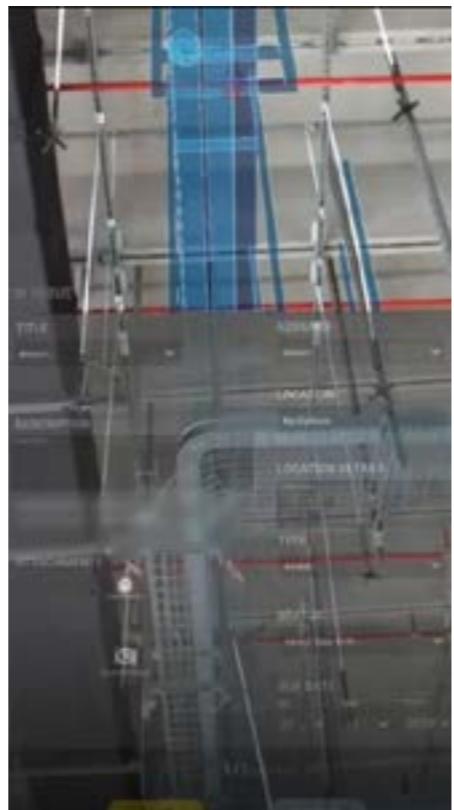


Portfolio

Assankhan Amirov

HoloSite - XYZ Reality

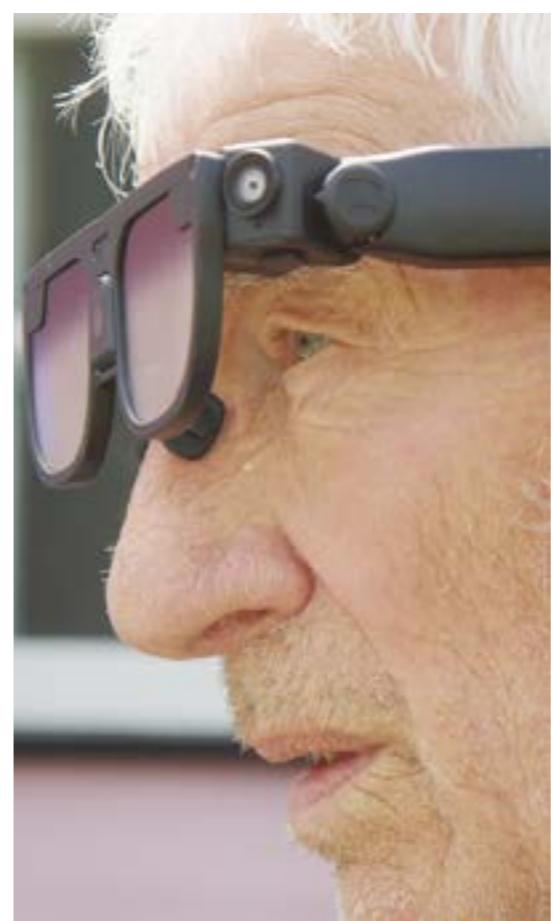
Delivering millimeter-accurate BIM overlays onsite via a hard hat and visor, engineering-grade AR enables real-time validation of construction installations. As a Unity developer on the team, I worked on both user experience features as well as core functionality integrating 3D models, construction data, and hardware.



CrossSense - Animorph

Unity/C++/C#/Figma

Wearable AR glasses and a companion app co-designed with early-to-mid dementia patients deliver cross-modal audiovisual cues that blend into the user's environment, helping them stay focused on daily tasks, avoid hazards, and remember plans. An edge-server architecture leverages machine learning to personalise these associations on lightweight hardware, ensuring low latency, high privacy, and support for independent living.



Jungle Trail - Animorph

Unity/C++/C#/Figma

An AR app guides children through a jungle-themed hospital trail led by an interactive tiger, encouraging exploration beyond their bedspace. By gamifying movement, it boosts confidence, mood, and cognitive function, with plans to expand coverage, add motion tracking, and evaluate outcomes for wider adoption.



Augmentedly Delicious

8thWall/Javascript

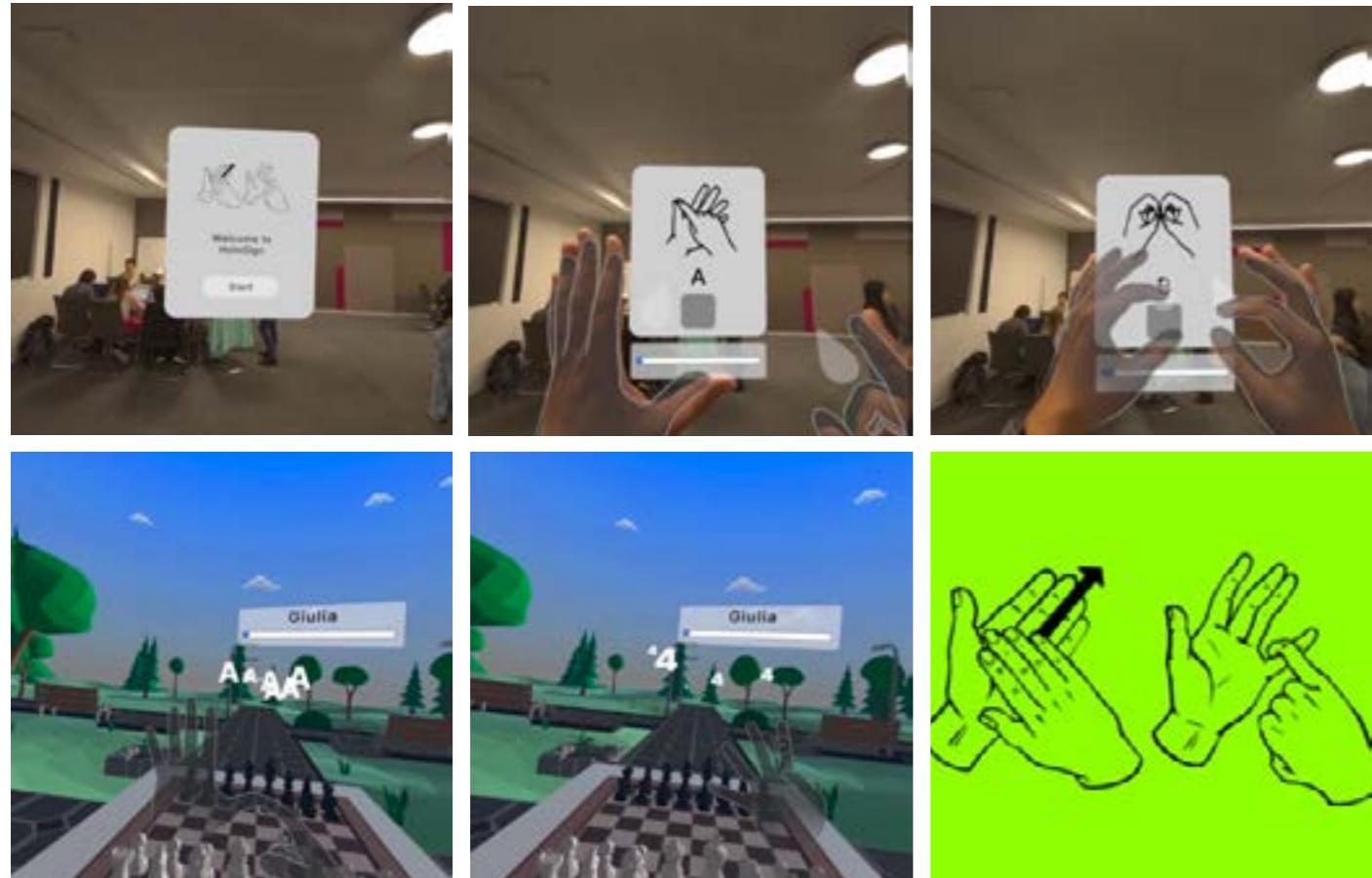
An AR mobile app overlays 3D animations and interactive games onto London's Chinatown shopfronts, showcasing signature dishes and their cultural history. Built with 8th Wall, A-Frame, and Blender, it uses image targets and VPS to deliver a stable, immersive culinary exploration.



HoloSign

Unity/Quest 3/ONNX

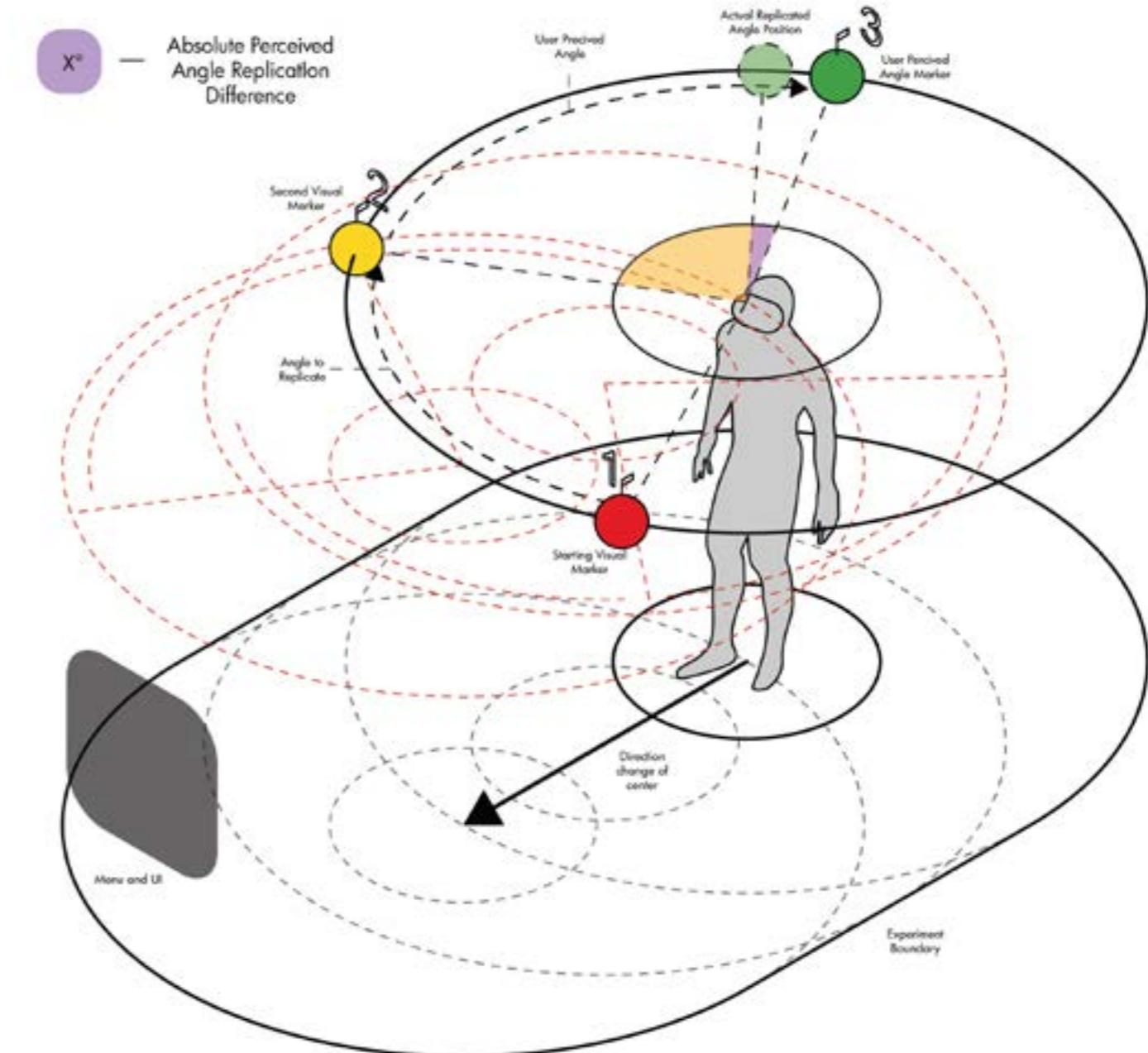
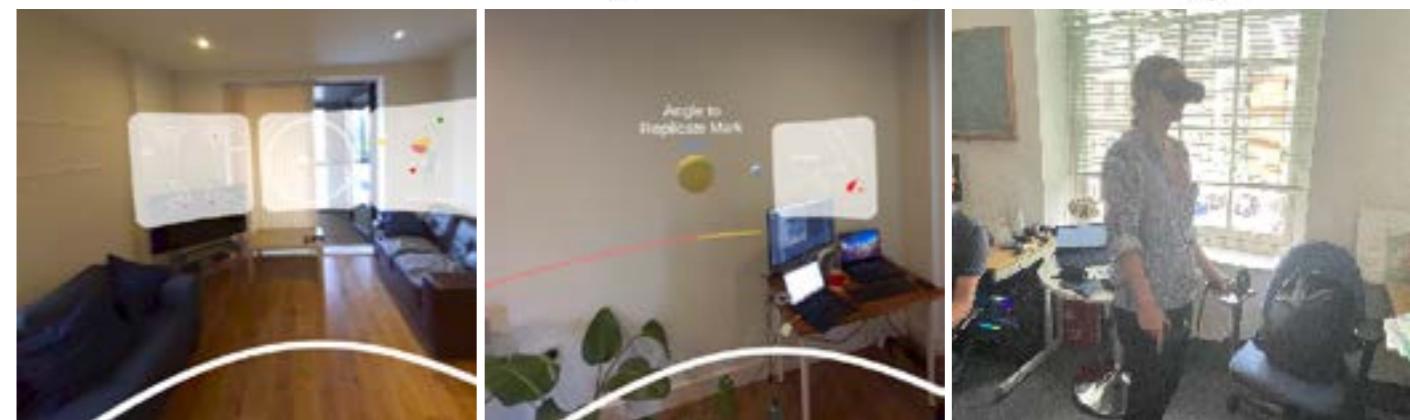
A mixed reality app that teaches British Sign Language through an interactive chess game, using hand tracking and a custom AI model for real-time sign recognition on Meta Quest. Built in Unity with the Meta Quest SDK and an ONNX-optimized ML model, it immerses users in real-world scenarios for faster skill acquisition.



Angular Task Application

Unity/Vive XR Elite/Open XR

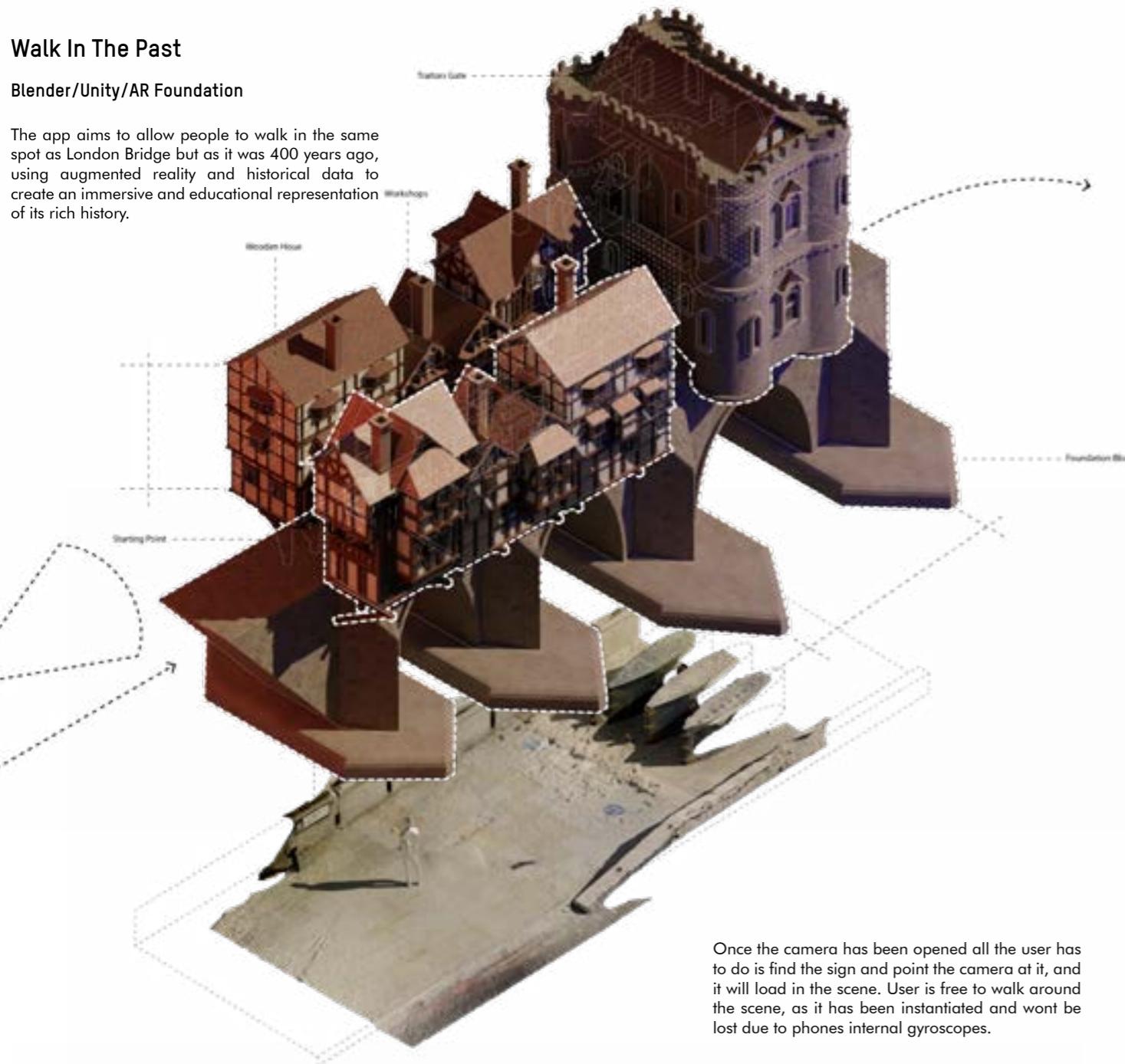
A standalone Mixed Reality (MR) application for Alzheimer's research, incorporating intuitive user-friendly design, and comprehensive guidance for ease of use in the elderly population. Working closely with leading researchers and practicing clinicians in order to implement their comments. Including stream and remote control capabilities, customizable settings, and safety features for flexibility and control in experiments.



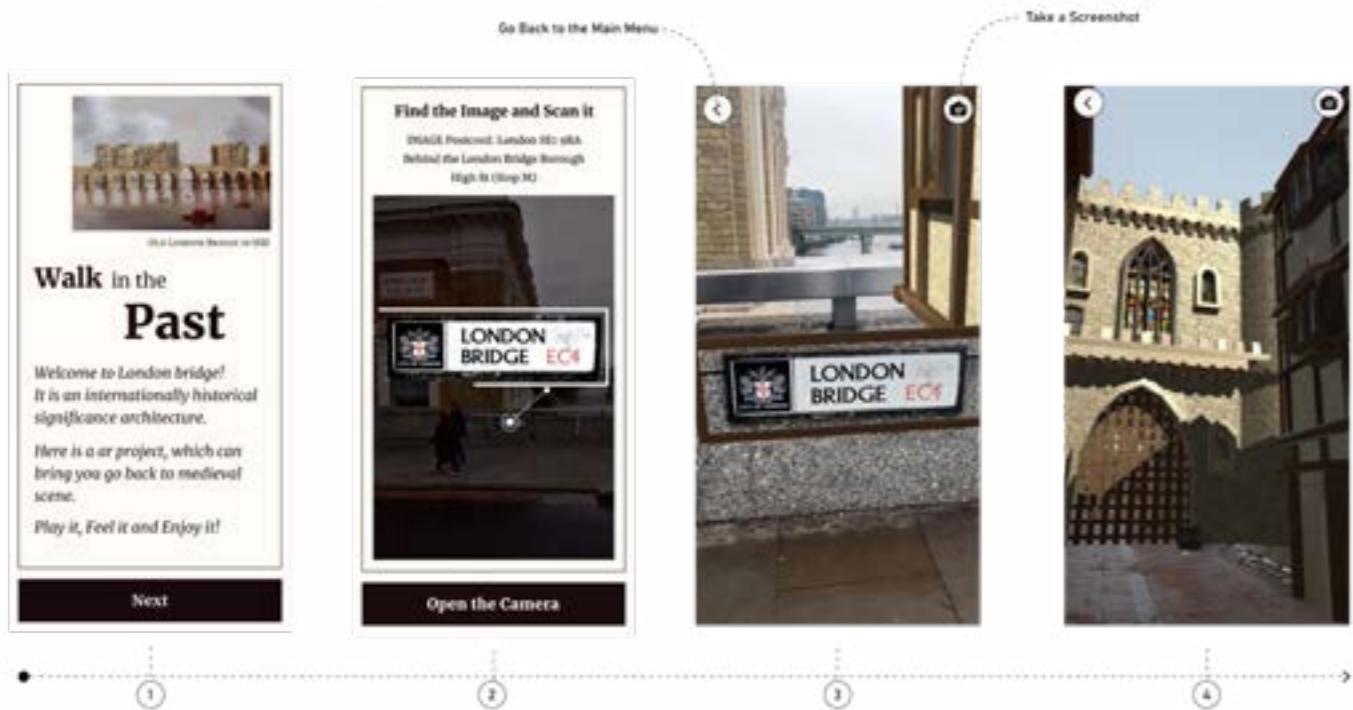
Walk In The Past

Blender/Unity/AR Foundation

The app aims to allow people to walk in the same spot as London Bridge but as it was 400 years ago, using augmented reality and historical data to create an immersive and educational representation of its rich history.



Once the camera has been opened all the user has to do is find the sign and point the camera at it, and it will load in the scene. User is free to walk around the scene, as it has been instantiated and won't be lost due to phones internal gyroscopes.

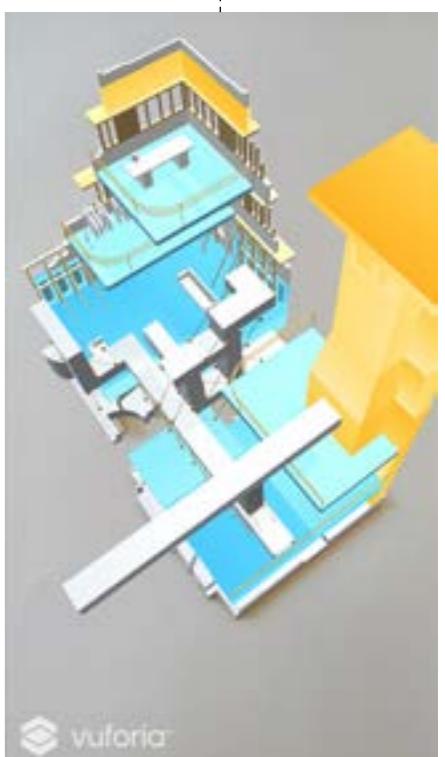
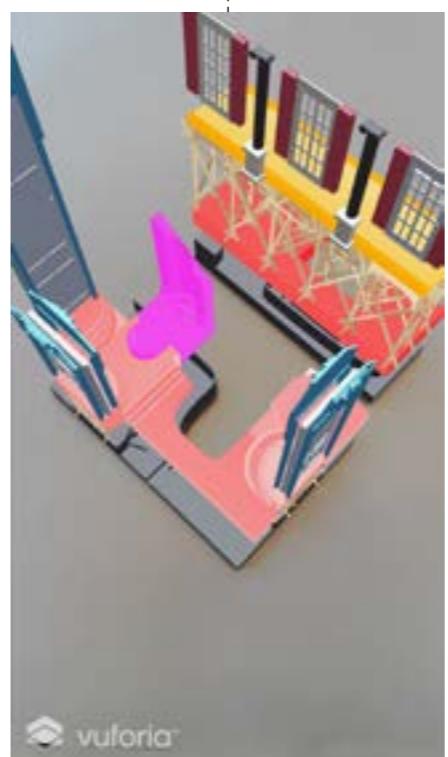
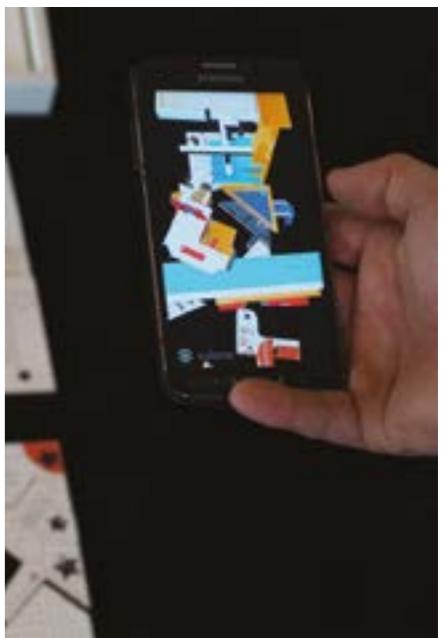
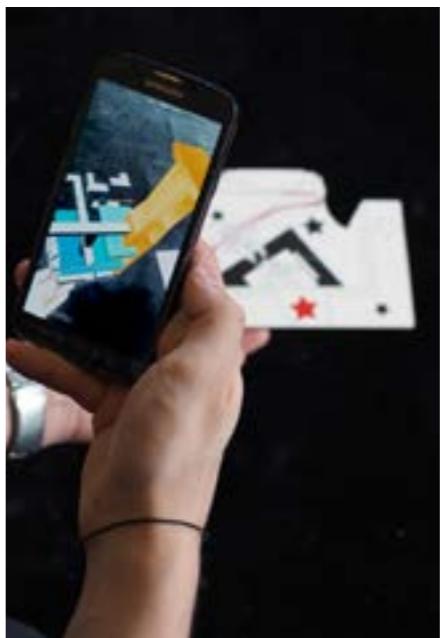
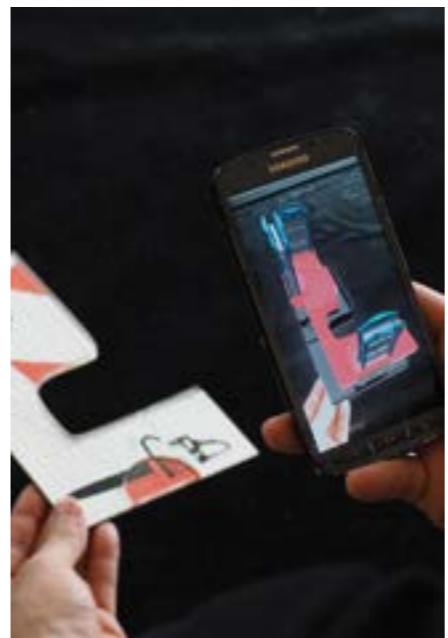


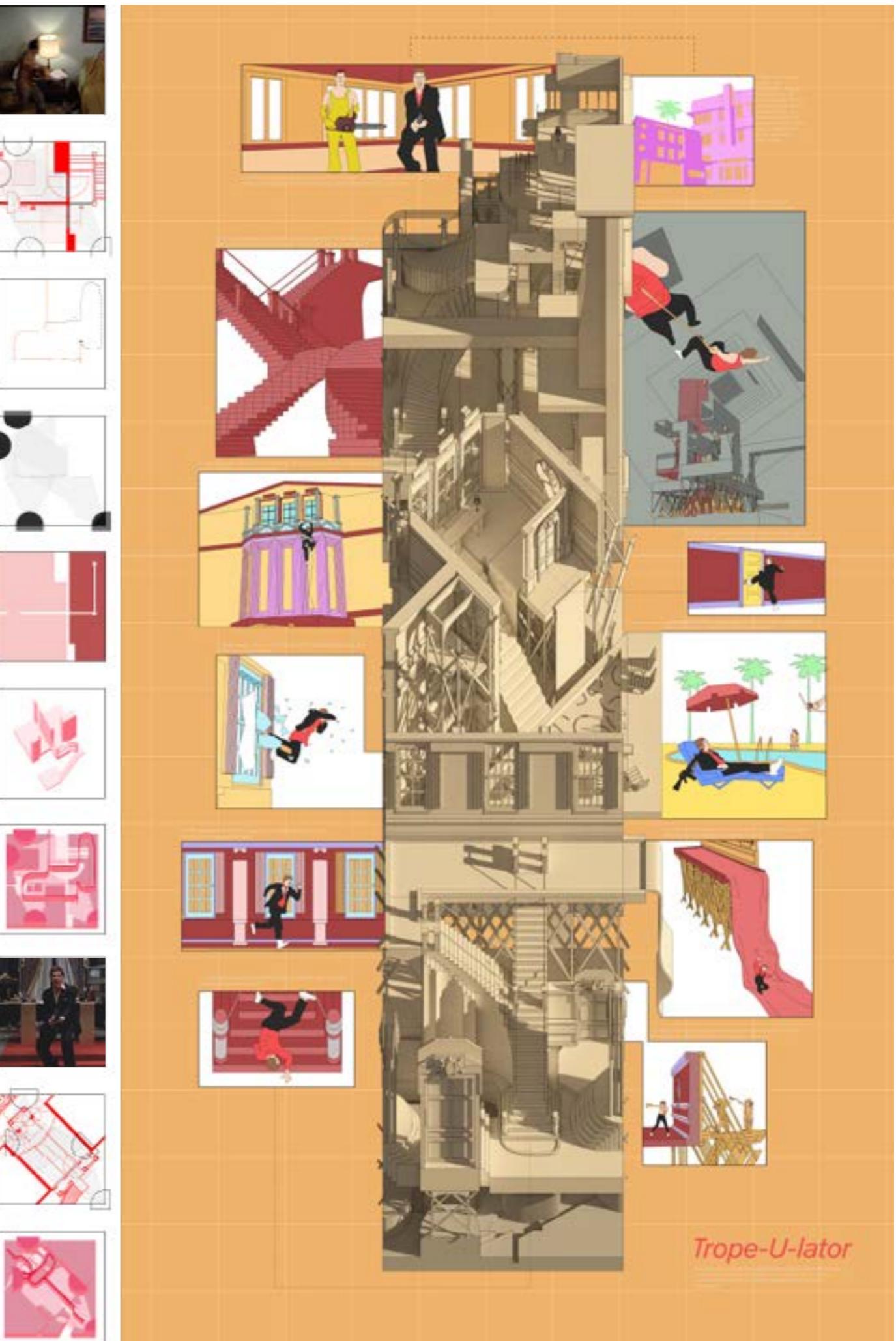
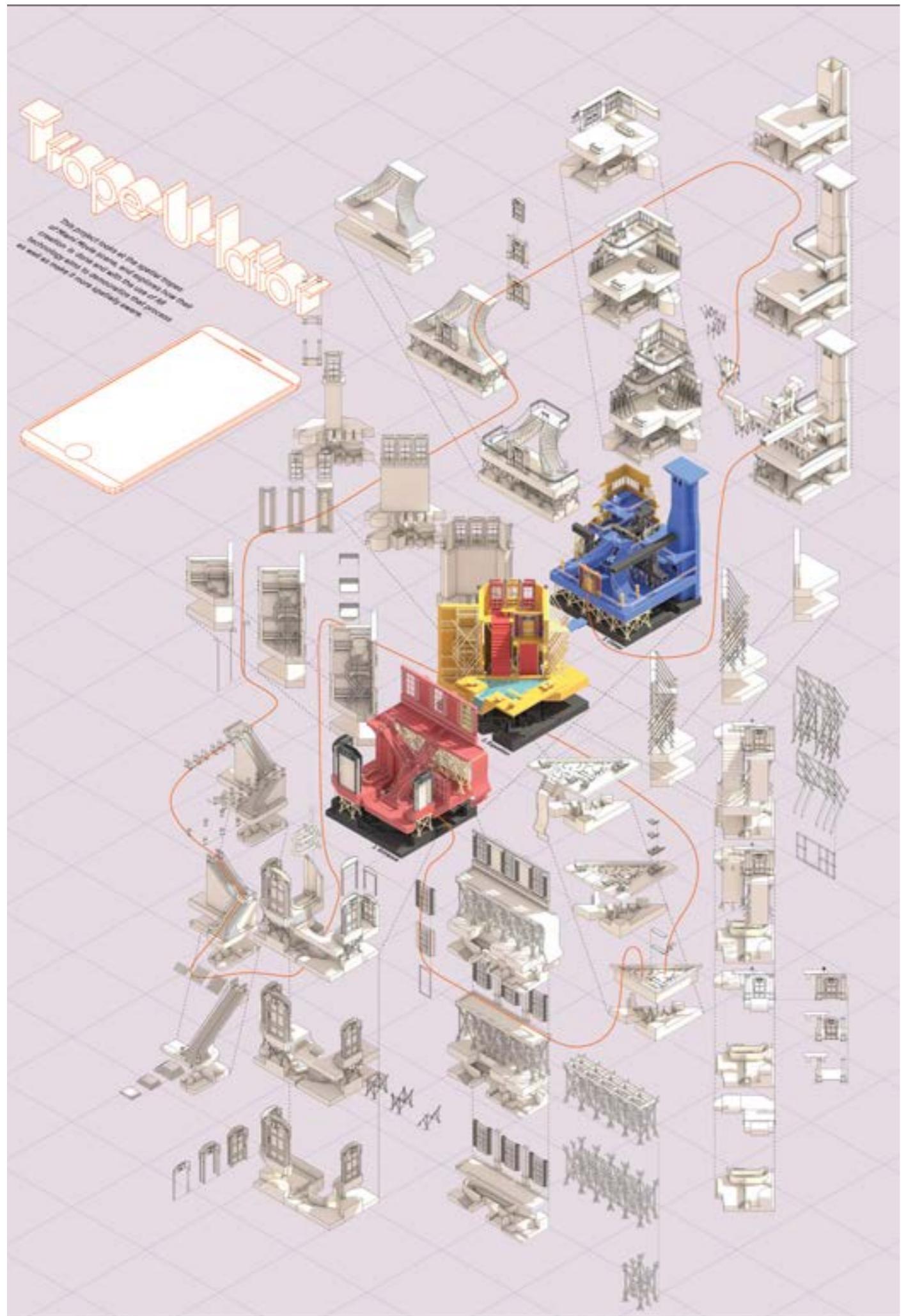
Trope-U-Lator

Rhino 3D/Blender/Unity 3D/Vuforia

Third Year First Project. The Trope-U-Lator is a tool kit, that allows people to create their own spaces and structures based on the action tropes of the Miami Movie Scene using Augmented Reality.

Each trope movie trope is depicted as puzzle pieces and by scanning them using a phone creates a 3D structures which then can interact with the other pieces, making them morph and change. When two pieces enter each other Bounding Boxes, additional elements are revealed, a hidden staircase, a rooflight or a swimming pool. Depending on which elements are placed next to each other, the user would get a different outcome, and create their own movie action scene.





Kunaev House Augmented Reality Museum

I have began a project that aims to digitally document the small museum of my home city, Almaty. With many of the museums being self funded and run by volunteers, there is always a chance that well of knowledge and history might disappear. Thus in order to capture those museums and increase peoples awareness of them, I have utilized photogrammetrical scanning technique to create models of parts of the musems that a person could download and explore in Augmented Reality on their own device. One could come up to the preserved kitchen table of the Soviet Leader Kunaev, and see what were the traditional dishes of the time and lean towards the apples or the candy of the time.

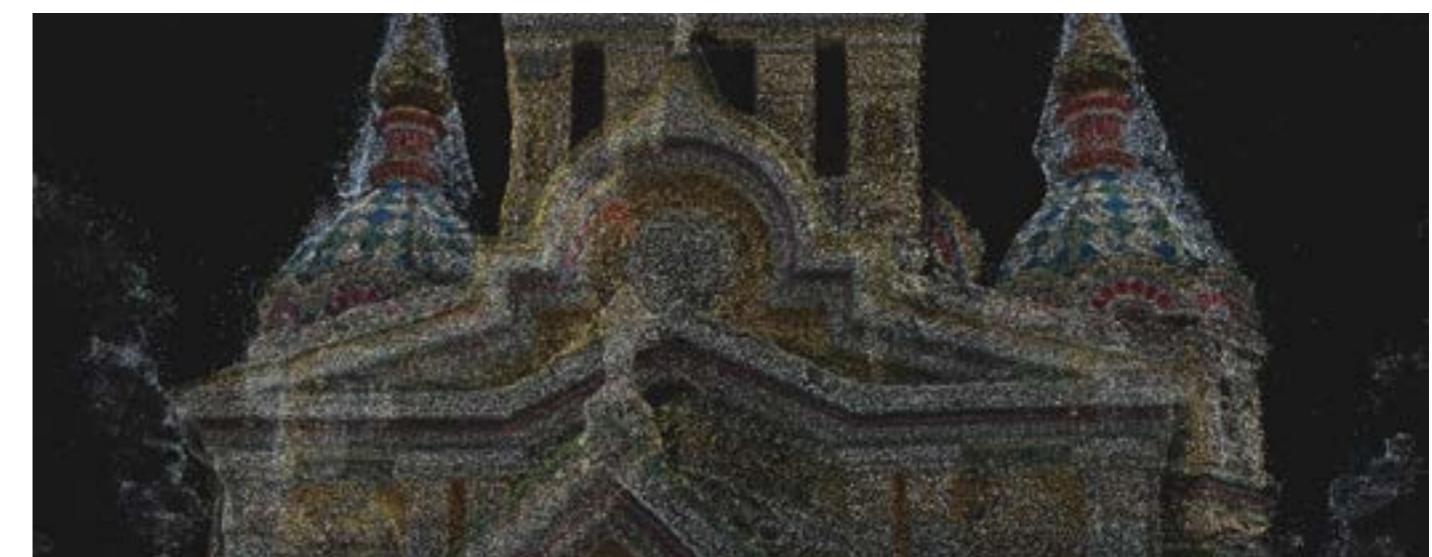
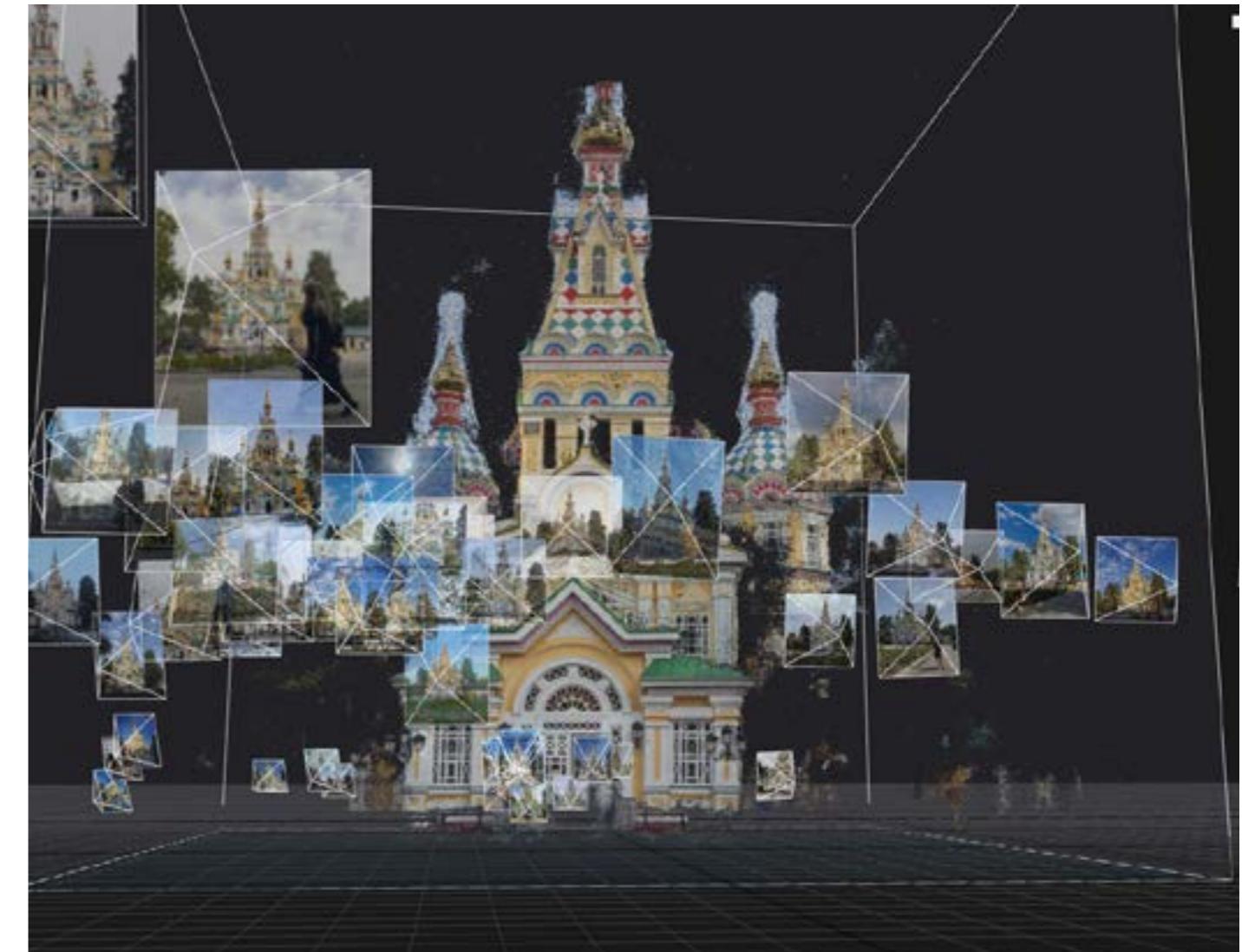


Rhino 3D/Blender/RealityCapture/Unity 3D/Vuforia



Generating 3D Scans from shared images on Instagram

Due to the pandemic and the travel restrictions the museum project had to be continued remotely. I have tried to utilize public data and the large amount of user generated photographs in order to construct the virtual scans of famous landmarks in Almaty. In the example below, I wrote a small code that would use pictures geotagged to the Ascension Cathedral in Almaty, to be processed and create a photogrammetry scan of the landmark.



Blender/RealityCapture

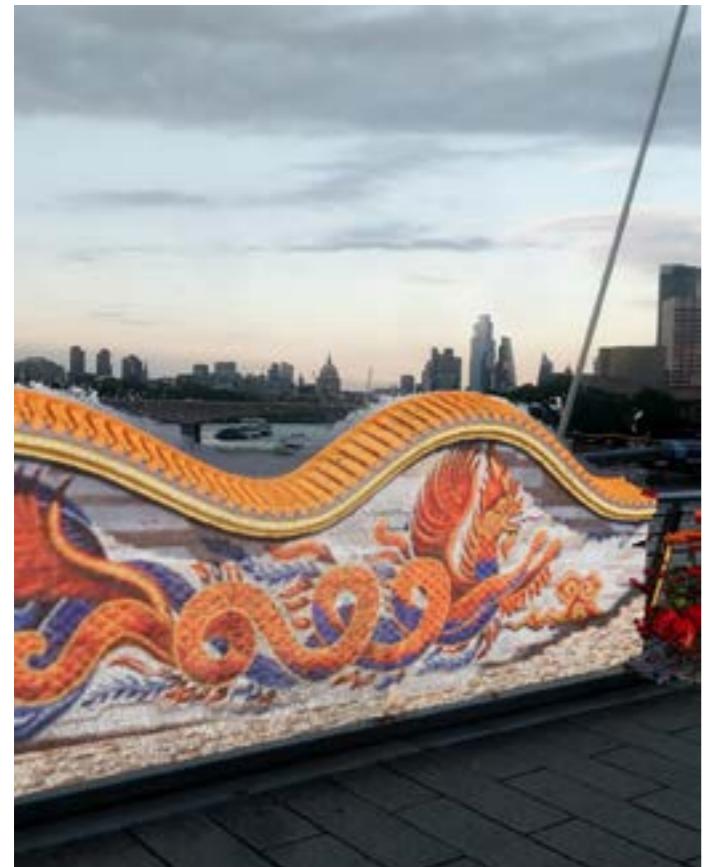
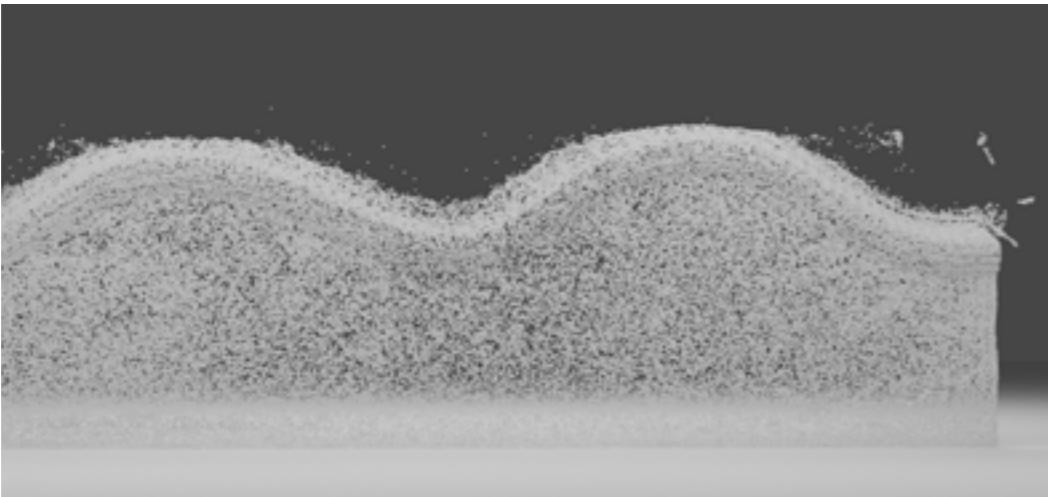
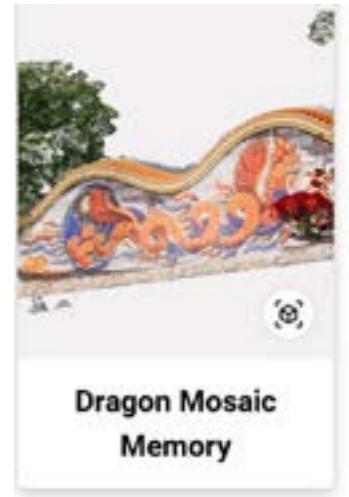
Dragon Restoration

Digital copies and recreations have become more poignant today, for instance a very famous dragon mosaic was destroyed in my home city of Almaty. The new owner has smashed the art wall into million pieces without a chance of restoration. I have reached out to the original artist of the piece and even though original drawings were lost to time, I was able to gather enough data to accurately digitally reconstruct the piece. I then shared it online through AR, in order to allow people to visit the piece once more.



Dragon Restoration

Furthermore, working with the original artist, I have tried to preserve the lost piece. Creating a short video about its destruction, recreating a million pieces.



Augmented Reality

Blender/Spark Ar/Lens Studio/Reality Composer

Parallel to my work, I have been designing and testing a variety of AR Filters. One series of filters focused on Traditional Kazakh Ware, and what they could be shown as in the digital age. Focusing on interactivity they are meant to be played with and educate people about Kazakh culture. Other projects were to test different ideas, such as a Virtual Bookshop with all the bestseller on Display, an interactive version of Street Graffiti and some hand gesture translations.



Saukele, a wedding headware for the bride.



Tubeteikas, a tower of traditional mens headware, that requires balancing.



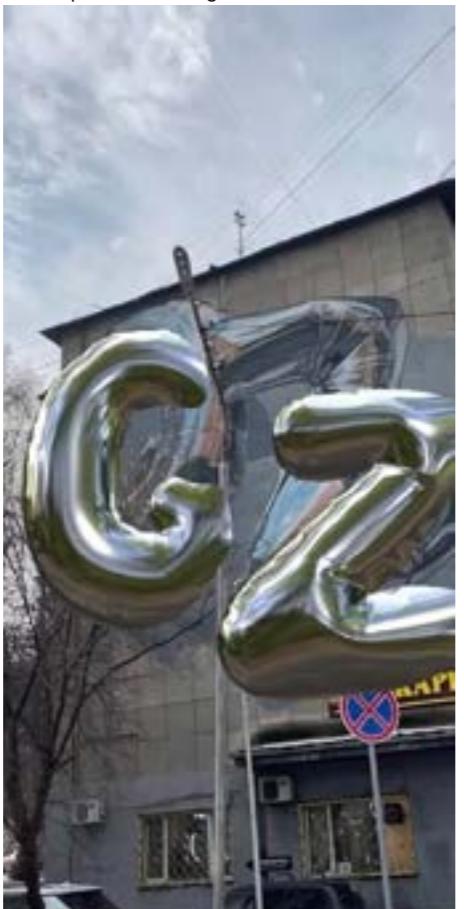
Shekelik, jewlery piece which dangles with the movement of the head.



Tetris being played on a facade, done with animations but trying to make in code.



Filter reads the gestures of the fingers, and translates them into 3d objects with physics.



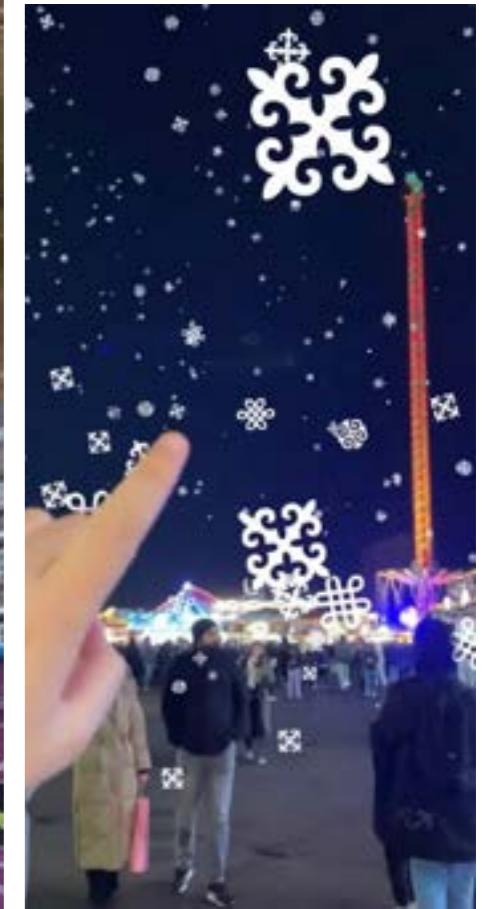
Interactive street graffiti, when elements come out of the art, and animate when pressed.



AR Bookshop, allows you to visually see the books during quarantine.



Garden maker, pregabs of plants are generated when you tap, so you can build a garden.

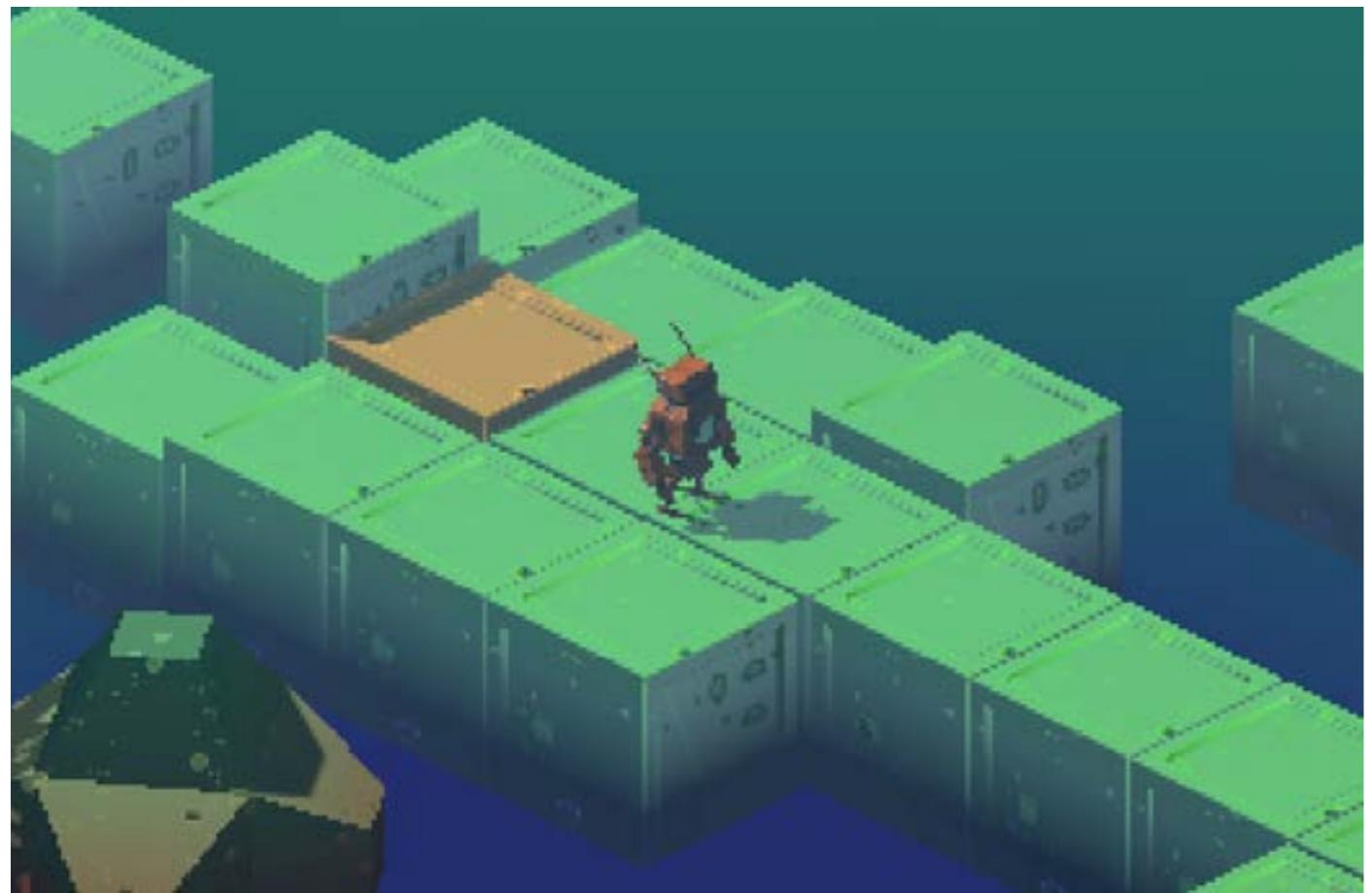


Enviromental particle system creating snow flakes in the form of Kazakh ornaments.

Game Development

Unity/ C#

Time's Up - is an isometric platformer with elements of Time Manipulation. Play as SEC - short for Semi-Auto Electronic Companion, a cute orange robot who can use his robot powers to slow down time around him, and reverse the time for certain objects. Help SEC navigate his way around cyberspace to complete his technical tasks! Everything was coded and modelled by me, the levels art style was inspired by the game Transistor.

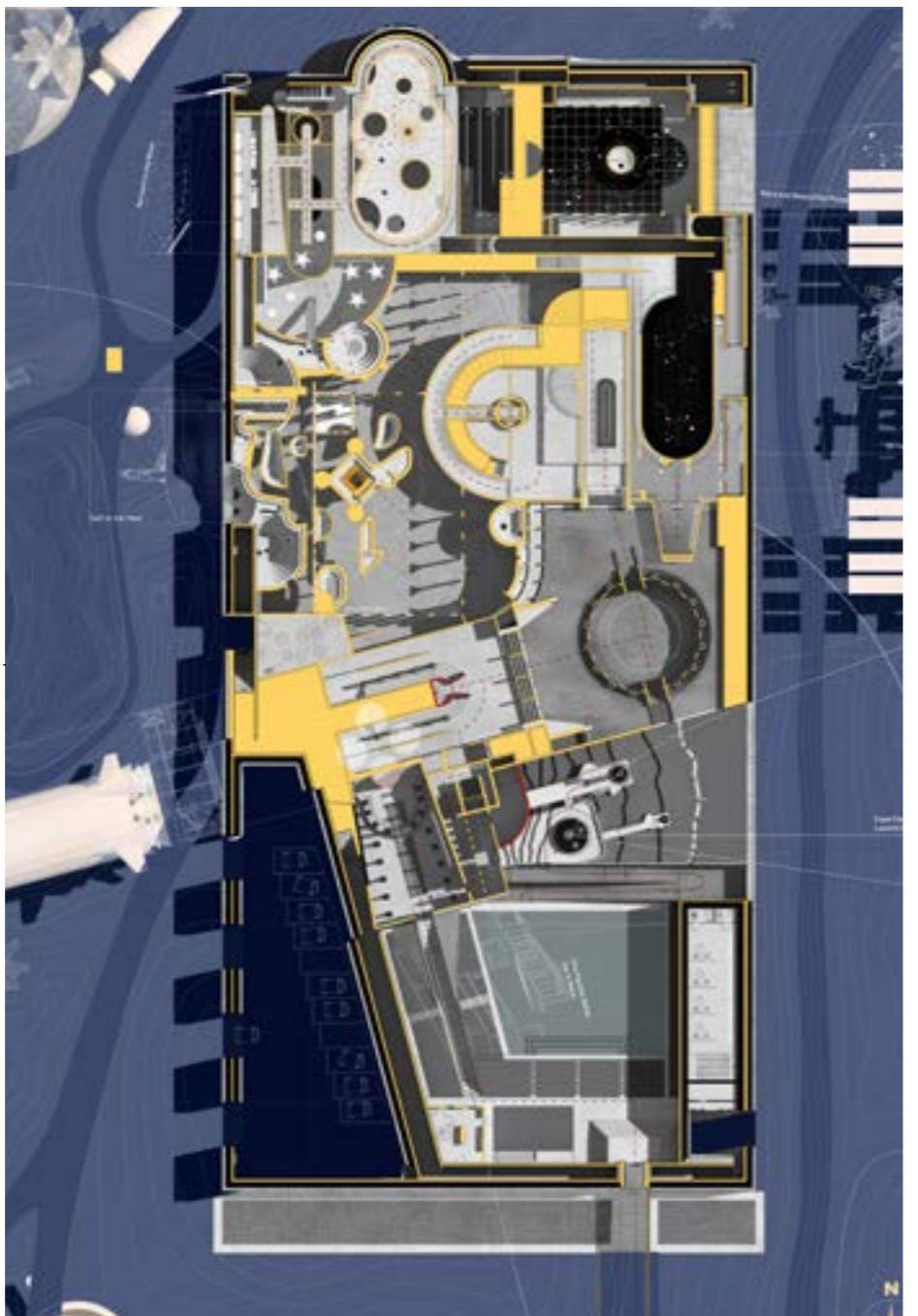


Architecture

Space Oddity

Third Year Building Project. Based on the depiction of NASA and space exploration in popular culture. Located in Florida, the building project aimed to create a series of pavilions that would take the user on a journey, simulating the feeling of a journey to the Moon.





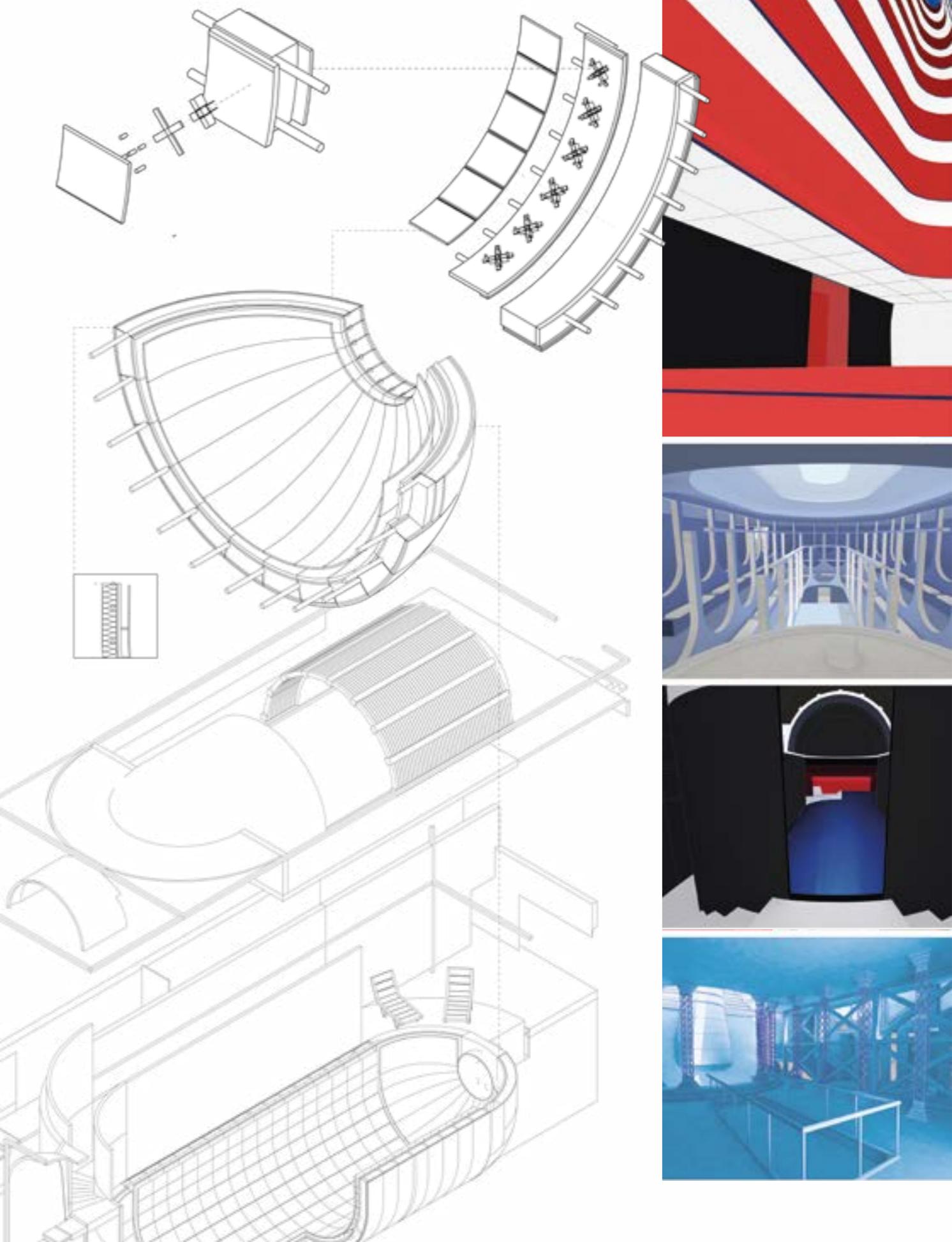
Space Oddity

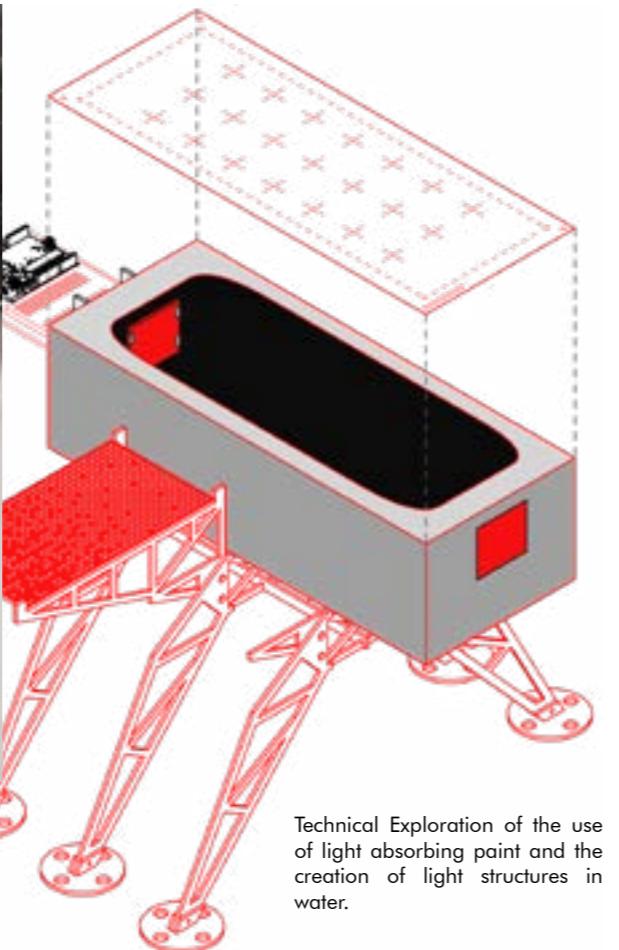
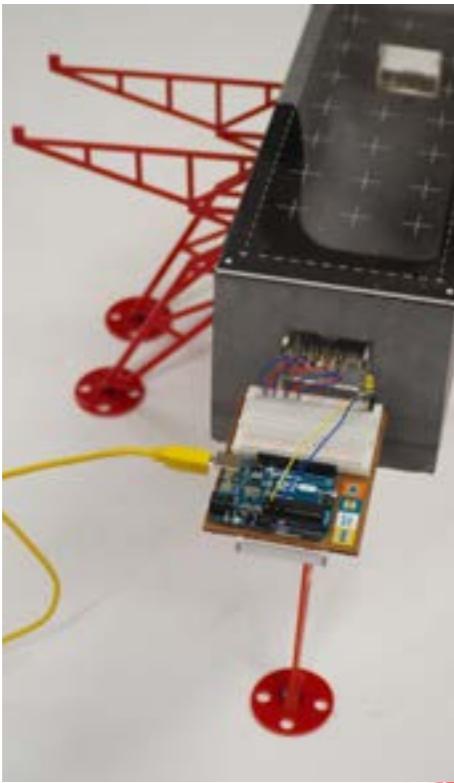
Final Iteration Plans, with illustrations depicting the inspirations for each part of the building.



Space Oddity Technical

My Technical explored the techniques of NASA and contemporary artists to understand how each pavilion would be made, for instance I explored the use of Vantablack and the NASA's Sensory Deprivation Tanks to create the feeling of swimming in space.

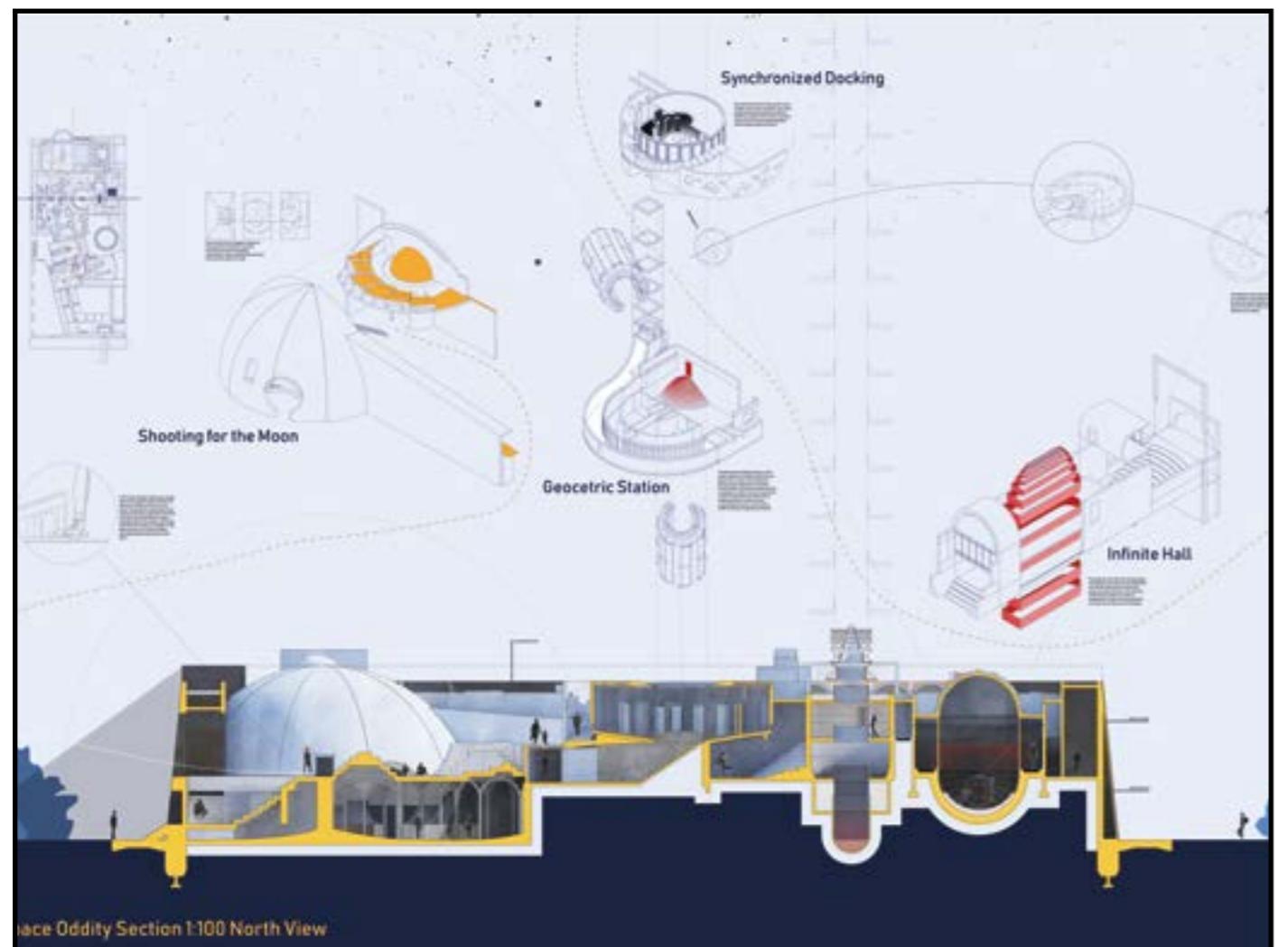




Technical Exploration of the use of light absorbing paint and the creation of light structures in water.

Space Oddity

Long and Short Sections of the Building, exploring the entrance and exit choreography through each space and their relation to each other.

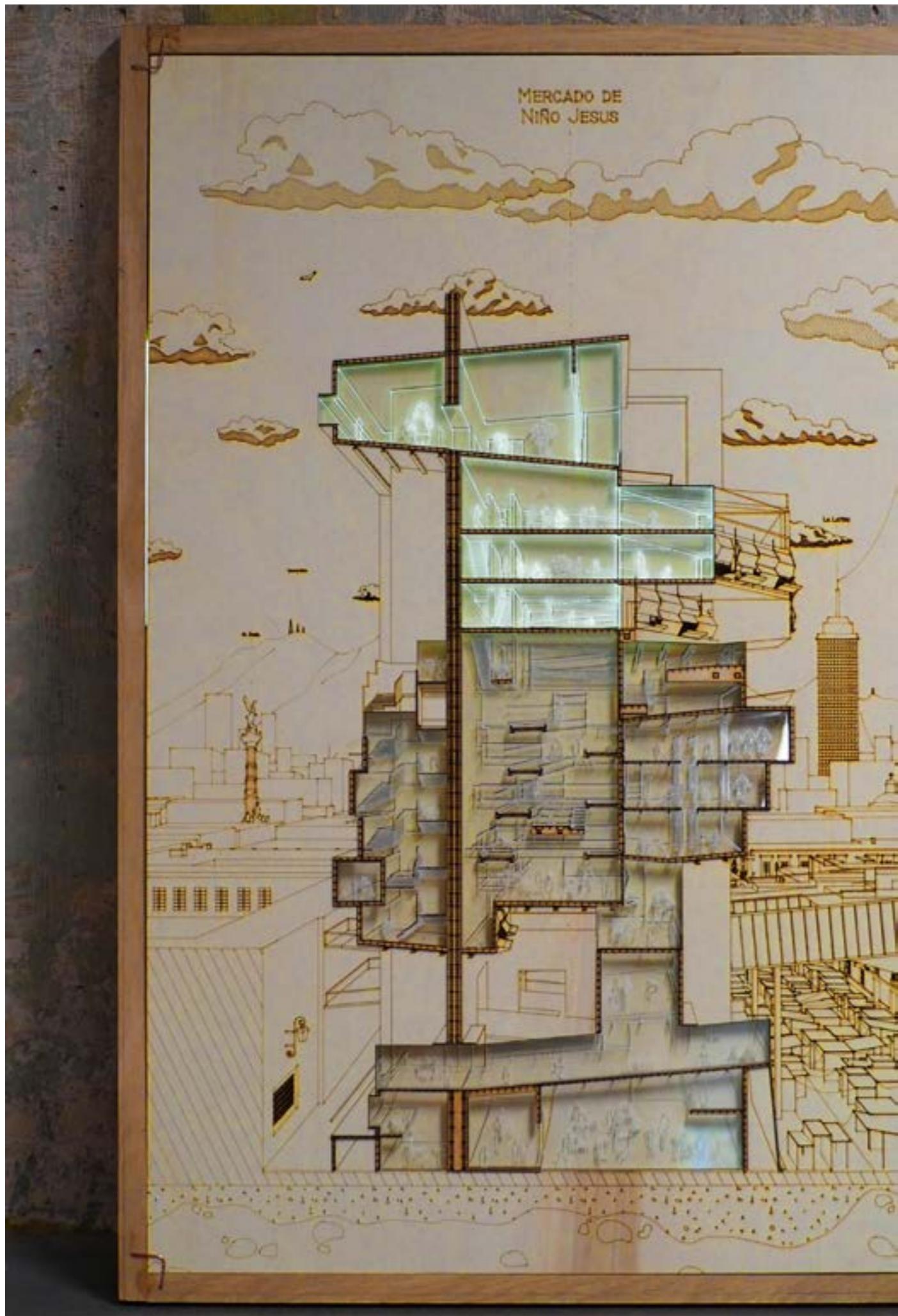


Mercado De Nino Jesus

Second Year Building Project. The building is a doll making market, which houses workshops, restaurants, viewing and public areas.

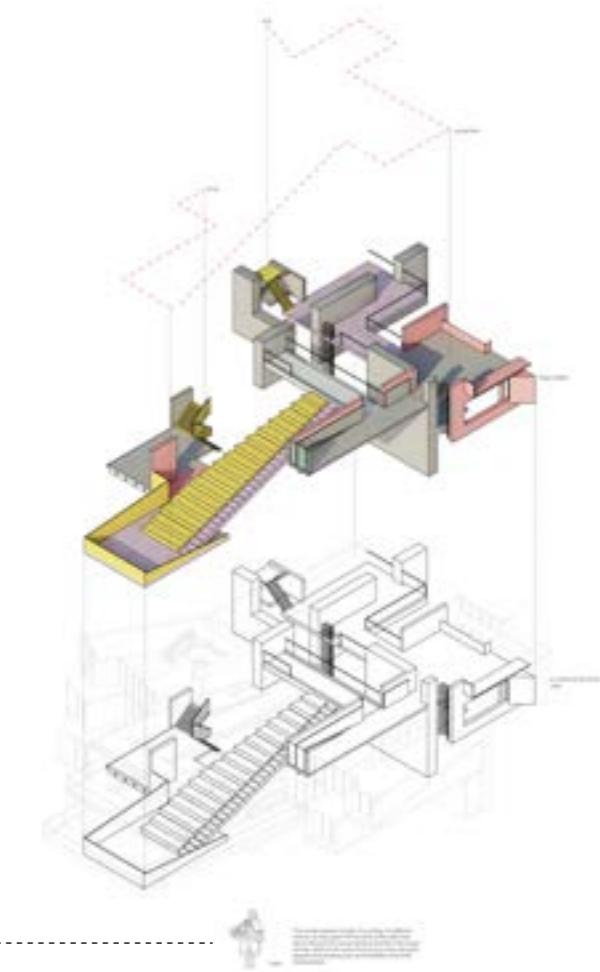
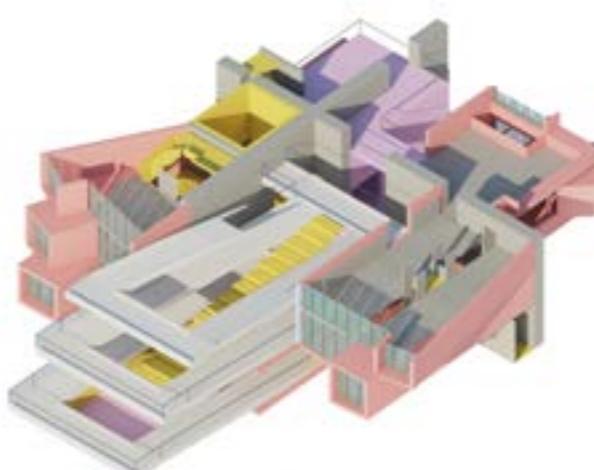
The building was inspired by the chaos and the system of the market in the historic part of Mexico City. It aim to create a place for celebration of the doll making and shrine tradition in Mexico.



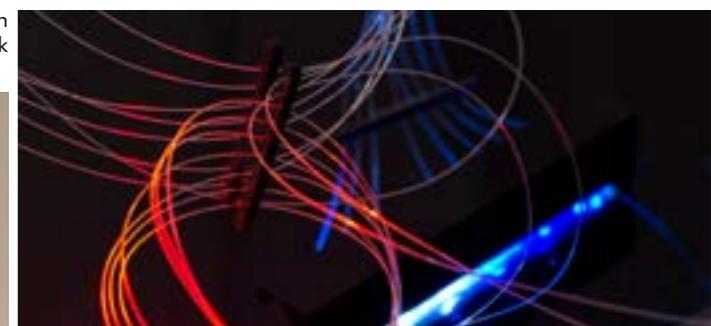


Mercado De Niño Jesus

Doll maker, local buyer and a tourists, all might explore and use the building differently, thus the building allows different paths and journeys.



First Project explored the peculiar cultural element of Street Wrestling in Mexico City, with me designing and building a device that could track crowds reactions and inform the wrestlers.

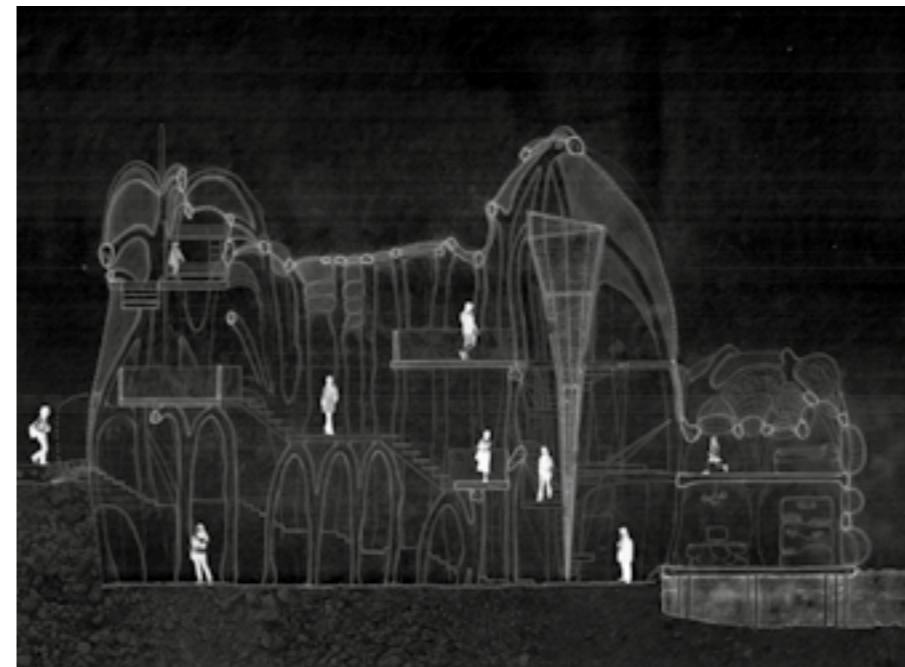
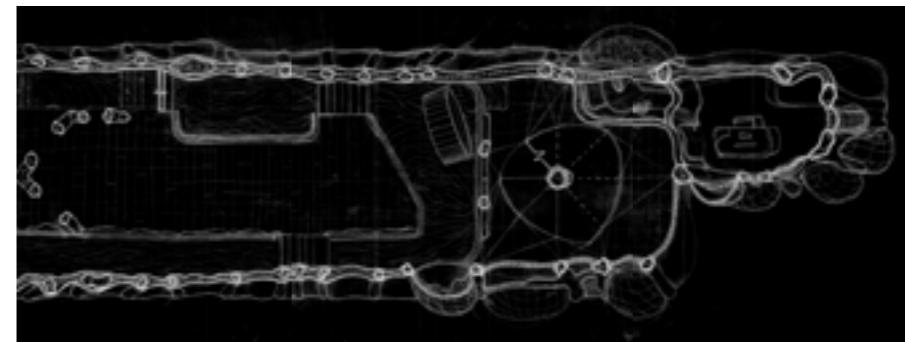


Kings Cross Candy

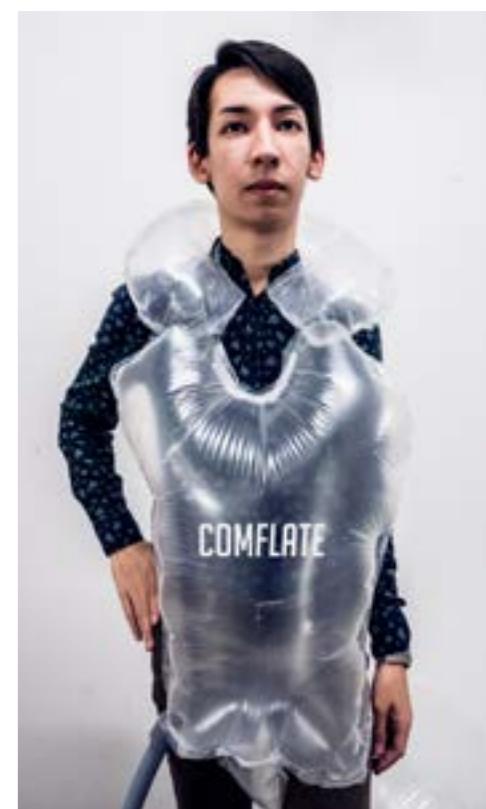
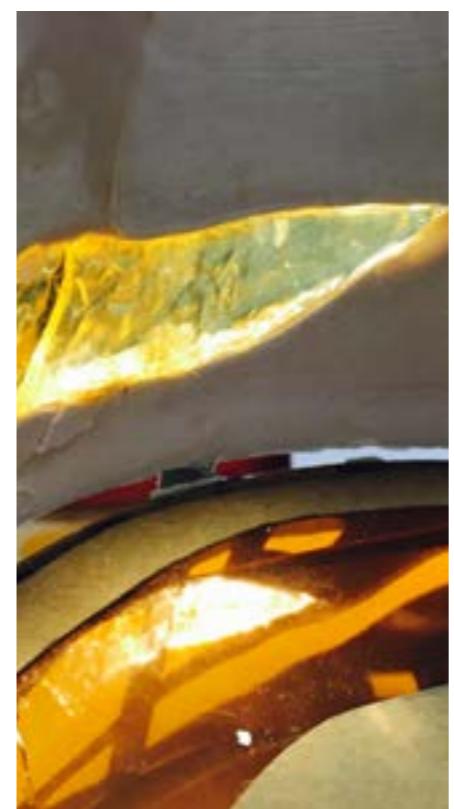


Kings Cross Candy

First Year Building Project. Located in the Camley Street Park, the building houses a candy making artisan and his workshop. With the buildings form based on the loose viscosity of candy and Antoni Gaudi principles of structure.



First Year Wearable Project."Comflate" is a wearable inflatable suit, that can be adjusted to allow comfortable resting on any surface.



Tselinny Contemporary Culture Centre

As part of my Years Out I have begun working at Asif Khan Studio in London. I participated in different projects at the studio, ranging from high-end international projects to small-scale temporary exhibitions. The project I have participated in the most would be the Tselinny Contemporary Culture Centre, a reconstruction of an old Soviet Cinema, abandoned and deformed in the years after the collapse, into a vibrant and open art space for all people of Almaty.



Tselinny - Moddeling

Applying the skills that I have developed at the Bartlett, I have dwelled deep into the design process, exploring the need to decolonize the existing building, in order to allow it to host any form of cultural event. The models we have been creating allowed us internally to understand the design challenges we would need to overcome, as well as a method to communicate our design to the people.



Concept Models and Visualization of the New Tselinny



Sectional Model of the Culture Centre

Tselinny - Saving Sidorkin Sgraffito

The hardest aspect of the project was the preservation of the existing sgraffito done by Evgeniy Sidorkin, one of the most prominent artists of Kazakh SSR. The piece was thought lost to the previous works done on the building in the 90s, however, it was rediscovered during our initial concept design stage. Its discovery changed the course of the project, leading us to explore methods of saving the art piece that is fused to the concrete walls. The sgraffito was also badly damaged, with strengthening columns, mercilessly driven into it, destroying a part of the drawing in the process.

Sidorkin Mural c1970



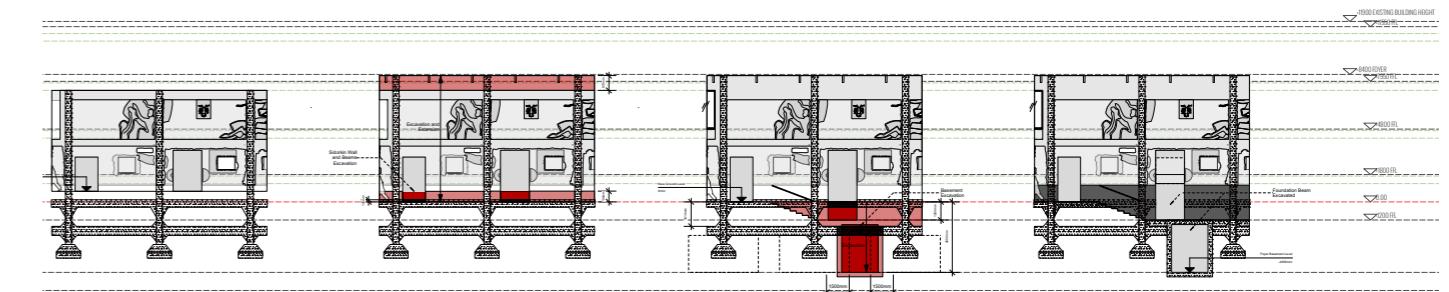
Visualization of the Main Foyer

Current state of the Sidorkin

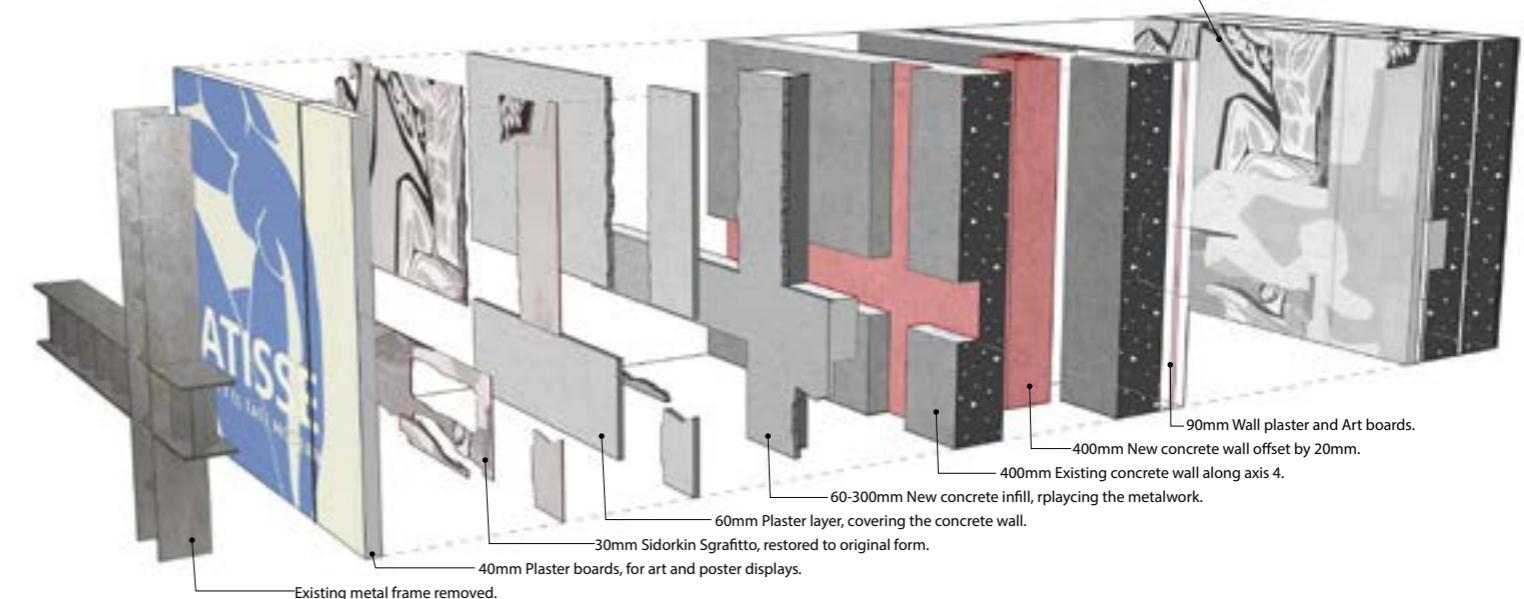


Tselinny - Saving Sidorkin Sgraffito

One of the most important aspects that we have explored was how to incorporate the sgraffito back into the building, not only in a technical sense but cultural. The Sidorkin wall, as well as any space in the building, is able to tell a story through materiality and design. As the piece was damaged, these lost parts could not be restored, they were lost forever. Thus the design reflects that, with the lost areas not being painted again, which allows the Wall to reflect its troubled past which mirrors that of the entire country.

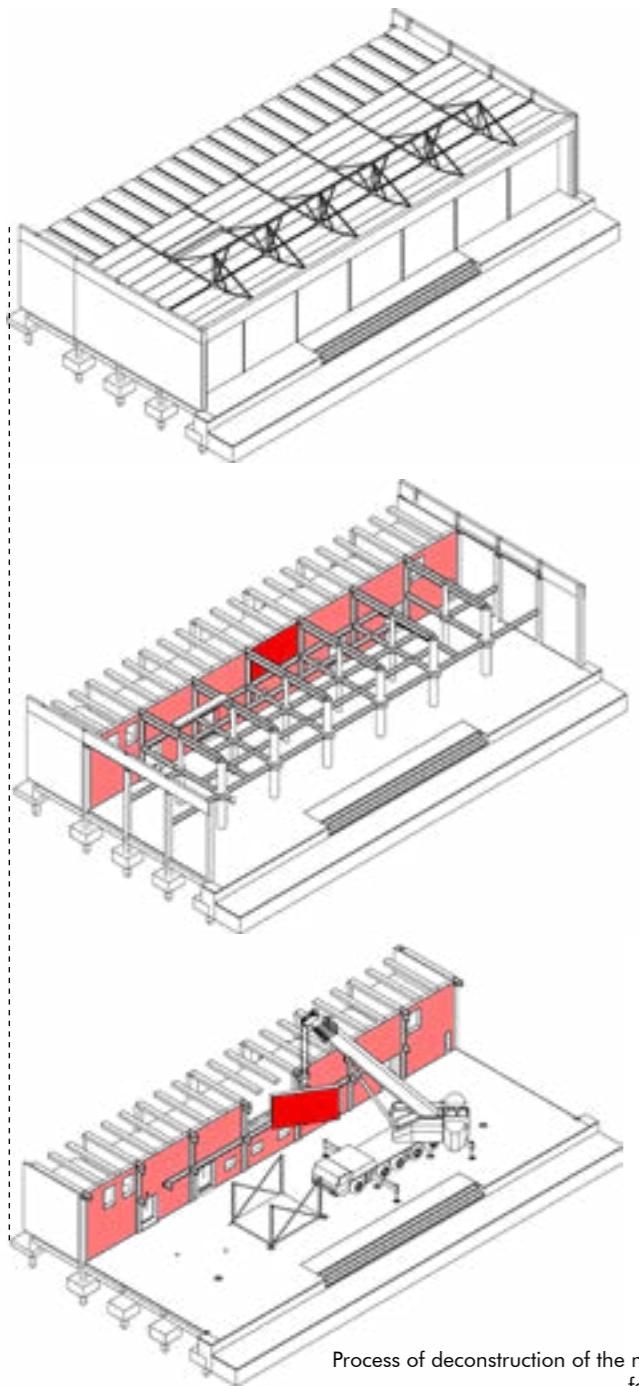


Restored and Strengthened Sidorkin Wall Axis 4



Tselinny - Saving Sidorkin Sgraffito

We have developed a method of removing the pieces without damaging them further, the concrete wall would be diamond rope cut around the columns, and then the giant pieces would be lifted onto custom platform. The initial process of

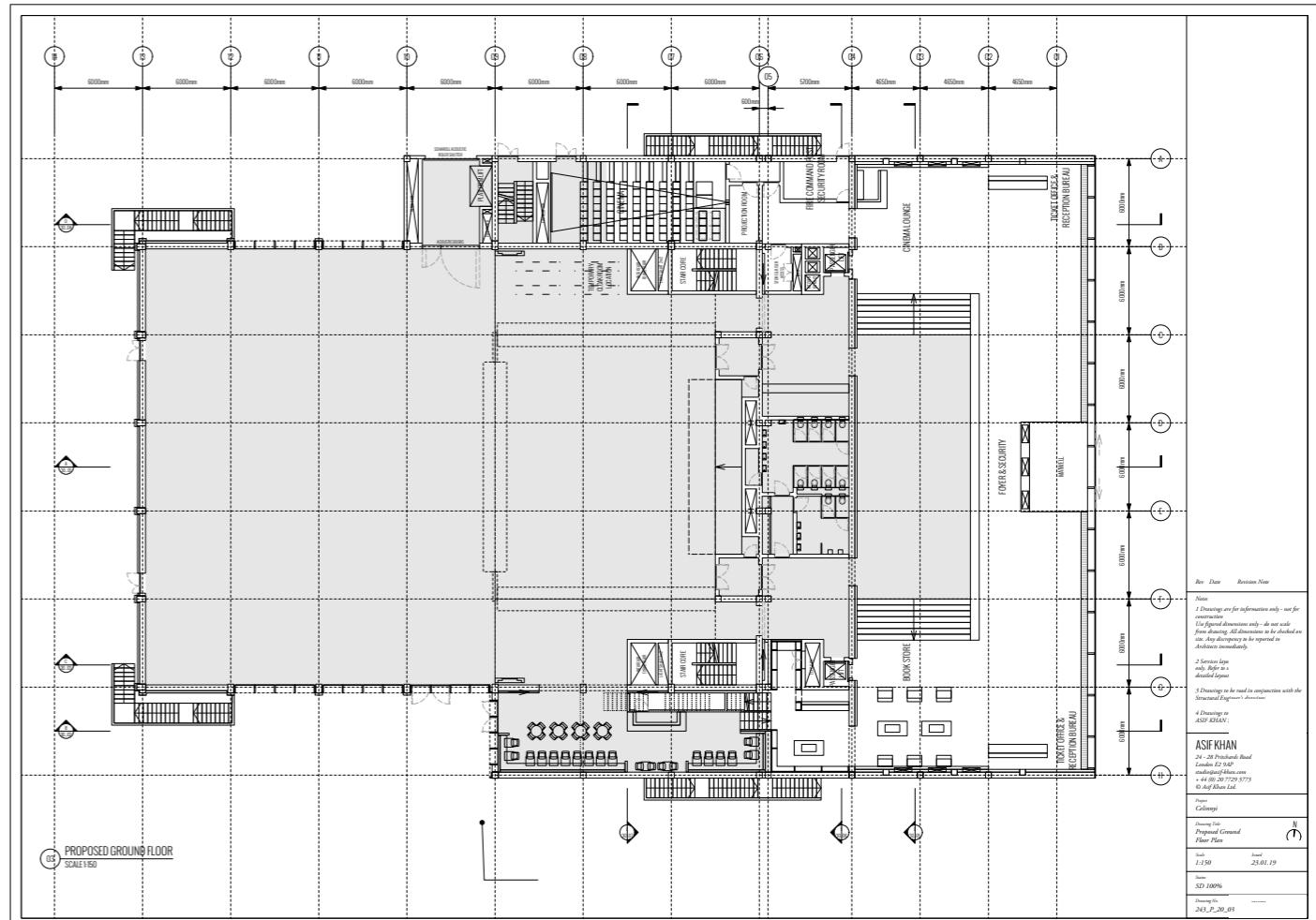


Process of deconstruction of the main foyer.

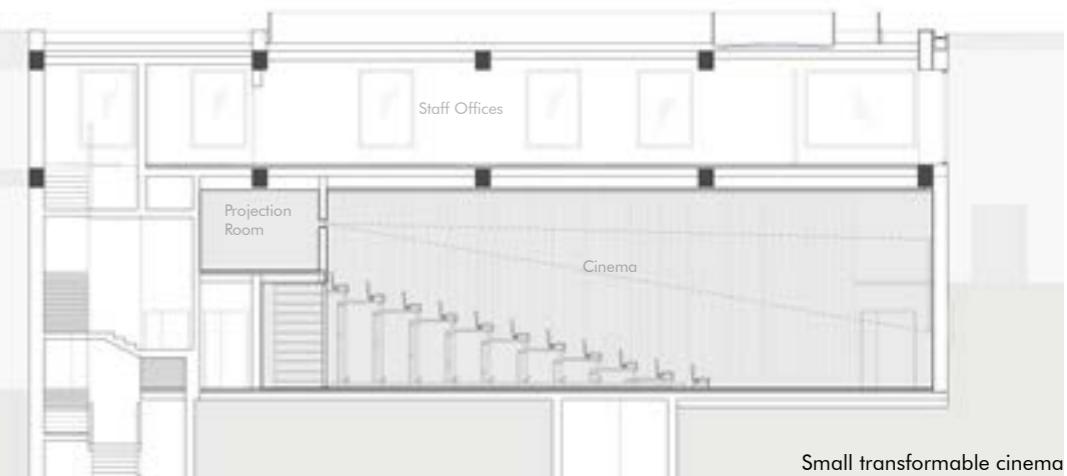


One of the pieces being attached to a crane.

Tselinny - Planning



Working on an international projects such as this requires constant communication with local architects and adaptation from the British Building Codes to the local ones, which often enough required very creative engineering and design solutions, which I learned to think about ahead. As the center was multi-purpose, I was able to explore many different aspects of buildings from exhibition management to BOH requirements.



Small transformable cinema



Section Model of the building.

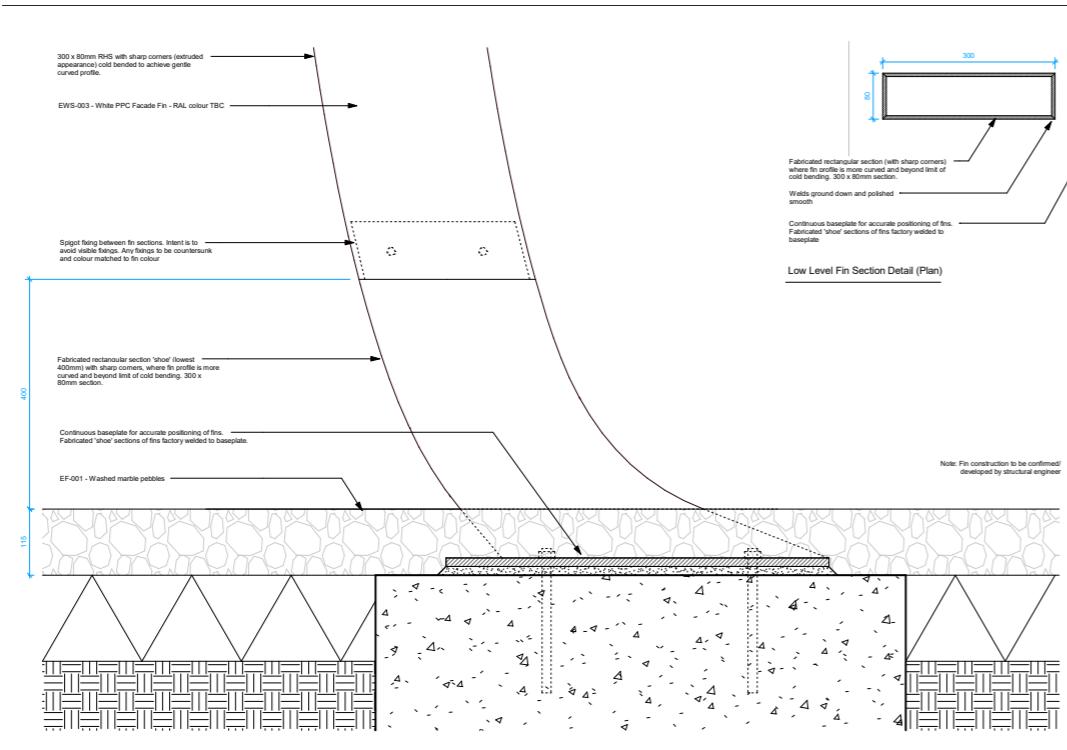


Tselinny - Facade

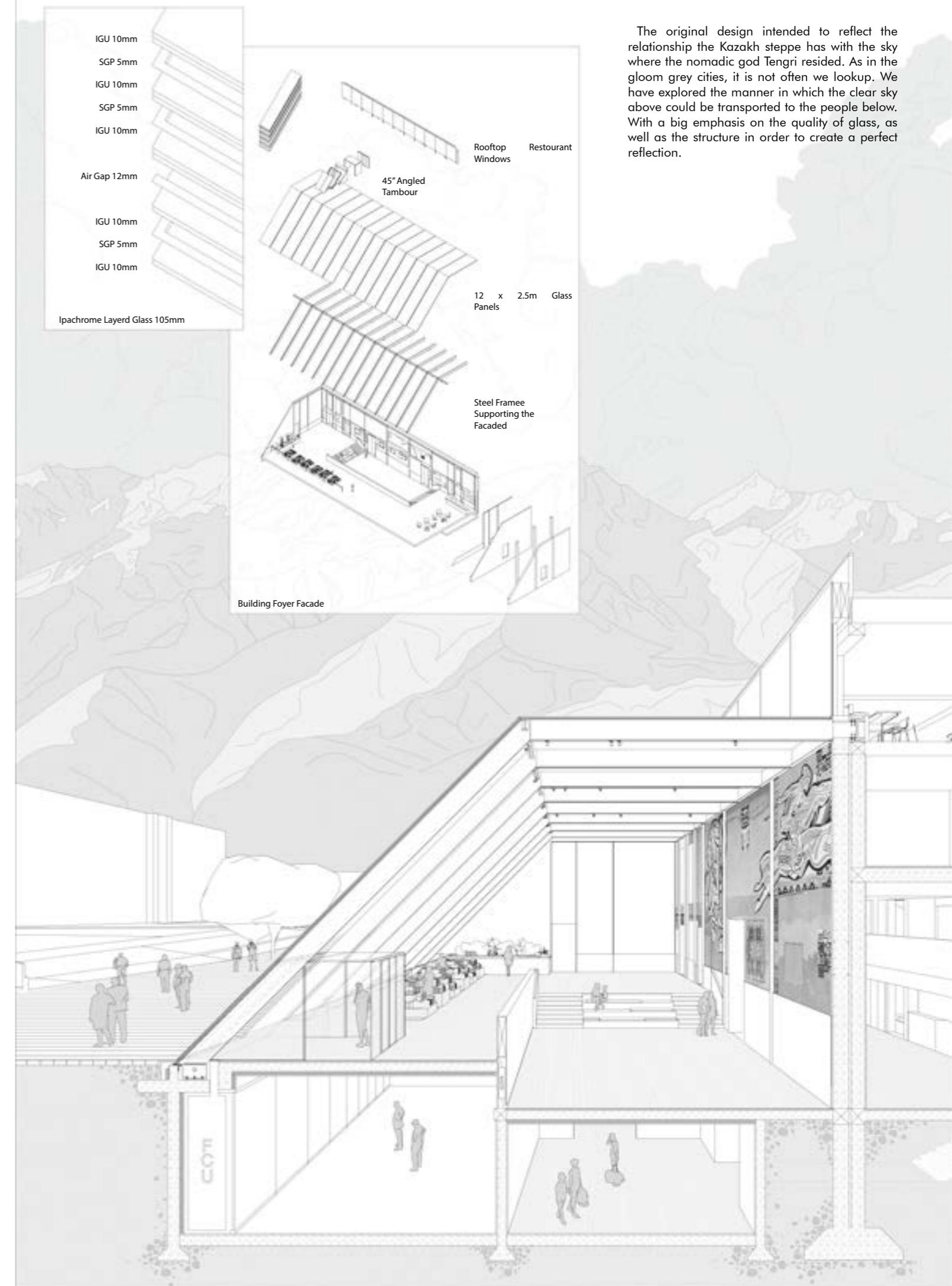
The most radical change to the building was the facade design, as it is the face of the Centre and its look would reflect on the relationship of the building with the city, which never had a contemporary design in a historical district. The facade we explored is a series of fins that create a wave-like motion, which echoes the monumentality of Soviet architecture, whilst at the same time creating vernacular forms that were inspired by the structure of a Kazakh yurt.



Physical model of the fin facade 1:100



Material Test of the fin.

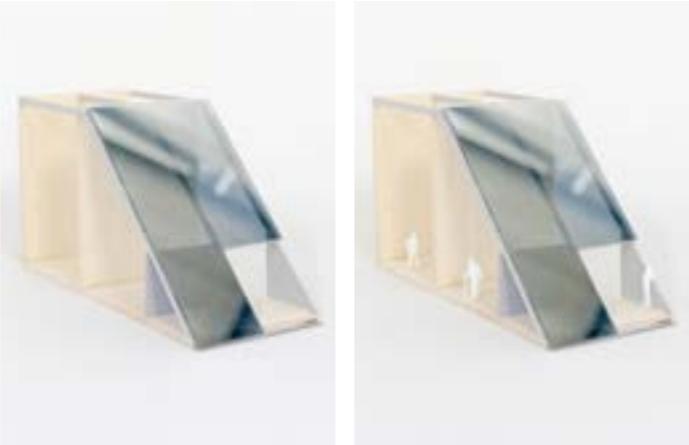


The original design intended to reflect the relationship the Kazakh steppe has with the sky where the nomadic god Tengri resided. As in the gloom grey cities, it is not often we look up. We have explored the manner in which the clear sky above could be transported to the people below. With a big emphasis on the quality of glass, as well as the structure in order to create a perfect reflection.

Tselinny - Original Concept



Glass mock ups outside our office.



Models exploring the entrance in the glass.

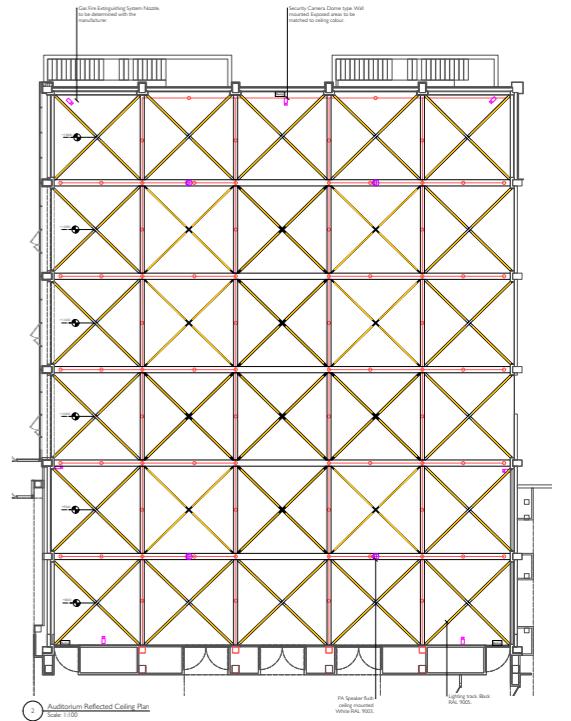
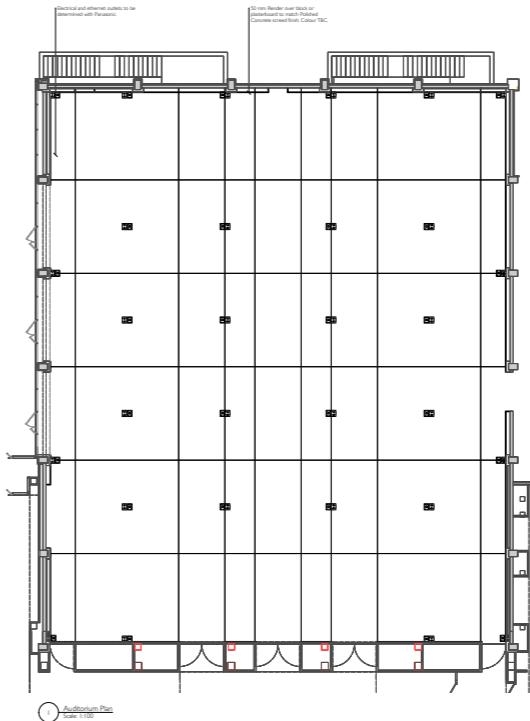
Whilst visualisations and models helped us in the office to understand the structure and design of the building, they also helped us to communicate our ideas across to the client, local engineers, contractors and city government. I learned a lot from those meetings, especially with the urban offices of the local council.



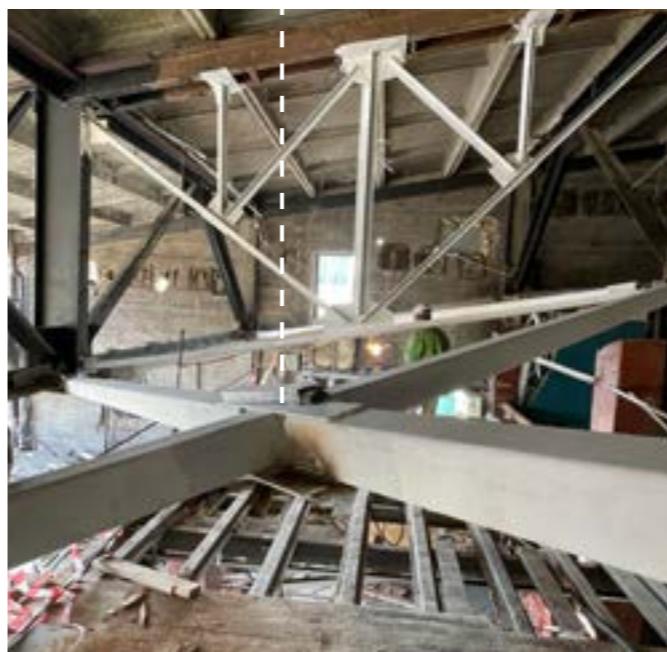
Visualization of the main facade with the landscape.

Tselinny - Strengthening

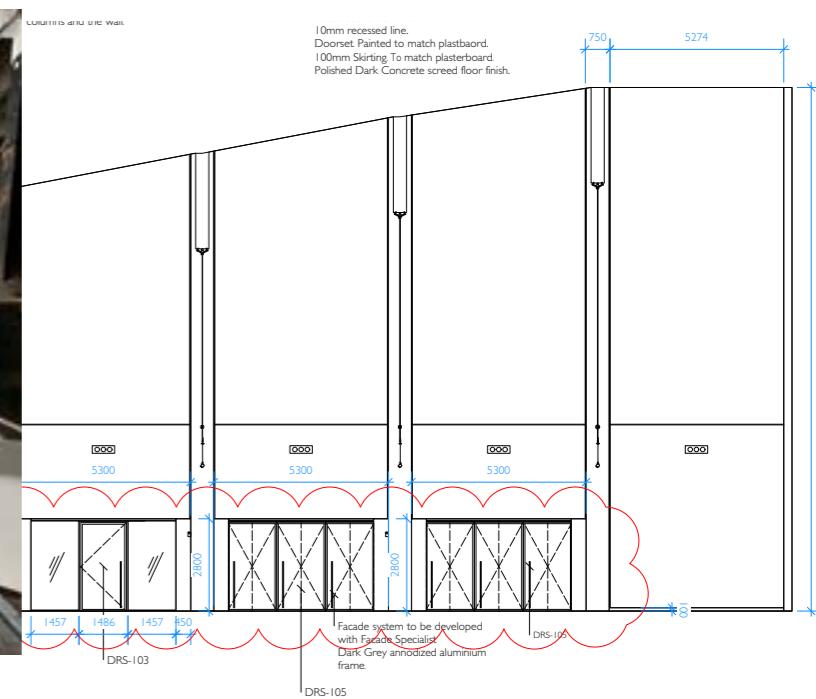
The project has reached the final stages of design, with me drawing internal elevations, door schedules and reflected ceiling plans to be sent off to the local expertise review and then to the contractors. I have also been utilizing the visualisations and drawings I have made in order to talk to manufacturers and contractors, as I was tasked with ensuring the quality of what they would produce and build.



Reflected Ceiling Plans

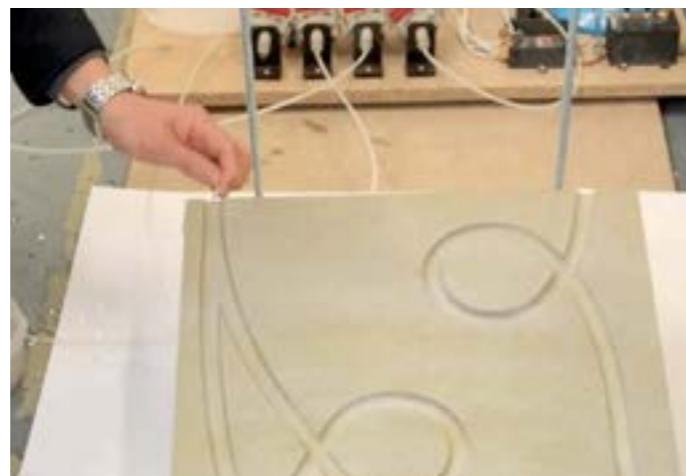


New truss strengthening being installed

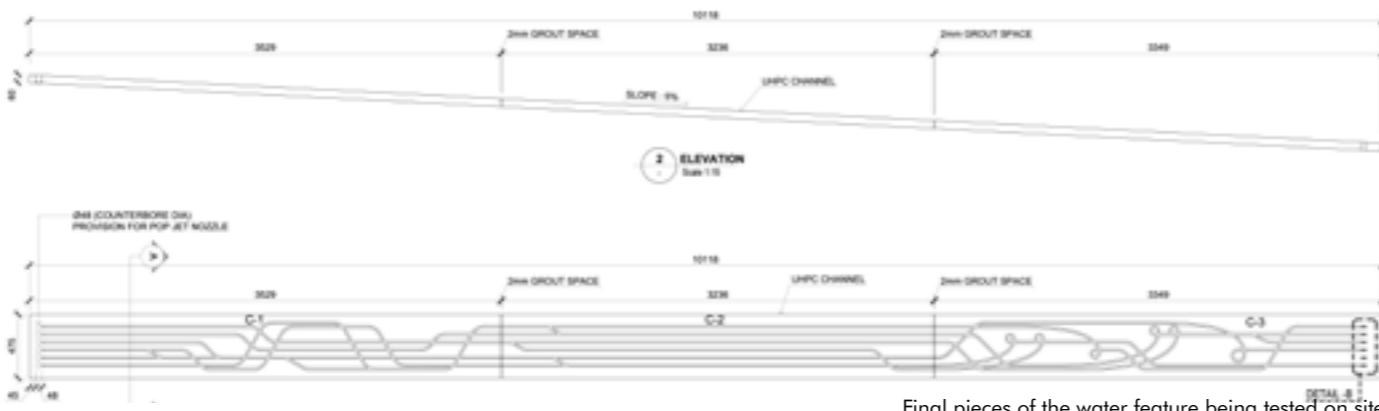


EXPO Dubai 2020 Water Feature

At EXPO I have participated in many projects, however, the small design of a water feature where small droplets would smoothly slide down a hydrophobic surface was the most interesting to me. As I was able to experiment and develop 1:1 models and test the physics of the droplets, in order to create a functional yet delicate design that would work with its context. This method allowed much greater control and understanding of the design.

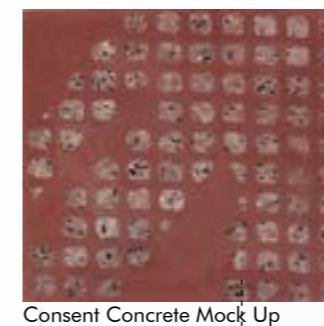


Mock Up models that I have made using a CNC

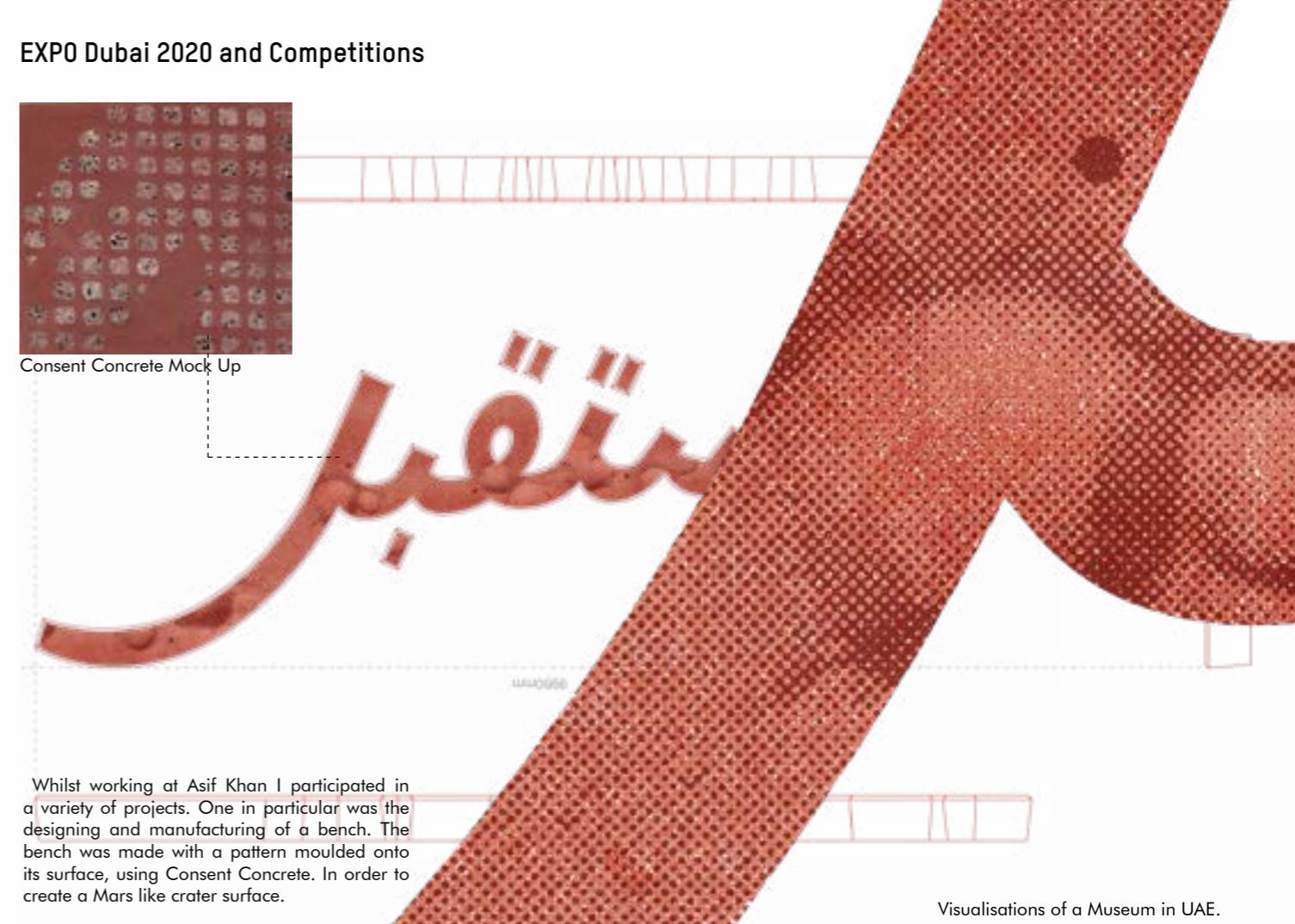


Final pieces of the water feature being tested on site.

EXPO Dubai 2020 and Competitions



Consent Concrete Mock Up



Whilst working at Asif Khan I participated in a variety of projects. One in particular was the designing and manufacturing of a bench. The bench was made with a pattern moulded onto its surface, using Consent Concrete. In order to create a Mars like crater surface.



Visualisations of a Historical Monument in UK.

Competitions

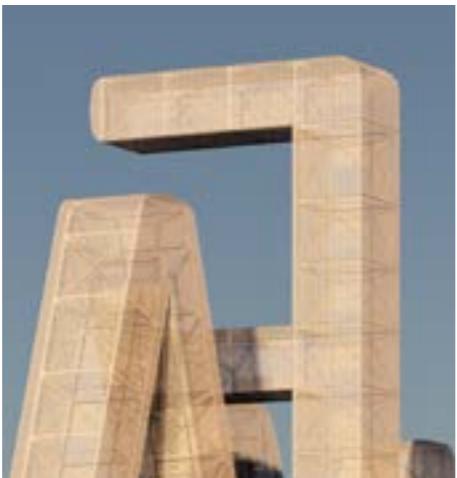
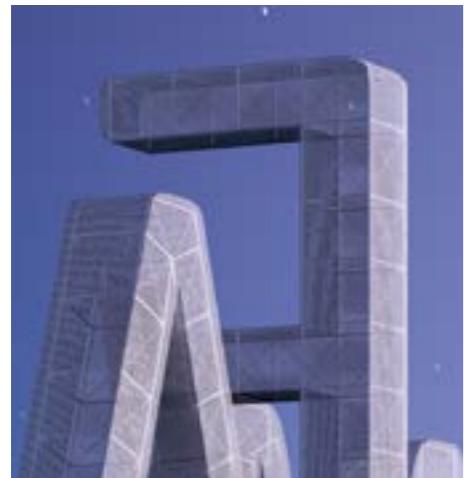
I also participated in many competitions whilst also working on the large scale projects in the past couple of years. I have been helping to develop the concepts, visualise the proposals and research the local needs and requirements. It has been a great exercise in between the large scale projects, to develop ideas, test new ones and explore different areas of the world, as well as react to different tasks each project required.



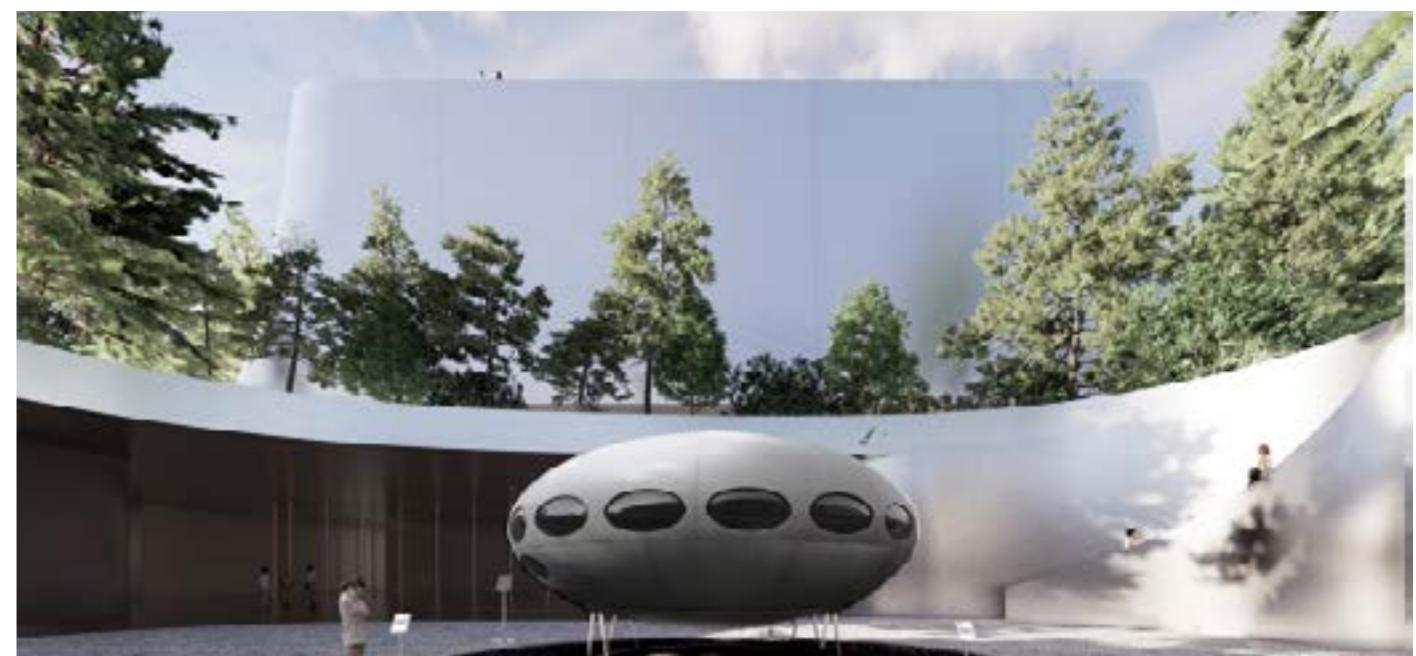
Visualisations and concept models for a Museum in UAE.



Visualisations of a private Musuem in UAE



Visualisations of a External Signage of a Museum in Taiwan.



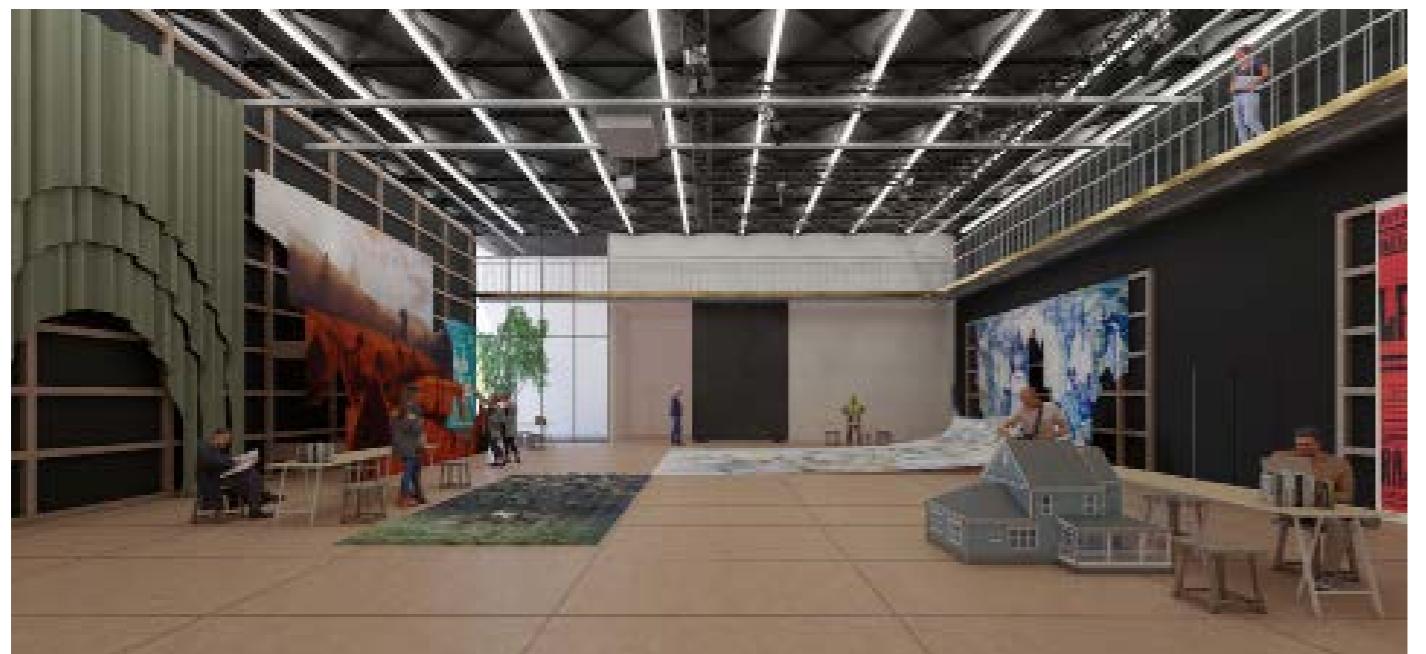
Visualisations of a National Gallery of Korea, Sunken Entrance



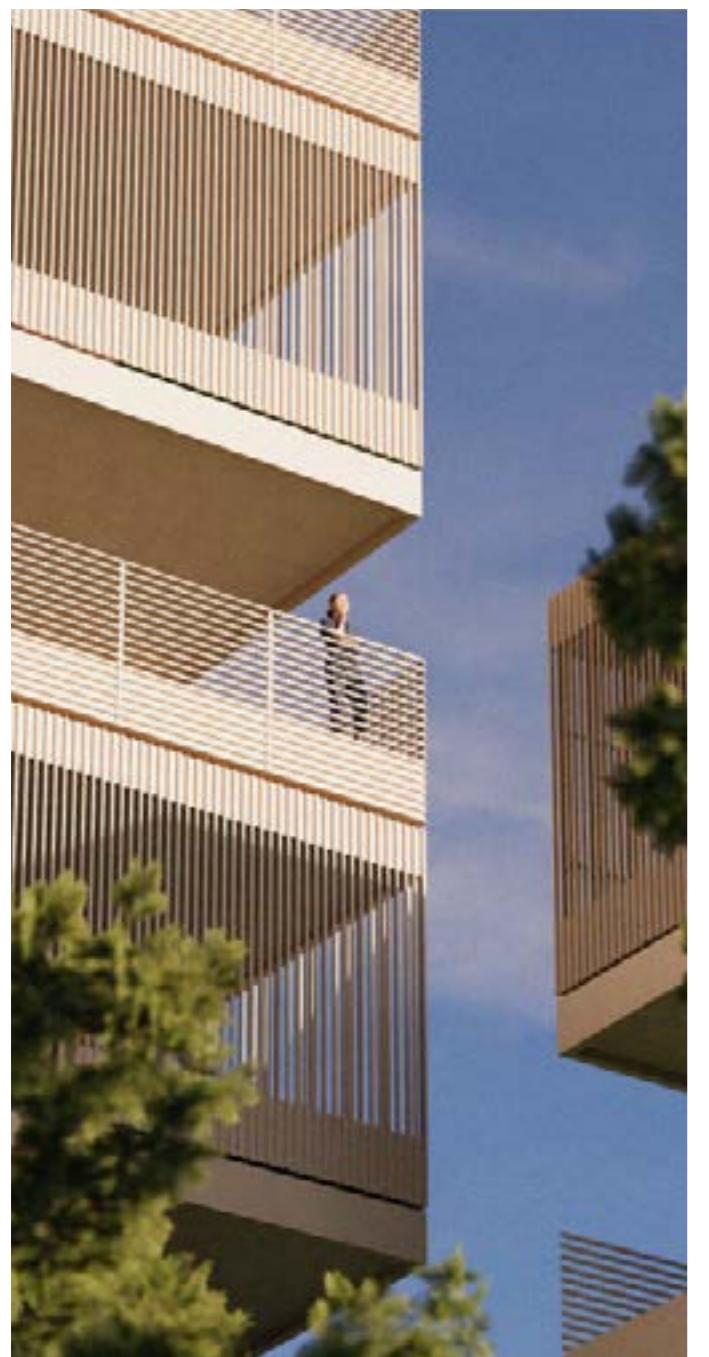
Material tests and Visualization of a workers monument in UAE.



Visualisations of a National Gallery of Korea, Rooftop



Visualisations of a Theater Workshop with production



Visualization of a Private Residence Tower London