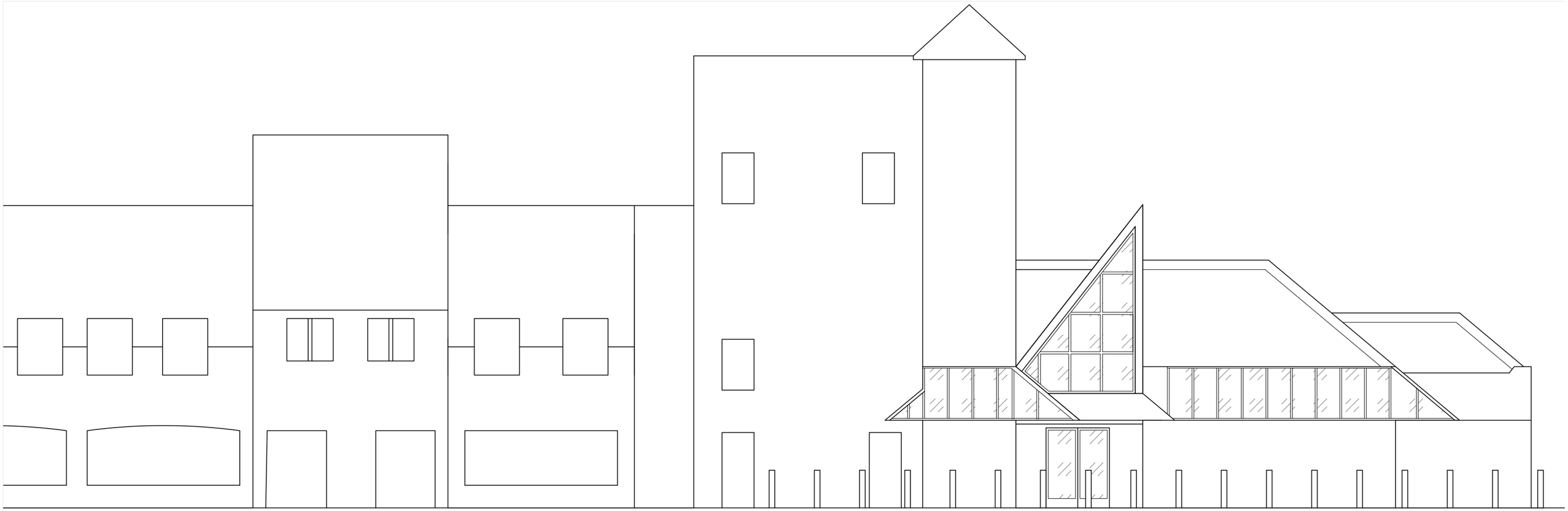


NORTH ELEVATIOON [1:200]

EAST ELEVATION [1:200]

Via. Victoria Shopping Centre

Via. High St

Via High St.

Via North East of City

River Witham

Lincoln Central
Market Area

Via East of City

Via. Car Park

Car Park atop of Supermarket

Sinci St.

Via. South of High St.

N

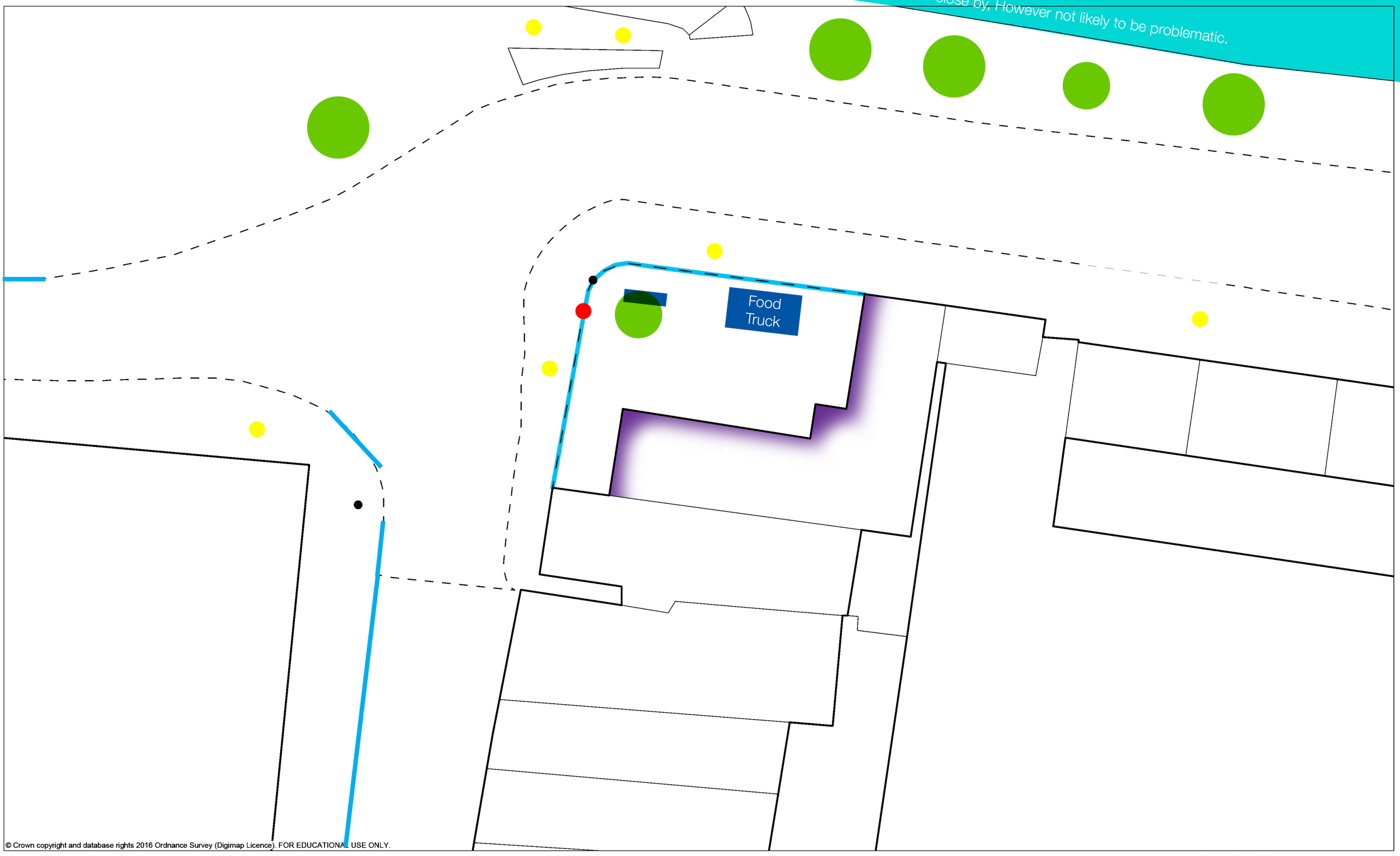
Commercial
Residential
Residential + Commercial
Other
River
Road
Footpath
Pedestrian Site Access
Ped/Vehicular Site Access
Pedestrian Circulation

Scale 1:500

0 5 10 15 20 25 30 35 40 45 50 m

Map showing residential and commercial properties, vehicular and pedestrian access

River close by, However not likely to be problematic.

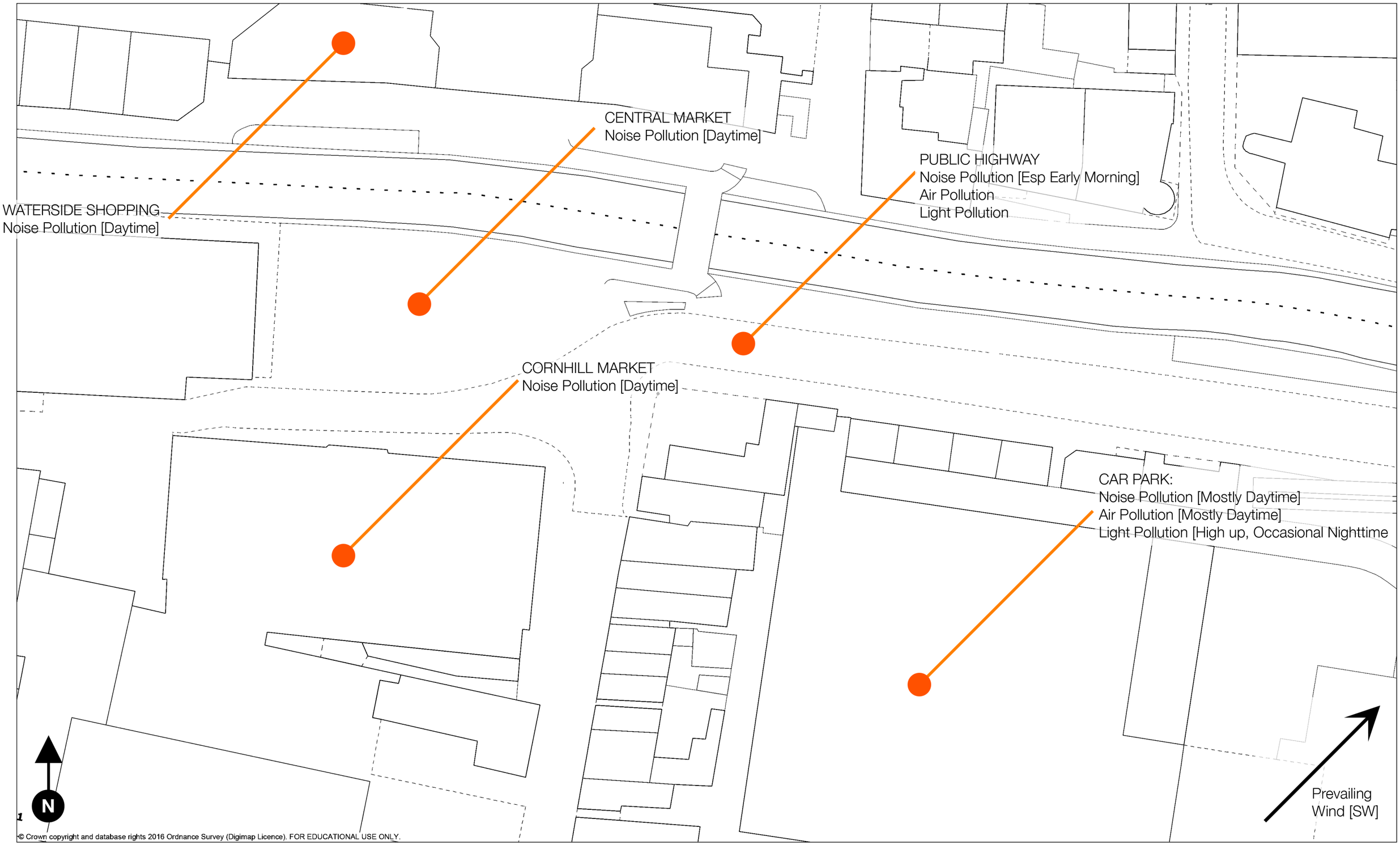


Shop Entrances
Post Box
Lamp Post
Bollards
Tree
Fresh Water

Scale 1:200

0 2 4 6 8 10 12 14 16 18 20 m

Natural & Artificial Features around site

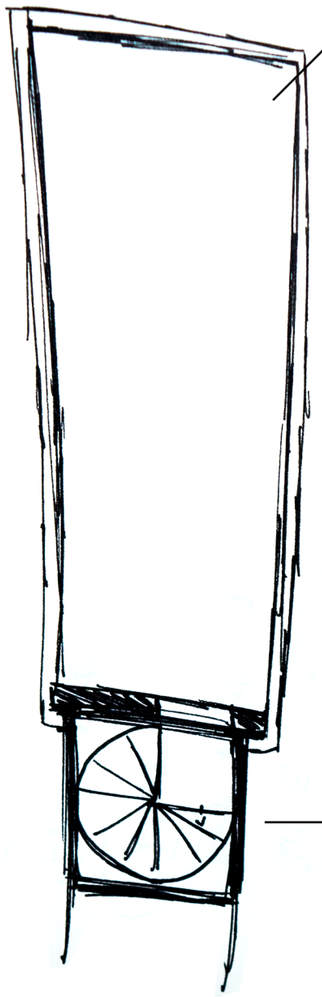


The site faces occassional Air and Noise pollution from the adjacent road on the North side. The market and surrounding shops will provide daytime bustle around the area.

Scale 1:500

0 5 10 15 20 25 30 35 40 45 50 m

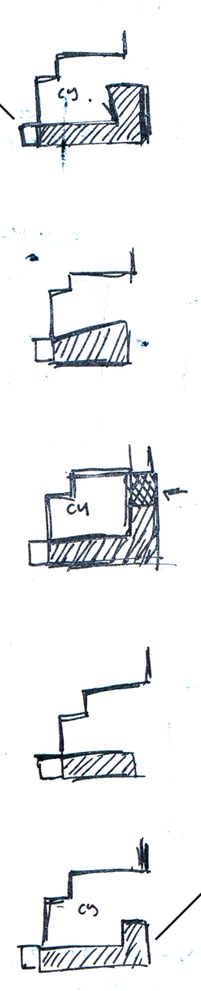
Sources of Pollution surrounding the Site



BUTCHER FUNCTIONS
INSIDE SHAPE

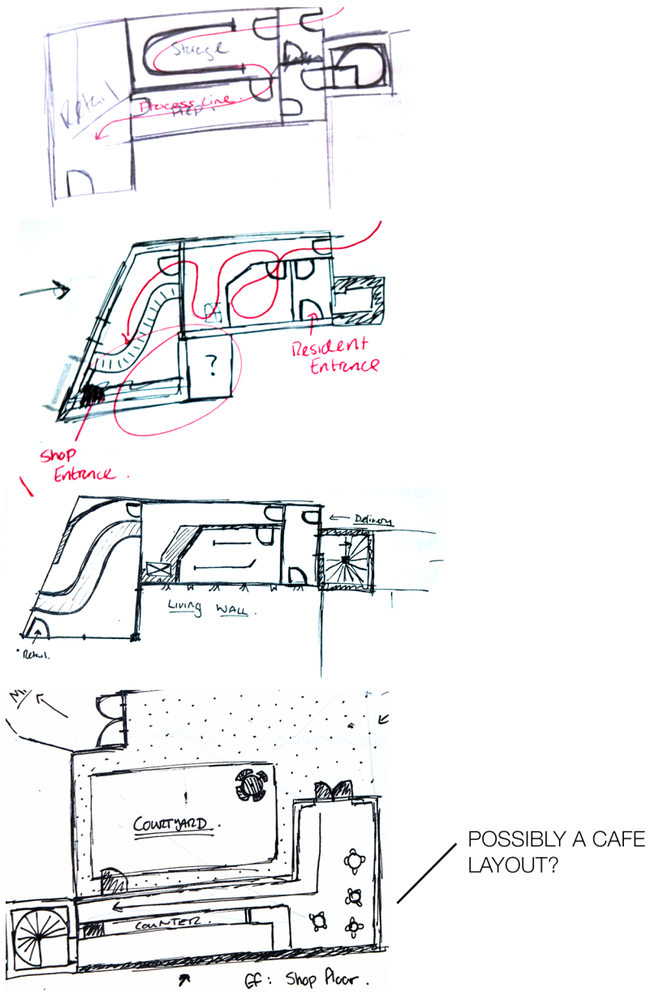
SPIRAL STAIRCASE
INSIDE OLD LIFT SHAFT
CARRIES THROUGH TO
FINAL DESIGN

INITITAL IDEA
REPURPOSE LIFT SHAFT
FOR SPIRAL STAIRCASE



L SHAPE IS THE
MOST PRACTICAL

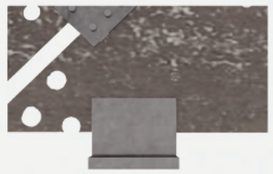
FLOORPLAN
MASSING

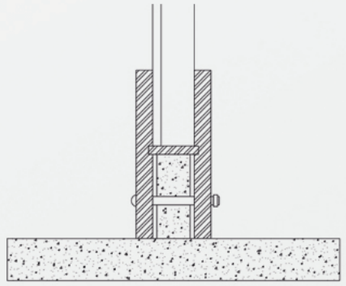


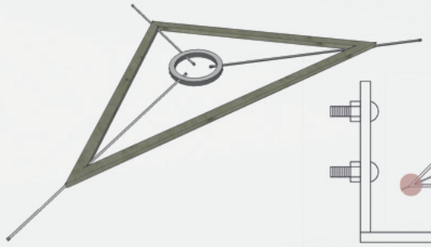
POSSIBLY A CAFE
LAYOUT?

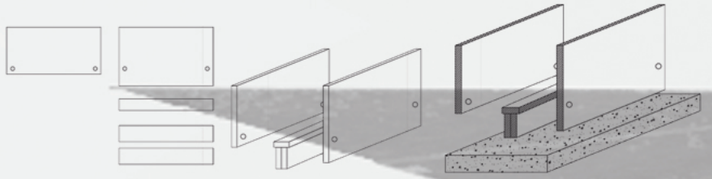
G FLOORPLAN IDEAS
PROCESS LINE
CONSIDERATION

FLOORPLAN DEVELOPMENT [1:50]

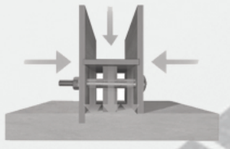


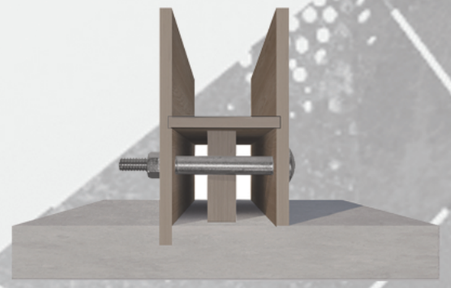




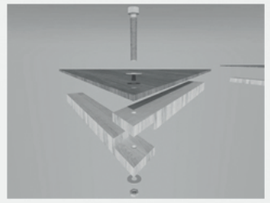


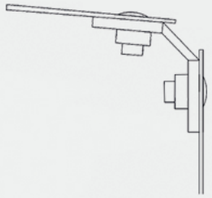
Instructions showing how exactly the footings go together in order to be formed.

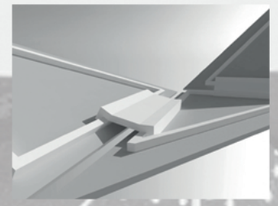


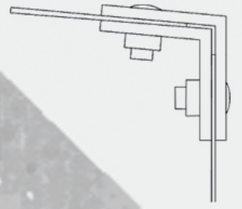


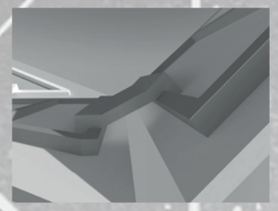
Final concept for footings design, will be taken forward to prototype.

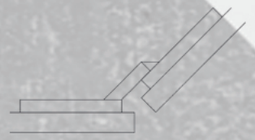




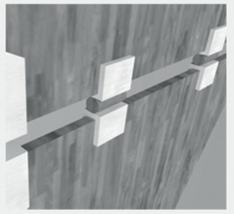




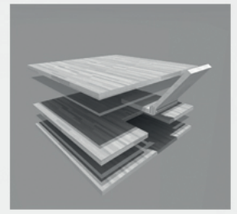




Frame bolted togehter through plywood, using spacers and washers.

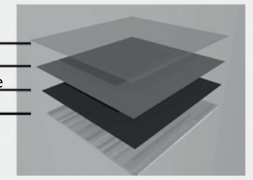


Idea 1: External plates attached by a single hinge.

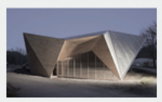


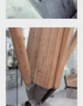
Idea 2: External plate attached by hinge.

Will use idea 2, by hollowing out the plywood and then inserting the hinge, adding strength to the joint.



Structure:



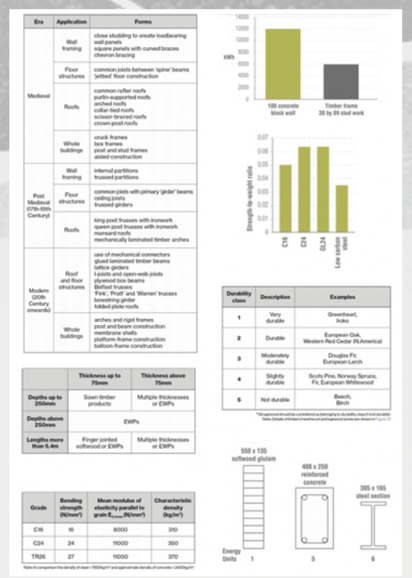


Assembly workshop, beaminster
Invisible studio architects.

Constellations bar, Liverpool
Howard Miller design.

Maggies centre, Manchester
Foster and Partners.

Winter gardens, Sheffield
Pringle Richard Sharratt architects.



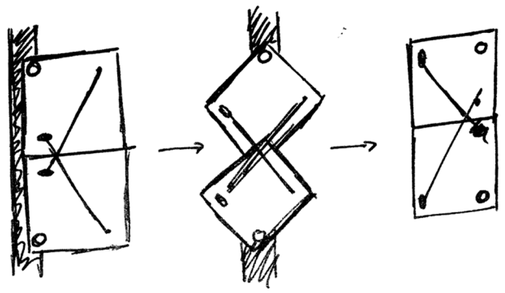
Era	Application	Forms
Medieval	Wall framing	close studding to create loadbearing wall panels square panels with curved braces chevron bracing
	Floor structures	common joists between 'spine' beams 'jettied' floor construction
	Roofs	common rafter roofs purlin-supported roofs arched roofs collar-tied roofs scissor-braced roofs crown-post roofs
	Whole buildings	cruck frames box frames post and stud frames aisled construction
Post Medieval (17th-18th Century)	Wall framing	internal partitions trussed partitions
	Floor structures	common joists with primary 'girder' beams ceiling joists trussed girders
	Roofs	king post trusses with ironwork queen post trusses with ironwork mansard roofs mechanically laminated timber arches
Modern (20th Century onwards)	Roof and floor structures	use of mechanical connectors glued laminated timber beams gang nailers I-joists and open-web joists plywood box beams Belfast trusses 'Fink', 'Pratt' and 'Warren' trusses bowstring girder folded plate roofs
	Whole buildings	arches and rigid frames post and beam construction membrane shells platform-frame construction balloon-frame construction

	Thickness up to 75mm	Thickness above 75mm
Depths up to 250mm	Sawn timber products	Multiple thicknesses or EWPs
Depths above 250mm	EWPs	
Lengths more than 5.4m	Finger jointed softwood or EWPs	Multiple thicknesses or EWPs

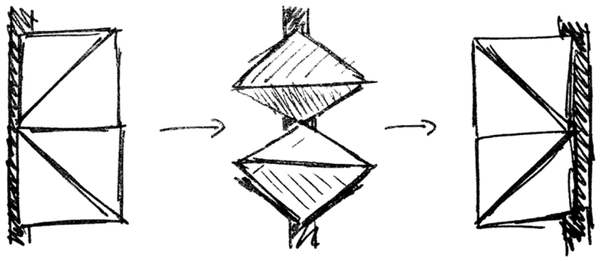
Grade	Bending strength (N/mm^2)	Mean modulus of elasticity parallel to grain $E_{0,mean}$ (N/mm^2)	Characteristic density (kg/m^3)
C16	16	8000	310
C24	24	11000	350
TR26	27	11000	370

Durability class	Description	Examples
1	Very durable	Greenheart, Iroko
2	Durable	European Oak, Western Red Cedar (N.America)
3	Moderately durable	Douglas Fir, European Larch
4	Slightly durable	Scots Pine, Norway Spruce, Fir, European Whitewood
5	Not durable	Beech, Birch

Torggler Doors

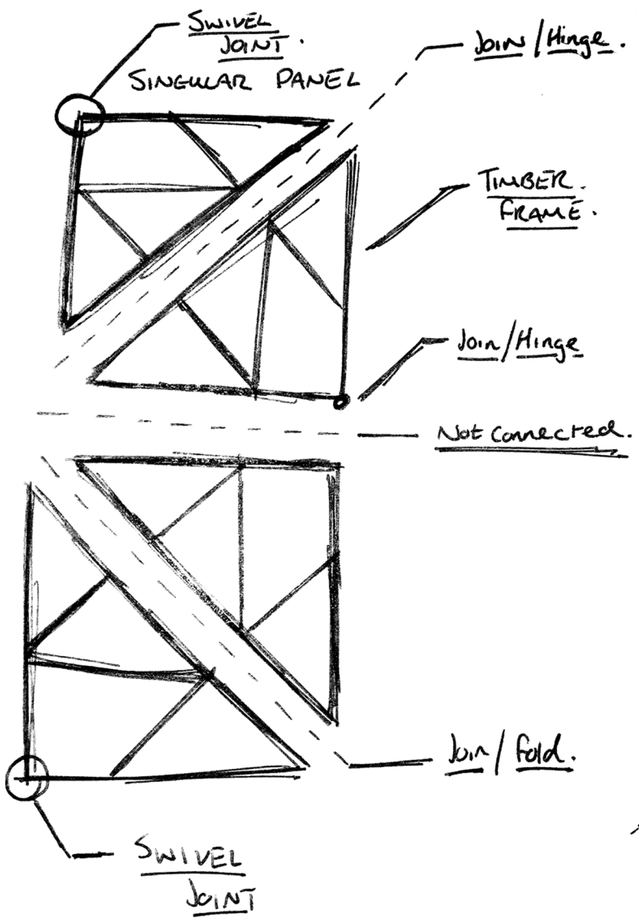


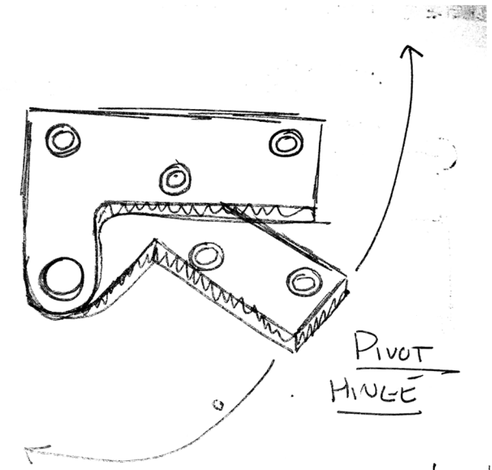
Bespoke doors that can fit into the theme.

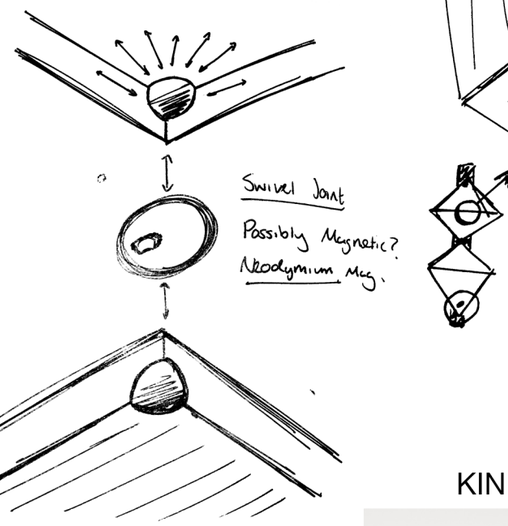


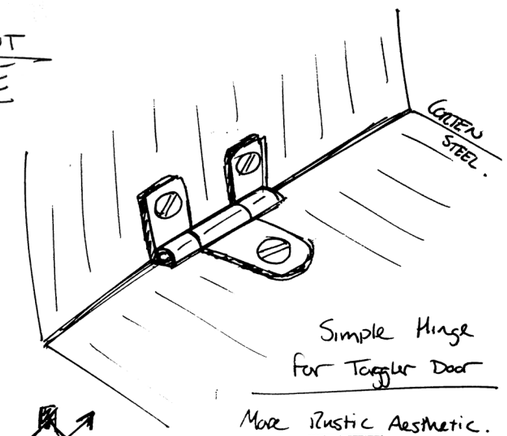
Flow of Movement.

Torrgler Door Construction.

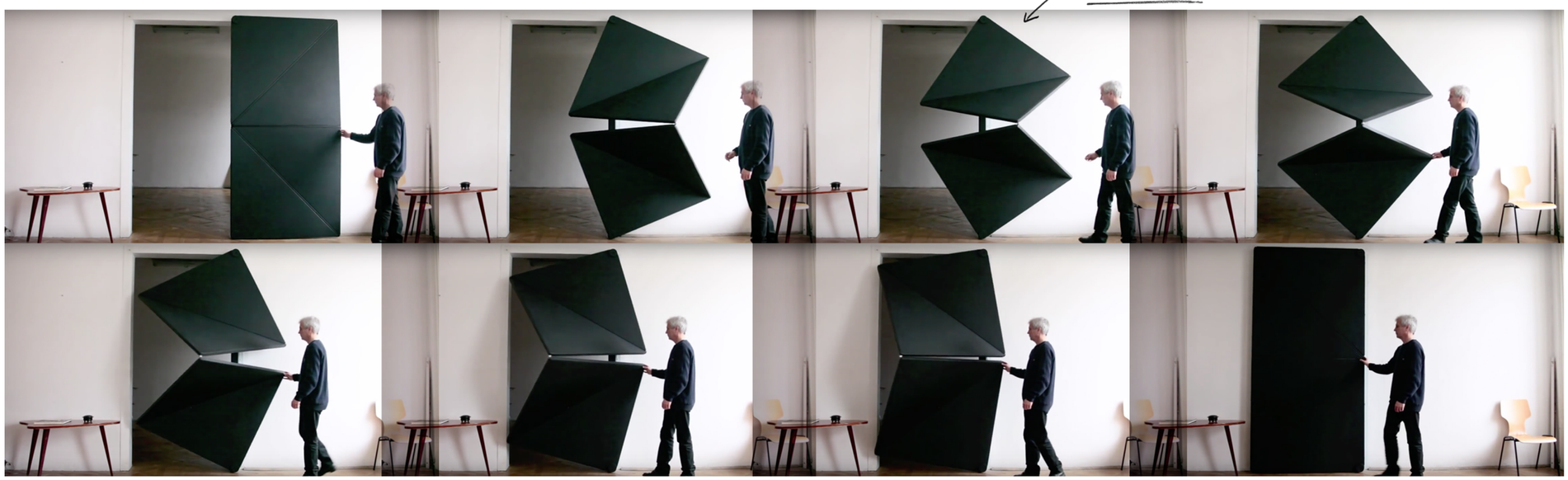




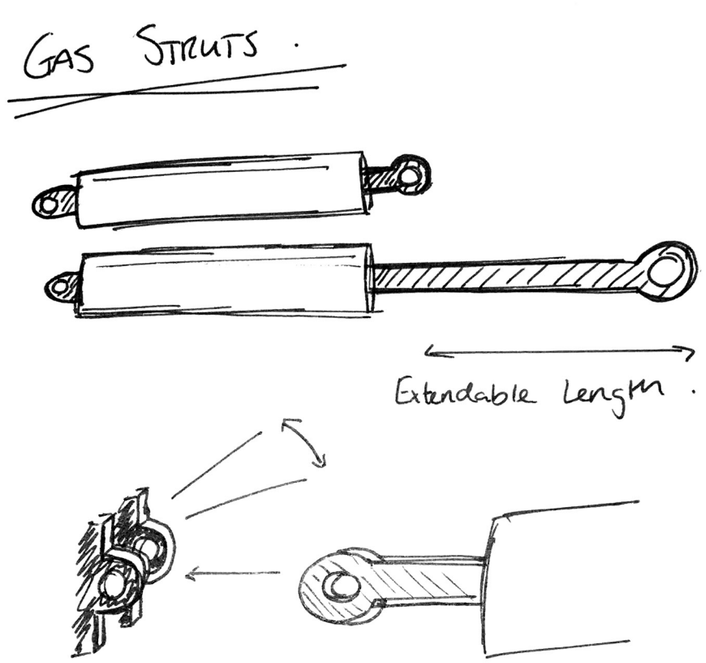


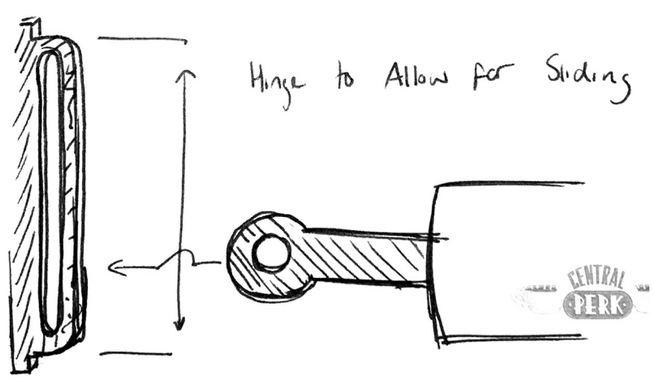


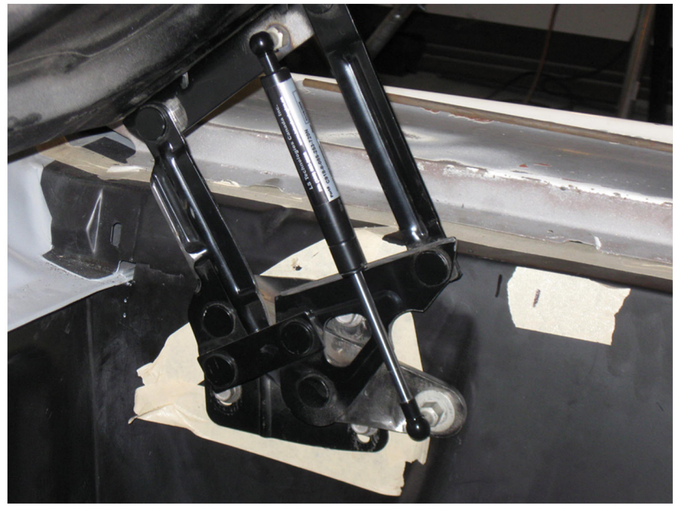
Triangles fit within aesthetic of pavillion.

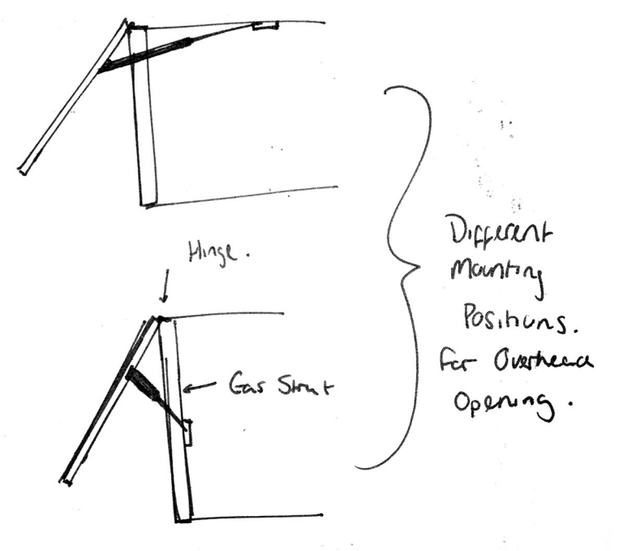


KINETIC 'TORRGLER' DOORS

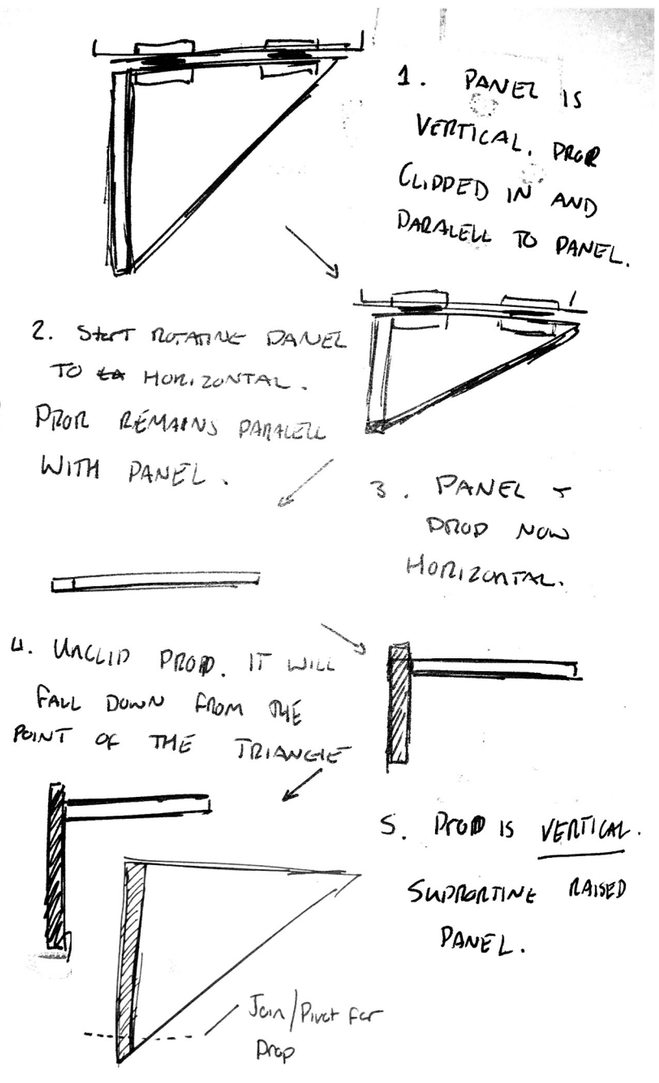








WOODEN PANEL PROPS



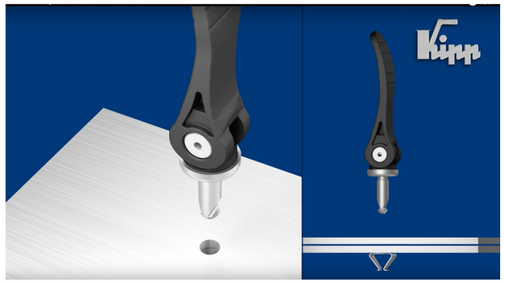
As part of my research for Make+, I came across the doors seen above. I thought they would fit the project's aesthetic really nicely and I attempted to contact the maker to see how they worked.

I was recieved a prompt email telling me not to infringe on copyright artworks and thus had to abandon this avenue.

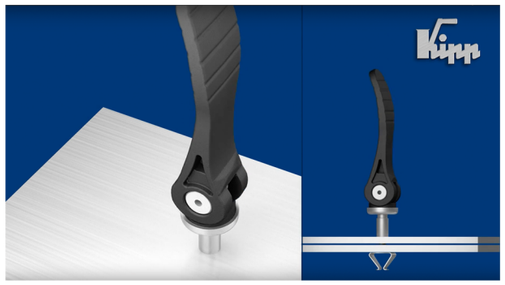
I then set my sights on Hydraulic Gas Struts, which i theorised could be a good way to hold up panel openings as entrances in a similar vein to car trunks.

though hugely practical, these would be particularly costly and a mechanical solution was eventually found.

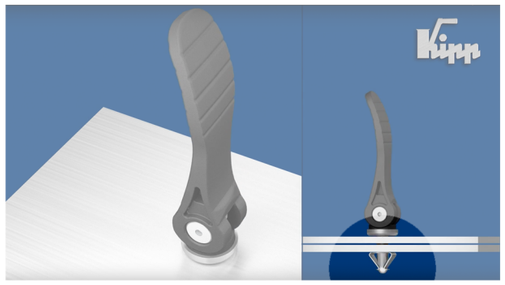
On the following page are my research and experiments into CAM levers and how they could be used as fasteners for the Make+ Pavillion.



1
CAM LEVER AND JOINING PARTS ALL SEPARATED.



2
LOWER CAM LEVER INTO PLACE



3
PUSH DOWN TO LOCK THE LEVER IN PLACE

4
PUSH LEVER TOWARDS LATERAL POSITION.

5
THE LEVER WILL CLAMP THE PARTS TOGETHER AS IT MOVES FURTHER TOWARDS THE LOCKING POINT

6
CAM LEVER WILL LOCK INTO PLACE WHEN LATERAL, LOCKING THE PARTS IN PLACE

CAM Lever illustration PHASE 1: INSTERTION

7
LIFT THE LEVER FROM THE LATERAL POSITION.

8
FLIP THE LEVER UP, THIS WILL SLOWLY START TO UNLOCK THE COMPONENTS

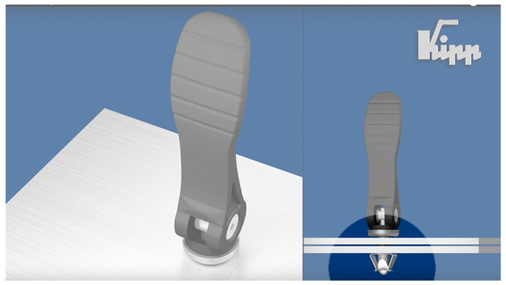
9
AS THE LEVER REACHES VERTICAL, THERE WILL BE A SMALL AMOUNT OF RESISTANCE

5
THE LEVER IS NOW VERTICAL. THE COMPONENTS WILL NOW BE LOOSE.

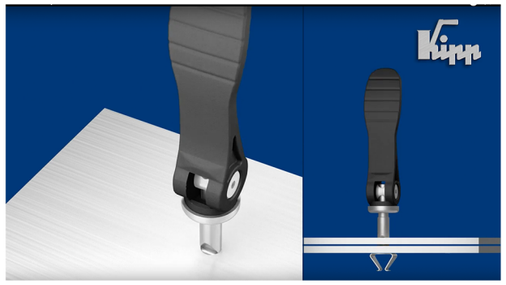
11
TWIST THE LEVER 90° ANTI-CLOCKWISE TO UNLOCK IT

11A

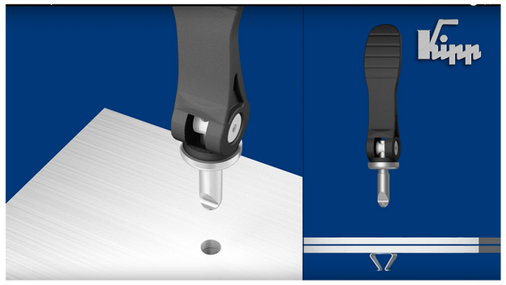
12
ONCE THE LEVER IS FULLY ROTATED, IT CAN BE PULLED UPWARDS



12A



14
THE COMPONENTS ARE NOW DIS-ASSEMBLED



CAM Lever illustration PHASE 2: REMOVAL

UNLOCKED POSITION
IN THIS STATE THE PANELS ARE LOOSE. THE THIN SIDE OF THE LEVER IS FACING DOWN

IN MOTION
THE PANELS ARE CLOSING TOGETHER. THE CAM LEVER APPLIES PRESSURE TO THE TOP PANEL.

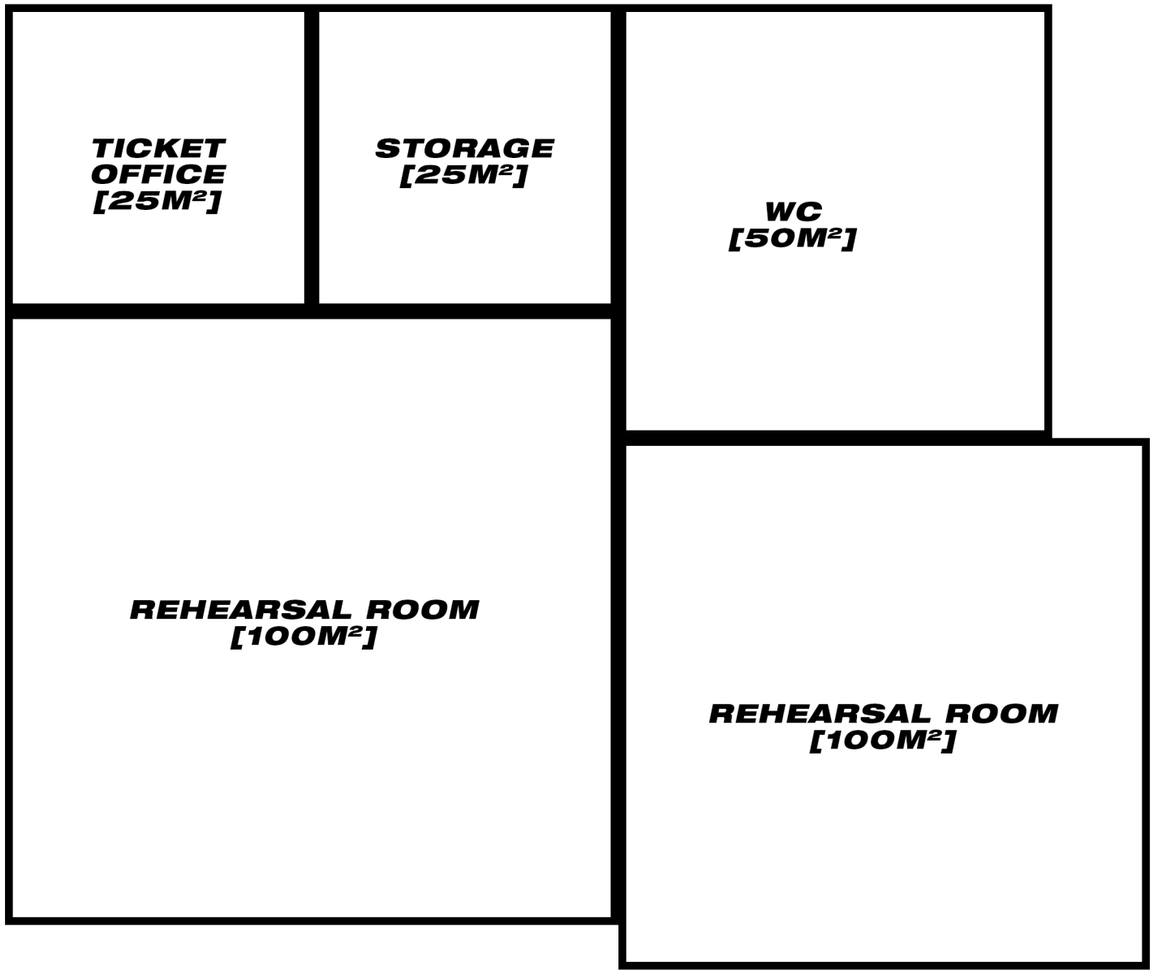
LOCKED POSITION
THE PANELS ARE CLAMPED SHUT. THE FRICTION BEWEEN THE CAM LEVEL, THE FIRST PANEL, AND THE FIRST AND SECOND PANEL

THIS TEST MODEL IS FORMED OF TWO SQUARE PANELS OF PLY. THE LEVER IS PLY THAT HAS BEEN SAWED INTO A CAM SHAPE.

A CAM IS A ROTATING OR SLIDING PIECE IN A MECHANICAL LINKAGE USED ESPECIALLY IN TRANSFORMING ROTARY MOTION INTO LINEAR MOTION

THIS WORKS BY OFFSETTING THE POINT OF ROTATION WITHIN THE CIRCLE, OR BY USING AN EGG SHAPE.

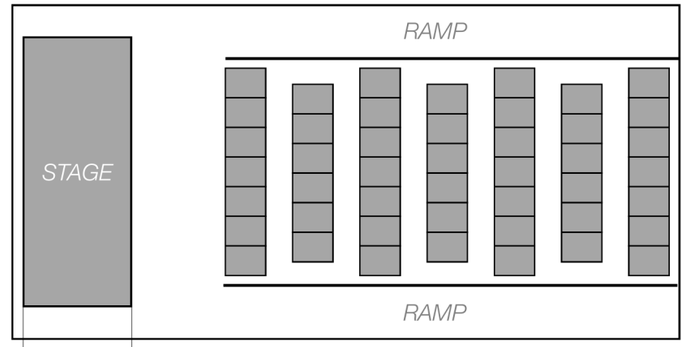
CAM LEVEL MODEL



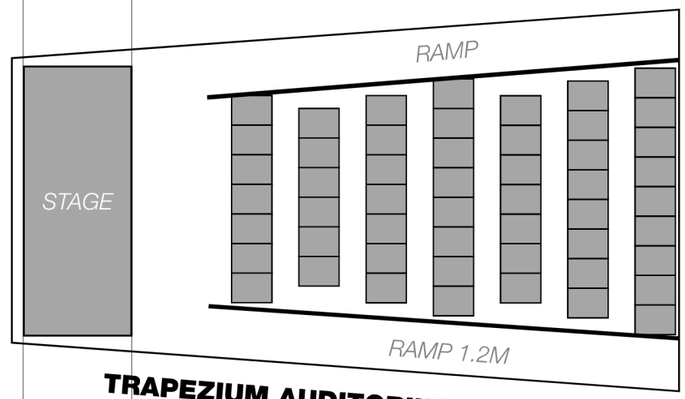
DESIGN ORIGINS

MY INTENTION WAS ALWAYS TO MAKE THE AUDITORIUM THE CENTER OF THE DESIGN. TO BEGIN, I ESTABLISHED THAT YOU CAN FIT MORE SEATS IN A 100M^2 SPACE IF IT IS A TRAPEZOID INSTEAD OF A RECTANGLE.

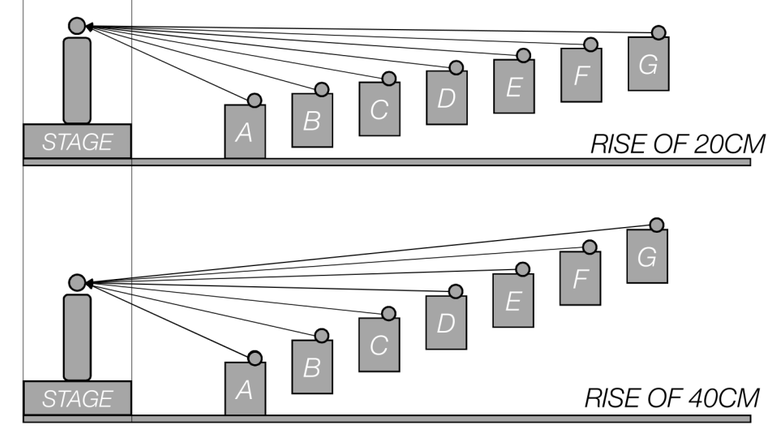
THIS SHAPE THEN FORMED THE BASE FOR THE REST OF THE FLOORPLAN: IT WAS DESIGNED AROUND THE MOST IMPORTANT SPACE.



RECTANGULAR AUDITORIUM – SEATS 46



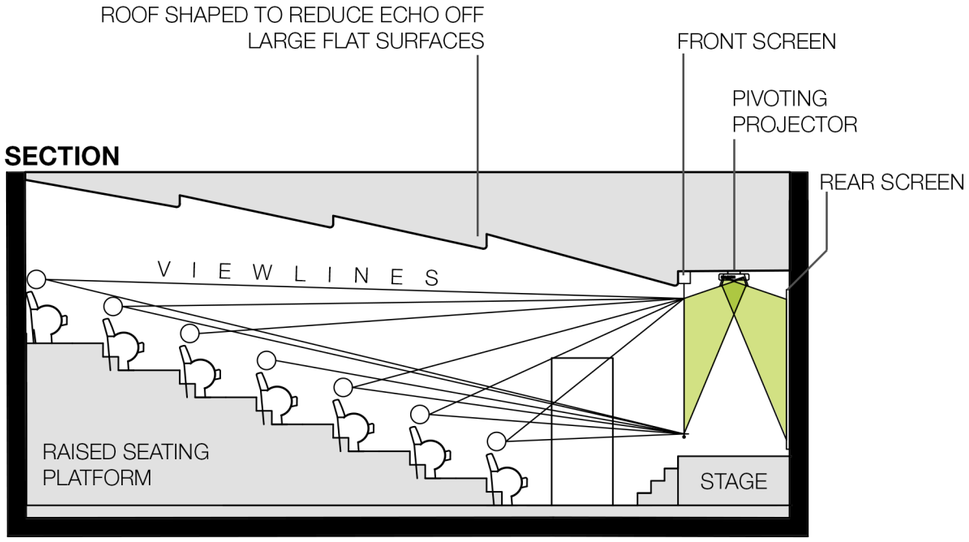
TRAPEZIUM AUDITORIUM – SEATS 52



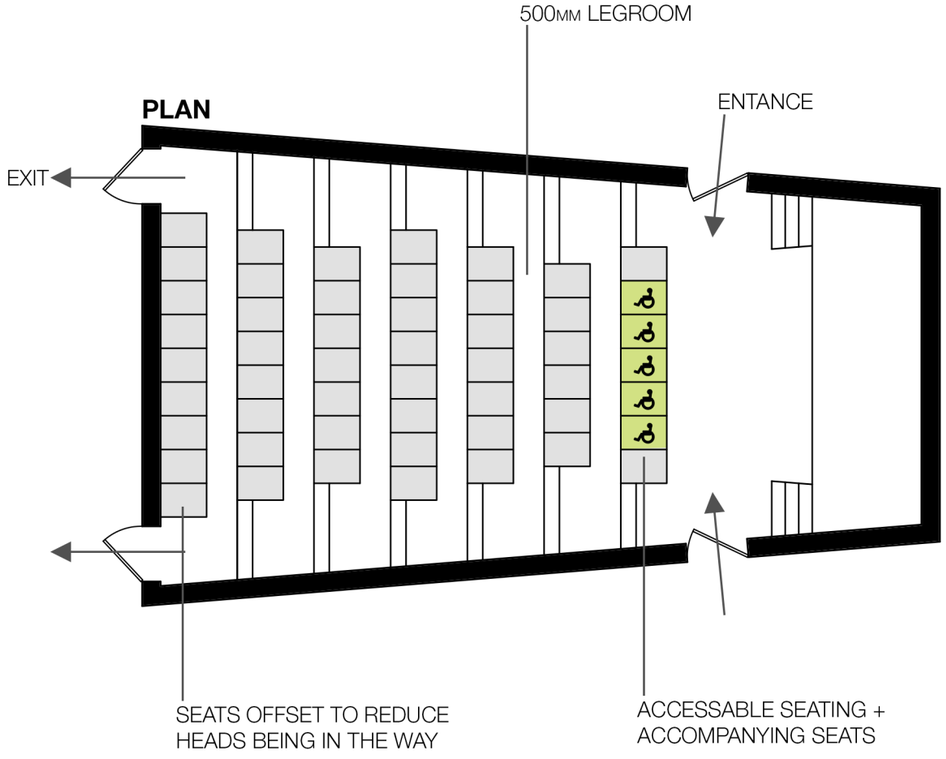
ROOM MASSING AND AUDITORIUM OUTLINE [1:100]

EXISTING AUDITORIA DESIGN

SECTION



PLAN



AUDITORIUM

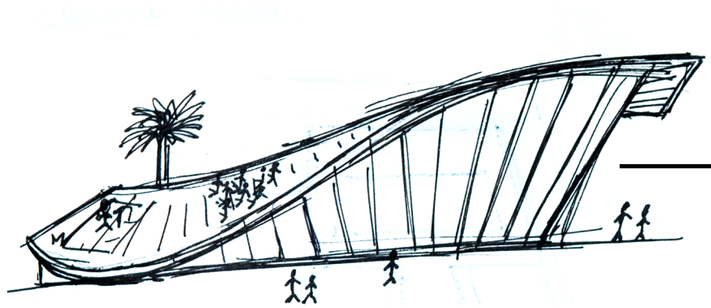
The auditorium in this building is designed for **presentations, small speeches, community classes** and also doubles as an **indie movie theatre**. To accomodate these functions there are two screens in the auditorium, in front and behind the stage. There is a short throw projector mounted on a rotatable plate that can project onto either screen. The front one for movies, the rear one for presentations.

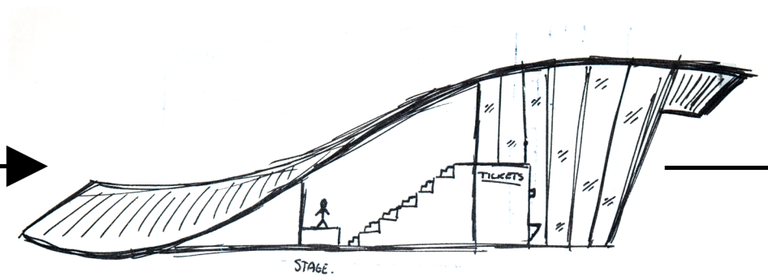
The auditoria's seating is designed so that one can see the top and bottom of the front screen no matter where they are sat. this also ensures that at any seat a speaker will be clearly visible and audible.

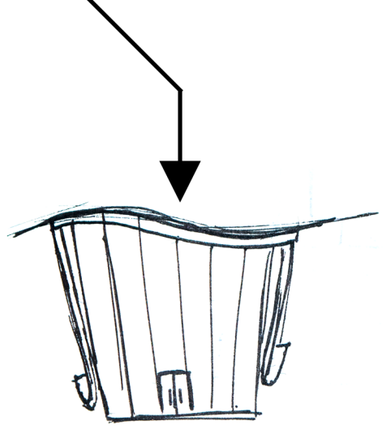
The auditoria's roof has been shaped to breakup the roof surface and reduce echo, and there are noise reduction panels along the left and right walls.

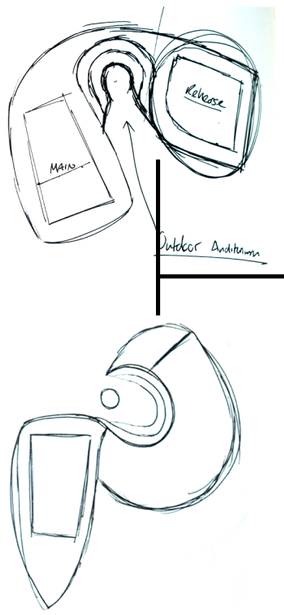
The auditorium is wheelchair accesable - with 5 designated chairs reserved for up to 3 wheelchair users to sit in front of.

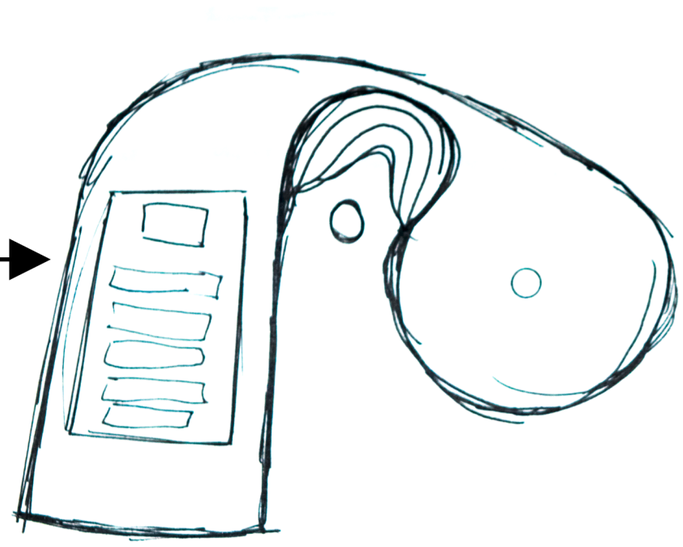
The auditorium features a dark theme on the inside. This will not interfere when used for talks or speeches, as subjects can be lit. It will benmefit the movie watching experience, however.

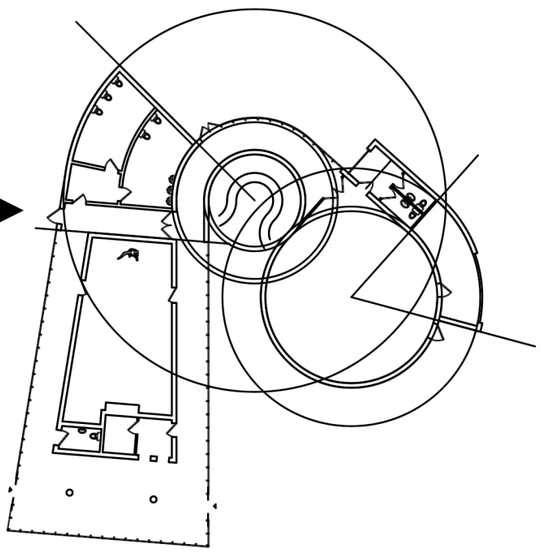


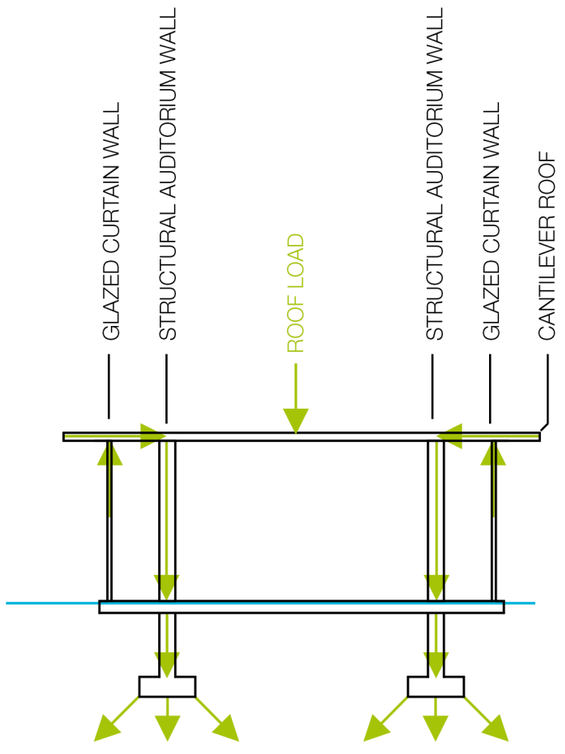

TICKETS
STAGE.




Rehearse
MAIN
Outdoor Auditorium





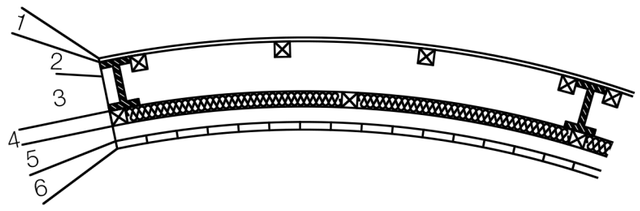


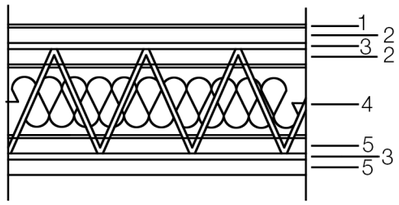
STRUCTURAL EXPLAINATION

The outer most, glazed curtain walls are not structural. The loads are transfered to the formed concrete roof which is cantilevered over the North, East and South sides. The roof transfers it's load to the steel column structural walls of the auditorium below and to two columns in the lobby. From here the load of the building is tranfered into a concrete isolated spread footings foundation under the auditorium - with a more lightweight raft foundation underneath the walkways and rehearsal room as shown in the drawing to the right.

WALL DETAIL [1:20]

1: Flexible Plasterboard
2: Flexiboard Framework
3: Structural Steel
4: Vertical Timber Frame
5: Horizontal Timber Frame
6: Vertical Timber Classing

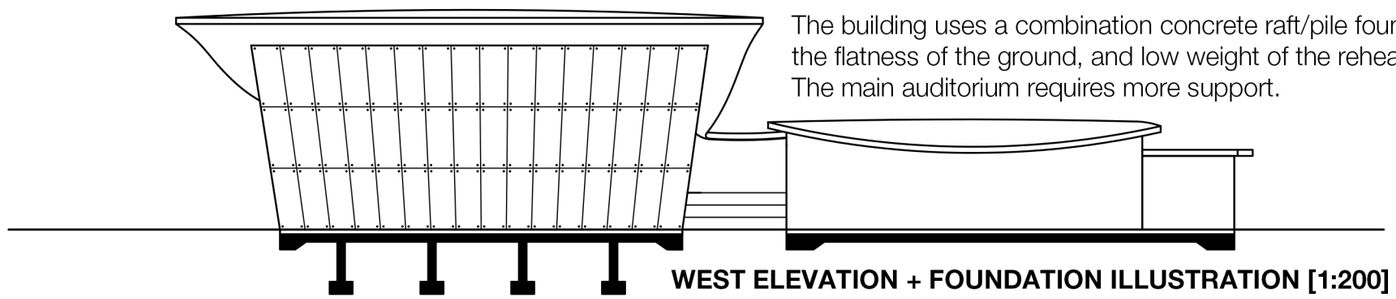




ROOF DETAILS

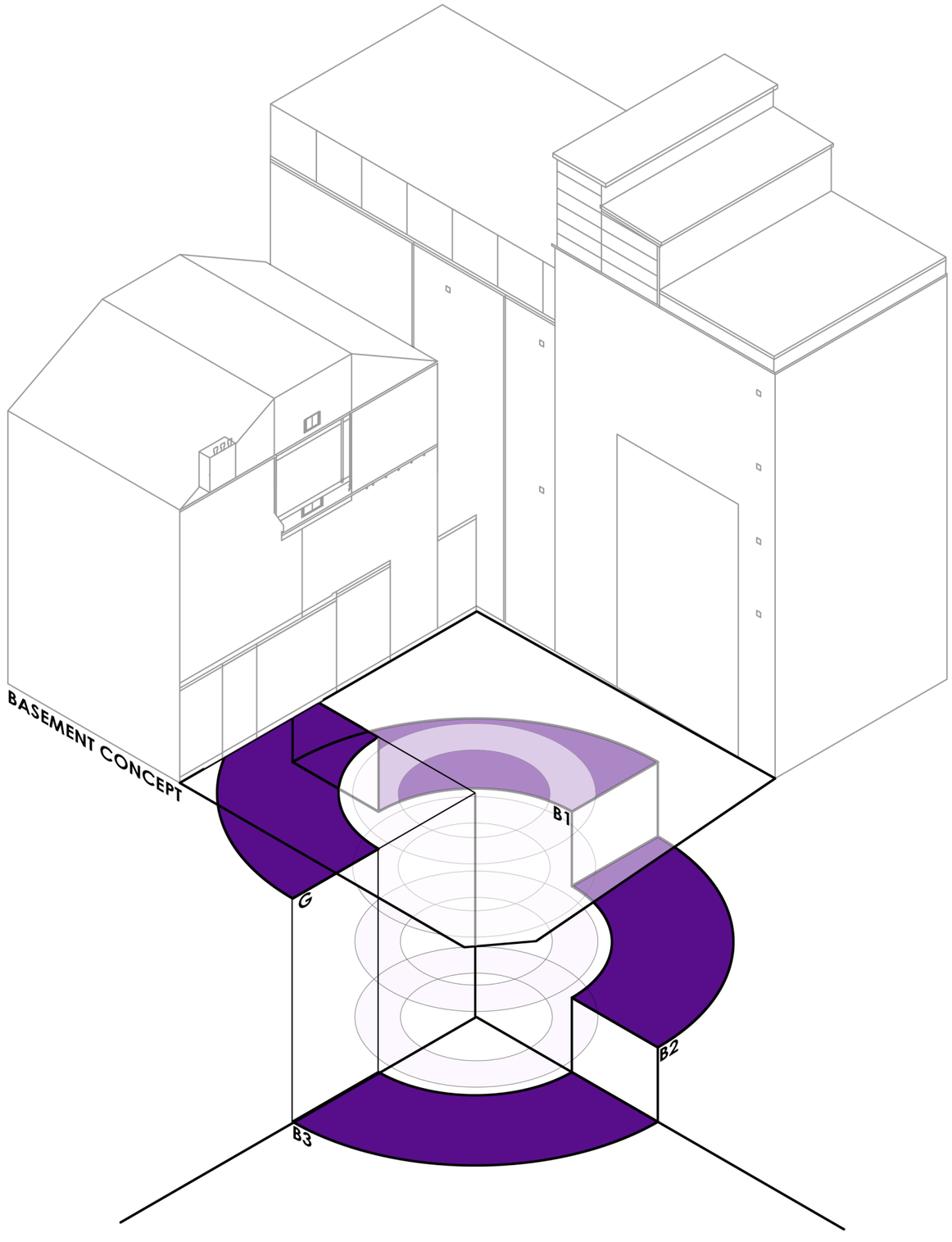
1: Waterproof Membrane
2: Outer Concrete Skin
3: Steel Reinforcement Truss
4: Rigid Foam Insulation
5: Inner Concrete Skin

Concrete was chosen for the roof material for two reasons, despite not being the most sustainable. Concrete acts as a thermal mass which will be essential in keeping the building passively cooled. It is also structurally appropriate for the cantilevers and shapes that are so prominant in the roof design.



The building uses a combination concrete raft/pile foundation due to the flatness of the ground, and low weight of the rehearsal room side. The main auditorium requires more support.

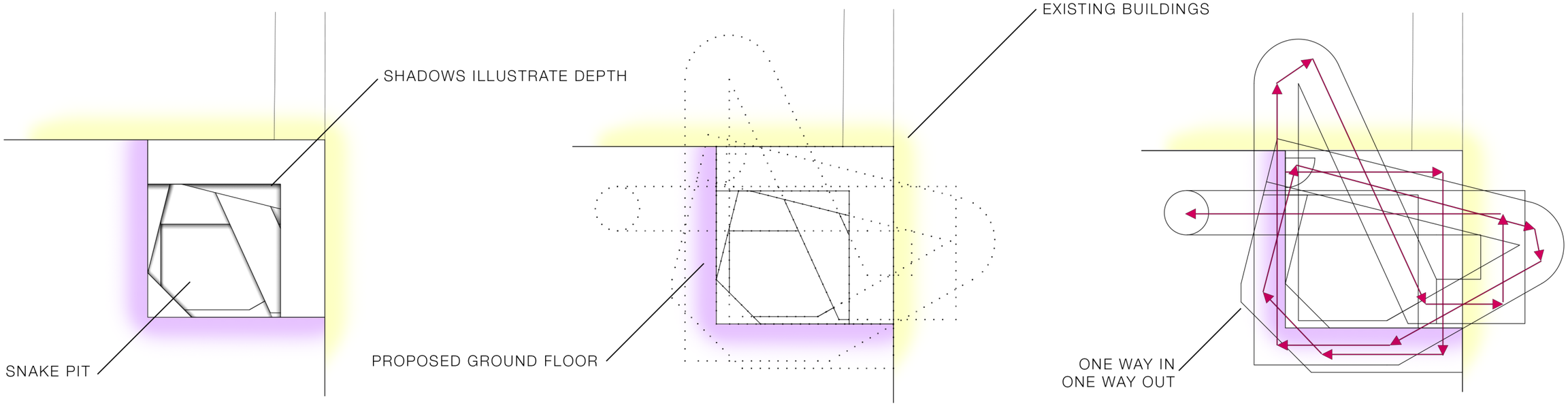
WEST ELEVATION + FOUNDATION ILLUSTRATION [1:200]



CONCEPT
The building will cascade down through multi-layered basements through a network of tunnels reminiscent of a snake. single entrance/exit is intimidating [interpreted from narrative]

The building will also disregard the site boundary when underground, extending out in every direction.

Each floor will have different functions, with the must luxurious the furthest down.



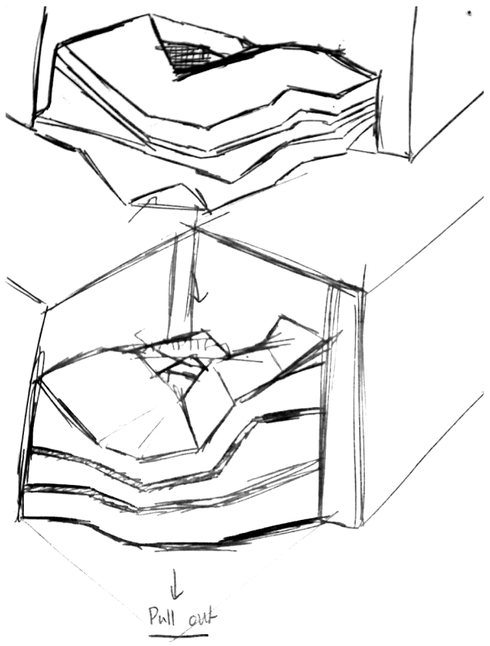
TOP DOWN VIEW

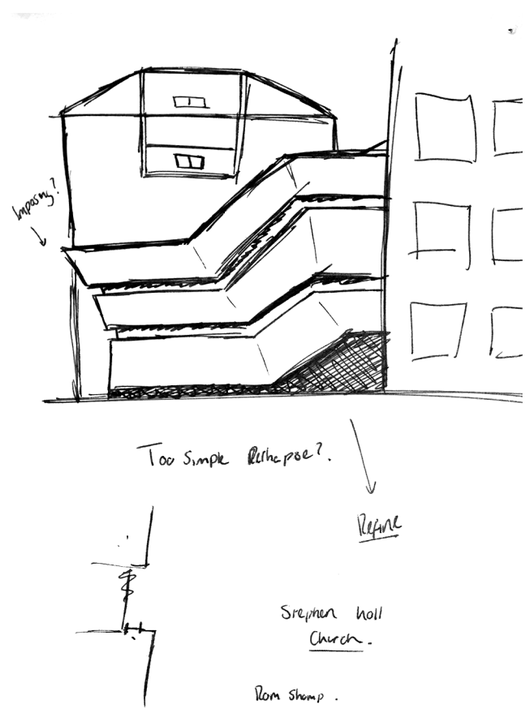
TOP DOWN VIEW + HIDDEN LINE

CIRCULATION

CASCADING BASEMENT CONCEPT [1:100]

THESE DIAGRAMS ARE TO SHOW THE INITIAL CASCADING CORRIDOR CONCEPT. THEY SHOW DEPTH, CIRCULATION AND HOW FAR OUT THE BASEMENTS WILL EXTEND BEYOND THE SITE. THEY REPRESENT, BUT ARE NOT ACCURATE TO THE FINAL FLOORPLAN

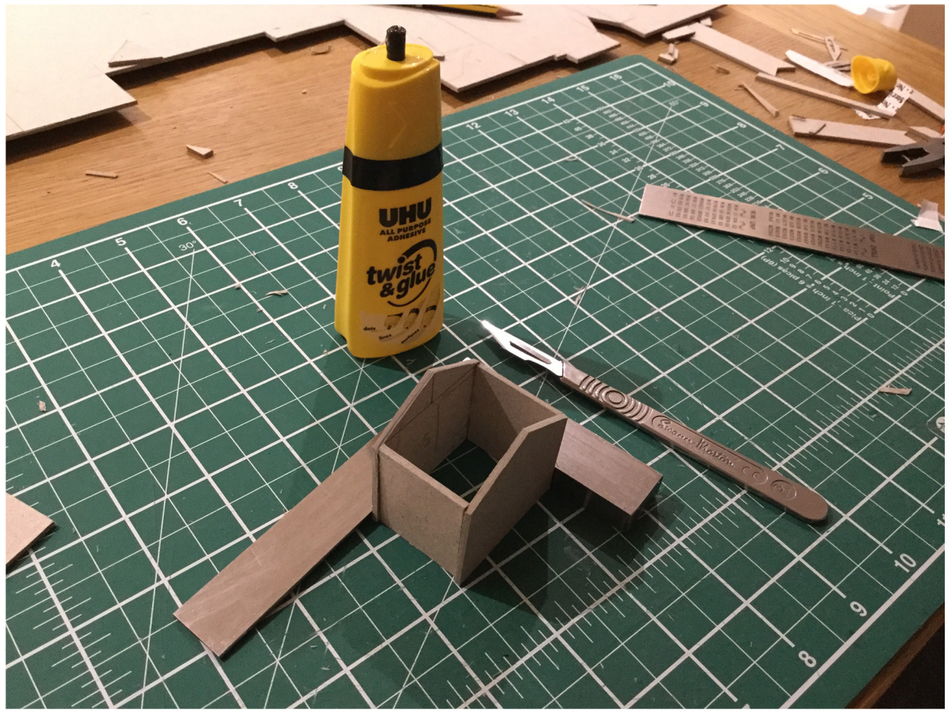




IDEA → REFINE → SIMPLIFY

GROUND FLOOR IDEA EVOLUTION [EXCERPTS FROM NOTEBOOK

CONCEPT: BUILDING WRAPS AROUND CORNER STIE LIKE A SNAKE, THEN PROCEEDS TO CASCADE DOWNWARDS INTO BASEMENT, CARRYING THE MOMENTUM.



Card Model Making Pictures