



National  
Trust

Case Study

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# Re-discover Dyrham

Enhancing the visitor  
experience during  
building works

October 2015

Dyrham Park,  
Gloucestershire



# Background

Dyrham Park sits in a valley within the Cotswold countryside and contains a Grade I listed country house built by William Blathwayt in 1692. There is a historic fallow deer herd in the 280 acres of parkland (Grade II\* listed), an evolving formal garden, pear orchard and a water cascade.

In 2015, Dyrham Park underwent a major re-roofing project. The 160 year old roof was past its lifespan and in poor shape. Patch repairs could no longer keep the roof watertight and leaks had started to appear in several rooms on the upper floors. The Dyrham Park project consisted of a full scale roof repair to the house and greenhouse as well as the installation of a new biomass boiler and conservation heating. Since the cost of such a major project is so high, the property was asked to fundraise a proportion of the total cost in order to be able to finance it.

Comprehensive research was conducted as part of designing the visitor experience during the works. The aim was to find out what the visitors wanted to see both during the project and in general at Dyrham as a property. The type of research involved:

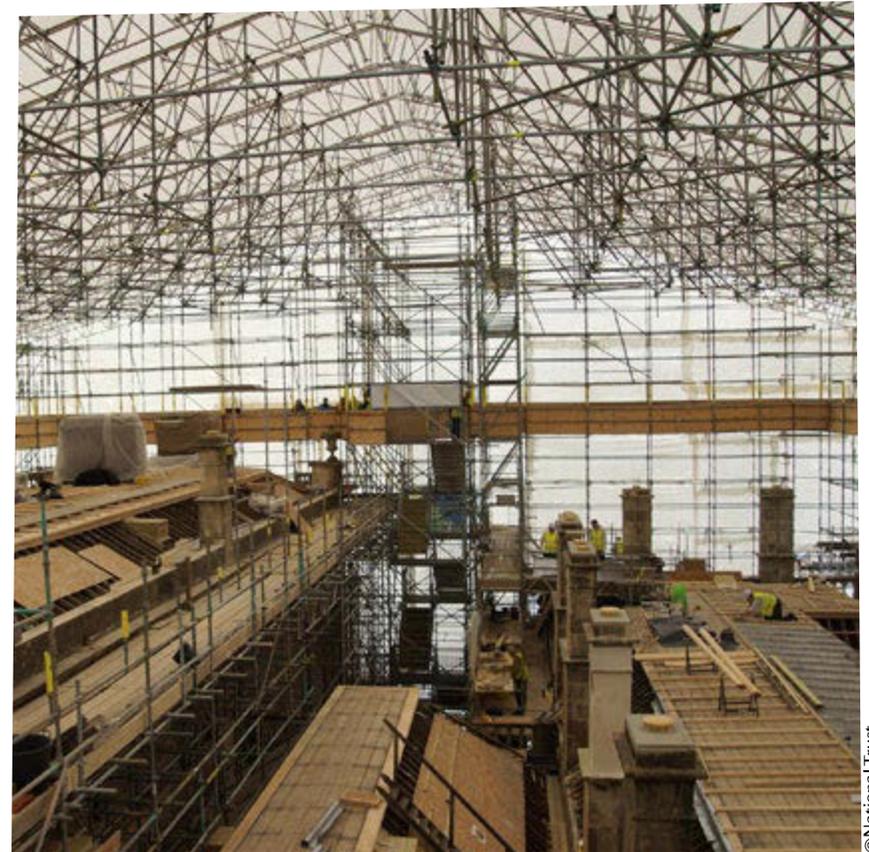
- Evaluating key performance indicators from other major building projects within the Trust;
- Carrying out an Audience Insight via Research Box;
- Researching market analysis and potential;
- Learning from other properties.

The property made the decision to stay open during the works. To make this worthwhile they needed to ensure visitors would keep coming. Previous major projects had seen a reduction of up to 20% in visitor numbers. By contrast, this presented an opportunity to showcase conservation work, offering new opportunities to visitors and inspire repeat visits.

National Trust properties such as Castle Drogo and Tyntesfield had also stayed open during major projects. The team from Dyrham therefore visited these properties to learn from their experiences prior to going forward with their own project. One thing they discovered was that visitors liked going up scaffolding, but that there were often queues and limitations to who could take part due to mobility, height or age.

The re-roofing of Dyrham was the main aspect of the conservation works at the property. The re-roofing encompassed the removal and replacement of 8,000 Welsh slates as well as 46 tonnes of lead. High level stonework on the mansion such as the chimney stacks were also in an urgent state of disrepair and had to be capped and vented.

In order to increase visitor engagement throughout the building works the team wanted to create an all access scaffolding rooftop walkway for visitors. Instead of erecting scaffolding in one area at a time during the works, the scaffolding had to encompass the entire house for the duration of the project. This was dictated by the soil conditions, the layout of the building and the need for the scaffolding to be free standing.



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Above The scaffolding rooftop walkway

The accessible walkway would allow visitors to view conservation in action and learn about what it takes to conserve a Grade I listed building. Other engagement ideas were also developed as we knew that Dyrham's 17th century story was little known to visitors. These included an exhibition showcasing how Dyrham was built and what conservation works were to be undertaken for this new project, as well as a 'sign a slate' campaign.

Dyrham hired a design contractor to help design the visitor experience. The company took a 'conservation as art' approach, meaning interpreting the project not as an apologetic work in progress but a chance for both new or familiar visitors to Dyrham to encounter the house and gardens in a new way.

# Design

A range of different experiences were developed to meet the needs of all the visitors – from those looking for a traditional heritage visit, to those coming to see behind the scenes, and those visiting for the park and garden.

The attractions developed included: a roof access experience; an exhibition looking at the creation and conservation of Dyrham; an open stores experience where people could watch behind the scenes collection conservation; an innovative re-presentation of historic rooms; an improved welcome; and improvements across the outdoors including new trails and play opportunities.

## Roof access

Experience from other properties confirmed how much visitors enjoy going up onto scaffolding, but Dyrham wanted to raise the bar by ensuring full access for all. The success of the walkway between May and December 2015 meant that it became the major visitor attraction of the site during this time.

The team at Dyrham worked with an Architect, a Structural Engineer and scaffold company to develop the scaffold viewing platform proposal. The team wanted to ensure that the walkway did not impact on the work in any way, would be safe and not too costly. Questions and concerns such as 'Could the structure take the additional weight? Would there be places where the presence of the public might impede work? Would emergency exits and lifts be required?' and 'how to design visitor flow routes?' were thoroughly discussed and resolved.

Building Control and the Fire Officer were also brought in early to discuss the proposals. Risks were mitigated with a pragmatic approach, good method statements and risk assessments.

A walkway gave people access to the high level scaffolding (via stairs or a lift) so they could learn about the works from volunteer roof guides as well as experiencing incredible views. From this perspective visitors could watch the slates and lead being replaced on the roof. They could also get up close to the interesting stonework on the house, such as roof statues or chimneys, which otherwise would not have been possible.

The walkway had a capacity of 90 people at a time and this was monitored by the roof top volunteers and a team of four paid supervisors to ensure that health and safety was consistent.

About four volunteers at a time were located on the walkway to guide visitors as well as answer any questions. The idea was for visitors to be able to walk around in a free flow fashion rather than in a guided tour as there were both interpretive signs as well as guides along the way. There were also a series of passing places where visitors could linger, with Perspex boards up to handrail height to ensure that wheelchair users and children could get a good view.

Traditional scaffolding was used and it was erected by a team of five in 16 weeks. Piling was used to take the weight of the scaffold and anchor it to the ground. Screw piles were wound into the ground every two metres around the perimeter of the scaffold base, approximately 8-10m deep into the ground. The total amount of scaffolding used was 500 tonnes or 38 miles.



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## Scaffold wrap

The design on the scaffold wrap was determined by consultation. The team decided they would like to create an image of the house. The property team knew that the view of the house from the drive was important to visitors, therefore the expense was countered by maintaining the 'wow' factor. As such the scaffolding wrap became a key feature of the conservation works.

The image of Dyrham used was sourced by the Curator and sent to designers to produce the scaffold wrap. The supreme mesh wrap was 33m long and approximately 10m high.

## Above Rooftop guide explaining the works to a visitor

# Design

## Building Dyrham exhibition

The exhibition was hosted in two rooms of the mansion and aimed to inform visitors of the architectural history of Dyrham, as well as the works going on at the property and why they are important.

The first exhibition of 1692 described the construction of Dyrham. It introduced Mr. Blathwayt as the key character and told the story of the house between 1692-1704. It included information on the architects who designed the building, the people who worked on it and the materials sourced from all over the globe to build it.

The 2015 exhibition room showcased the conservation project. Visitors could find out about the problems the property faced with the leaking roof and old oil boiler as well as what work was being done to repair the roof and install the biomass boiler. There was information on the materials used (lead, stone, timber and slate) as well as on the project team involved and a section on the scaffolding and scaffolders.

A small scale roof replica was also erected in this room. It allowed visitors to see the roof structure and its slates up close, helping them to understand the roof repairs and encourage any questions.

## Sign a slate campaign

Before the project work began Dyrham started fundraising with a major 'sign a slate' campaign. Visitors could sign one of the Welsh slates which would be placed upon the roof in the refurbishment. It was an exciting chance to get visitors involved and make them feel part of the project. There were three different options to choose from:



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For a £25 donation the entire slate can be used for the individual or group to draw on, write a message or sign a name. A £5 option was also available where a name could be signed on a shared slate. The 'VIP Sign a Slate' option cost £250. In this the person's name and message was professionally etched onto the slate. This package also included an invitation to a special evening drinks reception on the rooftop walkway.

This campaign was promoted through social media, encouraging the public to share their slate photos with Dyrham on Facebook, Twitter and Instagram using the #signaslate hashtag.



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## Duration

- Construction start date: January 2015
- Completion: May 2016

Above left **The visitor lift for the scaffolding tour**

Top right **Visitors watching the conservation in action**

Bottom right **Access to the walkway via the stairs**

## Cost

Total project cost was £4,025,300. The majority of the cost was funded by the National Trust, with project-specific fundraising contributing just over 15%.



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## Impact

The rooftop walkway (along with the rest of Dyrham's new visitor offer) proved very successful in attracting visitors during the building works. In general, 2015 was very successful. It was Dyrham's busiest year ever with over 217,000 visitors against 165,000 the previous year. The property had anticipated a loss of income from declining visitor numbers during the works but instead generated a profit.

The roof access experience also encouraged many repeat visits to the property. Visitors recounted that their repeat visits were driven by their enjoyment of watching the progression of the rooftop work. The forecast total for the HLF bid was 80,000 visits and the property exceeded this value. From May to December over 100,000 roof visits were made (with over 68,000 of these coming from visitors who had not visited Dyrham before) the benefits of which were seen directly in operating income.

Visitor experience feedback indicated a significant increase in visitor satisfaction during the months where they were able to watch works taking place, in comparison to the year before.

Such results had not been seen previously to such good effect in the Trust during a major project. Dyrham is keen to share the planning and thought processes that went on behind the scenes. The team was tasked with keeping spending to a minimum and so all proposed spending was well researched and evidenced to enable the risk versus benefits to be measured.



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Left **The Building Dyrham exhibition room showcasing the project**

Above **First view of Dyrham Park during building works**

# Review

## Performance

Visitors were very interested in experiencing the conservation in action at the property. This was shown by the increase of visitor numbers, repeat visits and feedback indicating increased visitor enjoyment. The decision to develop the visitor experience rooftop walkway was innovative and not without risk, having not been done before in the National Trust. However, the additional cost of developing the visitor friendly and all access walkway on the scaffolding was felt to be reasonable. The project also received £75,000 from the Heritage Lottery Fund in order to develop the visitor experience of conservation in action.

Visitors, in the main, commented very positively on their visit to the rooftop walkway at the property. Many were visiting specifically to see the roof works and said they would visit again to see the progress. Other visitors were unaware of the works/partial house closure prior to visiting and commented that the roof tour was very unique and more than made up for this partial closure, creating an excellent visit. The accessibility of the scaffolding tour was highly praised. Visitors reported being very happy that buggies with small children could be accommodated via the lift as well as people with limited mobility.

The success of the rooftop walkway was also shown in the enthusiasm of the volunteers. The property had about 90 keen roof volunteers, who guided the visitors along the walkway. This was a combination of existing volunteers in new roles and also new recruits.

The 'Sign a Slate' scheme also proved to be a fruitful fundraising campaign. It raised the profile of the project and allowed visitors to become more emotionally involved in the works. Over 3,000 of the total 9,500 slates were signed, generating a valuable contribution of over £50,000 towards the fundraising target.



Above Interpretation sign directing visitors towards roof tours and the exhibition

## Maintenance

The scaffolding had low maintenance needs, with a weekly check over as part of overall health and safety requirements. The scaffolding on this project was quite sheltered and was therefore unlikely to suffer wind damage.

## Additional engagement

As an additional engagement and fundraising tool, the property set up a coin drop mechanism along the scaffold tour. A simple tube ran from a dedicated area on the rooftop walkway and led down to ground level at Mr Blathwayt's apartment into a donation box. The aim was for visitors to throw coins in the tube as a donation and to 'hear the coin drop'.

The Re-Discover Dyrham project also included an enhanced presentation of the visitor showrooms in Mr. Blathwayt's apartment. The apartment reinterpreted a series of five rooms - aiming to be 'a delight for all the senses.' The displays in the rooms allowed visitors to experience the sights, sounds, smells, touch and tastes of the 17th century, when Dyrham Park was being built. The displays included: an optical illusion painting featured in one of the rooms; a nearby harpsichord being played by volunteers; the rooms decorated with silk flowers fragranced with potpourri; a box of textiles available for handling; and hot chocolate provided in the final part of the exhibition (created from an original 17th century recipe).

The mansion also became home to a new collections store area where visitors could learn about how Dyrham Park cares for its collection. From chairs and paintings to large pieces of furniture and delftware, regular guided tours helped visitors understand more about conserving a historical collection.

Furthermore, throughout the project contractor apprenticeships, student internships, expert study days, specialist tours, volunteer training days for new methods of engagement and staff development programmes were all available to give valuable opportunities for skills development amongst volunteers, students, contractors and the visiting public. This helped to address the skills gap that exists for traditional heritage skills.

# Review

## Associated works

As mentioned previously, the roof repair on the mansion was only one of the major works at the property during this project. The other conservation and environmental works which took place consisted of:

- Undertaking masonry repairs to high level features and structural repairs to the greenhouse;
- Fitting lightning protection;
- Installing a woodchip biomass boiler plant located remotely in the mansion;
- Incorporating zoned conservation heating control throughout the mansion;
- Improving insulation to the roof space;
- Integrating safe access solutions for future maintenance of the greenhouse and mansion roof.

Damaged masonry on the roof of the greenhouse meant that stonework in the greenhouse had become in urgent need of repair. Years of freeze/thaw action had caused elaborate stonework to fall off, resulting in additional damage to the surrounding area and presenting a health and safety concern. Work to the building included stone repairs and installation of improved rainwater guttering to prevent future damage. Safe access arrangements were incorporated.

The existing oil-fired boiler was providing a poor level of conservation heating, was functioning inefficiently and was reaching the end of its operational life. It also presented a potential fire risk to the mansion. As stated within its Energy Strategy, the National Trust plans to decommission all of its largest oil heating systems by 2020. Dyrham is the National Trust's fourth highest oil user in the South West, accounting for 2% of the Trust's total oil usage. Hence the oil-fired heating system at Dyrham was replaced with a biomass boiler, which is considered to be more cost effective, environmentally sound and safe.

## Lessons learnt

Phased opening can be problematic. This lesson was already understood following a site visit to a similar National Trust project. Unfortunately, the project time frames at Dyrham meant that the alternative to phased opening was a three month closure of the property. Phased opening was therefore agreed. However, visitor complaints were received during March and April (before the roof opening in May) about the lack of 'value for money' and the reduction in offer. Where phased opening is unavoidable in future projects, consider alternate offers or reducing the entry fee.

Enlist experienced scaffolders early in the design stage to facilitate understanding of the limitations of the property and to create a scaffolding design with associated cost estimate. This can be budgeted as pre-project consultancy and the resulting scaffolding design can then be put out to tender.

Having a scaffold up for roofing works does not necessarily mean that external decorations can be undertaken more easily or cheaply. Due to the limited loading of the scaffolding at Dyrham, only one 'lift' of boards was possible at a time. This delayed the external decoration work until the late summer.



Above Coin drop

Projects incorporating visitor engagement take time. The more planning and thought that goes into the design of experiences, the better they will be. The project team drew on a wide range of research and high quality material for the design and content of the interpretation materials and undertook a number of revisions to refine the end result. The process took a long time and was painstaking, but provided a high quality end product and was well-worth the time investment.

# Review

## Recommendations

Take steps to raise awareness amongst potential visitors that project works are in progress. If visitors are aware there may be some disruption before they arrive, they are more likely to enjoy themselves. Share information about the project through social media and on websites well in advance to build interest. Also, at the point where visitors arrive on site, try to demonstrate that something different is happening at the property. At Dyrham, giant cubes and scaffolding were erected in the car park promoting the theme 'see Dyrham differently' to ensure visitors were aware something was going on before they even got to visitor reception.

The on-the-ground staff and volunteer team are crucial to the success of a project such as this. The property invested a huge amount of time and effort in training and communications both during project planning and in the run up to the project. Communications with property staff and volunteers during the planning stage were well-directed to build enthusiasm and positivity amongst their team. They received a whole property project induction to help them understand what would be happening on a property-wide basis and role-specific training was also provided (for example tour guiding training sessions; Q&A coffee chats).

It is important that the property team have a preview of the experience of the property during the works before the public, to give them the opportunity to adjust to and understand the changes. This can be hard work for the project staff (for example, project inductions were repeated 23 times in one week at Dyrham) but is vital to ensure a committed and enthused property team. The success of this preparatory work is reflected by the positive visitor experience feedback during the project and the incidence of repeat visits.



Having a changing offer proved to be a real success. Visitors returned repeatedly to see the progress of the roof, evidenced through a wealth of verbal feedback from visitors that they had been before, returned to see the progress and were planning to come again for the next phase of work.

Above left **Visitors waiting for a roof tour with signed slates in the background**

Above right **Signed slates being placed on the roof**



Having a wow factor makes everything easier. The roof at Dyrham provided the 'wow' and the property made the most of this in the design of its visitor engagement. Consequently, visitor interactions with volunteers were almost entirely positive, resulting in happy volunteers who were friendly, engaged and keen to volunteer more, which in turn boosted the morale of the staff team. Happy visitors are more likely to spend more during their visit, benefiting fundraising schemes like the 'Sign a Slate' campaign. They are also more likely to recommend a visit to the property to their friends. The property team at Dyrham noticed a real difference in the atmosphere during the works and this was reflected in their improved visitor experience monitoring results.

## Further information

### Products and Services

#### Main contractor

Ken Biggs Contractors Ltd.  
High Street, Bristol BS39 6HP  
01761 470743  
www.ken-biggs.co.uk

#### Scaffolding

Brand Energy and Infrastructure Services  
Manby Road, Unit 3, Immingham DN40 3DX  
01469553800  
www.beis.com/uk

#### Architect and contract administrator

Purcell  
35 King Street, Bristol BS1 4DZ  
01179 101060  
www.purcelluk.com

#### Visitor engagement design consultant

20/20  
25 Tregonigge Industrial Estate, Cornwall TR11 4SN  
01326 372520  
www.2020projects.co.uk

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### Case study information

This case study was compiled by Natasha Rozanski with assistance from Clare Frater, Colette Cuddihy, Becky Hitchens and Adele Watt.

Design by Inkcap Design.

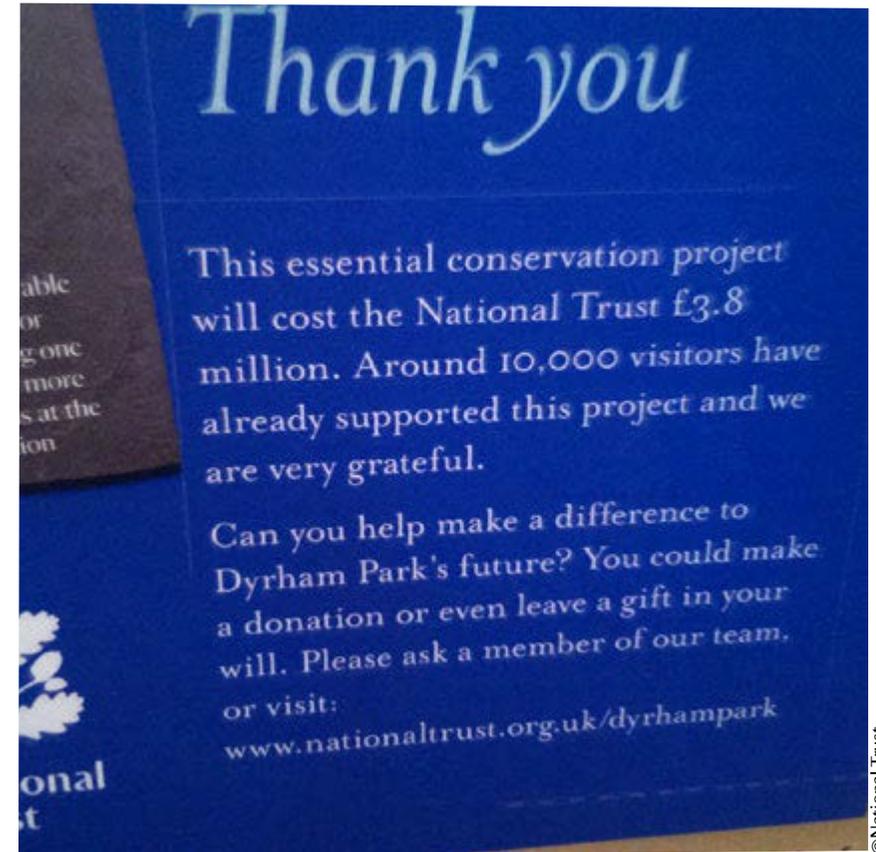
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Above A thank you board in the Building Dyrham exhibition. The final project cost rose to £4.025 million during the project due to additional works needed to the greenhouse but it was agreed to keep the figure of £3.8 million for consistency