samples of Santander's wife, on fans, in a photo album, in books and on Santander's bed. In the second room, the fungus affects uniforms and hats and the display case where they are located. On top of this display case there is a high concentration of particulate material and more fungus. According to analysis carried out by the author, the fungus is using the highly concentrated particulate matter as a feeding ground,

fuelled by the lack of air circulation and the elevated level of relative humidity throughout the house [Calvo, 1997; Garry, 1998; Michalski, 2009a, 2009b, 2009c].

Fig. 6. Bed of Francisco de Paula Santander from room 2- Habitacion de Descanso del General

Fig. 7. Box with hats of military uniforms, suffering from biological infestation by a white fungus. Room 4: Batallas.

Luminosity

The external rooms facing west and north receive direct sunlight during the afternoon. In these rooms there are windows and also closed balconies with glass. The temperature of these areas in the afternoon varies between 21.3 and 17.9 degrees Celsius. The majority of exhibited objects in these rooms are of organic nature,

such as fabrics, wood, paper, photographs, posters and easel paintings. According to the measurements taken, the luminosity levels are superior to 300 lux, the recommended level for such displays [Michalski, 2009b]. The curtains on the windows do not stop sunlight from reaching different areas of the collection and the rooms. Sunlight affects these objects, such as wood, fabrics and paper, negatively. These materials are very sensitive to high levels of visible light and ultraviolet radiation. The result of long-term exposure has been chromatic degeneration to the surfaces causing a yellow-like tone, dryness and has increased photo oxidation processes. For this type of material it is recommended that the exposure to light never reaches values higher that 50 lux [Michalski, 1998, 09; Calvo, 1997]. Examples of deterioration can be seen on the clothes of Santander's daughters and wife.

Fig. 8. Sunlight directy hiting objects of organic nature. Gallery 3: Villa del Rosario.

In order to establish a solution strategy, problems were labelled according to the urgency for a solution. The three problems mentioned above belong to Level 1 that is, urgent. It was recommended that solutions be found for these problems in less than three months. To resolve these issues several preventive conservation actions were suggested.

To resolve the problem of water ingress to the edifice, it was recommended to secure leaks in the roof thus eliminating further damage due to water running over objects. Ceilings and covers were also inspected. It was recommended that biological deterioration caused by fungal growth could be prevented by first determining the type of fungus affecting the collection and then taking measures to prevent its growth. It is also important to implement a regular cleaning schedule for the collection, as well as a continuous observation in order to note further deterioration. Finally, for the third problem, actions to mitigate natural illumination are suggested, in particular installing protective layers, such as curtains or blinds, in front of the windows that reduce the levels of sunlight entering the building. It has been determined that the problems described adversely affect the collection, in particular those artifacts of organic nature, which are the most valued because these consist of the everyday objects of Santander, his wife and his daughters. It was established that the analyses of relative humidity and temperature were useful and

necessary since they allowed the determination of environmental factors that affect the collection. The accumulated data has provided solutions to the problems encountered during the research project.

Conclusion

The research project has allowed a detailed study of the museum, its building and its collections.

Reviewing the data collected, it can be concluded that the museum had several problems of different nature, all of which required different solutions. Identifying specific problems led to finding individual solutions that could be quickly implemented, thus further damage to the artifacts entrusted to the care of the museum could be prevented by addressing these issues. Solutions were formulated based on theoretical guidelines and subsequently put into practice. These could be implemented using the museum's own resources.

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
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The Getty Research Institute, Los Angeles, November 6-9, 2012

House Museums Are Not All the Same! Understanding Motivation to Guide Conservation

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Abstract

This paper presents the implications for conservation of an analysis showing that houses are preserved as museums for distinctive reasons, which impact on the ways in which they are subsequently conserved, presented and interpreted. For example, the houses of culture heroes (sometimes referred to as 'personality' or 'celebrity' houses) possess the aura of sacred places, and hence the author argues that their conservation should be oriented to retention of the magical character of all original elements. By contrast, houses museumised for their design qualities (interior and/or exterior) are more similar to artworks (walk-through artworks) and here the author suggests it is appropriate to clean and restore them to conventional museum standards of integrity in order to display the rationale of their preservation. In another contrast, the multi-generational accretion of contents, building and landscape typical of British country houses requires the modulation of historical judgment in restoration and conservation decisions. This kind of decision-making is even more called for in the modern genre of historic process or social history houses, which may be all or part re-created for interpretive purposes. Thus the spectrum of conservation intervention in historic house museums stretches from maintenance of as-found

Introduction

The conjunction offered by a conference on historic houses and conservation of cultural heritage gives me a platform to demonstrate the practical application of a project I have been working on for some years. It is the history of historic houses as a species of museum, which I problematise with the simple question, 'why?' Why does western culture museumise houses? A brief answer is framed by the perspective that the social function of museums and heritage is to focus ideological projections of cultural identity. Museums and heritage are particularly efficacious as national identity representations, or in microcosm, local identity representations. House museums are a subset of museums with the notable characteristic of bringing the domestic domain of private life into the public sphere of attention and discourse. This is not a benevolent act of inclusiveness (though some house museums stress this approach today). Rather, I read house museums as a deliberate channelling of the culture of private life into the grand narratives of nation to demonstrate and enhance national imagery in the interest of national prestige and power. House museums have proved to be popular vehicles of symbolic national culture, not least because the rhetoric of 'home' so effectively presents the museum's message in a familiar, homely tone. Even a palace can be presented as a home, but it is a home almost always depicted in the context of national heritage.

For the purposes of conserving historic houses, my work is relevant not so much for its big-picture-connection of house museums to nationalist agendas, as for the history of houses becoming museums. Each story of house museumisation occurs in a specific time and circumstance. This specificity is what generates the particular meanings attributed to the house: why it was deemed important enough to extract from regular use and conserve as an item of heritage. Times and circumstances change,

condition to replacement or reinvention of a significant portion of contents and building. Despite this logic, understanding the motivation to transform a house into a museum and undertake appropriate conservation treatments can be, and often is, over-ridden by contemporary needs. This paper calls for conscious consideration of the initial purpose of the house, its cultural significance, in heritage management terms, in coming to appropriate conservation decisions.

Keywords

House museum, Historic house museum, Conservation in house museums

and so do house museums. The process of change is what history documents, by tracking the social, political and economic contexts that reorder meanings. The conservation of museumised houses needs to understand both the original and the shifting meanings, in order to develop an informed management plan that will protect and maintain the cultural significance of the house. This is the message of the Getty Conservation Institute's (GCI) 'Values of Heritage' research projects of 1998-2005, one of whose sources was the Australia ICOMOS *Burra Charter* process for heritage conservation. The *Burra Charter* asserts: 'understand significance ahead of all other issues that bear on the place, and aim to protect and maintain significance in all the stages of preserving the place'.

It might be said that the significance of a house museum is simple and generic: houses are valuable manifestations of particular historical and design heritage that should be preserved to inform and delight the public with their authentic character, essentially the ICOM view of museum purpose. It is a sincere and worthy summary, but it avoids stating what is the magical substance of heritage, and why the public should learn from it and enjoy it. Let me illustrate the problem with the story of an architectural historian colleague in Melbourne, who is interested in the problem of modernist architecture as heritage. She found that house curators believe collections and interpretive displays are necessary to interest visitors in the house, but she thought objects and interpretation interferes with seeing the design, which is what she perceived as the real significance. She concluded that the discrepancy makes house museums uncomfortable, *unheimlich*, uncanny, which is a post-modernist take on the persistent critique of house museums as frozen, static, or dead [Lewi, 2013, 62-74]. I think both the researcher and the curators she cites would find it helpful to look for heritage significance in each house's history of museumisation, not just the history of building and living in the house, but why it was considered important enough to detach from inhabitation and transform into a museum.

Bearing in mind that houses are museumised in order to inscribe and celebrate particular kinds of ideas, the histories of museumization reveal a range of motivations. These motivations characterise house museums as certain types of mentality, which can be analysed as a typology [Young, 2007, 59-77]. Now, I am constantly aware of the reductionist tendency of typologies, which appear to simplify complex cultural products into tick-the-box categories. With that risk in mind, it is still helpful to be aware that house museums are not all the same, and that therefore they require distinctive modes of management, specially in conservation interventions.

The years of investigation into house museum history have revealed many fascinating stories and patterns. This paper introduces a suite of rationales that inform the transformation of historic houses into museums.

Heroes' houses

I use this term in the anthropological sense of culture heroes, the real or mythical figures who are claimed to embody some aspect of a society's ideals. The first hero's house museum in the UK was Abbotsford, the home of the poet and novelist Sir Walter Scott, located in the Border country of Scotland [Brown, 2003; Kelly, 2011]. It was opened some months after his death, in 1833, by his family, to accommodate the fans and tourists who had visited during his life and continued to visit. The house remained a family business for 170 years, but has been managed by a trust since 2005. Typical of items identified as prototypes, there is a certain fuzzy character in judging Abbotsford a museum, as opposed to a shrine, and that comparison is an important indicator about the origins and survival of heroes' houses.

The second British hero's house was Shakespeare's Birthplace in Stratford, which had also been something of a shrine in its previous eighteenth century manifestation as a pub. It was purchased in 1840 by a committee of gentlemen who expected that the national government would take it over, which never eventuated; it took thirty years to pay off the original loan that had secured the house [Fox, 1997, Part 1]. The pattern of a committee forming a trust to manage a house museum emerged this way, and it is still the predominant mode of house museum management.

In the USA, Hasbrouck House, in Newburgh, New York state, became the first American house museum in 1850; it was a farmhouse used by George Washington as headquarters during the 1782-83 winter of the American Revolutionary War. It was rather unwittingly acquired by the state of New York in payment of a debt, valued for the sake of its links to the first President [Hosmer, 1965, 36]. It initiated a string of Washington house museums, most of them further War headquarters. Another strand of Washington house museums comprises places where the 'Father of His Country' had personal links, among them the second house museum in the US: Washington's own plantation, Mount Vernon. It was museumised by a committee of patriotic women in 1858, thus establishing a particularly American practice of house museum formation and management [West, 1999, ch.1.]. That the first two house museums in Britain and the US focus respectively on writers and presidents is not just chance: these two kinds of hero came to define the genre of heroes' houses as symbols of their nations, from which further kinds of hero houses followed [Young, 2012, 143-58; Young, 2011, 26-30].

How does this knowledge impact on the conservation and management of heroes' houses? As suggested by names like Shakespeare and Washington, the types of figures commemorated are creation figures, founding heroes, saviours or redeemers; they are mythic embodiments of nation, or sometimes on a smaller scale, of the local or topical. Museumisation effected a modern parallel of sanctification, as recognised in the theory of civil religion, where patriotism is presented in the forms of godly faith [Bellah, 1967, 1-21]. The house parallels the shrine; its furnishings parallel relics; traces of the hero's physical presence inspire loyalty to his or her cause, or so it is hoped by those who initiate and shape the museumisation, who are the true believers. The obverse of the true believers is the visitors who neither know nor care about the subject-hero; their responses range from vague awe to boredom, and their disinterest in irrelevant great men's houses feeds the popular critique. Recognising that culture heroes may drift into obscurity and redundancy proves the importance of shared knowledge and belief in appreciating a hero's house museum. This problematic situation can sometimes be addressed through site interpretation, and sometimes via re-orientation of the house's purpose. An example of a now-little-valued hero is the early twentieth century dramatist and litterateur George Bernard Shaw (GBS). His house in Ayot St Lawrence, Hertfordshire, has been reported as today having more visitors come to inspect an inter-war domestic interior than to celebrate GBS [Forrest, 2008].

When a house was museumised essentially as a shrine, I suggest its conservation turns on the magic of the inhabitant's onetime presence and use of furnishings. Assuming there is reliable evidence of authentic presence

and use (sometimes a highly attenuated condition), conservation planning demands a minimal degree of intervention and a maximum of stabilisation, as is. In reality, relatively few heroes' houses survive with large intact collections, but where they exist, they are of extreme significance to the meaning of the house.

Collectors' houses

A house belonging to a collector – usually of art or antiquities, though other fields also exist – is essentially the collector's private museum. Some such houses become publicly museumised, usually after the collector's death, and usually because the collector bequeaths a sufficient endowment to keep it going. The house museum fulfils one of the more narcissistic motivations of collecting by creating an enduring, public self [Pearce, 1992, 48-66]. Not many people can afford the kind of collecting that is considered worth maintaining intact and in-situ as a permanent museum (though the number is growing in our affluent times), and few can resist the claims of their heirs. (In fact, a high proportion of houses preserved as museums, for whatever motivation, belonged to childless owners, and a further significant proportion were summer or holiday homes, evidently regarded by heirs as more expendable than the family dwelling).

Collections widely regarded as important enough to museumise tend to focus on artworks and antiquities, the most valuable registers of objects in the western cultural economy. The first was Sir John Soane's Museum in London, bequeathed to the nation in 1833 and opened to the public in 1837. It is the model of an eighteenth century-style antiquarian collection, motivated by scholarly research, used in formal and informal teaching, but also incorporating the collector's interest in contemporary art; both wings of the collection were regarded at the time as appropriate and laudable to convert to the public sphere.

The high status of art objects, enhanced by the patina of noble taste and the aura of scholarship, made collecting particularly attractive to the nouveaux riches of the later nineteenth-early twentieth century period in both the UK and the USA (and still today). The houses of collectors emerged as museum self-memorials. Of this genre, the first was Isabella Stewart Gardner's Venetian Gothic palazzo in Boston, opened in 1903. In the UK, the first of this modern kind of bourgeois collector's house museum was the Russell-Coates Art Gallery and Museum in Bournemouth, gifted to the people of the town in 1908, though opening in 1922. The Gardner and Russell-Coates collections were funded by commercial fortunes, and typify how great wealth can enable the acquisition of the cultural capital that confirms elite status in modern, non-feudal societies.

Non-art collectors' house museums are comparatively fewer. Probably the oldest is the Mercer Museum, where Henry Mercer's collection of early American crafts and industries decorated his remarkable concrete castle, Fonthill, near Philadelphia; it opened in 1913. This was an early museumisation of what came to be called Americana. Interest in Americana surged in the twentieth century, manifest in vernacular forms as folk art and in elite forms as American-made art and decorative arts. Notable collectors' houses were gradually museumised from the mid-twentieth century, starting with Henry Francis du Pont's Winterthur, which took the route of period room installations. Something similar had been the project of Frank Green, an English industrialist scion, whose historical art and decorative arts collecting was realised in the medieval Treasurer's house in York, made over to the National Trust in 1930.

The role of collectors' house museums in the constellation of nationalist expressions is less obvious than for heroes' houses. But the shift of private resources into the public sphere is such a counter-intuitive move, even by the most egotistical personalities, that it is worth understanding in a large-scale context. It is most fully expressed in the American ethic of public philanthropy, of the wealthy offering back to the community, which is a much more prominent act in the USA than the UK. The cycle of public recognition generates its rewards in esteem, a very powerful form of symbolic capital for its moral dimension, which validates the persona and his

or her influence, often on a national scale.

Many collectors specify that the layout of their houses should not be altered, an egocentric demand bequeathed to many collectors' houses. It may be regarded as an idiosyncratic strength of the genre, but it is also a severe managerial and conservation constraint. Even where it is not specified, the rationale of the collector's house museum implies a mandate to conserve the founder's taste, similar to the significance accorded a hero's relics, but tempered with an understanding of the founder's aesthetic. Hence original display arrangements, techniques and materials are significant determinants of conservation interventions in collectors' house museums.

The country houses of Britain

I treat the country houses as a distinct species of house museum because they are the product of specifically British circumstances. The key is the law of primogeniture, by which aristocratic titles and estates were inherited by the eldest son, and thus not sub-divided each generation. Over time, this vast intergenerational project of patronage developed into magnificent houses with exceptional furnishings and decoration. When the National Trust's first rescue list of country houses 'of undoubted merit' was compiled in 1936, it was found very hard to limit the list to 230, and that was thirty more than the aim [Lees-Milne, 1992, 7]. A further reason to treat the country houses as a class unto themselves is that they manifest practically the whole of my typology of house museums. Not only are they often important collectors' houses, but they frequently housed heroes of the British kingdom, for the aristocracy was the historical source of its military and political leaders. And sometimes country houses are also specimens of the kind of exceptional design, exterior, interior and garden, discussed below.

My final reason for considering the country houses as a specific genre of house museum is the enormous impact they have generated on the rest of the world, as the cynosure, the very model, of what a house museum ought to be. Unfortunately, the image of the country house has deformed the development of house museums in the new world, and arguably in the UK too, via a vision of museumising the great, high style house, inhabited by the ruling class and exemplifying wealth and taste: a statement of their power. Such conditions could hardly be met outside the aristocracy, let alone in the colonies, yet when ex-colonials adopted the house museum genre, aside from local culture heroes, they looked for stately homes, and if they could not find much, they manufactured them.

I need here to backtrack a little: I referred to the country houses as a specific genre of house museum. I acknowledge that far from all British country houses are museums; many are privately owned and inhabited and a few are not open to the public at all. But museumisation in the interest of tourism emerged as one of few viable uses for enormous old houses full of valuable goods. The history of, as one author puts it, 'the fall and rise of the English country house', is now well-documented, including the intervention of the National Trust [Mandler, 1997, 401-3].

The reinvention of the country house as a national heritage was a much more recent product. It is hard to believe how such buildings could become practically worthless, but country houses were abandoned because they were just too expensive to maintain. The consequences were documented in an exhibition at the Victoria & Albert Museum in 1974, 'The Destruction of the English Country House', a show of photographs of stately shells and ruins. It made graphic the conclusions of several government reports since 1950, arguing that the owners of country houses needed government support to keep the houses going. One report justified the need by pitching the country houses as 'England's greatest contribution to western civilization, the purest expression of national genius' [Mandler, 1997, 401-3]. This line frames the reconceptualisation of the houses of the elite

as the heritage of all Britons.

British country house visiting peaked in the 1990s, but remains a magnet of international tourism to Britain. One of the themes that sustains interest is the continuing connection of hereditary owners to the houses. This sometimes-tenuous claim follows the taste of the pre-Second World War National Trust Country Houses Committee, asserting that 'families not only made the best caretakers but also breathed that ineffable spirit essential to the legendary purpose of country houses' [Lees-Milne, 1992, 16]. This view persists in some country house circles, with the conviction that a museum is melancholy, and a resident custodian deadens the atmosphere. The resonance with the aura of heroes in their domestic shrines is suggestive, if anachronistic.

In conservation terms, the dilapidated state of many country houses when they embarked on museumisation encouraged an interventionist approach, controlled only by the availability of funds, which was not challenged until the 1980s. By then, experience and theory began to indicate that the intricate complex of building, interior decorative scheme, collection, and historic association might be more appropriately addressed by stabilisation rather than restoration. Meanwhile, the perceived needs of tourism seem to dictate the cliché of restoration 'to former glory'.

Artwork houses

I have come to this term to describe the type of house museumised for essentially aesthetic reasons. It encompasses style specimens assessed as either outstanding or typically representative, both exterior and/or interior designs, by famous or anonymous artists. Style in this sense embraces both elite artistry and vernacular expression, and acknowledges the significance of technique as well as beauty. Simultaneously, the justification of artwork house museums converts them into indices of national character: evidence of the aesthetic distinctiveness and distinction of the imagined community of the nation [Vale, 2008, 55-59].

This is clearest in the first generation of artwork house museums, which were late medieval vernacular. The first house acquired by the (English) National Trust, in 1896, was the heavy-timbered, thatch-roofed Clergy House at Alfriston, East Sussex. Looking back on fifty years of Trust acquisitions, a commentator described the house and a cohort of further vernacular cottages as specimens of pure Englishness manifested in architecture: 'they look, and are, indigenous' [Oliver, 1945, 78]. A parallel vision of the power of the style of buildings to express the spirit of nation developed with the foundation of the Society for the Preservation of New England Antiquities (SPNEA; since 2004, Historic New England) in 1910 [Lindgren, 1995, 154-5]. By 1915 it had acquired four properties, exemplified by the Boardman House in Saugus MA. Built about 1687 by a not very important local carpenter, in which nothing of great import ever happened, the Boardman House was described by William Sumner Appleton as 'a magnificent specimen of our early architecture which has come down to us practically unchanged' [Hosmer, 1965, 244]. Of style it has little, but its construction reveals the carpentry systems of the old world coming into contact with new world materials and techniques, an architectural essence that justified collecting it for posterity.

High style house museumisation took different forms on either side of the Atlantic. Aesthetic masterpieces were a significant dimension of the post Second World War avalanche of country houses that came to the National Trust. Houses such as Knole, remarkable for its seventeenth century integrity (acquired by the Trust in 1946), and Robert Adam's interior and exterior remodelling of Osterley Park, Middlesex (acquired 1949) brought important sites to the public knowledge of English design. The neoclassical colonial legacy of the US inspired museumisations less for the sake of style than for historical associations, but American agencies and individuals recognised the aesthetic potential of Victorian styles well before English eyes could see it. In 1941, the fine Italianate Morse-Libby house in Portland ME was rescued and preserved under the name Victoria

Mansion; richly decorated and furnished by Herter Brothers of New York, it was preserved as a Gesamtkunstwerk, a total artwork. Not until 1980 was an equivalent Victorian house museumised in Britain: the 1870s Linley Sambourne house in Chelsea.

Likewise it was in the USA that houses designed by modern architects were first museumised as artworks. The archetype is Frank Lloyd Wright (FLW), museumised earliest in Fallingwater, designed in 1937, made public in 1966. Today, more than twenty FLW houses, representing his life's oeuvre, have been transformed into house museums from coast to coast. The only English design hero equivalent to the great creative of America would have to be William Morris. His furnishing designs, while widely present in aesthetic and arts-and-crafts house museums, were not museumised in situ until a private group managed to secure the Emery Walker House interior, located in west London, in 2000.

These examples demonstrate the characteristic mode of presenting artwork houses, literally as walk-though artworks. In this perspective, the condition or integrity of an artwork house is a major element of its importance, and determines a conservation approach based on the value of the original worked fabric as the product of inspired vision.

Historic process house museums

By this, I mean houses where historically significant activities of ordinary life happened: once-off or regular events, particular or generic, but usually without involving anyone or anything famous. Today we can call them social history houses. Their genealogy can be traced to the open-air folk museums inspired by Artur Hazelius in Scandinavia in the 1890s. In the absence of anthropologically-defined cultures in the UK and the USA, outdoor museums of historically-inspired structures developed in the inter-war period, displaying numerous museumised houses. Colonial Williamsburg, Greenfield Village (now 'The Henry Ford'), Old Sturbridge Village and Historic Deerfield all opened in the 1930s [Hosmer, 1981]. In Britain, the originator was the Welsh Folk Museum, now titled the National Museum of Wales; its name change demonstrates the conscription of the vernacular to define the nation. Reshaping 'colonial' or 'folk' houses as national history was facilitated by the great 1960s-70s heuristic shift to history-from-the-bottom-up, which trickled readily into house museum practice.

The oldest specimen of a historic process house museum appears to be the Old Merchant's House in New York City, museumised in 1936. It would have been a hero's house if anyone famous had ever lived there, but the Tredwells were merely a well-off merchant family. Much of the house's significance arises from unusually long inhabitation by two generations, during which little was modernised or thrown out. The product was recognised by a descendent as a time capsule representing the 1840s, and the rescuer struggled to establish and keep it going as a museum in the by-then insalubrious Lower East Side. It is still struggling, and today presents itself more as an artwork house, 'New York City's prime example of a Greek Revival home' [1]. The Old Merchant's House constitutes what is today acknowledged as a very rare item: the unusually complete contents of a middle class household, in situ. Several examples survive in the US of intact house collections preserved as monuments to non-elite writer-heroes like John Greenleaf Whittier and Henry Wordsworth Longfellow, but it would have seemed impious to view their relics as everyday, representative furnishings. The social history perspective motivates and justifies this kind of interest today. It was slow to emerge in the UK, where the first example seems to have been the Tenement House apartment in Glasgow, inhabited from 1911-65, kept more or less intact by a sympathetic soul, and acquired by the National Trust for Scotland in 1982.

The rarity of non-elite household collections generated the category of re-created historic process or social history house museums. A relevant house, sometimes relocated, is furnished according to plans of variable

reliability with material purchased, donated or manufactured for the purpose. That purpose is essentially to interpret themes of daily life in a more-or-less significant house. The presentation might be expressed generically, or in the names of one-time occupants. This kind of re-created house museum is probably the most numerous type in both the UK and the USA.

The conservation approach to historic process house museums is governed by the degree of original material exhibited. The scarcity of historic non-elite furnishing assemblages demands the utmost sensitivity, which should nonetheless be tempered by good sense as to the fitness of extreme conservation processes applied to humble objects. I have seen a laundry stick (for hoisting wet washing in and out of the tub) displayed with such exaggerated care that the display is laughable; let us remember that many domestic goods are intrinsically sturdy. In cases of major internal re-creation, the house structure is often presented as the most important artefact, even though it may have been extensively treated to make it a suitable museum, at the expense of collection objects. Objects acquired to furnish a house museum are likely to have some degree of significance in themselves (and it may grow as the re-creation ages), but a critical eye for heritage significance is a healthy guide to appropriate conservation intervention in this scenario.

Not-very-important house museums

I usually refer to this final type of house museum as sentimental, because it sounds kinder. In my generous moments, I mean 'sentimental' in the sense of engendering positive spiritual or communal feeling for the place, usually focusing on a sense of non-specific antiquity (contrasted to structured history). But in my more ruthless mode, I mean houses whose significance is not very great in any comparative sense, even though possibly worth preserving within local frameworks. They are the lumpen-class of house museums, and while they are often described in the same elevated language as more convincing specimens, they may be sub-threshold in the age of professional heritage management. They tend overwhelmingly to be large, high style houses, often lavishly decorated and furnished with antiques, expressing 'the romance of a grand past' [Herbst, 1989, 101]. Such houses can often be found to have been museumised for no very particular reason: perhaps their relative grandeur fulfilled a dim vision of the English country house as house museum, or perhaps it just seemed like a good idea at the time. The social history revolution appeared to offer a way to modernise some such houses, by refocusing on humble life in the house, specially on the contemporary interest in servants or slaves. But it is not a very ruthless judgement to suggest that an uncomfortable proportion of house museums developed reactively or opportunistically, without much substance or significance.

Concluding Remarks

These are the kind of houses that undoubtedly inspired Richard Moe, then chairman of the US National Trust, in 2002 to put the disheartening question, 'are there too many historic house museums?' American preservationists have now bitten this bullet, and ask frankly, 'Does America need another house museum?' They point out that, despite the best intentions, museumisation can condemn a historic house to poverty and deterioration rather than reinvigoration [Moe, 2002, 1; Stapp and Turino, 2004, 7; Barrientos, 2008]. A number of studies have investigated non-traditional management structures and more active uses for historic houses than traditional display [Harris, 2007].

It might be argued that as old houses, even not-very-important examples contain some intrinsic historic value. Well, yes, for the dividing line between the categories of history and sentiment is a threshold of perceived significance, and that is inevitably a matter of decision, that is, of management. But thus I return to my initial proposal that the conservation management of house museums needs to be informed by systematic assessment

of the heritage significance of each case, not by the need to restore or furnish a grand house to a certain time period. The standards of significance change over time, exemplified by the case of redundant heroes, and arguably, house museum management should reflect changes, even if it means closing a house after a period of public display and returning it to domestic use. Since house museums are largely managed as unique specimens by individual trusts, it is hard to envisage a broad regime of selection to control the spread of museumised historic houses. However, this degree of control is practised with determination by the large organisations that manage networks of houses; in fact, they've become infamously unwilling to add acquisitions to their portfolios. Unfortunately, the wisdom of experience is not obvious to advocates of new house museums.

The many sites I have referred to in this paper demonstrate the enthusiasm of advocates to establish house museums, over a long period of time. They have been so effective, that today it seems a normal and natural thing to pay honour to the past by museumising an important house. A few new house museums open every year, and even more are proposed: a house once occupied by someone famous comes onto the market, and a journalist or commentator or local interest group makes a TV story about its museum potential. The staff of heritage management agencies grimace; they are already dealing with the thinly stretched resources available to maintain existing houses. So I conclude with the call to acknowledge that the other side of the coin of significance assessment in heritage preservation is the acknowledgement of insignificance. We need to recognise it and act accordingly.

Endnotes

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

A Joint Conference of ICOM-DEMHIST and three ICOM-CC Working Groups:
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Kamarajar Memorial House in Viridhunagar, India: Journey of a House to a Memorial Then to a Historic House Museum of National Significance

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Abstract

The preparation of a conservation management plan (CMP), guided by the Australian ICOMOS *Burra Charter,* for a culturally significant mid-1880s house in southern India – the Kamarajar Memorial House – has confirmed its *cultural significance*, and clarified the conservation needs for the building and its collection enabling a rationalisation of the presentation of the artifact/*place* and so, an improved and more authentic interpretation of the artifact/*place.* The house, located in Virudhunagar, southern India, is the birthplace of K. Kamaraj (1903-1975), a highly revered politician of his generation. Kamaraj spent much of his early life in the house and his family continued to live there until it was purchased by the Tamil Nadu State government soon after his death. However, since this State acquisition, the *place* has been substantially modified and now poorly reflects Kamaraj's critical formative years which is the phase of his life most directly connected with the *cultural significance* of the *place*.

Keywords

Conservation management plan, *Burra Charter*, reconstruction, curatorial program

Introduction

This paper seeks to convey how the process of preparing a conservation management plan (CMP), specifically guided by the Australian ICOMOS *Burra Charter,* for a house museum in southern India – the Kamarajar Memorial House, the birthplace of K. Kamaraj, a highly revered and illustrious politician from the mid-twentieth century - has clarified its *cultural significance* and better defined the conservation needs for the house and its collection. Consistent with the *Burra Charter* approach, the artifact is understood to be the *place* comprising both the building and its collection, ideally presented as one, seamlessly. *Place*, defined in the *Burra Charter* 'means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views' [Australia ICOMOS, 1999, 2].

A CMP prepared in accordance with the *Burra Charter* is intended to become the 'principal guiding document for the conservation and management of a heritage *place*. It is a tool that allows owners, managers and approval authorities to make sound decisions about heritage places' [Johnston & Heritage Council of Victoria, 2010, 4]. Similar documents are prepared in other countries according to standards and charters; in Australia it is industry standard that CMPs are prepared according to the *Burra Charter* which states that 'Work on a *place* should be preceded by studies to understand the *place* which

should include analysis of physical, documentary, oral and other evidence …' [Australia ICOMOS, 1999, 8].

The Kamaraj house may be classified as a 'documentary historic house museum' type as defined by S. Butcher-Younghans in 1993, though it does not currently conform with this definition sufficiently to 'recount the life of personage or place of historical or cultural interest in which the environments must contain the original objects, and if possible in their original layout.' The house can rather be classified as a sub-type, established by Rosanna Pavoni and Ornella Selvafolta in 1997 - 'houses dedicated to illustrious men' [Pinna 2001, 8].

Life of Kamaraj – 'The Kingmaker'

Kamaraj was born on 15 July 1903 in Virudhunagar in modest circumstances. The town had long been a trading centre, however its ascendancy over nearby towns was due to the extension of the railway from Madurai (a major centre 50 km to the north) in the 1880s [Jagenathan, 2007], about the time the subject house was built. The population featured a high percentage of Nadars, the caste to which Kamaraj's family belonged. The Nadars were traditionally associated with various agricultural industries related to the cultivation and harvesting of palm trees, including toddy tapping (alcohol production), which had caused them to have a lowly status in the Hindu caste system [Hardgrave, 1967, 19-21].

Kamaraj was schooled locally for seven years before his education was cut short after the premature death of his father, Kumarasamy, in 1909. From the age of 12, he worked in shops owned by his extended family to support his mother (Anna Sivakami) and younger sister (Nagaamal). During his teenage years, Kamaraj's political awakening commenced when he joined the Congress Party (established in 1885 and one of the oldest democratic parties worldwide) in 1919 and he began attending meetings of Gandhi's Non-Cooperation Movement [Narasimhan, 1966 & Narayanan, 2007, 9].

Kamaraj's political activities brought him into conflict with the British authorities, as he was interned three times (for a total of about eight years) from 1930 to 1945, and also with the leaders of the Nadar community. Kamaraj was forced to leave Virudhunagar in 1923 because he was 'branded as a traitor to his caste' for his support of the Congress Party. A few years later however, he was welcomed as a local hero when he returned briefly in 1931 after his first jail term, though he was not embraced by the Nadar community leaders for another decade, by which time his political prominence could no longer be denied [Hardgrave, 1967, 186-190].

In 1937, Kamaraj was elected to the new Legislative Council at the State level (these were the first bicameral elections held after the British began to allow provincial autonomy), and from 1946, when he was appointed to the Legislative Assembly he relocated permanently to Chennai. In 1954, he was appointed Chief Minister (leading political figure equivalent to a State Governor in the USA or State Premier in Australia) in Tamil Nadu, a position he held for 9 years.

During his years as Chief Minister, Kamaraj implemented major improvements in the spheres of agriculture and industry, however his education reforms are undoubtedly his greatest legacy. He was responsible for introducing free and compulsory education, reopening thousands of recently closed schools and establishing many new schools, so that no child had to walk more than 3 miles (4.8 km) to attend. Furthermore, a Midday Meal Scheme was instigated so that children were provided with at least one meal per day. As a result of these programs, the literacy rate in Tamil Nadu was increased greatly and it remains amongst the highest in India [Balasundaram, 1983, 39-41].

Subsequently, Kamaraj became a major political figure at the national level, though he declined the offer to become Prime Minister in 1964 after the death of Nehru. He was, however, instrumental in bringing the next two Prime Ministers to power – Lal Bahadhur Sastri (1964-66) and Indira Gandhi (1966-77, 1980-84), and hence is often referred to as 'the kingmaker'. Kamaraj's funeral procession in Chennai during 1975 was attended by enormous crowds [Parthasarathi, 1982, 43].

Development of House – 1890s to present

Kamaraj spent much of his early life in the Virudhunagar house, which was the family home for at least 80 years (from c.1900 to the late 1970s) before it was procured by the Tamil Nadu government to be presented as memorial museum. The detailed history of the building has not been firmly established, though much of the constituent building fabric of the house (mostly stuccoed brick) is understood to the date from late nineteenth century.

Fig. 1. Sulochanan Street, near the museum

The urban context of the Kamaraj House has a dense character. It is located in an older part of the town with consistent, attached, small single and two storey, masonry houses though interspersed with some larger, mansion houses. Quarters are created by a network of winding and irregular streets and laneways, which are ringed by wider thoroughfares. Within the quarters, the streets are narrow, limiting access to pedestrians, scooters, bicycles and the like - larger vehicles (cars or trucks) cannot penetrate this urban fabric (Figure 1). Directly in front of the Kamaraj house which is located on a corner, the open space to the east is slightly wider than adjoining streets, forming a minor public square which features a small Hindu shrine and a free- standing portico, which has been recently constructed in front, limiting views of the building.

The Kamaraj House is mostly two storey, consisting of three distinct sections, not necessarily constructed at the same time, nor internally (Figure 2) conjoined as now. It is known one small section was acquired during the mid-twentieth century, probably to accommodate

security personnel when Kamaraj visited his family after he became Chief Minister. The three distinct components are the:

- Northern section, which is the largest and contains the public areas of the museum, previously the main living areas.
- Middle section, with similar internal detailing as the northern section, containing kitchen and a third storey storage area.
- Southern section: acquired later and containing ablutions areas to the ground floor.

Fig. 2. Exterior with shrine and portico

The building which occupies the whole L-shaped site (approximately 80 m^2 or 860 $feet^2$ in area) is modest in size (Figure 3). The kitchen (which is not on display) is only c. 8m^2 (80 $feet^2$) and the largest room about 5 x 6 metres (322 $feet^2$). The ground floor consists of the main hall (lounge room/primary living space) and two small rooms to the rear. The mostly original main hall is typical of the period and is distinguished by timber (probably teak from Burma/Myanmar) detailing and includes four tapering columns with simple carved stone bases, elaborate brackets and beams with sunflowers carved to the underside. The first floor, where there is an open terrace, a much-altered anteroom and Kamaraj's bedroom, is reached by a later concrete stair- steep, but not as steep as the earlier/traditional timber stair. Kamaraj's bedroom retains a marvellous painted concrete floor imitating tiles (Figure 4), another characteristic of southern Indian houses of the late nineteenth century

(the decoration is often extended as a dado, but not in this instance).

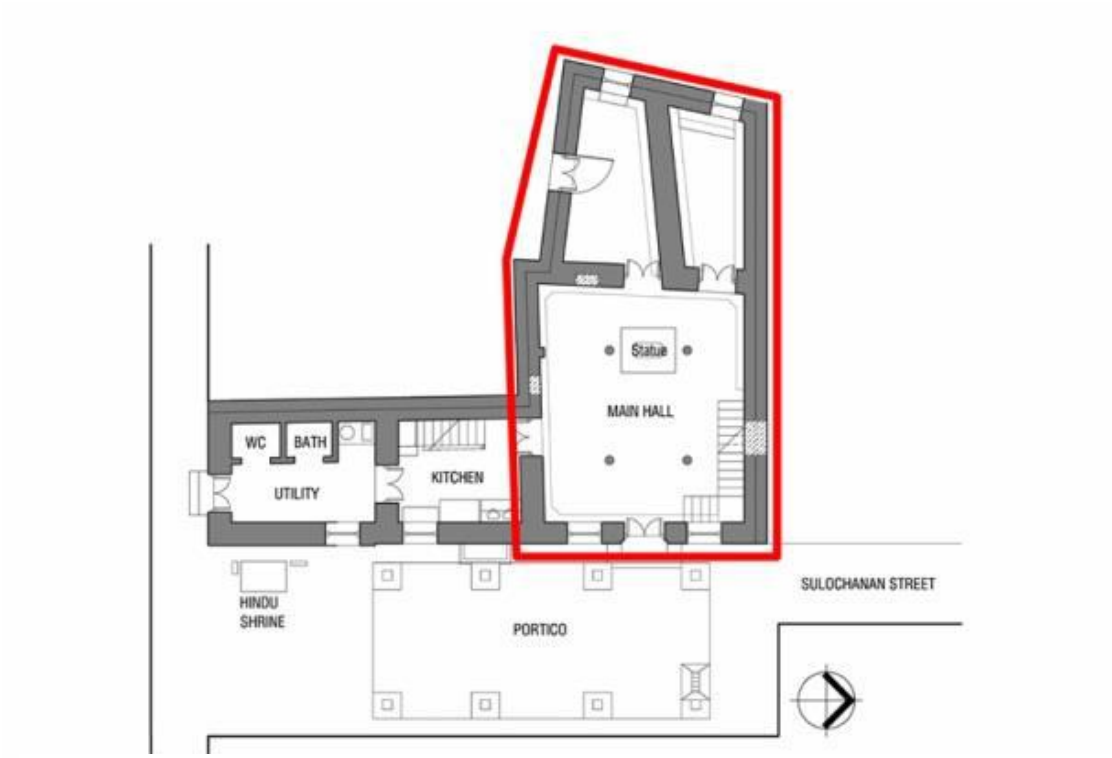

Fig. 3. Ground floor plan

Fig. 4. Painted floor and Kamaraj's bed

Externally, the façades have been modified so that the formerly separate sections are now integrated to read as one larger building, finished in a contemporary Modernist-influenced idiom, diminishing its appearance as a typical residence of the suburb (albeit now on a corner allotment) and giving it a grander and more institutional character (Figure 5). The result is that it appears relatively large in scale compared to many houses in the vicinity and closer to that of nearby mansions. External alterations have included: the introduction of small canopies over the windows, and the replacement of the presumed earlier canopy over the front entrance, as well as the original doors and some window shutters with non-traditional types.

Fig. 5. Adjacent house with typical doorway detailing

Internally, in the parts of the house which are publicly accessible, the house has been stripped of its domesticity - several original features and finishes, typical of such houses in southern India (inset cupboards, niches, the front door, windows with timber shutters) have been removed or are obscured by later elaborate veneer panels used as the backdrop for the collection (Figure 6). In addition, the earlier concrete floors with decorative etched (mat-like) detailing, known to have existed in some of the ground floor areas, appear to have been tiled over while 'back of house' zones, such as the kitchen are not accessible.

It is observed that the process of museumisation of the Kamarajar Memorial House to date (by State acquisition and sponsorship) has enabled the retention of much of the significant *place* and offered interpretative opportunities, though they do not necessarily assist with the telling of story of the place but rather Kamaraj's political career. As such, the museumisation thus far has to some extent resulted in a disconnect of the artifact from the *place*.

The changes that have ensued have in part reduced the authenticity of the *place*, so that it no longer reflects its original purpose or easily facilitates its interpretation. It has been altered to become a site that memorialises Kamaraj's noteworthy political career rather than an historic house museum that reflects and documents his

earlier, formative life there.

Fig. 6. Main Hall

These interventions, presumably undertaken out of respect for this much-admired man to create a legacy befitting an important leader, translate, in our view, to an aggrandisement of the *place* which confuses its story; while also appreciating the process of near deification associated with the contemporary reverence that is afforded to Kamaraj in southern India (he has a near saint-like status similar to Gandhi's). The house in Virudhunagar is one of several Kamaraj commemorative sites across Tamil Nadu including a memorial at Guindy in Chennai (next to Gandhi's), a memorial museum at Kanyakumari where his ashes were immersed (also next to Gandhi's), several statues, and the domestic airport in Chennai named the Kamaraj Terminal.

Built Fabric Conservation Recommendations

Based on what has been established as the *cultural significance* of the Virudhunagar museum –Kamaraj's birthplace and his childhood home – the CMP recommends that the domestic appearance of the building/s be reinstated both externally and internally, where confirmed by appropriate documentary or physical evidence. The reconstruction of the façades to their original/early state would entail the removal of later modifications, as they compromise the ability to interpret the buildings as consisting of two or three separate sections and their former residential use.

Similarly, it has been recommended that the interior be returned as close as possible to the time when it was

occupied by Kamaraj, that is, the first half of the twentieth century. Nonetheless, there are features it would not be practical to reinstate, such as a dirt floor (which is likely to have been the original treatment until about the 1930s), and the original, very steep timber staircase in the main hall.

The proposed approach has been offered with full acknowledgement that we, as Australian cultural heritage management practitioners, have our own predilections, biases, and understandings which may differ from those of Indian colleagues and friends. However, the request from the Indian authorities was to provide this Australian perspective and the response to the recommendations of the CMP has been positive both from the stakeholders and authorities in India. We are also mindful that it may not be necessary to eradicate all indications of the later phases and that the existing condition should be archivally documented, before major changes are undertaken.

Current State of the Collection

The collection of the Kamarajar Memorial House in Virudhunagar consists mainly of large scale reproductions of black and white photographs, predominantly relating to Kamaraj's time as Chief Minister (1954-63) and subsequent political career, with only a few images dating to the earlier life when he was based in Virudhunagar. Cabinets are located in four rooms containing items dating to the latter years. These display ceremonial objects such as gifts from foreign dignitaries, scissors (for cutting ribbons), trowels, and the like. There are a few personal items, including simple kitchen implements, reflecting Kamaraj's austere lifestyle, travelling items, including a suitcase and some toiletries, and some clothing (Figure 7).

Fig. 7. Display cabinet.

Like typical houses in this tropical climate, there are timber shutters but there is no glass to the windows and internal climate control is limited to basic ceiling fans, only operated when visitors are present and when electric power is available (which is intermittent). The ground floor remains relatively protected from the impact of the hot sun because of the narrow streets. Objects are displayed in contemporary timber and glass cabinets protected from dust but it is unclear what other pest control procedures are in place. The collection is not extensive and there are only a few fragile objects, such as pages from manuscripts and cloth, including traditional clothing worn by Kamaraj, and his mattress – all of which are showing signs of decay.

The Virudhunagar house is one of three museums which celebrate Kamaraj's life and a similar curatorial program has been adopted at all three. The Chennai house, located in a central tree-lined suburb, is a much larger, free-standing *Moderne* style building probably constructed during the 1930s. Kamaraj rented this house from 1946 and it was opened as a museum in 1978 (Figure 8). The third museum is a new building, opened in 2000 at Kanyakumari at the southern tip of mainland India. These three museums, although laudatory in their intention, almost deify Kamaraj by focusing on the years when he was at the political forefront highlighting his meetings with important persons, from India and abroad. Although this curatorial approach is relevant to the Chennai house, and possibly to the Kanyakumari museum, it makes less sense at the Virudhunagar house, which offers the opportunity to appreciate a complementary aspect of Kamaraj's life - his early, formative period and his family background.

Fig. 8. Chennai house – exterior with statue

Recommendations for Collection

The visitor experience would be enhanced by a curatorial program for the museum that focuses on Kamaraj's life during the years when he was based at the house, from 1903 to 1945, which as previously outlined, is the primary period of cultural significance of the Kamarajar Memorial House. Displays relating to his school years, early working life, nascent political development, periods of internment, and his relationship with the broader Nadar caste/community, are recommended.

A collections and acquisitions policy needs to be developed to support the curatorial and interpretation program for the museum. Except for Kamaraj's bed, there are few items relating to the domestic use of the building, though it is reported some important items still exist, such as the family cradle that would have been used by Kamaraj, and his mother's chair. Acquisitions with demonstrable provenance to the building and the family should be the focus of the collections and acquisitions policy.

Surviving relatives of Kamaraj, including some who lived in the house, are a valuable source of information about the building and the lives that were lived in it, and oral histories need to be gathered from these people as a priority. Information about how different parts of the building were used would complement stories about Kamaraj and his family, especially his mother and sister.

How best to care for the collection is an important concern and it would be optimal to create an environment that regulates light and temperature in at least part of the building, where fragile items could be preserved, stored and displayed, though this may be difficult because of the irregularity of the electrical supply.

Programs to promote the site and collection and to disseminate information about Kamaraj's early life may include an education program, the creation of a library/archive, and an internet site. Over time, a research collection could be developed that includes archival material and primary sources such as recordings and transcripts of oral histories which could be located on the World Wide Web, including YouTube and the like. This collection could also be broadened to incorporate material on political history, especially of southern India. A research collection would also support the development of changing exhibitions on Kamaraj and other related subjects. At present, the Kamarajar Memorial Museum does not have any dedicated digital media to support it such as a webpage, Facebook or the like. Once this is established it can be developed over time as a research portal providing access to library and archive material.

Additional facilities might be required to realise some of these recommendations. There is limited scope for physical expansion because of the relatively small scale of the site and future development (for an administrative/storage/support facility) may necessitate the acquisition of an adjacent property.

Consultation & Involvement with Indian Authorities and the Community

The project was initiated by the local Member for Parliament (Virudhunagar Constituency), Mr Manickam Tagore, who knew one of the co-authors Vinod Daniel. Daniel was born in Virudhunagar and is also a Tamil speaker. Mr Tagore's support has been invaluable and has helped to raise the profile of the project with the State government.

The CMP was prepared under the auspices of AusHeritage with financial assistance from the Department of Foreign Affairs and Trade (DFAT) of the Australian Government. The efforts of the Australian Consul-General in Chennai, Mr David Holly, and the Australian High Commissioner, Mr Peter Varghese, have also been instrumental in connecting with the highest levels of the Tamil Nadu government.

In order to ensure an inclusive approach, a draft of the CMP was provided to various stakeholders and a small forum was conducted under the direction of the District Collector (chief administrator) of Virudhunagar. The recommendations were translated into Tamil so that they could be discussed by family members and other stakeholders. A final report was presented to the current Chief Minister's Department, managers of the site, for comment. Initial response from the government has been positive.

There has been a considerable degree of publicity in the local newspapers including a recent article in the *Hindu* (2.09.2012), the most highly respected paper in Tamil Nadu, which will hopefully serve to keep the project on the Government's agenda. Currently the CMP is with the Chief Minister and Chief Secretary and many discussions are underway for the State government to implement it.

Conclusion

The recommendations of the CMP encourage a different conservation approach to the constituent fabric of the building and the collection in combination with a clarification of the curatorial agenda, based on what has been determined to be the *cultural significance* of the *place*. This approach, consistent with *Burra Charter* guidelines, would result in a subtle shift in the presentation of the building from a Memorial House to an Historic House Museum (as defined by ICOM DEMHIST) and in so doing, the reconnection of the artifact to its context.

Endnotes

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THE ARTIFACT, ITS CONTEXT AND THEIR NARRATIVE:
MULTIDISCIPLINARY CONSERVATION IN HISTORIC HOUSE MUSEUMS

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The Winterthur Museum and Gardens, from Inside to Outside: Interpretation and Conservation Challenges

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Abstract

For decades, Winterthur has been a leader in the practice and theory of conservation, preservation and interpretation of American decorative arts, applying this knowledge to the Winterthur museum collection and to the training of the next generations of curators and conservators. A recent policy change requiring a similar level of care to the institution's garden ornament challenges many established practices. This paper will discuss the various issues confronting the institution regarding Winterthur's outdoor objects, in terms of ethics, conservation treatments, long-term maintenance and funding. The necessity of a multidisciplinary collaborative approach of historic houses preservation will become evident, from inside to outside.

Keywords

Preservation, twentieth century museums, seventeenth to twentieth century objects, garden ornament, garden interpretation, conservation

Introduction

Winterthur is a non-profit educational institution set on a 980-acres in Delaware. The institution was founded in 1951 by Henry Francis du Pont (1880-1969), a DuPont Chemical Company scion who repurposed his ancestral estate into a museum housing a premier collection of American decorative arts, an outstanding botanic garden and a first-rate research library. Envisioned by du Pont as a unified entity managed by a strongly hierarchical staff, over time the Museum Garden & Library separated into more horizontal, professional divisions: curatorial, interpretative, horticultural, conservation and collection management. Today Winterthur's professional divisions are charged with the management, preservation and interpretation of about 90,000 objects in the museum and garden collection and 750,000 in the library (Figure 1).

Fig. 1. Winterthur garden, October 2012

HF du Pont and Winterthur

Henry Francis du Pont, born at Winterthur in 1880, was the third generation of his family to live on the estate (Figure 2). He married Ruth Wales in 1916 and together they had two daughters. Du Pont had three great passions: American antiques, gardening, and cow breeding; all of which contributed to making Winterthur one of the greatest of American country estates in the first half of the twentieth century [Aslet 1990]. His collections and garden were developed as a unified vision of grand living rooted in a twentieth century ideal of the American past. During World War II, when fuel restrictions and labor shortages made country house life no longer viable, du Pont made plans to open his estate to the public. In 1951, he endowed a non-profit corporation and gave over the management of his collection to museum professionals [Montgomery, 1964].

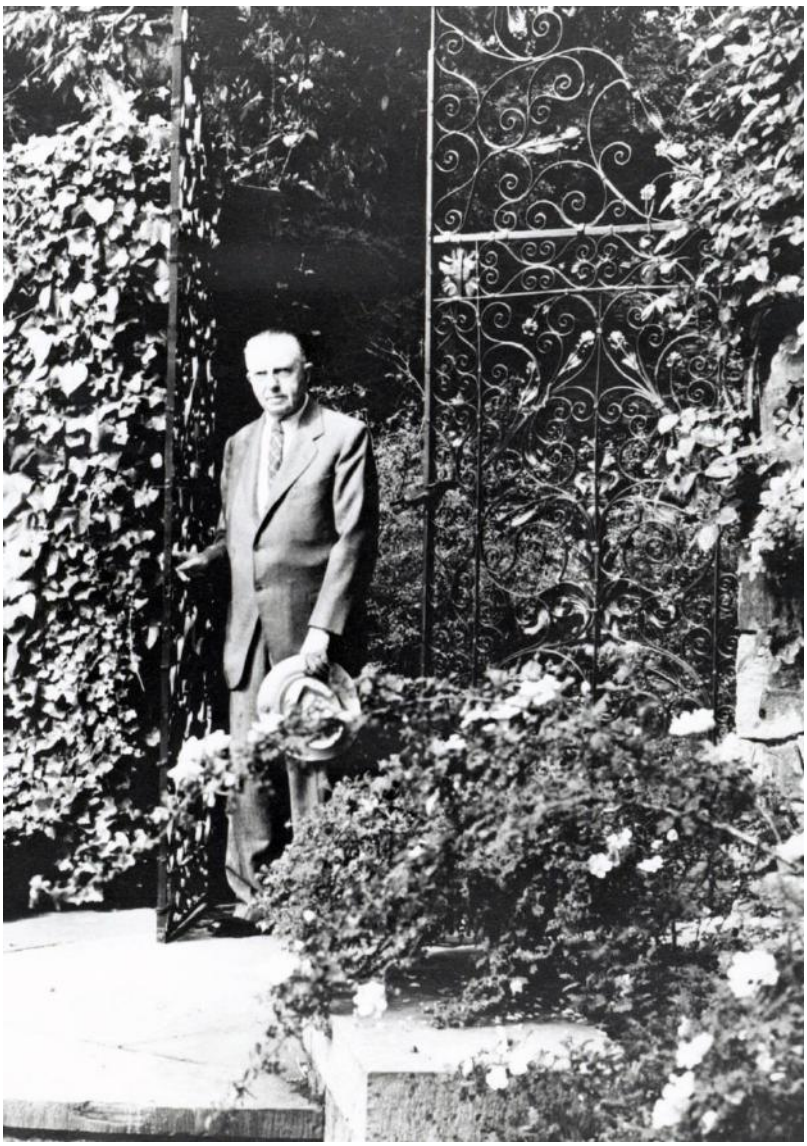

Fig.2. H.F. du Pont in the garden, 1951. Courtesy of Winterthur Archives

The inside

Over the eighteen years that du Pont and the museum co-existed, from 1951 to 1969, the curatorial staff preserved most of du Pont's 1931-1951 displays of 1640-1840 material while using as many opportunities as possible to provide the public with the latest scholarship. With du Pont's support and advice, the staff upgraded the collections, installed new rooms and presented temporary exhibitions. Excited by all the new information and eager for more, du Pont funded a Winterthur graduate degree program, a research library, a state of the art conservation facility [Harris, 1981]. The contradictions between du Pont's displays and new information gathered from the growing field of American decorative arts, a field he was largely responsible for launching, increased immeasurably after his 1969 death. By 1975, changes to the installations at Winterthur caused enough concern that the board of trustees adopted a policy to "freeze" 21 rooms which best represented du Pont. The other 154 rooms could be changed freely.

With great seriousness, and much discussion over the last three decades, the institution has held to its twinned responsibilities of maintaining du Pont's rooms as much as possible while investigating the original condition and context of the objects. These responsibilities can produce conflicting results: a 1770s Philadelphia-made sofa (1951.0007) [1] has been re-upholstered using a reproduction of an early eighteenth century French damask chosen by Mr. du Pont in 1952; on the other hand a rare set of 1764-65 English silver candlesticks (1961.0546.001-004) which once

provided atmospheric electric illumination in du Pont's Port Royal Parlor and were part of the Frozen Room collection, were stripped of their wires and plastic candles in 1998 and restored to an approximation of their eighteenth-century condition (Figure 3).

Fig. 3. Port Royal parlor with de-electrified candle in insert.

This tension between interpretations manifests itself in nearly every conservation and curatorial decision. However, across all areas of responsibility, there is an agreement on the institutional mission, which is preservation for future generations. This dynamic tends to favor treatment options that adhere to the conservation profession's best practice of keeping alterations as reversible as possible.

Early in the history of the museum, there was a commitment of the annual budget toward care of the museum collection. Beginning in the early 1950s, a Belgian-trained cabinet-maker, Arthur Van Reeth, worked as furniture restorer. In 1953, Gordon K. Saltar began the first scientific research on the microscopic identification of woods. In 1958, Howard Plenderleith was hired to make a comprehensive assessment of collection care which established care of collection procedures for over a decade. In response to his recommendations, tinted storm windows were installed to reduce sunlight intrusion and the resulting heat burden. A full-structure heating, ventilating, and de-humidifying project began in 1961 and took six years to complete. More light-reduction steps were taken in the 1980s. In the late 1990s, a state-of-the-art lighting system was installed. An updated and comprehensive Collections Management Policy was adopted by the Board in 2005 and has been subsequently revised. Today there are 17 professionals dedicated to the conservation and preservation of the museum collection.

The outside

Before a 2010 policy change, Winterthur's collection of 400+ garden ornaments – antique English and Continental wrought-iron gates, lanterns and seating furniture; antique lead sculpture and cisterns; a variety of bird baths, sundials and armillary spheres; 1930s terrace furniture, lighting and decorative cast concrete objects were not managed within the museum's collection care framework. Because most of the outdoor collection is European and/or twentieth century, with no history in the United States before being sited at Winterthur, it was previously considered outside the usual collecting policy. Moreover, and in high contrast to other collection objects, these pieces are exposed to the weather; touched by the public and treated even more cavalierly by insects, birds and squirrels. Particularly because of the latter reasons, the collection was considered not within the scope of Winterthur's curatorial and conservation staff.

High-risk conditions are the inherent environment of garden furniture and there are ways to minimize the risk. The most extreme is to simply store them indoors, and this has been employed in some cases at Winterthur. This sort of radical intervention is modified when reproductions are made and placed in lieu of the originals, an accepted approach in the conservation field. Winterthur textiles have long been subject to this. Although fabrics are retained on view as long as possible, some reach a point when they must go into storage and are replaced with reproductions. Du Pont suffered reproductions on occasion. He was aware, as the staff is today, that they are never perfect—they lack the luster, color and texture of the original.

Particularized ethical questions arise with garden ornament. When artifacts have been created to be integrated in an inherently damaging environment, is removing them from their setting acceptable or not? Is their authenticity preserved when stored indoors? Is the original material more important than the original intent? In 1981, the *Florence Charter* drafted by ICOMOS to address the conservation of historic gardens, defined a Historic Garden as a *living monument* (Article 3) [2]. During the *Nara Conference on Authenticity* in 1994, Carmen Anon Feliu, referring to that article, emphasized that the creator of a historic garden provided Time with original material to be transformed. This action converts Time into a "creative element." Dynamism is integral to the garden, which is in perpetual transformation [Anon Feliu 1995, 221]. The Florence Charter posits: '*The permanent or movable architectural, sculptural or decorative features which form an integral part of the historic garden must be removed or displaced only insofar as this is essential for their conservation or restoration. The replacement or restoration of any such jeopardised features must be effected in accordance with the principles of the Venice Charter, and the date of any complete replacement must be indicated'* (Article 13). In the instance of gardens, the intent and attitude of the creator of the gardens, H.F. du Pont at Winterthur, should be considered in regards to conservation decisions.

At Winterthur, the challenges posed by the garden furnishings are accentuated by the institution's complicated history with the garden. In 1951, when du Pont turned over the management of his indoor collections to the museum staff, he released all responsibility to them and until his death, acted only as an advisor. In 1952, when he opened the garden to the public, it was for the spring only, and he chose to lease the land and supervise his gardeners himself. By the time the institution took ownership of the garden on his 1969 death, the museum staff had spent decades creating guidelines and policies with the indoor collections in mind. Immediately after du Pont's death, the gardeners continued to care for the furnishings with the same efficiency as when du Pont was alive (Figure 4). Everything was regularly repaired, oiled and repainted; placed in the barns or under customized covers in the winter; each moveable item marked and identified on a garden furnishings plan originally drawn up in 1931 by du Pont's landscape architect, Marian Coffin (1876-1957).

This care was commensurate with du Pont's understanding of the ornament as an essential element of his garden. In 1928, when he commissioned Coffin, ornaments were prioritized: 'I have a great number of figures, benches, wall fountains etc. collected over a period of years, which I thought could be used to advantage.' She

planned accordingly. They are as integral to the design as the plant spectrum, the rolling terrain, and the path systems. For over 60 years, with painstaking devotion, du Pont developed the best American example of the "Wild Garden" theories of landscape architect William Robinson (1838-1935). In creating this unusual garden, du Pont was aided by Coffin, between 53 and 83 gardeners, and an almost unlimited income. By 1970, when the institution took on the responsibility of the Winterthur garden, none of these factors were available anymore.

Fig. 4. The Winterthur Garden, 1935 Samuel Gotscho. Courtesy of Winterthur Archives.

In the continued aftermath of du Pont's death, as the institution struggled with the new financial burden of a 1000-acre estate and the diminishing endowment returns of the 1969-1970 recession, it is surprising any attention was paid to the newly-inherited garden furnishings. In fact, there were several attempts to treat them in a manner consistent with the house furnishings. In August of 1970, conservator Geoffrey Lemmer made a condition assessment of the 76 lead garden statuaries. In 1976, an iron assessment was made by Winterthur metals conservator Don Heller. It is unclear if any treatment resulted. The economic stagnation of the mid-1970s forced the museum into difficult choices. Among many other institutional cut-backs, winter care for garden furniture was eliminated. Things either remained outside all year or went into storage indefinitely. The pieces outside (even the newest were then at least 30 years old), deteriorated. Over time, more and more were relegated to storage. In 1985, volunteer Lonnie Dobbs and her daughter Renee photo-documented as many pieces as they could find, in storage and in the garden. The notebooks they created remain one of the primary

historical source materials. By 1990, the majority of ornament was in storage and the condition of the remainder was poor. Squirrels had developed a habit of gnawing on the lead, literally eating the statues away. This single factor figured prominently in the decision to remove as much lead as possible from the garden.

Garden objects elsewhere

At Winterthur, the neglect of the garden in the 1970s and 80s fits into a larger social trend. There was not a wide interest in historic landscapes in these decades. The reconstruction of Thomas Jefferson's vegetable garden at Monticello did not begin until the 1980s. Until then, the iconic presidential home was marooned within parking lots. As at Monticello (and Mt Vernon, Winterthur and almost all historic houses in the period), the focus was inside not outside [Birnbaum, 2000]. In an even more concentrated fashion, the 1970-1990 history of garden ornament at Winterthur is consistent with what took place at other gardens during the same period. The decorative sundials and lead cupids esteemed by du Pont and his cohorts in the 1930s lost their value after World War II. A more clean-lined and modernist style became preferred, a cultural shift that only deepened in the 1970s and 80s as the objects and the generation that valued them aged. Among the better documented examples of this is Hidcote, the extravagant Cotswold garden created by Lawrence Waterbury Johnston. Although one of the most popular sites in the British National Trust's portfolio since Johnston gave it to Britain in1948, most of the garden ornament was dispersed to other gardens or auctioned off in 1970 [Clarke, 2009]. A less dramatic example, but closer to home, is Longwood Gardens, developed on the private estate of by du Pont's second cousin Pierre (1870-1954). This highly technological garden, known for its spring-bloom-in-winter conservatories, has evolved in style since Pierre's 1954 death. Old photographs testify to the unexpected romanticism of the ornament that once dotted those grounds.

Resurrection

By the 1980s, the Winterthur garden was widely perceived as almost lost. There was an initiative taken in the early 1990's 'to sell all garden furniture.' [3] A board committee formed to resuscitate the garden. They declined to sell the furniture and instead raised funds and awareness (Lonnie Dobb's 1985 photo documentation of the furniture was part of this effort). In 1988, Winterthur hired a director to supervise the rehabilitation of the garden, Thomas Buchter (now at Marie Selby Botanical Gardens in Florida). The clean-up of the garden took a decade. Damaged hardscape included cracked concrete, crumbling asphalt, and an acre of obsolete greenhouses. The horticulture task was even more massive. Overgrown shrubs, invasive plants and dead and dying plants tunneled through du Pont's once-meticulous garden. There was no hope of achieving an exact restoration of du Pont's garden, which had been a magnificent dinosaur even in the 1960s when du Pont was alive to supervise his army of gardeners. Instead Buchter aimed for a more achievable goal: design intent, defined as identifying du Pont's objectives in each area and then approximating it as closely as possible given the resources available and the fluctuating environmental conditions. Intent was exposed through systematic investigation of remaining plant material, photographs and maps; the vast archive of plant orders and gardener's reports; and oral histories with those involved. To give clarity to the project, the board of trustees declared the garden a complete work of art, each area adding to the whole. Winterthur's department of horticulture united behind that understanding.

Summation of history

At this point, in the early 1990s, a distinct philosophical split cleaved the inside and outside goals of the institution. Outside, the garden staff committed fully to achieving du Pont's design as the ultimate goal.

Inside, the commitment was much wider than to one man's point of view. It was also to the long-term preservation of objects, to the advancement of historic understanding and making new information accessible to the public. Recent treatment of the garden ornament, in its new position as a collection object and its traditional role as a garden design element, has been instructive in first making apparent and second helping to bridge this institutional gap. A review of the restoration process for three objects, each at a different time period, reveals different approaches that have been taken.

Fig. 5. Bath house lanterns. Left: one of the pair of original 1930s lantern. Right: one of the pair of 2005 replacements.

Bath House Lanterns (1969.4228.1,2)

By 2000, this pair of 1930 iron lanterns, designed by Walter Kantack for the bath houses, had become dangerously eroded (Figure 5). Accessioned into the collection in 1994, the number was never painted onto the object. In 2000, when the lanterns were evaluated by the curatorial and conservation staff, they were unaware that the pair was already part of the museum collection. Using standards of connoisseurship developed for eighteenth and nineteenth century objects, the lanterns were judged to be in poor condition, lacking in significance and replacements were ordered. As intended, the replacements - custom-made reproductions of a pair of nineteenth - century lanterns from one of the museum rooms - had no connection to the originals in design, date or scale. In 2005, the new garden director Chris Strand rescued one of the lanterns from the trash and stored it. The other is lost. This painful chain of events galvanized the institution into taking its twentieth century garden ornament more seriously. In 2006, the position of estate historian was created and in 2010 the responsibilities of curator of garden objects was added.

Lead hippocampus (1969.4083)

Purchased at auction in 1928, this sculpture was bought as English, late seventeenth century (Figure 6). A year before the garden was complete, Coffin installed it at the pool for a focal point as she completed her design (Figure 7). Over the years it has suffered significantly from the elements, handling by visitors and gnawing squirrels. In 2005, garden staff, curators and conservators, determined that it was no longer aesthetically or structurally fit for display in the reflecting pool. A reproduction in polyester resin was crafted using imaging and modeling techniques to recreate the hippocampus so that the original could be stabilized and stored [4]. The reproduction was then painted to resemble the aged original. Although more expensive and time-

consuming than anticipated, the project is considered a success. Since 2007, the painted resin casting has been on view year-round and, with two hot-wax coating applied to protect the paint, has aged well. A similar approach has been taken with twelve other lead garden objects. Creating and installing custom reproductions has preserved the original object while providing the public with an understanding of the design intent. A few years later the opposite decision was made!

Fig. 6. Lead hippocampus (back) and its reproduction in polyester resin (front).

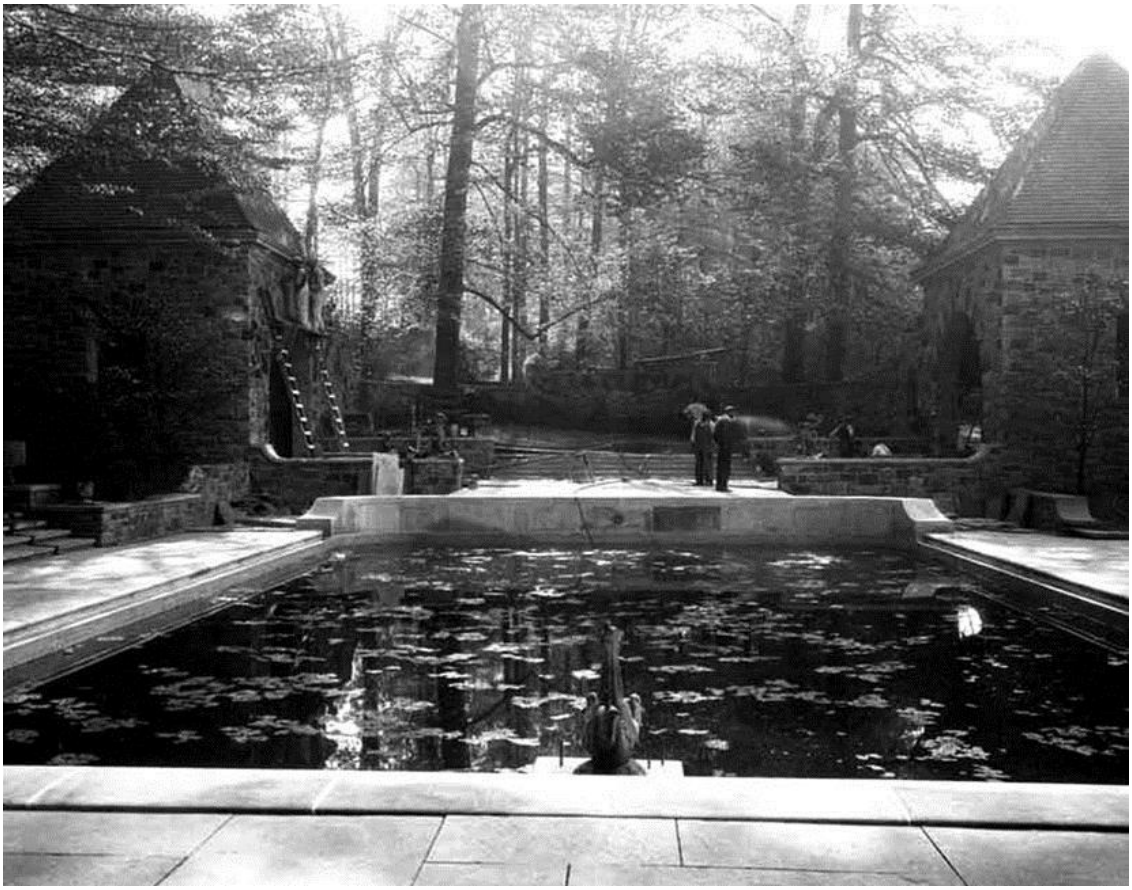

Fig. 7. Winterthur pool, May 5, 1930, with hippocampus in place. Courtesy of Winterthur Archives.

Iron lilies (1969.4178.1,2)

In 1956, du Pont bought from a New Orleans antiques dealer an unusual pair of wrought-iron lilies set in a battered bronze, concrete-filled, Italianate vase (Figure 8). The lilies were placed immediately in the newly-created Sundial Garden. In 2001, they were removed because of safety concerns. In 2010, a donor pledged restoration money for the lilies. A $30,000 estimate for the reproduction of the pair stalled the process as options were discussed. A resin reproduction was not expected to produce successful results. Commissioning an ironsmith to recreate individual flowers generated questions about artistic ownership, artistic license and objective evaluations of the end result. Ultimately, the decision was made to repair the original lilies for one-third of the reproduction price and return them to their original position in the garden. This choice included a long-term maintenance plan and permanent funding for a summer intern. The surface of the lilies will be hot-waxed each summer and covered in the winter.

Fig. 8. One of the pair of iron lilies re-installed in their original setting after treatment.

Conclusion

From 1987 through to 2005, Winterthur developed several guidelines and policies that impacted the stewardship of garden furniture and objects. As imperfect as these were, they set the stage for the present guidelines and practices. In 2010, paint conservator Susan Buck analyzed the paint history of a set of 1930s chairs and they are now repainted the proper 1930s color, a variation of the fashionable "Wallis Blue." Currently, outdoor sculpture conservator Adam Jenkins is testing a capsicum-wax to use on our lead sculptures as protection against the squirrels so they may be returned to the garden.

Garden objects are at the frontier of "permanent" and "ephemeral" works of art. They relate to traditional indoor museum objects by their materiality but to the dynamism of nature by their situation outdoors. The iron lilies illustrate that unique dichotomy perfectly: flowers made out of iron to be part of a garden. What is their meaning in an indoor storage? Hence the difficulty in making conservation decisions about these objects. The conservator needs to find the right equilibrium between preserving the material and their essence as garden artifacts. The Winterthur staff works collaboratively to define that equilibrium on a case to case basis, with the intent to link, as du Pont did in his time, the inside with the outside.

Endnotes

[1] The numbers in brackets cited refer to the inventory numbers of artifacts belonging to the Winterthur collection

[2] http://www.icomos.org/en/component/content/article/179-articles-en-francais/ressources/charters-and-standards/158-the-florence-charter [Accessed September 2013]

[3] Winterthur Garden Dept., Bulletin Points of Meeting on Garden Furniture/Sculpture, 22, Jan. 1996.

[4] Mixture of polyester resin, calcium carbonate filler, ultraviolet light stabilizers and pigments. Made by Ed Shank and John McColley (American Resin Casting Inc., Biglersville, Pennsylvania).

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