"The intent of Murder's Sounding is to create 3 architectural instruments, interactive and networked pavilions, that tell stories with sound. The design of the pavilions will re-imagine the promise of digital fabrication away from complexity and towards narrative. The stories to be told will be murder mysteries that span 3 cities - Warsaw, Poland; Melbourne, Australia; and Baton Rouge Louisiana - and engage 3 rivers - the Vistula, the Yarra, and the Mississippi. Students can expect to immerse themselves in the experience of Warsaw, Poland, a city once known as the "Paris of the East," to explore the city through a series of mildly absurd dérives, and to investigate the potential of computational architecture to tell tall tales through a real-world digital design-build project."

Murder's Sounding

(a pavilion)

Supported by:

MONASH University
MONASH ART DESIGN & ARCHITECTURE
Warsaw University of Technology
LSU Center for Computation & Technology
Interdisciplinary | Innovative | Inventive
ASK Architecture For Society of Knowledge

3 *Murder's Sounding - Contents*

Background — 04

The Boys Surface — 05

The Pavilion — 07

Designing the Form — 08

Designing the Space — 09

Structure — 12

Scripting — 13

Tectonics — 14

Projections and Internal Program — 16

Smartphone Interactivity — 18

Beyond the Pavilion — 20

Precedent Projects — 21

Murder's Sounding - The Studio — 23

Project Team — 24

4 Background

It would seem foolish to explore an unfamiliar city without a map.

The map has become the primary way in which we understand the urban environment. It dictates to us where to go and what to see, what is significant and what is not. We trust that the map is a true representation of the city... but what if it isn't? What if in order to truly experience the city, we must do away with the map? Break it, shatter it... murder it entirely?

The Murder's Sounding studio begins with the proposal that the relationship between the city and the map is not as straightforward or as truthful as we have accepted it to be. Not only does the map present a subjective view of what is important, it predicates paths and establishes hierachies that do not exist in the city at all. It is not enough to merely look beyond the map, we must sever the relationship between the map and the city entirely in order to allow the new city to emerge.

What is the new city? How do we find it? These are the questions that drive our investigations. As if detectives in a murder mystery, we look for clues as to what the true city is and how to experience it. The project aims to challenge how one experiences the city by severing the representation from the fact, forcing the viewer to build their own experience of the city altogether. If we murder the map, what is left behind?

In an attempt to find the true city, we conducted absurd derives, wrote false histories and walked convoluted routes. We dismantled map elements and reconstructed them in illogical ways. These were the tour guides we wrote.

Rather than photographs or drawings, we experimented with virtual reality capture and 360 sound recordings. These forms of documentation felt closer to the reality of a city. A map can be printed and easily distributed - how do you communicate a city documented in these formats?

The Murder's Sounding pavilion aims to communicate the impossible in number of ways. First, it aims to present a city in its fragmented, imperfect way. It will show an installation of projected scenes and recorded soundscapes taken from these cities, arranged seemingly at random. The user has a certain level of agency, but is taken on an undecipherable journey, a digital derive. Second, it communicates the impossible through architectural form. The pavilion is modelled on the logic of the Boy's surface - a physically impossible surface that appears to be a solid. The impossibility of the Boy's surface acts as an apt formal metaphor for the impossible mission of communicating a city.

Follow us as we introduce the Murder's Sounding Pavilion, an instrument with which we attempt to find the truth of the city

5 *The Boy's Surface*

The design of the pavilion is derived from the Boys surface, a non-orientable surface found by Werner Boy in 1901.

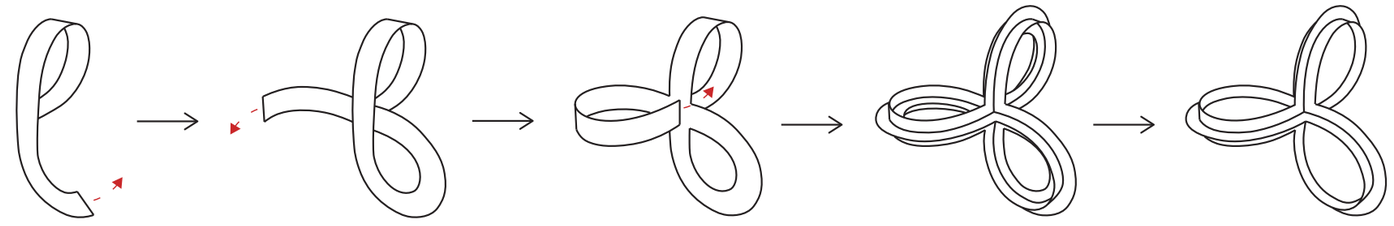
A non-orientable surface obtains a path which brings the traveler back to their starting point, mirror reversed. Therefore the Boy's surface achieves a unilateral surface similar to a Mobius strip. A Mobius strip is also a non-orientable surface although the Mobius strip obtains an edge whereas the Boy's surface does not and rather, closes in on itself.

Werner Boy discovered the Boy's surface on assignment from David Hilbert who asked him to prove it was impossible to immerse the real projective plane into three-dimensional Euclidean space. What Werner Boy discovered, was that his thesis advisor was wrong as the Boy's surface illustrates that it is indeed possible to immerse the real projective plane in 3 space and therefore discovered the first known immersion of the real projective plane. A characteristic feature of immersions as evident in the Boy's surface is that self-intersections may occur.

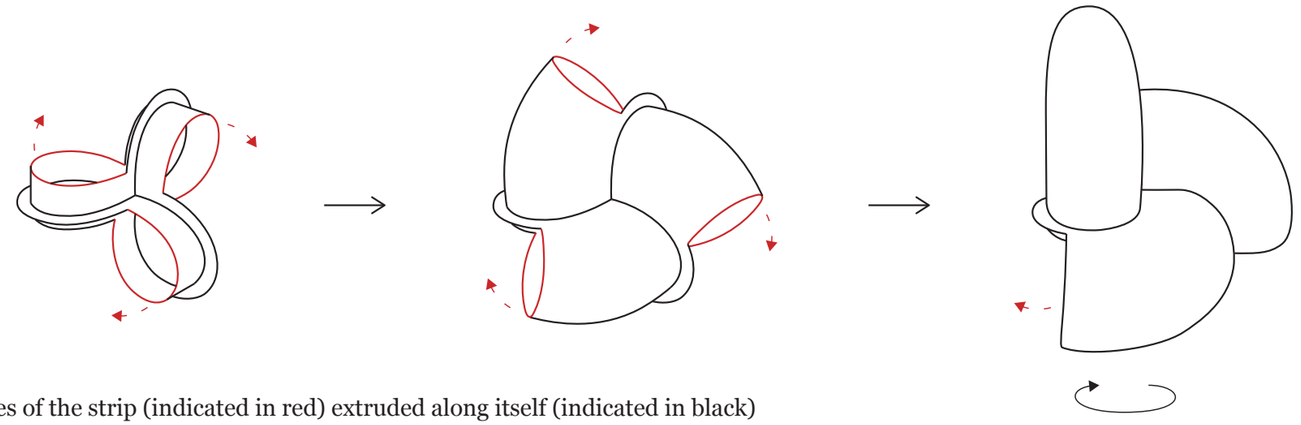
The Boy's surface has no singularities other than one self intersection and obtains a three-fold symmetry. This means that it has an axis of discrete rotational symmetry: any 120° turn about this axis will leave the surface looking exactly the same and that the Boy's surface can be cut into three mutually congruent pieces.

The adjacent diagrams depict the particular form of the Boys surface that we studied, and how it can be explained in two differen ways - first, as it morphs from thickening and joining the edges of a mobius strip, second, from joining surfaces made first in the X, Y and Z planes.

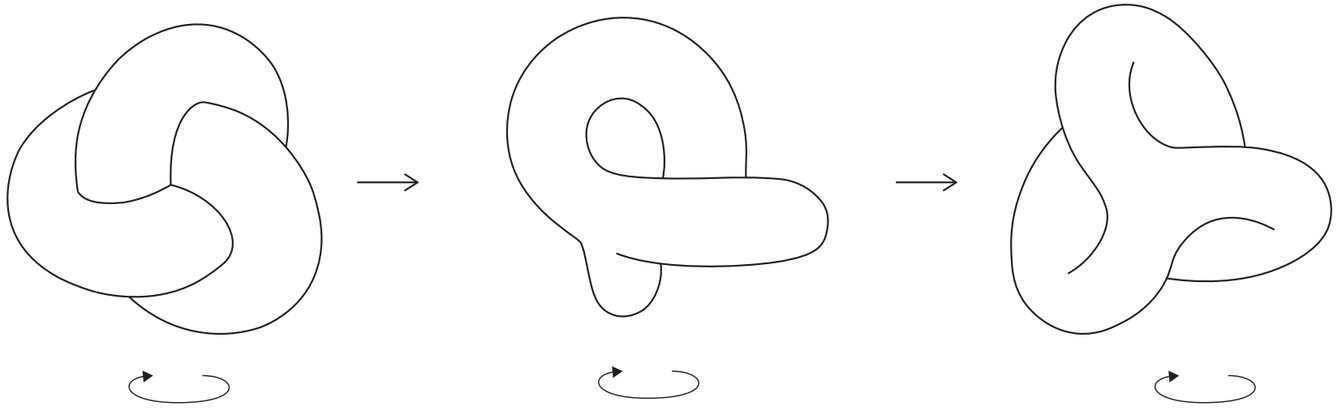
Conceptually, the impossibility of the Boys Surface is used as a physical device, highlighting the impossible way that a city can be experienced in a single, planar map.



The surface extruded in a strip (as indicated in black)



Edges of the strip (indicated in red) extruded along itself (indicated in black)



All edges merge - single surface


TEATR STUDI
SCENA
TAŃCA

7 *The Pavilion*

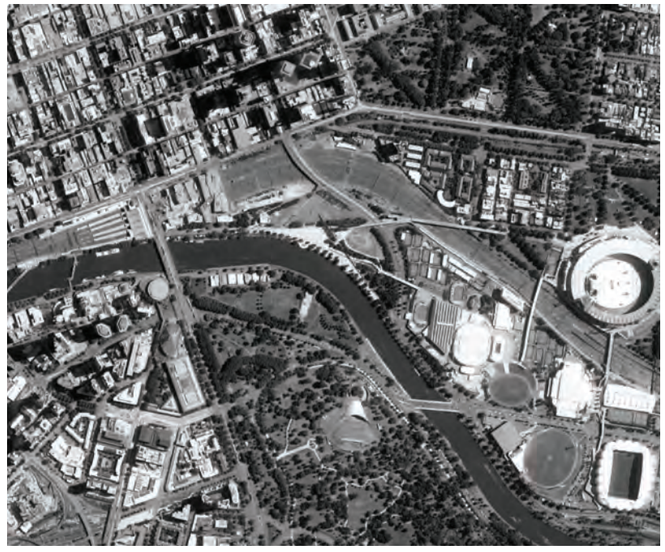
Murder's Sounding will be installed across three cities - Warsaw, Poland; Melbourne, Australia; and Baton Rouge Louisiana. Taking the same form, the pavilions will speak to each other - trading stories and experiences to create a space between spaces, a scene between cities. Each of the pavilions will serve as an exhibition space for a series of immersive and interactive projections, questioning the way we understand and occupy the city.

The cities were chosen for their shared quality of riverside proximity as well as their existing relationship with the project team. The Yarra River runs through Melbourne - our home-base, the Vistula runs through Warsaw - the location of our study tour and the Mississippi River runs through Baton Rouge - the city in which our project collaborators are based. The rivers give an indication as to the potential sites of each of the pavilions.

The Murder's Sounding pavilion will serve as a purpose-built, immersive structure that houses the interactive projection-based installation designed as part of the studio. Its form references the Boy's Surface, a spatially impossible geometry, as a physical counterpart to the 'impossible cities' that it provides access to. The interior accommodates 20-25 people, and allows users to interact with the content of the installation through an app developed for the project. The space beneath the undulating floor allows for services and equipment storage. The construction and detailed resolution of the pavilions are being developed in a follow-up study with students at Monash University, where they are resolving these issues through scripting and digital fabrication.

The Vistula running through Warsaw, Poland

The Mississippi running through Baton Rouge, Louisiana



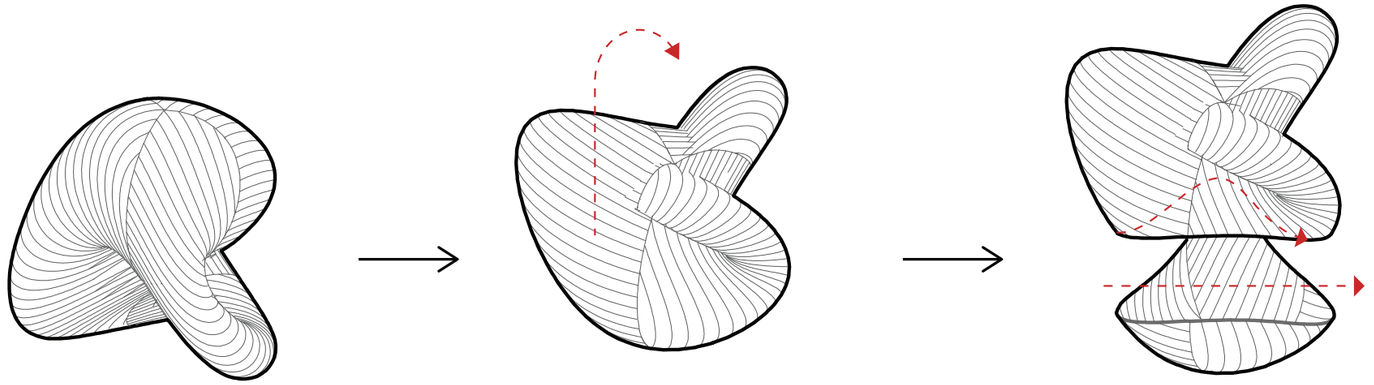
The Yarra River running through Melbourne, Australia

8 *Designing the Form*

The initial stages of the design process begins with taking the form of a Grasshopper generated Boy Surface, flipping it upside down and slicing a cutting plane through its bottom half. The logic behind this move was to accentuate the Boy Surface's triple point moment by using its complex geometry as a ceiling feature that begins to describe the shape's complexity in its purest undisturbed form. We wanted to take care in the way we were to deal with such a specific and formulaic type of form that is the Boy Surface.

The driving goal for our initial iterations was to discover potential strategies that allowed us to translate the Boy Surface into an architectural space, without having to compromise on the essence of what makes a Boy Surface what it is. The primary elements of this surface that became ingredients for us to architecturalise was firstly; the lobes (3 extruded/ sectioned spaces) next is the triple point (where all three lobes collide and intersect) and lastly is the artificial ground plane (made from cutting the bottom of the surface)

In order to keep the Boy Surface's shape consistent and undisturbed, the remainder of what was cut from the bottom acts as the ground condition so you enter from the level of where the cutting plane is and descend to the very bottom of the Boy Surface. This crucial play in ground levels aids to morph the entrance sequence to become parallel to the curvature of the Boy Surface itself. This means the pavilion's entrance is raised 1m above ground where a berm leads you up to either one of the two entrances situated underneath the natural cantilever of the lobes/roof. At entrance point the curvature of the walls concave to follow the descending treads of stairs digging into the cave-like formal language of the pavilion.



ORIGINAL BOY SURFACE MODEL

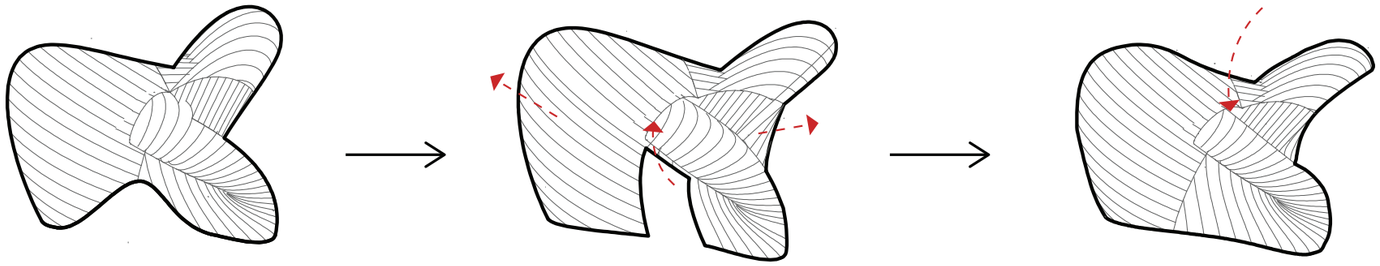
Our base model was derived from the cartesian parametrization equation of the Boy's surface by Werner Boy in 1901.

MODEL FLIPPED ON X-AXIS

Geometry was flipped upside down in order to expose and highlight the main connection point of the three lobes.

CUTS CREATED

Form is sliced to create openings and allow for ground plane connection.



FINAL FORM PROTOTYPE

The resulting form that is used for further testing.

WALLS + OPENINGS EXPAND

Walls are straightened and openings are expanded to allow for more comfortable head space and access.

CEILINGS ARE DEPRESSED

The ceiling is pushed down from the connection point which flattens the overall form that allows for broader space internally.

9 *Designing the Space - plan*

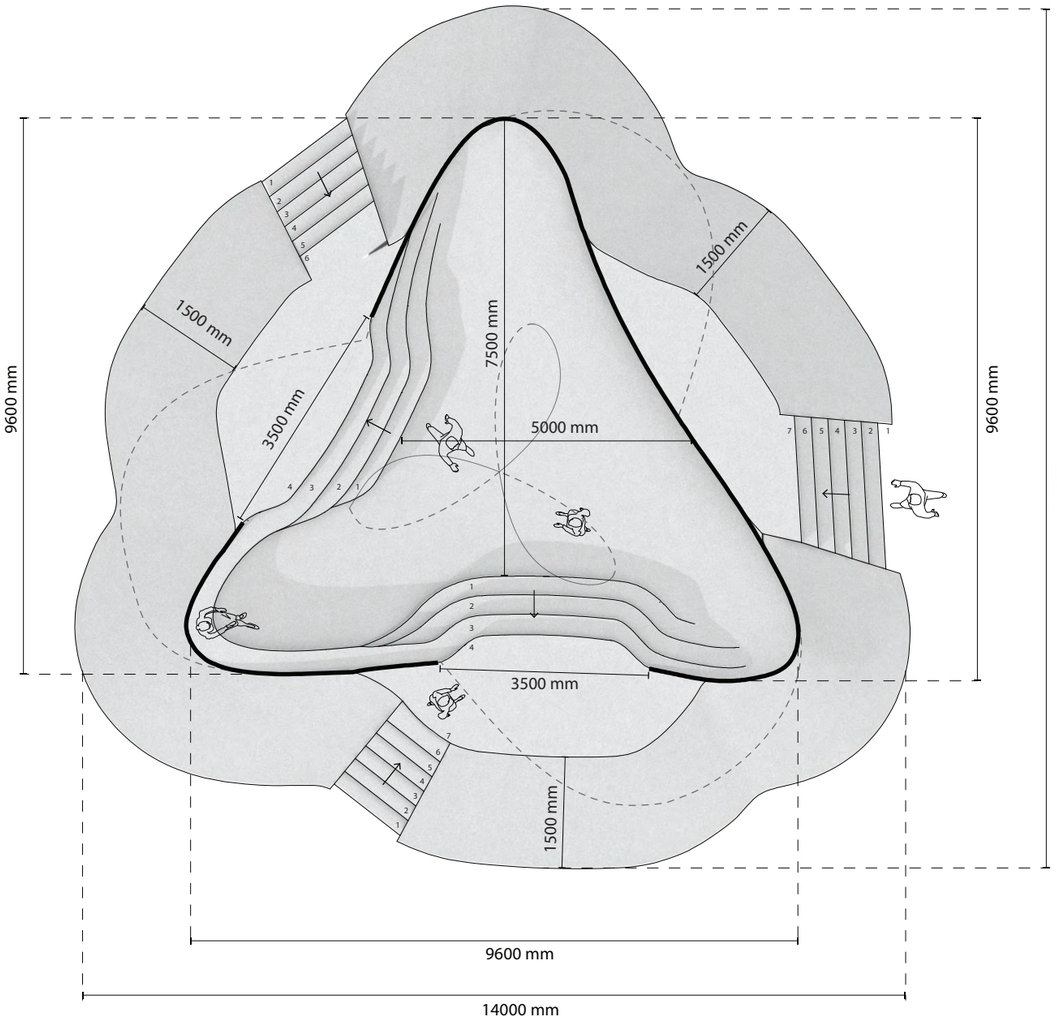
Spatially we tried to follow with respect to the natural spatial qualities that the Boy Surface was giving us. The ground condition is anchored by a chamber-like space in the middle that sits under the triple point, secondary to that are the 3 lobe areas where the ground raises up to meet the walls of the pavilion, lastly are the stairs that offset a bit from the surface which then slips back into the pavilion's walls exposing the extreme circular curvature of the surface where the 3 lobes meet the floor.

Every architectural gesture implemented in the Boy Surface has the intention to work with the complexity of the surface and to describe it's geometry as simple as possible. Whether its using the natural isocurves of the surface to inform the openings or emulating the specific curvature of the surface, our process is anchored by the formal complexity of the initial Grasshopper-generated Boy Surface iteration we had at the start.

Conceptually, the Murder's Sounding pavilions sit in juxtaposition with their surrounds, luring passers by with a sense of mystery and apparent geometric impossibility.

Upon entering, the audience is immersed in a seemingly virtual reality, effectively transporting them to a place that is both familiar and unreal. The visitor is confronted with a variety of sounds, imagery and mapping of locations. Some elements will be vaguely recognisable whilst others will be generated from sister pavilion cities. These elements collide, inform or reconfigure one another to create the resultant narrative

As the spatial mysteries of the form unravel, the visitor may try to piece together this puzzling narrative. They may notice that the concave floor beneath them reveals a cartographic convergence of figures. This semi recognisable map has evidently been butchered and forms the central scene of the crime. Just like the detective in the giallo film, they find themselves compelled to find the killer responsible for this violent misdeed.



10 *Designing the Space - section*

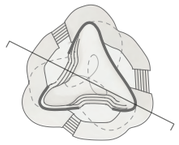
In the process of developing the project, we explored different ways of applying the stories and cities to the surface. Throughout the process this affected the form, structure and program of the pavilion. The path we took to achieve our final result can be broken down into a few stages. As the stories and cities were a key part to the overall concept, our goal was to create an interactive, sensory experience for the public to immerse themselves in. Therefore we decided to focus on using projections throughout the pavilion to highlight these stories whilst also emphasising the structure of Boy's Surface itself.

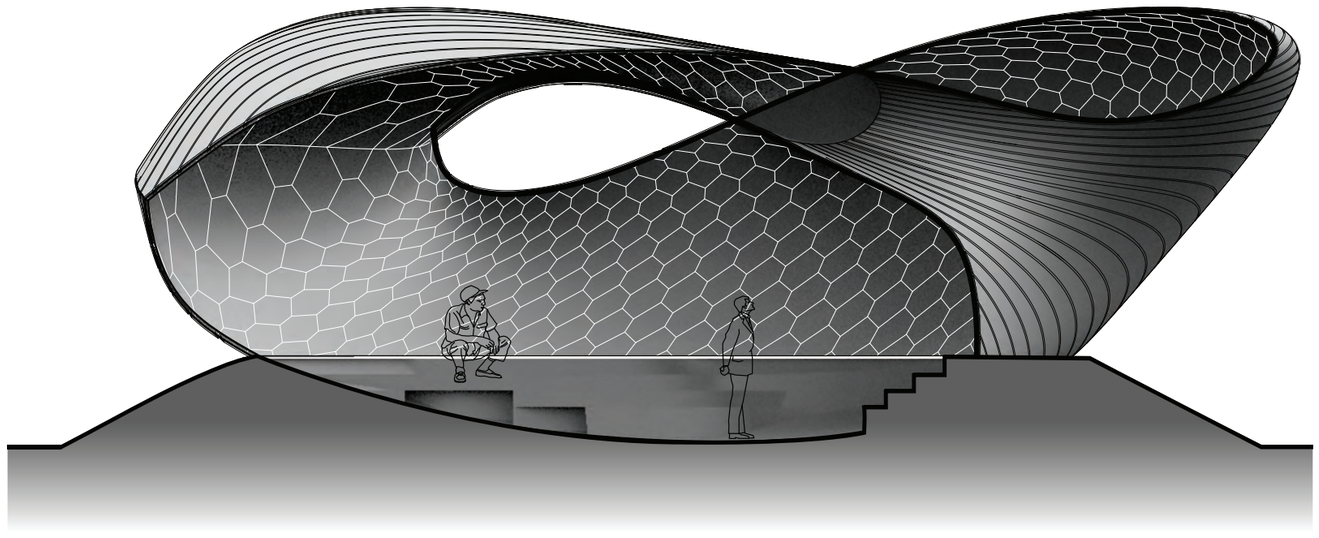
Initially the three lobes of Boy's Surface were designated to the three cities, Warsaw, Melbourne and Louisiana. Within each lobe the stories and maps would be displayed to the surface using projections. There was discussion around where exactly on the surface the projections would be displayed. We came up with projecting the individual cities on the exterior and the hybrid city on the interior for users to experience once entering. Due to the limited space on the exterior we had to consider enlarging the 'horns' to create a surface for the projections.

We then introduced the idea of an app for the public to utilise whilst inside and outside the pavilion. The app would work alongside the projections and allow the user to control them. With the app, a user would be able to select a city tour and then swipe up to display it upon the surface for a limited time.

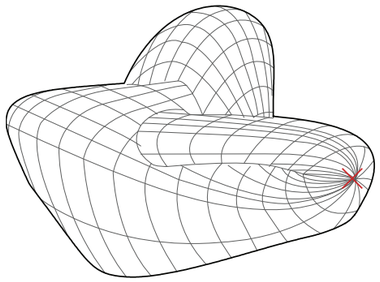
It was then decided that we discontinue with the exterior projections and move them onto the interior walls. Along with this, we would have a real-time sensor map on the floor showing the live location of people using the app outside the pavilion. This sensor map would then control the surrounding sounds and visuals depending on where people are located around the city.

As we developed and finalised the form, we decided to use the three exterior caps to display the current city, the 'selected' city (chosen by the users) and the hybrid city of the two. On the interior, four mappings would be projected on the floor; the two cities, the hybrid and the location of the pavilion. Each site will have a 3D recording of it along with the audio of its surroundings, together these will be displayed along the interior walls when they have been selected. This can either be controlled through the app or through the movement of people within the pavilion depending on where people gravitate towards.



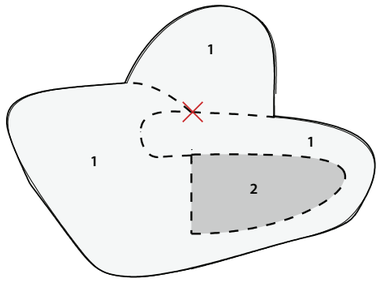


12 *Structure*



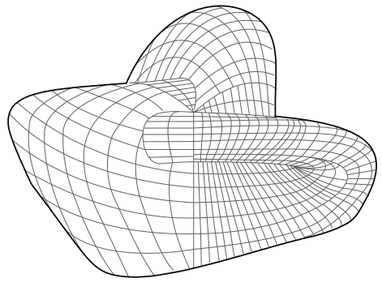
BOY SURFACE MODEL

Using the resulting geometry from the form finding process, the form is input into a parametric script to be rebuilt to allow for dynamic testing of structure.



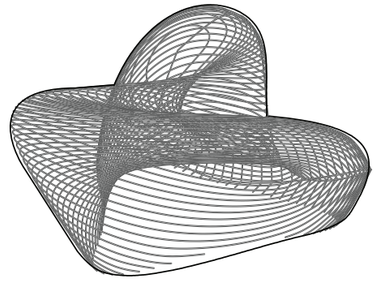
SPLITTING OF SURFACE

In order for the form to be feasible for construction, the form needed to be divided into three smaller parts and a new origin point needed to be established.



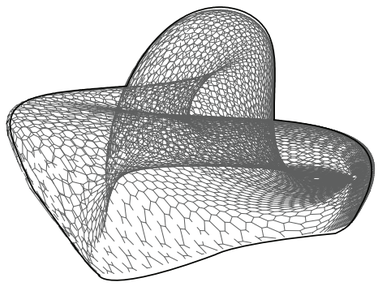
UV ADJUSTMENT

After splitting the surface in parts, each part needed to be split once again into smaller parts to allow for even and consistent panelling.



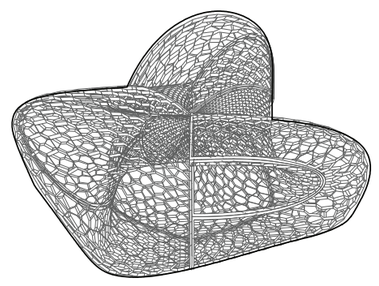
STRUCTURAL BEAMS

Once the UV is resolved, lines can be extruded to create structural beams.



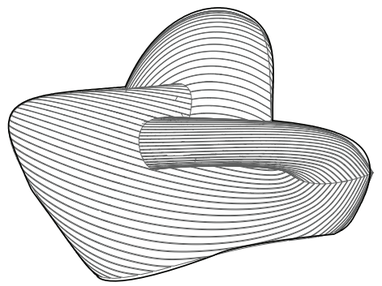
HEXAGON PANELLING TO SKIN

The skin is then divided into hexagons through vigarous parametric testing to find its ideal configuration.



STRUCTURAL DEPTH

Hexagon geometry is then extruded to create depth and supporting ribs are added to make the geometry structurally sound.



EXTERIOR TREATMENT

Once structure is resolved, strip panels are applied to the surface of the skin.

The pavilion's unique form creates interesting and challenging areas that allow for an unconventional structural system. The form is broken down into an interior fabric skin, central hexagonal structural cells and an overlapping metal ribbon exterior.

By breaking down the surface into these three main elements, the pavilion can function with different interior and exterior materiality choices. The main structural element are the hexagonal cells. These cells are formed with two hexagonal metal frames at either end, joined by a series of timber members that are bolted together. The exact shape and size of each cell is different, determined by the parametric computer algorithm.

13 *Scripting*

In order to achieve this script, the surface was divided into three equal sections, to allow for easier workability with the complex surfaces. From each section, the surface is further divided up into two parts, this helps us to understand from what point is the intertwined surface facing inside and outside. These two parts then had the hexagonal cells arrayed along the surface, most of the job here is generating a script that would allow flexibility in changing the number of hexagons on the U V domain of the surface.

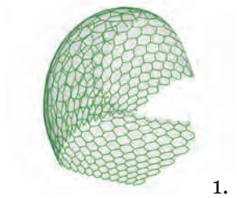
Next stage is to make these hexagonal cell a three-dimensional geometry.

Step 1 : Offset the surface to a desired thickness
Step 2 : Reapply the same hexagonal script on the offset surface
Step 3 : Join and loft the two hexagonal grid for a three-dimensional hexagonal cell.

After generating these hexagonal cells, a membrane is created along the edges of the surface, these ribs act as both structural skeleton of the hexagonal cells and joinery for where the edges of two surface meets and interlocks. From here, we have attained the required parts to assemble into a full Boy's Surface with a generative design methodology.

Diagrams immediately right (top to bottom)

1: Hexagon Generation
2. Offset Surface
3. Lofting Process
4. Structural Membrane
5. Hexagonal Shell Type 1
6. Hexagonal Shell Type 2
7. Assembled Boy Surface



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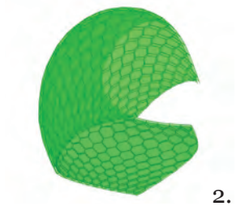

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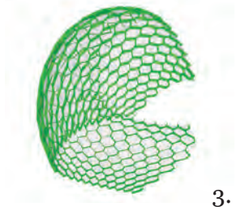

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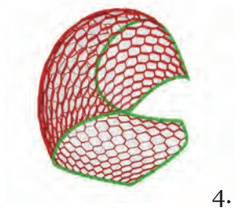

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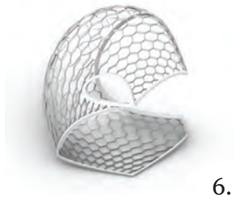

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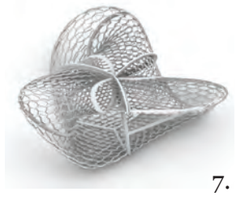
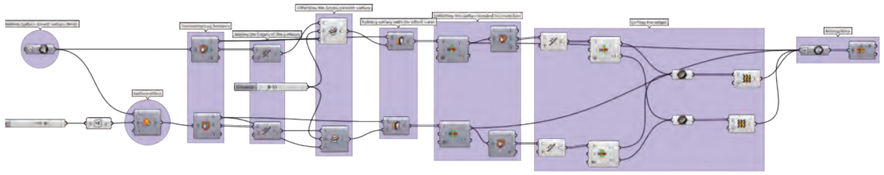


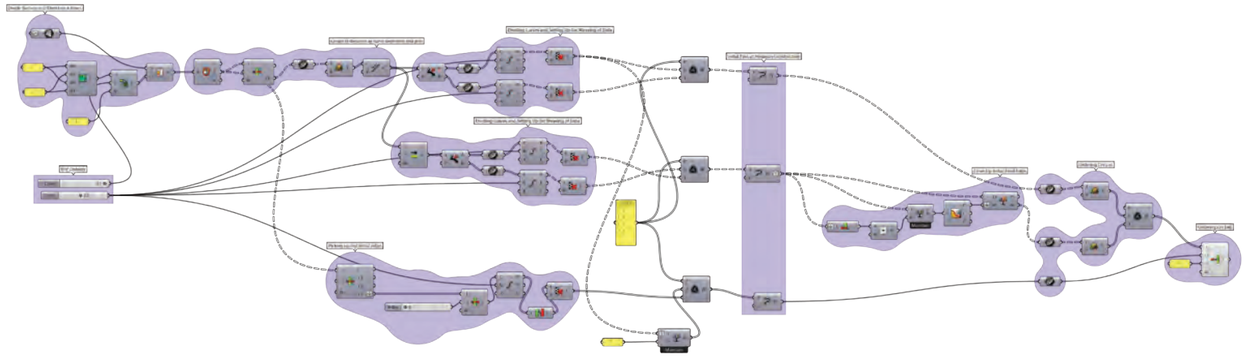
7.

Creating surface ribs to contain and support the hexagonal structure

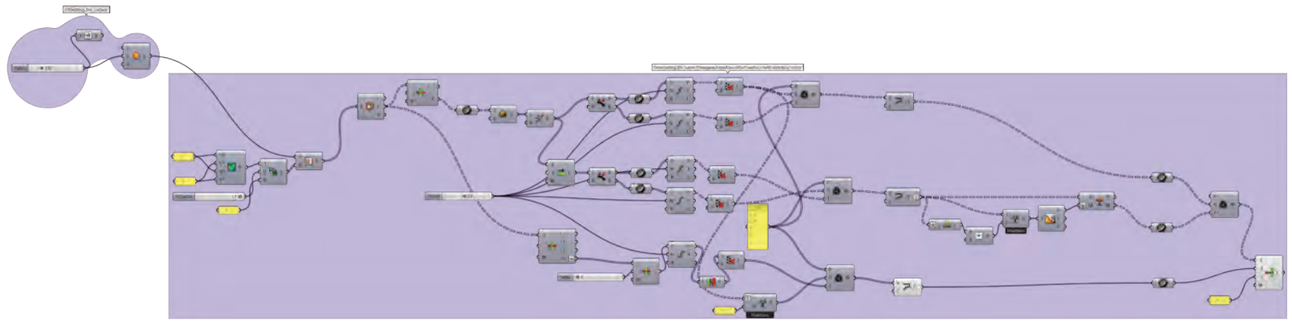


Hexagons as a surface

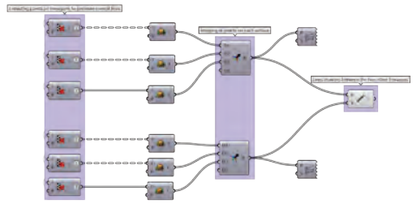
Generating the hexagonal structure on the internal surface



Generating hexagonal cells on the offset surfac



Drawing normal lines between hexagons on the internal surface and the external surface



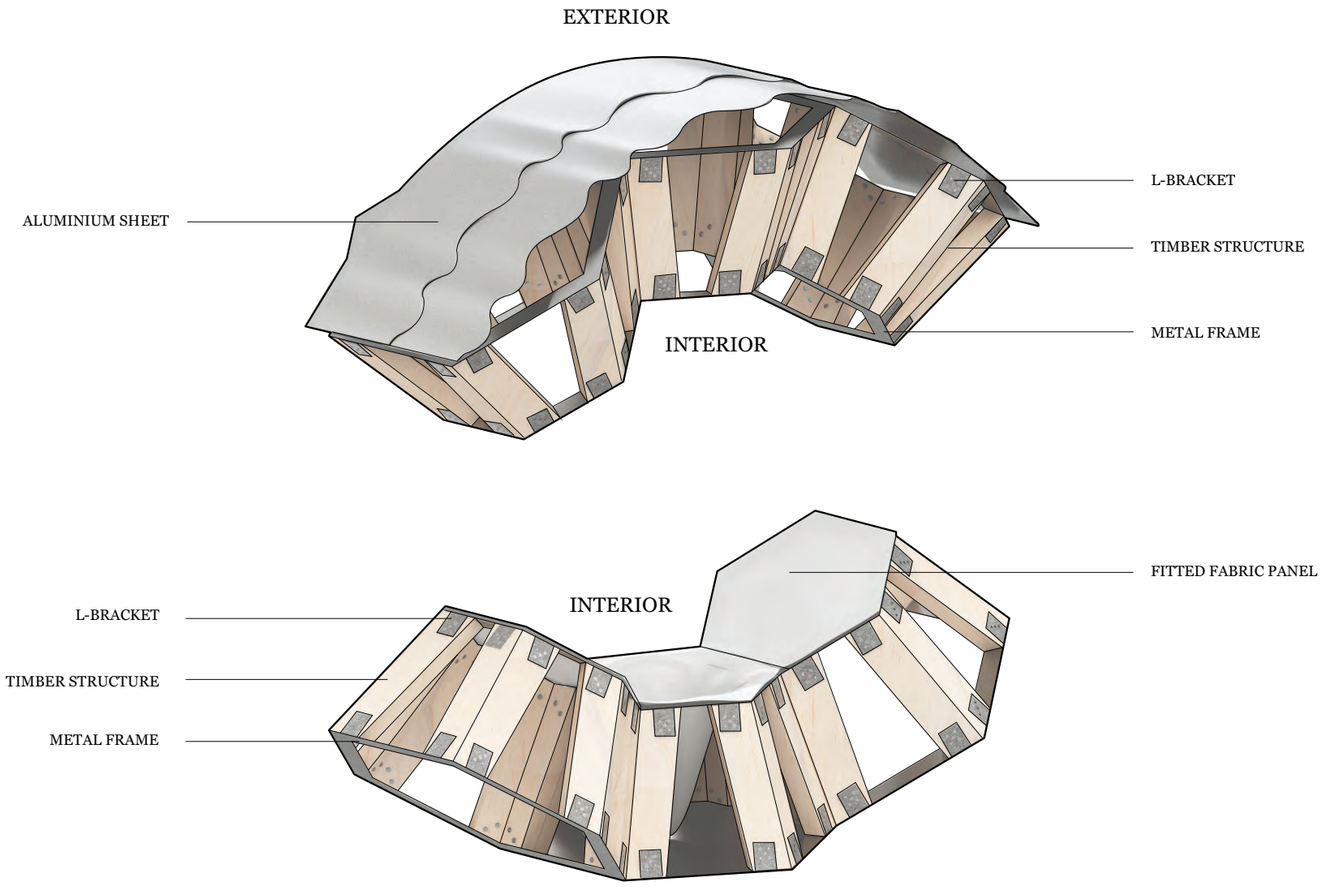
14 Tectonics

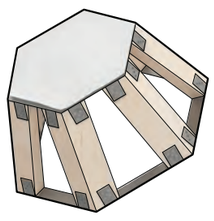
The pavilion uses a hexagonal structural system to support the complex mathematical surface of the Boy's Surface. Constructed using timber and metal frameworks held together using unique L-brackets to connect the interior and exterior skins as well as their neighbouring hexagonal modules. Each module will be constructed separately and connected by hand, allowing for a flexible construction process.

The exterior skin will feature steel cladding strips that will highlight the boy's surface geometry. The skin will be fastened in place using screws.

The interior skin will feature fabric panelling. There are four type of interior fabric panel treatments, respectively named 'relaxed', 'pinched (passive)', 'pinched (kinetic)' and 'utility' based on their functionality. The relaxed panel option features a typical application of fabric stretched over the hexagon metal frame. This results in a smooth and simple surface, ideal for projections, due to this it will be featured most predominantly around the pavilion.
The 'pinched' panel features a similar construction, however the centre drum will be pulled at various pressures and fixed onto the structure to create interesting variation on the surface.
Based on the trajectory of the project, there can be an option to incorporate additional motors and sensors can be used to manipulate the surface further to create a more dynamic interaction with the pavilion and its users. The pull can be programmed to react to a set of parameters.

Utility modules will be located in specific locations throughout the pavilion to allow for immersive audio and visual experiences. Any machinery used to create sound and visuals will be housed within the structure and concealed by the fabric skin to create a seamless interior.





1. RELAXED

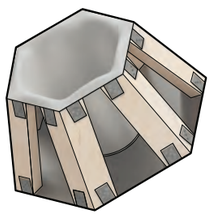
Fabric is pulled and fixed over hexagonal structural form resulting in a smooth falt surface ideal for projection.

2. PINCHED (PASSIVE)

Pulled from the center point of each fabric panel and attached to a fixed point within the structural frame. The amount of pull depends on the desired effect and can vary throughout the interior panelling of the pavilion.

3. PINCHED (KINETIC)

Each fabric panel is pulled from its centre point and attached to a stepper monitor which reacts to proximity, creating a dymanic surface that interacts with visitors.



4. UTILITY

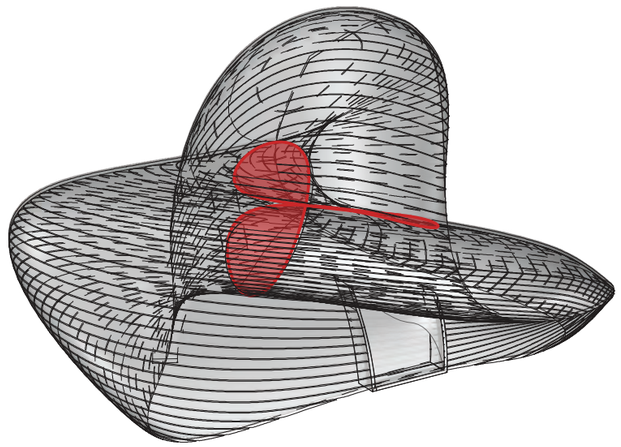
Speakers and projectors will be emebedded within the panel structure and arranged throughout the pavilion to allow to create emmersive audio and visual enviroments.

16 *Projections and Internal Program*

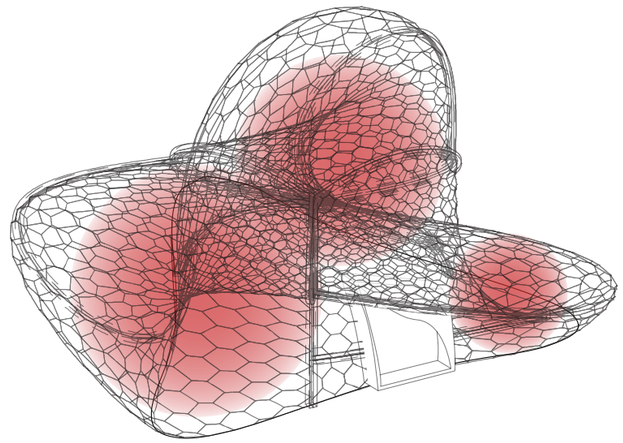
The projected images and sounds act as clues to the "murder" of the map. As the visitor investigates the body of evidence, the projected images and sounds reveal themselves as distorted fragments of three separate sites, with varying levels of coherence and truth. They may realise that each site influences a node on the map, acting as a weapon for the ensuing carnage. The combined aspects of the three sites, sounds and mapping combine to create the slashed version of the concrete yet fictional city before them.

Users of the app are then given a chance to choose one of the sites themselves, which triggers a change across the entire landscape. This is followed by a moment of discovery as they realise that now they too are in fact complicit in the crime. As the realisation of their involvement sets in, the visitor may begin to rationalise their actions. Could the bloody yet fascinating outcome of their deeds possibly justify their crime?

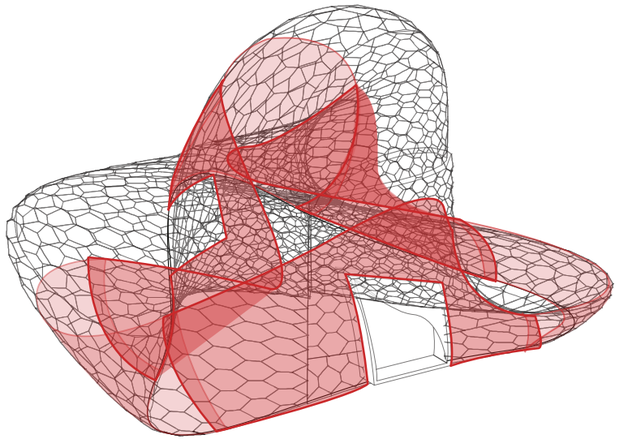
This interactive and participatory experience removes the boundaries between fact and fiction and invites visitors to question the benefits of changing the accepted representations of the city. Visitors are challenged to investigate the benefits of a re-orientation of architectural and urban realities and the possible effects this could have on the way they inhabit and influence the city.



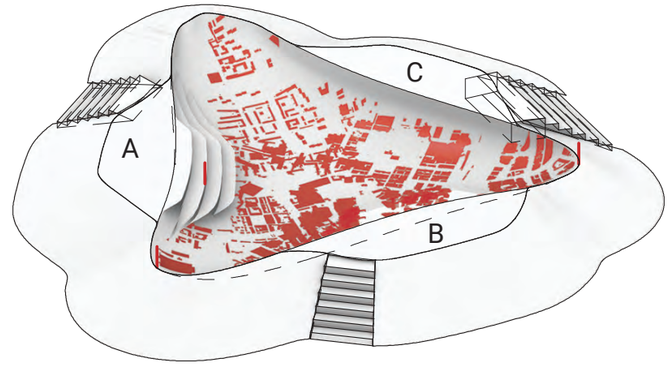
1) Interior Projections



2) Augmented Audio



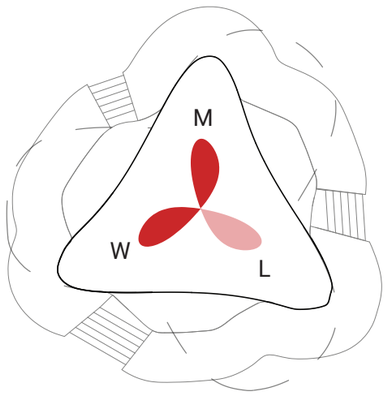
3) Interior Projections



4) Floor Projections

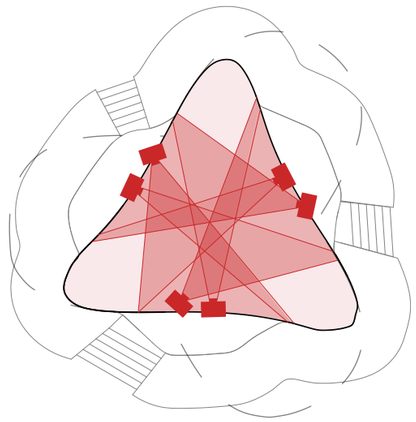
*see next page for full diagram captions

17 *Projections and Internal Program*



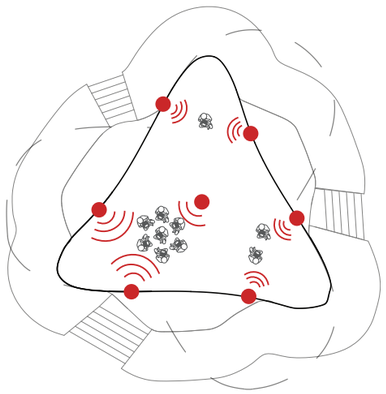
Exterior Projection Surface

1) The exterior of the pavilion will incorporate a back-lit projection onto the "cap" of each"horn". Each cap is dedicated to one of the three cities - Warsaw (W), Melbourne (M) and Louisiana (L). The projections on the cappings of each lobe will display only 2 cities at a time, depending on which cities are showing internally at that moment (the home city will always be lit up).



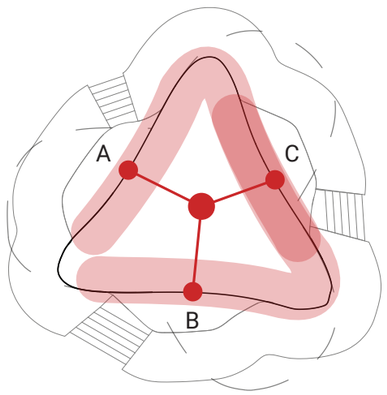
Projector Locations

2) The interior projections are utilised to create an immersive cave within the pavilion. The 2 smaller surfaces (A & B - with entrances) will display narratives based on locations chosen from 2 users (home city and randomised sister city) that have been chosen via app. The larger surface (C) will display a hybrid of the two conditions shown within the smaller surfaces, creating a third (fictional) condition. The edges of each projection appear to disappear into each of the horns.



Dynamic Ambisonic Sound

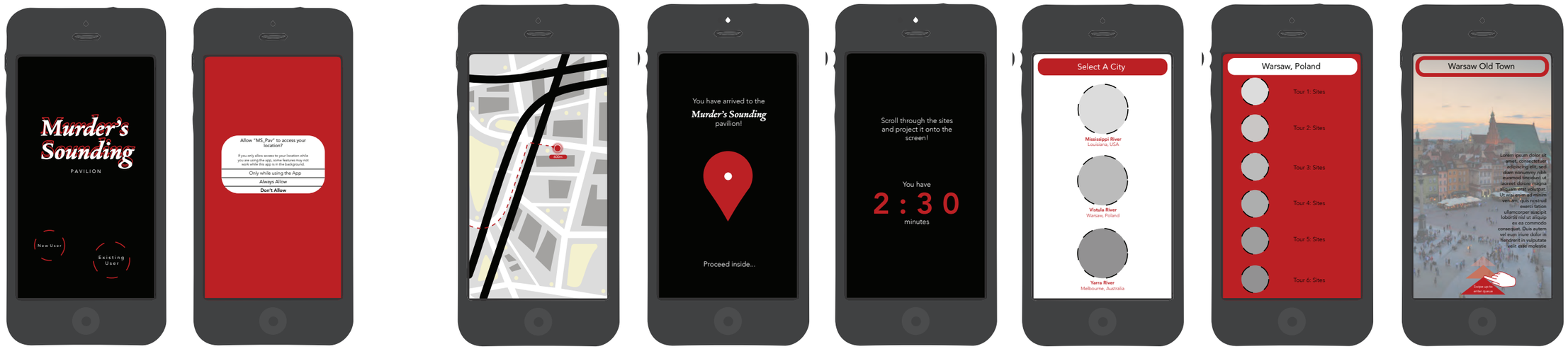
3) Ambisonic sound will be utitlised to produce a blended soundscape, which will be modified depending on user behaviour. The sound will alter depending on clusters of people, their location and their movement through space. This will determine the volume, pitch and direction of the surrounding audio.



Map Nodes

4) The floor displays an altered map incorporating four conditions - a node corresponding to each of the projected cities (home city - A, sister city - B, fictional hybrid city - C), meeting in the central point of the floor surface, which also represents the location of the home pavilion and surrounds. This central node locates you within all of the remapped cities and forms the convergence point at which none of the cities and all of the cities exist at the same time.

18 *Smartphone Interactivity - within the pavilion*



Download & Log onto Murder's Sounding application

Permission for Bluetooth & GPS tracking

Locating users & directing them towards the Pavilion

Pavilion detects users in the vicinity of the Pavilion

Users notified of time limit to choose sites, to queue and project them

Options of all 3 cities

Sites of the 6 tours from each 3 cities

Chosen site & prompt to place in projection queue

Once users are withing Pavilion vicinity, next page will appear

Page automatically changes once users proceed further into the pavilion

A smartphone application has been developed based on the city tours generated from Murders Sounding studio (and an equivalent version in sister cities). Approximately 30 locations from each city will be presented in the form of a linear remapping of the city.

Users log onto the Pavilion app, where the app will automatically locate where the users are and assess their position in relation to the pavilion. The app will have two functions: usage within the vicinity of the pavilion, as well as outside of the vicinity of the pavilion.

Whilst inside the pavilion, users can use the app to project installations on one of the small lobes of the pavilion by 'swiping up' on their chosen site. The same process will be occurring in all three cities, where a hybrid of two cities will be projected on the largest lobe of the pavilion.

19 *Smartphone Interactivity - within the city*

Users pair with someone from sister location

Users select point to navigate to (e.g: from remap of Warsaw)

A hybrid map of the two cities is generated depending on what sites the two users have chosen

MELBOURNE
WARSAW

Users use linear remap of Warsaw to navigate to location.

As users follow the guide and visit the sites, they will need to use their headphones to listen to the frequency of the sounds in order to navigate to their next location.

Once they reach the chosen location, certain features willbe unlocked
(e.g: morphed 360 of fictional hybrid locations / morphed soundscape / new story).

Outside of the pavilion users pair with someone from a sister location on the app, where they select points to navigate to. From this, users follow the guide and visit the sites. To play the game users will need to use their headphones to listen to the frequency of the sounds in order to navigate them to their location. Once they reach their final location, a 360 of the fictional hybrid of the two users locations along with the morphed soundscape.

20 *Beyond the Pavilion - Engaging with the City*

Over the last few years, the traditional map has transformed from a static, stylised portrait of the earth to a dynamic, interactive stream of guidance and information. But this has not changed the general perception of it. We still assume that the map has a 1:1 relationship with the city - that it tells the truth about the experience. We allow the map to control every predetermined journey between two destinations, meaning that the city and our experience of it is inherently dictated and judged by the map.

Outside of the pavilion, users can use the app to pair with someone from a sister location. Both users are able to select points from their home city to navigate to. As an extension of the pavilion's use of seemingly illogical devices, we present the user with a reconfigured, fictional mapping of the city - a truer experience of the city than the traditional map because it no longer claims to represent it.

With no obvious correlation between the map and the city they find themselves in, users will need to use their headphones to listen to the changes in frequency of recorded sounds in order to successfully navigate the reconfigured map and reach their final destination. Whilst physically navigating the city, they will find that there is no correlation between the map, their orientation or the obstacles and ambiences they may encounter along the way.

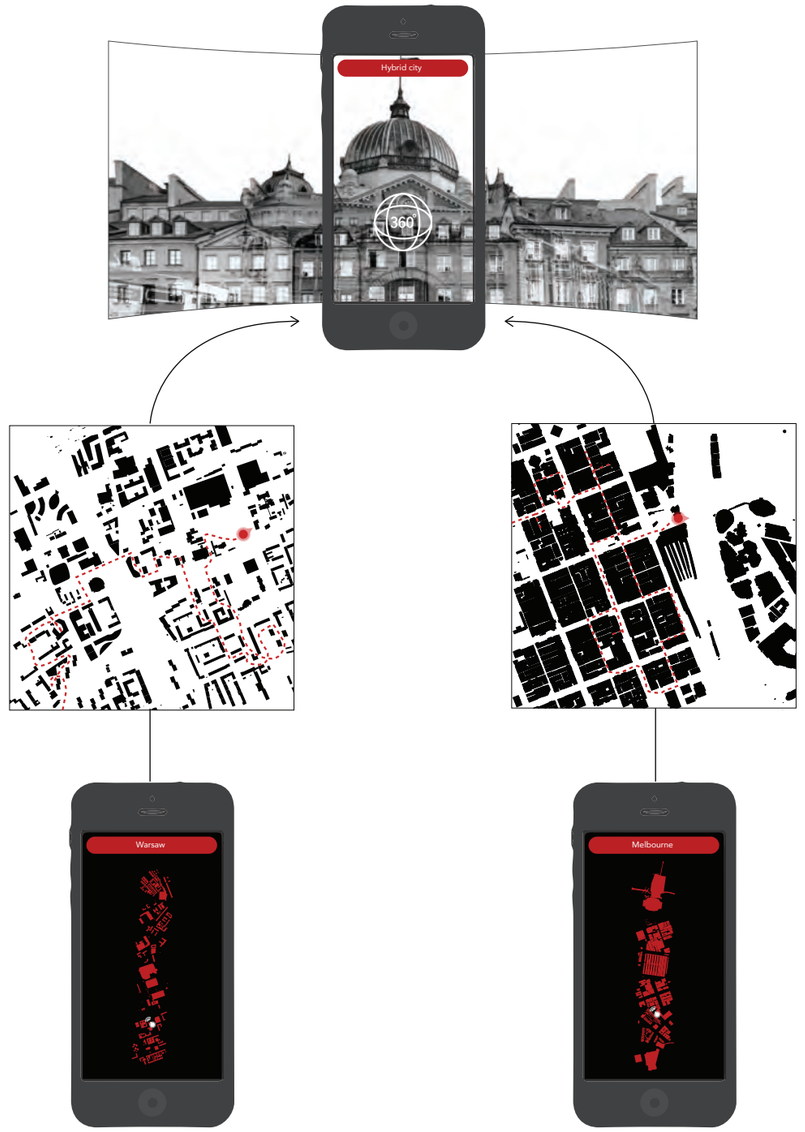
Once they reach their final location, a 360 image of the fictional hybrid city created by the two users' sites is unlocked, along with the resultant map and morphed soundscape.

The app aims to further interrogate the perception of the map and encourage users to contemplate the way in which their relationship to the city is affected by the constriction of non-linear possibilities.

3) Once each of the app users has reached their target destinations, a fictional hybrid city is unlocked, composed of the two home cities of the users.

2) This map, known as the 'conventional' map, is not shown to the users of the app. This shows the actual route taken to navigate to each of the chosen destinations.

1) Two users using the app simultaneously in each of their respective cities. In this instance, the app experience is paired between the two users. They have each selected a destination in their home cities to navigate to.



21 *Precedent Projects*

ContemPLAY

The ContemPLAY project was designed and built by students at the McGill University School of Architecture. It engaged with perceptual phenomena through the creation of a pavilion invented through a closed-loop process of digital design and fabrication that always erred toward uniqueness and complexity.

Awards

Young Architects and Engineers Award from the Intitut Canadien De La Construction en Acier

Excellence Award for Hot-Dip Galvanized (HDG) Steel from the American Galvanizers Association

Publications

World Architecture News
https://www.worldarchitecturenews.com/article/1511438/contemplay-pavilion-completes

Arch Daily
http://www.archdaily.com/258929/the-contemplay-pavilion-drsfarmm/

Evolo
http://www.evolo.us/contemplay-pavilion-mcgill-school-of-architecture/

Bdonline
https://www.bdonline.co.uk/news/canadian-students-showcase-contemplay-pavilion-/5017212.article

McGill Publications
https://www.mcgill.ca/channels/news/contemplay-pavilion-172611

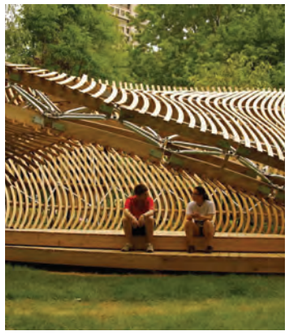
Architizer
https://architizer.com/projects/contemplay-pavilion/

Inhabitat
https://inhabitat.com/mcgill-university-students-build-twisted-contemplay-pavilion-out-of-locally-sourced-materials/contemplay-pavilion-1/

Archinect
https://archinect.com/people/project/27705583/contemplay-pavilion/27705855

Futures Plus
https://futuresplus.wordpress.com/2012/06/29/contemplay-pavilion-mcgill-school-of-architecture-2/

Talkitect
http://www.talkitect.com/2011/07/contemplay-pavilion-by-mcgill.html



b-Shack Pavilion

The B-Shack project followed in the footsteps of ContemPLAY, also designed and fabricated by students at McGill University. It was designed to support urban beekeeping practices by raising awareness of the plight of bees, providing a site for volunteer beekeeping initatives and creating a platform for beekeepers to share knowledge and exchange resources.

Awards

Young Architects and Engineers Award from the Intitut Canadien De La Construction en Acier

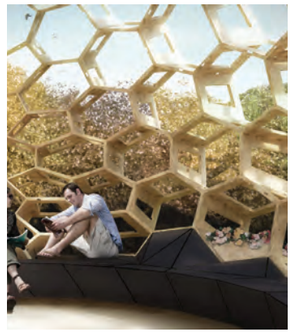
Excellence Award for Hot-Dip Galvanized (HDG) Steel from the American Galvanizers Association

Publications

Architizer
https://architizer.com/projects/le-b-shack/

McGill Publications
https://www.mcgill.ca/sustainability/channels/news/farmms-b-shack-urban-hive-and-bee-study-center-mcgill-students-232986

https://vimeo.com/73302798



23 *Murder's Sounding - The Studio*

The Murder's Sounding pavilion was developed as part of an intensive studio in the Masters of Architecture course, run by Monash University in conjunction with the Warsaw University of Technology. It ran from mid-June to mid-July, 2019.

Prior to departure, the group investigated their techniques of 'murdering' the map on a city they understood well - Melbourne. They also prepared with base-knowledge on the logic of the Boy's Surface, a mathematical surface that began to inform the overall shape of the structure. Although some preparation work was happening, the studio work was conducted mostly on site in Warsaw.

Students were based at the Warsaw University of Technology, where they spent most of the week in a studio-style setting, working collaboratively on the project. The members of the group had a diverse body of knowledge and varying skill sets, allowing for the development of the project on many fronts. The class was divided into project teams, each with a set of deliverables and an agenda for the following weeks. Mostly, the teams were flexible and time was allocated as needed at different stages of the project.

Running parallel to the pavilion project, we continued our investigation into the disjunction between the city and the map by taking abstract derives, mapping them, and writing them into a tour guide for the city. At the beginning of each week, the group would walk one of these student-led tours, listening for facts among mostly fictitious stories

There was also a travel journal component - mimicking the writing of Georges Perec, the students were to keep a travel log, verbally describing in-detail accounts of their travels. Like a stop on a verbal derive, each of these logs were taken at chance points along the trip, connected through their relationship to the writer, and not much else.

This studio developed the initial concept design for this project, in the hopes that it will be realised by more curious urban investigators down the track.

Project Team

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