

MANCHESTER SCHOOL OF ARCHITECTURE

Infra-Game

INVERNESS

EDINBURGH

LIVERPOOL

LONDON

CONNECTION
Connecting the country one game at a time!

Visit msa.ac.uk for more information

Team

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Nidhi Anil Aralikatti (BA 02)

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Partners

Dr Richard Brook

A registered architect and MSA Infra-space atelier leader. Richard is an experienced architectural historian and is particularly interested in post-WWII British modern architecture, infrastructure, and the impact of government planning and regulation on the built environment. He is currently leading a project called 'The Life of Buildings', in which he and his collaborators are creating interactive virtual reality models of historically important buildings from archival drawings and oral histories. The project's long term aim is to create 'mixed reality' cities that co-exist with real cities to educate people on our lost architectural heritage.

Dr Luca Csepely Knorr

Chartered landscape architect and Joint Programme Leader of Master of Landscape Architecture in MSA. Luca's research focuses on the histories of landscape architecture, architecture and urban design from late 19th century to 1970s. She is experienced in co-ordinating multi-disciplinary teams within and outside of the university. She is currently co-organising an interdisciplinary network 'How Women Build', exploring the role of women in the construction industry amongst involvement with many other research projects.

Agenda

INFRA GAME

Project Background

Dr Richard Brook and Dr Luca Csepely-Knorr are experienced historians with extensive knowledge on post-war infrastructure and landscape. Their knowledge and investments contribute to a network research: *Landscapes of Post-War Infrastructure: Culture Amenity and Heritage*, which is funded by UKRI. This network research has united multiple teams of academics from government agencies, the private sector, community groups and artists to consider the landscapes of infrastructure broadly. By learning the past using collaborative and cross-disciplinary research, the objective of the network is to explore the ways in which art and humanities research methods can augment traditional forms of landscape assessment to reveal more of the intangible and qualitative values attached to the landscapes of infrastructure and create a holistic framework to support future decision-making.

To disseminate the research to a wider audience, the project is running a public engagement program, in which our project is involved. The follow-on-funding will enable the research team to work with filmmakers, film archives, museums and local schools to create interactive games and an immersive filmic experience, both to be premiered at the Bluedot Festival in 2021.

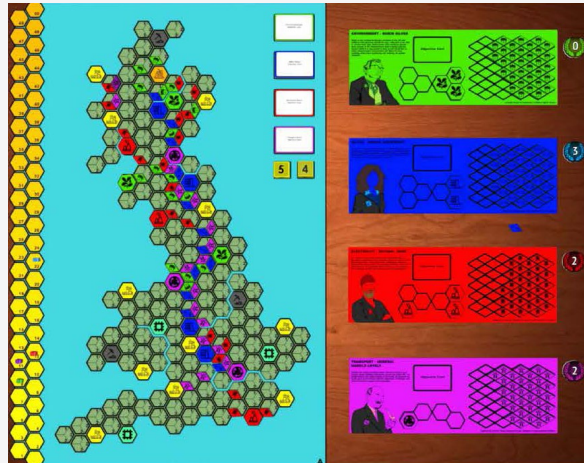
More information of project background can be found from these websites: <https://www.msa.ac.uk/postwarinfrastructure/> <https://postwarinfrastructure.org/>

Project Objective

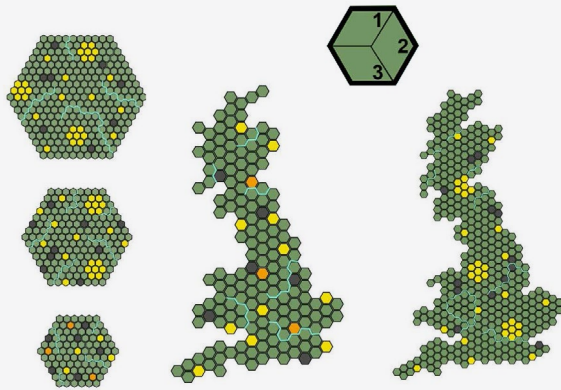
The landscapes of motorways, power stations, reservoirs and other forms of infrastructure can now be easily overlooked. Inspired by post-war infrastructure development principle, INFRA-GAME aims to develop board game into enjoyable educational tool to enlighten children with knowledge and consideration behind infrastructure and landscape planning. We will be working together to develop the exciting board game into an aesthetically attractive product. The board game will be ultimately available for sales in physical. Long-term social contribution will be achieved through this educational entertainment device.

Original Game Analysis

We selected the board game 'Connection' to further develop. We found this game fun, challenging and with clear connection with UK geography and infrastructure principle. The relationship with educational purpose is more explicit.



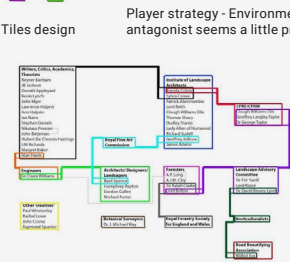
The shape of base board is designed according to UK map. We found this can be very inspiring to children and we appreciated this a lot. It is good that the hexagon has cooperative element. However, the overall board color and design is not appealing to kids enough.



The gameplay, such as missions, tiles, characters, is thoughtful. However the move strategy is not mature enough that the players may easily become the antagonists to each other. Dr Paul Wake shared his thought with us that more cooperative elements should be included to encourage kids to build up a cooperative mindset.



Mission Card

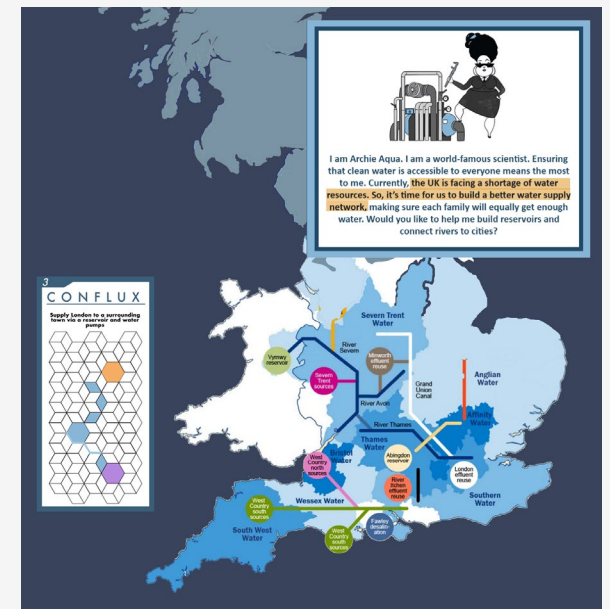
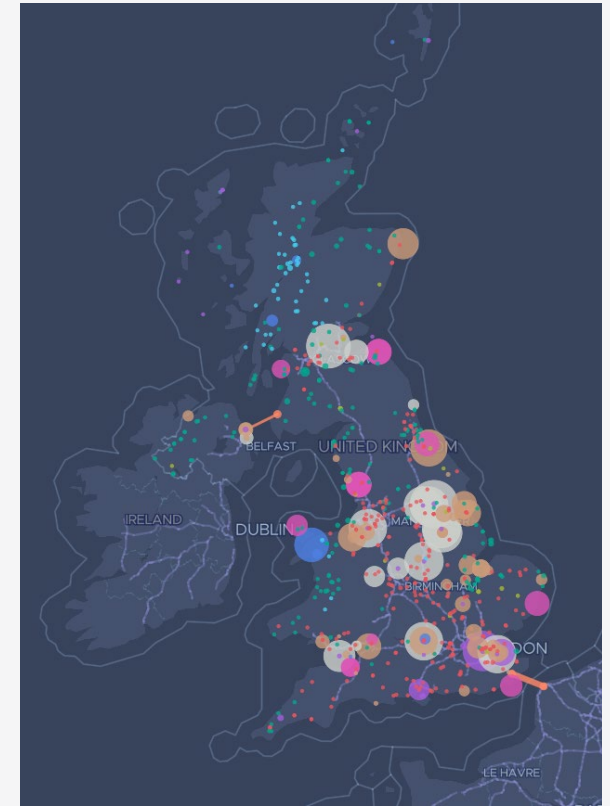


Background of Character Design

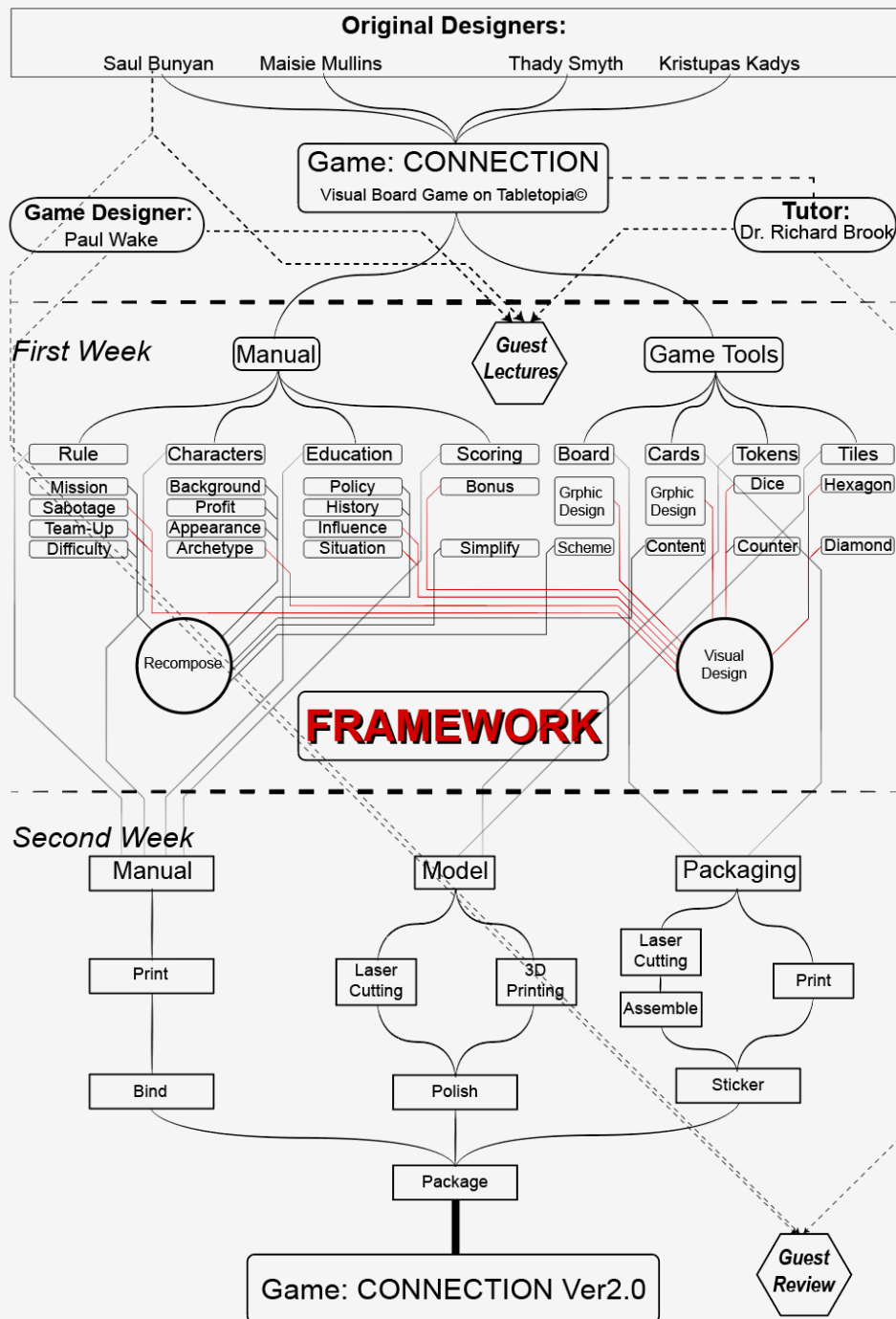
The Infra-Game project holds the purpose that deliver knowledge of infrastructure to younger generation. Meanwhile, the reflection from these young players could also benefits decision making in broader urban planning projects. Switching the role into game designer, the students need to stand on the users' perspective and rethink the educational aspect in board game design, which, requires ample knowledge on infrastructure and also the ability for design communication.

The project makes a promotion of a different interpretation of architects' professionalism: the role of architect is not only constructing, but also apply their specialty for society improvement. Students are required to focusing on both history and contemporary, in order to build a three-dimension cognition of infrastructure.

Alongside with the knowledge in original board game, a new research background also actively engaged in policy and technology revolution. For example, the improved game involves the clean energy revolution in UK electricity supply. As the reflection, the mission cards emphasis the importance of coastal electricity resources. Moreover, the design team made efforts to breakdown obscure information and blend them into each part: character/manual/mission. In this way, children will learn on their own initiative through these vivid illustration and approachable language.



1. Pearce, S. E. and R. (n.d.) Interactive: How the UK transformed its electricity supply in just a decade.



Manual Design

After thoughtful consideration that children will need to keep flipping the paper if the rule book is designed in traditional booklet-style, the team has decided to go for a folding manual rather than a rule book, so children can unfold the whole manual to easier cross-reference. With nice color scheme and graphics, the folding game manual allows itself standing like a 3D manual.

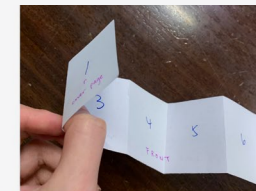


Folding manual in fact required the team to think more careful about the information sequence.

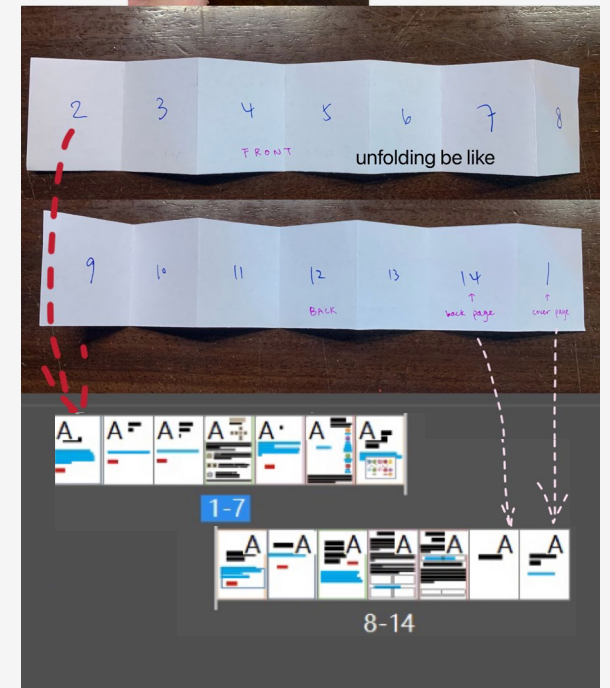
How to play

Simplified scoring calculation: gaining scores by completing missions and win the game.

- Step 1:** Roll the dice and calculate your budget
- Step 2:** Trade your budget with the bank to receive the tiles.
- Step 3:** Shuffle mission cards and draw one. If you roll a sabotage symbol on dice, draw one from the sabotage cards.
- Step 4:** Complete missions to earn points! (Remember: you will be awarded extra points if you collaborate with each other!)
- Step 5:** Announce the winner of the game to the first player that reaches 25 points (or any points of ending the game accepted by all players)



actual pamphlet look like



Base Board

UK map as the board basemap, we succeeded this idea from original design. This scheme aims to gives children geographic knowledge.

In terms of graphic design, The team has applied pastel color with symbols and illustrations to make the overall board more pleasant and engaging to children. The educational purpose is further strengthened by adding city names and revealing the basic geographical zoning of the UK, to help children understand more of the UK geographic concept.

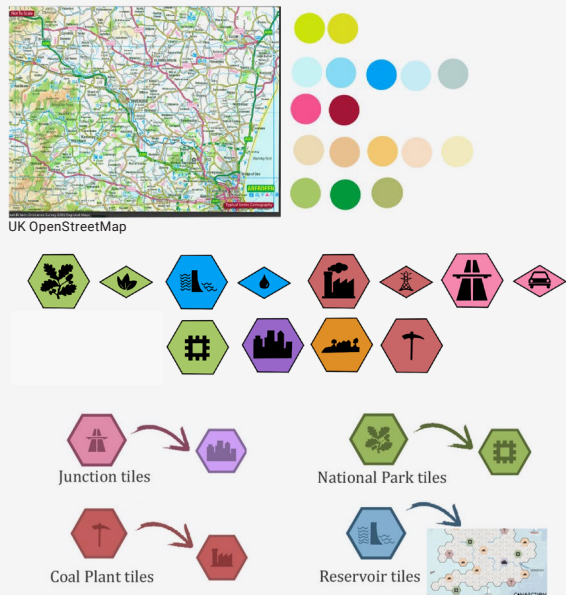
In this process, all the BA students was well-involved, especially someone who are good at drawing gave lots of valuable advices. and the final appearance (show on left) is the result of group work.



Color & Symbol Design

The team has taken from UK OpenStreetMap the color inspiration, and apply the color scheme consistently to all components.

The team was also actively improving the symbols to simplify the graphics, to make them more readable to children.



Characters Re-design

There are four game characters: motorway builder; electrical builder; scientist; landscape architect.

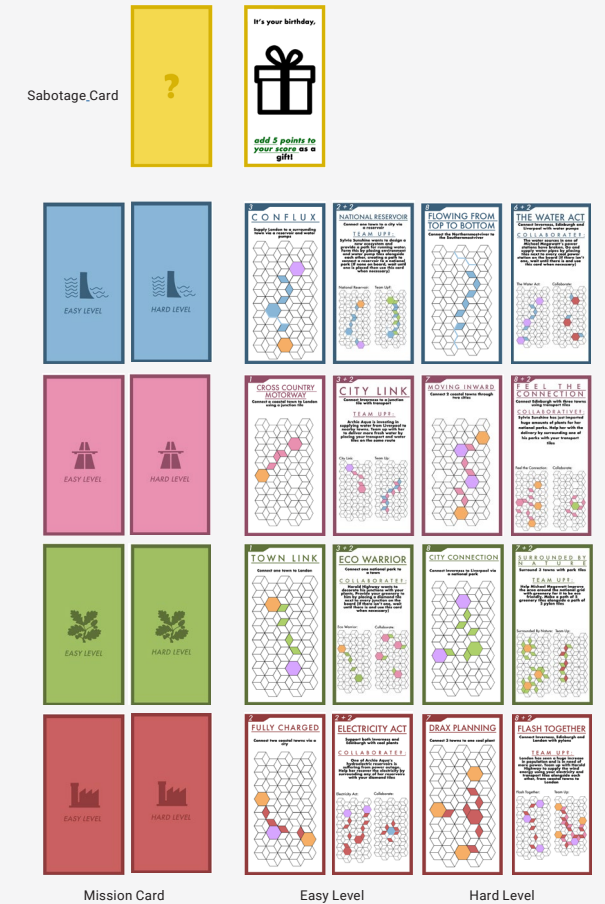
The team improved the character design. On top of making the characters more aesthetically appealing and their professional background more understandable to children, the team also considered the inclusion of gender and race diversity as professionals in UK.



Cards Design

Reconstructing mission cards is the most crucial part of improving both game mechanism and education information. Students took multiple-testing and writing to balance different cards, and each character was offered three types of cards as the final version. We break down the original mission and translate them into easy and hard tasks with short sentences for better absorbing. The introduction of collaboration cards contributes the trigger discussion of how different infrastructure could work together, which, achieve the knowledge delivery. Also, the team learned from well-designed board games and added effective cards for more fun in playing.

There are 10 mission cards for each character, of which 6 are easier mission and 4 are harder missions. There are 20 sabotage cards in total.



How to use the cards

At the start of each round, each player must select an easy or hard mission card at random and solve the task. Once the task is solved, pick another from the opposite pile, again at random. This order continues throughout the duration of the game. Each player has different missions and will work to solve their own tasks.

There is a collaborative option in some of the cards. You may choose to play collaboratively and gain extra points or play independently, its up to you.

It is also possible to draw sabotage cards. A player will draw a card and complete whatever action it states upon it. This can either be positive or a negative for yourself.

<p>Pay day!</p> <p>Earn 10 million!</p>	<p>You woke up late for a meeting.</p> <p>miss your turn!</p>	<p>Hurray! You have been elected director of your chosen infrastructure.</p> <p>pay everyone £1 million as a celebration gift. If you do not have the money to pay, everyone can go up one point on the scorer.</p>	<p>Your office has been broken into and you have lost money and resources.</p> <p>Complete one of your missions without visiting the bank or lose a point.</p>	<p>Don't fancy a trip to the bank?</p> <p>Add an extra tile to the board on your next move, free of charge!</p>
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<p>Seems like you've made great progress.</p> <p>Add 2 points to your score!</p>	<p>It's christmas and you've received a gift at work!</p> <p>The player sitting closest to you has to pay you 5 million.</p>	<p>You don't like how things are laid out.</p> <p>swap any 2 tiles on the board.</p>	<p>You're feeling generous.</p> <p>pay 5 million to another player of your choice!</p>	<p>Time for a change of scenery!</p> <p>Remove one of your mission cards and swap it for a new one from the deck.</p>
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<p>You've done some sneaky tricks without telling others!</p> <p>Remove an opponent's tile of your choice from the board and give it back to them, they don't receive a refund.</p>	<p>The route to your day's work has been blocked, so you have to turn around and go a different way.</p> <p>Order reverses and you miss your turn!</p>	<p>You've stormed out of a meeting in a temper.</p> <p>deduct 1 point from your score!</p>	<p>Place down 5 more tiles</p> <p>to earn an extra point!</p>	<p>You've had a big argument with another player.</p> <p>block their mission route as revenge!</p>
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<p>FULLY CHARGED</p> <p>Connect two coastal towns via a city.</p>	<p>DRAX PLANNING</p> <p>Connect to coal plants surrounding Liverpool and London.</p>	<p>GO FLASH</p> <p>Support a team with pylons.</p>	<p>METROPOLITAN POWER</p> <p>Connect Edinburgh and Liverpool with pylons.</p>	<p>RURAL POWER</p> <p>Connect two towns with pylons.</p>	<p>ELECTRICITY ACT</p> <p>Support both Liverpool and Edinburgh with wind plants.</p> <p>COLLABORATE!</p> <p>One of Archie Acker's National Reservoirs is needed to generate power. Make two rivers flow electrically by connecting your reservoir with four National Reservoirs.</p> <p>Electricity Act Collaborative</p>	<p>NATIONALISATION</p> <p>Connect 3 different coal plants.</p>	<p>FLASH TOGETHER</p> <p>Connect Liverpool with pylons and Edinburgh with wind plants.</p> <p>TEAM UP!</p> <p>London has a huge power plant in operation and is in need of more power. Help up with the wind plants, Liverpool and Edinburgh, to generate power. Make two rivers flow electrically by connecting your reservoir with four National Reservoirs.</p> <p>Flash Together! Team Up!</p>
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<p>DRAX PLANNING</p> <p>Connect 3 towns to one coal plant.</p>	<p>ELECTRICITY ACT</p> <p>Connect Liverpool and Edinburgh via wind and coal.</p>	<p>CITY CONNECTION</p> <p>Connect Liverpool to Liverpool via a national park.</p>	<p>2+2 SURROUNDED BY</p> <p>Surround 3 towns with park tiles.</p> <p>TEAM UP!</p> <p>Help your opponent by surrounding the three around the national park with 2 park tiles. The opponent will surround the greenery tile straight a path of 3 pylons.</p> <p>Surrounded By Nature! Team Up!</p>	<p>PARK CONNECTION</p> <p>Connect one national park to any city.</p>	<p>3+2 ECO WARRIOR</p> <p>Connect one national park to a town.</p> <p>COLLABORATE!</p> <p>Help Archie Acker's National Reservoirs generate power by joining with your own. You can generate power if you have 2 park tiles on the board. If you have 3 park tiles on the board, you can generate power when necessary.</p> <p>Eco Warrior Collaborative</p>	<p>PUBLIC PATHWAY</p> <p>Connect 2 different national parks.</p>	<p>GREEN BELT</p> <p>Connect a national park with 3 cities.</p>
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<p>TOWN LINK</p> <p>Connect one town to a city via a national park.</p>	<p>GREEN BELT</p> <p>Surround any city with park tiles.</p>	<p>3 COAST TO LAND</p> <p>Connect one coastal town from Liverpool to any national park.</p>	<p>2 GOING GREEN</p> <p>Surround one town with park tiles.</p>	<p>3 CON FLUX</p> <p>Supply London to a surrounding city via a reservoir and wind pumps.</p>	<p>2 WATER CONNECTOR</p> <p>Connect two towns to the same reservoir.</p>	<p>1 THE WATER ACT</p> <p>Connect London to Liverpool.</p>	<p>3 RURAL WATER</p> <p>Connect each river to one town.</p>
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<p>2+2 NATIONAL RESERVOIR</p> <p>Connect one town to a city via a national park.</p> <p>TEAM UP!</p> <p>Sybil's team has to deliver a package to a city for the construction of a new road. Help them by surrounding the package with 2 park tiles. The opponent will surround the package with 2 park tiles. The opponent will surround the package with 2 park tiles. The opponent will surround the package with 2 park tiles.</p> <p>National Reservoirs! Team Up!</p>	<p>1 DRAIN THE RIVER</p> <p>Connect one town to a reservoir.</p>	<p>5 WATER CONNECTOR</p> <p>Connect 3 towns to the same reservoir.</p>	<p>4+2 THE WATER ACT</p> <p>Connect Liverpool, Edinburgh and Liverpool with water pumps.</p> <p>COLLABORATE!</p> <p>Help Archie Acker's National Reservoirs generate power by joining with your own. You can generate power if you have 2 park tiles on the board. If you have 3 park tiles on the board, you can generate power when necessary.</p> <p>The Water Act Collaborative</p>	<p>2 RURAL WATER</p> <p>Connect London and Edinburgh via a reservoir.</p>	<p>8 FLOWING FROM TOP TO BOTTOM</p> <p>Connect the Northamptonshire river to the South East coast.</p>	<p>5 WHEN ENDS MEET</p> <p>Connect Edinburgh and London via the Mersey river.</p>	<p>6 WHEN THE NORTH MEETS THE SOUTH</p> <p>Connect the Southampton river with London.</p>
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<p>1 CROSS COUNTRY MOTORWAY</p> <p>Connect a coastal town to London using a junction tile.</p>	<p>2 MOVING INWARD</p> <p>Connect 2 coastal towns through London.</p>	<p>2 COUNTRY DEMARCATION</p> <p>Surround London with transport.</p>	<p>2 FROM THE TOP</p> <p>Connect Liverpool with its closest town.</p>	<p>2 TO THE BOTTOM</p> <p>Connect Liverpool with its closest town.</p>	<p>3+2 CITY LINK</p> <p>Connect Liverpool to a junction tile with transport.</p> <p>TEAM UP!</p> <p>Archie Acker is travelling to see his family in London. Help him by surrounding the junction tile with 2 park tiles. The opponent will surround the junction tile with 2 park tiles. The opponent will surround the junction tile with 2 park tiles.</p> <p>City Link! Team Up!</p>	<p>3 SUPER HIGHWAY</p> <p>Connect two towns with transport tiles.</p>	<p>8+2 FEEL THE CONNECTION</p> <p>Connect Liverpool with three towns.</p> <p>COLLABORATE!</p> <p>Archie Acker has just imported huge amounts of plants for his national parks. Help him with the delivery by surrounding one of his parks with your transport tiles.</p> <p>Feel The Connection Collaborative</p>
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£ 10m	£ 5m	£ 2m	£ 1m	£ 1m
£ 10m	£ 5m	£ 2m	£ 1m	£ 1m

Dice & Money

The game is played with 2 dice. You can roll the dice to add money to your budget. The amount of money you get in each round is the sum of the numbers on dice. Draw a sabotage card if you see the symbol on dice. You can decide to use it immediately or to keep it for later. If you roll a double figure, you will be awarded an extra £5 million. Buy your tiles at the Bank. Each hexagon costs 5 million, each diamond costs 1 million.



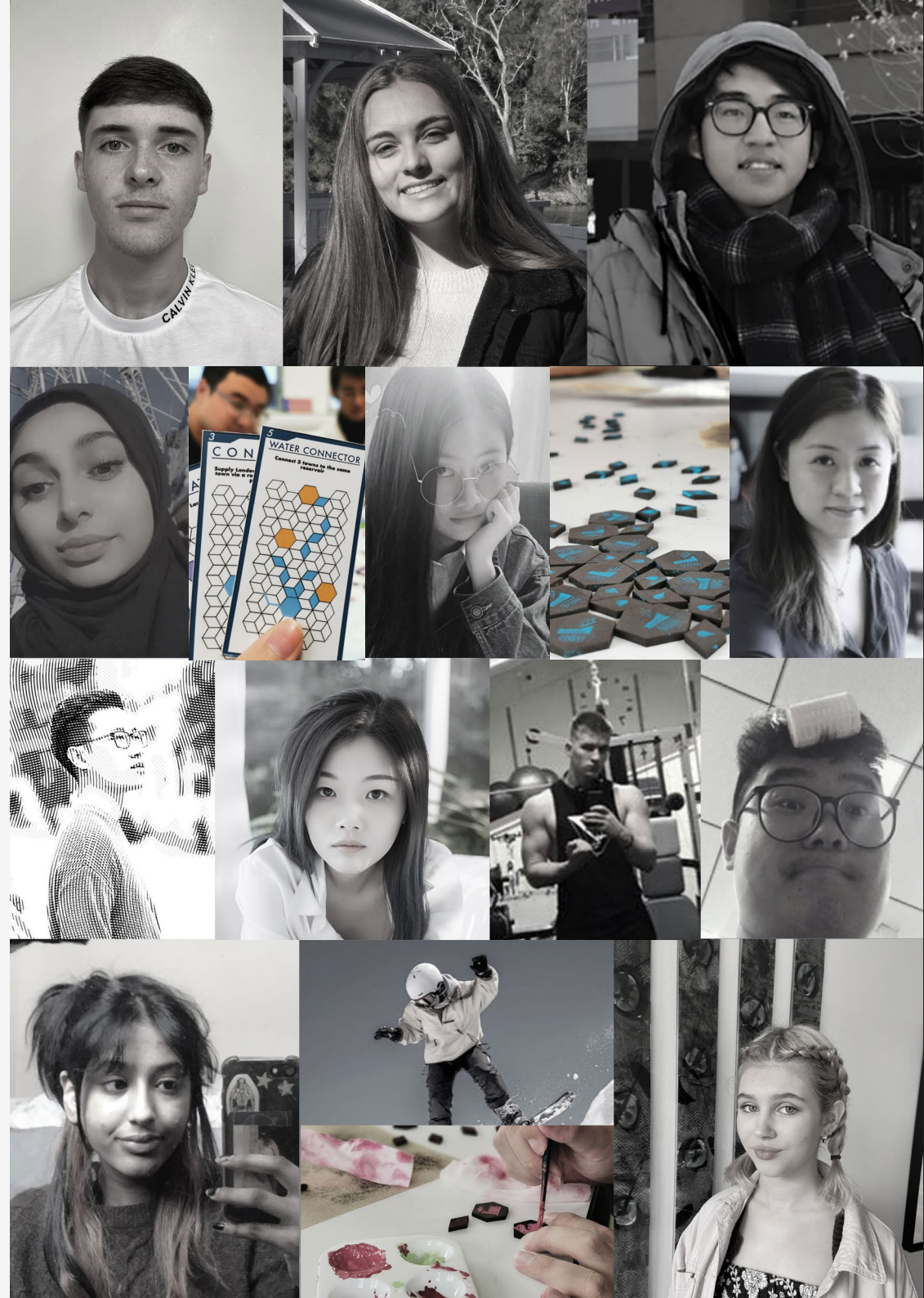
Logo Design

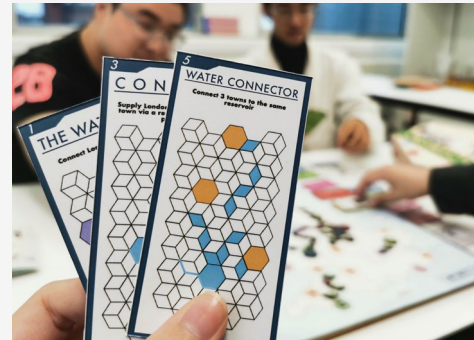
The team has designed a wonderful logo for the game. Infrastructure symbols are integrated in the game name 'CONNECTION', which effectively convey the infrastructural nature of the game concept.



Package Design

Extending from the design language in game components, the package box design has applied hexagonal shape. Same characters, logo with infrastructural symbols, extraction of UK map were put together as package design elements, which helps to create the box into a visually-communicable one.





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

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