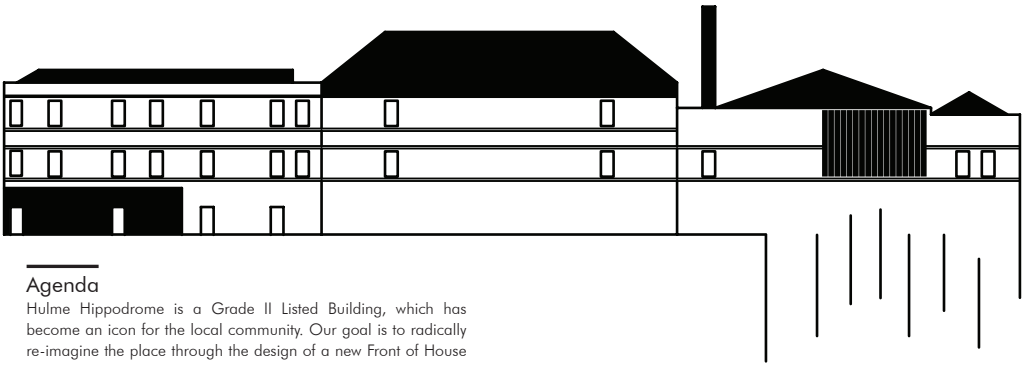
MANCHESTER SCHOOL OF ARCHITECTURE

Re - Imagine The Hippodrome



Agenda

Hulme Hippodrome is a Grade II Listed Building, which has become an icon for the local community. Our goal is to radically re-imagine the place through the design of a new Front of House opening onto Warwick Street, which would catalyse the redevelopment of the whole area and transform it into a shared cultural and civic space.

Skills

- Virtual Reality
- 3D Modeling
- Rendering
- Presentation
- Photoshop/ Indesign/ Illustrator

Team

- Zhustin Zhekov
- Ya-Han Chang
- Winston Leung
- Kyungho Oh
- Quanze Ma

Visit msa.ac.uk for more information

MANCHESTER 1824 The University of Manchester

Manchester Metropolitan University

Save Hulme Hipp

MSA LIVE 24

Team

Ya-Han Chang (MA AR)
Winston Leung (M.Arch 1)
Quanze Ma (MA AR)
Kyungho Oh (MA AR)
Zhustin Zhekov (M.Arch 1)

Max Dermitzakis (FDN)
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Aryan Chandra (BA1)
Karol Wegrzyn (BA1)
Parth Jain (BA1)
Suet Ning Audrey Ko (BA1)
Amelia Guy-Williams (BA2)
Fang-Tian Lin (BA2)
James Pound (BA2)
Qiwen Zhang (BA2)
Rory Mclaren (BA2)

Partners

Save Hulme Hippodrome Ltd. is a local community group, also known as Friends of Hulme Hippodrome. Beyond their efforts to slow or halt ongoing demolition actions, they are collaborating with Manchester City Council to protect the building. They are currently applying to have it listed as an Asset of Community Value and are cooperating with the Charities Commission on an investigation into the circumstances surrounding the sale.

Save Hulme Hippodrome envisions a future for the Hippodrome that benefits the arts and the communities of Manchester for another 120 years. This vision includes a complete refurbishment, new mixed uses for the various spaces within the building, and placing the building into community ownership.

In March 2021, Save Hulme Hippodrome raised over £17,000 from more than 500 donations. These funds will be used to finance essential structural and conditional surveys, as well as an independent fair market evaluation. These actions are crucial steps in rescuing and securing the building for the future.

Agenda

Re-Imagine the Hippodrome

The Hulme Hippodrome is a magnificent 120-year-old historical theatre complex, which consists of two twin theatres and one floral hall. Established in 1901, it stands as an iconic piece of social and historical architecture that has witnessed countless performances and events over the decades. Renowned for its stunning Edwardian-style interior decoration, the Hippodrome is adorned with exquisite gilded Rococo plasterwork, making it a true gem of architectural heritage.

Since 2006, this remarkable theatre has been on the 'Theatres at Risk' list, highlighting its need for preservation and restoration. Due to extensive structural disrepair, much of the complex remains unused and in dire need of attention. However, there is a glimmer of hope as the second theatre has been successfully converted into a vibrant cultural and music venue, now known as Niamos Radical Arts & Centre, which is open to the public. This venue continues to breathe life into the historic complex, offering a space for artistic expression and community engagement while the rest of the theatre complex awaits restoration.

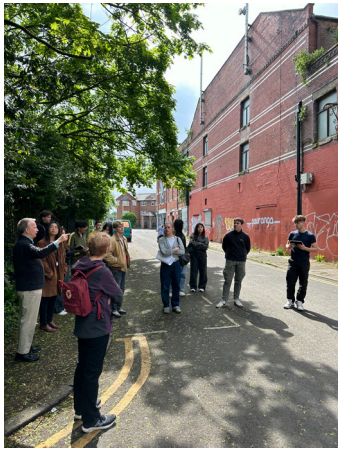
Our goal was to redesign the facade along Warwick Street. Our team of students explored and analysed the site from various perspectives, using hand sketching, digital drawings, 3D modelling and AI generated tools. By utilising these diverse approaches, we aimed to ensure a comprehensive understanding of the site and generate innovative design solutions. Once the initial ideas were finalised, they were discussed in detail and evaluated for practicality and budget considerations by our amazing collaborators from Save Hulme Hippodrome. Additionally, by using 3D modelling and VR technology we aimed to improve the participants' modelling skills and also enhance the visitor's experience.

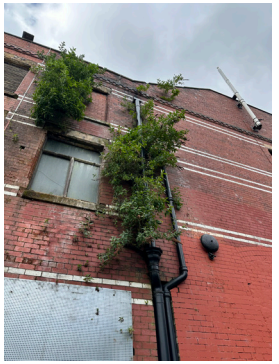
Site Investigation

Site Visit

On site, we met our collaborators from Save Hulme Hippodrome - Tony and Elaine. They gave us a detailed tour of the history and local memories around the Hippodrome.

During the visit, we also received a voluntary opinion by a local resident, who told us about the past days of the building and the childhood memories he had.





Apart from gaining knowledge from historical perspective, we also took some simple measurements, that helped us obtain a more accurate information about the scale of the building.

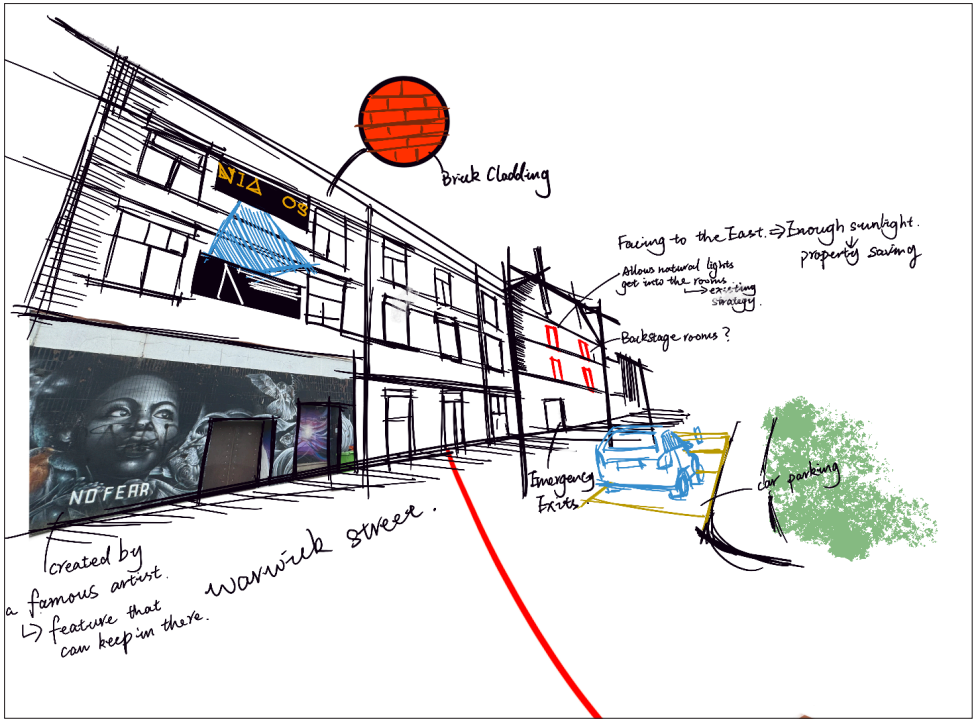
Impressions

Collages

After visiting the site, we began sketching our impressions of the Hippodrome. We were impressed by the value of the building for the local community and its history as a beacon for entertainment.

Some students used hand drawing to spot out the distinctive features of the site, capturing its scenery with traditional approach.

Others opted for a more modern approach, using Photoshop to create digital collages that embodied historical patterns and elements.

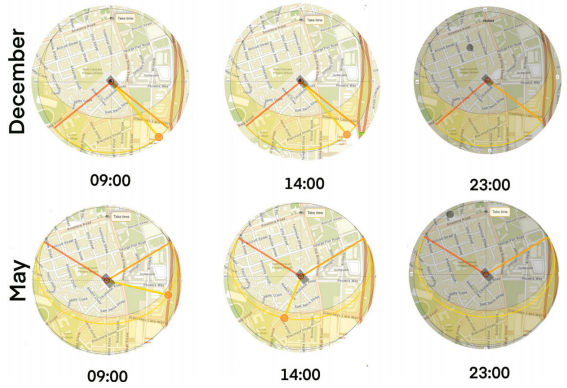


Site Analysis

SWOT Analysis

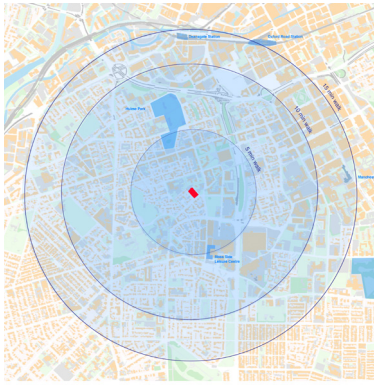
Dividing the students into teams, we aimed to explore the building from different angles, that would later serve as the basis for our design approach.

Sunlight Study



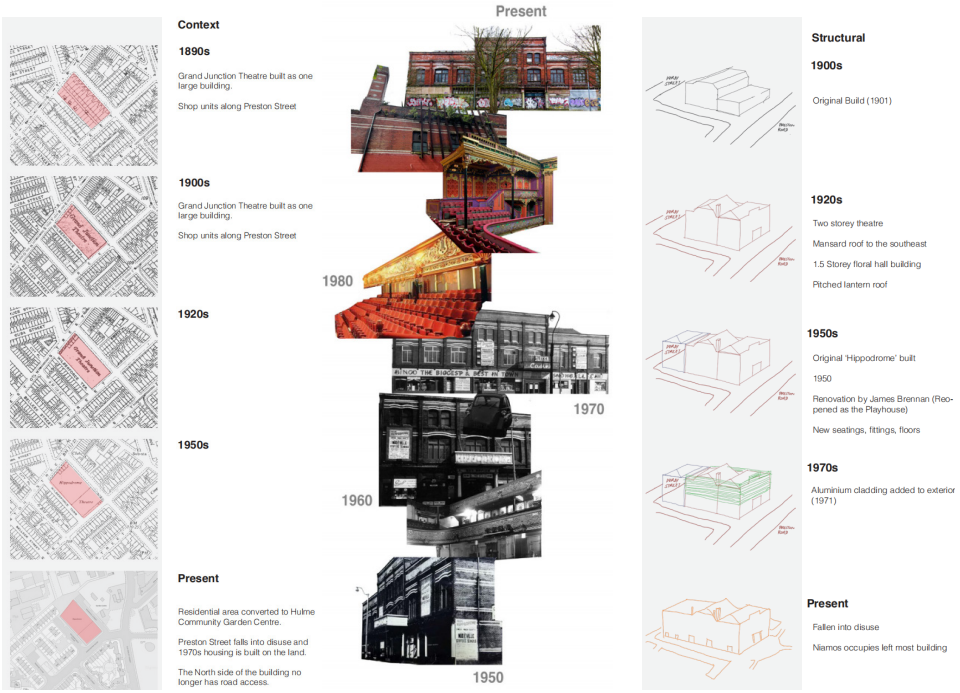
We found out that the facade receives almost no sunlight and little wind throughout the year, which determines the existence of wild vegetation.

Walking Distance



The location allows for easy access to the universities and the city centre, which increases the value of the site.

Historical Analysis

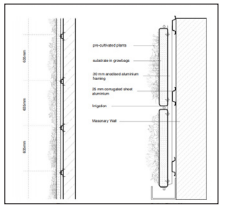


The Hulme City Challenge scheme from the 1990s was introduced to redevelop the area. The proposals promised new homes and community facilities, but minimal progress has been achieved since then.

Precedent Studies

This precedent provided some insight into the implementation of green technology into a historic fabric.

New green wall (Jose Maria Chofre)



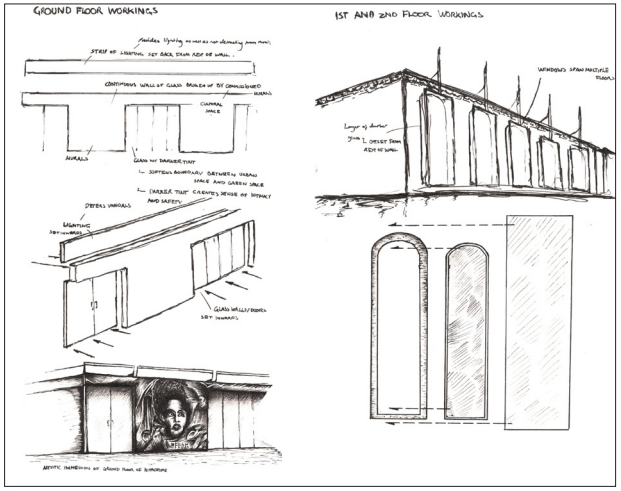
The green facade system was designed by Sempergreenwall using grow bags filled with substrate and mounted on flexible plastic panels, which themselves sit within a frame of aluminium sections.

Office Building in Stavanger

Initial Ideas Conventional Techniques

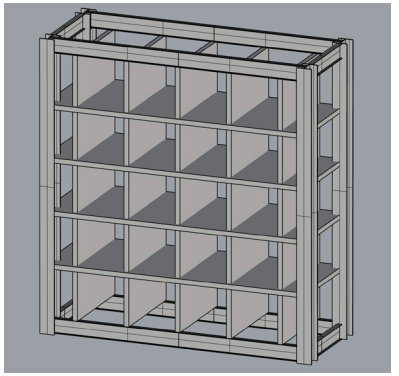
The initial design approach implemented the idea of using green wall frame, attached to the facade. We worked in 3 teams to explore the concept through modelling, collaging and AI generated images.

Iteration #1 *Iteration #2* *Iteration #3*



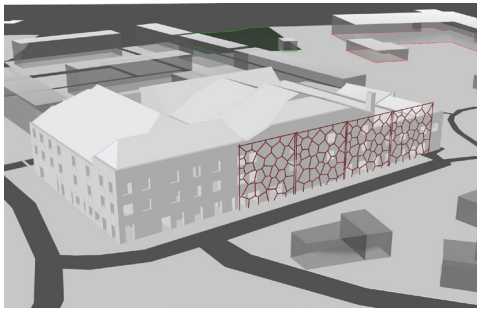
The sketch group was tasked with exploring initial design ideas through conventional techniques by sketching the architectural elements of the facade. As they carefully drew the structure, they identified key features and discovered the potential for incorporating a green wall. This approach allowed the group to thoroughly understand the façade's characteristics and envision innovative ways to enhance its aesthetic and functional aspects.

Rhino Exploration

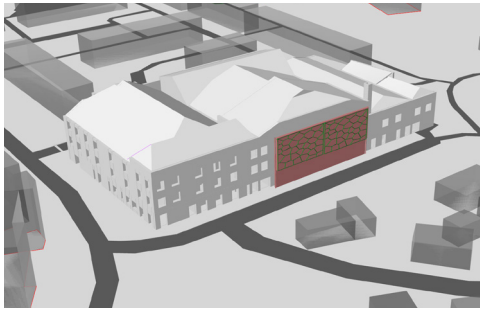


The modelling team was in charge of producing 3D iterative design on Rhino, which implemented the ideas of the sketching group. One of the student was using plug-in applications such as Grasshopper to illustrate the frame work of the plant wall. The green wall panels will be integrated into the frame, creating the impression of floating plants.

The structure will be comprised of steel I-beams, and the system will be braced every sixth bay for additional stability.

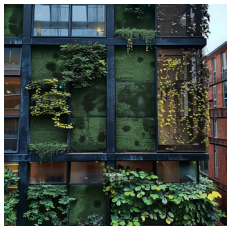


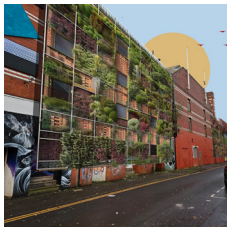
Iteration #1



Iteration #2

Midjourney



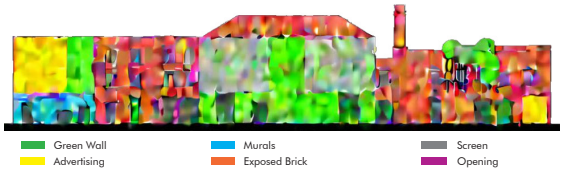


The third group of students used the AI generator tool Midjourney to gain inspiration for the facade. By refining their descriptions fed into the AI engine, they learned how to produce more accurate graphics, which in turn were used to create collages by combining these AI-generated images with actual site photos.

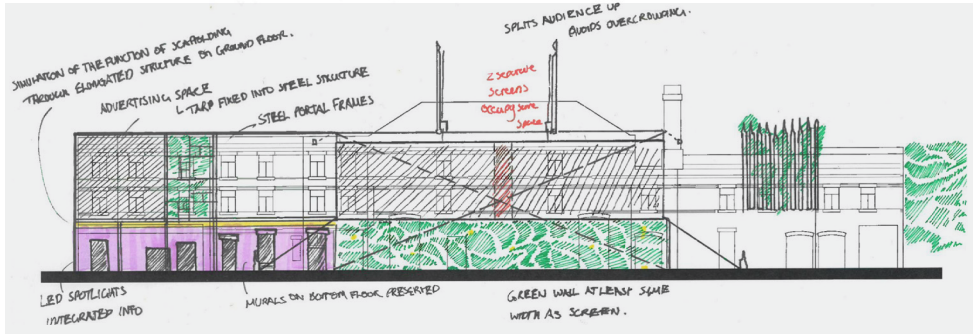
Design Concept

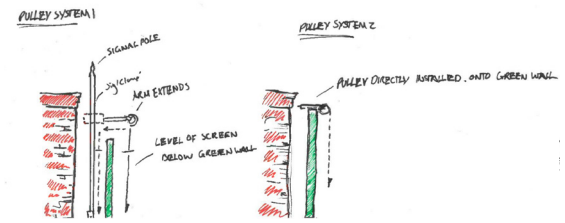
Ideas Testing

Collages combining the ideas of the three design teams, showing the future site during day and night. The irregular shape of the green wall frame will attract the curiosity of passers, while the rolling screen will provide entertainment. The frame will be also lit at night to prevent anti-social behaviour.



Using Midjourney, we were able to generated this sketchy elevation, that outlines the proposed changes. However, the result was a mixed success, due to the limitations of AI.

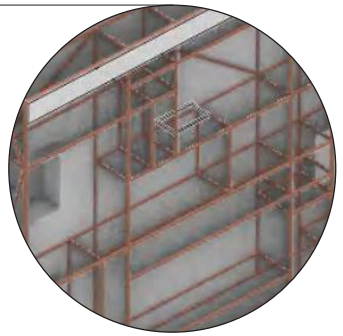




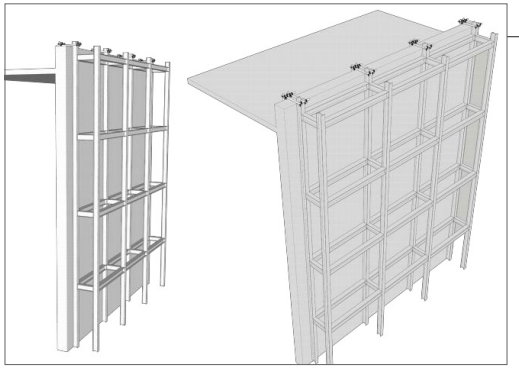
After the initial brainstorming, we kept the idea of the green wall, but we attached to it a pulley-system screen, which can be used for advertising, and movie projections. The murals, of NIAMOS would also be preserved, as part of the local vernacular.

Proposed Visuals

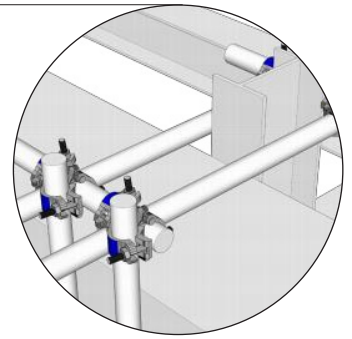
Structural Detail #1



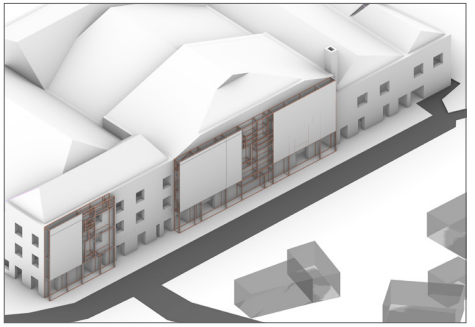
In terms of the engineering behind the proposal, due to the structurally compromised Hippodrome facade, the frame will need to be bolted to the ground using an anchor system.

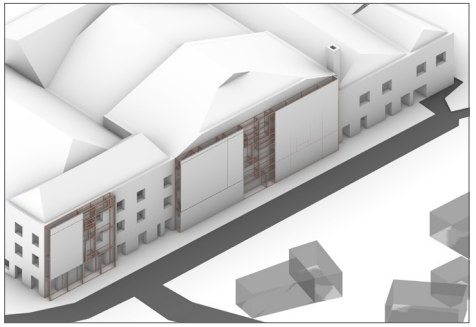


Structural Detail #2



The only contact point between the proposed frame and the external structure would be the top parapet of the Hippodrome. Due to a risk of overturning, the proposed frame will need to be lip tied to the existing parapet.

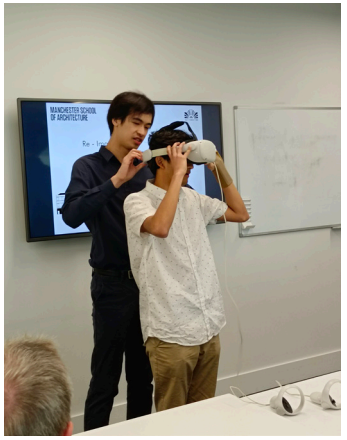


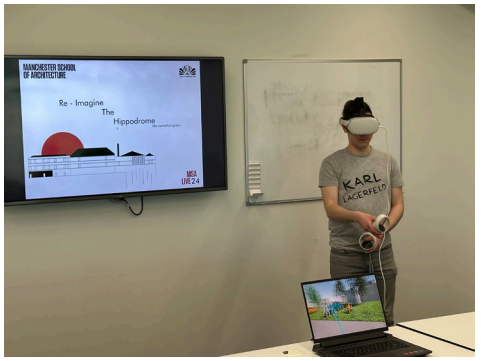


The idea behind the two separate screens is to prevent overcrowding and to generate more income by displaying two different events/ adverts.

Midterm Report

Client Meeting





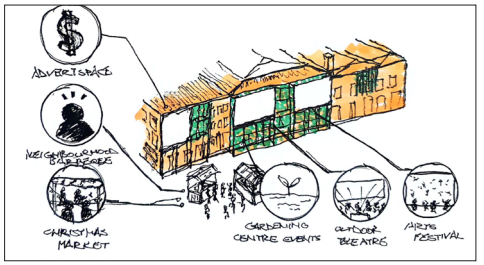
On Day 5, we had our initial presentation with our collaborator, Tony. This was the first time we showcased our ideas using a VR equipment. Based on his feedback, in which he expressed some concerns about the budget and the climate conditions for the installation idea, we set out to improve our design. He encouraged us to further investigate the budget constraints and weather resistance of the proposal, with a focus on the green frame.

Following the presentation, we decided to divide the students into two focused groups to tackle the feedback we received. The green group continued to develop the vegetation wall proposal, exploring various design possibilities and assessing its feasibility. The screen group concentrated on studying the budget implications and investigating ways to enhance the weather resistance of the screen installation.

Reflecting on the first design week, everyone was satisfied with the amount and quality of work we had produced. For the next week, we aimed to improve the collaboration between the different cohorts, as there was a tendency of students interacting primarily with their own peers.

Option #1

Screen Team

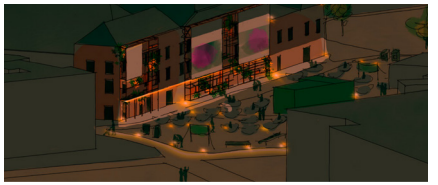


The screen team identified that a collaboration with the nearby Hulme community Garden Centre would be an ideal case scenario for the design, as it will open more space for events to take place. This will have benefits for both the Hippodrome and the Centre as it will generate a steady flow of income for both parties.

Day-time scene: Art Festival

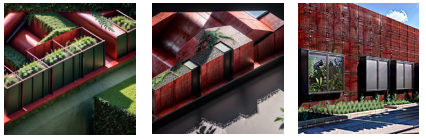
Seasonal events: Christmas market

In the evening, the venue could be transformed into an outdoor theatre with popular movies playing on the screen. This venue will have the potential to become a great place for the community to gather and relax.



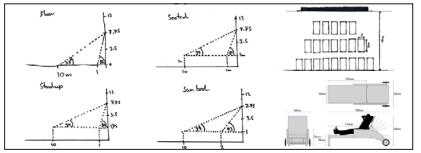
Night-time scene: Outdoor theatre

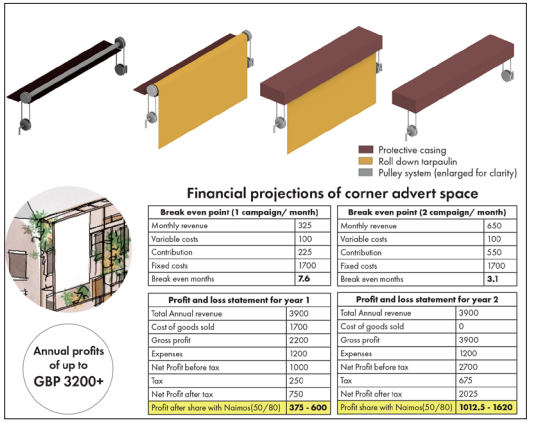
Technical Drawings & AI



Perforated steel, glass panels, or steel mesh can be utilised in the final proposal.

Theatre Seating Plan





Break even point (1 campaign/ month)	
Monthly revenue	325
Variable costs	100
Contribution	225
Fixed costs	1700
Break even months	**7.6**

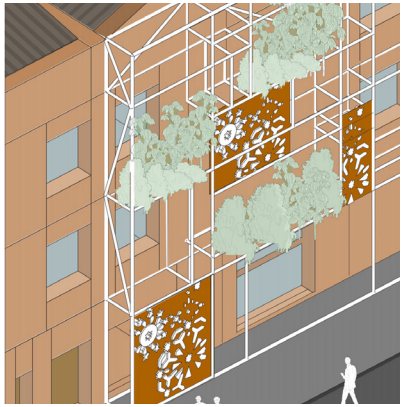
Break even point (2 campaign/ month)	
Monthly revenue	650
Variable costs	100
Contribution	550
Fixed costs	1700
Break even months	**3.1**

Profit and loss statement for year 1	
Total Annual revenue	3900
Cost of goods sold	1700
Gross profit	2200
Expenses	1200
Net Profit before tax	1000
Tax	250
Net Profit after tax	750
Profit after share with Naimos(50/80)	**375 - 600**

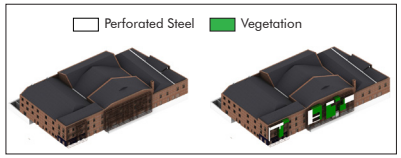
Profit and loss statement for year 2	
Total Annual revenue	3900
Cost of goods sold	0
Gross profit	3900
Expenses	1200
Net Profit before tax	2700
Tax	675
Net Profit after tax	2025
Profit share with Naimos(50/80)	**1012.5 - 1620**

Option #2

Green Team



Proposed view of the green wall frame that incorporates the idea of using perforated steel panels.



The left isometric shows the steel I-beam frame and the right one shows the position of the corten panels and the greenery on the frame.

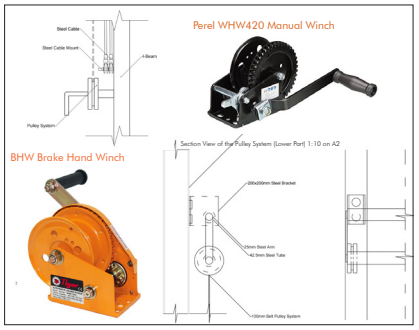
The starting point for the design was this elevation that explored the structure and the aesthetics of the proposed frame.

Iteration #1 explores the potential planting options for the design.

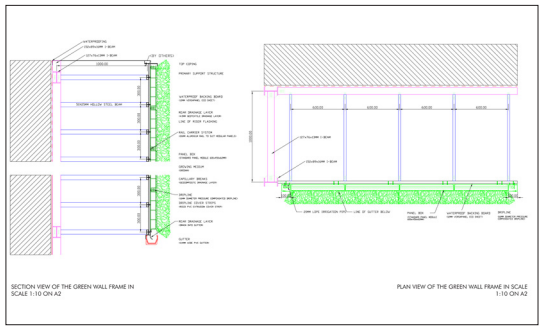
Iteration #2 incorporates a mesh inbetween the steel frame.

The LED lighting around the perimeter of the building would highlight the Hippodrome to visitors at night and prevent anti- social behaviour. It can be powered by solar panels, positioned on the roof.

Detail Design (Green Wall & Pulley System)



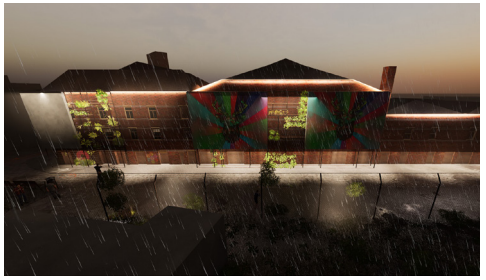
The manual pulley system suits the local climate. A ball bearing system prevents bending by halving the span and evenly distributing the load.



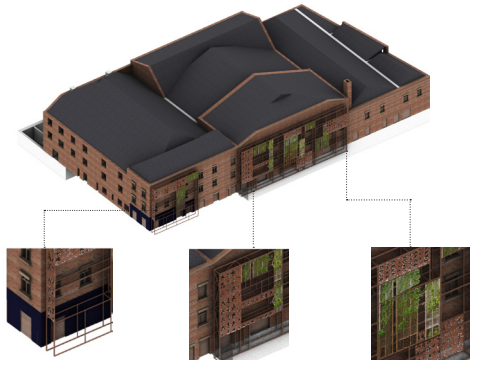
The green wall frame utilises the use of I-beams as the primary structure, and hollow rectangular steel beams that support the prefabricated green wall panels.

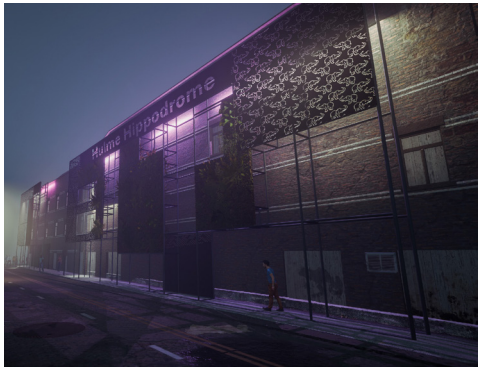
VR Renders

Option//#1 Screen Team



Option//#2 Green Team





Reflection on the Project

MSA Live provided us with the opportunity to take ownership of our own project. By managing a team of students, while collaborating with external partners, we managed to gain knowledge and skills that will later help us in our career development.

Blog

SCAN ME

YouTube Video

SCAN ME

About

Each year the MSA LIVE programme unites Masters Architecture year 1 and Masters of Architecture & Adaptive Resuse students with those in BA foundation, 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.

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 are for community benefit or 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 joined 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 6 cohorts in MSA have worked on 40 projects with partners.

QUESTIONS

For questions about MSA LIVE please contact the MSA LIVE team:

msalive@mmu.ac.uk

BLOG

live.msa.ac.uk/2024

SOCIAL

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@TheMSArch
@MLA_TheMSArch

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