



Carbon Literacy Training at Manchester Museum

DEVELOPING A CARBON LITERACY CENTRE MODEL:
PHASE 1 REPORT

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Background to this Report

The Carbon Literacy (CL) project is a unique training programme to inform and empower people to act on Climate Change, delivered in Manchester by Cooler Projects CIC, on behalf of the Carbon Literacy Trust. The Carbon Literacy Project aims to share ‘carbon literacy’ for everyone who lives, works and studies in Manchester, through a days-worth of training in understanding the carbon impacts of our activities. Training is currently delivered through businesses, educational institutions and community groups. The next step is to explore options for offering training for individual citizens through museums.

This report has been commissioned by Cooler Projects, Manchester Museum and Museum Development North West (MDNW), to explore potential delivery models for Manchester Museum to become a ‘Carbon Literacy Centre’ (CLC) providing the opportunity for individuals to gain knowledge and understanding of climate change, the relationship with our own carbon footprints and the practical ways an individual can make a positive impact in reducing greenhouse gas emissions.

Executive Summary

The Carbon Literacy programme is an excellent fit with the mission and values of Manchester Museum and its role in promoting civic engagement and action. It also fits with the strategic priorities for the Museum Development North West team in promoting sustainable working in museums. This report outlines the research, evaluation and consultations with partners and audiences which have informed the development of a training model for Carbon Literacy training at Manchester Museum which potential to replicate the model in other museums in the North West.

Museums offer a unique learning venue for adults and can be a catalyst for further learning. Accredited learning in museums tends to be linked with employability and developing schools – it also is often aimed at young people and there is a degree of tailoring sessions to their participants. In climate change learning storytelling and using familiar, everyday objects have proven to be powerful tools in engaging participants with the broader, global challenges faced. Digital technology such as MOOCs can very a very effective means of making learning available to much wider audiences and increasing engagement with the stories of museum objects.

There is flexibility in the structure and delivery of Carbon Literacy training to meet the needs of the learners and work in the museum environment. One of the key challenges is funding the training programme. Before any additional display, event and staffing costs the certification and moderation will cost the CLC a minimum of £10 per participant. However, many museums charge for their adult learning programmes and the visitor surveys conducted showed that 76% of respondents

were willing to pay towards the cost of training events in line with the duration of the activity. Covering the essential costs without additional external funding being required would help to create a more sustainable, longer term programme.

The CL training has been extremely positively received, particularly where it has a clear relevance to participants. While the certificate validates the learning, there is evidence to suggest that what participants really value was the feeling working collaboratively towards making a bigger impact on addressing climate change. Key areas for possible improvements were focused on reducing session lengths, balancing the amount of scientific information, incorporating simple activities with clear instructions and outcomes and an increased focus on positive action.

All the consulted potential museum partners were enthusiastic about being involved in the CLC programme, motivated by the benefits of continuing to expand their sustainable working practices and in providing new opportunities for museum audiences. The CLC model needs to work with venues where there is limited staff capacity for development work and support in making collection links and creating climate change themed interpretation through workshops, case studies and mentoring may be required to assist partner museums becoming Carbon Literacy Centres. Support and training for partners needs to engage with decision makers particularly to encourage working sustainable to be embedded within business planning.

Most survey respondents were concerned about climate change. Visitor consultation showed that the main potential motivators for participating in Carbon Literacy training were

associated with taking positive action on the environment, rather than learning about museum objects. However, most of the respondents were interested in the delivery of the training through traditional museum learning routes particularly focused on additional interpretation of objects through displays, handling, tours and trails. The course should therefore make the most of the unique atmosphere of the museum settings, but the branding of the training courses needs to strongly reflect the environmental purpose.

Manchester Museum has a large existing potential audience for the Carbon Literacy programme of over 420,000 visitors annually and a strong adult learning programme, although visitor numbers and participation may be affected by the upcoming Courtyard Project. A significant advantage would be to raise awareness of Carbon Literacy within new and diverse audiences. Converting visitors to participants on the training would be most effective and sustainable if Carbon Literacy fits with the current visiting patterns and programming priorities; catering for adults with children learning together or for adults looking for social activities.

Families are a key audience for event programming. The motivation for family participation was markedly different to adult learners, with more focus on education and entertainment for children. Overall there was less interest in making the pledge and in gaining the Carbon Literacy Certificate. However as 65% of visitors to Manchester Museum are families there is potential to modify the training for offer a family learning Carbon Literacy programme with activities designed for adults to learn alongside their children, as a second strand of the museum-based programme.

The recommended model is based on using object stories and active learning. Key

elements of the training are to raise awareness, manage participant's emotional journey and supporting participants to make a commitment for positive action. A modular based programme, consisting of shorter sessions was favoured by both museum partners and the consulted audiences. To ensure integrity of the training, where possible the training should 'model' the principles of low carbon usage and highlight the ways in which the host museum is working to reduce its carbon footprint.

The CLC could maximise engagement with all museum visitors through *Carbon Stories* interpretation in the form of display panels or trail, which is available to visitors at no extra cost. A supporting trail guide would also function as a marketing for the CLC bookable course (see page 42). The course would consist of two sessions, each lasting 2.5 hours. The first session based around a guided tour and object handling session to fulfil the *Knowledge* and *Values* outcomes of the current CL training programme. The second session is based on the *Action* outcome focusing on practical and positive actions which can be taken, including making a public expression of the pledge to be displayed in the Museum. This model could also be used with focused groups or as courses for small businesses unable to deliver the training within their own organisation, which may provide a revenue source to subsidise the public programming.

The model can also be adapted to a family audience again linked to the *Knowledge*, *Values* and *Action* principles, though particularly aimed at families with children over 5 (see page 43). An active family trail to explore the *Carbon Stories* display would be followed by two events; a drop-in family friendly event with a carousel of climate change activities and a bookable art session to create a family pledge artwork. There is

potential for the events to be part of the Big Saturday programme, particularly given that weekends were cited as the most popular time for activities.

Being part of a collective working towards a common goal, was identified by trainers and participants as an integral part of the training. This could be further developed through using digital media and online platforms to provide or signpost pre (and post) training resources for support based on the principles of 'flipped learning'. The benefit of this approach is in managing the amount of material available in the course and giving some individual choice. This may be most effective in partnership, locally with the Universities and nationally with initiatives such as the Happy Museum network.

Introduction

As the first stage in potentially developing a sustainable and scalable Carbon Literacy Centre business model, this report aims to set out recommendations based upon the findings of stakeholder and audience consultations as well as cultural sector focused research of similar accredited training or learning opportunities. If the pilot proceeds to phase two, this would be delivered and tested from June to December 2018 during the *Season for Change*.

Context

In recent years museums, galleries and heritage practice have been contributing to creating opportunities to inform the public's understandings of contemporary issues and promoting positive civic action, while maintaining the core principles of museum-based learning, inclusivity and accessibility. In the North West, the Renaissance funded Green Museums programme delivered by Museums Development North West offered Museums training opportunities in the practical application of both sustainability theory and a leadership programme to develop advocacy skills to share the learning further and give participants the ability to implement the changes museums need to address their sustainability issues – and save money.

The programme developed organically into museums having these conversations with their visitors through regular event programming. At Manchester Museum direct conversations with visitors was a core aspect of the 2016 *Climate Control* exhibition and to facilitate this museum staff completed the Carbon Literacy training course. Manchester Museum became the first Carbon Literate museum in the world and is now a Gold

Carbon Literacy Organisation (CLO). The legacy of the Green Museums programme continues as Museum Development North West provides training for museum staff throughout the region to become Carbon Literate. Carbon Literacy training is currently offered on a business and sector specific basis, through the workplace. The three partner organisations have progressed to the point of exploring the options to extend their programmes to use museums as a vehicle to offer Carbon Literacy training to their visitors as individual learners.

Project Aims

The central aim of scoping the potential to deliver CL training at Manchester Museum is to explore how diverse museum collections can be used to deliver the message that climate change can and does affect everything – but there are practical ways that we all, individually and collectively, positively address climate change.

This project will scope the benefit and challenges of using museums as a venue for the CL training, how diverse museum collections can be used to tell climate stories and explore potential delivery models, appropriate to a museum setting and capitalising on the innovative use of science, to promote civic engagement and action.

The recommended model for the pilot phase will also take into account extending the museum CL training programme into other smaller regional museum or heritage venues and ideas for creating a sustainable business model for a Carbon Literacy Centre (CLC) that is scalable to other cultural venues within the Greater Manchester area and the wider North West region.

What would a sustainable model look like?

- **Meets the strategic objectives** of key stakeholders.
- **Integrated** into the public programming of the Museum.
- **Relevant to the locality** and to people's lives.
- **Balances cost and income** or able to address an imbalance through diverse funding streams.
- Demonstrates **an impact on individuals and communities**, which deliver the aims of the Carbon Literacy programme.
- Responds to **robust evaluation** to ensure a positive and high-quality experience for learners.

What does success look like?

The three project partners and key stakeholders had a common vision in the outcomes of a successful pilot, although this was articulated in a way relevant to the mission of each organisation.

- A step change in how the programme is viewed; communicating the key message that as an individual you can take positive action and raising awareness of the CL training within a wider and more diverse audience base.
- Develop a sustainable delivery model for Manchester Museum which any individual can become accredited as Carbon Literate, which is not possible with the current model.
- Continue Manchester Museum's pioneering work in delivering public engagement with the issues of climate change.
- Raise the profile of the programme outside of Manchester through

creating a Carbon Literacy Centre (CLC) model, which is replicable in other museum or cultural settings.

Strategic Fit

Development of this pilot project fits very well the local, regional, national and also international strategic aims of the partner organisations and their key stakeholders;

Local

The Carbon Literacy (CL) project stems from Manchester's climate change action plan - Manchester: A Certain Future (MACF). The CL project aims to give every person who works, lives or studies in Manchester (approximately 1 million people) a day's worth of carbon literacy training. This is a step on the path to Manchester becoming the World's first Carbon Literate City. The recent Green City Summit in March 2018 has stimulated an increased sense of urgency as the city now pledges to be Carbon Zero by 2038.

The Vision for Manchester Museum is to encourage people to engage with some of the major issues of our time, including those which impact directly on developing a sustainable world – climate change and habitat loss.¹ While families are the most significant audience for the Museum, one of its key objectives is to improve access to the Museum for all. Currently the Museum is working on a large capital project which would involve significant building works and the closure of approximately half the Museum galleries for two years and this will have an impact on delivery of all learning and event programmes. Manchester Arts Sustainability Team (MAST) was established in 2010 by Manchester based arts and cultural organisations and Manchester Museum is one of the member organisations who agreed to

¹ The Manchester Museum Strategic Plan 2015 - 18

match the MACF target of reducing carbon emissions by 41% by 2020.

Regional

In addition to modelling the management of their activities on good practice in environmental, social and economic sustainability, MDNW also operates a network throughout the region, offering support and guidance for a range of Museums. As part of its aim to improve the resilience of museums MDNW supports and promotes a culture of environmental sustainability across the sector. This includes supporting development of Environmental Strategies based on Julie's Bicycle Museums Environmental Framework and aiming to embed a culture of sustainability through promoting and delivering Carbon Literacy training.²

National

Manchester Museum is a National Portfolio Organisation and as such both Manchester Museum and MDNW received Arts Council England (ACE) funding. One of the five goals in the ACE ten-year strategic plan *Great Art and Culture for Everyone* is for the arts, museums and libraries to become resilient and environmentally sustainable. Julie's Bicycle is an Arts Council England partner, commissioned to deliver their Environmental Programme to the National Portfolio Organisations 2018-22. The *Seasons for Change* initiative running in 2018 is being managed by Julie's Bicycle and seeks input from the cultural sector to provide the '*widest and wildest imagination to speak out, champion change, showcase sustainable practice and inspire action*' on climate change.³

The Happy Museum UK network, of which Manchester Museum is an active member,

was created in 2011 with the purpose of action and academic research to find out how museums could contribute to a sustainable future by fostering wellbeing that doesn't cost the Earth. It aims to develop wellbeing, resilience and care for the environment in museum staff, volunteers and communities⁴.

International

The Climate Control exhibition at Manchester Museum was part of the European City of Science programme. The Museum recently hosted the international symposium '*Climate Change and Museums: critical approaches to engagement and management*' which explored local and global topics. Manchester has also previously been recognised as good practice city on a European level, for climate change engagement through the arts sector.



The Museum became the inaugural recipient of the Climate smART award which seeks to recognise a museum or large-scale public art project that has made a significant educational contribution to the fight against climate change.

² MDNW Sustainability Strategy 2018-22

³ www.juliesbicycle.com/season

⁴ The Happy Museum. Re-imagining museums for a changing world: learning and evaluation 2013

Background Research

A literature review of Museum learning programmes from which best practice or learning could be drawn to inform a CL training delivery model for Museum audiences, particularly exploring modular and accredited learning for adults in museums.

1. Adult Learning in Museums

Museums offer a unique learning venue for adults, being able to deliver a range of learning activities including tours, talks, workshops and self-directed learning support through guidebooks and trails. What connects the activities is the hand-on experience provided. The review showed there are few examples of formal accredited learning delivered by museums services for visitors, perhaps due to the academic and administrative impact of becoming an accrediting body. However, Museums can be a catalyst for further learning and many adult learning programmes provide short ‘taster’ sessions. Many informal adult learners are drawn into museum programmes through visits with children or grandchildren.

In the 2010 National Adult Learner Survey⁵, 69% of adults surveyed has taken part in learning activities within the previous three years. The most commonly cited reasons for not learning were cost (58%), lack of time (42%) and inability to fit learning around job (29%) or family life (25%). In addition people with no or Level 1 qualifications also regularly cited lack of confidence (23%) and lack of information about available and appropriate courses (15%) as barriers to their learning.

⁵ *Power to the People*. July 2016. Learning and Work Institute.

Case Study: Share Academy⁶

The Share Academy aims to explore the long term and dynamic impacts of museums and university partnerships, working with and for local ecologies. It is a collaboration between University College London, University of the Arts London and the London Museums Group aiming to deliver academic benefits to students and additional resources and activities for and at Museums.

Share Academy projects exemplified transformational relationships, where partners reframe issues through combining academic and curatorial perspectives. The skills of the partners were melded to create new products, ideas and relationships.

Delivery model

The Share Academy outputs were project based but utilised and demonstrated a range of methods to deliver public outputs of the cross-sector collaborations. These included;

- Joint Exhibitions
- Student Projects
- Residencies
- Creating Learning Resources
- Talks with expert speakers
- Workshops with professionals e.g. artists
- Public Debates

Project Outcomes

The *Drawing Parallels* project created the space and structure for an important and balanced debate about the collection of foetal specimens. Peckham Cultural Institute anticipated 40 participants at its panel debate but received 73. *The Keats in London* project attracted 70 or so people to each of its talks.

⁶ Share Academy Final Evaluation Report, April 2015. Annabel Jackson Associates Ltd.

Challenges

Language was a key potential barrier to the success of the project. Where museums and academics worked together on an exhibition, the museum staff invariably had to spend a large amount of time editing versions of the text to ensure it was suitable for the general public.

The different needs and expectations of the individual partners was also an issue, with the Universities tending to want to engage with creative and innovative activities. Museums usually have no shortage of ideas but lack capacity for more routine jobs like cataloguing and running events.

One of the learning points arising from the project evaluation was that Partners need to understand the specific skills and constraints of each other rather than having general notions of what can be gained from a museum or university. This means understanding and appreciating the special nature of a museum's collection; and understanding the specific learning objectives of a course or department, and what that means in terms of the skills students or academics will have or value.

One of the key findings was the issue of future sustainability of the project. Working to engage specific new audiences or groups in the community generates an expectation of further future activity.

2. Lifelong/Adult Education – Credit Based Courses

Museums may partner with providers of formal education to extend their capacity to offer more specialist and in-depth learning, including local Adult Community Education

providers, the U3A, WEA and FE & HE institutions. Universities can offer continuing education courses and these are offer credit based, given the opportunity for participants to work towards accreditation or access to other courses.

Case Study: University of Liverpool, Continuing Education

A range of Courses run from October to May/June as part of the Continuing Education programme⁷, which aims to offer learners across Merseyside opportunities to develop and extend knowledge, skills and individual potential. The courses are designed to create active learning environments which allow the participants to take charge of their own learning, with support and guidance. The sessions are credit bearing, allowing participants to build an individualised programme of learning which leads to a Formal award from the University, which gives evidence of the commitment and achievement of learners and also demonstrates the content, level and volume of teaching has been approved (at the level of a first year of an undergraduate degree). The awards available are structured so that the learners create a study pathway, but which reflects personal interests. The awards include a mandatory 5 credit introductory module. Individuals are expected to keep a record and evidence of the courses they attend and contact the Continued Education office to apply for their award/certificate.

Sessions are two hours, and courses run for four weeks. The sessions are delivered on weekdays but do vary by course by being offered as morning, afternoon and evening slots. There are special day long courses (6.5

⁷ <https://www.liverpool.ac.uk/continuing-education/credit-awards/>

hours) offered on Saturdays, advertised separately to the main programme.

Continuing Education also works in partnership with cultural institutions in the Liverpool area to offer free events for the public, used as ‘taster’ sessions to promote enrolments in the credit-based programme. These can tie in with local initiatives, events and the specialist interests of partners (e.g. local history groups).

3. Accredited Learning in Museums

Few museums currently offer accredited learning. Accredited courses for adults are offered at the V&A⁸ which offers work based vocational qualifications in museum and cultural studies, working with the National Apprenticeship Scheme and the Kensington & Chelsea College. Employability and developing the skills of local young people and the long term unemployed are key aims of the Hull: Yorkshire’s Maritime City project, which is recruiting for a Museum Accredited Learning Officer. The role will be responsible for developing maritime heritage-based programmes with local learning providers and providers of apprenticeships and work experience.

There are examples of learning programmes aimed at children and young people, which have been developed with an element of accredited learning.

Case Study: Talking Objects Collective, British Museum⁹

The Talking Objects Collective is a programme for young people aged 16-24, encouraging participants to explore the stories of an object in focus in a creative project which develops

personal, professional and employability skills. The project relies on partnership working, with organisations which offer formal accredited learning.

The programme is based upon a self-directed and personalised informal learning model, but ultimately is designed to support the participants accredited learning. This developed from the original programme aim, to introduce participants to contemporary issues through the stories of objects. It shows the different connections which one object can make, with groups focusing on the Lewis Chess-men working towards accredited courses such as Diploma in Jewellery Manufacture, BTEC Creative Media a referee/coaching qualifications.

Participants take part in six – eight sessions over a period of months, with sessions tailored to the needs of the groups. There is an initial ‘Inspiration Day’ to introduce the story of the object, followed by a series of object focused, skill development sessions.

One of the particular successes of the programme has been the target of working with young people who are re-engaging with education or at risk of falling out of education and employment. Informal learning in museums can start to break down barriers for young people, which may be found in traditional formal learning settings. The model of engagement of Talking Objects has shown that informal learning can complement formal learning, while encouraging new audiences to engage with museums.¹⁰

⁸ www.vam.ac.uk/content/articles/q/qualifications-at-the-v-and-a/

⁹http://www.britishmuseum.org/about_us/community_collaborations/partnerships/talking_objects.aspx

¹⁰ <https://www.anewdirection.org.uk/blog/informal-object-based-engagement-and-formal-accredited-learning>

Case Study: Arts Award, Trinity College London and Arts Council England

Arts Award is an arts-based qualification for young people up to the age of 25, which can be offered by any youth organisation and training courses are delivered in becoming Award Advisers and Assessors. Venues can become Arts Award supporters or Arts Award Centres which more actively deliver the programme.

Participants gather evidence of their course work through the format of a logbook or online learning record. The evidence needs to be moderated before a certificate can be awarded, and this has a cost per individual varying dependent on which of the five levels is being assessed (ranging from £3.75 for Discover level to £40 at Gold level). To achieve the Awards, participants must complete a recommend number of guided learning hours plus independent learning hours for the more advanced levels.

Many museums have embraced Artsmark and Arts Award as a way of strengthening their relationship with local schools. But one of the key challenges for museums is being about to afford the time and costs of both the initial staff training and the delivery of the programme, with the Advisor training costing between £125 to £197 per staff member. Many venues try to build the costs of offering Arts Award into external funding bids for one off programmes of activity which has not been a sustainable model. powerful combination of their expertise, buildings and collections.

Another significant issue with museums delivering Arts Award is the difficulty of integrating it into established formal and informal learning programmes, which are able

to engage with larger groups of children. There is also the challenge of language and a focus on art and artists, which may not correspond with the objects, stories and experiences all museums offer visitors.¹¹

However the Bridge organisations, which promote and support Arts Award delivery report that the clear structure and accredited outcomes of the Award does fit well with priority of one it its key audiences in schools.

Case Study: Children's University

Children's University is aimed at 5-14 year olds to encourage participation in new experiences, developing new interests and acquiring new skills beyond the school day. This includes museum visits alongside after-school clubs and volunteering. Participants are rewarded with credits, certificates and a 'graduation' event. The children become members of the CU and use a 'Passport to Learning' to collect stamps from assessed CU Learning Destinations to record their learning. An electronic passport has been developed. There are various award levels, starting with a Bronze certificate for 30 hours of learning. The programme is funded by the Education Endowment Foundation with the aim of contributing to improving pupil attainments and develop social skills such as confidence.

2. Climate Change Education

Case Study: Special Collections, Manchester Metropolitan University

The Special Collections at Manchester Metropolitan University are a learning resource acquired to support teaching at the University through object-based learning. This includes using objects in sessions focusing on Global Citizenship and Sustainable Development, in which climate change is one of the themes explored. This is delivered by

¹¹ Now and the Future: A review of formal learning in museums (2016). Arts Council England.

the Education for Sustainable Development Co-ordinator and MMU Special Collections Education and Outreach Officer.

The objects used as a basis for these sessions are part of the Process and Material Innovation Collection, comprising objects made within the last five years collected due to the material or method of production being innovative or experimental. Objects are used in a half day workshop about Sustainable Development which is regularly delivered to students studying Science Communication. The workshop is made up of theoretical study and research, followed by practical application of knowledge in creating exhibition panels for each object, aimed at a family audience. Students are given minimal information about the individual objects, but the workshop begins with the context of global Sustainable Development issues through film and discussion groups. In this way, the workshop is an enquiry-based session and is dependent on the skills of the facilitator to develop an atmosphere of co-creation of knowledge, rather than a more traditional student-teacher relationship. The objects are everyday items, carefully chosen for their potential to tell stories about Sustainability either through the material used, the ideology behind it or the business model used in its production.

Storytelling and the use of everyday familiar objects, are a key aspect of the success of the workshop. Adapting the workshop where required, to meet the needs of the specific audience is also a required skill of the facilitator; with the enquiry-based model suiting Arts and Humanities students more so than students studying Science subjects.

Workshops on Sustainable Development linked to students' research projects have also been delivered for members of the public at the Whitworth Art Gallery, particularly using

the outdoor spaces and plants and other natural objects. A model of 'systems thinking' worked best with the public audiences at the Gallery, posing a 'big' broader question to engage people on the global impact, then beginning to focus learning on local and personal issues to demonstrate real time relevance. This has been particularly successful when using functional objects to which people can relate or can clearly see an impact on their day to day life.

Case Study: Manchester Environmental Education Network (MEEN)

MEEN works with local Primary and Secondary schools on a project basis and as part of their programmes deliver aspects of learning about climate change and greenhouse gases. Often this is linked to the Ecoschools agenda. Session structure echo the CL training programme, with three delivery elements; Learn, Practice and Share. Interactive sessions work particularly well with children, and there is a delivery package but this is usually adapted to meet the specific needs of the school and interests of the participating pupils. This has ranged from role play and drama demonstrating global warming to geography-based activities mapping the global locations of fossil fuel reserves.

Activities are always child-orientated and designed to start conversations. Peer to peer learning is an important aspect of MEEN's approach, with children taking on the role of 'teacher' to share their knowledge. This child-led approach has been very successful in public family focused events held in schools as part of their MEEN project.

4. Digital Technology in Museum Learning

One of the key advantages of using digital platforms is the ability to spread ideas and

stories to a much wider audience through use of digital tools (for creative activities or to play games using museum content) or digital services to deliver museum resources and learning (Google Cultural Institute, Historypin, MOOCs). This has included successful national and regional online collections of object stories through projects such as the British Museum's 'Teaching History in 100 Objects' and the 'A History of the North in 100 Objects' led by Tyne & Wear Archives and Museums. The flip side of this however is that many visitors to museums are looking for a space to 'escape' or 'digitally disconnect' and engage with real objects.¹²

Case Study: Historic Royal Palaces MOOC

One of the drivers in changing informal learning in museums is technology and new digital possibilities, which can give more access to more learners without the need to visit museums through online courses, webinars and MOOCs (massive open online courses) which are open to all and usually are free of charge. The Historic Royal Palaces developed 'A History of Royal Food and Feasting' a MOOC available on FutureLearn (the Open University platform) as a means to provide content to engage new audiences with their stories. The object of the course was to reach a large and global audience, who had not visited the palaces. The MOOC was successful in this, with 13,000 registrations for the course. The key to the success of developing the MOOC was the inclusion of opportunities for the learners to participate such as recipes to try, videos, quizzes and the ability to make comments. One of the key benefits was the ability to tell stories which could not be told onsite during a visit to the palaces. Linked to this, both qualitative and

quantitative feedback on the course suggested it did not discourage visits to the palaces, with 85% of course participants saying they felt inspired to visit following the course.¹³ One possible use for MOOCs is through the concept of Flipped learning, which provides a way to combine digital and museum-based learning. Providing learning materials before the course so that participants can prepare and so use the class-based time for discussion and deepening understanding is the principle of 'flipped learning'.¹⁴ This may able help to address one of the challenges for delivering a science-based course to adult in the disparity in the level of education and scientific background.

Digital Open Badges

There is also the ability for learners to shape and record their learning through digital badges. These virtual badges can be awarded to recognise acquiring new skills or knowledge through employment, education or lifelong learning and stored within a virtual 'backpack'. They provide a method of accreditation to replace paper-based certificates. The badges are designed for participants to be able to display them on the web e.g. on blogs or social media accounts. One of the advantages which Open Badges provides for museum learning is the ability to build up a record of informal learning and skills development, particularly useful for those wishing to demonstrate skills to potential employers. Many Universities, including the Open University now offer Open badges, often linked to completion of a MOOC or of extracurricular activities.

¹² museum-id.com/informal-learning-museums-opportunities-risks-gina-koutsika/

¹³ museum-id.com/moocs-and-heritage-storytelling-for-a-global-audience-by-katherine-biggs/

¹⁴ www.heacademy.ac.uk/knowledge-hub/flipped-learning-0

Stakeholder Consultations

1. Green Museums Programme

Over the course of the programme, 50 individuals from Museums in the North West participated. As some participants moved on to work in other museums, the learning from the programme was shared both within and outside the region, however embedding it within organisations was one of the main challenges for the programme. Often there was a single point of contact and not a wider organisational 'buy in'. Key contacts were often mid management level and not always decision makers. So, one of the key learning points of the project was to incorporate training for advocating for participating and continuing the programme with senior management.

Capacity within smaller museums was a significant challenge, particularly for gathering baseline energy data and time for attending training sessions which were 2 or 3-day

courses. Webinars to deliver bespoke elements of the course were a very useful tool in mitigating the problem. One of the benefits of the Carbon Literacy training is that it is only a one-day commitment and has an element of flexibility with the ability to complete half the course online.

Environmental Sustainability is a core priority for Manchester Museum and a big part of their activity, but this is not the case for smaller museums in the Greater Manchester area who are likely to have different pressures, priorities and diverse target audiences. Greener Museum partner museums remain enthusiastic about working more sustainably, which may have the advantage of continuing the money saving aspects of the original programme. However smaller museums participating in a larger programme may need additional financial support in order to take part, particularly if a standard of delivery needs to be met. Making funding available would be an incentive.

Key Points;

- A flexible training approach worked for museum staff taking part in training, which potentially would work best for visitors too.
- Training across multiple 'centres' in a collaborative programme would help reduce the capacity pressures for smaller venues. Creating the need for additional travel does not fit with the principles of the Carbon Literacy programme.
- Support and training for partners, should, where possible, also engage with decision makers particularly to encourage working sustainably to be embedded within museum planning.
- Museum objects are able to unlock unexpected stories and with a wider network of museums involved there is potential to create a collective educational resource using a very diverse range of collections. This could potentially form the basis of an online catalogue or E-training resource.
- Some potential partners will have collections which may easily lend themselves to interpreting Carbon stories. However, factoring in additional support or guidance to help museum staff unlock the links to climate change and carbon footprints in their collections would be extremely beneficial. This may take the form of case studies, peer support or introductory workshops.
- The model needs to work with venues where there is limited staff capacity for development work. One mechanism of reducing additional work for staff at smaller centres is through providing professional designed materials or templates which can be edited and printed by partner venues according to their bespoke requirements. Ideally these would be low maintenance and semi-permanent.
- Small and independent museum may well look to their volunteers to lead and deliver the carbon literacy programme. Volunteers require specific training aligned to their needs and circumstance.

2. Carbon Literacy Project

The Carbon Literacy Trust was formed in 2013 by Cooler Projects CIC, as a collaborative project for the benefit of the people of Manchester. The Trust is now a Charitable Incorporated Organisation with the aim to “*advance the education of the public in the conservation protection and improvement of the physical and natural environment*”. This is delivered through sharing Carbon Literacy, currently through a sector specific, workplace training programme, education institutions and for organised community groups.

Carbon Literacy Training

The training involves a day’s worth of learning (approx. 7 hours) and has been designed to be interactive and cater for all learning styles. There are four CL Learning methods, which provide the structure for the course delivery;

Local or Social Learning

Course content is linked to the participants environment, to maximise the relevance to the individual participant.

Delivery by Peers

Course trainers are currently from within the same sector as the course participants, maximising the relevance of the session to both individual and workplace carbon footprints.

Group Enquiry

Participants are encouraged and supported within a group scenario, to apply their new learning about climate change. To become certified as Carbon Literate participants must create both a personal action to reduce their individual carbon footprint and a group action to involve other people in reducing the collective footprint of a workplace, community or place of education.

Positivity

The focus of the session is to empower

participants to take action. The trainers provide the information and support participants to respond to it positively with practical ways that the participants can contribute to, or advocate for, reducing greenhouse gas emissions.

To achieve the Carbon Literacy certificate, participants must attend the days training, pledge their personal and group action and demonstrate that they meet the Carbon Literacy standard, which is;

An awareness of the carbon dioxide costs and impacts of everyday activities and the ability and motivation to reduce emissions on an individual, community and organisational basis.

Currently evidence of achieving the standard is provided through a combination of a participant details form, which records information about the individual and the group pledge made, and the feedback of the session Trainer. This is moderated by Cooler Projects CIC on behalf of the Carbon Literacy Trust. If successful a certificate of Carbon Literacy is issued to the participants electronically.

Peer to peer learning is currently a central element of the training model, with trained professionals from the same sector delivering training sessions. In this way the training costs are kept to a minimum. The current model for funding the Carbon Literacy accreditation is through the charge for moderating and administration of the certification. This is a scalable charge dependent on the organisation going through the training, with larger businesses paying more. The charge for educational institutions is currently £10 per certificate, for 100+ participants.

Key Points;

- There is flexibility in the structure and delivery of Carbon Literacy training to meet the needs of the learners and work in the Museum environment, although participants will need to progress over more than one session to achieve the Carbon Literacy Standard.
- Before any additional display, event and staffing costs the programme will cost the CLC a minimum of £10 per participant. There may be potential for a franchise or licence-based system designed to best accommodate smaller host venues as CLCs.
- Previously there have been no large-scale bids to potential funding bodies or discussion with potential corporate sponsors. In a sustainable model going forward the costs would be covered without additional external funding being required.
- While the certificate validates their learning, participants really value the Carbon Literacy programme as being part of 'something bigger' working towards a common goal.

Course Content

The current course structure is based upon dividing the day into sections exploring Knowledge, Values and then Action (see Appendix 1 for a full outline). Some of the elements of learning are 'core' and some customised and relevant to the learner. Knowledge involves delivering the scientific research and evidence for climate change, the impact of increasing global temperatures and the role of carbon emissions and other greenhouse gases in contributing to this. Understanding the scale of this impact and the impact a 2-degree temperature can have on the environment, is one of the key challenges for trainers.

The Values section gives the trainer opportunity to make clear links to the sector the participants work in and how the training can have relevance to make real changes through real life inspirational case studies. For some organisations this can be linked to strategic priorities around sustainable working but for others it can be more fundamental and linked to how to save money on energy. For individuals there is potential for some career development benefits – with employers such as the BBC and ITV placing more value on employee understanding of sustainable working during recruitment processes.

The final section in the day is Action and is at the core of the purpose of the Carbon Literacy programme. This is the section where participants work together to generate their own ideas for how they can make an impact through the personal and group pledges. The role of the trainer is to encourage a higher level of ambition through conveying the scale of what individuals can achieve and what a collective could achieve. The emphasis of this section can vary depending on the participants, from more practical physical

suggestions (turning off lights) to the strategic differences which organisation leaders can make through their influence. Trainers report an obvious shift in participant attitudes throughout the day, from an initial reluctance to leaving inspired to make positive changes. An informal survey carried out by the CL trainer within the BBC offices in Manchester indicated that the majority of staff members (97%) trained through the CL programme continued to be affected by their learning and endeavouring to make everyday changes after three months.

There is currently no formalised centre means of follow up support for alumni of the CL programme. However, there are smaller networks which have arisen from within the sector-based training sessions. There is a need for a post training support/engagement to maintain the commitment to the long-term life style changes made by the participants. Museums and cultural venues could play an important role in maintaining the carbon literacy momentum.

The course constitutes a days' worth of learning. This is currently delivered as either;

- Full day (8 hour) facilitated course.
- Two sessions:
 - 3.5 hour 'Knowledge' online training module
 - 3.5 hour facilitated 'Values' and 'Action' focused workshop.

At Manchester Metropolitan University, CL training is delivered through the School of Science and the Environment to undergraduates, in two modules. While the e-learning module was thought to be of a high standard and easy to use, the trainers found that most participants (~75%) did not complete it. This was attributed to the three hours needed to complete the sessions as being too daunting. The trainers also felt that the emotional impact of the CL training is a vital element of the course, and this is not successfully achieved online. In order to improve completion rates the University now uses a screening of the recent documentary film *Before the Flood* in place of the online module. To reinforce the scientific information and ensure participants meet the CL standard, a short factual film on climate change is shown ahead of *Before the Flood* and a short, facilitated discussion follows to test participant understanding of the impact climate change is having now and gives current and potential solutions.

Participant Feedback

Overall, the previous participants of the CL training consulted were very positive about the course. The volume of information delivered during the course was a common theme in the suggested improvements; with many participants suggesting that they would have liked more interactivity during the day or more time in-between the sessions to reflect on their learning and consider life style changes before making their pledge.

Feedback from the CL training courses delivered at the BBC in Manchester;

Interested in Policy/what the Government are doing
More information on day to day relevance for the workplace
More people taking part on the course
Would like more significant commitments made
Content hard to follow
One-hour taster courses as well as the day long courses
Perfect!



*It's about making it
loud and clear that
climate change
affects everything.
The solution needs to
involve everyone.*

Key Points;

- Training needs to assume participants have no prior scientific knowledge and no understanding of climate change.
- The content is best received by participants where the relevance to them, their everyday lives and their values or beliefs is made very clear, including the practical ways to make changes in their carbon footprint and sharing this knowledge with others.
- A modular approach would reduce the risk of overwhelming participants with information and allow time between modules to absorb, reflect and think.
- Being about to move around and be more active would work very well for some participants.
- The topic is very emotive and can have a very profound effect on people. In a group scenario the trainer can create a supportive and nurturing environment. The online element of the course may risk the loss of this emotional journey.
- Targeted activity for specific audience groups may be most effective.
- A peer led delivery model may be difficult to sustain with traditional museum visitors, who may have expectations of Museums as reliable centres of knowledge, with specialists and expert researchers and curators.
- Investment of time and resources in marketing for the training will be a significant factor in its appeal to new audiences and in take up for events/opportunities. This may involve creating a bespoke branding for the museum, creating a new strand of 'Carbon Literacy' using a new term which is more in line with appealing to a general, public audience.
- Where possible, the training should 'model' the vision of the Carbon Literacy Programme and be as low carbon as possible.

3. Museum Development North West Training and Support

MDNW is a Carbon Literate Training Organisation, a scheme which was launched in 2017. MDNW runs a museum specific Carbon Literacy training for North West museum staff and other cultural organisations.

Training Course Feedback

From a sample of 83 participant Feedback Forms from the Museum sector, feedback on the course has been very positive.

Course Content and Delivery

- 89% said the course was enjoyable
- 91% found it inspiring
- 92% believed the content was pitched at the right level
- 93% thought it was well conceived
- 94% rated the course as well organised

Inspirational and motivational

Enjoyable and important workshop

I learnt a lot more than I thought I might, I thought I knew more beforehand

Brilliantly put together and delivered

Very good and varied presentation with a lot of preparation by the trainers

I think you covered an awful lot, it was amazing

Course Relevance

- 92% thought the course was a good use of their time
- 93% thought the course was relevant to them
- 94% gained ideas they could use in their work

- 98% found the course to be useful

Very useful and applicable to one's job and private life.

A good opportunity to share learning and ideas with colleagues.

Advocacy

The majority of participants planned to share their learning beyond the course, and many cited friends and family in addition to work colleagues. Only 15% of respondents indicated they would share the learning with museum/venue visitors, which could indicate that participants were focused on individual action and changes at home and work rather than the wider potential advocacy and influence of Museums.

Participant Suggestions

Participants comments tended indicate four areas for possible improvements to the course;

1. **Course Structure** – Reducing session length.
2. **Content** – Include more information on positive action/developments to balance the scientific information.
3. **Activities** – Simple activities with clear instructions and outcomes.
4. **Actions** – Increased focus on providing support and advice on potential individual actions.

What worked best about the training was the active engagement, learning how to do something positive.

Participant Feedback

1. Course Structure – Reducing session length

Comments suggested that shorter sessions possibly delivered over two days might be a preferred option.

It was quite a long day.

Thought event should be a half day, enjoyed the first half more.

Quite long before first tea break. Good pace of activities. Quite a long day but I can see you were trying to pack in a large course into a shorter stage.

May have been easier to fit into 2 x 1/2 days but can see the benefit of full day.

Great info, could poss. have been squeezed into a 3.30pm finish.

2. Content – Include more information on positive action/developments to balance the scientific information

Positivity is one of the key learning methods of the course and some of the received suggestions indicate that emphasis on positive actions could be further incorporated as a theme throughout the day.

Too much emphasis on doomsday scenarios - this is demotivating.

Would have liked more information on alternative energy sources.

More positive e.g. of actions.

More information about the repercussions.

3. Activities – Simple activities with clear instructions and outcomes

Activities which suit a range of participants with different backgrounds, learning styles and interests is particularly difficult when there is not a common interest such as workplace. However from the Museum sector feedback there were some comments which suggested simple activities, linked to real life practical examples were preferable.

Confusing activities, too many, too long, not super engaging.

Make some of the activities more relevant to own life/draw on experiences.

There were enough activities throughout the day to break the info up.

Resistant to role play.

Explanation of some of the exercises a bit confused but all ultimately interesting/useful.

4. Actions – Increased focus on providing support and advice on potential individual actions

Feedback suggested participants particularly enjoyed thinking about personal changes at work but also in day to day home life but that this was an element of the course where there was potential to invest more focus on practical suggestions, examples, advice and discussion led by the facilitator.

Increased my desire to act but still struggled to decide on a pledge and how effective/sustainable it was.

Would have liked more advice on actions I could take.

Use less paper! For forms etc. More examples of simple actions anyone can do. Local examples of sustainable actions.

More about actions and the impact of actions.

Tips for things you can do to help reduce carbon dioxide.

Specific changes you can make and how they impact in a collective way. I like the maths of it all.

4. Public Engagement at Manchester Museum

Existing Museum Audiences¹⁵

Visits to Manchester Museum have been increasing, with 417,769 visitors in 2016/17. The average dwell time in the Museum is 2 hours 10 minutes, but family groups tend to spend 30 minutes longer on visits. A high proportion of visitors are in family groups, making up 65% of all visits. In line with this, there is a comparatively large segment of visitors aged 25-44, most likely to be the age range of accompanying parents/carers. There is also a relatively high proportion of young adult visitors, with 16% of visitors aged 16 – 24. This is likely to reflect the large student population of Manchester (one tenth of the resident population are students).

The motivation for the majority of visit was Social (to spend time with family and friends) or Child Centred (to stimulate, education and entertain children), which would seem to concur with these two-identified key audience for the Museum. 54% of visitors are on repeat visits.

Audience Spectrum segmentation, as used by the Arts Council, describes how people engage with arts and culture. At Manchester Museum 23% of visitors are *Experience Seekers*, likely to be highly engaged young adults looking for a social experience. Reflecting the high proportion of families, 15% of visitors are *Dormitory Dependents* and 14% are *Trips and Treats*. Both groups represent families who will be moderately engaged with the Trips and Treats group particularly influenced by child interest. A key segment for the Museum is the 15% made up by *Facebook Families*. This group tend to be less engaged in arts and culture. The high

proportion of visitors to Manchester Museum by this segment could reflect the diversity of visitor socio-economic backgrounds, with 46% of visitors from the C2DE socio-economic groups which traditionally are less likely to visit Museums.



Exhibition Programme

As part of its mission to promote civic action and engagement the Museum uses special exhibitions to connect people with contemporary issues that affect their lives; provoking discussion and positive participation. From May – September 2016 the Climate Control exhibition attracted 98,000 visitors who were encouraged to share thoughts, ideas and potential solutions for how to begin to tackle the causes and challenges of climate changes. This positive approach to connecting people with the natural world and to inspire action rather than dishearten, is also key to the development of the permanent galleries such as the Living World exhibition.

Social motivations are really important at Manchester Museum: almost two fifths (39%) say that their main reason for going to the Museum is to spend time with their friends and Family.

¹⁵ Data taken from the Manchester Museum and Galleries Partnership Visitor Report, April 2016 – March 2017

Formal Learning for Schools

Formal Learning at the Museum for schools and post 16 institutions is very popular, with demand for the Primary school workshop programme outweighing delivery capacity. The current school provision has included activities relating to endangered species and habitat loss as part of a *Rainforest Investigators* workshop.

The Museum has worked with and or helped with the training of 176 teachers 286 trainee teachers, 56 ESOL tutors, all mainly at the primary level with a focus on areas of the curriculum they are not familiar with. Engagement with Secondary School/Post 16 students has been most successful on a project basis and where there is opportunity for young people to engage with Experts at the Museum and from the University. 68,000 University students visited the Museum in 2016/17 and 169 course modules were linked to the Museum collections.



Family Learning Programmes

For families the core offers are school holiday activities, targeted programmes with groups, Magic Carpet sessions aimed at 0 - 5 year olds and a programme of monthly themed drop in Saturday event. There are popular annual themed 'Big Saturdays'. 73,555 people engaged with family learning in 2016/17, of which 18,253 were adults. Many of these offers are participatory e.g. crafts, workshops, performance, talks and workshops and most aim to engage and entertain.

Adult Learning

Adult Learning at the Museum is also based around informal learning opportunities, particularly focusing on providing social experiences with the 'Museum Meets' programme of events. More formal sessions have been offered for specialist groups such as the U3A and the Urban Naturalists, as well as structured Egyptian Day Schools. In 2016/17 3,366 adult learners participated in activities and programmes at the Museum, related to the collections.

Volunteers

Volunteers are at the heart of the Museum operations and there is a collaborative and inclusive approach to the volunteer programme.

With an increase in the opportunities for volunteering the pool has increase to 236 volunteers in 2016/17, contributing 13,245 hours to the Museum. One of the roles which new volunteers were recruited for was to manage object handling opportunities on gallery and to use specimens to spark discussions with visitors, including on the issue of climate change.



Key Points;

- The Carbon Literacy programme is an excellent fit with the mission and values of Manchester Museum and its role in promoting civic engagement and action.
- In terms of reach for the CL training, there is a large existing potential audience and the model should primarily be tailored to current audiences.
- There is a lot of existing educational work to a range of audiences. Carbon Literacy could be offered as an option to these groups within the existing structure and programmes.
- There is a strong adult learning informal programme, so there is an established potential audience base. However this audience may already have scientific knowledge and an understanding of environmental issues.
- There is the potential to reach a large and diverse new audience who would not engage with Carbon Literacy through the workplace or through other means, particularly if the training fits with the current visiting patterns and can cater for; family groups learning together or for young adults looking for social activities.
- There is a high propensity for repeat visits which may work well for offering a modular based course over a longer period of time.
- The Museum has a social role in providing opportunities for those with disabilities or other potential barriers to physically accessing the Museum, so sessions ideally will be inclusive or be adaptable to encourage engagement.



Developing a Model for Carbon Literacy Centres

Museums can both offer a self-directed learning experience through their exhibitions and collection displays as well as delivering a varied range of facilitated learning activities, and this is one of the key strengths as a venue for 'informal' adult and intergenerational learning programmes. They are also potentially 'neutral' venues for other education providers to use.¹⁶

Museums use the terms Formal Learning (usually to describe school programmes) and Informal Learning (learning which is non-intentional through activities which do not have specified learning objectives).

The CL training is likely to be best described as;

Non-Formal Learning, or 'adult education provision occurring outside the formal school system, usually short-term and voluntary, involves a tutor or facilitator, usually some kind of curriculum, sometimes offers certificate at the end but this is incidental to the learning or activity (e.g. evening classes).'

Museums are part of a community and provide a non-threatening place to empower learners which opens the opportunity to work with community groups, groups with additional needs and particularly for the CL programme the chance to engage with new audiences.

The Museum Association Discussion Paper *Museums 2020* (July 2012) identified several key functions of museums which chime with

¹⁶ www.museumsassociation.org/policy/01062008-informal-adult-learning-shaping-the-way-ahead

the CL project and for which there was a positive response from the sector¹⁷; particularly 'Making a Difference to the Environment', which recognised the potential for making stronger connections between the preservation of museum collections and protecting the natural world.¹⁸

As well as showcasing the work being done in Museums to operate in a more sustainable way, Museums can also promote awareness of environmental issues through showing alternative ways of living through the material culture of different societies or from past generations.



¹⁷

<https://www.museumsassociation.org/campaigns/museums2020/23072012museums2020-consultation>

¹⁸ www.museumsassociation.org/download?id=806530

1. Manchester Museum

Understanding the Audience

1. Values

The Common Cause Foundation conducted a survey of over 1000 residents across Greater Manchester about their values¹⁹. 85% of people attached a greater importance to ‘compassionate’ values (e.g. social justice, environmental protection) than ‘selfish’ values (e.g. wealth, social status). People with compassionate values are more likely to express concern about environmental issues such as climate change. The research also revealed the tendency for older people (55+) to place more importance on compassionate values. Younger people (18 – 24 year olds) were more likely to hold ‘selfish’ values. The conclusion of the survey results was that a Perception Gap exists, where residents tend to perceive that their fellow citizens attached less importance to ‘compassionate’ values than they do personally.

Key Points;

- Older residents may be more predisposed to take part in civic action such as CL training, based on their compassionate values.
- The design of the course should make the most of the unique atmosphere of learning in Museum settings and the potential in the resource of the collections to engage the interest of new audiences.

2. Newsletter Survey

A survey link was sent out via the of the Manchester Museum newsletter and the regular MDNW blog. The survey received 87 responses. The profile of the survey respondents is detailed below, which indicate most respondents were highly educated, with 87% being University graduates.

Respondent Profile

- 87 Responses – only 1 said they were unconcerned about climate change
- 76% Working, 17% Still in Education
- 54% Held qualifications above a first degree
- 9% Held Secondary School or Vocational qualifications as highest level of qualification
- 71% Female
- Most had not participated in adult learning at the Museum

Respondent Knowledge and Interest

- 97% were interested in finding out about climate change and how to reduce their carbon footprint
- 48% thought training was necessary to understand the issues of global warming
- The Majority showed a good understanding of the phrase ‘Carbon Literacy’
- More than half of the respondents were not aware of Manchester’s target to reduce its carbon footprint (59%)

Motivation to Participate

Learning about the impact locally and what action could be taken to live more sustainably

¹⁹ Common Cause Foundation research - <https://valuesandframes.org/greatermanchester/>

were both important cited motivations in considering doing the training.

Responses;

- Environmental
 - Contribute to environment sustainability (85%)
 - Reduce my/my families carbon footprint (74%)
- Local
 - Impact/work being done in home environment (80%)
- Personal
 - Ways to Save Money on Utility Bills (64%)
 - Educate other adults about the environment (53%)
 - Educate my children about the environment (34%)
- Museum Learning
 - Find out about museum objects (43%)

Course Format and Structure

76% of respondents were willing to pay an event charge in line with the duration of the course, with the majority of respondents (95%) favouring shorter sessions of 4 hours. There was a small preference for the training being completed alongside work colleagues.

- Audience Group
 - 58% of respondents would like to do the training alongside work colleagues
 - 51% said they would attend with friends and 36% with family
 - 42% would attend the training as an individual
- Duration
 - 60% would spend 1 – 2 hours on activities, with 35% prepared to spend 3 – 4 hours at events.
- Cost
 - 28% were prepared to pay between £5 and £10 per event

- 19% would spend £1 - £5 and 20% would spend more than £10
- 24% did not want to pay

Potential Activities

There was most interest in activities which are clearly linked to the museum learning environment, using the displays and objects as the focus of the sessions. The majority of respondents also identified with the pledge being a key part of the training, with 88% interested in making their own commitment.

- Museum Based Activities
 - Extra Museum Displays - 92% Interested
 - Museum Trail/Guide - 87% Interested
 - Object Handling - 85% Interested
 - Guided Tours - 76% Interested
- Based on Current CL Training
 - One Day Formal Training - 70% Interested
 - Classroom Based Talks – 65% Interested
 - Online Learning Modules - 78% Interested
 - Making a Pledge - 88% Interested
- Creative Activities
 - Arts and Crafts – 67% Interested
 - Drama and Creative Writing – 46% Interested
 - Activities with Children – 58% Interested

Action

Although there was significant interest in making a pledge, there was less interest in earning a certificate as part of the training, although more than half of the respondents were still interested in this. Some of the respondent's comments revealed the belief that a demonstration of completing the course was 'showing off' rather than a method of advocacy, to raise awareness of climate change action. There was some

interest in ways to access post training support.

- 65% were interested in gaining the Carbon Literacy certificate
- Other ways to demonstrate Participation
 - Email signature logo – 49% Interested
 - Social Media Supporters group – 35% Interested
 - Membership programme with follow up support – 33% Interested

Key Points;

- Museum based informal learning activities were most appealing, but the motivation for the learning was more likely to be learning how to live more sustainably than finding out about the museum objects.
- Taking action, in the form of the pledge to make a change, was of significant interest as one of the training activities.

3. On Gallery Survey

To capture a more representative sample of the Museum visitors, on gallery surveys were conducted with 19 visitors.

Respondent Profile

- Only 1 respondent said they were not concerned about climate change
- 95% Working, 5% Still in Education
- 32% Held qualifications above a first degree
- 33% Held Secondary School or Vocational qualifications as highest level of qualification
- 52% Female

Respondent Knowledge and Interest

The majority of respondents showed some understanding of the phrase 'Carbon Literacy', although answers tended to be more general about the environment than focusing on greenhouse gases and climate change.

Motivation to Participate

Environmental and local motivations were again the most cited for potentially signing up for the training. Finding out more about the museum artefacts were the least cited motivation.

Responses;

- Environmental
 - Contribute to environment sustainability (63%)
 - Reduce my/my families carbon footprint (58%)
- Local
 - Impact/work being done in home environment (63%)
- Personal
 - Ways to Save Money on Utility Bills (37%)
 - Educate other adults about the environment (32%)
 - Educate my children about the environment (26%)
- Museum Learning
 - Find out about museum objects (26%)

Course Format and Structure

89% of respondents were willing to pay an event charge and 94% favoured sessions shorter of no more than 4 hours. There was a preference for the training being completed alongside friends or as an individual.

- Audience Group
 - Only 5% of respondents would like to do the training alongside work colleagues

- 42% said they would attend with friends and 10% with family
- 37% would attend the training as an individual
- Duration
 - 72% would spend 1 – 2 hours on activities, with 22% prepared to spend 3 – 4 hours at events.
- Cost
 - 64% were prepared to pay between £1 and £5 per event
 - 11% did not want to pay

- 68% were interested in gaining the Carbon Literacy certificate
- Other ways to demonstrate Participation
 - Badges, signs – 53%
 - Email signature logo – 27% Interested
 - Social Media Supporters group – 33% Interested
 - Membership programme with follow up support – 27% Interested

Potential Activities

- Museum Based Activities
 - Extra Museum Displays - 88% Interested
 - Museum Trail/Guide - 87% Interested
 - Object Handling - 84% Interested
 - Guided Tours - 88% Interested
- Based on Current CL Training
 - One Day Formal Training - 81% Interested
 - Classroom Based Talks – 65% Interested
 - Online Learning Modules - 78% Interested
 - Making a Pledge - 88% Interested
- Creative Activities
 - Arts and Crafts – 83% Interested
 - Drama and Creative Writing – 76% Interested
 - Activities with Children – 50% Interested

Action

In line with the newsletter survey, there was significant interest in making a pledge (88%), there was slightly less interest in earning a certificate as part of the training. There was some interest in ways to access post training support, but the certificate was still the most popular way to evidence the learning.

Key Points;

- The most cited potential motivators for taking part in the training were ‘active’ – how to contribute and what can be done to reduce carbon emissions, rather than more passive reasons such as learning more about museum displays.
- However in terms of delivery of the information respondents were interested in making the most of the location with extra museum displays and object handling being particularly popular (only 6% of respondents not interested).
- Most respondents were interested in short events of 1 – 2 hours and were willing to pay for the activity.
- In contrast to this, there was still interest in a formal day course.
- Museum based activities were most popular, however there was

4. Family Focused Interviews

As the Museum's biggest audience, face to face informal interviews were held with family visitors to the Museum, during one of the Big Saturday sessions. The profile of the family respondents is detailed below.

Respondent Profile

- 18 Interviews – 17% said they were unconcerned about climate change
- 61% Working, 22% Not Working, 17% Retired
- 55% Held Secondary School or Vocational qualifications as highest level of qualification
- 72% Female

Respondent Knowledge and Interest

- 89% were interested in finding out about climate change and how to reduce their carbon footprint.
- The majority did not understand the phrase 'Carbon Literacy' or think it would appeal to a family audience. Suggested alternatives tended to be active and less specific;

Looking after the Planet
Stop the Climate Changing
Saving the Planet
Green Planet Families
Saving the Environment

Motivation to Participate

Learning about the impact locally and what action could be taken to live more sustainably were both important cited motivations in considering doing the training.

Responses;

- Environmental
 - Contribute to environment sustainability (6%)
 - Reduce my/my families carbon footprint (11%)

- Local
 - Impact/work being done in home environment (6%)
- Personal
 - Practical activities to entertain my children (61%)
 - Educate my children about the environment (56%)
 - Ways to Save Money on Utility Bills (0%)
 - Educate other adults about the environment (0%)
- Museum Learning
 - Find out about museum objects (11%)

Course Format and Structure

88% of respondents were willing to pay an event charge in line with the duration of the course, with the majority of respondents (72%) favouring two half day sessions. Weekend activities was the most popular, with several respondents mentioning that school holidays tended to be too busy.

- Audience Group
 - 22% of the interviewed families included three generations
- Duration
 - 72% preferred two half day sessions, 17% preferred a full day and 11% favoured a series of shorter one-hour sessions
- Timing
 - 59% preferred weekends
 - 30% preferred school holidays
 - 6% would like after school events
 - 6% would attend weekday events with an under 5
- Cost
 - 39% were prepared to pay between £5 and £10 per event
 - 17% would spend £1 - £5 and 17% would spend more than £10
 - 22% did not want to pay or preferred the option to give a donation

Potential Activities

There was most interest in interactive and practical activities which are clearly linked to the museum learning environment, using the displays and objects as the focus of the sessions. About half of the families (53%) were interested in making a pledge commitment, the same amount of people (53%) were interested in gaining a Carbon Literacy certificate.

- Museum Based Activities
 - Extra Museum Displays - 44% Interested
 - Museum Trails/Activity Sheets - 94% Interested
 - Object Handling – 94% Interested
 - Guided Tours - 44% Interested
- Based on Current CL Training
 - Classroom Based Talks – 22% Interested
 - Online Resources or Games - 28% Interested

- Making a Pledge - 53% Interested
- Creative Activities
 - Arts and Crafts – 94% Interested

Action

- 53% interested in making a pledge
- 53% were interested in gaining the Carbon Literacy certificate
- Other ways to demonstrate Participation
 - Badges or stickers for children – 47%
 - Email signature logo – 18% Interested
 - Social Media Supporters group – 6% Interested
 - Drama and Creative Writing – 33% Interested
 - Self-Led Activities with Children – 89% Interested
 - Membership programme with follow up support – 6% Interested



Key Points;

- Education and entertainment for children were the main drivers in choosing museum activities.
- Active learning was clearly the most popular activity style, particularly ensuring that children were engaged without additional reading or the need for long period of concentration. Most adults were most concerned that activities were age appropriate.
- Families tended to be less interested in making the pledge and gaining the certificate than individual adult learners.



Activity Suggestions

Families with Under 5's

Singing or movement would be great.

We love making mess at the museum – as much as possible!

Smaller chunks of activity we can do in our own time with one led session would be best for our 2 ½ year old as he doesn't stay still for long!

Spotting things in the displays is good, like the nature trail upstairs.

Hands on things to do in the baby area would work for me, as I can take a day off and come along in the week.

Families with Over 5's

'Finding clues to solve a mystery is perfect and really engages kids'

'They love stories, so would love the drama and storytelling'

The children don't stop to read anything, so a fun guided tour would be great.

Anything with animals, they love..

We would definitely watch videos at home, to introduce us to the subject.

They won't look at the writing on panels, but like anything 3D or to watch short videos.

My daughter knows all about it from school, so she might be interested but it's not something I would choose to do.

Interactive is best, particularly outside – we are sad the garden is gone!

2. Potential Museum Partners

Consultations

Staff from smaller museums within the Greater Manchester area and the MDNW Development team were consulted on the potential to develop additional Carbon Literacy Centres and the issues which would impact upon the sustainability of the CLC programme.

Motivation

Those Museum staff previously involved with the Green Museums programme were very keen to continue building on the work they have already done in bringing sustainability into their working practice. Many of the staff consulting mentioned that they see museums as places of learning, as “*institutions of the facts*” with a respected voice and a responsibility to reach new and different audiences with information about contemporary issues such as climate change. In addition many of the consulted museum professionals felt that there is a social responsibility of the museum to inform their visitors about contemporary issues linked to the stories of their collections.

Benefits

The key benefit for smaller venues was viewed as continuing with work already done through the Green Museums programme and for profile raising, with the intended benefit that the extra commitment demonstrated may help to generate more funding opportunities to continue with environmental sustainability programmes. It would also be useful, where appropriate, to explore how the CL training could fit with other agendas which museums are engaging with, in particular Wellbeing and working with Older People were suggested as an area where there could be cross-over.

For some museums it was thought that Carbon Literacy training wouldn't necessarily appeal to their current visitors, but what would be of interest and potentially beneficial was the appeal to new audiences, particularly to younger adults (aged 20 – 40) who work during the week. The possibility of adding in new semi-permanent ‘carbon stories’ interpretation to current long-term exhibitions was very appealing as a way of refreshing displays and adding a new way of looking at objects.

Challenges

The two most significant barriers to involvement for potential partner museums to becoming Carbon Literacy Centres are staff capacity and funding. Although keen to be part of the project, these factors would impact on the priority for delivering it.

Other challenges identified were the risk of the subject matter being a mismatch with their current displays and how it would appeal to visitors who expect history focused experiences. An example of this was a recent activity programme around water quality at the Nantwich Museum, which was not as popular as other topics with its visitors. Smaller museums have a much shorter visitor dwell time, some the duration of some visits being only 15 - 20 minutes, so any training events or modules ideally would have to be programmed and bookable. The phrase Carbon ‘Literacy’ is potentially a challenge, in that some visitors may not immediately understand what it means and it sounds like a formal academic course which could be off putting to some.

Collections

The project was viewed as an exciting opportunity to interpret the collections in new ways or even to use their buildings. For some this was in calculating the carbon footprint of objects which had travelled but

other museums felt that this could be a big piece of work as there were no obvious collection links with carbon and climate change. All the museums felt they would benefit from additional support in recognising the opportunities for their own collections could be used, through guidance on content and topics or checking scientific content.

Audiences

In addition to individual visitors, group visits may be a potential audience to consider or target, with many specialist interest groups visiting museums as part of their learning and educational programmes, including groups which traditionally have an older membership such as the U3A and WI. Children are often an important audience for smaller museums, with families making up a large proportion of visits. School visits, particularly from KS2, also tend to be key audience and source of income for smaller museums.

Delivery Model

The museum staff consulted all clearly favoured a modular approach, which felt easier to manage both from the museum's point of view and as a mechanism for delivering learning to visitors. One of the identified possible barriers was that Carbon Literacy as course could be too big and overwhelming for many museum visitors, so breaking it down into clearly defined modules and giving participants space to reflect on their learning in between sessions would help to avoid this risk. A modular approach with a series of two-hour sessions was seen as achievable by museum staff who have already been trained as Carbon Literacy trainers.

Funding

Museums had an enthusiasm to deliver the activities and training within their means 'on a

shoestring' and felt this chimed with the values of the programme. Others felt they would need their participation and related interpretation and resources to be fully funded. Museum visitors who had signed up to the course would likely be happy to pay a course fee, particularly as most adult learning courses in museums do have a charge. But general visitors to the museum may be not willing to pay extra to take part particularly if it is seen as part of the museum visit and not as an added 'extra', and this may mean that potential participants are lost.

Support

All of the consulted venues felt they would need additional support in the form of training to apply the background science and the principle of the training course (including accurately calculating the carbon footprint of museum objects) to reflect their own collections. In order to take ownership of the programme as a Carbon Literacy Centre, museums tended to want training and resources which would allow them to deliver training in house without the cost or organisation needed to bring in external facilitators. In particular this related to engaging and training volunteers in assisting or leading on delivering the training.

*Every museum has
climate stories to tell...*



Key Points;

- Partner museums clearly favoured a modular approach.
- Training sessions or workshops to give guidance and support in developing bespoke interpretation for individual museum collections would be needed, specifically to help with identifying object links to climate change and with accurate scientific information.
- Train the Trainer sessions would be valuable for both museum staff and their interested volunteers to promote confidence in delivering the CL training to museum visitors.
- The content of the CL training would need adapting to better fit with delivery in a public venue and more specifically linked to the unique experiences offered by learning in a museum.
- Contribution to online learning platforms could be a way to involve the collections of museums unable to commit to becoming a Carbon Literacy Centre.
- Explore branding for the programme which is in line with museums as a venue for informal learning, particularly linked to the success of museums as sociable places of 'learning for pleasure' for adults. Branding should also promote the new Carbon Literacy displays and activities as an exciting reason to visit the museum contributing to the drive to increase museum visitor numbers.

Creating a Sustainable Model

Integrating into Current Programming

Manchester Museum is set to undergo a two-year capital project to create new exhibition space, as part of the Courtyard project. This will raise the challenge for delivering events for the public in that half of the current exhibitions will close and there will be reduced facilities for delivering learning. The proposed model is therefore one which should be delivered on the galleries.

Family activities are an important part of the programming of most museums, with school holidays and weekends typically being the busiest point in the week for activity. At Manchester Museum play is an important aspect of family tailoring learning by age group – the museum does clearly distinguish activities suitable for younger/older children and this would need to be considered in planning family CL training events. The current programming for families offered by Manchester Museum offer up several different ways to engage families with carbon literacy and as the family survey work indicated, utilising more than one method of activity but integrating into the current programming may be the most effective. These include trails available to all visitors, under 5 sessions, drop in Big Saturdays, holiday events and bookable workshops. Trails are recognised as being fun and accessible activities for families to complete together as they explore the exhibitions. Using family passports and gathering stickers as activities are completed has worked very well for previous events and this is something that regular family visitors may already be familiar with. Using a summer school model to keep activity focused over a shorter duration may work best to ensure family attendance, with many other competing

pressures on families in holiday periods. In addition to lining up with peak times for visitors seeking family events, linking with national events or special dates may also offer a wider reach in marketing and interest.

Museum Volunteers

Most museums have volunteers and many rely extensively on them, they are often the staff of the museum. In some museums they play a more supporting role. In both cases they could be involved in promoting and delivering Carbon Literacy. This would be particularly useful for volunteers in a front of house role where they would play an important part in the first awareness raising stage of the proposed modular approach.

If they are in effect staff then they can be trained alongside existing staff and getting them signed up and committed to the project will be vital. Small museums may have a lot of volunteers and the costs of the training may need to be supported or subsidised. It should also be noted that volunteers need to be persuaded to take part and might have different logistical requirements from paid staff.

Volunteers could play a useful role after carbon literacy training ensuring that the message and the commitment by those who have undertaken the training is kept up. They could research and disseminate current ideas, and projects from elsewhere in the city/region /and wider world. They could encourage new and further commitments to reduce carbon footprints. They could take part in the social media programme. However the over enthusiasm of a keen volunteer might need to be moderated by staff particularly checking if the science of a particular piece of news is correct.

Museum Friends Groups

Many museums also have Friends organisations and in some cases the same people are both volunteers and friends. Active Friend's groups can encourage and additional learning opportunities through their own programmes of events such talks, seminars and conferences, and may also financially support Museum or Gallery activities.

The honorary committees of these organisations could go on the training and also commit the organisation itself to reducing their carbon footprint. Friends organisations are sometimes more transactional than volunteers in that there is a membership fee and benefits from being a member. They are often involved in delivering lecture and activity programmes. Such a programme could contain a carbon literacy event/training/ inspirational lecture.

Friend's groups are often involved in fund raising and supporting extra work for the museum and they could adopt CL as an important cause to champion and fundraise for.

It would be worth looking at the examples set by the Olympics and the voluntary "Games makers" and more recently in Hull the 2017 City of Culture volunteers. Although the Olympics and a City of Culture are not exactly the same as a carbon literacy campaign there are some interesting lessons to learn, ideas to consider and some distinct similarities with the carbon literacy programme in Manchester.

The volunteers in both Hull and the Olympics were:

- Helping others to enjoy various events and facilities.
- Had a passion for their city/country.

- Had a big philanthropic motivation and wanted to help.
- Believed passionately in the cause they were volunteering for.
- They often wanted to be seen to be helping and had distinctive uniforms and identity.
- There was an extensive programme of events for them to support.
- In the case of Hull, the volunteers wanted to continue volunteering in the role beyond 2017

On a more practical note the coordination, recruitment and organisation was supported by paid staff from a "parent" organisation, in short they were not an autonomous self-administered body. They had a uniform and identity. In Hull the 2017 volunteers could be called upon by organisations with an event that they need help with. The volunteers also ran front of house and awareness raising services, e.g the information centre on the railway station. It should be noted that it was the demands of delivering the Olympics and Hull 2017 that were the driving force rather than servicing a demand for membership or even fostering an interest in sport or Hull.

Contacting the organisers of these volunteers would be the recommended first step in setting up such a group to support Carbon Literacy in Manchester.

Engaging with Businesses

Developing the training courses for SMEs, businesses and the self-employed could be a way to subsidise a public programme. The museum would offer a venue and trainer for organisations unable to take part in the current sector specific training model. This could be combined with an element of networking likely to appeal to smaller businesses. This approach may work well in

partnership with support agencies such as the Chamber of Commerce and FSB.

Federation for Small Businesses (FSB)

The objectives of carbon literacy training would fit with a number of FSB strategic objects;

- Getting 'business ready' for the next 10 years.
- The reduction of costs to business is a policy priority for FSB.

FSB supports the governments's 25 year environment plan that includes a pledge to reduce emissions.

Further areas to explore in partnership with the FSB would include;

- Marketing Carbon Literacy offer to potential business customers.
- Developing the potential to offer Carbon Literacy training for FSB members at the Museum.
- Exploring if Carbon Literacy training could be offered as a membership benefit.

Further contact would be through the FSB Development Manager for Manchester, Robert Downes.

External Funding

Additional funding would give the option to subsidise or cover the staff, resources and/or moderation costs of the accreditation. Manchester Museum is part of The University of Manchester and is a charity (number XR82062), which works to promote a sustainable world and greater understanding between human cultures. As a registered charity Manchester Museum could be the lead partner on applications to trusts and foundations.

An overview of potential organisations, with funding priorities which link to the aims of the Carbon Literacy Centre project, are given below.

Esmee Fairbairn Foundation

<http://www.esmeefairbairn.org.uk/>

Criteria Overview

Connecting people with nature and environment issues on one of the funding priorities, the Foundation supports work that excites and inspires people to get involved and make a difference or work which makes environmental issues relevant to people's everyday lives and what they care about. Applications much show how the work can be sustained beyond the grant and support both grassroots work and high-level strategic approaches to influencing the wider sector.

Application Details

The two-stage application process is ongoing, with no set deadlines. Most grants are for less than £150,000.

Garfield Weston Foundation

<http://www.garfieldweston.org>

Criteria Overview

The Foundation supports projects, revenue and capital costs in the areas of Welfare, Youth, Community, Arts, Faith, Environment, Health and Museums & Heritage. A range of environmental projects are supported, including organisations which raise public awareness of, and find solutions to, specific issues. Also supported are organisations which conserve and interpret our nation's heritage for future generations, ensuring it is accessible and available to all.

Application Details

The Regular Grants programme for applications under £100,000 is open all year. Grants vary according to the size of the charity and the work being undertaken. Major Grants of over £100,000 require bespoke guidance for the application process.

Heritage Lottery Fund

<https://www.hlf.org.uk/looking-funding/our-grant-programmes/>

The future development of a bigger regional project may merit a funding application to the Heritage Lottery Fund. There has been a reduction in the National Lottery income to the HLF and as such there is a higher level of competition for funding. Any project which was submitted for funding would need to have a very clear outline in how it offers value for money in relation to the benefits offered for heritage and people, as the outcome which is most valued is that *'people will have learnt about heritage'*.

Application Details

The Carbon Literacy Centre project may fit with the 'Our Heritage' funding programme, which offers grants of more than £10,000 and up to £100,000. The last application deadline for the 2018/19 grant programme is 18 January 2019.

Joseph Rowntree Charitable Trust

<http://www.jrct.org.uk>

Criteria Overview

The Joseph Rowntree Charitable Trust has five priority areas for funding, one of which is 'Sustainable Future'. This funding priority includes a focus on *'campaigns, initiatives and*

mechanisms which encourage radical, large scale shifts in behaviour and culture away from consumerism towards more sustainable ways of living and using resources'. The Trust is particularly interested in work which addresses the root cause of problems rather than alleviating immediate need.

Application Details

The Trust doesn't support *'larger, older national charities which have an established constituency of supporters and substantial levels of reserves'* or work which has already been undertaken. The next deadline for applications to the Sustainable Future programme is 12 noon on Monday 20 August 2018.

Oak Foundation

<http://www.oakfnd.org>

Criteria Overview

Oak Foundation commits its resources to address issues of global, social and environmental concern, particularly those that have a major impact on the lives of the disadvantaged. As part of the environment programme, one of the three areas of focus is the safeguarding of a clean climate future for our children. Some of the key funding principles would link well with the CLC programme, particularly around targeting the root of the problem and being replicable within a sector or across geographic locations.

Application Details

They fund no more than 50% of the costs of any project or 20 per cent of the organisational programme budget.

Polden-Puckham Charitable Foundation

<http://www.polden-puckham.org.uk>

Criteria Overview

The Foundation supports work that addresses the pressures and conditions that risk global environmental breakdown. Community or local practical projects are not supported - except innovative projects for widespread application which could be a possibility for the future ambition of the CL programme.

Application Details

Grants are between £5,000 and £15,000 per year, for up to three years and usually for organisations for whom this would represent between 3% and 50% of their annual income.

Sharegift

<http://www.sharegift.org>

Criteria Overview

Sharegift is based upon donations of unwanted shares. The most effective way for a charity to benefit from a ShareGift grant is to raise awareness of ShareGift by encouraging their supporters to donate their unwanted shares.

Application Details

Giving is based upon suggestions of charities from donors - applications for funding are not accepted.

Underwood Trust

<http://www.theunderwoodtrust.org.uk/>

Criteria Overview

The trustee's objective is to make grants to support projects within the four categories listed below, and to continue funding, where appropriate.

- Medicine and Health

- Social Welfare
- Education and The Arts
- The Environment and Wildlife

Long term relationships have been established with many of the funded organisations.

Application Details

The Trust mainly gives to UK registered charities and other official charitable organisations. Applications are by invitation only.

Wren

<http://www.wren.org.uk/>

Criteria Overview

The FCC Community Action Fund is for applicants with community, biodiversity and heritage projects in England situated within 10 miles of an FCC Environment landfill site. This includes the provision, maintenance or improvement of public amenities including Museums, with the proviso that the venue should be somewhere the public can go and use without any limit or restriction. The work must be targeted at a single location. This funding stream may be suitable for partner museums.

Application Details

Applications are accepted from Registered Charities which operate a community facility. The next application deadline is 5pm on 13 June 2018.

Proposed Delivery Model

Following a range of consultation interviews (see Appendix 2) and review of results from the survey conducted with Manchester Museum audiences (Appendix 3) via a link on their regular newsletter and via the MDNW mailing list, A preferred model to pilot during the *Seasons for Change* programme has been identified, within a museum setting – primarily Manchester Museum but with future potential for roll out to other Museums.

Central to the development of the model is that it retains the fundamental core of the current CL training model, which is that participants can evidence they have achieved the Carbon Literacy Standard (*An awareness of the carbon dioxide costs and impacts of everyday activities and the ability and motivation to reduce emissions on an individual, community and organisational basis*) through a days' worth of learning.

This model addresses a number of the key issues raised during stakeholder and partner consultations;

- To make the most of the unique learning environment provided by a museum
- Tailor the activities to the current audiences profile including motivations, needs and expectations of museum visits
- Consideration of Training/resource needs of potential partner museums

Modelling CL Principles

Museums can offer a more environmentally friendly experience than many other leisure venues, along with parks, recreation centres, sports facilities, and libraries. Manchester Museum is the first carbon literate museum in

the world and many museums in the region who are potential partners have already begun work to become more environmentally sustainable. It is important for the integrity of the CL training in Museums to adhere as closely as possible to the principles it is promoting (through integrating into core programmes rather than as additional activity, consideration of recycled materials, multiple functions of paper-based resources etc.) and also to share the good practice already taking place in the museums. Where there is a carbon cost, it is worth considering factoring in initiatives to offset.

Target Audiences

Offering targeted, themed training events as part of the core Museum learning programme gives the benefit of connecting people with museum collections while they complete the CL training. It makes the most of the strong current adult learning programme offered and the relationships already in place with local community groups. However, this is likely to mainly reach people who are already interested and informed enough to commit to the time and cost of attending the training. There is an opportunity to engage with all visitors to the museum, firstly as a way of increasing awareness of CL training and secondly to add value to their museum experience through providing additional learning opportunities which fit with their motivation/s for visiting.

The target audiences for the model are therefore defined as the **existing museum audience**, with the structure of the model designed to engage interest in the programme then convert this into participation in the CL training and achieve accreditation.

The training aims to engage with adults and in a museum visitor context this gives three key categories of visitors: adults, adults in family

groups and in the case of Manchester Museum there are many student visitors.

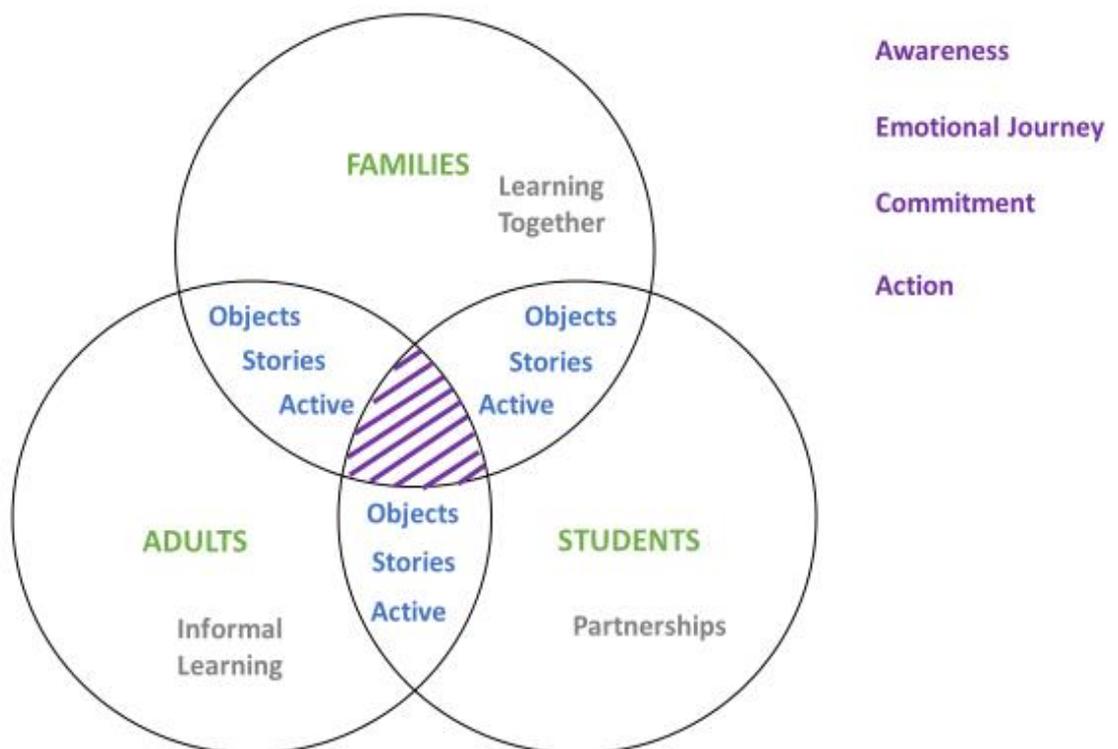
Training Principles

At the centre of the model are principles which describe the identified strengths of the current CL training programme which relate to each of the audience groups;

1. **Awareness** – giving the scientific facts and evidence in an informative and interesting way.
2. **Emotional Journey** – as a collective experiencing the emotional connection with environmental cause and effect and in particular how it would have a personal and local impact.

3. **Commitment** – informing, encouraging and supporting participants to make ambitious commitments to reducing their own carbon footprint.
4. **Action** – follow up support for participants in continuing to value and act upon their commitment, linked to demonstrating the importance of the individual as well the social and political action.

Also cutting across all the audiences are the principles of learning through museum objects and their stories in an active and interactive way.



Key target audiences and training principles

Training Model

With a large and diverse audience visiting the museum looking for the underlying benefits of a visit (enjoyment, entertainment, understanding, to see their favourite exhibit, to entertain the children) there is the opportunity to raise awareness of the CL offer. Visitors may initially want only a small amount of the total literacy requirement in that they will not have half a day to spare on a day that they have already planned to do other things. Raising awareness of the initiative through a Carbon Stories experience, which is part of the Museum visit at no extra cost. This would consist of additional interpretative displays based on key objects, which can reveal through their stories the key scientific evidence for the causes and impact of climate change. This aims to engage potential visitors and inspire them and get them to come back and or continue with the carbon literacy journey. They would also have completed/done some of the first awareness raising element of the CL training

A supporting pick up trail guide would also function as marketing for the training; a bookable course of two 2 - 3 hour session. The first session to reinforce the learning from the trail through a guided tour and object handling session, which includes opportunity to stop and sit down for short discussions at key points. The second session is focused on action and in particular making the local relevance clear, which may be through the involvement of local action groups or projects willing to be involved. This second session which culminates in the pledge making, could also make use of the museum setting through adding content to a community curated display on Manchester and climate change to inspire and inform other museum visitors, and conserve some of the peer to peer learning of the current CL course.

The model for adult learners, also could be adapted for small businesses unable to deliver the course within their organisation, potentially also for those who are self-employed providing the additional benefit of networking and becoming CL accredited. This potentially could bring in a revenue to subsidise the public programme.

There is potential to explore with both Universities further partnerships to promote CL training. This could include part of the course being accessed through the museum.

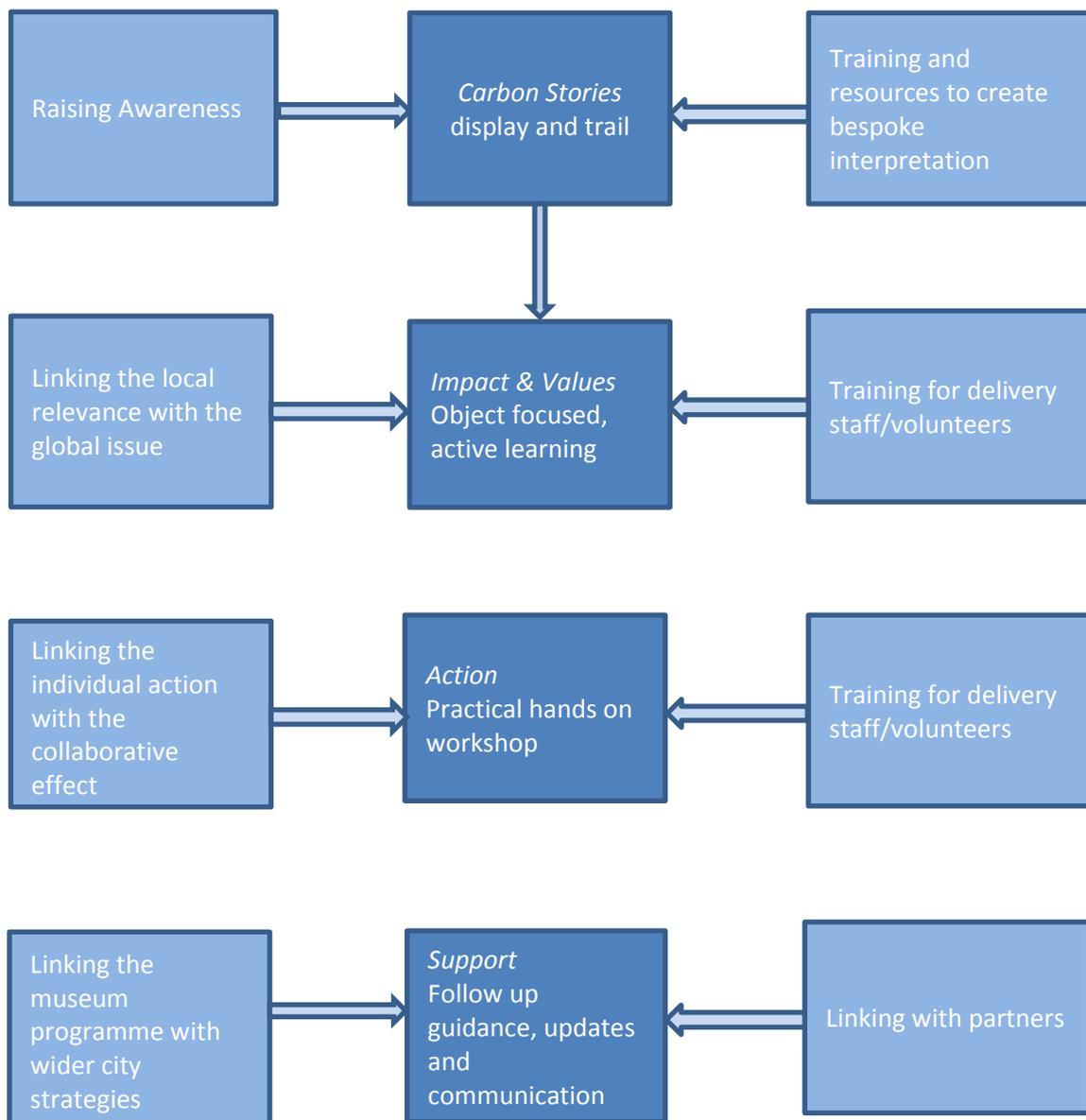
Family Accreditation

The result of the families surveyed would suggest that CL training would not be transferable to families in its current format; particularly as the phrase 'Carbon Literacy' was not something perceived as being family friendly and only half the families expressed an interest in the pledge and gaining the certificate. However, there was significant interest in the topic and children having the opportunities to both learn about the issues and contribute to Manchester's programme of reducing its carbon emissions. As families are a key audience for Manchester Museum, and most of the consulted museums, it would be interesting to consider adapting the training model to offer a Family Accreditation programme – based upon the principle that the family learns together, although activity may be more child focused. This may be developed successful as a separate museum-based programme as part of its event programme and without the need for accreditation and moderation used as an awareness raising promotion for the CL training for adults. A potential CL family model is suggested, based upon integrating it into the existing event programme. One of the key benefits of considering an offer to families is to maximise the potential to engage with new and diverse audiences. It is suggested this takes the form of two events; a

drop-in family friendly event with a carousel of climate change activities followed by a bookable art session to create a family pledge artwork. There is potential for the events to be part of the Big Saturday programme, particularly given that weekends were cited as

the most popular time for activities. This could continue as a special day offered periodically as part of the school holiday programmes, although activities may need to be varied to consider repeat visitors.

Modular Structure



Adult Learners Carbon Literacy Training Model

Principles;

- Raise awareness of the Carbon Literacy project with new audiences.
- Museums specialise in offering informal adult learning based on their collections.
- Using storytelling and familiar objects are powerful tools in dealing with sensitive, contemporary issues.
- The emotional journey taken as part of a group is an important element of the training.
- Flexibility within the content would allow the facilitator to adapt and be responsive to the needs, interests and knowledge of the group.
- Inform, empower and support participants to make a commitment to act.
- Support participant with digital pre and post training resources or support.

Module	Learning Objectives	Key Activities	Time Credit
Carbon Stories Interpretation Explore the boards with an Exhibition Guide - Available as a free pick up resource	Core Element 2: Knowledge	Themed display boards linked to key objects. Themes to include; 1. Introduction: Climate Change (not just carbon) 2. What is a carbon footprint? Link to museum objects (food, travel, transport, heating, lifestyle etc.) 3. Carbon Saving: How the Museum is reducing its carbon footprint Promote the CLC Bookable Course.	1 - 2 hours
CLC Bookable Course Session One Funded or charge applies per person	Core Element 2: Knowledge Core Element 3: Values	Interactive Guided Tour with object handling Introduction to carbon literacy What is climate change? <i>Activity:</i> What determines a carbon footprint? Climate change impacts Plenary – What can be done?	2 - 3 hours
CLC Bookable Course Session Two Funded or charge applies per person	Core Element 4: Action	Facilitated Workshop, supported group discussions. 1. Turning Knowledge in Individual Actions/pledges Manchester - Local Action case studies <i>Activity:</i> What's the impact of different carbon saving actions? 2. Communicating climate change A Global issue - Impact of Collaborative Actions <i>Activity:</i> Share and display pledges 3. Next Steps Link to support group/membership Post training resource links	2 – 3 hours

Family Carbon Literacy Training Model

Principles;

- Raise awareness of the Carbon Literacy training with new audiences.
- Families are a key audience for many museums and often a focus for special events – activity should be integrating into family programming e.g. holiday activities.
- Effective family learning is based on all members of the family can learn and take part together - activities need to be flexible to adapt to all ages of children or sessions be targeted by child age. It is recommended activities are aimed at children over 5.
- Using storytelling and familiar objects are powerful tools in dealing with sensitive, contemporary issues. Use a key object to engage children e.g. the Polar Bear or Tigon.
- Inform, empower and support families to make a commitment to act together.
- Support for families with digital pre and post training resources or support.
- Leisure time is valued – offer good value for money and an engaging family experience.

Module	Learning Objectives	Key Activities	Time Credit
<p><i>The Polar Bear Family Carbon Challenge</i></p> <p>Explore the boards with a Family Trail - Available as a free pick up resource</p>	Core Element 2: Knowledge	<p>Over 5s – active family challenge trail, to solve clues, linked to the themed Carbon Stories display boards about key objects. Themes to include;</p> <ol style="list-style-type: none"> 1. Introduction: Climate Change 2. What is a carbon footprint? Link to museum objects (food, travel, transport, heating, lifestyle etc.) 3. Carbon Saving: How the Museum is reducing its carbon footprint <p>Promote upcoming events as opportunities to find out more</p>	1 - 2 hours
<p>Event One Drop in event</p> <p>Integrated into the museums event programme</p>	Core Element 2: Knowledge Core Element 3: Values	<p>Carousel of hands-on activities on gallery and using the learning space, linked to the collection. This can include existing offers such as the volunteer led Climate Change handling trolley.</p> <p>Sign up families for the bookable session to complete the training or recruit adults for the CLC Bookable Course.</p>	2 - 3 hours
<p>Event Two Bookable session</p> <p>Funded or charge applies per family member</p>	Core Element 4: Action	<p>Workshop with a facilitator and artist to explore what we can do to reducing our own carbon footprint as well as communicating learning with others.</p> <p>Families will create a family pledge artwork incorporating the families learning about climate change.</p>	2 – 3 hours

Training Delivery

Staffing

It would be good practice for all deliverers of the training to be CL accredited. Museum Staff may be able to deliver as part of an organisational in-kind contribution, but for all of the consulted museums volunteers were essential for a sustainable service and it is recommended that this is adopted as a delivery mechanism even for smaller elements of the training or to support staff, particularly for partner museums. Training both volunteers and museum staff to deliver carbon literacy will be needed, and there are existing trainers who may be able to assist with this. Jane Mork at Manchester Metropolitan University is happy to be involved delivering Train the Trainer and would also be happy to provide students to deliver training. Currently they are paid through the University Environment Education Fund (EEF). This could potentially be expanded to cover some of the costs for student trainers, but would need to be explored further with Jane and may require match funding. Jane is happy to contribute staff capacity to relevant events

Marketing and Branding

All of the consulted museum professionals felt that the phrase 'Carbon Literacy' did not reflect the ethos of informal museum-based learning. Although the initial survey showed the majority of respondents had a good understanding of what CL training might entail, the on-gallery survey with visitors indicated more confusion and lack of motivation to find out. It is recommended that participants still undertake 'Carbon Literacy' training but that this is branded and marketed under another name, to fit with marketing strategies of Manchester Museum,

and appeal to what might motivate participation in the programme given the importance of family audiences. The Survey suggested this is strongly for environmental reasons and to live in a more sustainable way, so including reference to lifestyle may give a clear and simple message on the outcome of the training and have more of a broad appeal to people interested in the environment (e.g. Live Greener).

Pre and Post Training Support

One of the points highlighted by trainers was that the certificate was a symbol of being 'part of something bigger', a collective working towards a common goal, and that this was particularly valued by participants. Currently the training does not have a mechanism for follow up support of participants. 41% of survey respondents were interested in a social media support group, which could be an option particularly if linked and integrated with existing Museum social media accounts. This may be something which could be developed alongside a 'flipped learning' model of providing a collated set of resources for training participants via a website. There is a significant amount of existing online resources and games available, including the Museums own resources, so it is recommended to signpost to these resources rather than create new content. This may be achieved in partnership or signposting with other initiatives – for example the Happy Museum's Museum of Fossil Fuels.²⁰

Carbon Literacy Membership

Feedback from the survey showed that 30 % of respondents mentioned an interest in a carbon literacy membership. Setting up and running a separate stand-alone carbon literacy membership would require:

²⁰ happymuseumproject.org/museum-fossil-fuel/

- more research to investigate what potential members might like from such a group.
- Investigation into the sort of constitution or framework it might have
- some passionately interested people to take on the setting up and then the running of it.
- Identifying which organisation might be the originating or parent body for this membership

The danger lies in having to support and deliver membership benefits over a number of years. A self-selecting and sustaining social media grouping might alleviate this. In addition, groups that already have an interest in museums, carbon literacy or the care of the environment might not only add this to their volunteer offer but also promote it to their existing volunteers.

Manchester Groundwork MSSTT based at Trafford Park is a leading charity on sustainability. They have endorsed Andy Burnham's call for a carbon neutral city region. Although they are not a membership organisation they do have opportunities for people to join in and support projects including volunteering. Consideration might be given to cooperating with and signposting them to meet this aspect of membership.

Further charitable bodies with membership that support the carbon neutral agenda include: Lancashire Wildlife Trust with their My Wild city, Manchester Friends of the Earth's Healthy Air, Divestment, and Run on Sun campaigns and even WWF's Earth Hour.

Evaluation

Developing robust evaluation as part of the pilot phase 2, would contribute to ensuring a sustainable model - responding to staff, volunteer, partner and participant feedback.

Partner Museums

Relevance

Those involved with small independent museums have significant financial and capacity challenges, which may be barriers to projects which initially are viewed as having little relevance and extra cost for it.

Demonstrating the benefits of involvement in the CL programme particularly how it may encourage increased visitor numbers or engagement with target audiences will be important. Support for this could be through provision of resources or possibly objects. It would be beneficial to build in flexibility for partner museums to choose to focus on delivery of the adult or family programme, based upon their own audience demographics and strategic priorities.

Training for partner Carbon Literacy Centres

1. Funding

Free training courses for deliverers and also provision, where possible, of resources to deliver activities – this may be on a touring loan system between CLCs. Organisations with small staff numbers may be bound up with the day to day running of the museum which may be alleviated with onsite training and support.

2. Content

Although any museum collection can potentially be used to tell the story of the impact of carbon emissions and global warming not all small museums will have the capacity to work up such an offer. Particularly this would be support through training and mentoring to create bespoke interpretation based on object carbon footprint and ensure scientific integrity.

Carbon Literacy Museum Networks

To maximise the opportunity for partners to become involved it is worth considering how museums unable to undertake the

commitment to becoming a Carbon Literacy Centre (CLC) can still contribute to raising awareness of the programme and motivating future participation in CL training. This could be through a hub and spoke model, where regional museums offer their own Carbon Stories displays linked to their own collections and promote the accredited training at the CLC hubs.

With the upcoming partial closure and capital works at Manchester Museum there may be opportunity for iconic objects with a strong

carbon story to be toured at venues throughout the region as a promotion of the CL programme being delivered in museums – and to raise awareness of the environmental challenges and sustainability good practice happening in museums.

Appendices

Appendix 1: Current CL Required Course Content

Core Element 1: Learning Method

- Delivery by Peers: Training is most trusted when delivered by someone who is similar to the learner, who “feels like themselves”.
- Group Enquiry: Carbon Literacy learning takes place in an environment where, with the input of expert knowledge and peer support, learners jointly find their own answers and devise their own solutions.
- Positivity: CL learning emphasises the things that can be done as opposed to the things that cannot.

Core Element 2: Knowledge

- Greenhouse Gases: what they are, and their relationship to weather and climate;
- How climate here and elsewhere is likely to change, and how we know this;
- How changes in the climate are likely to affect us (in own country), and in other parts of the world;
- How our actions impact on the amount of greenhouse gases produced, and the impact they have;
- What we can do to reduce our impact, and the benefits and disadvantages of taking action;
- What we are already doing locally and nationally;
- Where we can go to get help. What help is available to us;
- How we can motivate others to take action, including gaining the confidence to communicate our carbon literacy to others.

Core Element 3: Values

- The action of individuals can and does make a difference;
- We need to work with others to create change
- Overall, the outcome of the changes we need to see can lead to a better world, & better way of life;
- Equity & fairness, now & in the future, underlies the changes that we want to see in the UK globally.

Core Element 4: Action

- The focus of Carbon Literacy is about empowering people to take action. By the end of their learning Carbon Literacy learners will:
- Create at least one significant action to reduce their personal carbon footprint.
- Create at least one significant action involving other people to reduce the collective footprint of their workplace, community or place of education.
- As part of Carbon Literacy, as a minimum, planning for the delivery and measurement of the impacts of the actions ‘created’ during learning must be capable of being evidenced. Plans should be practical, relevant to the participants’ circumstances and they should be able to and actually assess the potential impact of their actions

Appendix 2 - Consultation Interviews

Anna Bunney – Engagement Manager, Manchester Museum

Hannah Chalk – Learning Manager, Manchester Museum

Louise Clennell – Education and Outreach Officer - Special Collections, Manchester Metropolitan University

Ella Cole – Curator, The Whitaker

Kate Dobson – Museum Manager, Nantwich Museum

Victoria Grant – Family Learning Coordinator, Manchester Museum

Kaye Hardyman – Greener Museums Coordinator (?), Museum Development Officer, MDNW

Katie Henderson – Museum Officer, Police Museum

Lynsey Jones – Museum Development Officer, MDNW

Phil Korbel – Co Director, Cooler Projects

Raichael Lock – Coordinator, MEEN

Bridget McKenzie – Evaluator, Happy Museums

Lucy Millard – Environmental Sustainability Manager, The University of Manchester

Jane Mork – Senior Research Assistant Carbon Literacy, Manchester Metropolitan University

Emma Smailes – Area Development Manager, Federation for Small Businesses (FSB)

Richard Smith – Carbon Literacy Trainer, BBC

Valeria Vargas – Education for Sustainable Development Coordinator, Manchester Metropolitan University

Michael Whitworth – Commercial Manager, Manchester Museum

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