



Weaving the Web

SUNNY BANK MILLS

10 YEARS OF ARTS AND CULTURE



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INTRODUCTION TO SUNNY BANK MILLS ARCHIVE & WEAVING THE WEB

The Sunny Bank Mills Archive is many different things to many people. The interests of our visitors are wide and varied, from textile students and historians, local genealogists, and local historians to those interested in the dye industry, chemistry, and colour; or the Industrial Revolution, World War One, and the part the mills and its workers played during these periods in history. We have always had the goal to strive to be accessible to all, but all that was about to change.

During the early part of 2020, and the COVID-19 World Pandemic, the world suddenly became a very different place and the Archive, and its team, had to adapt to these new challenges. The global pandemic resulted in closure of physical spaces and restrictions on accessibility for 2 years. Without the physical presence of our visitors, researchers, and the local community the Archive had to think about how we could embrace a digital world not only in the short term, but also to improve our overall accessibility in the longer term. 'Weaving the Web' came from a recognition that the Archive needed to adapt to survive.



ABOUT SUNNY BANK MILLS ARCHIVE

Sunny Bank Mills was a fine worsted suiting textile mill, situated in Farsley, on the outskirts of Leeds and has been on the same site since 1829.

The first main mill owner, Edwin Woodhouse, established the name and brand of the cloth. This cloth was of the highest quality and was destined for the four corners of the world and the renowned establishments of Savile Row. The Archive at Sunny Bank Mills and its historic buildings are all that remain of this world-renowned quality cloth and the unique skills of the workers who worked here.

However, the current mill owners are still very much connected to the heritage of the mill which has been in the same family, the Gaunt family, for over one hundred years. The site is being sympathetically regenerated retaining the heritage and integrity of the buildings.

Why is the Archive collection unique? When a mill closes, normally everything is disposed of. Some business paperwork might get stored at the local archive, but the majority is thrown away. The Sunny Bank Mills Archive, held in the old warping shed, contains thousands of artefacts and cloth from the mill history spanning a period from the 1800s through to 2008 when the mill ceased production and the doors closed and through its further life. It, therefore, comprises a unique collection of West Yorkshire textile history, still contained in the buildings where it was once produced.





WHY 'WEAVING THE WEB'?

The Weaving the Web Project was funded by National Lottery Heritage Fund.

To preserve our textile history here at Sunny Bank Mills it was clear our collection must be accessible to all. The pandemic had highlighted that we needed to adapt. We needed more digital resources, and to provide the collection with digital resilience by providing better accessibility and inclusivity of and for the local community. This raised several questions.

- If our purpose is to share the many stories and textile processes and to safeguard and make accessible, the rich textile heritage for the future and for the community, how could this be translated into a digital offering?
- An archive is a place where people can go to gather first-hand facts, data, and evidence from letters, reports, notes, memos, photographs, design books, textiles, and a wide variety of other primary sources. So, what happens when you can no longer access that physical space?
- Historically online archives have often included extensive lists or photographs of the objects and artefacts they hold. Could the technology we have access to in the 21st Century, be used to provide a more interactive experience, as well as making the collection more widely accessible?

The following sections explain the evolution of the project over 12 months from design of the logo and merchandise, through workshops to the launch of 50 3D interactive images in the new Online Interactive Collection.



SO, WHAT WAS THE ANSWER?

“Virtual museum: a digital entity that draws on the characteristics of a museum, in order to complement, enhance, or augment the museum experience through personalization, interactivity, and richness of content”

Whilst visitors can touch and interact with the artifacts, art, and specimens in a physical museum, in virtual museums, visitors can only see and interact with virtual representations produced from the originals. They are unable to experience the real thing.

To bring the Archive to life in a digital world, we needed to create our equivalent version of a virtual museum. The objects alone only tell half the story; it is also the people that worked in the mill and their voices that bring context and meaning to our collection. To connect across communities in society today we needed to create a blended approach that was both inclusive and accessible.

This started in 2020 with showcasing the heritage of the site and the Archive by updating of the website to include sound, text, and oral history recordings. This was followed during the lockdowns of 2021 and 2022 by the creation and development of our interactive digital 360° tour of the Archive www.sunnybankmills.co.uk/heritage/interactive-3d-archive-tour/

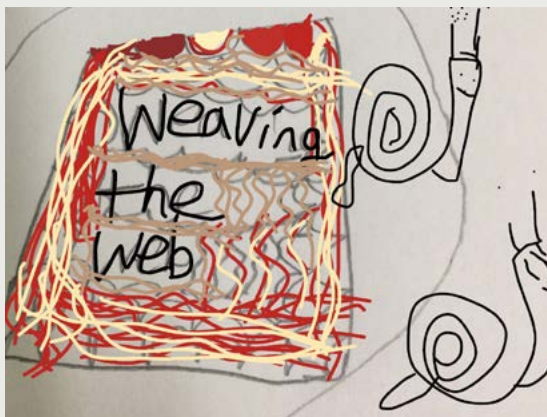
The initial 360-degree interactive tours undertaken during the 2020 and 2021 lockdowns were well received and helped us to see the potential to reach a wider audience.

To do this we needed to understand how they connected, or did not, to the collection and the wider site. What were the barriers? We had decided to work with our local Specialist Inclusive Learning Centre (SILC) in Farsley, Leeds. Combining our need to be relevant in a digital age with a need to understand a sometimes-unheard voice of this community group we were ideally placed to deliver the project Weaving the Web. Professional experience was sought for aspects of web design and access, and specialist photography and of course the expert knowledge of the tutors of the students at SILC.

The initial workshops carried out by the web designers and photographers gave the SILC students an insight into what these careers involve and helped us to gain a grasp of their understanding.



EARLY 2022 - THE PROJECT BEGINS



The logo

The starting block of the project was to run a competition where we asked the SILC students to design the logo for the project. They were given a brief by our Graphic Designer to give them the experience of what this role would look like and the kind of information they would be provided with in a real-life situation. The entries were judged by our team of Volunteers and Archive staff and certificates awarded to 1st, 2nd & 3rd places, with the winning design being used as the basis for the Project Logo by the Graphic Designers.

With the aid of our graphic designer, this evolved into a brand to be used in both the Sunny Bank Mills colours and in a range of brighter bespoke colourways which was used on a range of merchandise produced for the project. The tote bags, mugs, and badges were produced by the SILC students as part of an Enterprise initiative to enable them to gain work experience.



WEAVING THE WEB WORKSHOPS

The next phase of the project was to run a variety of community workshops from the Archive at Sunny Bank Mills.

The aim of these Workshops was to allow participants to learn how to create virtual representations of objects using a variety of technologies and be inspired to think critically about the significance of accessing archival materials through digital technologies.

We ran 10 workshops which included groups from both SILC and the local Springbank Primary School as well as groups signed up via a social media and a digital marketing campaign, the staff at Sunny Bank Mills, groups from our archive volunteers and a group from Pinc (an arts college specialising in supporting neurodiverse young people between the ages of 16-25). In addition, we also highlighted the workshops as part of Heritage Open Day across 2 days.

We asked all our participants to bring an object of their own to the workshop. This could be something of significance to them or simply an object they would like to explore more. We advertised this as an opportunity for them to challenge us as a team and also the technology.

This resulted in a large variety of objects in terms of materials, size, translucency, reflective properties, and texture, all of which gave us as a team the opportunity to learn more about the technology and its limitations at the same time as running the workshops

As well as looking at the technical aspects of each of the technologies, we asked participants to consider what is gained or lost during the creation of these images. This might include: Do you look at the object in a different way? Have you noticed anything different about your object that you have not noticed before? How is any emotional attachment to your object translated into the digital version?



Each workshop looks at three different technologies with a varying degree of accessibility, to create virtual representations of objects with all participants having the opportunity to try all the technologies and compare the resulting images.

The Technology

Full details of the technology hardware and software used throughout the project is presented separately.

ObjectVR

This technology uses a simple Digital Single Lens Reflex (DLSR) camera, with the addition of a tripod, powerful fluorescent studio lighting, light tent, and a motorized remote-controlled turntable. The resulting photographs are run through the Object VR software to produce interactive 3D images.

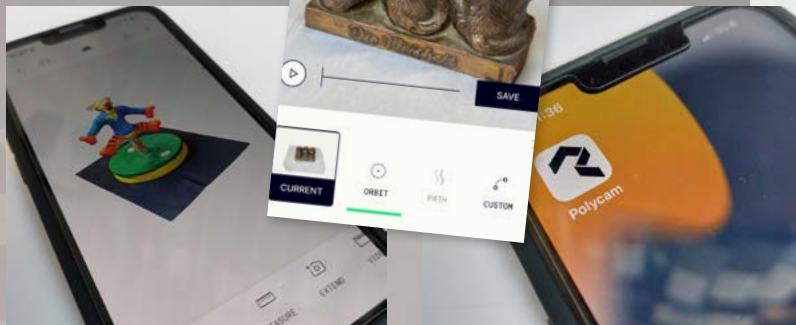
Polycam - Photogrammetry

Photogrammetry is the art and science of extracting 3D information from photographs. The process involves taking overlapping photographs of an object, structure, or space and converting them into 2D or 3D digital models. We used mobile phone technology centred around the Polycam App. Images are captured using the inbuilt mobile phone camera and converted by the App into 3D interactive images.

The Polycam App can be downloaded for free using the following QR codes, although during the project we upgraded to the paid version to enable greater storage/download options.

Polycam - LiDar

LiDAR is a remote sensing method that uses light from a laser to collect measurements. These are used to create 3D models and maps of objects and environments. The newest generation of mobile phones features a built-in LiDAR scanner which can also be used in conjunction with the Polycam App. This enables users to create realistic, accurate, and fast 3D representations of close-range objects and environments by moving the device around the space or object to be represented.



THE ONLINE COLLECTION GROWS – CREATING THE 360 IMAGES

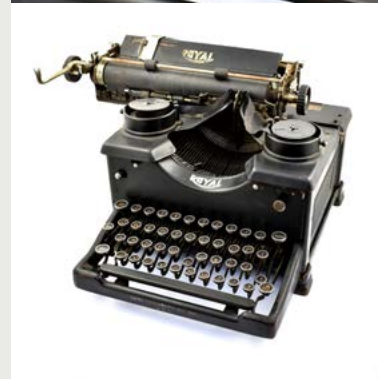
Alongside the workshops which ran throughout the project, we have worked with a Photographer from the University in Leeds to set up a protocol for the photography format of a starting list of 50 objects selected for the Online Collection.

The selection of items for imaging has been guided by volunteers, staff and by workshop participants. Archive volunteers have proposed their favourite items. Participants attending the imaging workshops have been able to see the collections and historic equipment and identify items they would like to see imaged. This has been valuable as it means that the selection will represent a variety of interests and perspectives and not just those of the Archive team. In addition, deciding how we represent the objects can be challenging, as it includes a huge variation in size, scale, materials, and textures, all of which we learned more about during the Community Workshops.

The images have been created using equipment purchased using the project funding; a DSLR camera, tripod, remote controlled turntable, and white tent, plus

a Mac to process the images. Multiple images are taken of the object, so it can be looked at from all sides. Images looking down onto the top or from underneath are not taken. The images are processed using software called Object2VR, which builds the interactive image. The images are shown against a sterile white background.

There have also been conversations about the impact of taking items out of their context within the Mill by photographing them against this white background and consequently decontextualising them. However, the objects are not displayed in their original position and context within the mill anymore anyway, they have been moved, so arguably their context has already been lost. By using a high contrast background and isolating the object, the user is able to view the object without distraction.



ENVIRONMENT AND SET-UP

Imaging items in the collection also has a preservation function. Some items are deteriorating physically, so imaging can capture what they are like before too much damage occurs.

For example, a metal cauldron was discovered and retrieved from the millpond. It is badly rusted; pieces are falling off and it will continue to deteriorate. It has been imaged so that people can get a sense of what it was like before its condition became excessively poor, and the process can be repeated in the future to catalogue the condition of the object.

For some objects which are stored in boxes or tins, their immediate context has still been communicated. The container has been imaged, showing the object inside. The object has then been imaged separately. For example, the archive holds a tobacco tin containing loom peg plans. These plans would have belonged to the weaver, so the tin is an important part of the story and context for these pieces of card. Therefore, we imaged both the tin and the plans. With the interactive image, viewers are able to view the tin and then click to open it and see its contents whilst still being able to zoom, scroll and rotate within both versions of the object.



ENVIRONMENT AND SET-UP CONTINUED

The space in which the photography is carried out is well-lit by north-facing roof lights (apart from on darker winter days), and that combination of natural light and the photography studio lights provides excellent quality lighting for the imaging.

The time required to image each object varies depending on the complexity of the set up required and the nature of the object itself. Bringing the Archive to life in a Digital World has not always been plain sailing. If only all our objects were small, non - reflective and fitted in our light tent! More challenging objects to image have included items made of glass or highly reflective materials as there is insufficient contrast with the white background.

Photographing fine wool suits from the 1980s and 1990s has required a different set-up again, as these were imaged on mannequins.



Objects like the fire extinguisher or menders stool required a separate set up again as a result of their proportions. The Archive contains an extensive number and variety of books and publications, from guard books and photograph albums to dye recipe cards. Consideration was given to how these objects should be imaged. What is gained from rotating a book or a flat piece of card. Some of the books have been imaged in this way; a guard book along with a wages book and ledger. The guard book was imaged both closed, to show the exterior and open to allow viewers to get an impression of what it contains. It was challenging to capture because of its size and because it had to be propped up to provide some support for it. This created shadows so the images for this guard book required

extensive manual editing to achieve satisfactory, project-compliant, final images.

Some books, such as a photograph album and peg plan book as well as other wages and cash ledgers and the dye recipe cards were imaged in a unique way where the object remains static but simulates turning of the pages.

The online collection can be viewed at www.sunnybankmills.co.uk/online-archive/



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Sparked some really interesting within the group, around how this technology can be used, the ethics of the technology and the difficulty in conveying the more subtle or intangible aspects of an object, such as associated feelings, senses and memories.

”

“

.....this workshop not only gave practical photography skills, but most importantly really made us think about the role of digital collections, the importance of accessibility, and how we connect with objects beyond the visual.

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WORKSHOPS

During the project we completed eleven workshops. Workshops were delivered for the student collaborators, Archive volunteers, staff and the public in the community, so a diverse range of people have participated.

During the workshop, participants had a session on imaging their objects with the DSLR/ObjectVR setup. In addition, they imaged their object using photogrammetry and Lidar on either their own, or the Weaving The Web project mobile phones. Participants were then able to compare the results of the three different methods tried.

Each workshop ended with a discussion around the different methods, the limitations, the pros/cons of each method etc. The questions below give a good starting point to this section of the workshop. A brief summary of some of the responses is also included for reference.

- What did participants feel is lost or gained when an object is imaged?
- Is there anything you are more aware of in the digital version?
- Do you feel differently about the object?

Discussion points

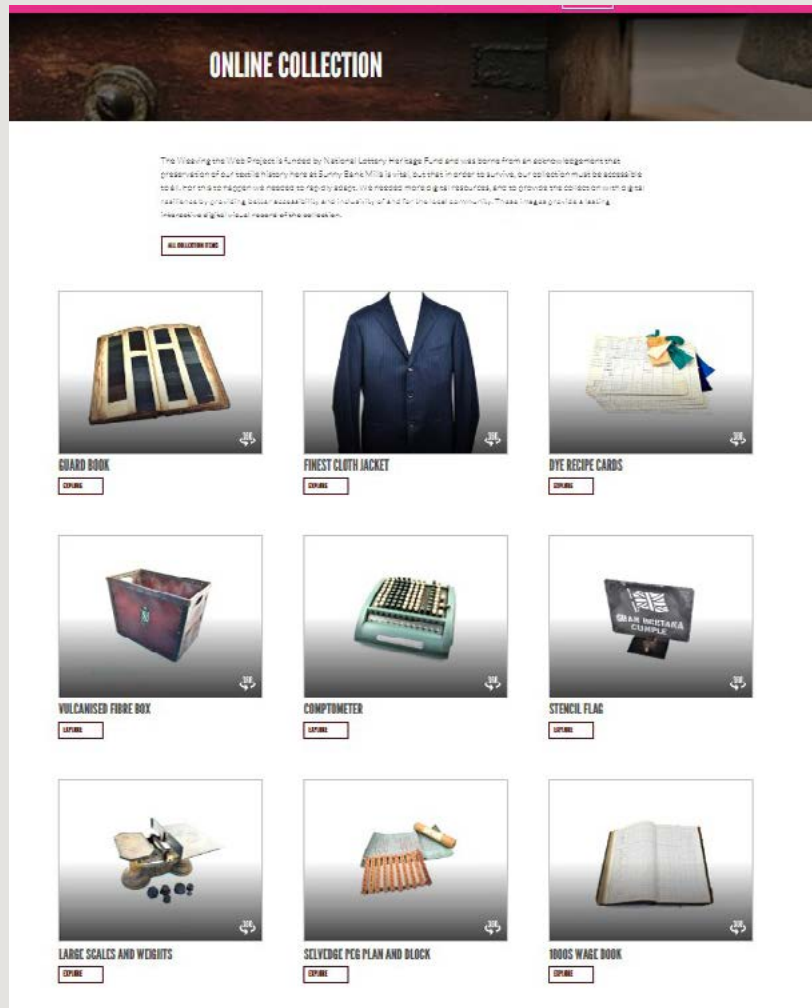
Most comment on the loss of the solid nature of the object - its weight and size – when looking at the digital image of it. But when they look closely at the digital image, they find they become more aware of the colour, texture, and shape of the object.

Some bring objects to which they have a personal attachment, and they are also invited to consider if they feel differently about the object when imaged. One lady brought a coffee pot which meant a lot to her, which she was incredibly careful with and which she did not like others in the household handling, in case it was damaged. Once it was imaged, she said she felt more relaxed about the physical coffee pot being handled, because she now had this digital version [from an archival perspective, a preservation copy].

While participants have spoken a great deal about the loss of the object's solidness and weight, we are also able to draw attention to the gains. A catalogue list does not give users an understanding of an object's weight. While these 360 images are not intended as a full substitute for the physical object, it does allow viewers to see the object, gain an impression of what it looks like and zoom in to study it in detail.

To address viewers' potential difficulty in perceiving the size/weight of imaged objects or their material properties, written descriptions accompany the images and their dimensions are provided.

These conversations have made the Archive staff think about their responsibility and role as curators of the collection and how they represent the Sunny Bank Mills archive online. They consider carefully how they will image each item. As a result, these conversations, along with input from the volunteers, have shaped and modified their approach over the duration of the project.



WRAPPING UP THE PROJECT AND THE FUTURE

The project brief was to image fifty items, which have now been completed and can be viewed via the online archive.

Categories link related objects e.g., books, office, textiles, travel, weights and measures, enabling viewers to browse and navigate related items if they want to.

The file sizes for the final 360-degree images are large and Sunny Bank Mills' server had to be upgraded to accommodate them. For the website, the output is html with the images sitting on the server, so there is no difficulty for users browsing the images, they do not need device capacity to manage large files.

The intention is to continue running the workshops, which have been extremely popular, on a commercial basis. Evaluation surveys carried out during the project provided feedback on an appropriate level for ticketing and the Archive also intends to offer 360 imaging as a paid, commercial service, especially to businesses based within the Mill premises which include several artists and being able to present 360 images of their work online to customers could enhance their marketing and profile.

Conclusions

The aim of the project was to make the collection more accessible, to question what our collection is and to share this to a wider community base.

SO WHAT DID WE ACHIEVE?

- Digital 360 imagery of 50 objects in the collection creating accessibility without the need to touch or damage the original objects and objects identified as too damaged can be conserved as the 360 imagery gives a lasting record. With the tools and training made possible from funding, and the new skills learnt, the 50 objects are the starting point to catalogue and digitise more of the collection. The detailed imagery can now be used to help promote the collection and make more dynamic displays online and on site.
- A wider range of people will be involved with heritage. We have identified a change in audience profile over the course of the project with people from a wider range of ages, those with additional needs and groups of people who have never engaged with heritage before. Attendees at both workshops and Archive tours has shown a significant increase in diversity and age range confirming that accessibility to the collection via technology opened up more possibilities to capture a larger variety of the community.
- Social Media for the Archive has developed to engage a far wider audience with a diversity of content from the objects to the stories of people who worked here
- SILC students created confidences in new environments and sharing thoughts and ideas creating better accessibility. Added skills were learnt by students with exposure to different careers in photography, web design and graphic design with added workshops focused on these elements of the project. They also added skills by developing the tools and experience to create their own merchandise for the project including printing designs on mugs, badges, and tote bags.
- Staff and volunteers learned specific skills in relation to the challenges to accessibility onsite and online for individuals with additional needs. This has created a lasting drive to always learn to ask is this project or space accessible and how can we make it more inclusive and has creating the impetus to always commit to finding new ways to make the whole site accessible to all and how can we be better?



ACKNOWLEDGEMENTS AND THANKS.

This workbook has been produced collaboratively between Alison McMaster, Heritage Officer and Rachel Moaby, Heritage Director, both at Sunny Bank Mills

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