



# Foreword

## To live, and act, and serve the future hour

At the Wordsworth Trust, the ideas and poetry of William Wordsworth are foremost in our mind: they are our inspiration, the force behind our mission. He can be seen as a 'worthy but dull nature poet' of 200 years ago; in fact, his concerns for people's disconnection with the world around them, the threat to communities from society's changes and the devaluation of the individual's humanity in a world driven by political economy are all relevant to today's sustainable agendas.

'The world is too much with us... we are out of tune'.

Wordsworth wrote to enable people to reconnect, 'to see, to think and feel'; his preoccupation, he said was 'man, the heart of man, and human life'. In another poem, he wrote 'we are all one human heart'. With Wordsworth there is a shared humanity, a respect for those of all backgrounds. Yet, this humanity is part of a wider universe – we may be one human heart, but there is a sense of 'one life' that we share with all living things in the natural world. The busy world produces a film that separates us from clear seeing – if we raised our imaginations and consciousness, if we saw the timelessness of nature and our relatively short lifespans, how could we be the selfish creatures that Peter Senge describes in 'Necessary Revolution' as creators of the 'Industrial Age Bubble?'

Wordsworth always offers hope. Political economy may fail us, the greed of others may appal us; our time on earth will pass. But, the poet shows us, we have within us the potential to make a difference for 'the future hour'.

*We Men, who in our morn of youth defied*

*The elements, must vanish;—be it so!*

*Enough, if something from our hands have power*

*To live, and act, and serve the future hour;*

William Wordsworth

**Jeff Cowton MBE**

Curator, The Wordsworth Trust

**Lighting** replace existing lighting with compact fluorescents or, even better, LED's. Check with a lighting expert first as many LED's emit high energy radiation in the blue end of the spectrum which can cause fading to light sensitive materials.



# Introduction



Environmental concerns have become increasingly prevalent for the sector, not only because of increased awareness of climate change and stricter legal obligations but also due to recent financial constraints and the rising cost of fuel.

In many respects the challenges facing the sector are the same as other public and private organisations. Tighter regulations of the last decade are set to increase as the Government moves towards the objective of reducing carbon emissions by 80% by 2050. The Climate Change Act 2008 makes the UK the first country in the world to have a legally binding long-term framework to cut carbon emissions. It creates a framework for building the UK's ability to adapt to climate change.

More and more museums are taking a strategic approach to environmental sustainability; tackling building performance issues, improving emergency preparedness, exploring passive methods of internal environmental control, rationalising collections and implementing new technologies.

Training and communication is key for developing leaders who can respond to change and drive sustainable development forward in museums. Renaissance North West has aimed to provide the inspiration and skills the region's museums need to change working practice and develop initiatives to help meet an organisation's sustainability goals. The 2009-11 Renaissance North West business plan had sustainability at its heart. The Green Museums Strand has delivered three main projects over the past 18 months focussing on environmental sustainability:

- ★ Museums and Art Galleries Survival Strategies publication
- ★ The Green Museums Leadership and Development Programme
- ★ Development of area Emergency Networks across the North West.

This publication will act as a legacy of the programmes of work and a resource for others wishing to improve their environmental sustainability.

**Kaye Tetlow**

Collections Care Liaison Officer, Renaissance North West



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# Green Museum Leadership Development



*"None of this is rocket science. Thanks to the Greener Museums Programme, I was able to make a persuasive argument for investment funding at a time when cash was available."*

The Green Museums Leadership Programme was designed to assist museums in turning operational, financial and reputational risks into revenue-generating, cost-saving opportunities.

This group training programme helped the 24 participant museum professionals to see and take advantage of the opportunities available to them. Each participant museum now has its own 'Green Champion' who knows how the museum works, its sustainability goals and what will make the most impact to the organisation.

## The programme:

This year-long Leadership Programme was flexible and delivered training through a combination of live workshops, online learning activities, tele-seminars, and one-to-one coaching. Participants followed a curriculum designed to develop sustainability knowledge as well as leadership, advocacy and project management skills. Attendees benefited from both group and individual learning. The group format facilitated the cross pollination of ideas and learning from what others have done, while the individual components allowed museums to customise their learning to the unique situation of each museum.

The programme helped each museum to establish a baseline – an environmental and financial footprint – so that each museum was able to identify its top issues and measure performance. Through our online curriculum, each sustainability leader learned about different aspects of sustainability to help them identify projects that will save costs in the short and long-term. The programme attendees have saved costs and generated additional revenue, often paying back the programme cost in less than one year. The participants also learned how to communicate their actions to engage staff and raise public awareness of environmental issues to help the museum raise its profile.

## Carbon Assessment Results

The total carbon footprint for Renaissance North West Museums total operations is 20,731.38 tons of CO<sup>2</sup> equivalent



On a per employee basis (1,492 employees) this is 13.9 tons CO<sup>2</sup>e per employee

- that's four elephants per employee in weight



Per visitor (5,786,748 per year) this represents 3.6 Kg CO<sup>2</sup>e each - that weighs more than one house brick for every visitor



By usable building floorspace (194,862 m<sup>2</sup>) this is 106.4 Kg CO<sup>2</sup>e per m<sup>2</sup> each year - the weight of a newborn baby elephant for every m<sup>2</sup> per year



The total carbon footprint for Scope 1 emissions is:	6,324.01 t CO <sup>2</sup> e
The total carbon footprint for Scope 2 emissions is:	13,313.89 t CO <sup>2</sup> e
The total carbon footprint for Scope 3 emissions is:	1,093.49 t CO <sup>2</sup> e

Greener Museums Leadership and Development Programme

Sponsored by:



*"The programme has given me the confidence to ask questions such as, 'Why do we do it that way?'"*

# Green Museum Leadership Development *continued*

*“There have been many more advantages of being part of this initiative which has been well worthwhile and I would recommend it to any other museum.”*



## The benefits

As well as being a fantastic professional development opportunity for the Green Champion, the Leadership Programme also benefited the museums as a whole. For example:

- ★ each museum now has an internal sustainability leader who can implement strategies, share knowledge and lead projects
- ★ participants undertook programmes and projects that have collectively saved nearly £200,000 in electricity costs, travel costs, and avoided capital spending, just in the first year
- ★ participants gained leadership and communication skills that they applied to their specialised knowledge of each museum
- ★ participants gained the confidence to make changes in the future and the skills to advance their careers.

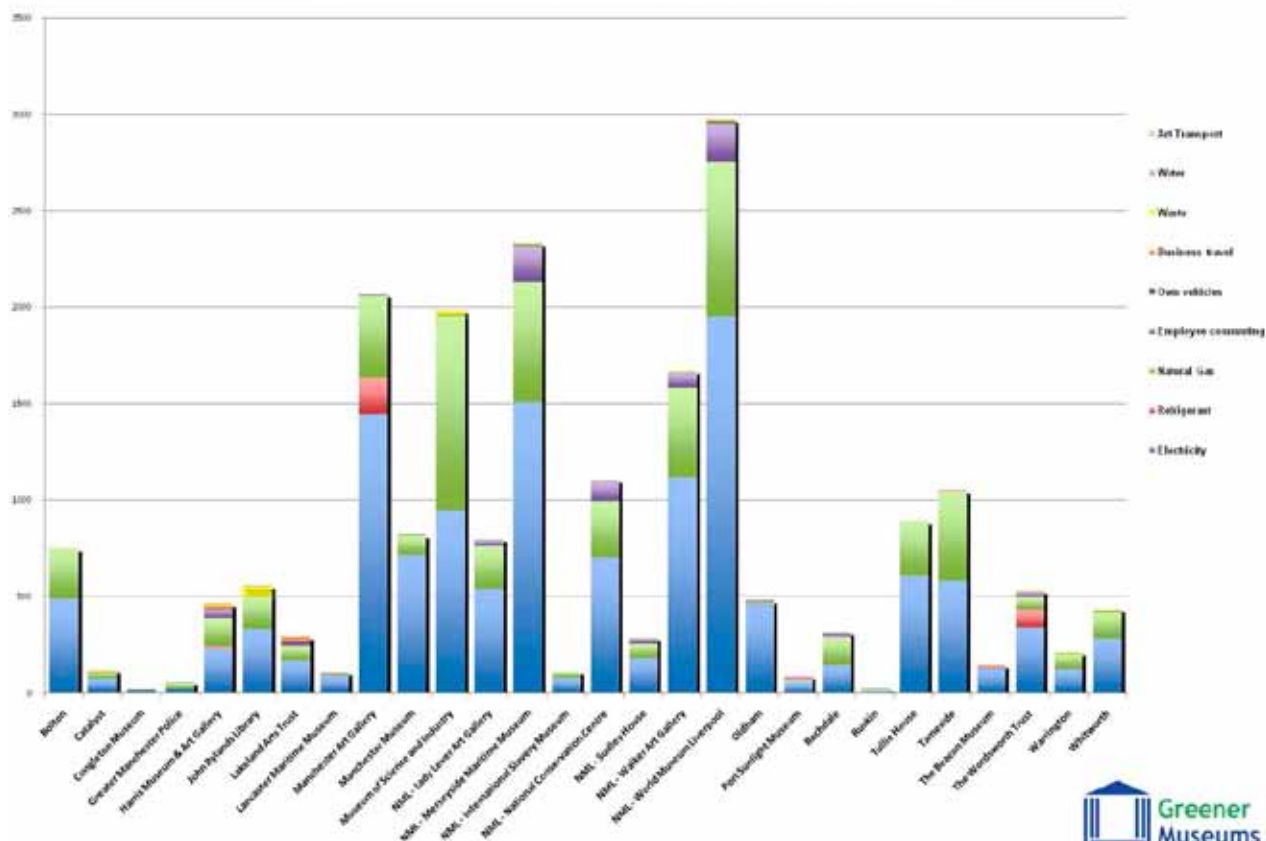
## Social return on investment

Finally, each museum benefited from having a strategic approach and organisational buy-in for sustainability. Using social return on investment calculations we estimate that:

- ★ the total social and environmental impact is about £625,000
- ★ for every £1 invested in this programme, £5.24 of social and environmental return has been generated
- ★ the payback period of the programme was approximately four months.

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## Renaissance North West: Carbon Footprint



## Green Museum case studies

As part of the Green Museum Leadership Development Programme, participant museums piloted economic, environmental and social sustainability projects at their organisations. This selection of case studies range in topic from recycling, reducing energy consumption, increasing building efficiencies, lowering carbon emissions and raising staff and public awareness about the environment. The measures adopted by the museums demonstrate how even small initiatives can go a long way towards improving sustainability within an organisation.

### Case Study 1

#### The Big Switch Off: reducing electricity consumption Harris Museum & Art Gallery



The Harris building was opened in 1893 in Preston as a free museum, library and art gallery. The building is Grade I listed and still retains most of its original features including grand, but inefficient, Victorian radiators. The building has been maintained and improved upon bit by bit over the years, but even so it is still inefficient and runs up large utility bills.

We identified that a major contributory factor to our energy consumption was lighting and computers, plus the increasing number of gallery interactives and installations requiring power. We concentrated our efforts on reducing our electricity consumption and since we began the Green Museums Programme we have reduced our consumption by over 10%. We achieved this through influencing small behavioural changes such as:

- ★ staff are more diligent about switching off lights and computers
- ★ staff switch off computers when they are away from their desks
- ★ the 50 public computers in the library are switched on an hour later than previously
- ★ banks of lighting in staff areas are only switched on when staff need access
- ★ developing a group of green advocates among staff.

To help with our efforts to reduce our consumption, we have procured LED lighting for one of our galleries and with support from Preston City Council we will install a voltage optimisation system and are looking into putting solar panels on the roof of the building. We also aim to make the forthcoming refurbishment of our history gallery as green as possible; all of which will ensure the sustainability of the building well into the future.

**Green Museum Champion: Lynsey Jones, Collections Care Officer**  
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### Case Study 2

#### Energy savings at Number 7 Warrington Museum & Art Gallery

*"If we can save money like this in just our office space, imagine what the whole museum could save!"*



Driven by a presentation from the Health and Safety Officer about the Council's climate change programme and since participating on the Green Museum Leadership Programme, we decided to tackle our office energy consumption which averaged 20.4kWh a day.

Through a staff awareness campaign and visual reminders of the environmental and economic issues we managed to reduce consumption by 14%. This will result in more than £260 savings from our annual electricity bill.

**Green Museum Champion: Amanda Moore, Museum Education Officer,**  
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## Case Study 3

### Low energy lighting Manchester Art Gallery

Manchester Art Gallery is working to identify priority initiatives to reduce energy use. Replacing the existing tungsten-halogen gallery lighting with energy-efficient LED lamps has been identified as a priority for three reasons:



Manchester Art Gallery – Alan Seabright

- 1 The existing lighting consumes a significant amount of electricity. This could be reduced by up to 60% by converting to an LED light source.
- 2 The existing lamps generate a significant heat load that places additional pressure on the plant, increasing energy consumption due to the additional cooling requirement and reducing longevity of plant components.
- 3 The existing tungsten-halogen lamps have now been phased out and are no longer available.

The current review of lighting density, energy consumption and options appraisal has shown that existing gallery lamps consume 780,000 kWh of electricity at an annual cost

of £59,000. LED lighting will not just save on electricity costs but also deliver additional savings in maintenance and re-lamping costs.

Until recently, LED lighting was not an appropriate low energy solution for lighting museum and gallery collections due to problems with colour-rendering and spectral composition. However, recent innovations have resulted in the production of a cold phosphor LED that has:

- ★ excellent colour rendering
- ★ no significant contribution in the high energy and UV area of spectrum
- ★ an extremely long lamp life without degradation in the appearance or quality of light.

The results of a pilot project, using the new Xicato artist series 700 lumen LED chip, have been very impressive, achieving an average 60% reduction on electrical consumption in the pilot area. By dimming fluorescents to 25% we can reduce energy consumption by about 70%, and changing from tungsten-halogen to LEDs would reduce demand by about 80%.

The cost of the new lighting scheme has been calculated at £96,000 and we have recently been awarded the full sum on an invest to save basis.

This will reduce our annual energy bills by £34,000 (including an additional £6,000 for the reduction in heat load) and our maintenance bill will go down by £12,500 a year and giving a payback on £96,000 investment of roughly 2 years.

In carbon terms, we would expect to save 233 tonnes a year which is half of what we need to save to achieve an F rating on our Display Energy Certificate.

Additional savings will be made through introducing a robust strategy for use of maintenance and display lighting, whereby full gallery lighting is only in use when spaces are open to visitors. This could potentially save a further 10% in electricity costs and a further reduction in cooling requirement.

**Green Museum Champion: Catriona Morgan, Principle Manager  
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**Amanda Wallace, Head of Asset Management and Development,  
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#### Green your offices

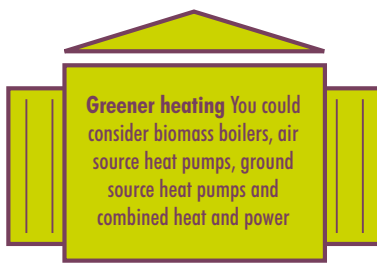
take away individual printers and switch to networked centralised systems. Print double sided and on FSC approved or recycled paper. Use biodegradable vegetable inks. Switch off equipment when it's not in use

## Case Study 4

# Display lighting & culture change The Beacon Museum Whitehaven



*“As a result of the knowledge and tools gained on the programme, we reduced our carbon footprint by 30% in just one year. Our DEC went from an E to a C. We’re saving £10,000 a year as a result of energy-saving initiatives.”*



The Beacon Museum carried out a review of the display lighting. A chart was compiled to assess the lighting in the building broken down on a floor by floor basis to show:

- ★ different bulbs used throughout the building
- ★ how many bulbs there were of each type
- ★ wattage
- ★ daily usage
- ★ kilowatt hours

This highlighted some areas where the wattage used by certain types of bulbs was unbelievably high and the lighting provided was unnecessary. By simply switching off these lights and removing surplus bulbs, we saved 4400kWh per year and training our cleaners to activate the lights only when needed meant that we can save up to two hours on display lighting every day.

With combined grants from Renaissance North West and Copeland Borough Council the museum has started to install Xicato cold phosphor LED lights on a floor by floor basis.

Our lighting review has saved the Council £4,000 revenue this year and around 21 tonnes of CO<sub>2</sub>, which means the payback for the LED lighting project will be 9 years.

Other green initiatives at the Beacon Museum include:

- ★ delivering costumed video-conferencing sessions to schools has saved over 300 hours of staff travel time and 4469kg of carbon.
- ★ installing water saving pouches in all 12 toilets, each saving one litre of water per flush. This is reducing our water consumption by approx 100 litres per day, or 36 cubic metres per year. United Utilities provided enough free pouches to enable each member of the team to take one home too.
- ★ opting from bottled drinking water to a piped system to reduce delivery mileage and to reduce waste plastic by using glasses instead of plastic cups.
- ★ introducing incentives to reduce overnight energy consumption by printers, PCs and computer screens. Compliance rates have improved over the past 6 months from a 45% success rate to 85%.
- ★ considering low energy options for new gallery projects. Our new Popular Culture Gallery features a Chopper bike which has been converted to run a disco glitter ball via pedal power.

Due to protected Council revenue funding thanks to a 5 year Business Plan, any surplus generated through energy savings or efficiencies goes into a sinking fund to create new galleries. This is a huge incentive to reduce energy costs and has been welcomed wholeheartedly by the museum team. As part of the Carbon Management and Sustainability groups within Copeland Borough Council, knowledge, tools and experience gained from the Greener Museums Programme will benefit the wider organisation.

**Green Museum Champion: Sue Palmer,**  
**Beacon and Tourism Services Manager, Copeland Borough Council**  
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## Case Study 5

# Lots of small changes that all add up to a bigger, greener museum Museum of Science and Industry

The Museum of Science and Industry in Manchester is a complicated set of five listed historical industrial buildings.

From 2009 a museum-wide recycling strategy was implemented, aimed at improving staff awareness of the importance of sustainability. The technical services department worked closely with waste management partners, who recorded recycling levels, which helped to show that recycling increased by 15% over the year.

Other energy saving initiatives include:

- ★ insulating pipe works
- ★ adding lighting sensors
- ★ replacing the inefficient pack away heaters to a condensing boiler and recirculation steam overhead heating system
- ★ replacing inefficient boilers with efficient condensing boilers
- ★ replacing an inefficient overhead gas heating system to blow low heaters
- ★ improving the guttering and access to roof areas
- ★ identifying the electricity usage in all of the gallery lighting and replacing the light fittings with more efficient lighting
- ★ replacing external lighting with 75% more efficient fittings
- ★ installing sensors in the Power Hall so that the light is only used when required
- ★ adding filter machines to the staff kitchens for drinking water

Gas usage has also reduced by 25% due to more intelligent running with the combined heat and power unit and the overall culmination of a four year management strategy. Investment in capital and upgrades to outdated heating equipment and ensuring that the technical services department can tailor the use of the heating equipment to best suit the museum's needs, the weather, and economic conditions in the volatile energy market has assured these reductions.

We have also introduced a monitoring and management system to enable the museum to monitor all the energy usage across all the buildings. The collected data is produced on posters showing the changes and the energy and money saved per building. By making it specific to buildings it is making it more personal, so everyone can take pride in the effects of their achievements.



The technical services department has been instrumental in achieving these changes. One of the biggest impacts was when the responsibility for the energy budgets was transferred to the technical department in 2009. Knowing and responding to each building individually and knowing what changes were needed has made a huge difference. The buildings energy efficiency rating – previously rated at low Gs – now has achieved ratings of B's and D's.

**Green Museum Champion:**  
**Rachel Hammond, Senior  
Collections Care Officer**  
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## Case Study 6

### Reduce, Reuse, Recycle: redeveloping historical buildings Museum of Science & Industry



The Great Western Warehouse was originally a 19th Century warehouse built for shipping goods in and out of Manchester. It is a Grade II listed building and one of MOSI's five historical buildings.

It has just come to the end of a £9 million redevelopment project and is one of the greenest developments in the North West. This was achieved by making the most of recycled and reusing materials, for example:

- ★ 35 tonnes of steel was removed from the building and recycled
- ★ 328m squared of glass was removed, some of which was re-used in the building and the rest sent for recycling
- ★ 1132m of internal walls were removed and recycled
- ★ some of the rubble from the demolition work was used for the foundations of the three additional lift tower extensions and the rest has gone to be used for roads and drainage work
- ★ old air conditioning ducts were re-used in the building.

We also sourced sustainable materials such as timber that is FSC approved and fit new high-efficiency technologies for mechanical and electrical services. The new toilets have been fitted with low water usage systems and the hand dryers are low energy.

The redevelopment scheme was developed around standards set by BREEAM (BRE Environmental Assessment Method), which is the leading and most widely used environmental assessment method for buildings.

The redevelopment of MOSI's Great Western Warehouse is expected to achieve a BREEAM 'Very Good' rating.

**Green Museum Champion: Rachel Hammond,**  
**Senior Collections Care Officer**  
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## Case Study 7

### Greening a temporary exhibition Tullie House Museum and Art Gallery

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*"The most critical point was deciding to embed green principles at the planning stage of the project."*

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During the course of the Greener Museums Programme the project team was tasked with the development of a temporary exhibition, 'Take Another Look'. It was important that this temporary exhibition would be as green as possible.

A number of things were identified to achieve a green exhibition including:

- ★ procurement and reuse of materials to reduce the amount of printed marketing material and concentrate on digital marketing
- ★ reusing old display cases from previous exhibitions
- ★ using eco-paint that was low in volatile organic compounds making it less harmful to the objects in the exhibition than ordinary paint
- ★ reusing the timber from 'Take Another Look' for the next exhibition.

**Green Museum Champion: Ben White, Collections Project Officer**  
benw@carlisle.gov.uk



## Case Study 8

### Carbon Reduction Wordsworth Trust



*“It seemed as though our complex building management system was attempting to dehumidify the entire Grasmere valley.”*



The Wordsworth Trust owns over 20 buildings in the hamlet surrounding Wordsworth’s home; these include public buildings and domestic dwellings. It has a full and part time staff of over 40 people, two-thirds of which live on site. The Green Museums Leadership Programme has been invaluable in drawing our attention to these two key areas: our buildings and our behaviours. The carbon footprint calculation showed our biggest impact is through the use of electricity, especially in the air conditioning systems for the recently opened library and research centre (The Jerwood Centre) and the existing museum. In fact over 50% of our carbon footprint comes from this source.

The air conditioning system now seems to be of a previous age. Commissioned in 2004, it is operated by a building management system (BMS) and was set up to run twenty four hours a day, twelve months of the year. No suggestion was made at that time that this should be altered; our faith was to be placed in software that would relieve us of even thinking about it. Electricity was nothing like the price it is today, even six years ago. Designing the building now, we would consider passive controls, heat conservation techniques and alternative sources of energy.

That still remains an option for the longer term. Engineers from Arup have worked with us, experimenting with different settings, turning the chiller off, leaving the whole thing switched off for a period to see if it made any difference. Our hope is that we can reduce the electricity bill (and therefore our carbon footprint) by 10 to 20%.

**Green Museum Champion: Jeff Cowton, Curator, Wordsworth Trust**  
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## Case Study 9

### Spreading the Word: Developing a sustainability communications strategy Lancaster Maritime Museum



Our participation in the Green Museums Leadership Programme allowed us to develop a communications strategy to raise staff awareness of environmental issues across the whole of Lancashire County Museum Service which includes 12 museum sites.

The aim of the strategy is to initiate green thinking within individual sites, and as a team, to meet Lancashire County Council priorities.

The strategy also includes target dates and outlines how the effectiveness of the strategy will be measured. It identifies key messages that the service hopes to convey and presents a range of tools and tactics to deliver the objectives.

In a large organisation effective communication can sometimes be problematic. If real effort is taken to raise awareness and engage interest, a long term vision for the Lancaster Maritime Museum and significant changes for both site and service can be achieved.

**Green Museum Champion: Michelle Cooper,**  
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## Case Study 10

### Seeing Green: Creating an environmental vision Tullie House Museum and Art Gallery



*"The exercise has made me realise how important facilitation skills are in achieving success in a group exercise."*

The staff at Tullie House Museum and Art gallery knew that we needed to be more environmentally sustainable in the way that we run the museum. However, the organisation did not have a vision of what a sustainable museum would be like or a method of getting to that vision.

During the second workshop on the Greener Museums Programme we were given an excellent framework and training on how to conduct a visioning workshop. This workshop would enable Tullie House to formulate a vision of a more sustainable organisation, helping us move forward to becoming a greener museum.

After altering the framework, I undertook several practice runs with staff members, which provided useful feedback and gave me the confidence to undertake the exercise with the museum's management team.

I was both nervous and excited on the day of the exercise. During the exercise the management team identified:

- ★ what was working well
- ★ what was hard
- ★ the path we need to take to get to a greener museum
- ★ the critical points on the path to a greener museum
- ★ obstacles on that path
- ★ the qualities of a greener Tullie House Museum

The ideas and discussion that came out of the workshop has allowed the organisation to start to work on what a more sustainable Tullie House will look like and establish a plan to achieve this goal.

**Green Museum Champion: Ben White, Collections Project Officer**  
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## Case Study 11

### Saving Energy Congleton Museum



Congleton Museum is an independent museum, governed by a board of trustees. With just two paid staff, it is run almost entirely by volunteers. The building is attached to the Town Hall and the electricity and water supply is linked, fortunately the museum has a separate meter allowing us to monitor our usage. The museum has five air conditioning units installed in key areas which are also used to heat the building.

Our electricity consumption for April 2009 to March 2010 was 33,316 kWh. As this contributes to 96% of the museum's Green House Gas emissions, it was decided to prioritise the reduction of electricity usage.

We have put the following measures in place:

- ★ monitoring electricity usage on a weekly basis
- ★ switching off the printer and photocopier at night
- ★ ensuring all computers are off at night
- ★ only have lights on in the exhibition room when required
- ★ ensuring toilets and unoccupied rooms are not lit when vacant

We are currently experimenting with the air conditioning system to help reduce energy consumption. One of the ways we are approaching this is to widen the parameters for environmental controls.

**Karen Stratford, Education Officer**  
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# North West Emergency Response Networks

*“As well as providing better protection for our entire collections, the Emergency Response Network has proved a catalyst for us to identify areas of our collection which would be a priority to save in an emergency. These collections are key for providing services to all our visitors and for strengthening community identity and cohesion.”*

Frank Galvin,  
Stockport Heritage Services



In November 2009, flooding at the Windermere Steamboat Museum demonstrated that the dock buildings are unable to cope with the extreme weather we are now experiencing, just 30 years after they were built. In the aftermath of the floods in Cumbria, regional resources were coordinated to help a number of affected museums and the Greater Manchester Emergency Response Network transferred equipment to assist the Steamboat Museum.

## **Salvage and recovery: the problem for museums**

When fire or flood damage occurs within museums and historic houses, the challenges staff face in mounting an effective salvage and response operation are significant. Museums traditionally hold a wide variety of objects, ranging from paintings and sculpture, through to archival and photographic collections, bone and natural history, ceramic objects and leathers and so on. This diversity is a major issue because each of these object types require different drying speeds, specialist handling and most of them can only be treated through immediate drying.

## **The Networks**

To this end, Renaissance North West has supported the formation of Area Emergency Networks across the region. Salvage volunteers making up the networks are willing to help museums, libraries, archives and other organisations holding culturally significant collections during incidents of fire and flood. Over 70 people have signed up and the majority of the volunteers received salvage training over the summer of 2010.

The salvage training covered effective immediate reaction to incidents including incident containment, salvage, triage, stabilisation, packing and air-drying of damaged collections and adapting these techniques for application in major incident situations.

The volunteers have access to personal protective equipment as well as additional emergency supplies. Generators, pumps and emergency lighting are stored at Stockport Museums Service, where it can be quickly loaded onto a van and driven to any institution requiring assistance. There is also a significant stockpile at Lancashire Conservation Studios in Preston, again with access to a museum van. In Cumbria and Cheshire, equipment has been dispersed amongst the institutions with volunteering staff with the idea that it would be transported by car.

## **How to sign up**

Any institution considering incorporating the North West Emergency Response Network as part of their emergency plan should register their interest by emailing Kaye Tetlow [kaye.tetlow@lancashire.gov.uk](mailto:kaye.tetlow@lancashire.gov.uk)

Whilst obviously the hope is that the network will never be required, statistics show that over 30% of institutions in the heritage sector have suffered an emergency in the last five years. Whilst smaller emergencies will probably be dealt with by the institution itself, without the need to call on the assistance of the Emergency Response Network, it is comforting to know that for larger and more complex emergencies, participating institutions will have prompt access to emergency plant and equipment, and individuals who are confident and competent in handling damaged objects.

This collaborative response will help prevent damage to cultural assets when the scale of the emergency exceeds the capacity of a single institution to deal with it effectively and will significantly increase resilience in the region.

**Emma Dadson, Harwell Document Restoration Services**  
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[www.hdrs.co.uk](http://www.hdrs.co.uk)

**Save Water** Use water savers in your loos to reduce water consumption with each flush! Use push taps with timers in toilets. Harvest rainwater and use it to flush loos

# Acknowledgements


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*“Greener Museums has made us think not only how we can do better when it comes to the operation of The Ruskin Museum, but also how we can shift public attitudes by presenting the facts in our displays throughout the museum. This would be true to Ruskin – the reason for our existence.”*

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Vicky Slowe, Ruskin Museum

## Further information



**Build a Green Team** Engage staff with helping to identify and implement sustainable working practices. A Green Team can help identify quick win solutions to improve sustainability and communicate successes to other staff.

Renaissance North West would like to thank the Regional Green Museums Steering Group, the individual Green Champions and participating museums on the Green Museums Leadership Programme and specialists at Arup, Greener Museums LTD and Harwell Document Restoration Services for their support and contributions to the Green Museum projects over the past 2 years.

### Green Museums Leadership Programme Delegates

Jon Chisnall	Urbis
Michelle Cooper	Lancaster Maritime Museum
Jeff Cowton	The Wordsworth Trust
Dion Etheridge	Gallery Oldham
Cathy Fisher	Tameside Museums and Galleries
Rachel Hammond	Museum of Science and Industry
Lynsey Jones	The Harris Museum & Art Gallery
Katherine Lynch	Port Sunlight Museum & Garden Village
Claire Mayle	Museum & Archives, Greater Manchester Police
Mike McCulloch	Museum & Archives, Greater Manchester Police
Ron McGregor	Manchester Museum
Paul Meara	Catalyst
Catriona Morgan	Manchester Art Gallery
Amanda Moore	Warrington Museum and Art Gallery
Andrew Moore	Link 4 Life – Touchstones and Resource Centre
Alastair Noone	The John Rylands University Library
Sue Palmer	Beacon & Tourism Services
Fiona Philpott	National Museums Liverpool
Vicky Slowe	The Ruskin Museum
Pierrette Squires	Bolton Museum and Art Gallery
Karen Stratford	Congleton Museum
Charlotte Upton	Lakeland Arts Trust
Ben White	Tullie House Museum and Art Gallery
Dean Whiteside	The Whitworth Art Gallery

### For more information about greening your museum visit:

Arup [www.arup.com](http://www.arup.com)  
British Standards Institute [www.bsigroup.com](http://www.bsigroup.com)  
Building Research Establishment's Environmental Assessment Method [www.breeam.org](http://www.breeam.org)  
Business Link [www.businesslink.gov.uk/bdotg/action/home](http://www.businesslink.gov.uk/bdotg/action/home)  
Carbon Trust [www.carbontrust.co.uk/default.ct](http://www.carbontrust.co.uk/default.ct)  
Centre for Alternative Technology [www.cat.org.uk](http://www.cat.org.uk)  
Centre for Construction and Innovation- Salford Uni [www.ccinw.com](http://www.ccinw.com)  
Constructing Excellence [www.constructingexcellence.org.uk](http://www.constructingexcellence.org.uk)  
Department for Environment, Food and Rural Affairs [www.defra.gov.uk](http://www.defra.gov.uk)  
Energy Saving Trust [www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)  
Global Action Plan [www.globalactionplan.org.uk/](http://www.globalactionplan.org.uk/)  
Green Building Initiative [www.thegbi.org](http://www.thegbi.org)  
Green Globes [www.greenglobes.com](http://www.greenglobes.com)  
Greener Museums Ltd [www.greenermuseums.org](http://www.greenermuseums.org)  
Groundwork [www.groundwork.org.uk](http://www.groundwork.org.uk)  
Historic Scotland [www.historic-scotland.gov.uk/index.htm](http://www.historic-scotland.gov.uk/index.htm)  
International Council for Local Environmental Initiatives [www.iclei.org](http://www.iclei.org)  
International Council for Local Environmental Initiatives – Europe [www.iclei-europe.org](http://www.iclei-europe.org)  
National Energy Foundation [www.nef.org.uk](http://www.nef.org.uk)  
National Museums Directors Conference [www.nationalmuseums.org.uk](http://www.nationalmuseums.org.uk)  
Salix funding [www.salixfinance.co.uk/home.html](http://www.salixfinance.co.uk/home.html)  
UK Green Building Council [www.ukgbc.org](http://www.ukgbc.org)

### **Museums for changing lives**

Renaissance in the Regions is the Museums, Libraries and Archives Council's (MLA) national £300 million programme to transform England's regional museums. For the first time ever, investment from central government is helping regional museums across the country to raise their standards and deliver real results in support of education, learning, community development and economic regeneration. Renaissance is helping museums to meet people's needs and to change people's lives.

[www.mla.gov.uk](http://www.mla.gov.uk)

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