

# MANCHESTER SCHOOL OF ARCHITECTURE

# POWER | P

ELLEN FAULKNER / OLIVIA MIHALE / JESSICA POORE / MEGAN PLEDGER / MATTHEW MEESON / MOLLY WALSH  
SAMUEL WARDLE / ALEXANDRA IORDACHE / ANANYA PRAVEEN-REDDY / YU-TAO CHEN / ABDULAZIZ BAESHEN  
MARIA SANGEORZAN / DERIN KLANTEN / EDWARD PUGH / EVELYN BOYCE

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Dr. Luca Csepely Knorr  
Dr. Richard Brook

# MSA LIVE 21

## Team

**Megan Pledger** (M Arch 01)

**Matthew Meeson** (M Arch 01)

**Ellen Faulkner** (M Arch 01)

**Molly Walsh** (M Arch 01)

**Olivia Maria Mihale** (M Arch 01)

**Jessica Poore** (M Arch 01)

**ALEXANDRA IORDACHE** (BA 01)

**SAMUEL WARDLE** (BA 01)

**ANANYA PRAVEEN-REDDY** (BA 01)

**YOUTAO CHEN** (BA 01)

**ABDULAZIZ BAESHEN** (BA 02)

**MARIA SANGEORZAN** (BA 02)

**DERIN KLANTEN** (BA 02)

**EDWARD PUGH** (MLA 01)

**EVELYN BOYCE** (MLA 01)

## Partners

The National Coal Mining Museum for England hosts a range of exhibitions and activities on the site of the decommissioned Caphouse Colliery - where many former miners tell their stories of life down the pit. Activities and events preserve the valuable social and industrial history of the mining industry, which came to an end in the UK in 2015.

Dr Luca Csepely Knorr and Richard Brook run an AHRC funded research network: 'The Landscapes of Post-War Infrastructure: Cooling Down', which this project will be a part of.

Dr Luca Csepely Knorr is an award-winning writer, a Joint Programme Leader of the Master of Landscape Architecture course with Becky Sobell and a chartered landscape architect. She was born in Hungary and has a unique perspective on the relationship between UK and international practice with a passion for the importance of the female role in architecture.

Dr Richard Brook is the MSA Infraspaces atelier leader and a registered architect. He is particularly interested in post-WWII British modern infrastructure. Richard is currently leading 'The Life of Buildings' project, where he is collaborating to create immersive virtual reality models of historically important buildings from archival drawings and oral histories.

Laura Flynn is a primary school teacher in London and due to the COVID-19 pandemic, her Key Stage 1 reception class have never attended a real-life school trip. Her knowledge of communicating complex topics to young children will be shared with the team along with what would traditionally make a great school trip.

# Power-Trip

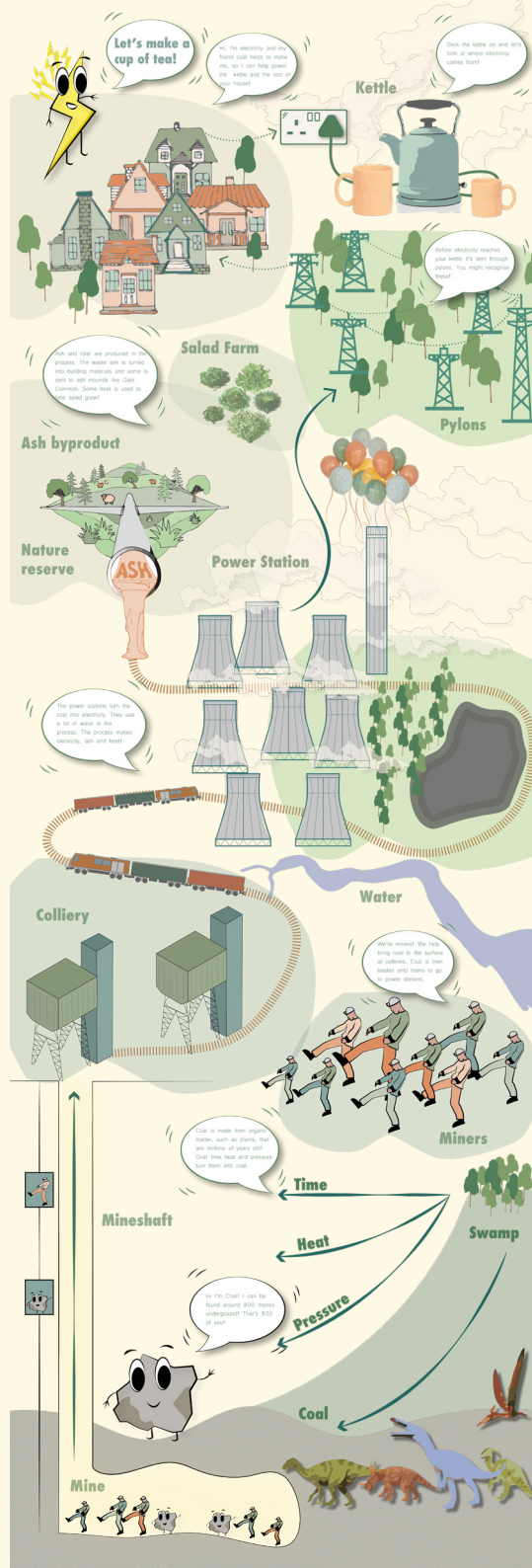
## Virtual School Trip & Exhibition

Power Trip will bring together the stories of power stations and coal mines into a virtual day-out for school children. Valuable built and natural environment school trips have been a severely restricted educational tool in the COVID-19 pandemic. This group will create a virtual school trip experience in the form of a website which re-interprets the complex histories of these infrastructures in an engaging, child-friendly experience. It will also act as a digital archive as power stations and coal mines are being demolished to make way for greener infrastructure. Content produced will also be curated to form a physical exhibition at the National Coal Mining Museum in the future. It is easy to recognise the architectural presence of post-war power stations and coal mines with their Brutalist form, but do we consider the landscape, social, and political context they sit within?

Our MSA Live event offers the opportunity for children to learn about post-war infrastructure through a fun and engaging virtual school trip. A normal school trip is an opportunity to break with routine and learn about somewhere new. Admittedly, we can't recreate the atmosphere of excitement as you wait for the bus, but we can give the children a chance to work with their friends to discover interesting stories through interacting with a new space. BArch & MLA students will design this new virtual space and create online games for the children to play on their "day out".

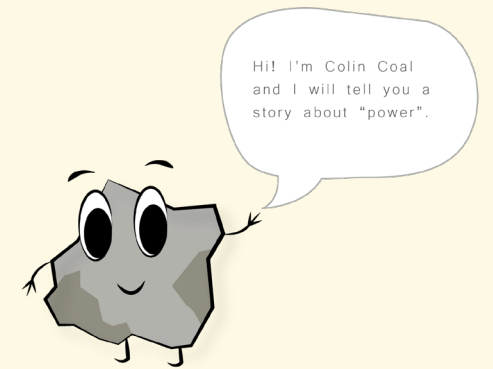
It will also give an opportunity to get architecture into the curriculum and show the positive effect architecture can have. Architects were not commonly involved in the design of industrial buildings but you can see the aesthetic and social improvements they made when the National Coal Board started using them. The huge, potentially overbearing forms were made monumental and iconic while hiding the messiness of the industrial day-to-day work. Amenities also played a large role, and the public was receptive to these industrial monoliths in their area because of these benefits to the community, despite the pollution.

These structures are steadily disappearing as we gradually switch to a fossil-fuel free energy system but their historical importance should not be understated. By educating children we are ensuring that these iconic buildings live on through in the next generation, even if their physical presence has faded.



The process of producing electricity was explained to school children using three characters. Following a presentation from our Primary School teacher collaborator Laura Flynn, who outlined the importance of children being able to attribute sounds and information to a person. This was particularly important when developing a virtual experience for young children. Therefore, Colin the Coal, Ellie the Electricity and Kelly the Kettle were developed to 'speak' to the children. The complex process of electricity generation was broken down through speech bubbles for the characters, which were also recorded by team members and uploaded as audio for the website.

The process was not only described in terms of infrastructural movement, but also describing the social impact of power stations and mines. We introduced the complex topics by starting with subjects five-year-olds were familiar with, such as dinosaurs forming coal. We also used topics learnt already in class to link to the curriculum, such as the UN Sustainability Goals and equal rights to reinforce the social value of power stations and coal mines. This helped the children question natural and man-made resources, which they had already started learning about.



Hi! I'm Colin Coal and I will tell you a story about "power".



Hi! I'm Ellie Electricity and I will tell you where I come from.



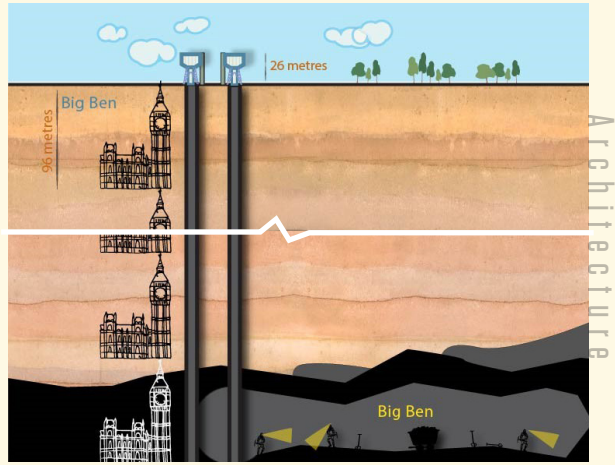
Hi! I'm Kelly Kettle and I will tell you more about how tea is made.

# Aire Valley Power Infrastructure



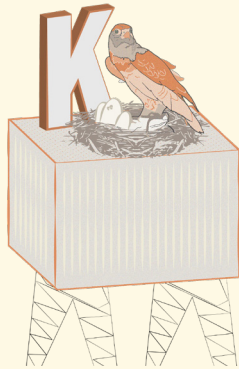
# Kellingley Colliery

Kellingley Colliery was the UK's last deep coal mine, closing in 2015 after 50 operational years. Construction began on the colliery in 1958 during the early period of rising social consciousness of the impact of post-war infrastructure. Under the National Coal Board, landscaping innovations were taking place such as the first use of planting semi-matured trees using root-balling technology to screen the mine from its rural setting.



During MSA Live, three thematic groups of MArch, BA and MLA students produced a series of illustrations highlighting key architectural, landscape and amenity strategies used for Kellingley Colliery. At the beginning of the week, a Miro board was used to share knowledge for the Research Methods Workshop 09 unit and then each group ran workshops to storyboard diagram ideas. Each diagram was designed to be child-friendly and assist in Key Stage 1 learning, such as showing how deep the colliery mining shaft was by comparing it to the Big Ben. The landscape diagram uses the UN sustainability agenda to show how a Peregrine Falcon would nest on top of winding towers, showing the biodiversity at the site. The amenity diagram illustrates the migration of miners to the colliery which resulted in various mining dialects being spoken. These dialects now risk being lost as coal mines closed.

man made?



natural?



landscape



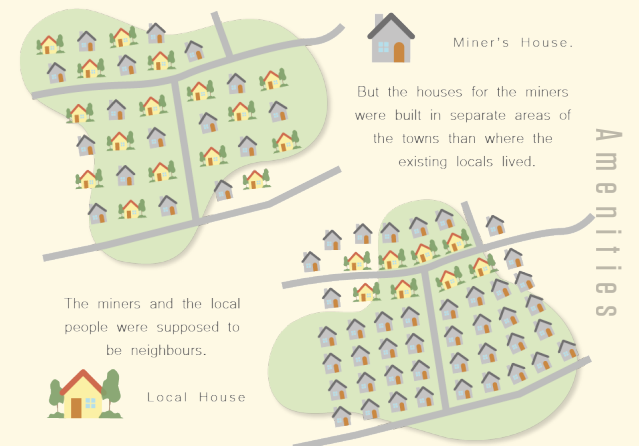
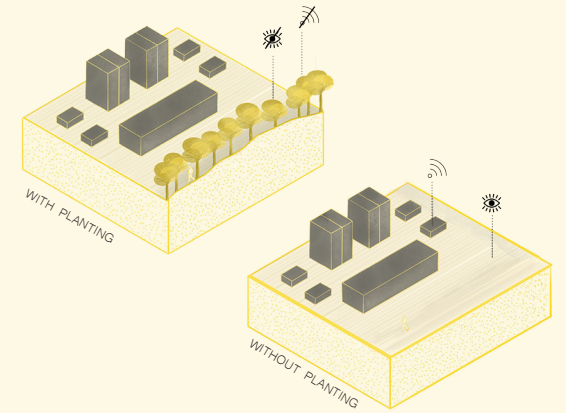
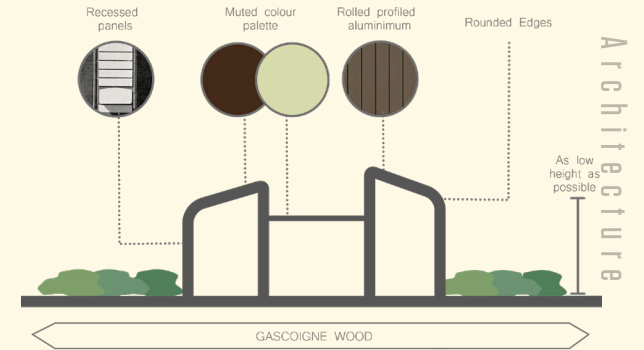
amenities

# Gascoigne Wood & the Selby Coalfield

Gascoigne Wood Drift Mine is the exit of the 5 shaft sites that make up the Selby Coalfield. It was the last mine to be built in the UK, construction started in 1976 and it closed down in 2004. Atkins Sheppard Fiddler Architects designed the scheme with careful attention to the environment as they were building on high grade agriculture land. There was also significant backlash from residents who had seen first-hand the destruction caused by the nearby Kellingley Colliery.

Gascoigne Wood was one of the biggest mines in Europe, 3 or 4 football pitches could fit in the Covered Stockyard alone. The architecture diagram shows the architects' use of a muted colour palette, low-rise construction and the break up of metal cladding into panels and recesses. In terms of landscape, the diagram to the right (made on Procreate) shows how landscape was used to hide the industrial activities at ground level.

The amenity diagram compares the planned approach and reality of the newly built housing for incoming miners. The Illustrator diagram efficiently portrays the conflict between long-term residents and miners in relation to new housing developments.



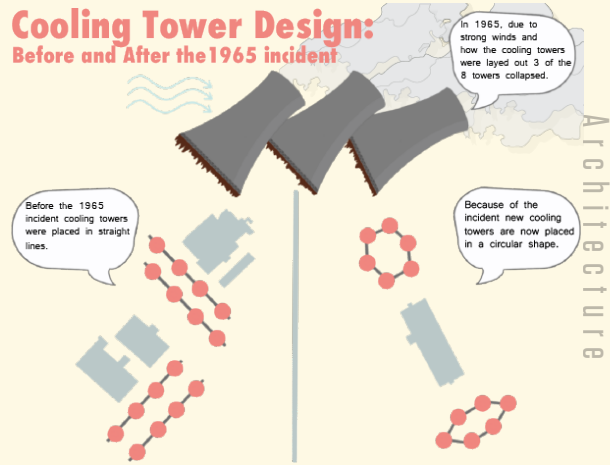
# Ferrybridge Powerstation

Ferrybridge 'C' was a coal-fired power station commissioned in 1966 by CEGB. The power station was the 3rd coal-fired one to be built on the Ferrybridge site, following the Ferrybridge 'A' and Ferrybridge 'B' power stations. It was decommissioned in 2016 as part of the UK-wide decarbonisation scheme.

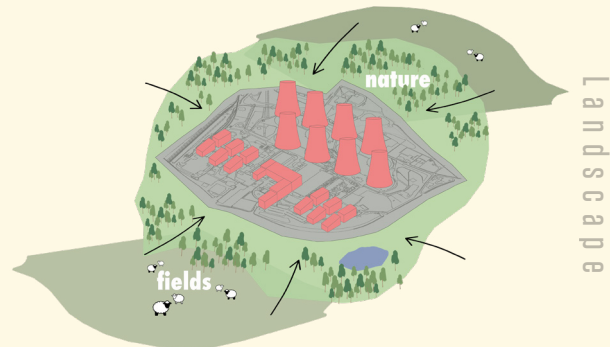
All diagrams explain in a simplified manner a rather complex matter about Ferrybridge. The Architecture diagram shows how a collapse of cooling towers resulted in the rethinking of the design approach for such structures. The direct comparison with Drax's cooling towers design makes obvious the importance that the Ferrybridge's collapse had on furthering structural integrity of power stations.

The Landscape diagram shows how a Green Belt strategy restricted unwanted expansion of the site. Kids can easily understand the idea of restriction through landscaping as the Green Belt is highlighted as a clear divider between the industrial area and the rest of the landscape.

The Amenity diagram talks about gender equality, a topic which is increasingly important in today's climate. Children are made aware of such an issue from an early age; therefore, they can grow to understand as well as combat the downsides of the world we live in.



Architecture



Landscape

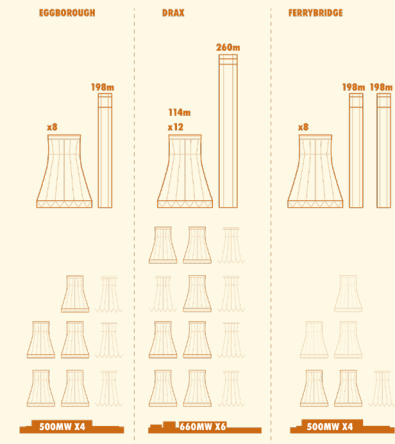


Amenities

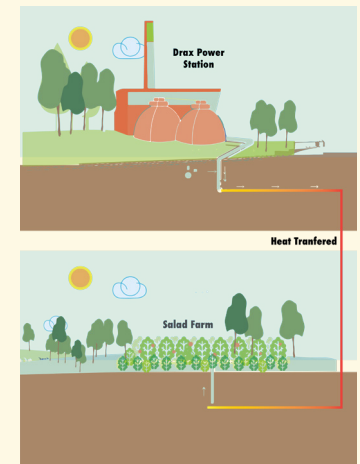
# Drax Powerstation

Drax Power Station is a coal-fired power station that was constructed in two phases, the first phase opened in 1974, and the second phase completed in 1986. The station was the last of the case studies to be completed and still operates today, having vowed to switch fully to biomass by 2025. The site was popular for social activities and many former employees spoke of fond memories.

Following tutorials on Illustrator, AutoCAD and Photoshop, we chose key aspects of Drax's design in the themes of Architecture, Landscape and Amenity. The architecture diagram focuses on a comparison between the power stations highlighting Drax's scale. A combination of InDesign and Illustrator was used to portray this aspect, effectively communicating this through only drawings and numbers. The next diagram emphasises Drax's ability to use recycled materials, both ash and heat for agricultural purposes, as part of its landscape strategy. The amenity diagram shows Drax's involvement with local education and depicts the scene of scouts having a tea party at the top of Drax's chimney taken from National Archive footage. We also regrouped in different teams to create resources for teachers including colouring sheets and nets of the case studies.



Architecture



Landscape



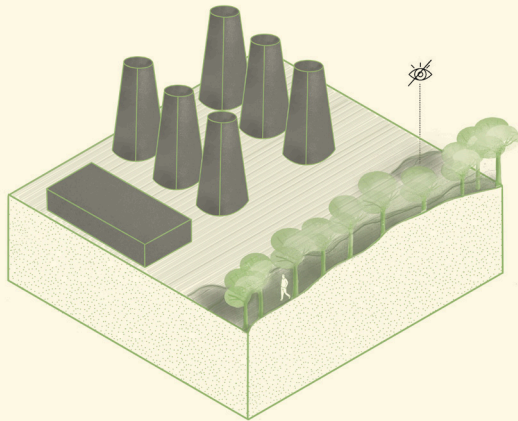
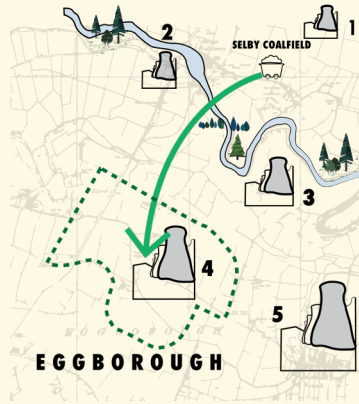
Amenities

# Eggborough Powerstation

Eggborough Power Station is a coal-fired power station that was opened in 1970, and decommissioned and partially demolished in 2018, after 50 years of power generation. The site was a popular location for local social events and sporting activities, and the design of the station and its landscape were important in the history of UK power station design.

Following presentations on child-friendly graphic design and a talk from Laura Flynn, a primary school teacher in London, we created diagrams explaining the design of Eggborough's buildings and landscape, and its provision of amenities for its workers. Amenities were an important aspect of the site's design, so we explored the existing research in detail, and presented them in two diagrams detailing their changing provision over time. By using child-friendly graphics with bold colours and simplified icons for each activity makes the diagram easily understandable by a five-year old. The diagram explaining the station's landscape design was drawn as part of a larger set of drawings depicting planting and the image depicting its architecture was a reinterpretation of existing work explaining how power station sites were chosen.

## HOW TO CHOOSE A POWERSTATION SITE



Eggborough 1968 Sports Fields Plan



Eggborough was designed to have...



Before it was demolished, all that remained was...



Eggborough 2000 Sports Fields Plan



Architecture

Landscape

Amenities

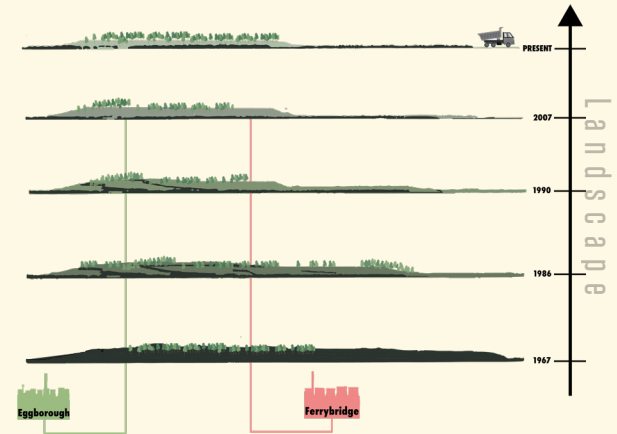
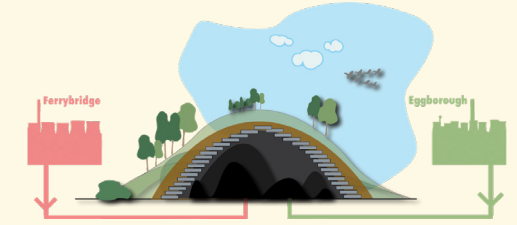
# Gale Common Ash Disposal Site

Gale Common was the largest ash disposal scheme in England. The site's use was phased across three defined stages. Stage I is complete and has since been partially restored and landscaped by Brenda Colvin. This hill is used for grazing livestock by a local farmer. Stages II & III are ongoing and involve the commercial extraction of ash from the site.

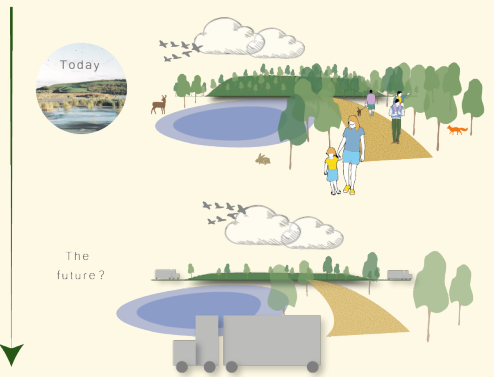
Architecturally, Gale Common was the first of its kind. What looks like a natural hill and nature reserve is actually an engineered masterpiece. The diagram explains graphically how the pulverized ash was used to create the mound which could be confused with a hill. This shows to the kids how man-made interventions can be easily mistaken for naturally occurring phenomena such as landscape formation.

Today the hill of Gale Common looks like a nature reserve with a large number of species. The timeline on the right shows the progression of Gale Common in section and what the site currently looks like today. The diagram is easy to understand, minimal text being required for its message to be sent across.

Gale Common has become controversial since what was once a green space, is now being taken away. As the extraction begins, the site of Gale Common will be changed forever. The amenities here can be seen changing in the diagram to the right.



## A MUDDY WALK THROUGH GALE COMMON



Architecture

Landscape

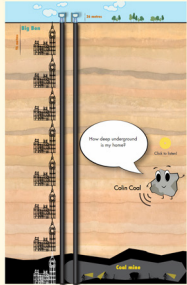
Amenities

## Quiz

1. Guess the meaning:



2. How many Big Bens deep is a mine?



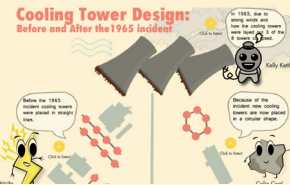
3.



## Gascoigne Wood & the Selby Coalfield



## Ferrybridge Power Station



# Virtual Exhibition

The highlight of our MSA Live experience was the “Virtual School Trip” on the Wednesday of the second week. After creating the website, we prepared a 50-minute long presentation for Ms. Flynn’s kids in Key Stage 1. The entire experience was a success, as the kids were entertained by the website’s content and really eager to learn more about how electricity is made. Given the time restriction, we only presented our “Coal to Kettle” diagram with a final quiz in order to understand how much they have retained of the information. Their engagement surpassed all expectations and their capacity to comprehend the entire journey of “electricity” - from coal extraction to power generation was awe-inspiring.

Another part of our website is represented by a Virtual Exhibition which aims to create an immersive experience with the content designed for the website. The space of the exhibition is in a physical room in the National Coal Mining Museum which will eventually hold a physical version of our work once the pandemic restrictions are lifted. The screenshots were taken from a virtual flythrough which can be found on the website.



SCAN ME

What uses electricity in your classroom?  
“Lights!”  
“Projector!”  
“Interactive Whiteboard!”

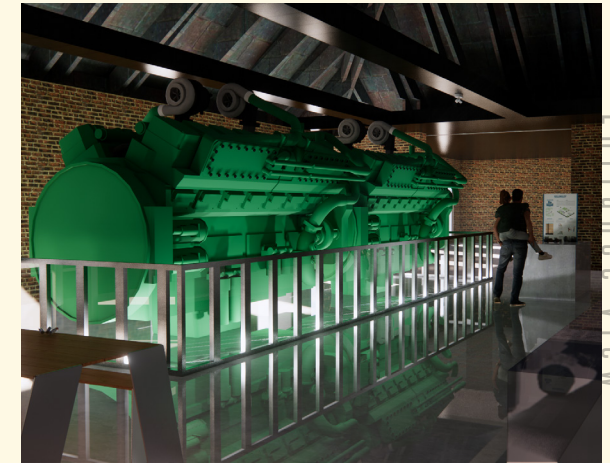
Do you know what coal is?  
“Coal is an ore in the ground.”  
“Nearly! Ores are usually metals.”

Do you know what a power station is?  
“A building that makes power!”

How old do you think coal is?  
“100 years!” higher...  
“200 years...” higher...  
“300 years!” Closer! It’s millions of years old

Is it fair that only men were miners?  
“No!”  
How can we respect gender equality now?  
“All play with each other.”

Who do you think helps Colin the Coal get to the surface?  
“Builders?,” “Other ground workers?”  
Nearly!, It’s miners!



Entrance View



Exhibition board



Back View



## ABOUT

Each year the MSA Live (formerly Events) programme unites M Arch. year 01 with B Arch. year 01 and 02 and M Land. Arch 01 in mixed-year teams to undertake live projects with external partners to create social impact.

## 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.

## 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 join for an eventful 2 weeks of activities at the end of the academic year.

## 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 600 students from 4 cohorts in MSA will work on 42 projects with partners.

## QUESTIONS

For questions about MSA Live 21 contact MSA Live Lead: Becky Sobell:  
**b.sobell@mmu.ac.uk**

## BLOG

[live.msa.ac.uk/2021](http://live.msa.ac.uk/2021)

## SOCIAL

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## WEBSITE

[www.msa.ac.uk](http://www.msa.ac.uk)