MANCHESTER SCHOOL OF ARCHITECTURE

INFRASTRUCTURE EXHIBITION

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Manchester Metropolitan University





Florence Arts Cente

Team

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Partners

Florence Arts Centre Historic England: Grade II Listed



'Florence Mine in West Cumbria is one of the best-surviving mining sites of any type nationally and is the best-surviving example of an iron mining pit head in England: it retains a full suite of buildings complete with nearly all of its machinery and equipment.' The mine is linked to the local area's economic and industrial history; its closure followed trends in the decline of mining and steel production in England. The arts centre sits adjacent to the historic mine and is home to a gallery, performance space and artist studios. Their ethos centres around the environment, using sustainable means to practice creativity and to support local artists within their community. The arts centre runs workshops for the local community. They also have two full time paint markers on site - who produce paints, pastels and inks from the iron ore which was historically mined on site.

Our aim: we would like to continue the centre's ethos by creating an exhibition to showcase work from Infrastructure Space from MSA. In the first semester of this academic year, MArch1 students from the atelier proposed reuse projects for the existing Florence Mine. Where better to exhibit the work than on site itself. Our collaborators are keen for us to design and curate the exhibition, a great opportunity for anyone interested in gallery/exhibition design.

Agenda

Infrastructure Exhibition

Project Aim

The aim of this project is to create and set up an exhibition that honours the work done by Manchester School of Architecture students in the Infrastructure Space Atelier, particularly their efforts towards envisioning the future of the Florence Arts Centre in Egremont and the wider Cumbria area. To involve the local community, a workshop will be organised that highlights the students work while building relationships around the potential reuse of the site and the region. The MArch 1 Infrastructure Space students have been working alongside the Arts Centre and other significant stakeholders since October 2022, undertaking studio projects to reinterpret the mine site.

Our Social Impact

Our social impact that is part of our agenda focuses on 4 key areas to promote engagement with Egermont and the local community near the Florence Arts Centre.

Town generation: Florence Art Centre is in a small town called Egremont in Cumbria. This exhibition may help to strengthen the interaction not only between town centre and FAC, but also between Egremont and neighbour city in Cumbria.

Community: The exhibition will encourage people to build a community surrounded by FAC by supporting local businesses and communication. This will increase diversity, and provide a stronger sense of community.

Art: This exhibition may arise residents' and visitors' attention of art education, and provide more opportunities for children and artists.

Environmentally friendly: During this exhibition, we won't leave any trash onto the site, and we will use environmentally friendly material.



Florence Mine History

Florence Mine was the last working deep iron in Europe. Providing the high quality Haemetite 'kidney' are that nade West Cumbria the home of the rails for all the world's railways. Creative Egremont now plans to reuse the buildings to provide training in creative industries and to further improve the cultural infrastructure that is needed to stem the flow of young people from the area and to attract others.

Context

Understanding Egremont

Egremont, located in Cumbria, England, has a historical association with iron ore mining. The area's rich deposits of iron ore played a significant role in the town's industrial development during the 18th and 19th centuries.

Egremont and the surrounding region were part of the Cumberland iron ore field, which was renowned for its high-quality iron ore reserves. The iron ore deposits in the area were primarily hematite, a form of iron oxide known for its reddish colour.

Today, the legacy of iron ore mining can still be seen in Egremont and its surroundings. There are several remains of former mines and related infrastructure, a reminder of the area's industrial heritage. Egremont and Cumbria's rich iron ore mining history made a lasting impression on local communities and continues to be remembered and celebrated.

FAC is a creative and performance space based on the site of the last working Iron Ore Mine in Europe Florence Mine, which is a neighbouring to the historic market town of Egremont in West Cumbria.

Our group ethos is focused to showcase the Iron Ore Mine in Egremont and bring awareness to the site an exhibition held at the Florence Arts Centre through 5 main sub categorise : Healing , Heritage , Culture & Arts, Environmental and Industry. The exhibition will allow us to not only showcase MArch portfolios and act as exposure of architectural work, but to also engage and promote local communities interaction and understanding of the Iron Ore Mine in Egermont.



CINNING D This was the process we underwent to sub categorise the MArch portfolio work while curating for the exhibition

to the cost of pumping



Initial iteration process













Iteration 1

Iteration 1 focuses on triangulation with the posters facing outwards for more stability in design. However, this design is very bulky and needs spreading out to create a journey throughout the exhibition.

Iteration 2

The second iteration focuses on dispersing iteration 1, this allowed for more faces on the stand to present onto, The design is limiting the exhibition to be focused within a certain perimeter which could be

Iteration 3

We began extending the triangulation forms to create a linear journey in exploration of approach to design. The semi circle form allows to visually connect with projects internally through immersion.

Iteration 4

Stemming of the design seen in Iteration 4, we began to create stand alone structure for each category based on the curation work. With stands which a foldable where categories can be connected with work

Iteration 5

Iteration 5 hones in on the different sub categories and creates stand still frames which focuses on each category, this helps create a more curated exhibition however the form is limiting as it creates a lot on

Iteration 6

Iteration 6 focused on resolving problems of the formation creating smaller spaces through opening up the form to allow visibility for a larger audience but in the process reduced the amount of posters we would be able to pin up.

Modelling prototypes

Our team worked on creating iterations of our exhibition space we narrowed down 15 iterations created by our BA students to our favourite 6 iterations to help narrow down the choices. These decisions were made through holding a crit where students pitched each idea and as a group we elevated strengths and weakness of each iteration.



We selected 7 iterations that had the most variety in design to showcase ideas that were developed, we began exploring ideas with creative ideologies linking form to the Iron ore mine leading to iteration 6 which as a team we were most interested in the iterations that were inspired by the Iron chemical symbol which we took further in our design process.



We as a group noticed that the design of this iteration, was stimulating since it was made to mimic the iron chemical symbol (Fe).



We adapted the design to consider and take into account of turning circles, allowing for wheelchair access.



Design detail iterations

1.

2.

5



The process of understanding how our panel were built involved resolving joint details to create transformable exhibition spaces that could be adapted to fit spaces as part of our long life design.

Sketch design process :

Sketches of our hinge design process after iterating the form for optimal movement - the design focuses on opening up 2 joint panels to the adapt to its fullest.





Curated posters



These are the 30 posters which our group have curated to be presented in the exhibition which best showcases a great selection of the MArch1's studio projects but also showcases Egermont's iron ore mine. The curation process consisted of choosing work from portfolios which fitted into the sub categories we had created at the start of our MSA Live project, this was a catalyst for our final curated posters for the exhibition. (All work seen in the posters are credited to MArch1 Infrastructure students)

Cost + Afterlife of exhibition

	Butterfly nuts 140 (10) 8mm ScrewFix £2,89	Washers 280 (100) 8mm 2mm ScrewFix £7,99	Clips 60 15mm 32mm Online £9,99	Dowels 13 4mm 600mm B15 £0,25	Dowels 60 8mm 600mm B15 £0,50	Plywood 3 25mm 1220mm 2440mm Howarth Timber £74,88	Plywood 4 12mm 1220mm 2440mm Howarth Timber £31,48	Material Amount Thickness Depth Length Firm Price per Elemen	
£6,99	£2,89	£7,99	66'6J	£0,25	£0,50	£74,88	£31,48	rice per Element	
£20,97	£40,46	£23,97	£39,96	£3,25	£30,00	£224,64	£125,92	Price	

Cost analysis :

We formed a an excel sheet to keep record of the costs required to build this exhibition as we were working within a budget. Costs were reduced in numerous ways eg: design leaning towards least amount of materials, using recycled or locally sourced materials for construction. Such design and construction decisions helped us maintain the budget while creating a well planned exhibition framework.

(Turn to see cost analysis)



Material afterlife :

The process and afterlife of the materials we used to ensure minimal waste of products was a core part of the design process. We wanted to create panels which could be reused multiple times in the future for other exhibitions to make the maintain material longevity and purpose.



the timber frames are constructed

in B15 by the students to form panels







timber for the panels are

sourced from local timber

the panels are formed in a local timber house



the exhibition is dismantled

the panels are constructed by students for quality check purposes

the panels and joints are transported to Florence Arts centre for a public exhibition

the timber frames were then

measured are cut for purpose

d the exhibition is put together at the Florence Arts centre for the public

the exhibition is dismantled and reassembled at a different location for re purpose.

Construction Sequence

Below we can see the construction process of the exhibition panels, this construction sequence allows for the panels to be assembled and disassembled by others for easy transport between multiple exhibition spaces.







2.To attach them to the main frame, a prototype has been created using wood to create a hole in the cut wood.

3. Holes have been made on both sides of all 15 cut pieces of wood.





4.The frame, which contains four parts, is made by cutting the board.



7.The interior and exterior frames have been joined together using wooden pins.



5.In order to connect the exterior and interior



8.The exterior connection consists of two parts, which are connected together using wooden pins.



6. The hinges between the frames have been constructed in this section. To assemble them, they have been divided into four parts and joined together using glue.



9. Finally, the posters have been printed and pinned up onto the frame.

1.1 Model Making Process

Our team split across the second week of MSA Live built a 1.1 prototype which we have been designing during the first week. This process went well as we were able to explore new modelling techniques and upskill through making a 1.1 model.













































Final renders

Final visuals of our exhibition in action in the Florence Arts Centre, showcasing architectural work produced by the Infrastructure students curated by our team.





1:1 Model final images

The 1.1 model we made explores how the triangulation panel used in the exhibition would look. This form hold 3 posters and allowed us to explore how the hinges would work to transform itself in different environments while understanding the stability of the form and analyse how much load could be applied to each panelling. This was our final output alongside the curated posters for this MSA Live project.



ABOUT

Each year the MSA LIVE programme unites Masters Architecture year 1 students with those in BA year 1 and year 2 and Masters Landscape Architecture 1 in mixed-year teams to undertake live projects with external partners to create social impact.

STUDENT-LED

Our MSA masters students take the lead in the project conception, brief development, delivery and co-ordination of a small project. Other cohorts joined for an eventful 2 weeks of activities at the end of the academic year.

LIVE PROJECTS

All MSA LIVE projects are live. A live project is where an educational organisation and an external partner develop a brief, timescale, and outcome for their mutual benefit.

SOCIAL IMPACT

All MSA LIVE projects have social impact. Social impact is the effect an organization's actions have on the well-being of a community. Our agendas are set by our external collaborators.

EXTERNAL PARTNERS

MSA LIVE projects work with many organisations: charities, community groups, social enterprises, community interest companies, researchers, practitioners and educators.

KNOWLEDGE TRANSFER

Working in teams within and across year groups and courses; MSA students participate in peer to peer learning. In addition, collaborators, participants and students engage in the transfer of tangible and intellectual property, expertise, learning and skills.

LARGE SCALE

This year approximately 650 students from 4 cohorts in MSA have worked on 42 projects with partners.

QUESTIONS

For questions about MSA LIVE please contact the MSA LIVE team: msalive@mmu.ac.uk BLOG live.msa.ac.uk/2023

SOCIAL #MSALive23 @msa.live.23 @TheMSArch @MLA_TheMSArch

WEBSITE

www.msa.ac.uk