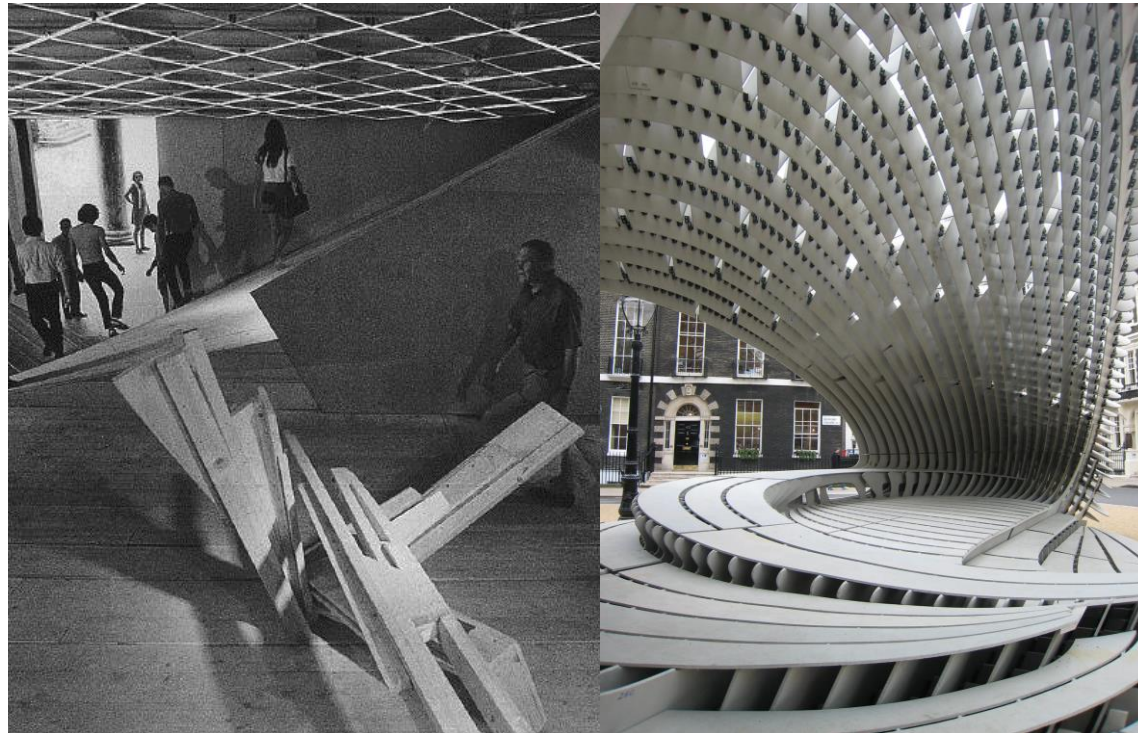


FULL SCALE PAVILION



French Pavilion, Claude Parent, 1970 | AA DRL 10 Pavilion, Dempsey/Huang, 2008

Project 4

In the final project of the year, students are asked to choose the development and construction of a full-scale project, or the development of a cultural centre for music and moving image – both in collaboration with the *Smart Kreativ Stad project (SKS)*. We also address the need for concert venues in Stockholm, most recently made obvious by the planned closing of Debaser at Medborgarplatsen.

Besides the collaboration with SKS, project 4 also introduces a conceptual starting point in the Function of the Oblique, as introduced by Claude Parent and Paul Virilio.* This is primarily aimed at the design project, where the sloping plane should be regarded as an element of pedestrian infrastructure (tying into the theme of the year), as well as a way to form spaces apt for the projection of moving image. The idea of the oblique may very well influence also the Full Scale project, but here we introduce another reference – Nine Problems in the Form of a Pavilion, that reflects on the development of the DRL 10 pavilion at the Architectural Association.**

Project 4 will be divided into two phases, the initial phase being a preparatory stage, with separate assignments for students participating in Full Scale and Design Project respectively. The full brief for Phase 2 will be presented in week 13.

* *The Function of the Oblique – the architecture of Claude Parent and Paul Virilio 1962 – 1962*, AA Documents 3, Excerpts available on our server – under Reading

** *Nine Problems in the Form of a Pavilion*, Edited by Alan Dempsey and Yusuke Obuchi, AA Agendas No. 8, 2010, Excerpts available on our server – under Reading

Phase 2



References: Stairway Cinema, Auckland, OH.NO.SUMO | Cineroleum, London, Assemble | Museum of Image and Sound, Rio de Janeiro, Diller Scofidio + Renfro

Design Project

The Design Project trajectory involves the design of a cultural centre featuring a combination of music venues and moving image venues. It should be located in a residual area in relation to infrastructure. Sites will be investigated in collaboration with SKS, who will explore different alternatives with a number of municipalities around Stockholm. The starting point for spatial and formal concepts should be the Function of the Oblique.

The details will depend on this, but the following aspects are predefined:

- The programmatic area for the cultural centre should be 3000 to 6000m²
- It should primarily use sites deemed unusable for other activities.
- The centre should establish relationships with an Infrastructural element (bridge, station, road interchange, piers, tunnel/underground station...), and should engage with public space and urban flows in order to become part of public space.

The Design Project should be developed individually.

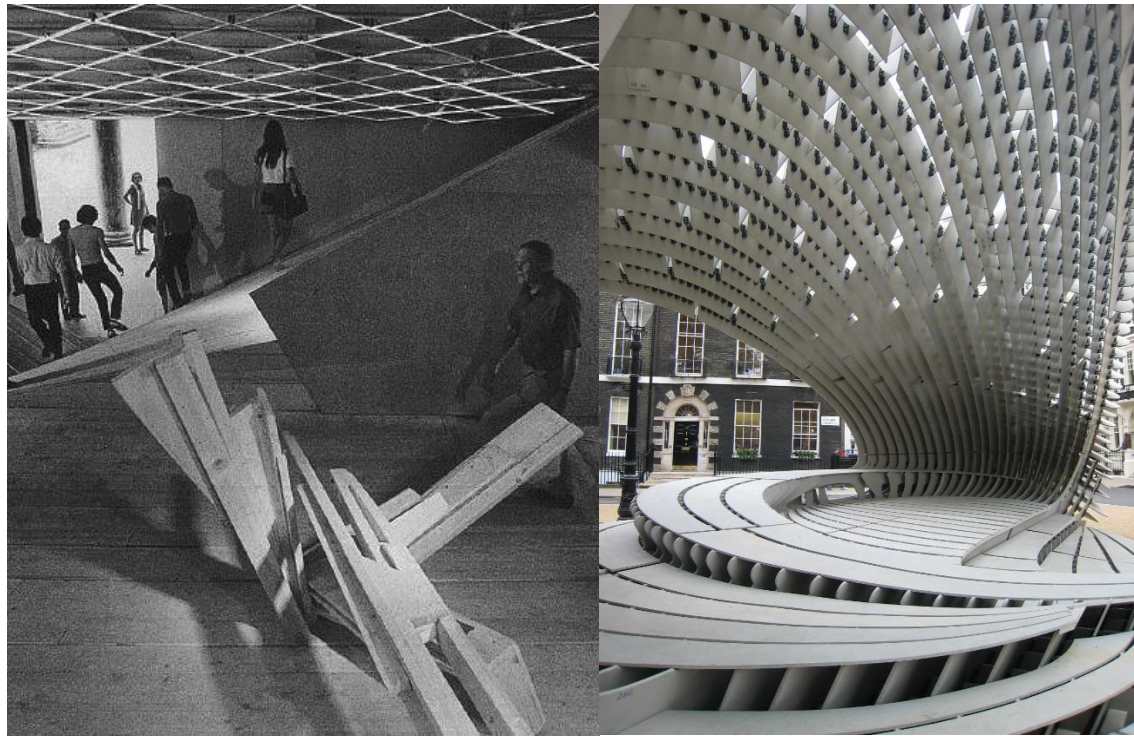
Full Scale

The full-scale assignment this year entails a pop-up cinema that will be used already in June by SKS. The specific details for this project will be worked out in collaboration with SKS, but the following aspects are predefined.

- It should be modular and possible to assemble multiple times by unskilled labour.
- It should be possible to enclose for a smaller audience, and open up for a bigger one.
- It may be placed indoors or outdoors (summer, with basic weather protection).
- It should house technical equipment such as projectors and screens as specified by SKS.
- Technical screening equipment will be facilitated by SKS.
- Structural supervision will be given by Tyréns.
- Materials will be sponsored, but specific material has not yet been decided.
- It should be designed and executed with all relevant safety and accessibility criteria.

The Full Scale project is a collaborative project, in a single team.

BRIEF



French Pavilion, Claude Parent, 1970 | AA DRL 10 Pavilion, Dempsey/Huang, 2008

Project 4 Phase 2

In the final project of the year, students are asked to choose the development and construction of a full-scale project, or the development of a cultural centre for music and moving image – both in collaboration with the *Smart Kreativ Stad project (SKS)*. We also address the need for concert venues in Stockholm, most recently made obvious by the planned closing of Debaser at Medborgarplatsen.

Besides the collaboration with SKS, project 4 also introduces a conceptual starting point in the Function of the Oblique, as introduced by Claude Parent and Paul Virilio.* This is primarily aimed at the design project, where the sloping plane should be regarded as an element of pedestrian infrastructure (tying into the theme of the year), as well as a way to form spaces apt for the projection of moving image. The idea of the oblique may very well influence also the Full Scale project, but here we introduce another reference – Nine Problems in the Form of a Pavilion, that reflects on the development of the DRL 10 pavilion at the Architectural Association.**

Project 4 will be divided into two phases, the initial phase being a preparatory stage, with separate assignments for students participating in Full Scale and Design Project respectively, followed by the eight week long Phase 2.

* *The Function of the Oblique – the architecture of Claude Parent and Paul Virilio 1962 – 1962*, AA Documents 3, Excerpts available on our server – under Reading

** *Nine Problems in the Form of a Pavilion*, Edited by Alan Dempsey and Yusuke Obuchi, AA Agendas No. 8, 2010, Excerpts available on our server – under Reading

In phase 2, students must choose one of two trajectories – Full-Scale or Design Project. Students will work individually (Design Project) or in one team (Full-Scale), for the final project of this year. Related issues are explored in both projects. There are related issues in both trajectories in terms of the brief. Both will deal with spaces where the public share visual experiences, both deals with temporary events, both take place in the city – although context will have to be considered in different ways. The full-scale trajectory will put strong emphasis on materials, structure and fabrication, but this should also be considered in the Design Project – which will require a faster early design process in order to be able to explore structure, potential fabrications issues and materiality.

Design Project Trajectory



Museum of Image and Sound, Rio de Janeiro, Diller Scofidio + Renfro | Cultural centre , Castelo Branco, Mateo Arquitectura | Phoenix International Media Center, Beijing, BIAD UFO

The Design Project trajectory involves the design of a cultural centre featuring a combination of music venues and moving image venues. It should be located in a residual area in relation to infrastructure. With a starting point in the Function of the Oblique, as defined by Virilio/Parent, students are encouraged to work with the integration of the interior infrastructure and interior spaces, and extend this approach to the exterior and the context of the selected site.

The assignment form Project 4 Phase 1 can be seen as a starting point, also suggesting that the project is developed from the inside and out – starting with spaces and internal infrastructure, and relating this to the context. Students are encouraged to develop their own design strategy for how program, infrastructure and space are integrated - and are asked to also present this strategy as part of the final submission.

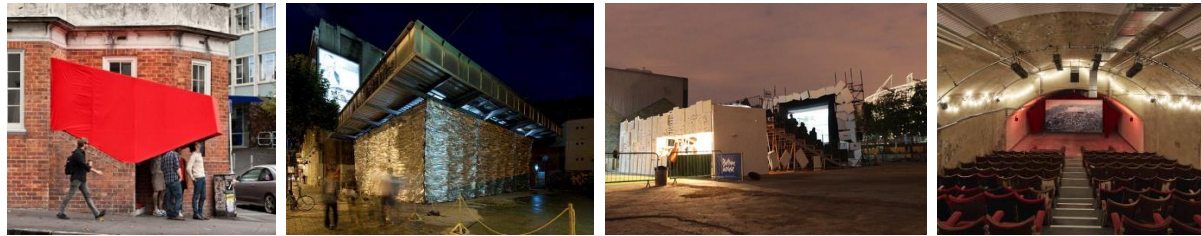
Students may select one of two sites – both under bridges in central Stockholm.

Sites:

- All sites are under bridges that are highly trafficked for pedestrian and bike use. The building should be able to have entrances from both the top level of the bridge and the ground below. Fore some cases, and according your design the bridge entrance might be the main entrance.
- The centre should establish relationships with the infrastructural element; the bridge, and should engage with public space and urban flows in order to become part of public space.

BRIEF

Full Scale Trajectory



References: Stairway Cinema, Auckland, OH.NO.SUMO | Cineroleum, London, Assemble | Films On Fridges, Scout Limited | Underground Film Club, Banksy / Rooftop Film Club / Drive-in Film Club

The full-scale assignment this year entails a pop-up cinema that will be used already in June by SKS. The challenge for the Full-Scale trajectory is to combine the requirements for the pop-up cinema with an explorative mode of design development, where computation, fabrication, structure and design are combined in an expressive as well as performative way. It is very important to consider the full-scale trajectory not only as fulfilment of client demands (SKS9 but also as an exploration of how architecture (as informed by computational design and fabrication) can bring something new to the context of mobile urbanism.

The building blocks of urbanism are becoming increasingly flexible, modular and mobile. This is an exciting time for mobile urbanism: the pop-up city is all the rage. The confluence of technological innovations, cultural preferences, and political winds has led to a growing interest in mobility of all forms. Pop-up shops, music events, ballrooms, restaurants and even pop up hotels enliven urban landscapes through temporary, site-specific events.

Site-specific pop up cinemas and parasite cinemas are part of this wider phenomenon of creative, temporary, Do-It-Yourself, often grassroots and potentially transgressive uses of spaces that were not designed nor intended for such use. Pop up cinemas are staged in motorway underpasses, scrap yards, brownfield sites, derelict petrol stations, car parks, roof tops, train stations and car parks or simply out-of-doors in the open air – they can “pop up” anywhere; however, sites are typically chosen purposely, to make advantage of any unique affordance of a specific setting or place. One part of what makes these events unique is that they are ad hoc and grassroots, organized and operated by small groups of friends and film enthusiasts; they often fizz with an air of the unexpected. Many pop ups also aim to provide an alternative to the blandness of the multiplex and in doing so they call attention to the distinct and often otherwise overlooked places where they occur.

As pop up events are often site-specific they can also be viewed as part of ‘place-shaping’ processes; involving consideration of the local, ordinary, contextual, typical, everyday, small, personal, intangible things that create a daily sense of place. Because pop up events interrupt the everyday, they are capable of calling attention to otherwise easily-overlooked and taken-for-granted place of quotidian life.

The brief for the full-scale trajectory will be continuously be informed by our partners, primarily Smart Kreativ Stad. The following criteria are given as a starting point:

- It should combine strong aesthetic and performative aspects, and explore materials, fabrication and structure in an interesting way.
- It should be modular and possible to assemble multiple times by unskilled labour.
- It should be possible to enclose for a smaller audience of 10, preferably with integrated seating, and open up for a bigger audience of 40 + (with additional off-the shelf chairs).
- It may be placed indoors or outdoors (summer, with basic weather protection). Maximum height is 3000 mm (may be subject to change after conversations with SKS).
- It should house digital projection equipment such as projectors and screens as specified by SKS.

The following aspects may be relevant to consider:

- Foldable and inflatable projection spaces and interior design (chairs, sofas)
- Fragmented pavilion – designed in different parts that could work together as one, or separately as smaller versions.
- Plug in pop up – how to work with multiple energy sources (electricity; battery; solar power, biking energy)
- The design of social and intimate spaces that allows strangers to share cinematic experiences
- The design and production of an advanced yet simple to assemble structural system, sustainable / efficient material use and interiors with strong experiential qualities

The pop-up cinema should contribute towards the horizontal criteria of the Smart Creative City project:

- Integration, Equality and Non-Discrimination
- An interactive and more dynamic urban environment

We will have additional support and feedback during the process as follows:

- Information on requirement for Technical screening equipment will be provided by SKS.
- Structural supervision will be given by Tyréns and Rozan Kaivan.
- Materials will be sponsored, but specific material has not been predefined – budget will be an issue (initial material budget of ca 30 000 kr, most likely to be expanded by additional funding).
- It should be designed and executed with all relevant safety and accessibility criteria (feedback from SKS).

Student organisation and workflow:

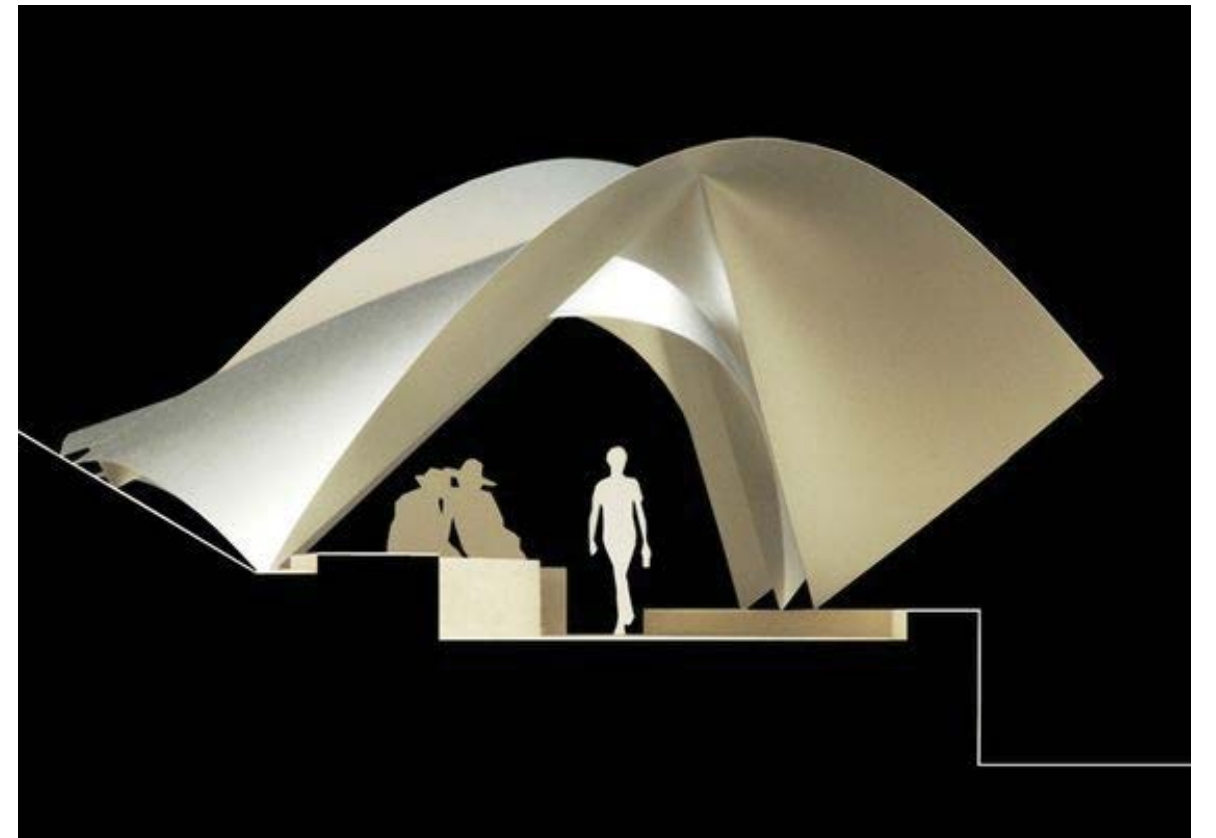
- Students need to find their own way of starting up the project, and initiating design concept development. There may be additional research required (such as precedence on pavilions, additional examples of pop-up cinemas etc). The design concept may be developed through fast parallel charrettes (individual/small sub-team competition).
- After initial concept phase, it may be wise to set up different responsibilities, such as design of furniture, development of structural strategy, preparing for fabrication, receiving feedback on projection technologies etc.

The Full Scale project is a collaborative project, in a single team.

Deliverables:

- Full presentation of design proposal, using representations as needed (a physical model is required).
- The full-scale pop-up cinema
- Pedagogical instructions as needed for assembly and packing

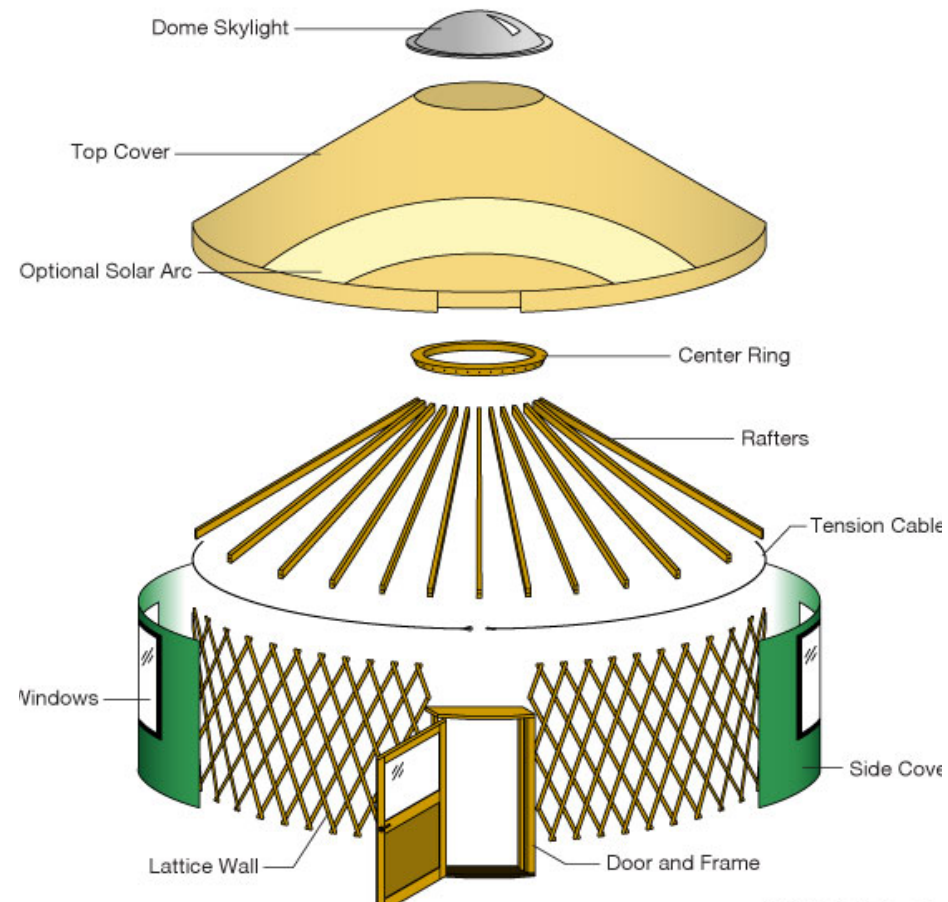
INSPIRATIONS



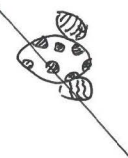
INSPIRATIONS

The Yurt


<http://www.treehugger.com/sustainable-product-design/jero-modern-yurt-trakke-uula-jero-maklab.html>



GROUP SCHEDULE

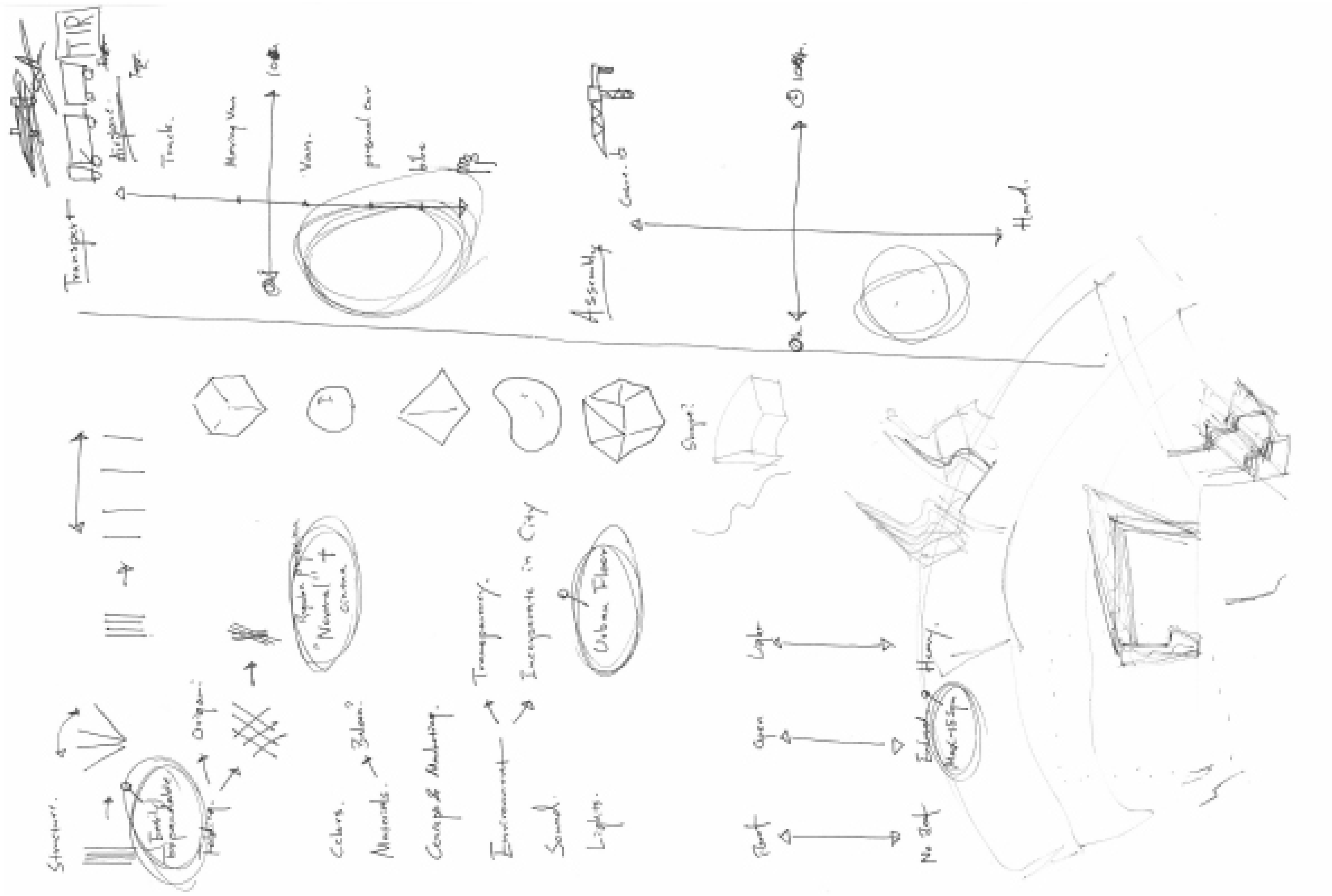
Monday	Tuesday	Wednesday	Thursday	Friday
<div>Design Concept</div> <div>Week 13</div> <div>28/3 - 8/4</div> <div></div>	<div>Phase II Start.</div> <div>Planning</div> <div>Individual work:</div> <div>Identify + Research.</div>	<div>Group Meeting.</div> <div>16.00</div> <div>Choose Concept Direction.</div> <div>Deligate Assignments.</div>		<div>Group Meeting 14.00</div> <div>Four</div> <div>1st round proposals.</div> <div>3 proposals + 1 proposal</div> <div>Keep developing proposal.</div> <div>Haider, Adam, Bartosz</div> <div>12.00</div>
<div>Design Concept</div> <div>Week 14</div> <div>4/4 - 9/4</div>	<div>8:30</div> <div>Tutorial 14.00</div> <div>Palate of ideas.</div> <div>Idea History, Networks ... organ.</div> <div>Deligate Assignments.</div>	<div>Group Meeting 14.00</div> <div>2nd round proposals.</div> <div>3 proposals + 1 proposal.</div> <div>Deligate Assignments.</div>		<div>First Draft Presentation.</div> <div>(All materials.)</div> <div>Seminar Course.</div> <div>Daniela.</div>
<div>Final Concept</div> <div>Week 15</div> <div>11/4 - 15/4</div> <div>Presentation Work Start.</div>	<div>Presentation Done.</div>	<div>Seminar 14.5.</div> <div>Final Concept</div>	<div>Group Meeting?</div> <div>Summarize Concept</div> <div>Deligate Structural Assignments.</div>	<div>Seminar</div>
<div>Structural Resolution</div> <div>Week 16</div> <div>15/4 - 22/4</div>				<div>FINAL DESIGN!!</div>
<div>Fabrication Planning</div> <div>Week 17</div> <div>25/4 - 29/4</div>			<div>Individual Studies.</div>	<div>Seminar</div>
<div>Fabrication</div> <div>Week 18</div> <div>2/5 - 6/5</div>			<div>Kristinmel.</div> <div>Holiday!!</div>	

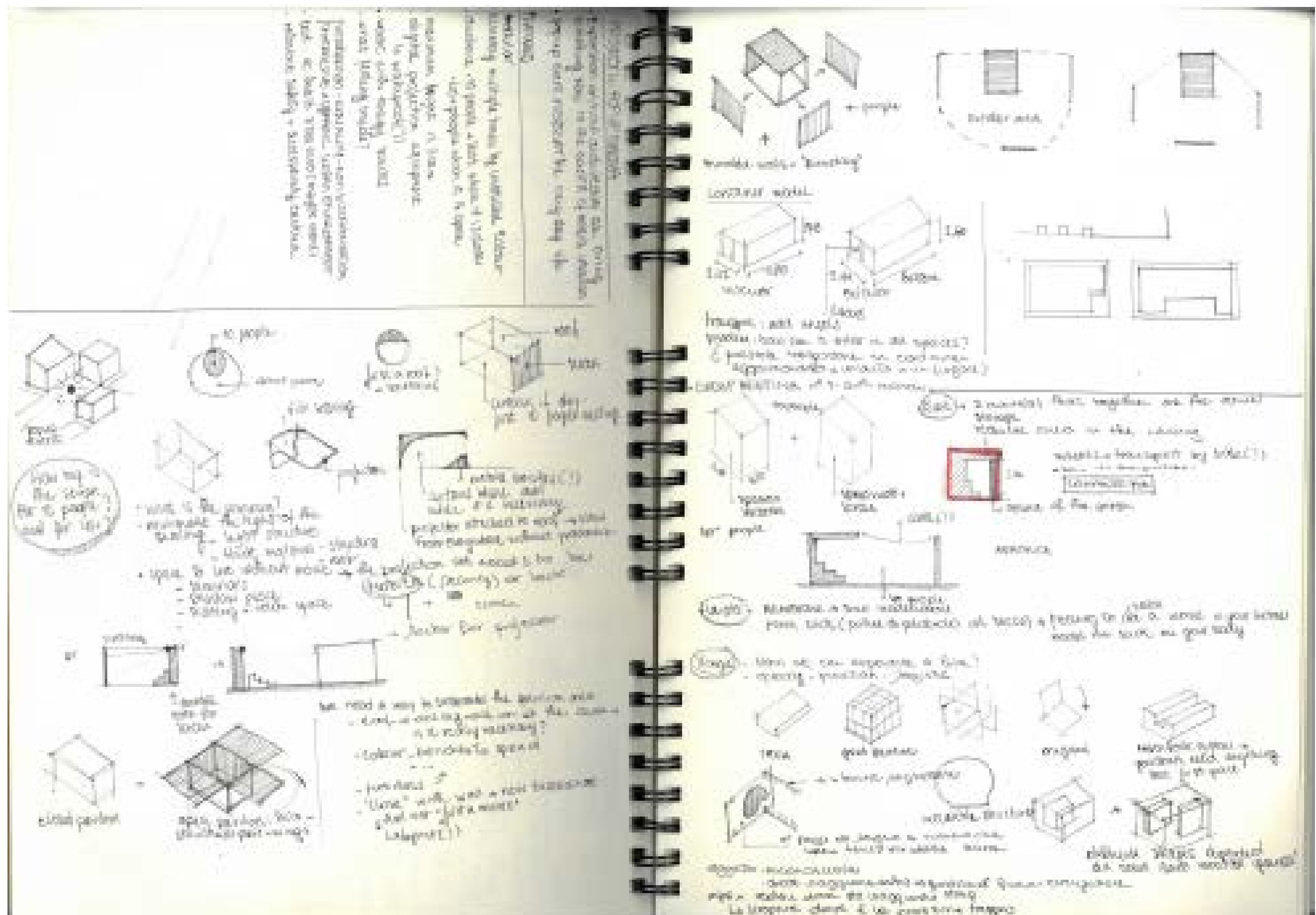
FULL SCALE PROJECT · Studio 01

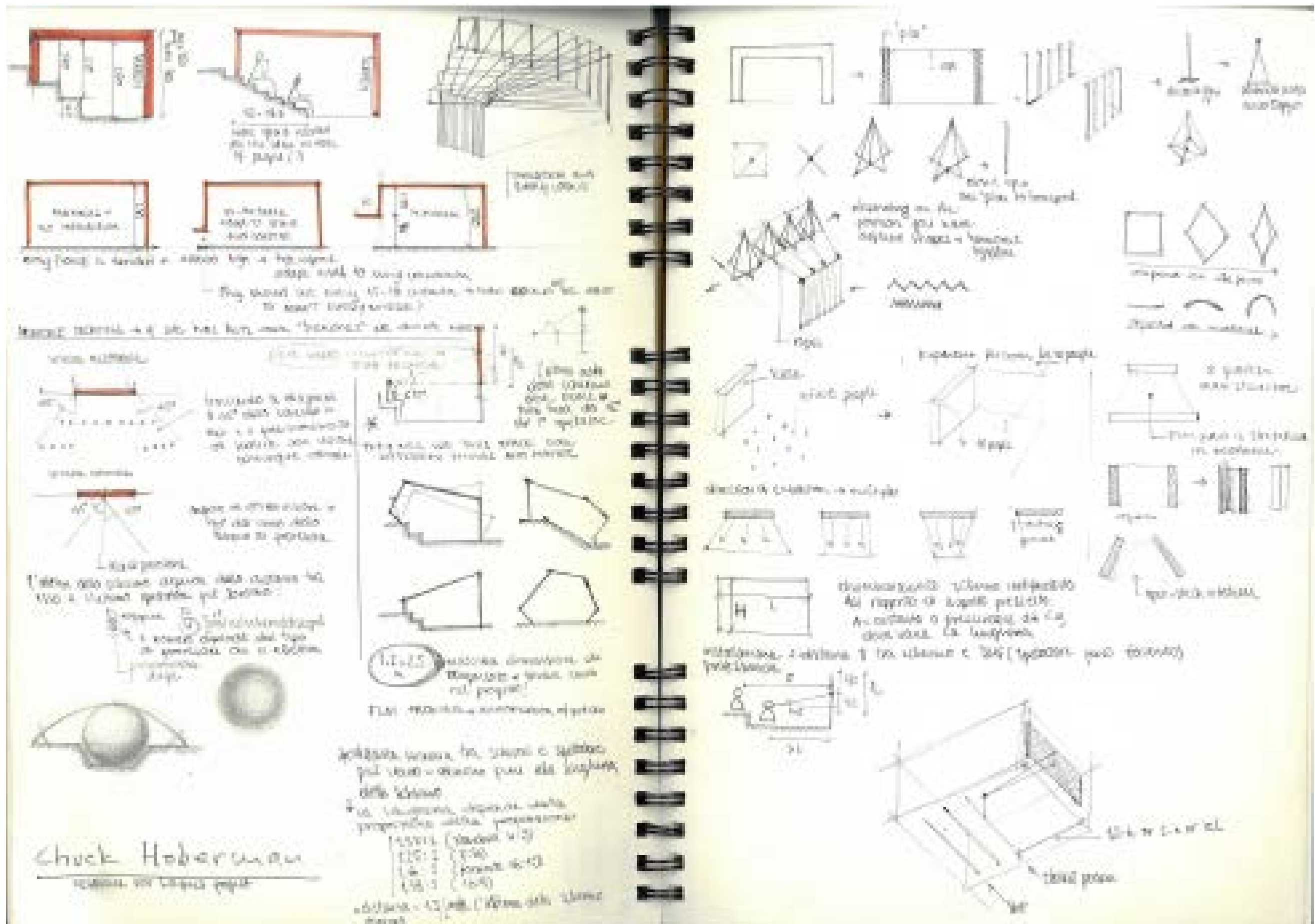
Monday	Tuesday	Wednesday	Thursday	Friday
<div>Fabrication</div> <div>Week 19</div> <div>9/5 - 13/5</div>				
<div>Prel. Assembly</div> <div>Week 20</div> <div>16/5 - 20/5</div>				<div>Reject End.</div>
<div>Final Assembly</div> <div>Week 21</div> <div>23/5 - 27/5</div> <div>Xing</div>				
<div>Week 22</div> <div>30/5 - 3/6</div>				
<div></div> <div>Group</div> <div>Layers</div> <div>Membrane</div> <div>G. 2d</div> <div>Bao, Bartosz, Daniela</div> <div>Haider, Hwa</div> <div>Adam, Matteo, Xing.</div>				<div>Cene</div> <div>Expandable.</div>

- Can't be at school.
- Important.
- Group Meeting.

PROGRAMME







Vans that only require B Driver’s License



Van Mini

- Loading volume up to 3 cubic m
- Diesel
- Maximum weight 700 kg

Example:

- 2 seats

Outer measurements:

Length: 421 cm

Height: 185 cm

Inner measurements:

Length: 140 cm

Width: 120 cm

Height: 113 cm



Small Van

- Loading volume up to 5 cubic m
- Automatic gear
- Diesel
- Maximum weight 810 kg

Example:

- 5 cubic m, Maximum weight 810 kg
- 2-3 seats

Outer measurements:

L: 530 cm

H: 200 cm

Inner measurements:

L: 200 cm

B:150 cm (120 cm between the wheelarch)

H:135 cm

Door height: 127 cm

Door length 123 cm



Medium Van

- Loading volume 10-14 cubic m
- Automatic gear
- Diesel
- Maximum weight 970 kg

Example:

- 13 cubic m
- 3 seats

Outer measurements:

Length: 695 cm

Height: 275 cm

Inner measurements:

Length: 326,5 cm

Width: 178 cm (135 cm between the wheelarch)

Height: 194 cm



Big Van

- Loading volume 17-18 cubic m
- Automatic gear
- Diesel
- Maximum weight 782 kg

Example:

- 18 cubic m
- 3 seats

Outer measurements:

Length: 722 cm

Height: 310 cm

Inner measurements:

Length: 430 cm

Width: 210 cm

Height: 200 cm

AFTER GROUP MEETING NUMBER ONE

THREE MAIN DIRECTIONS:

Membrane structure+origami

Grid structure

Layers structure > Harmonic

MEMBRANE INSPIRATIONS



MEMBRANE INSPIRATIONS



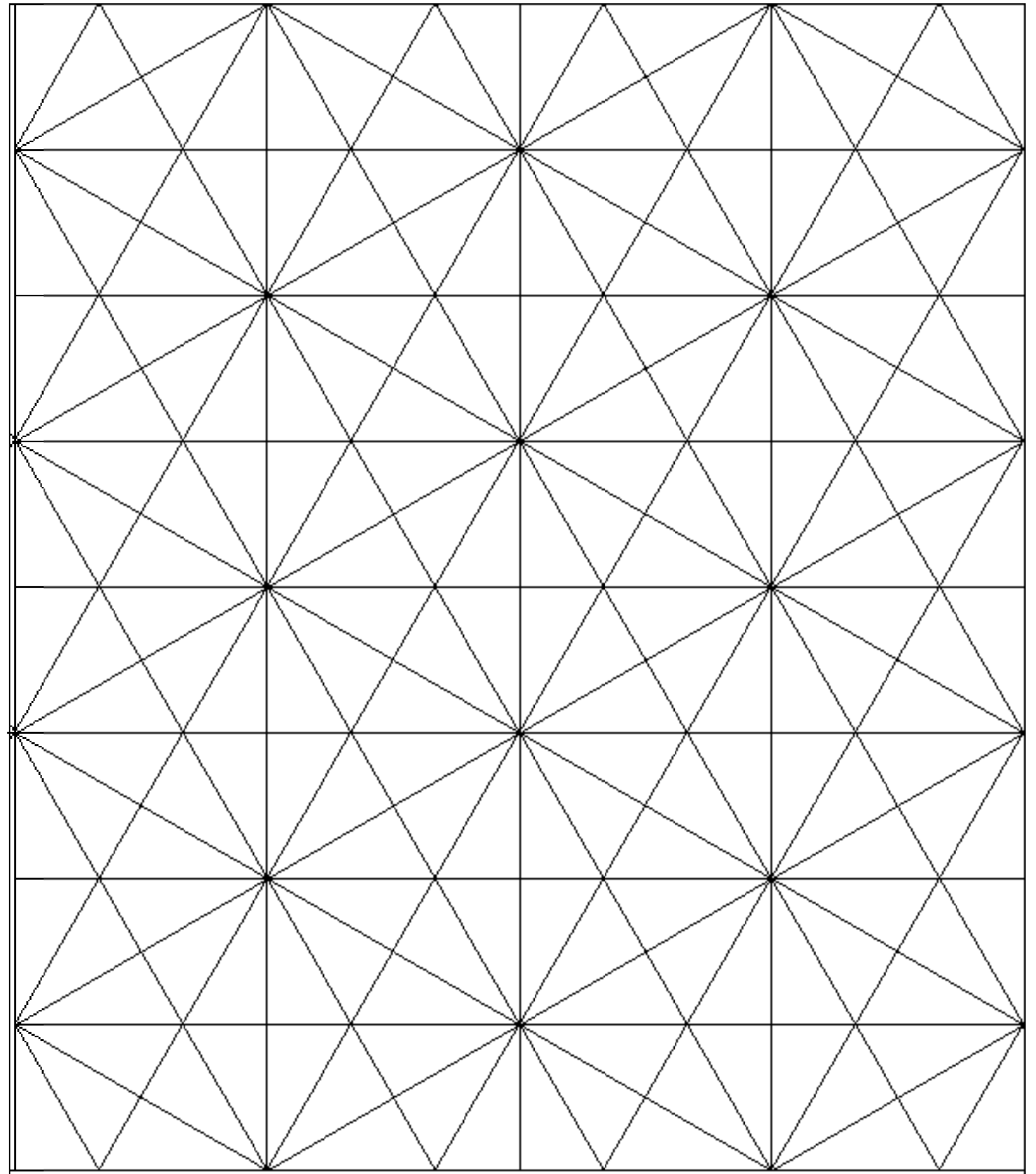
MEMBRANE INSPIRATIONS



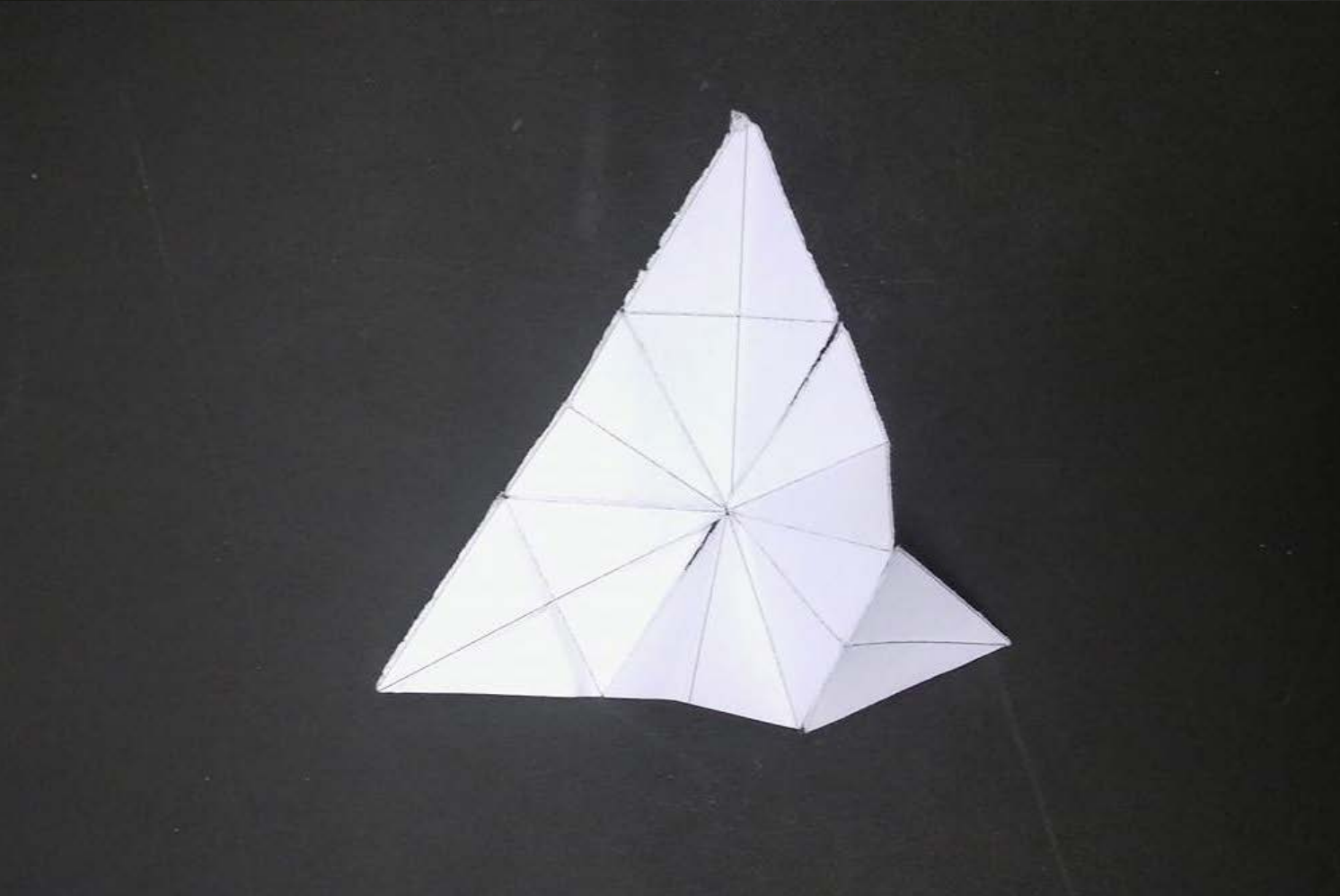
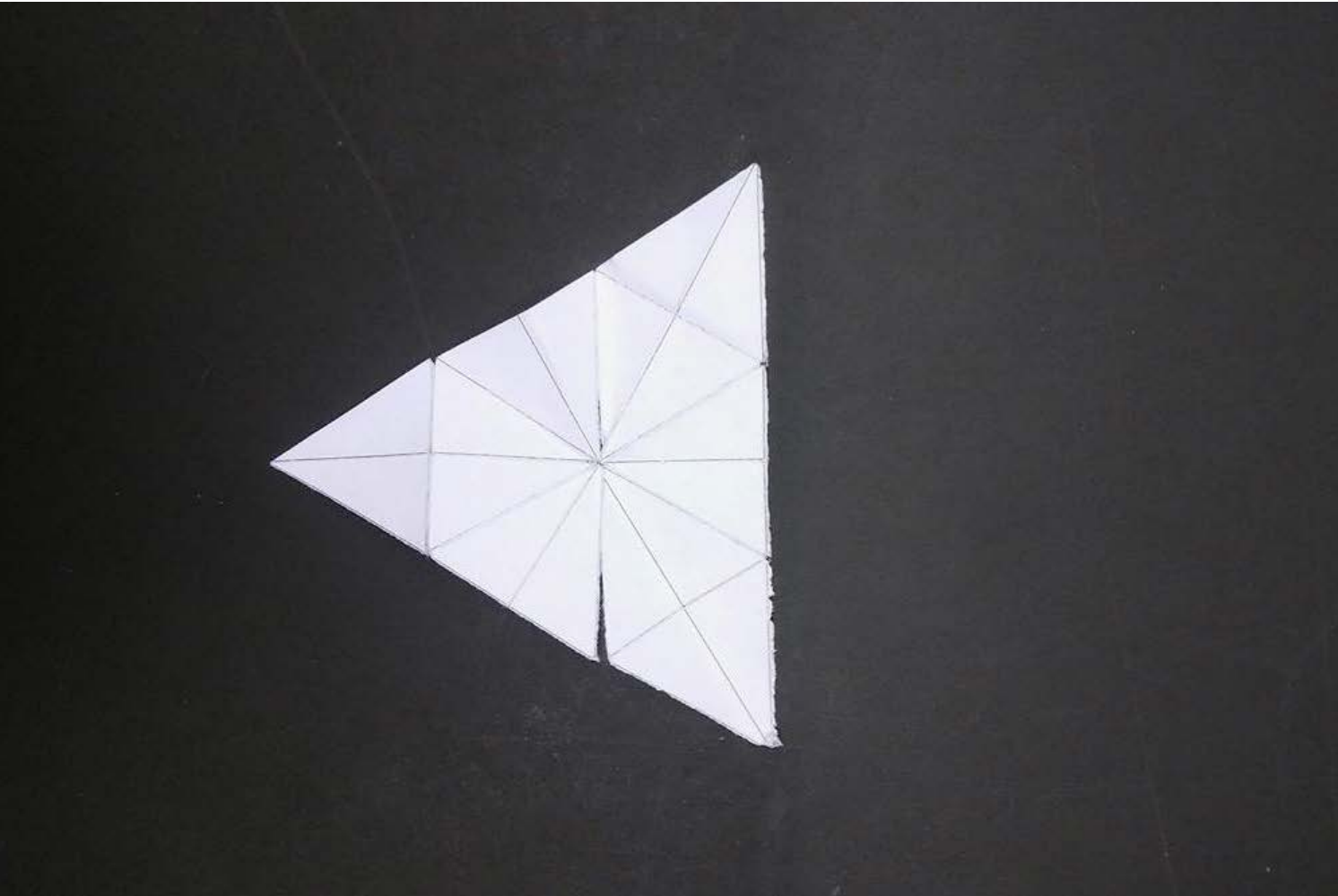
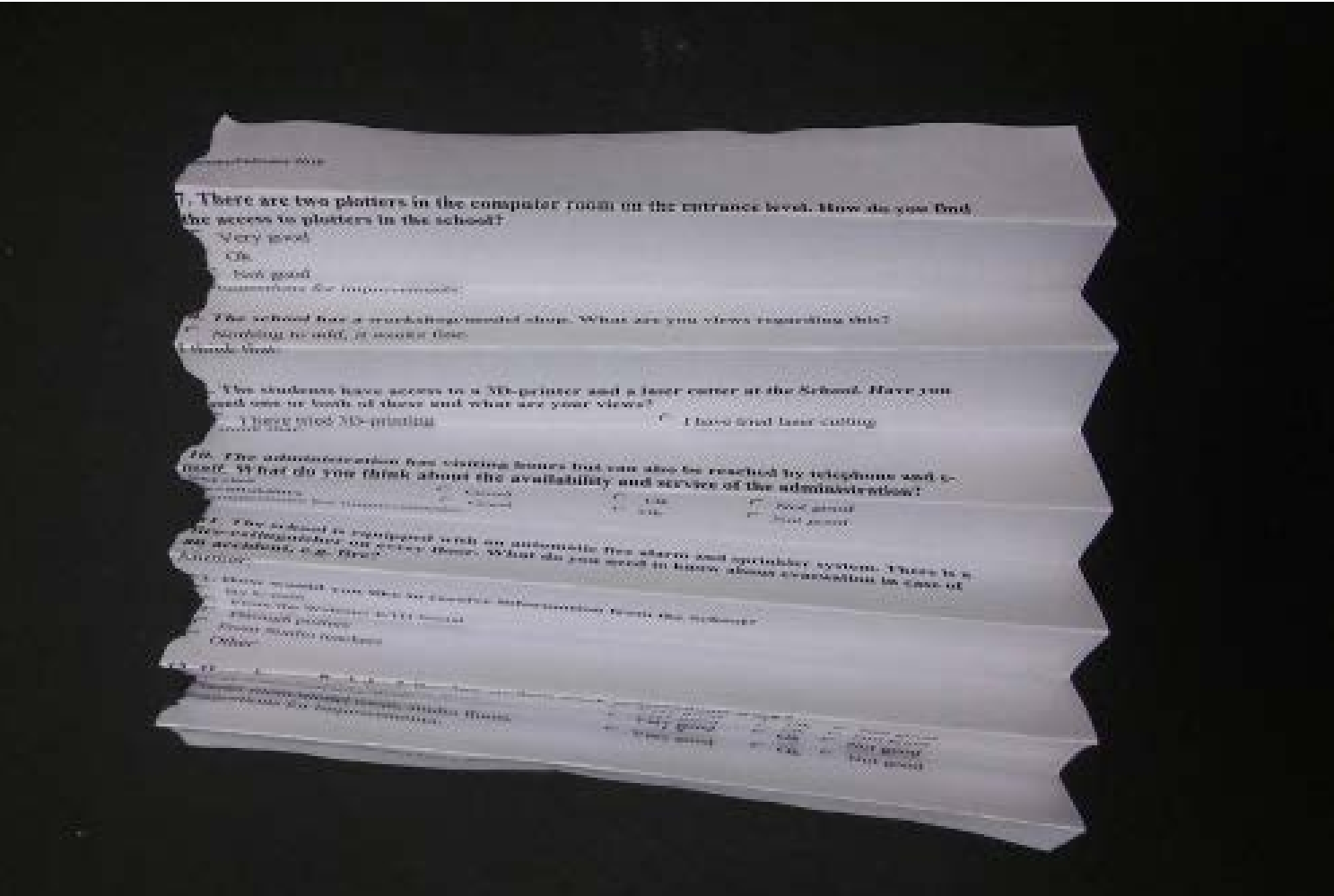
MEMBRANE INSPIRATIONS



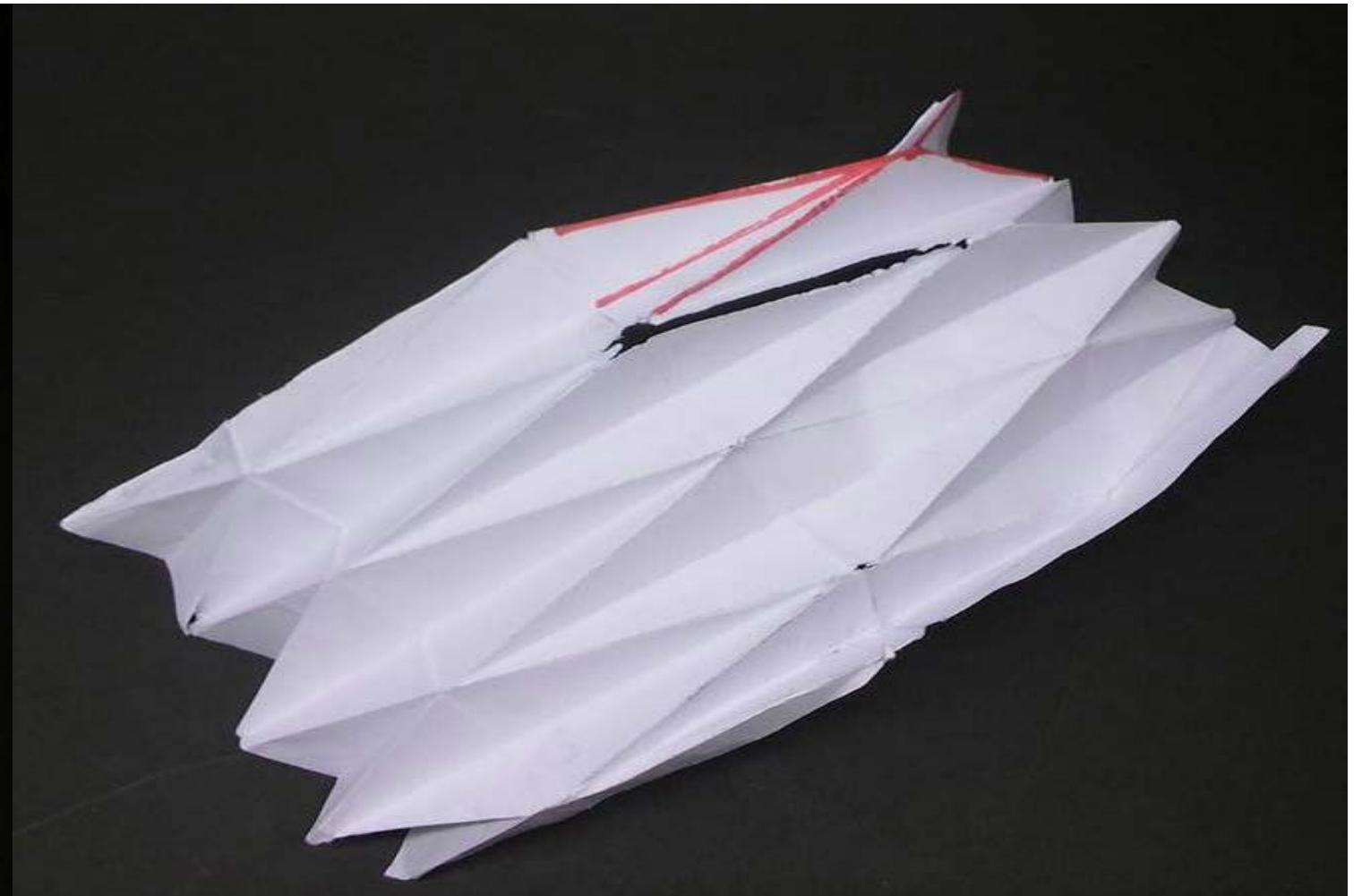
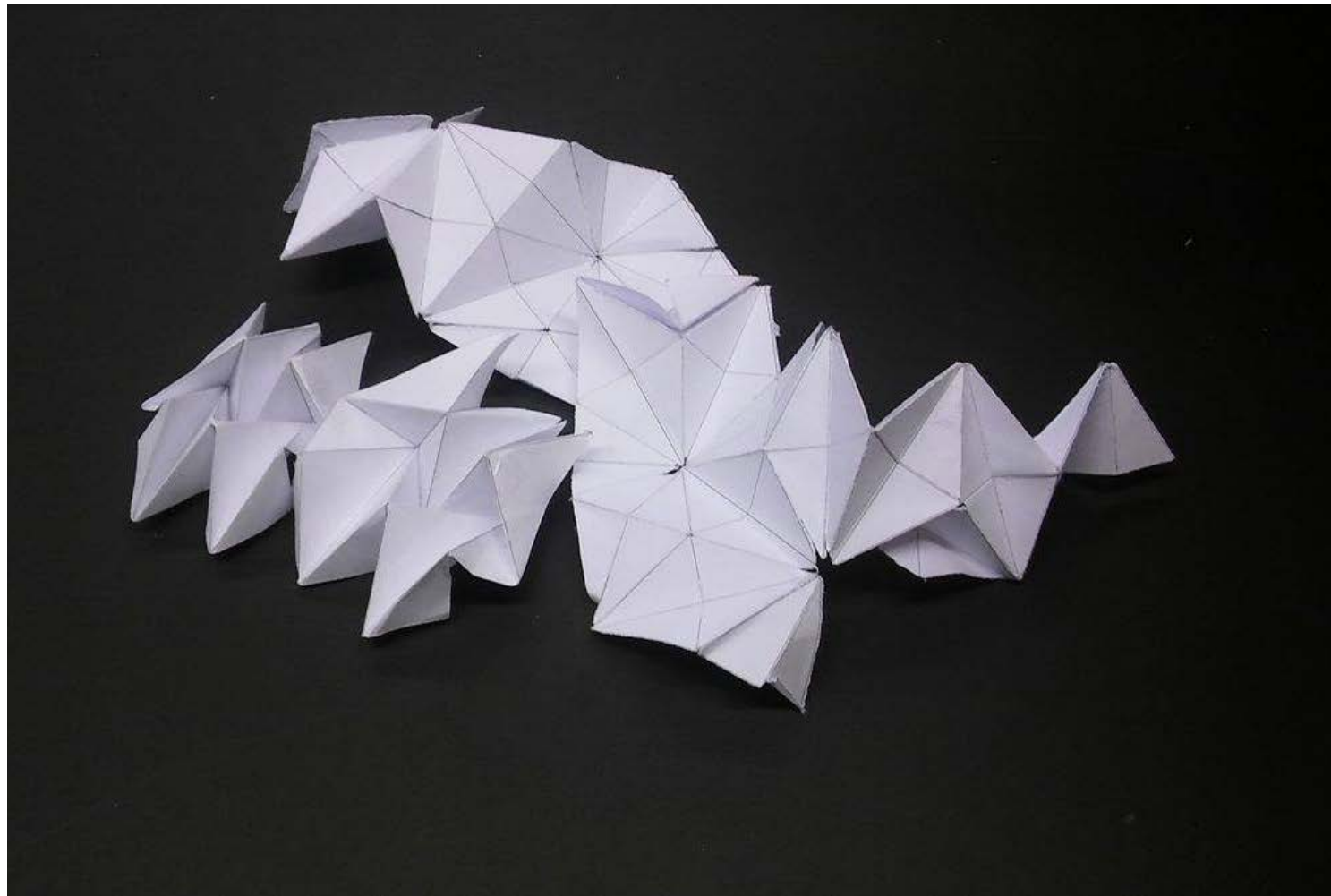
ORIGAMI SHAPE



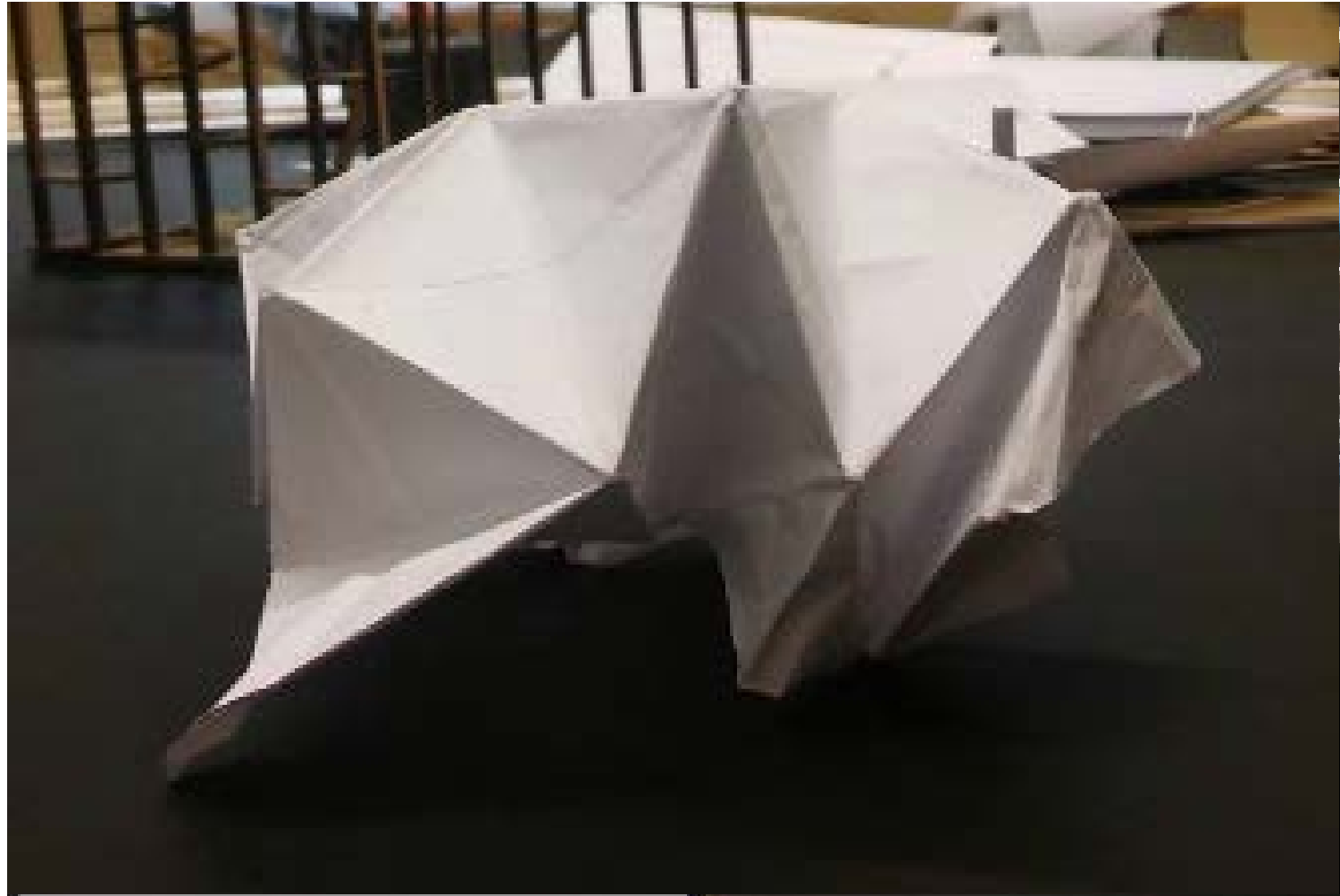
ORIGAMI SHAPE



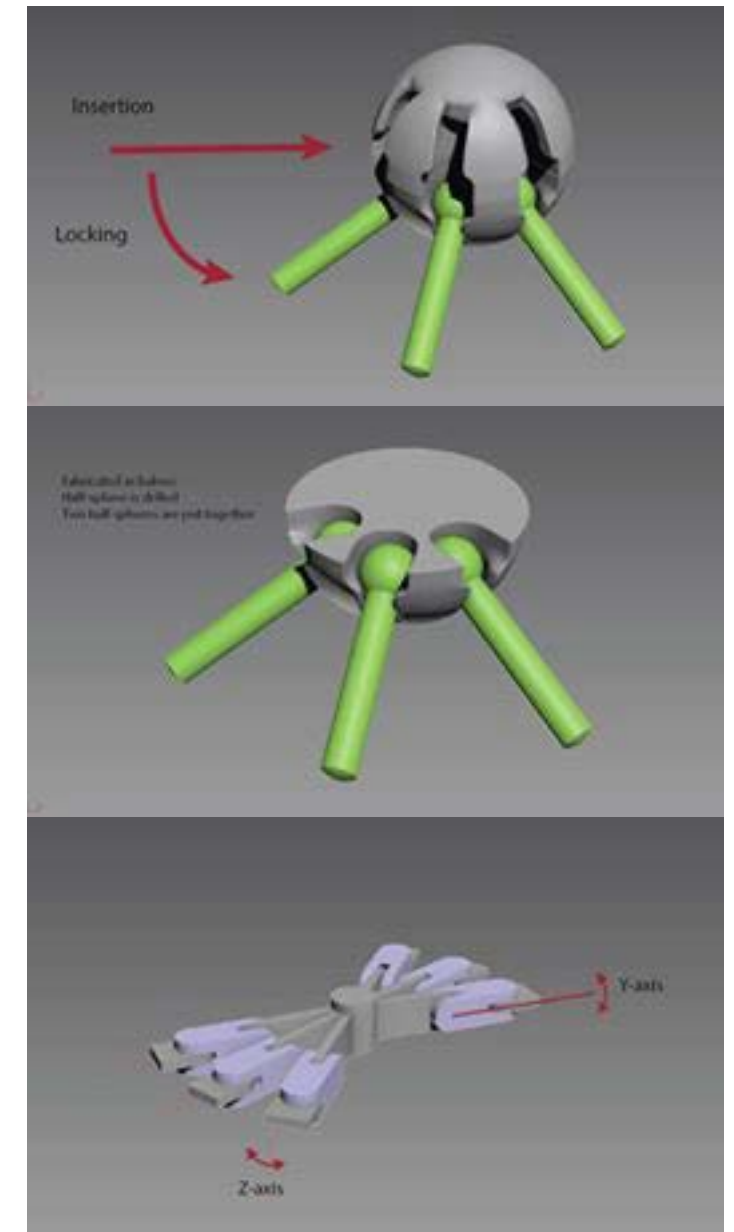
ORIGAMI SHAPE



ORIGAMI SHAPE



MEMBRANE STRUCTURE_ FOTO DA HAIDER



MovieCloud - Spread the Thought

A floating cloud travelling through Sweden enlightening the citizens with new perspectives and ideas.

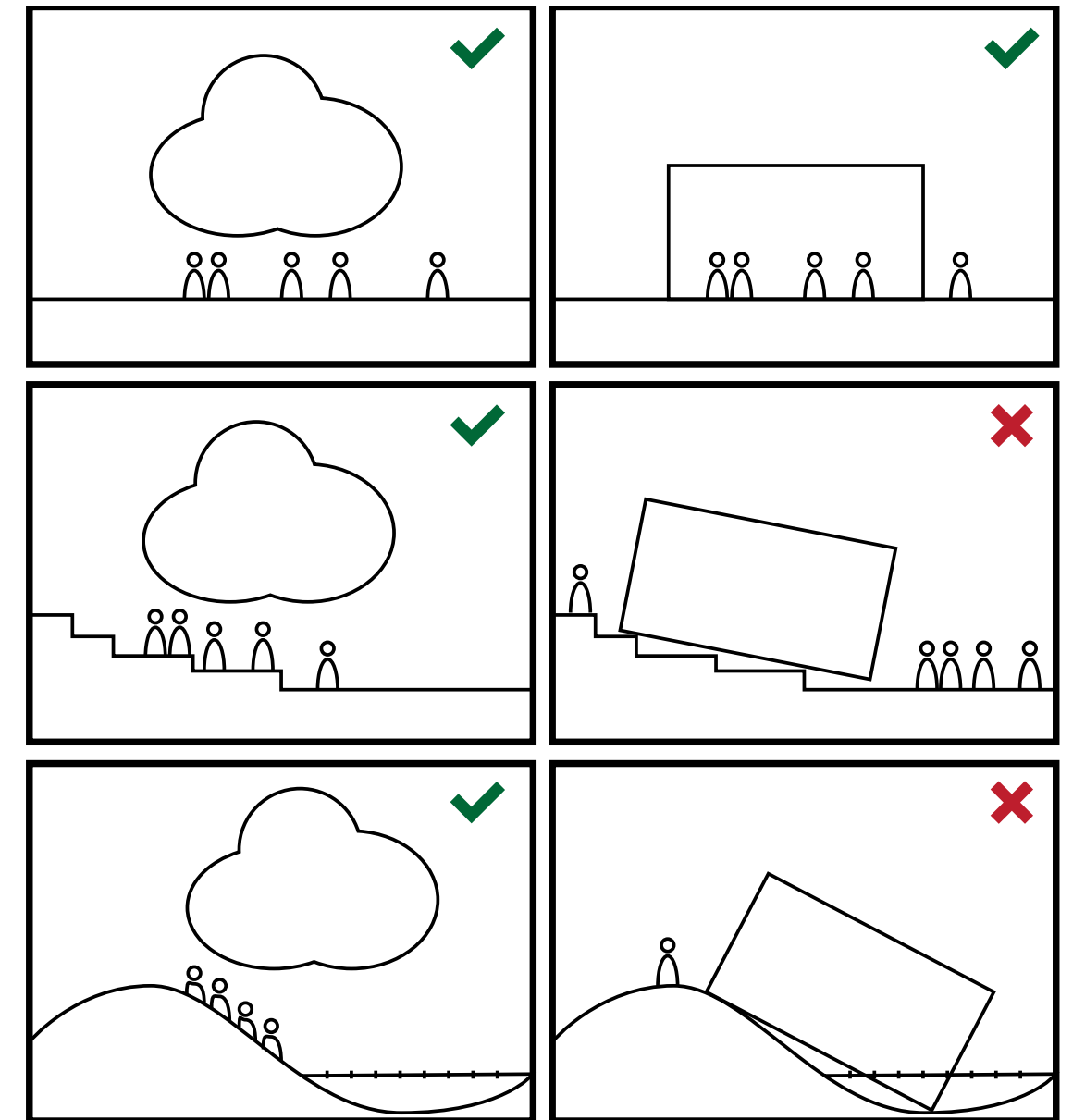
PROS and CONS

- + Recognizeable (Word of Mouth Effect)
- + Adaptable
- + Flexible to move
- + Reasonable costs

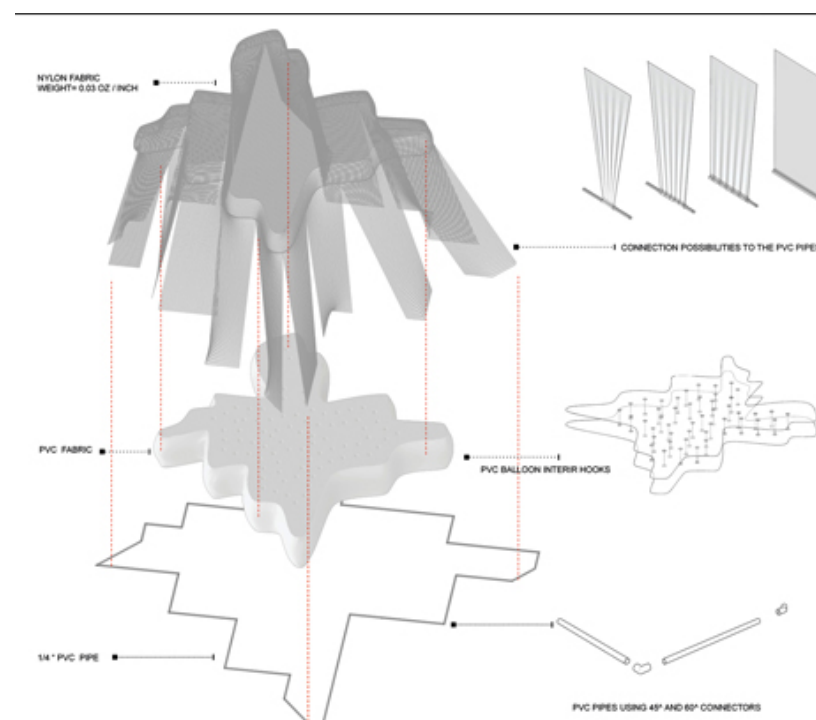
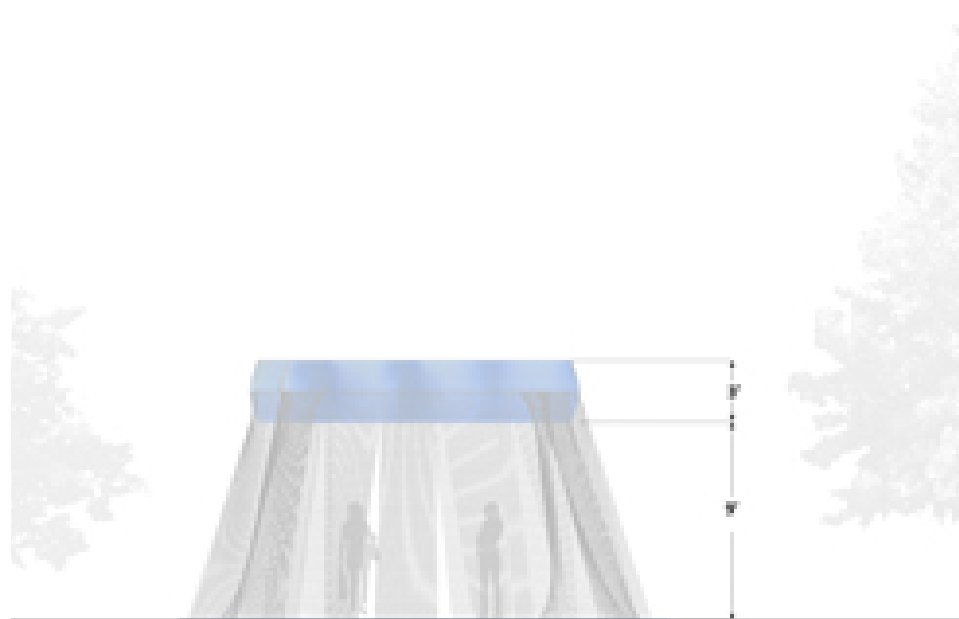
- Technology
- Stability in wind
- Finite gas (Helium refill)
- Dependent on manufacturer

WHAT'S NEXT

- + Get a manufacturer on-board
- + Design the movie experience (Seating, people flow, Technique and screening)
- + Design the flying ceiling
- + Design different stages (Small, Medium, Large)
- + Make instructions on how to use
- + Develop marketing strategy

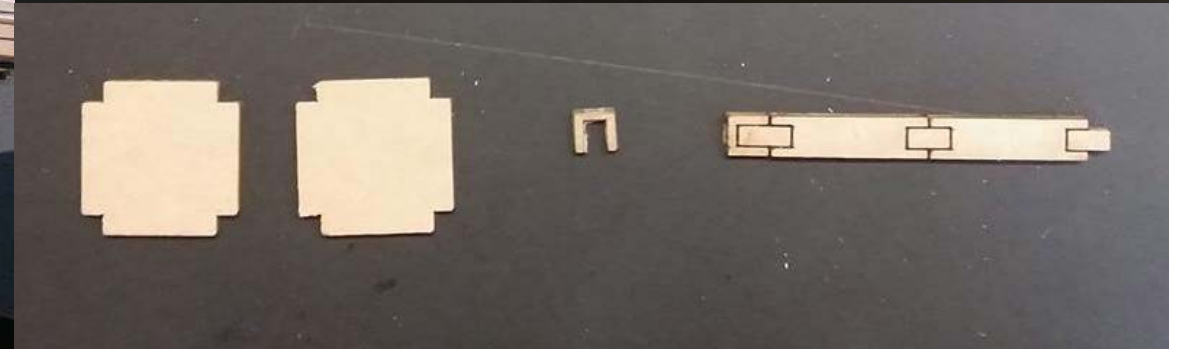
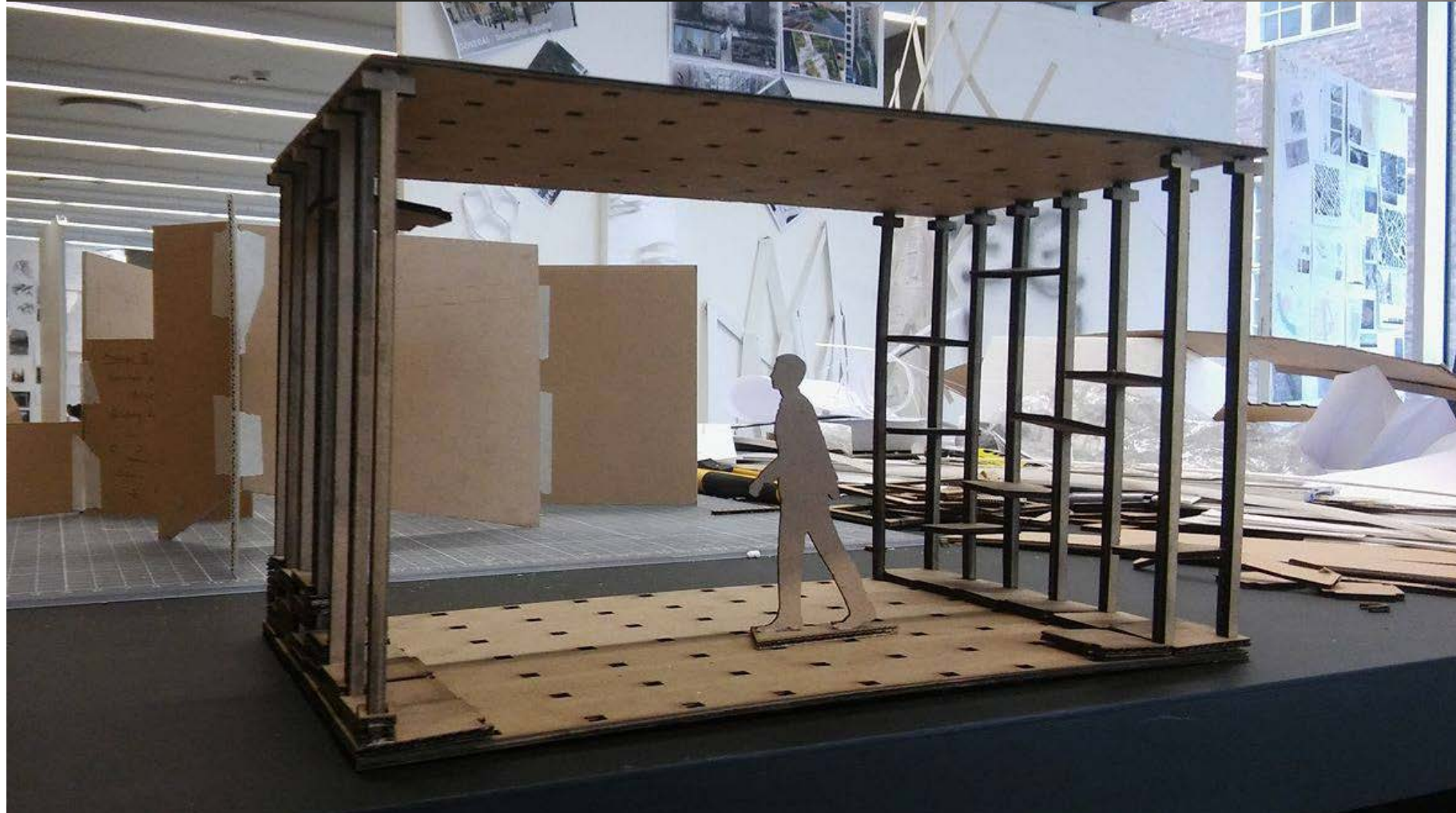


Adaptation to Urban Landscape vs "stiff" structure

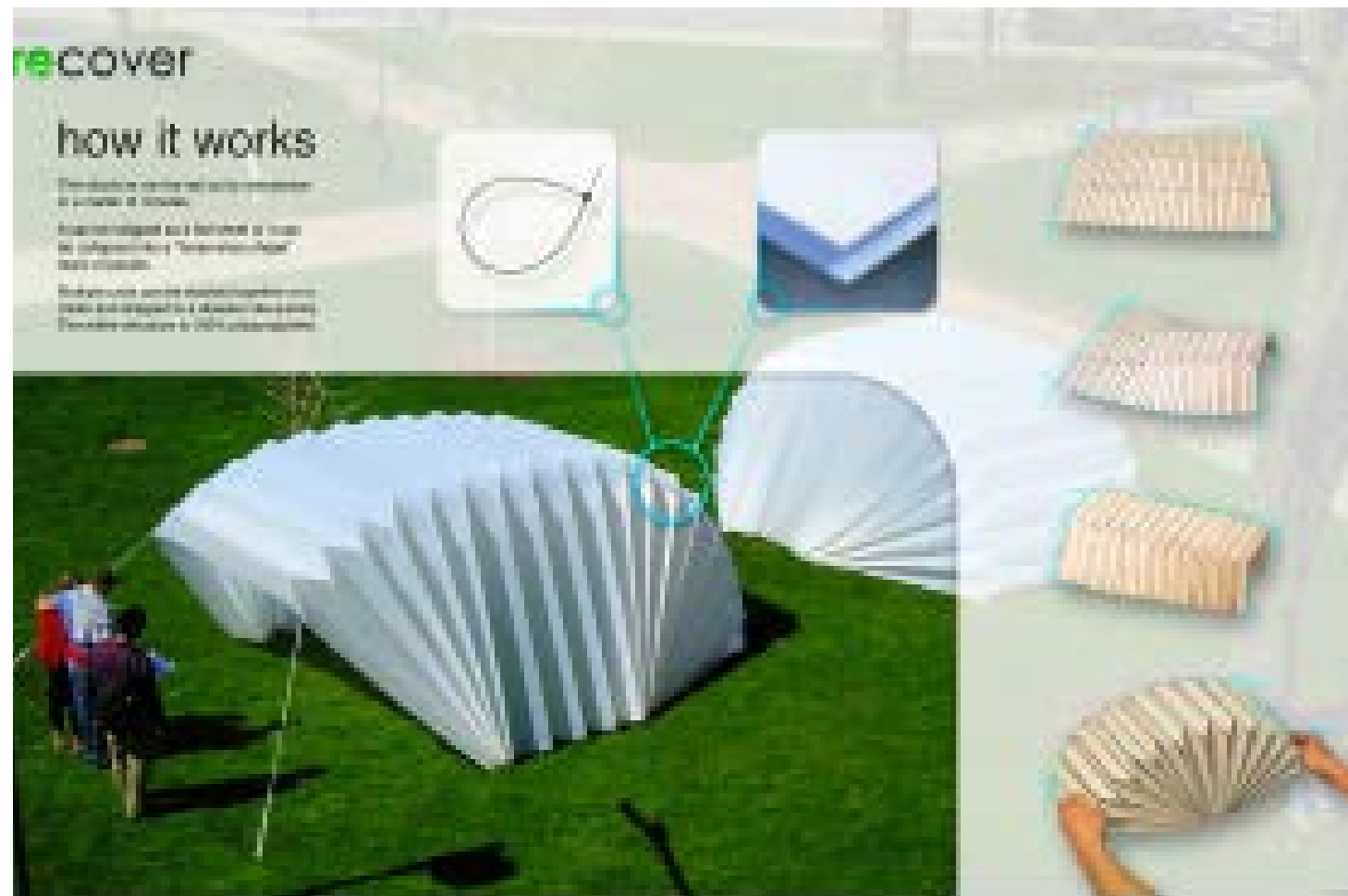


Reference: Wedding pavilion by Qasti
<http://www.dezeen.com/2013/08/28/floatastic-by-qastic/>

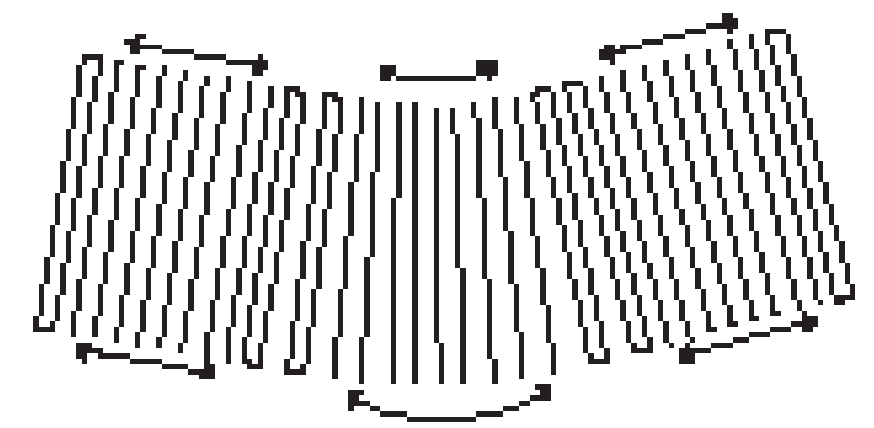
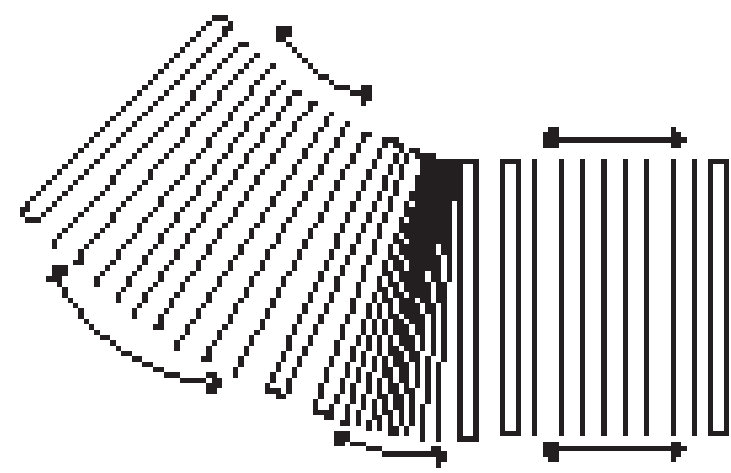
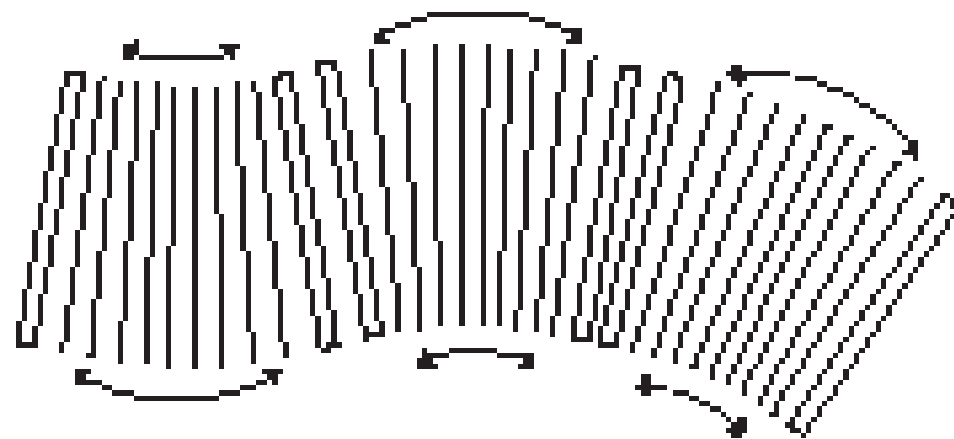
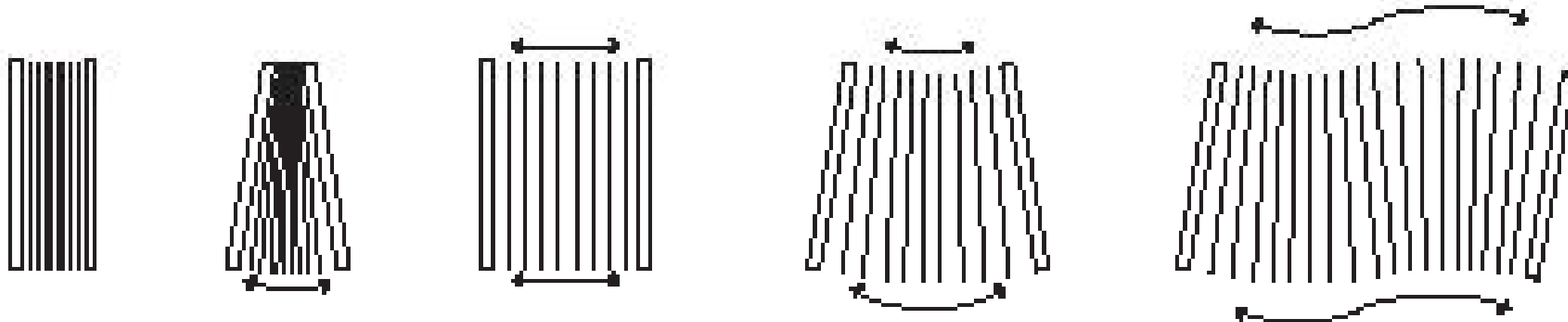
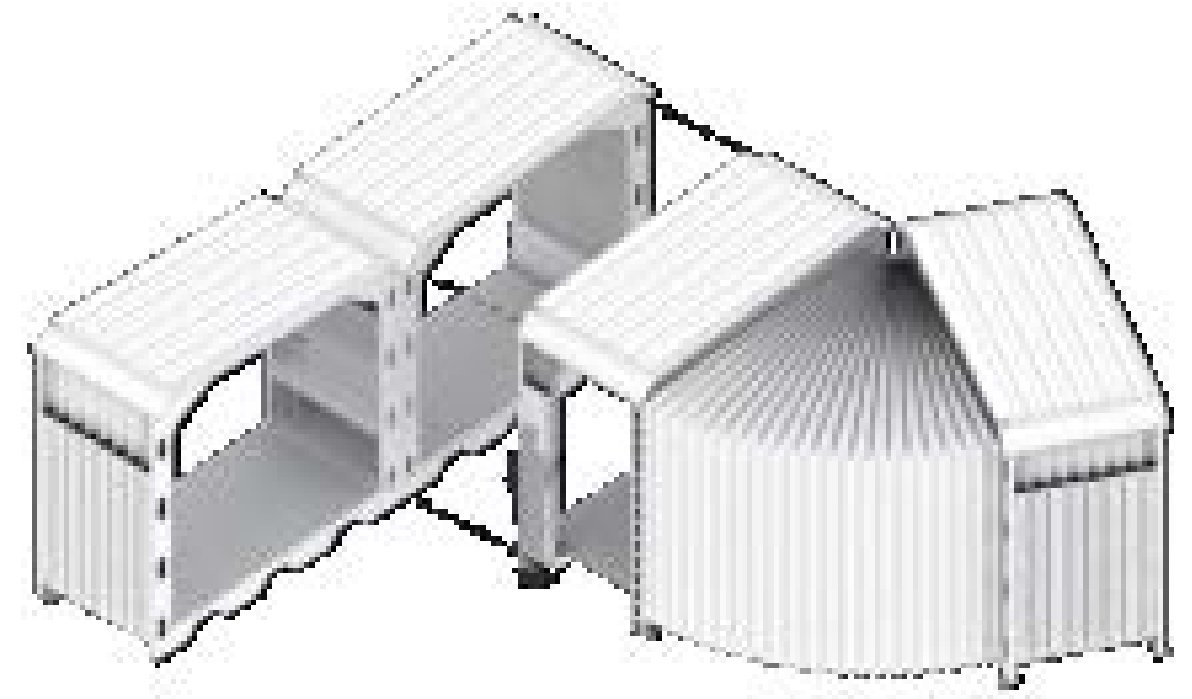
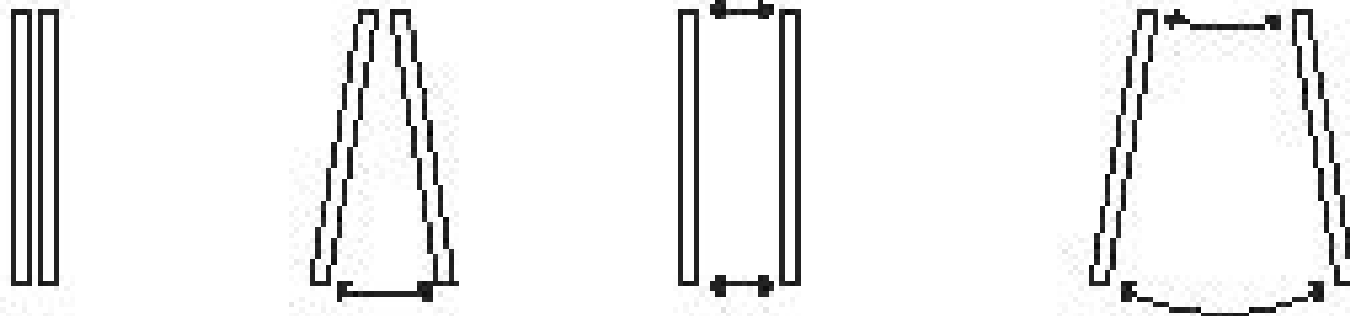
GRID STRUCTURE



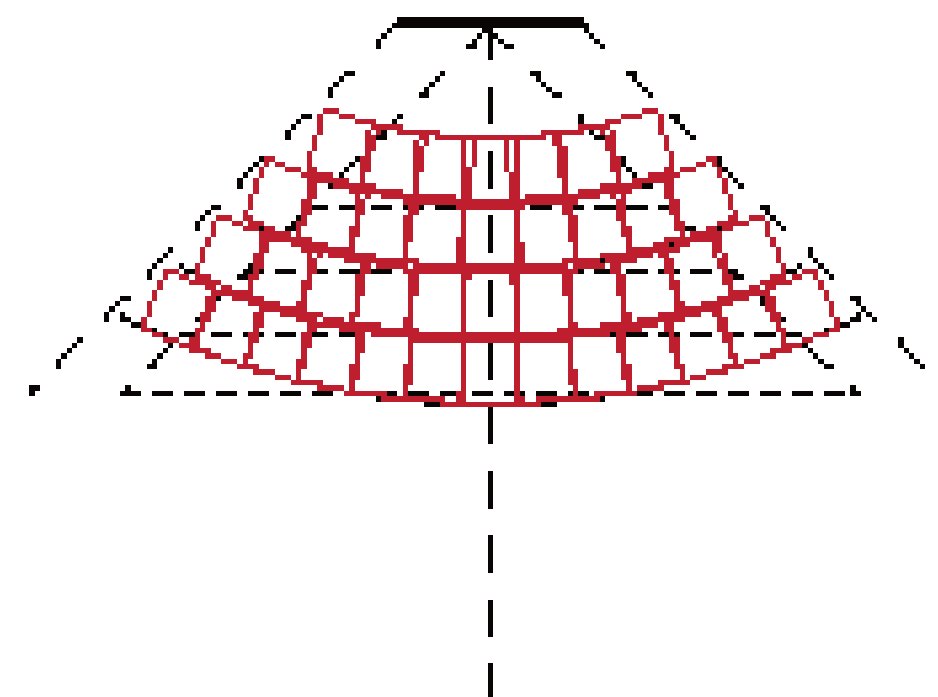
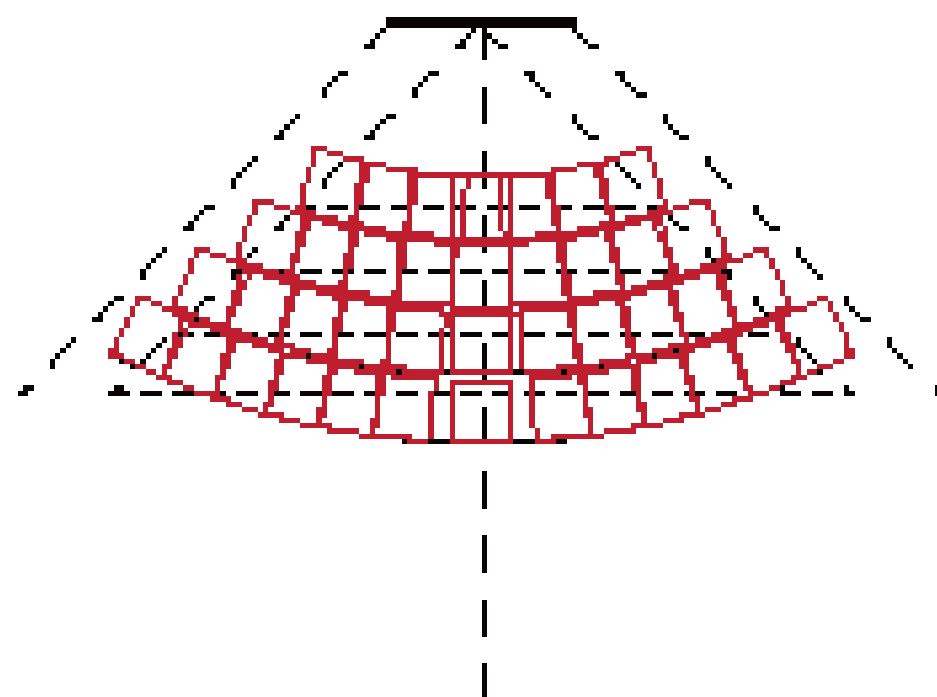
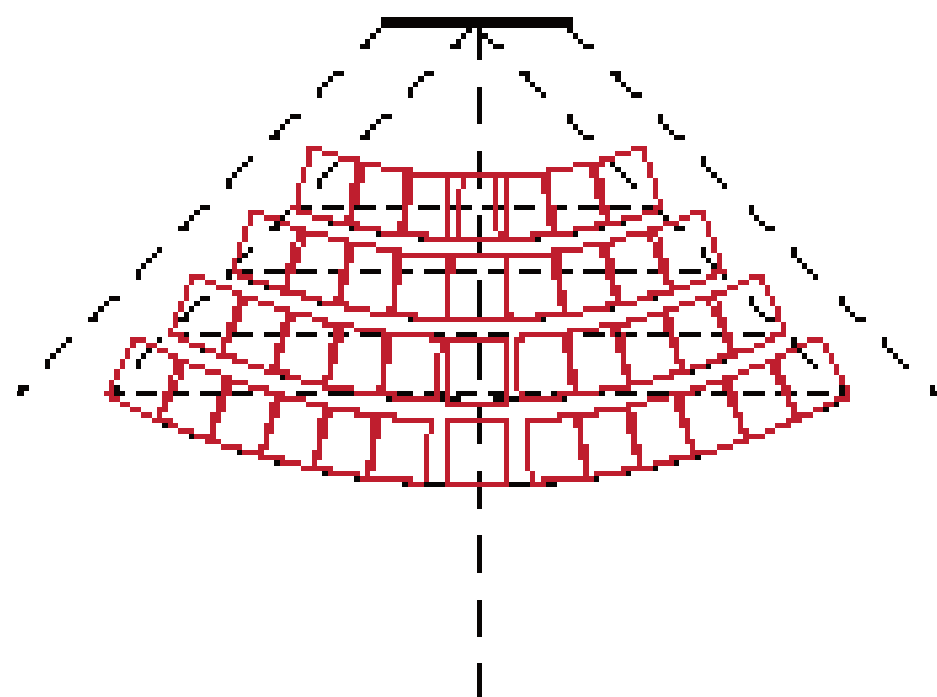
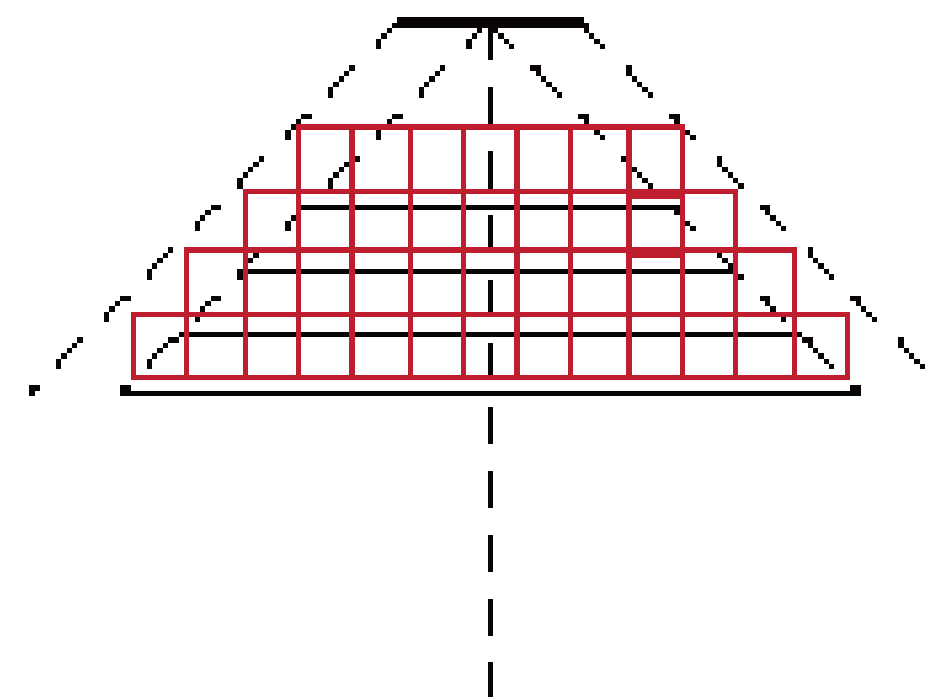
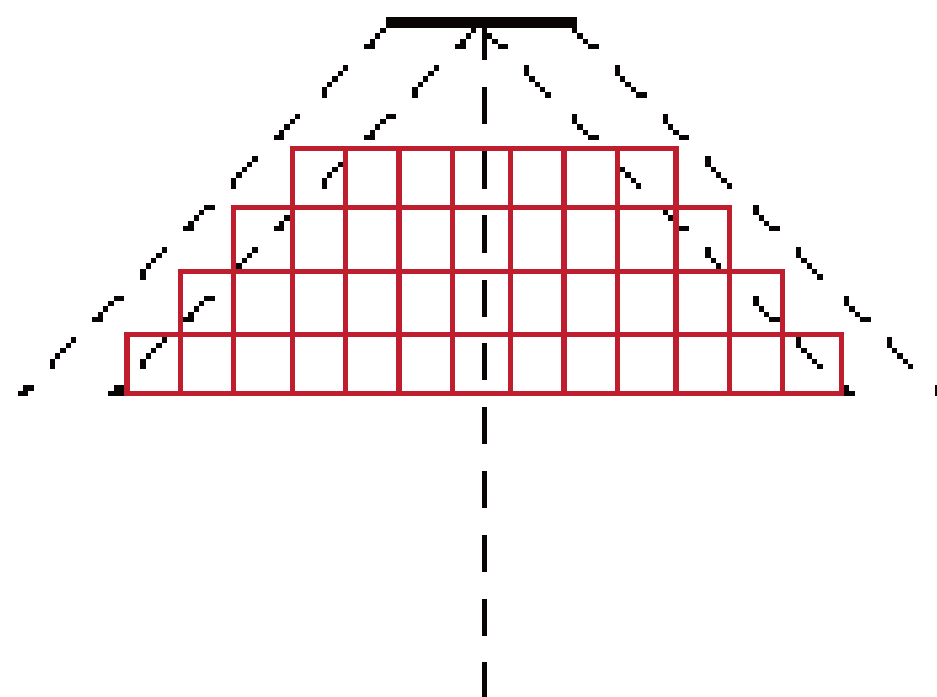
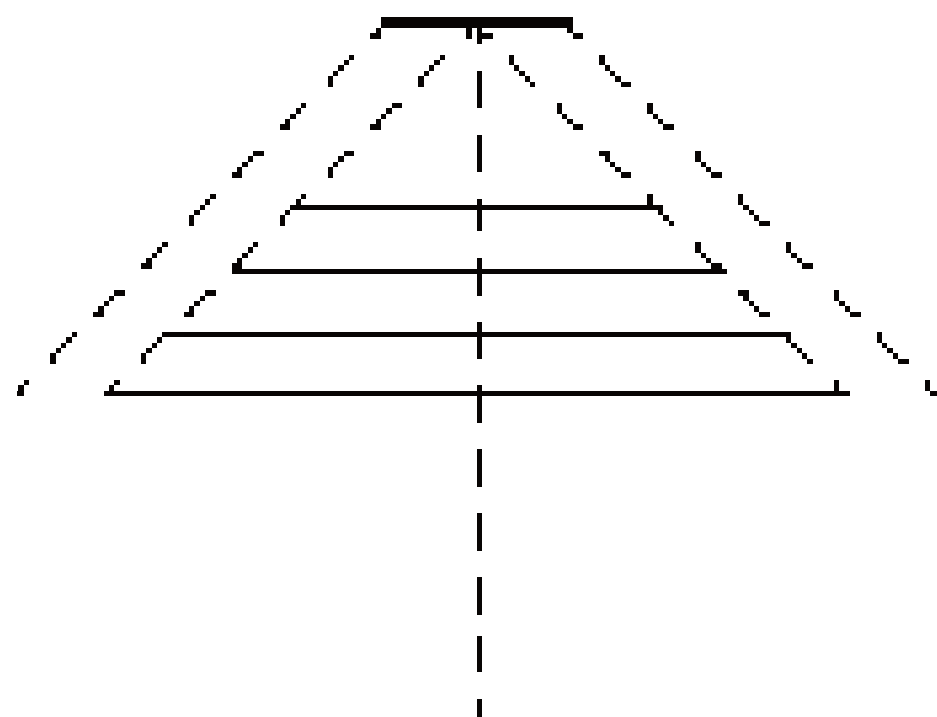
LAYERS STRUCTURE



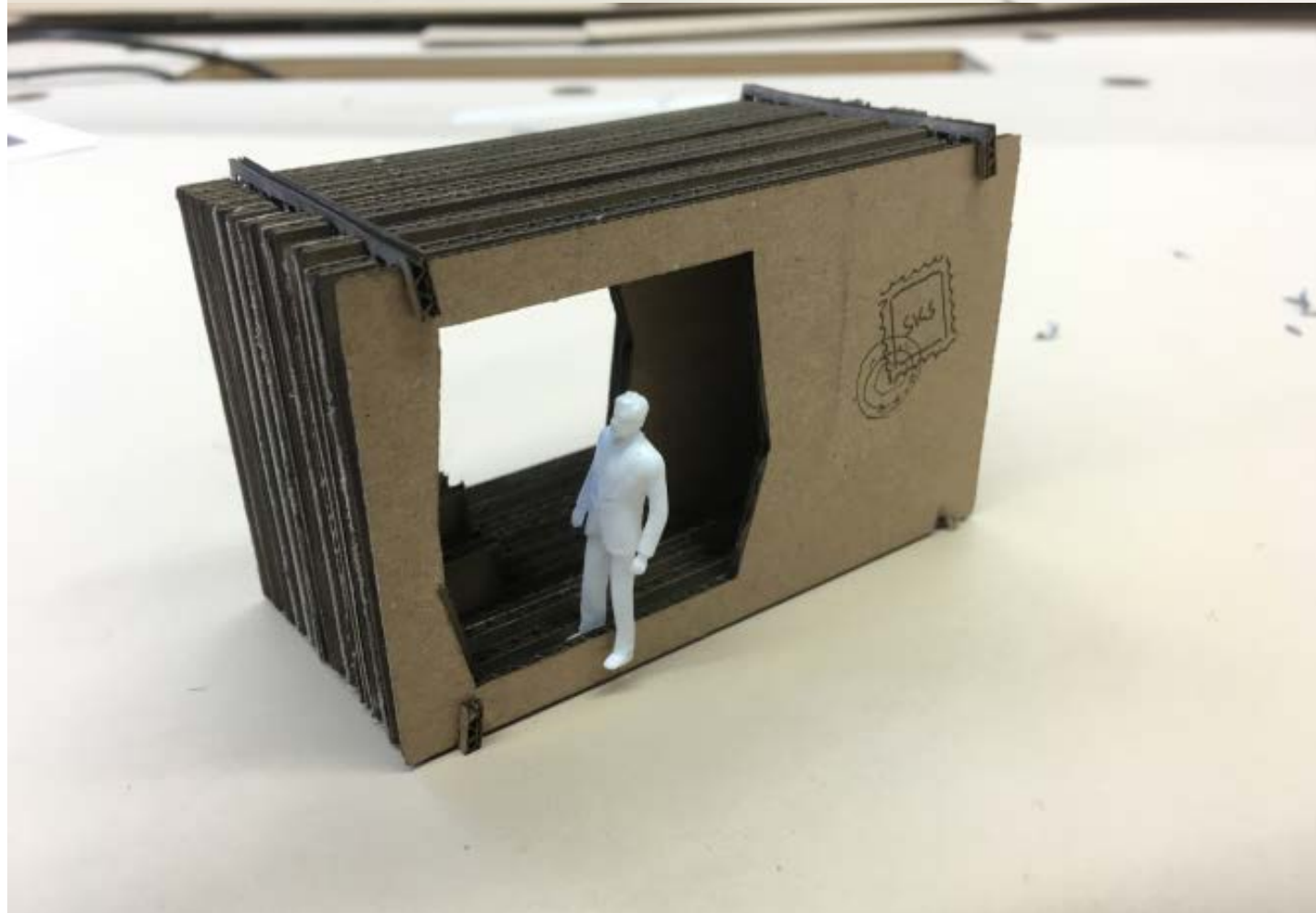
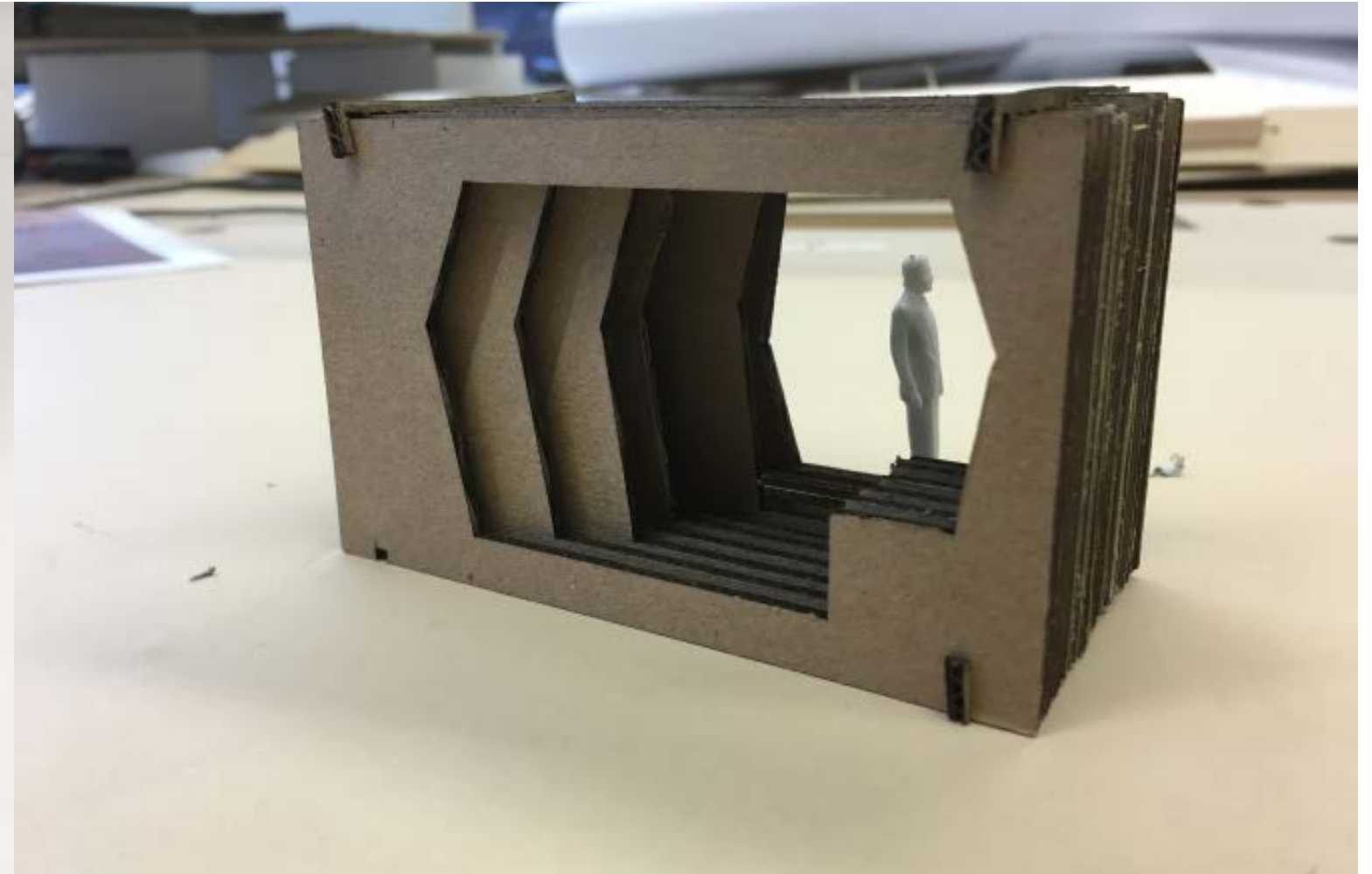
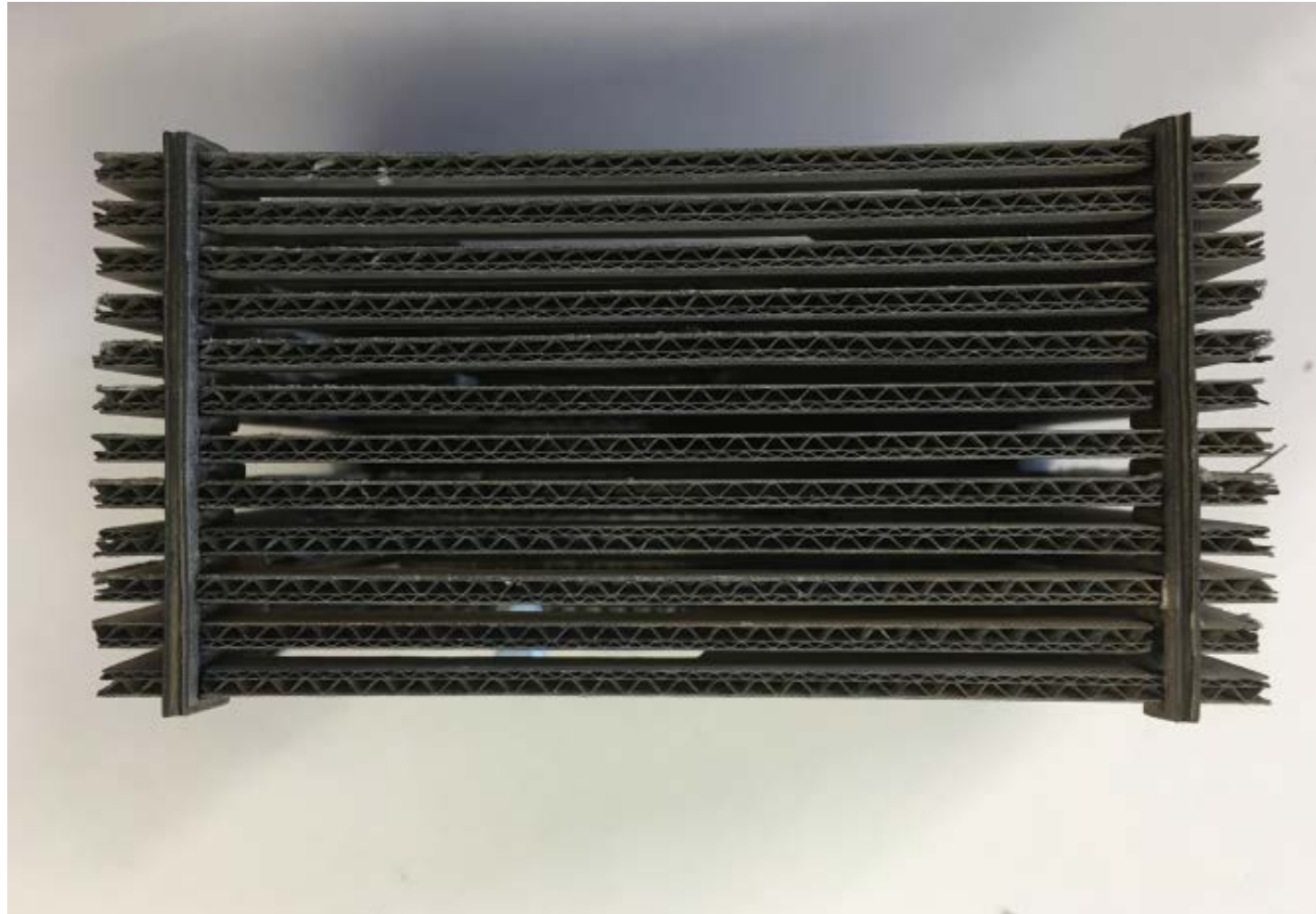
Accordion



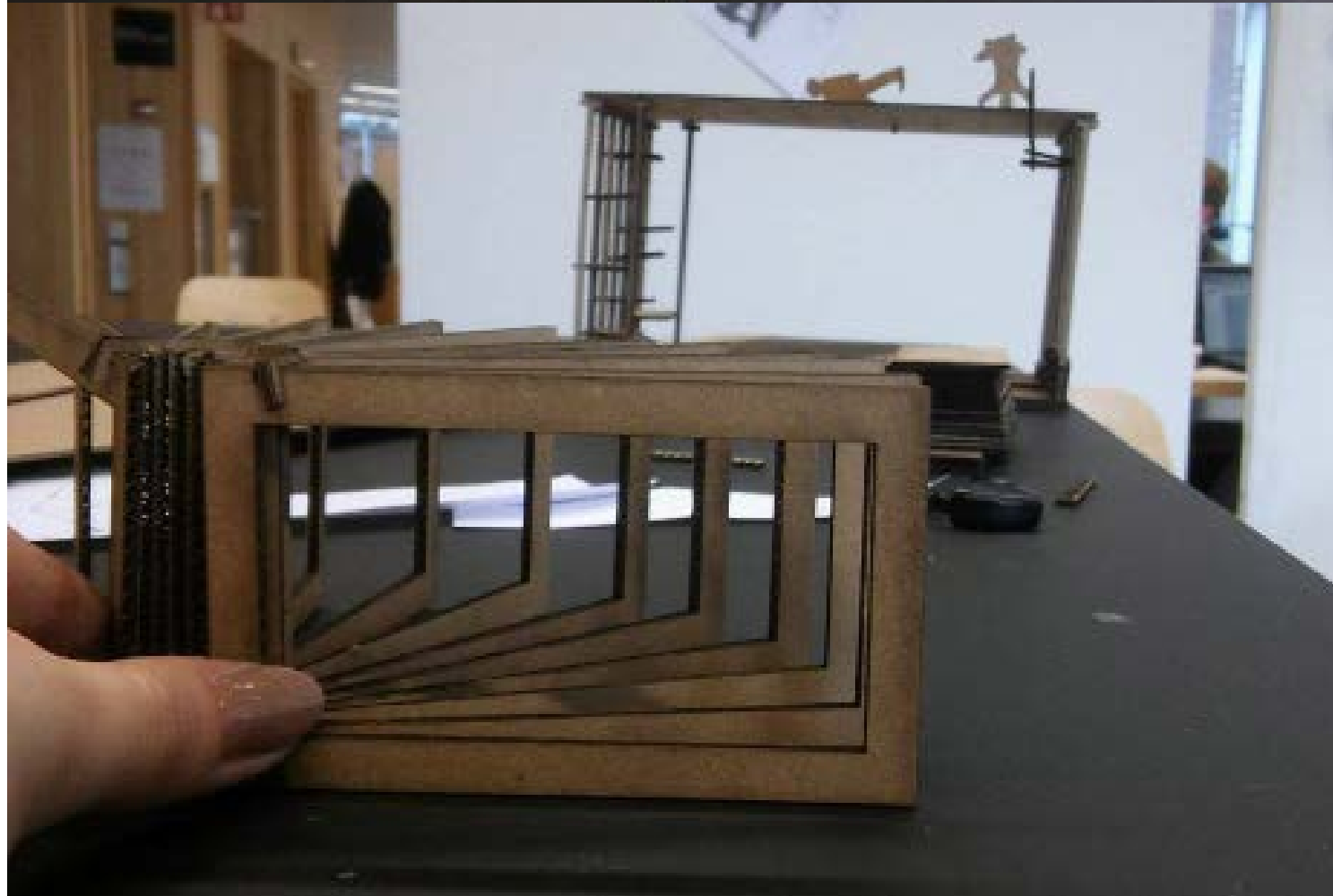
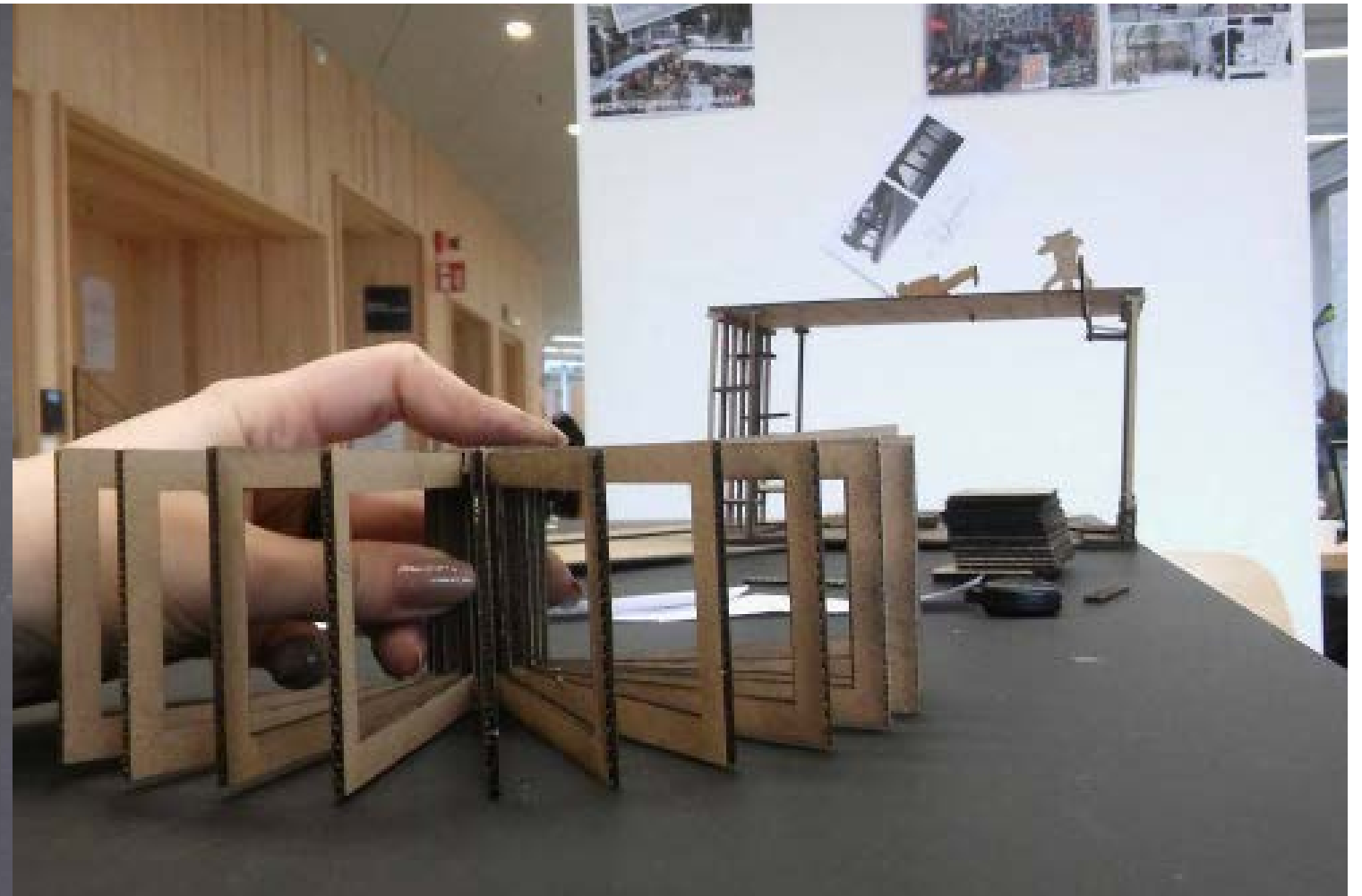
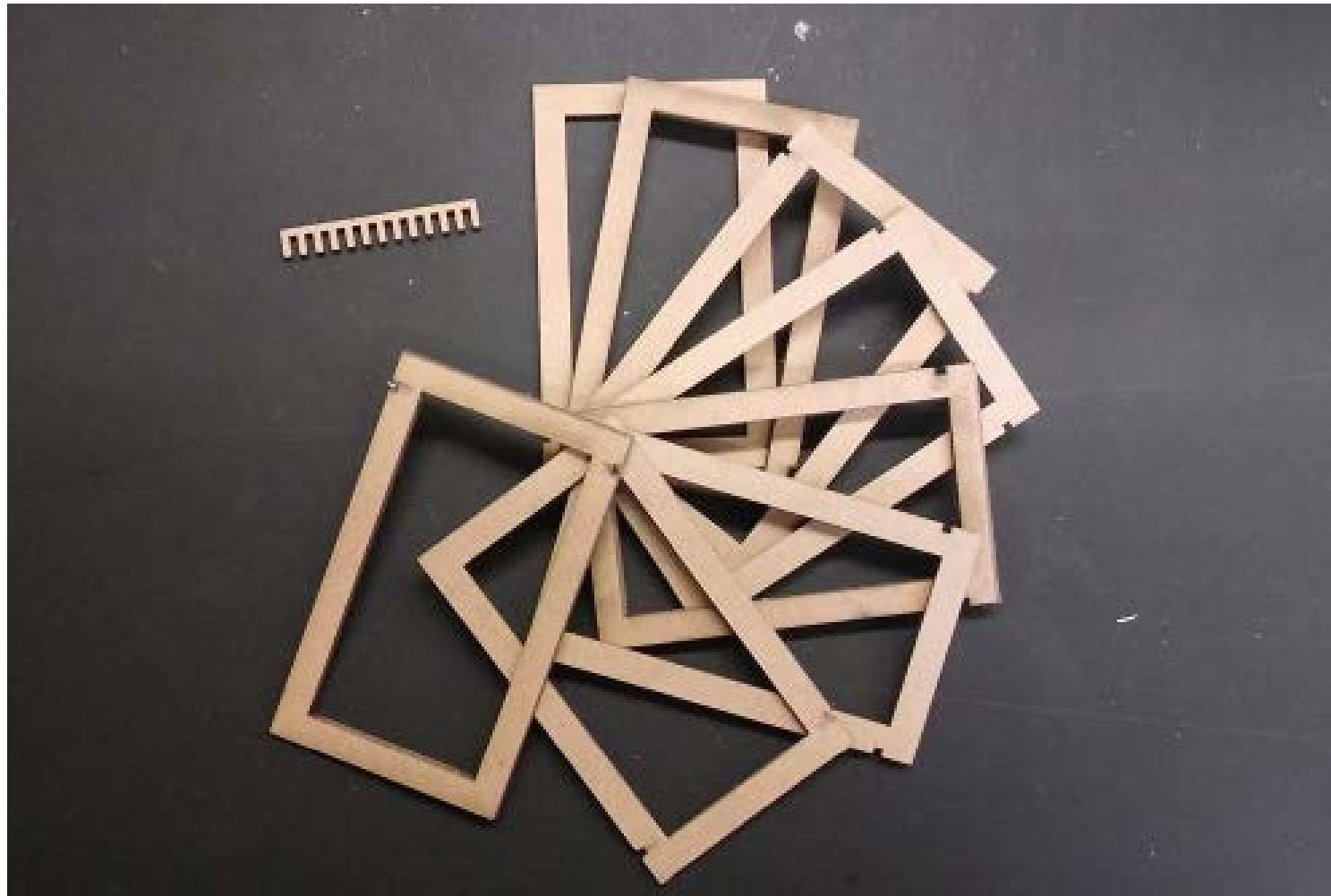
PLAN



LAYERS STRUCTURE



LAYERS STRUCTURE



AFTER GROUP MEETING NUMBER TWO

OTHER DIRECTIONS:

Tripod structure
flexible and foldable : how?

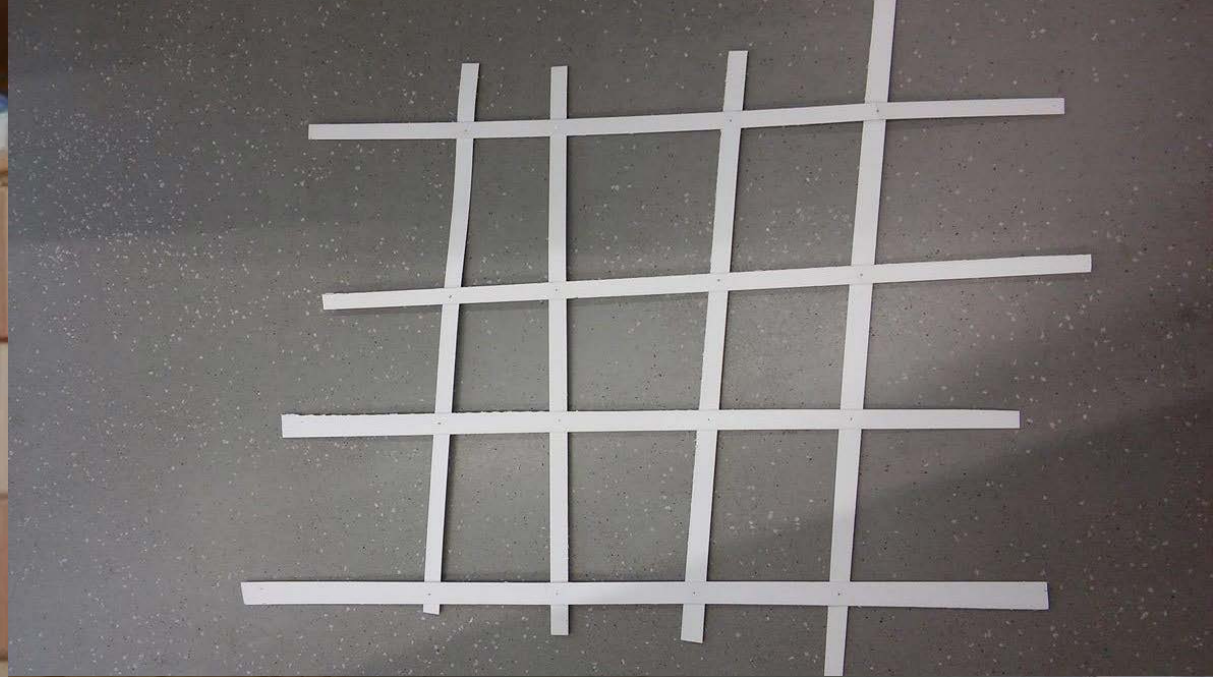
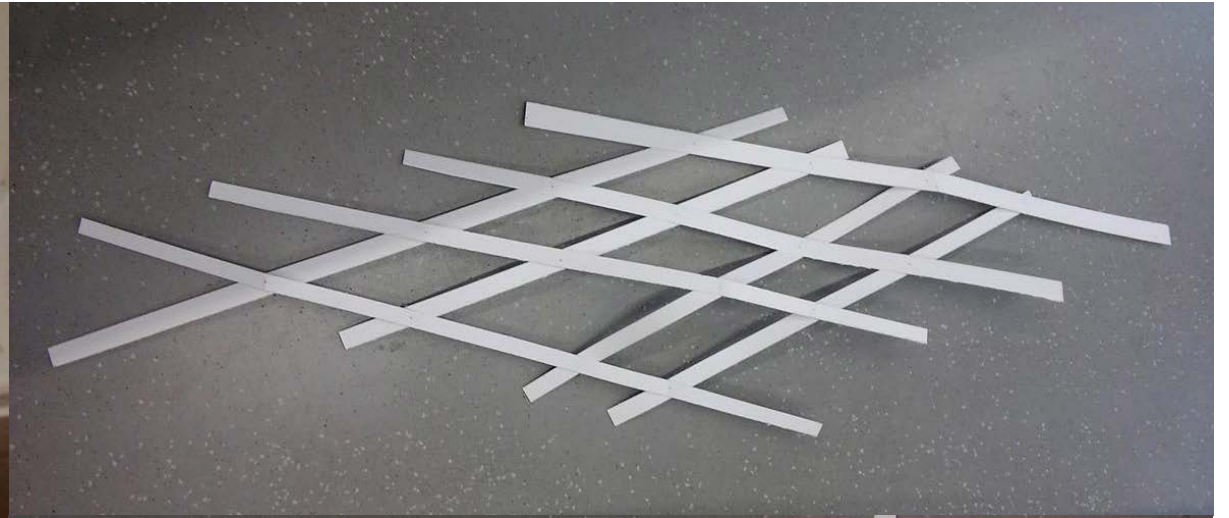
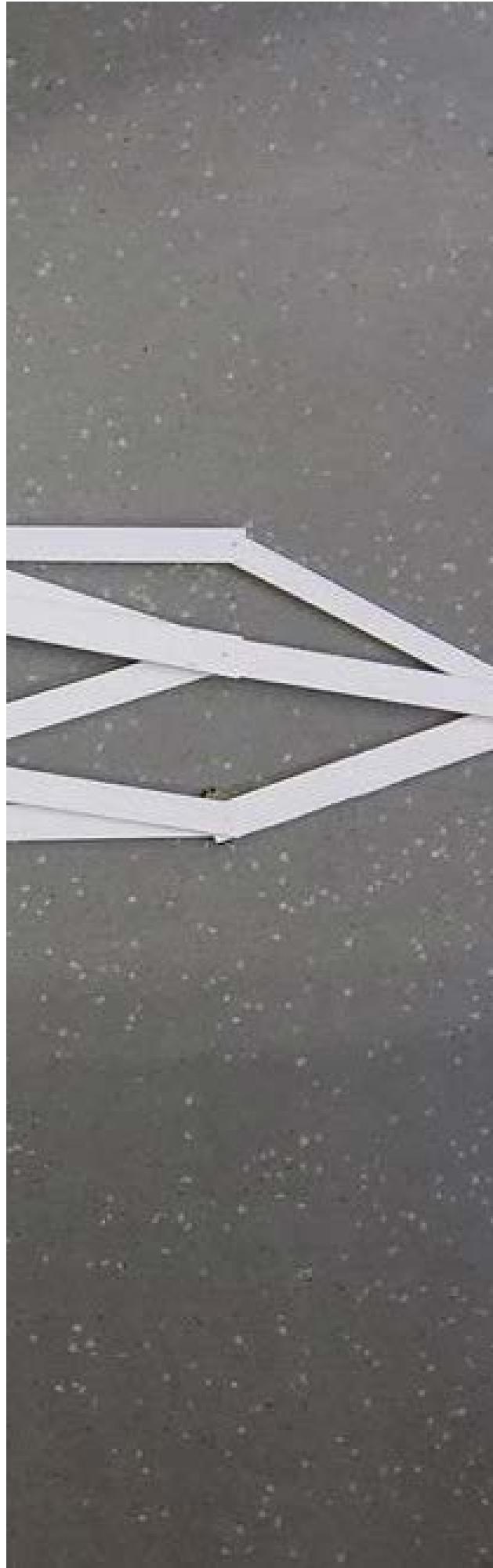
TRYING THE EXPERIENCE AND DIMENSIONS



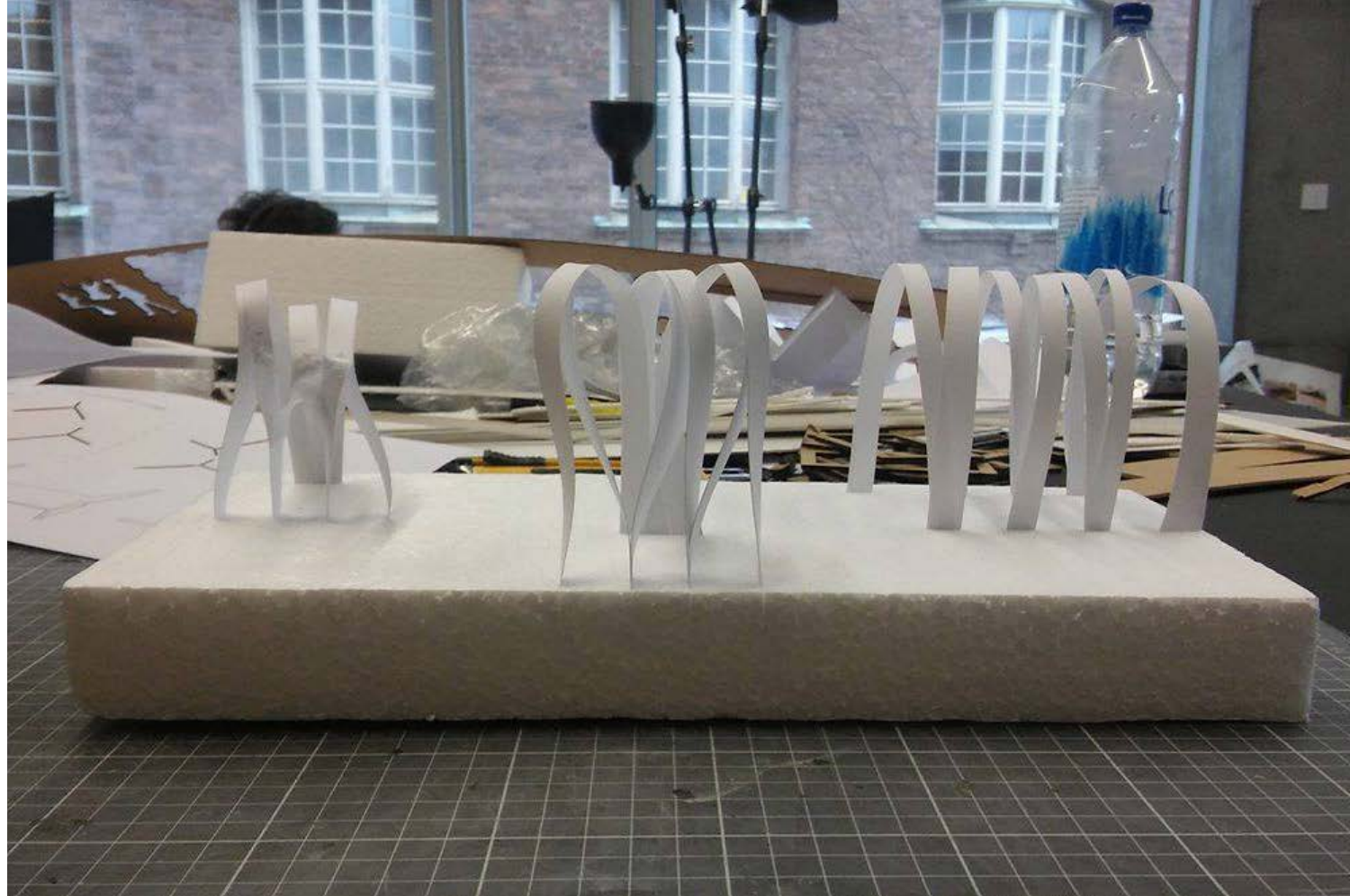
FLEXIBLE AND FOLDABLE : HOW?



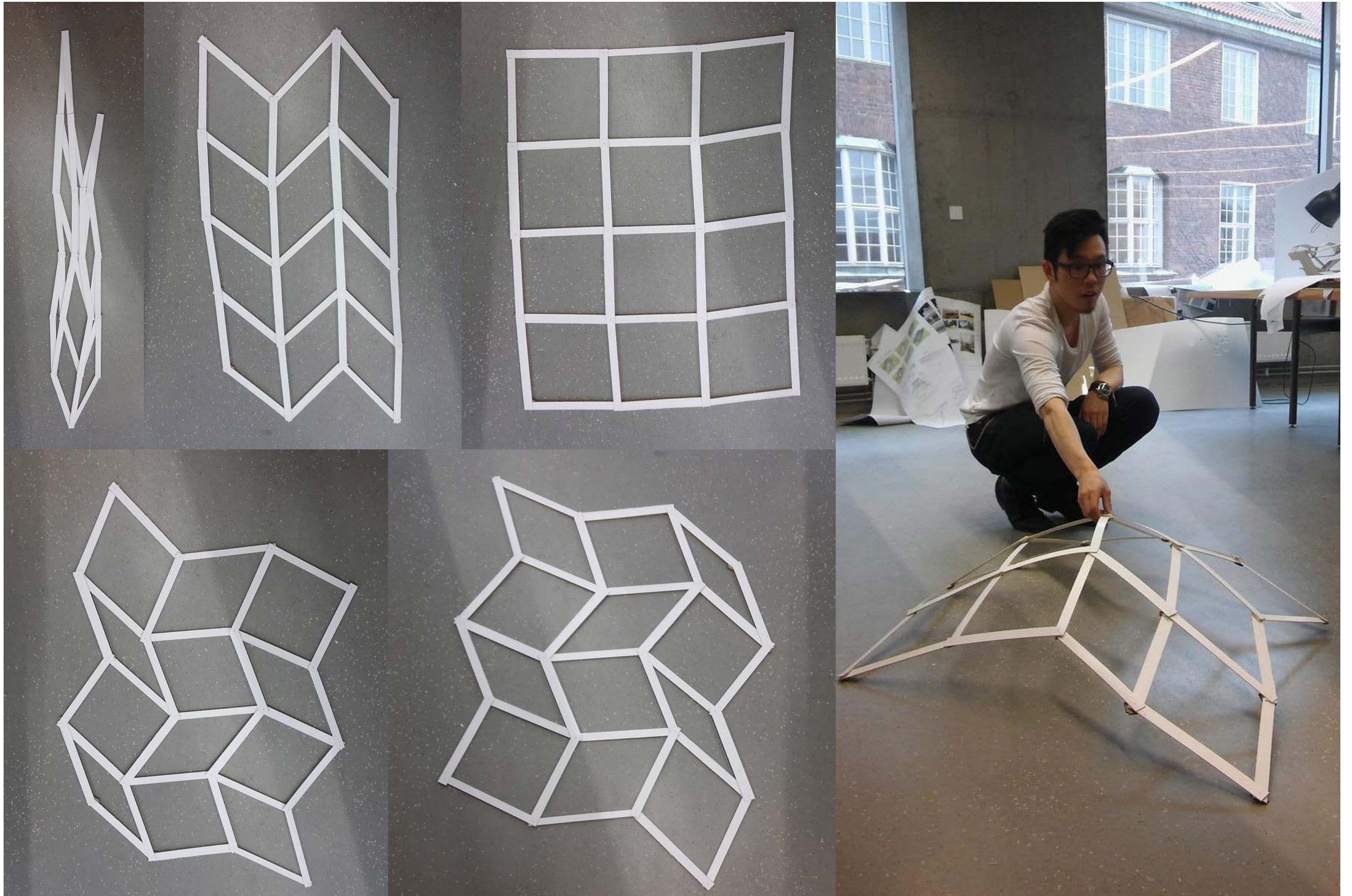
FLEXIBLE AND FOLDABLE : HOW?



FLEXIBLE AND FOLDABLE : HOW?

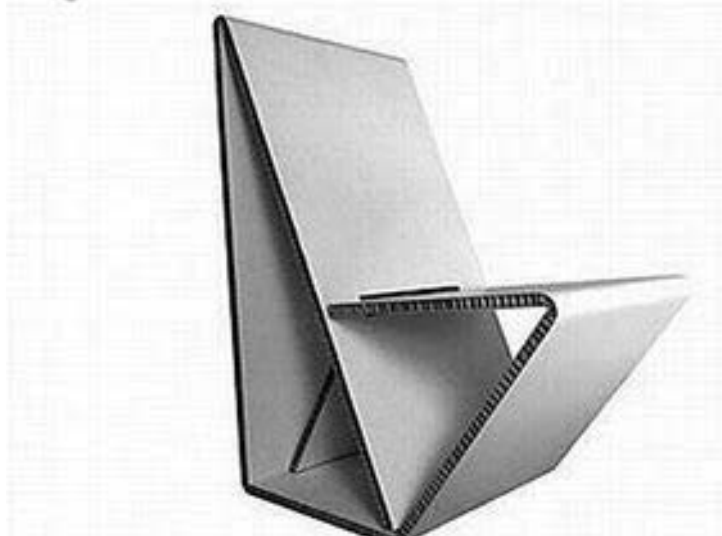
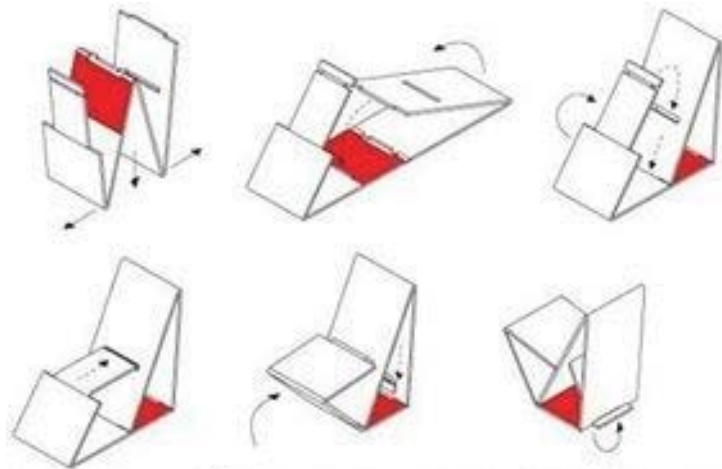


FLEXIBLE AND FOLDABLE : HOW?



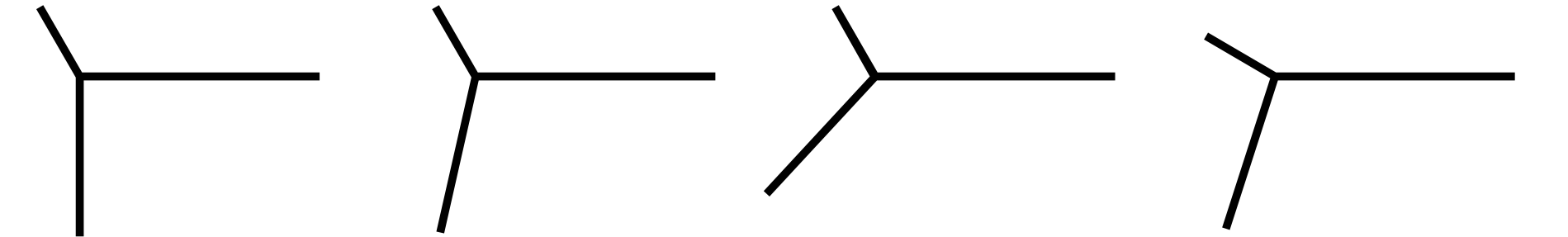
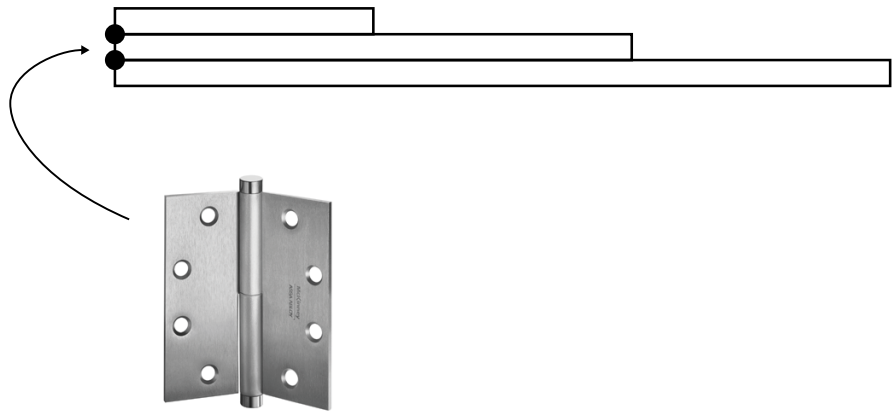
FLEXIBLE AND FOLDABLE : HOW?

FOLDABLE SEATING IDEAS

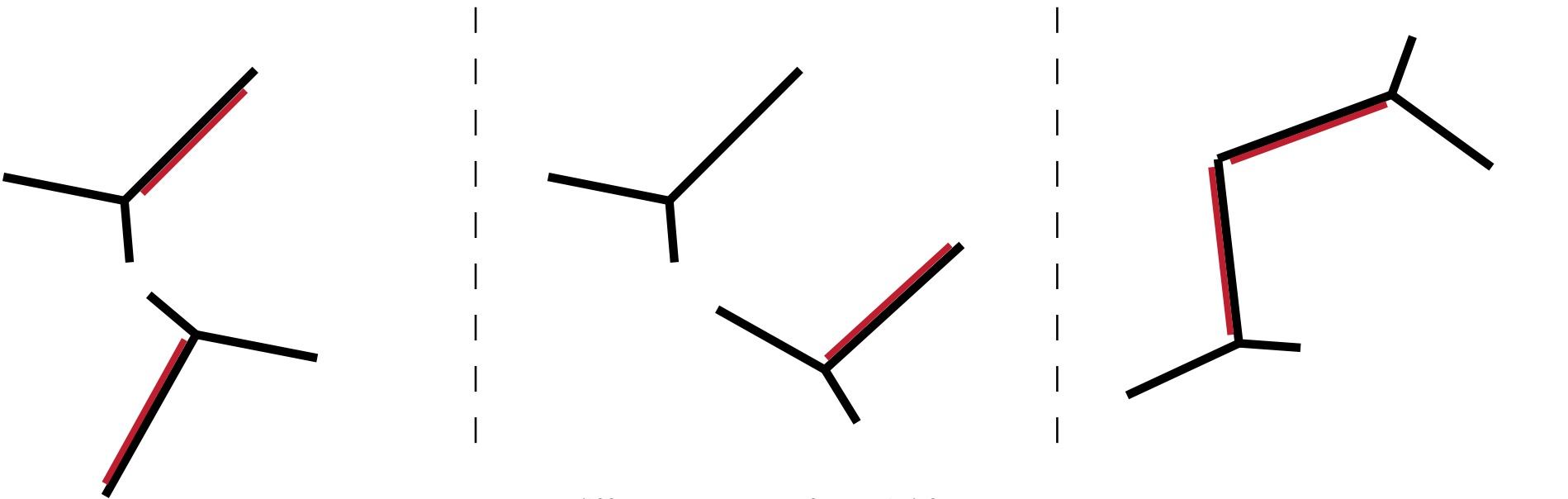
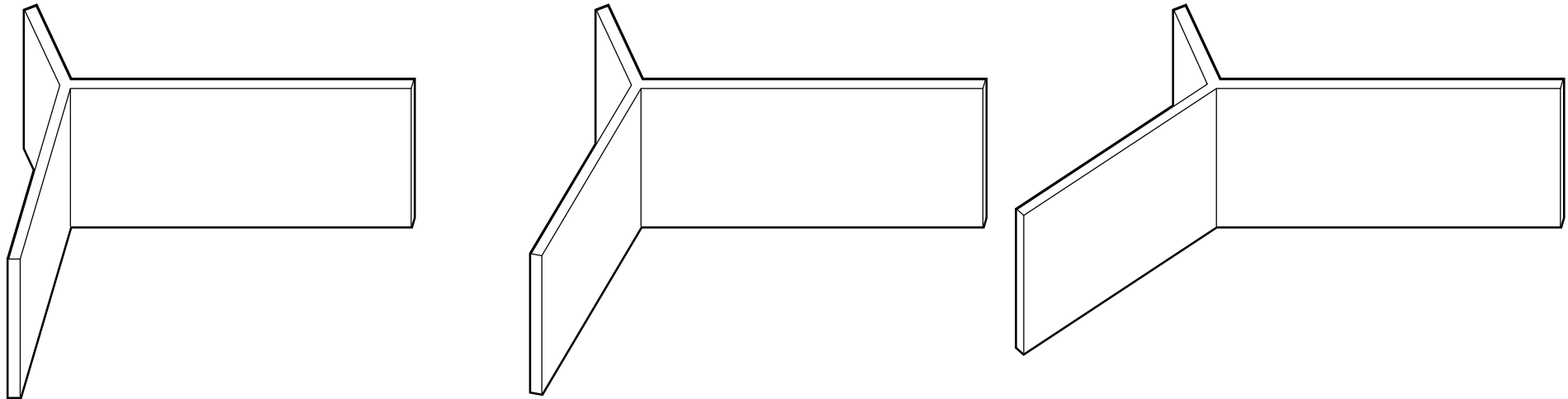


Triangulated Hinge

double hinge mechanism = foldability

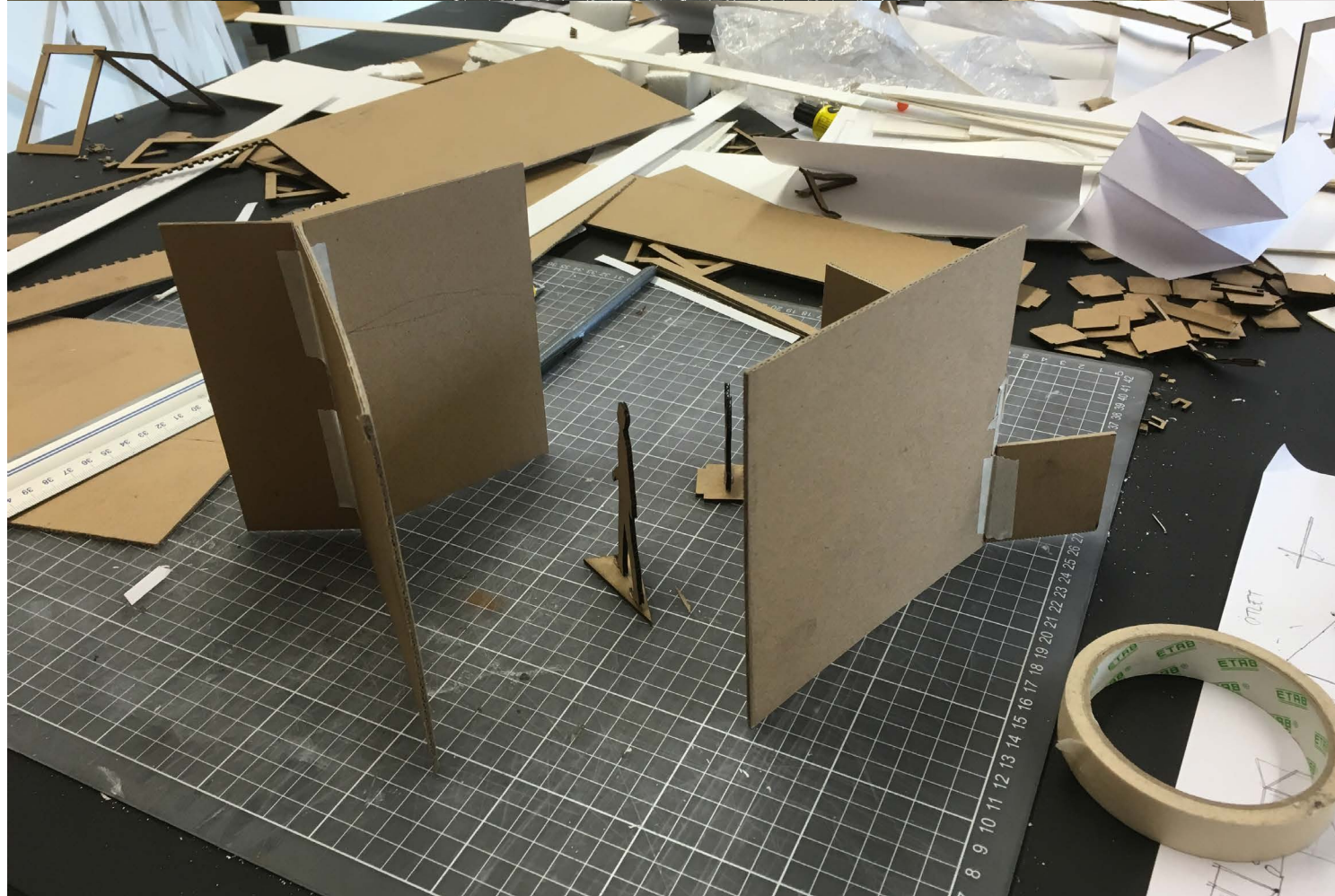
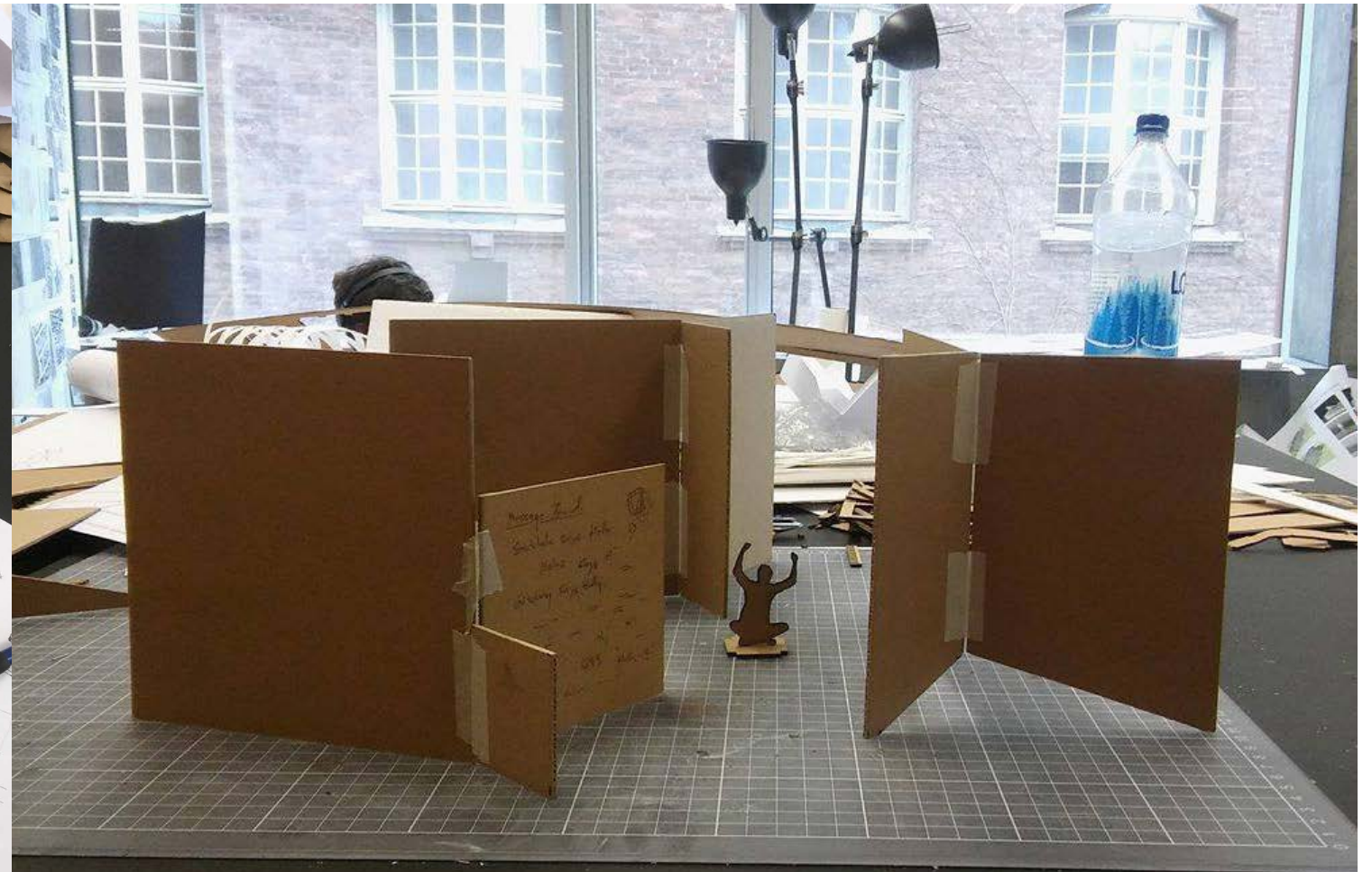


variable opening angles



different cases of spatial forms

TRIPOD STRUCTURE MODEL



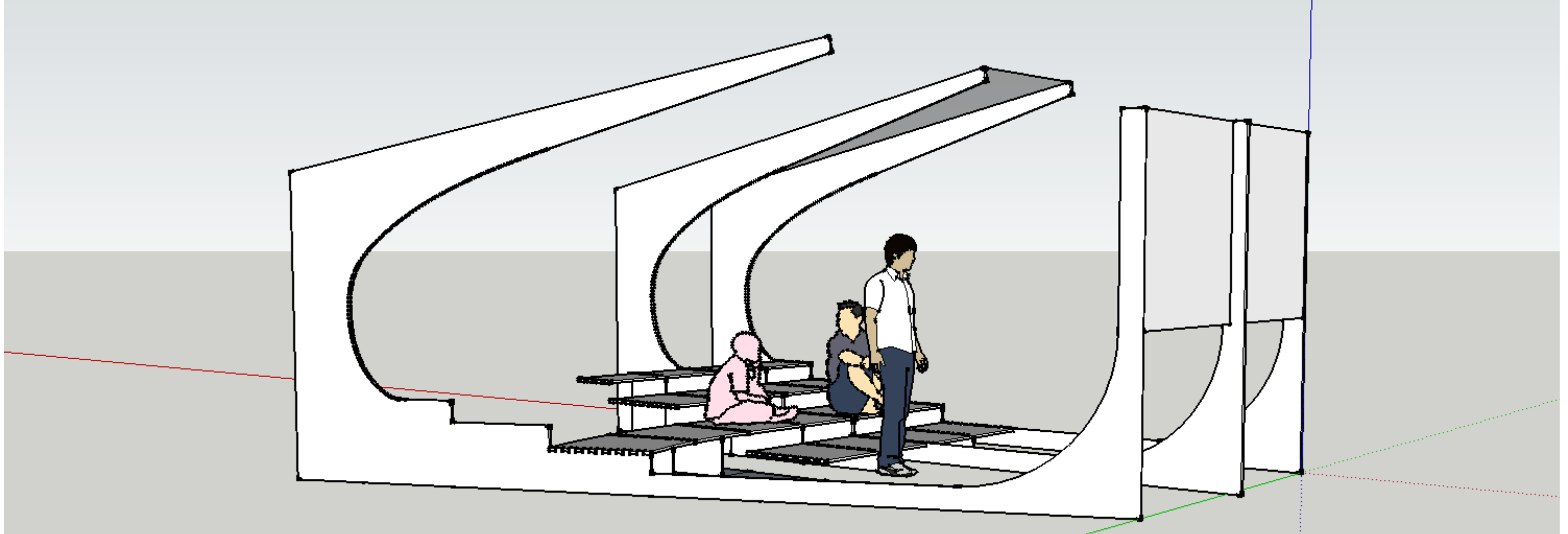
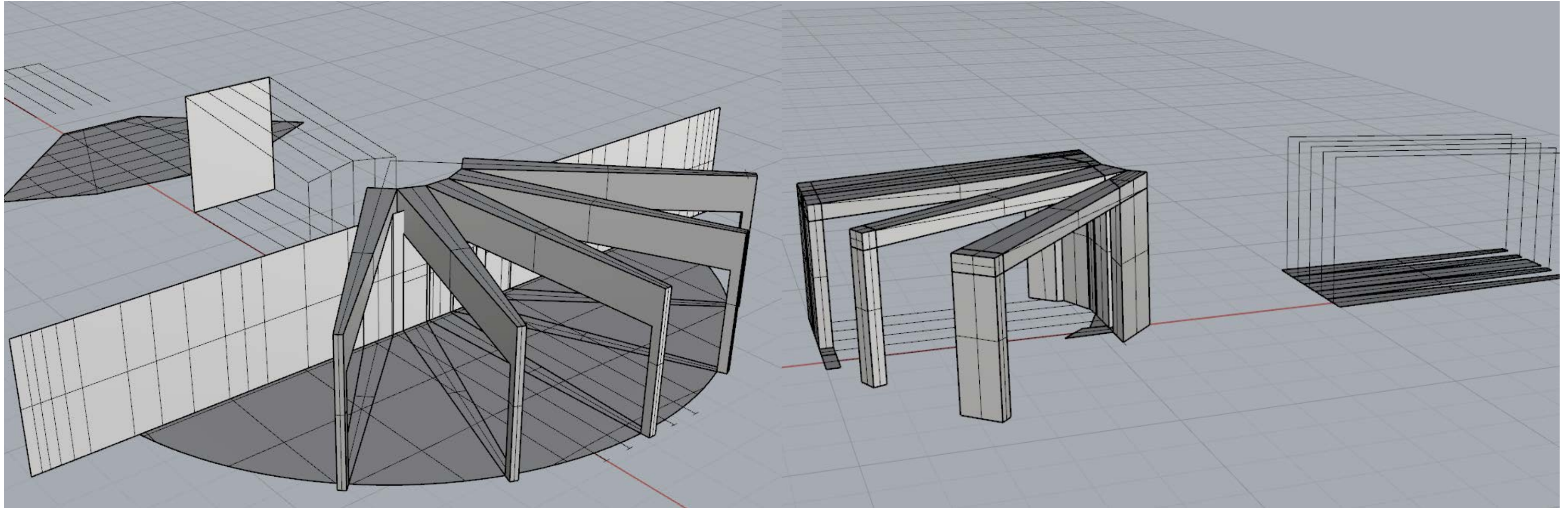
GROUP MEETINGS



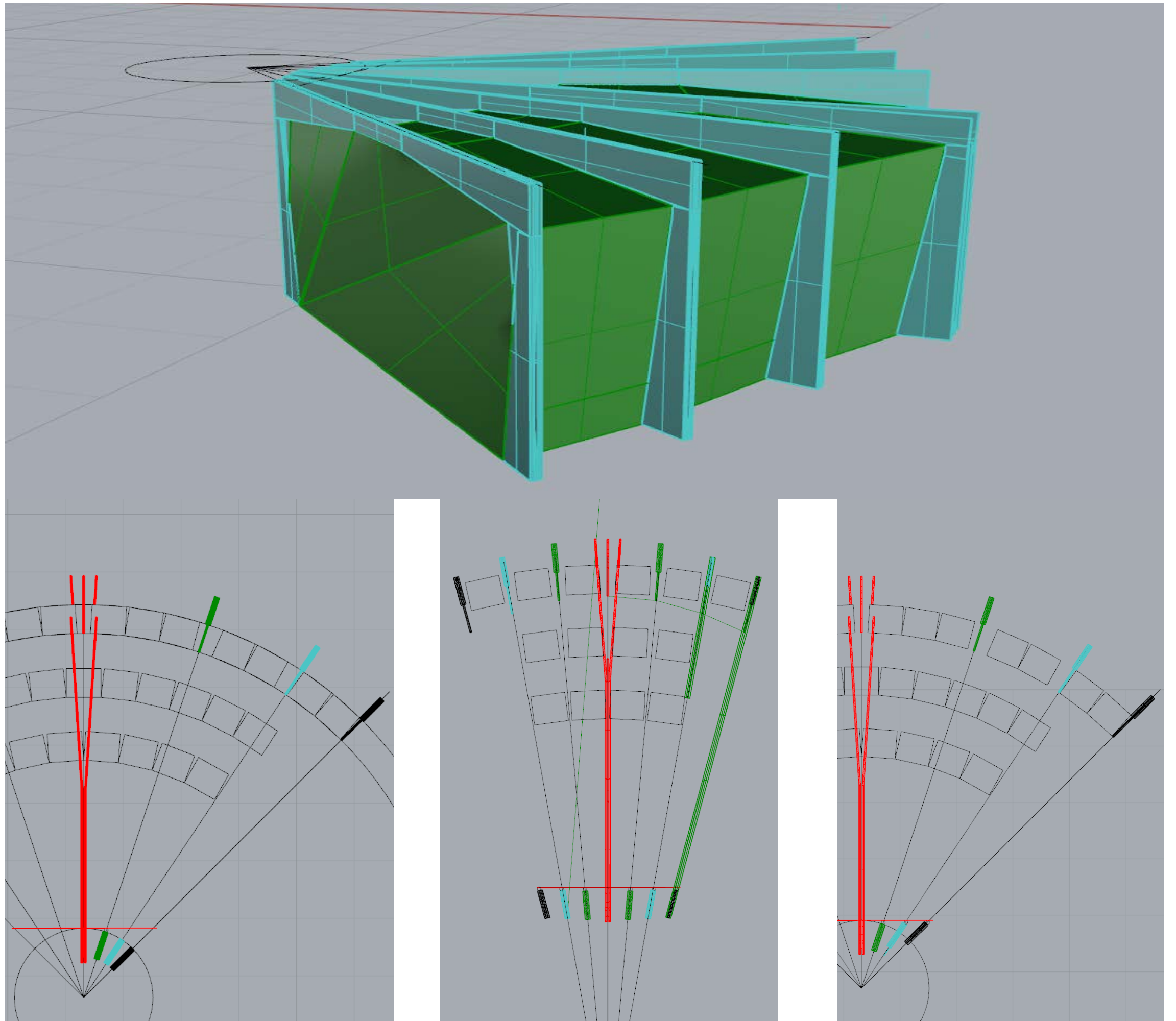
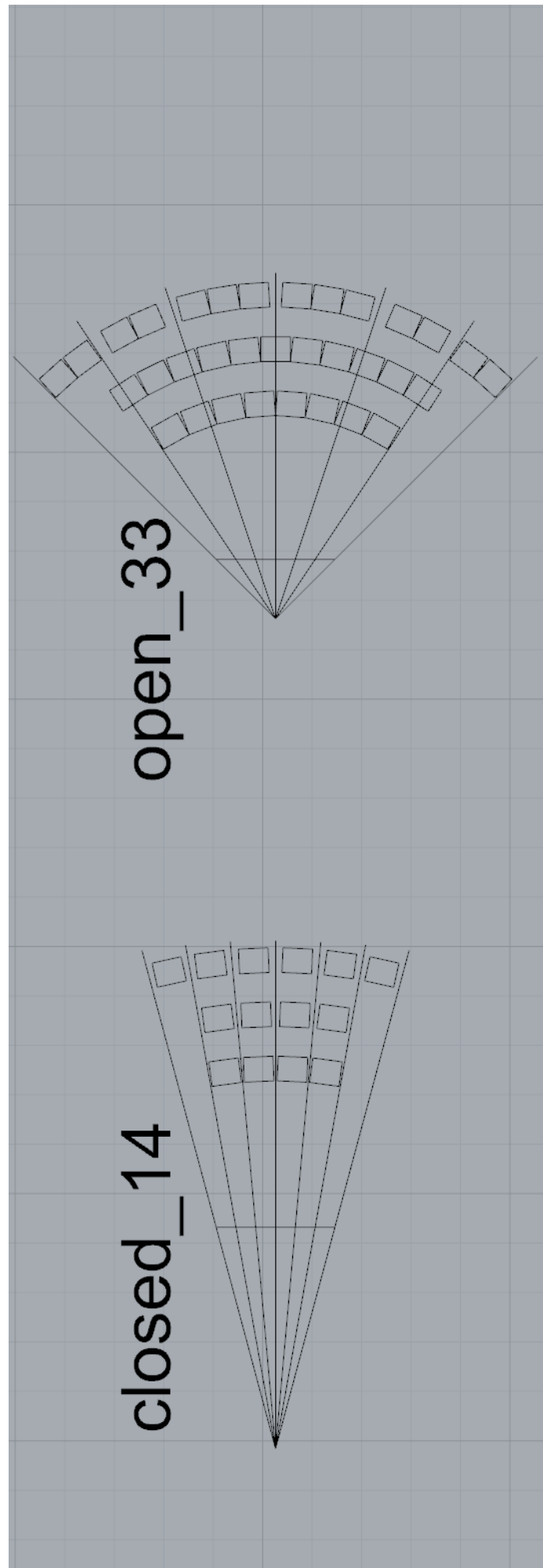
GROUP MEETINGS



ACCORDION

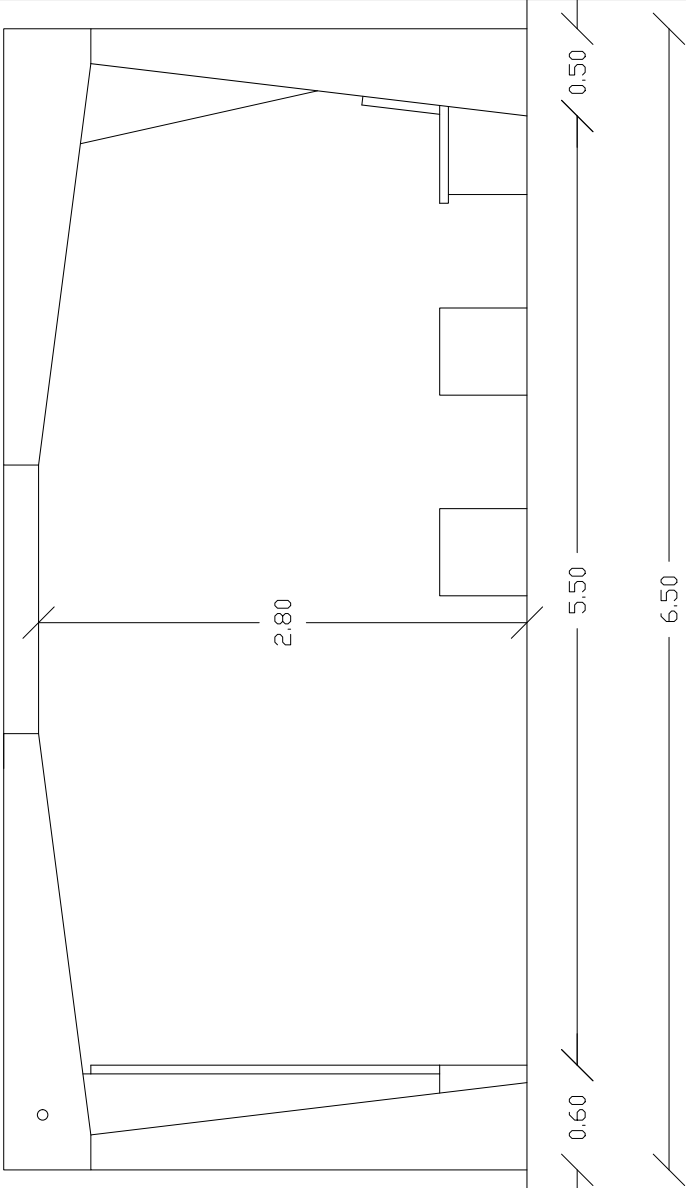


ACCORDION

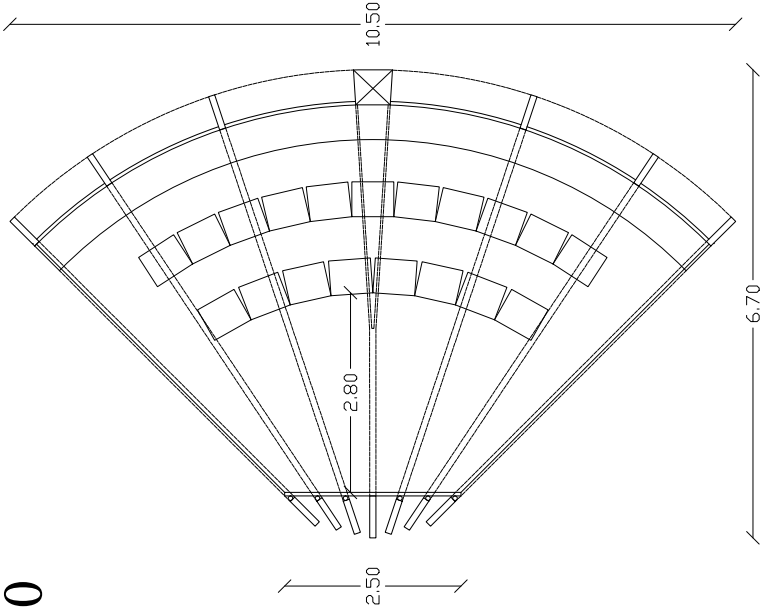




The Accordion



Elevation 1:20



Plan 1:50

Concept

The idea of the accordion. Harmonica-like opening and extending. 3 levels of opening up.

CLOSED
small, private event

OPEN
large private event

EXTENDED
public event

Spatial Arrangement

Plandiagrams on how people sit and move in relation to the pavilion

CLOSED
14people

OPEN
33people

EXTENDED
50people

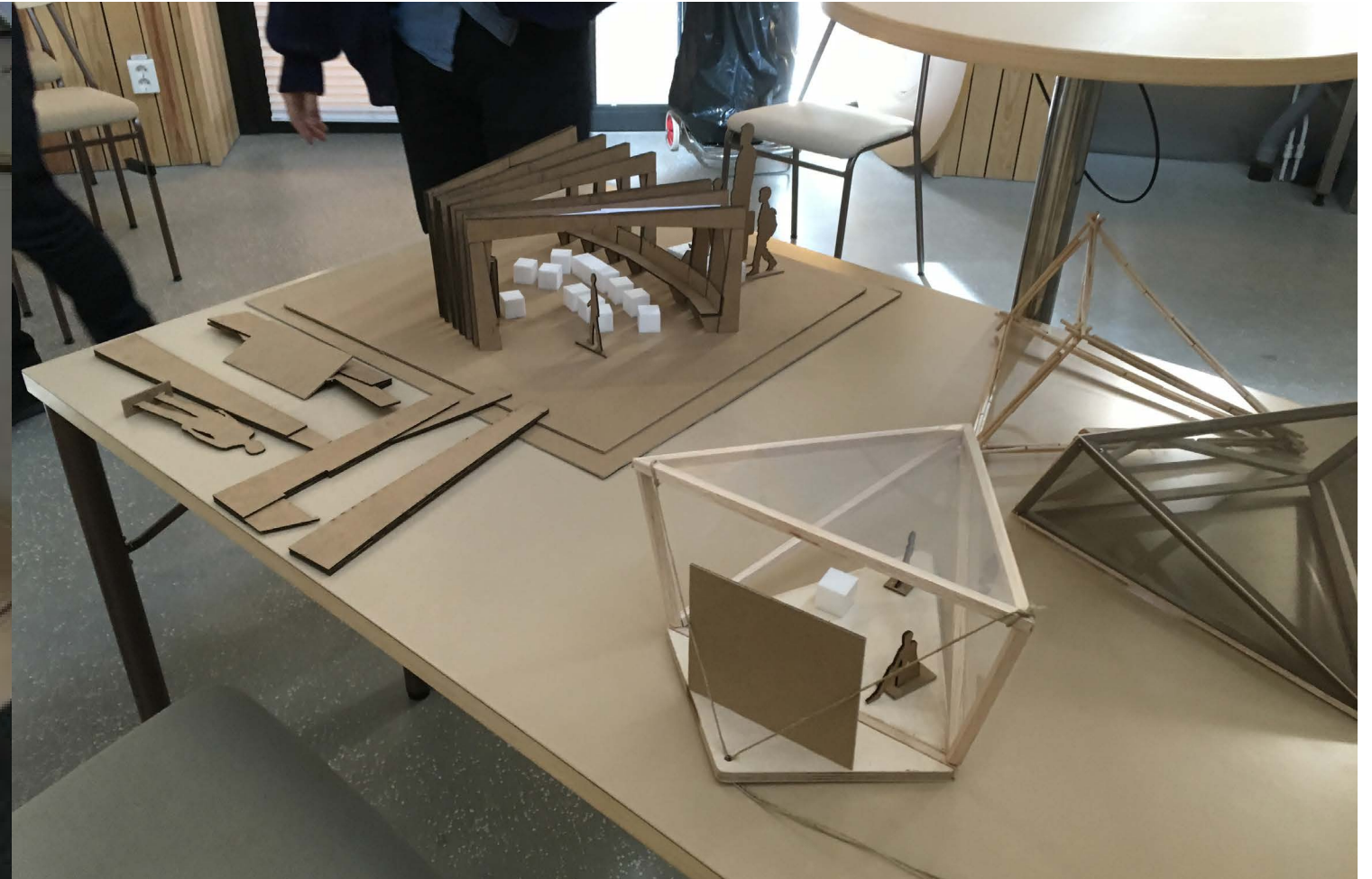
Assembly

Diagrams on how the pavilion will be built in three steps

Material + Cost Estimation

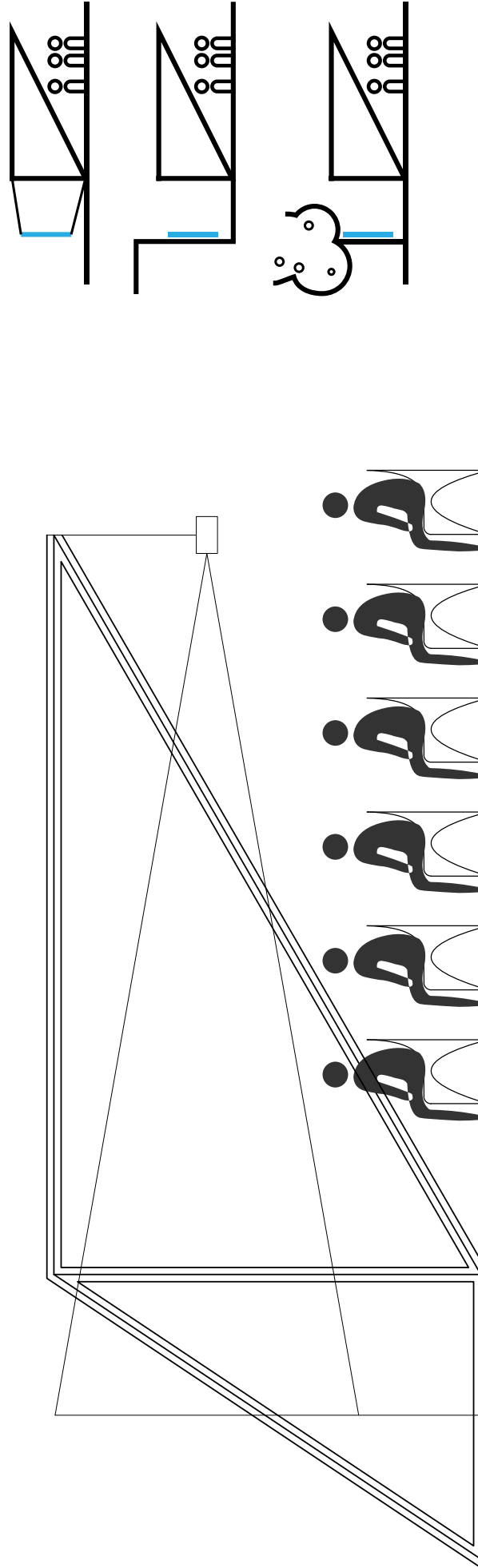
31% OSB Wood	66% Waterproof Tarp	3% Additional elements
Total approx 27 300 SEK incl VAT		

MID CRIT PROPOSAL NUMBER ONE: ACCORDION_MODEL





The Filmcone



Elevation 1:20

Concept

The idea of the projection cone. Where the “beam” of the projection creates the outer shape of the pavilion, giving it a very distinct character.

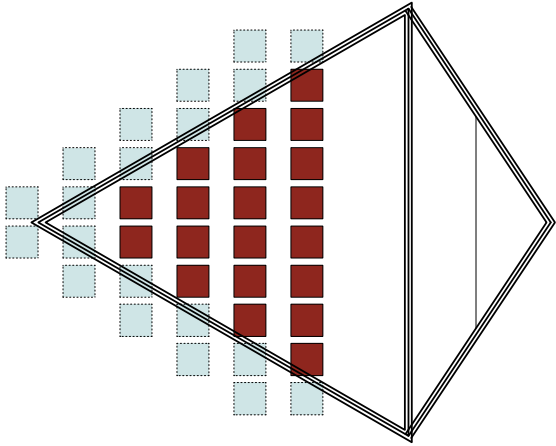
Spatial Arrangement

This diagram shows possible arrangements of the audience with 10 to 40 people.

Structure & Assembly

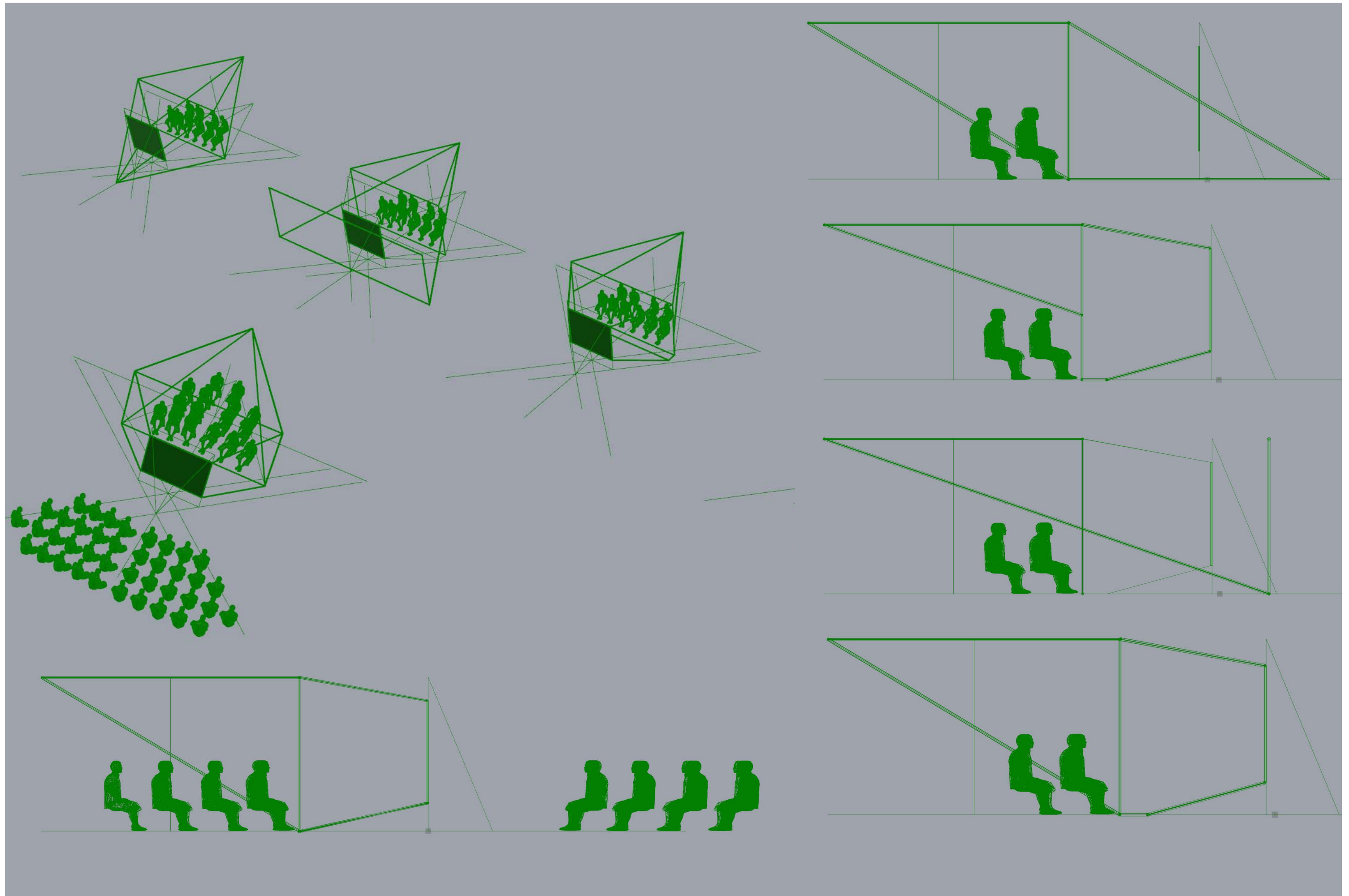
Material + Cost Estimation

41% Construction Plywood	4% Wooden Beam	46% Waterproof Tarp	4% Screws	4% Wires
Total approx 19 500 SEK incl VAT				

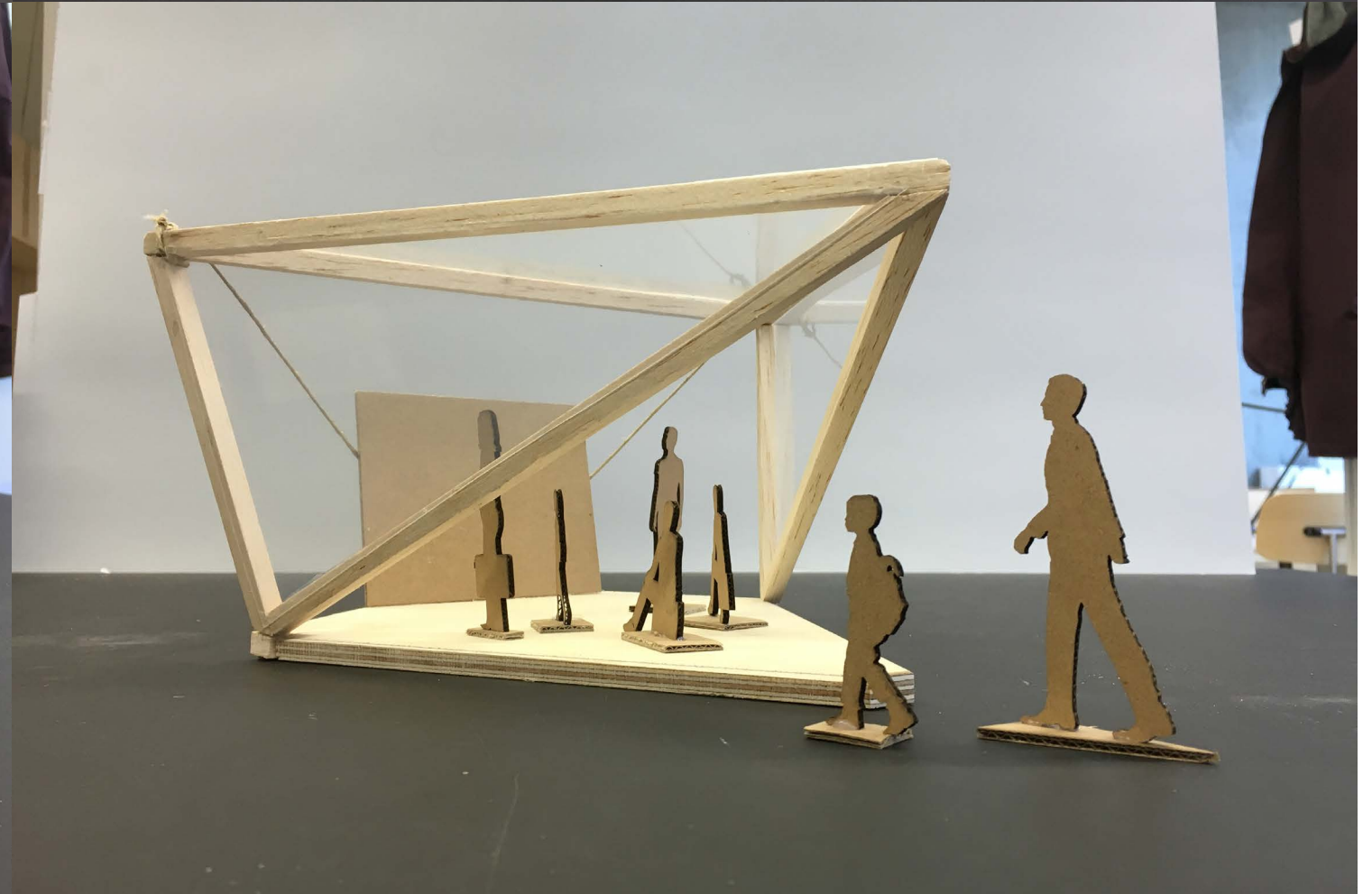
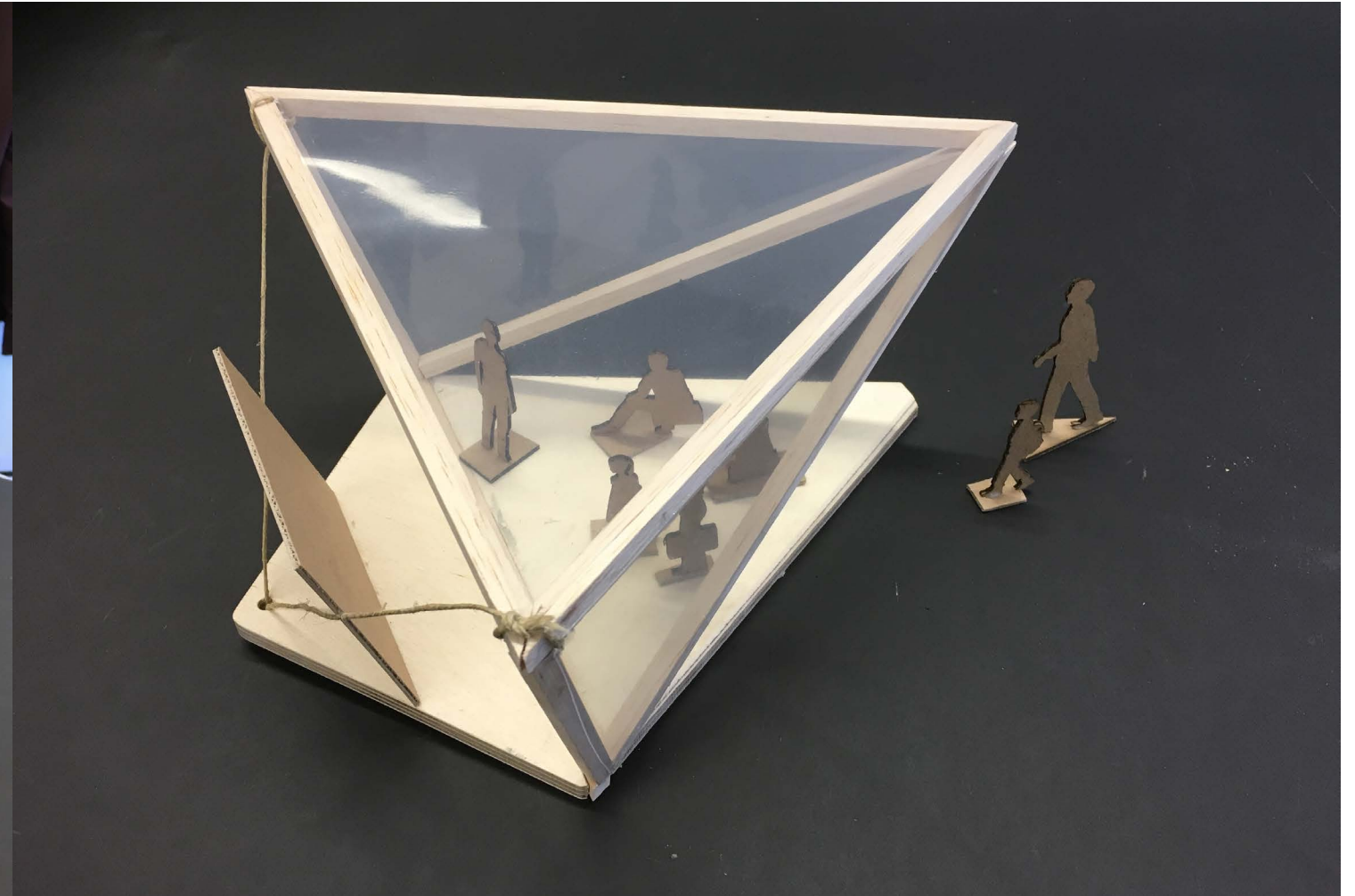


Plan 1:50

MID CRIT PROPOSAL NUMBER TWO: PROJECTION CONE_MODEL

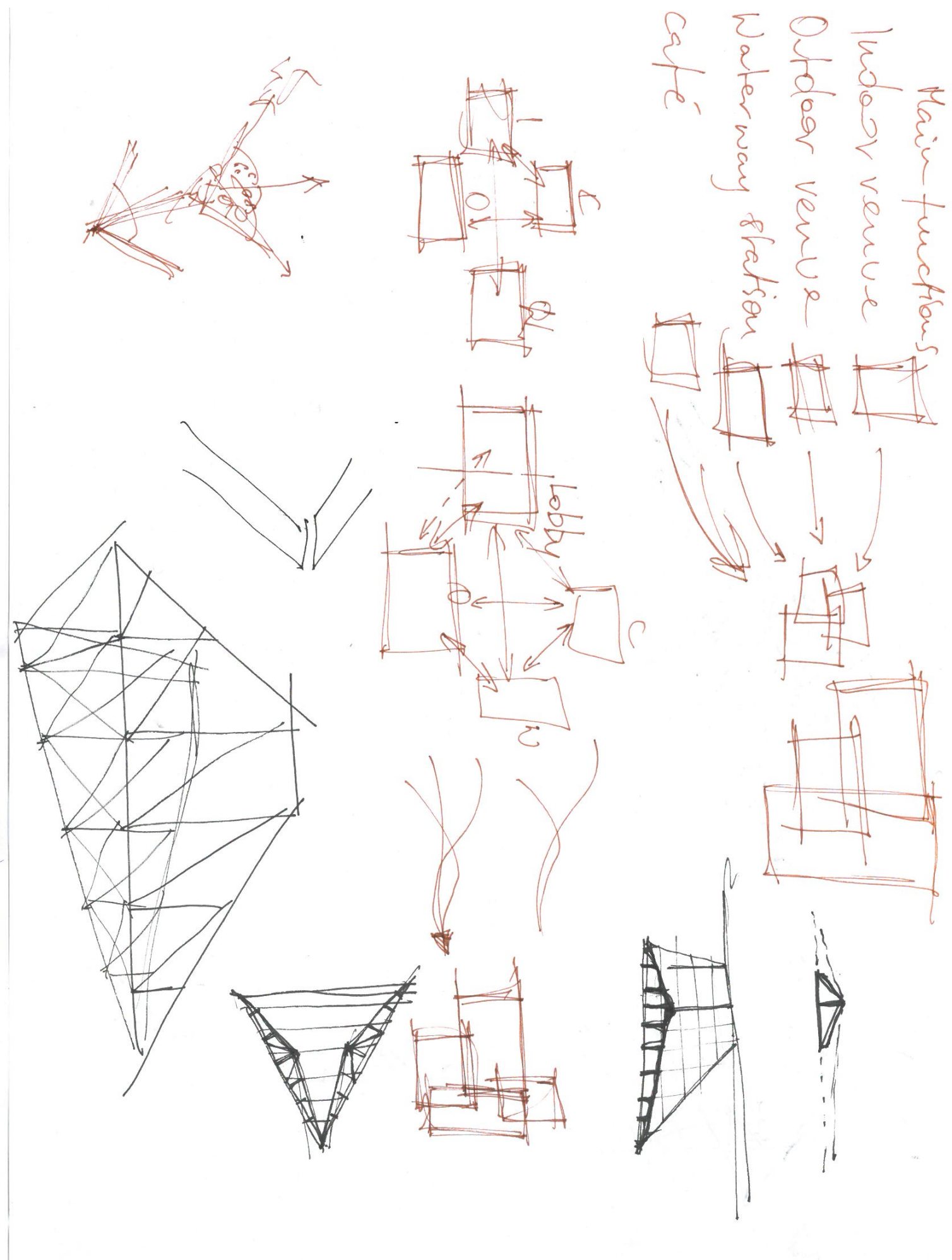
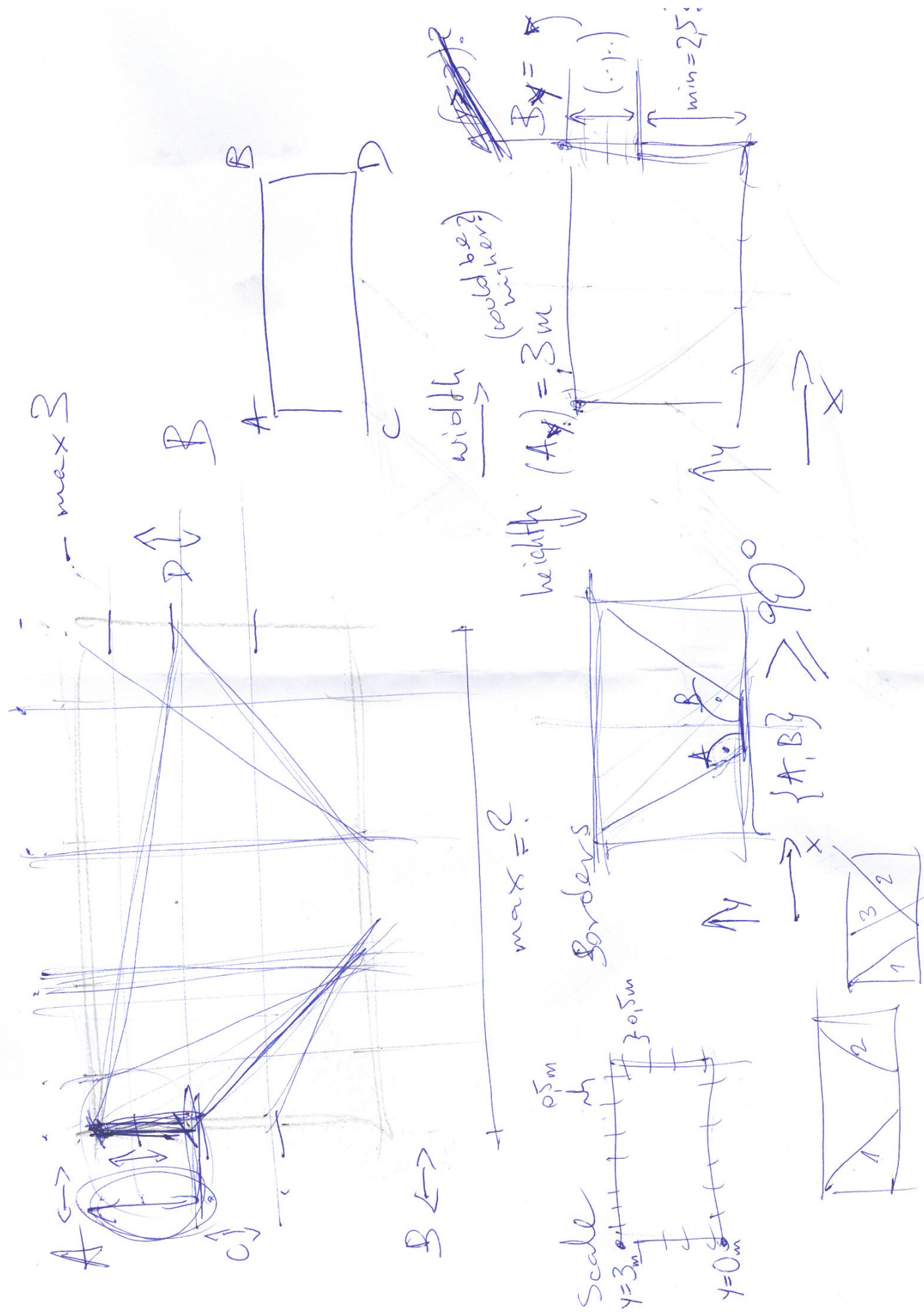


MID CRIT PROPOSAL NUMBER TWO: PROJECTION CONE_MODEL

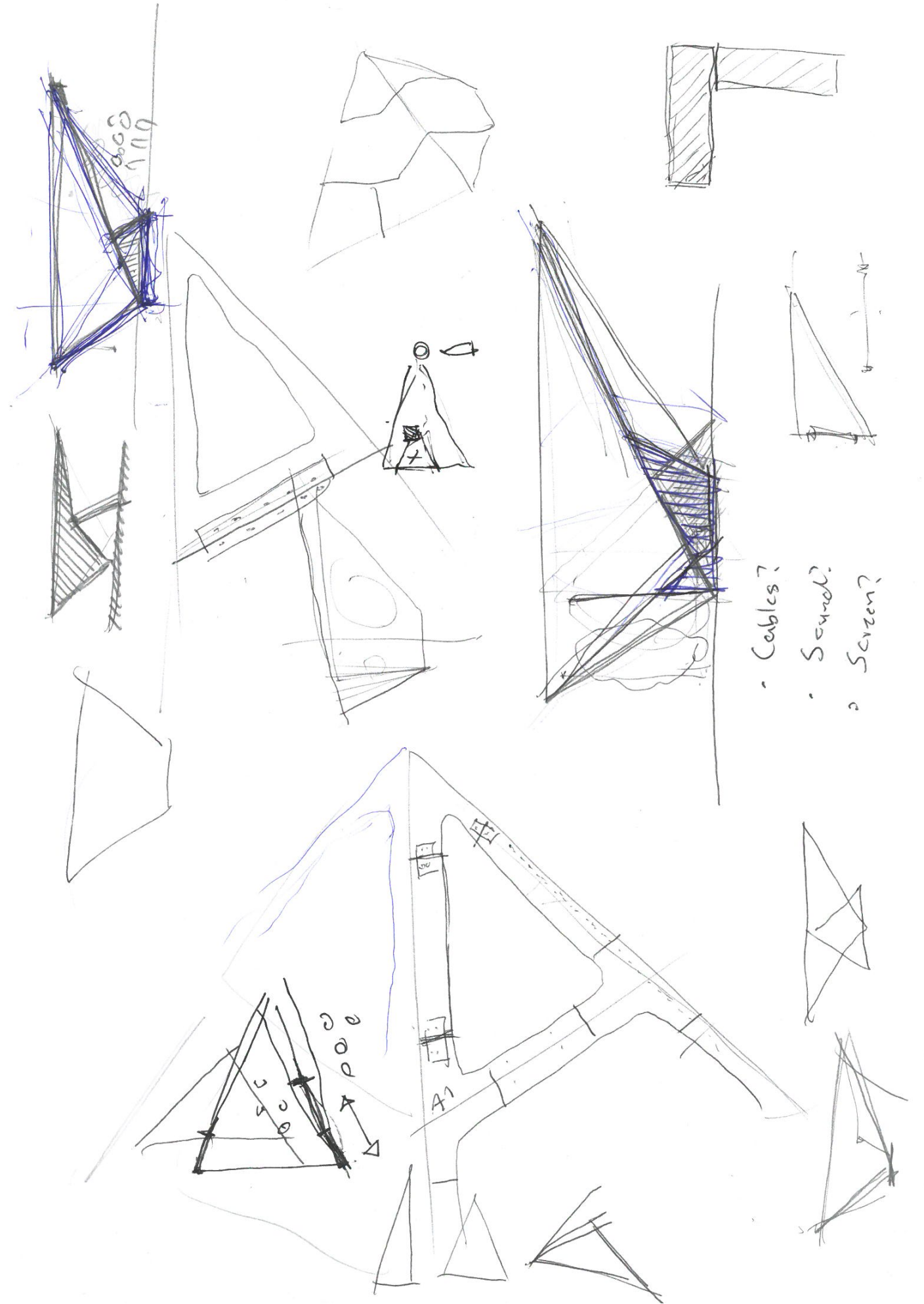
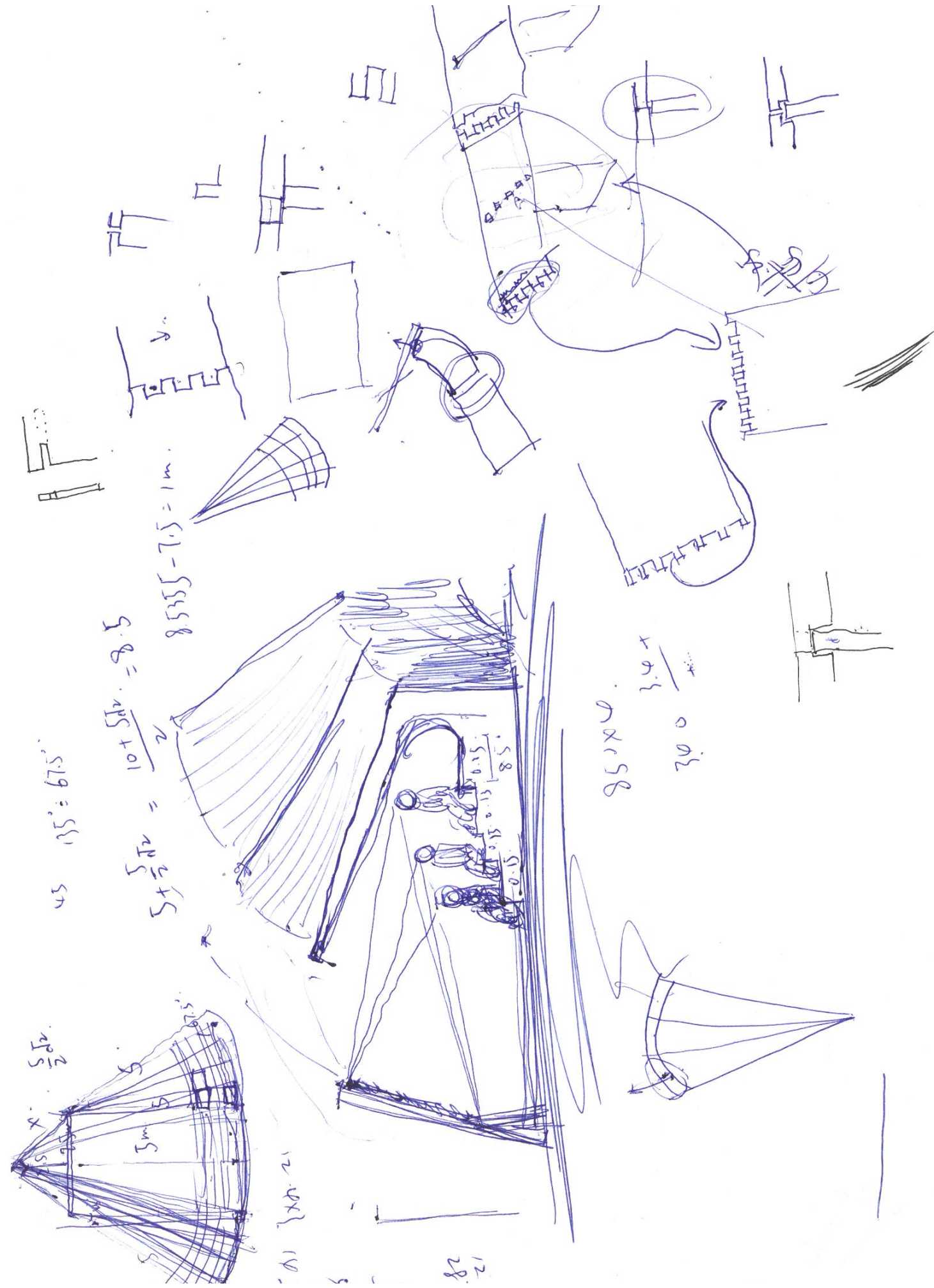


AFTER THE MID CRIT
ONE DIRECTION: PROJECTION CONE

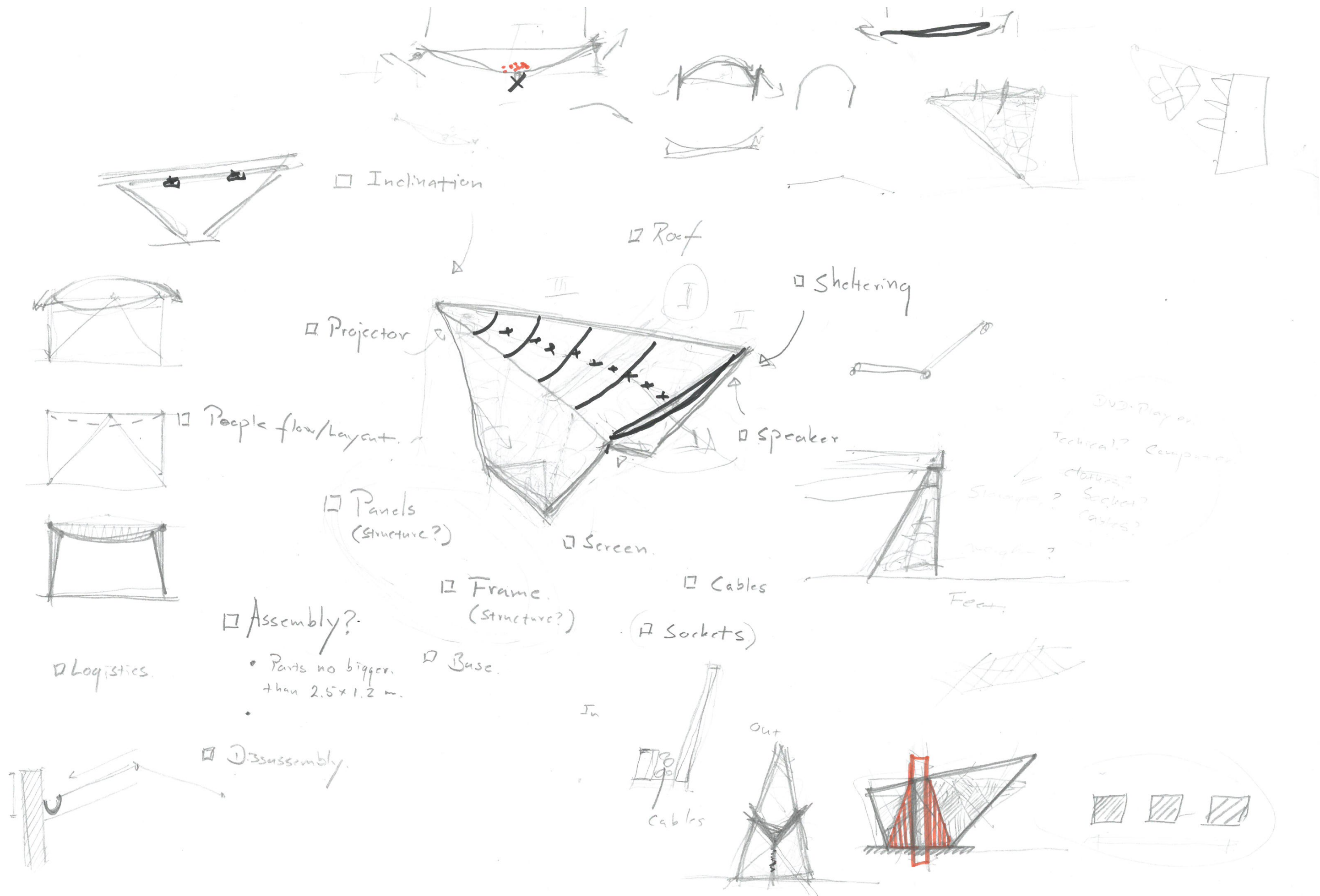
GROUP'S SKETCHES



GROUP'S SKETCHES



GROUP'S SKETCHES



GROUP'S SKETCHES

39

Customized joints & panel elements.

Customized joints
Standard elements.

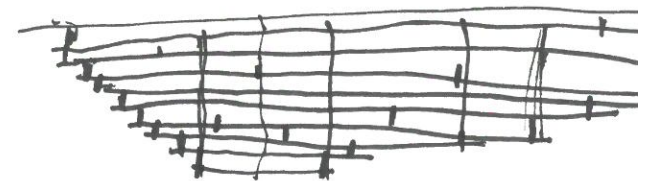


the perfect structure.

12 Joints

12 Panels

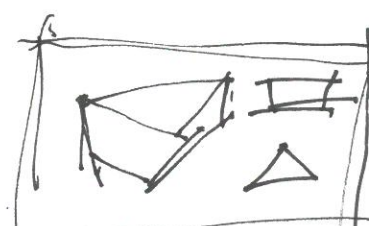
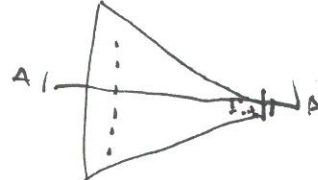
0 Materials.



Assembly? → Root?
→ Wall?

Modules?

General:

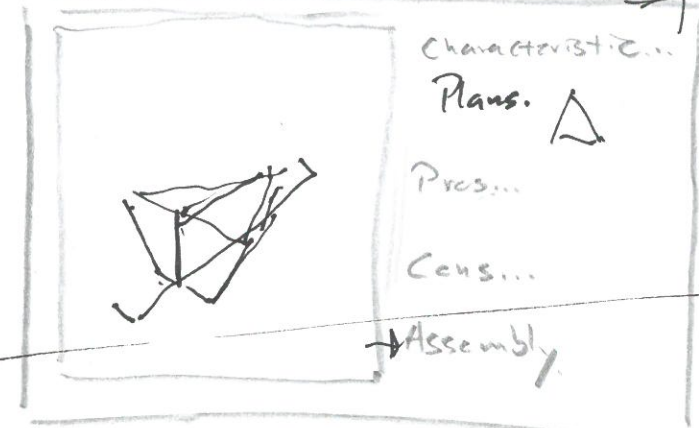


1. Skeleton + cloth.

2. Fully covered walls.

(Panels.)

Concept



Characteristic...

Plans.

Pres...

Cens...

→ Assembly

Solution.

1. Plan (1:20/1:50) + Section.

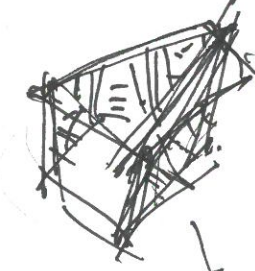
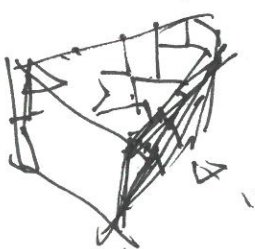
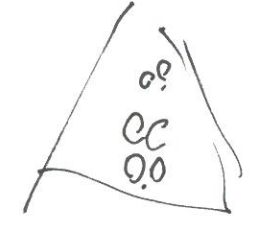
- People flow 10:40.
- Projector placement.
- Screen placement.
- Equipment placement (Speaker)
- Cables & sockets.

6. Transport.

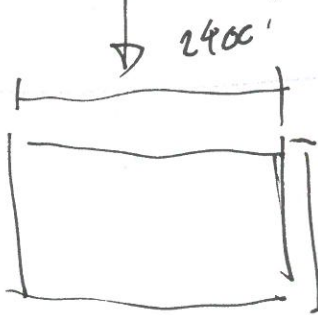
Str. Assembly.



1. Structural

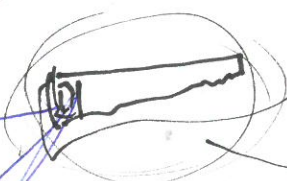
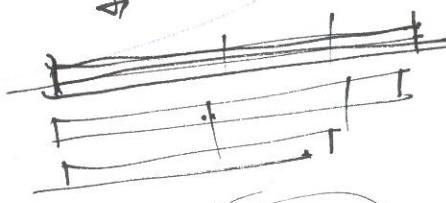


000



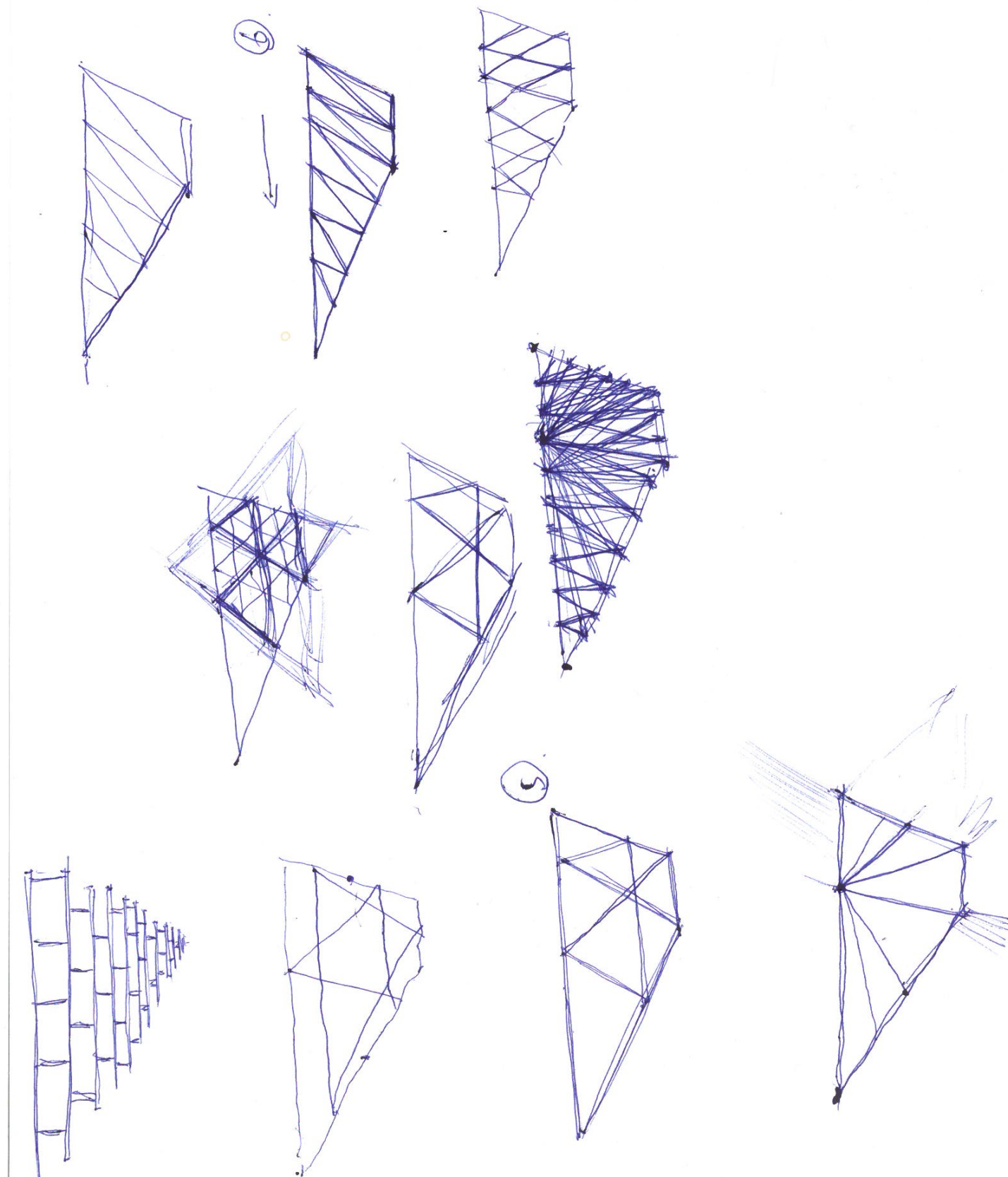
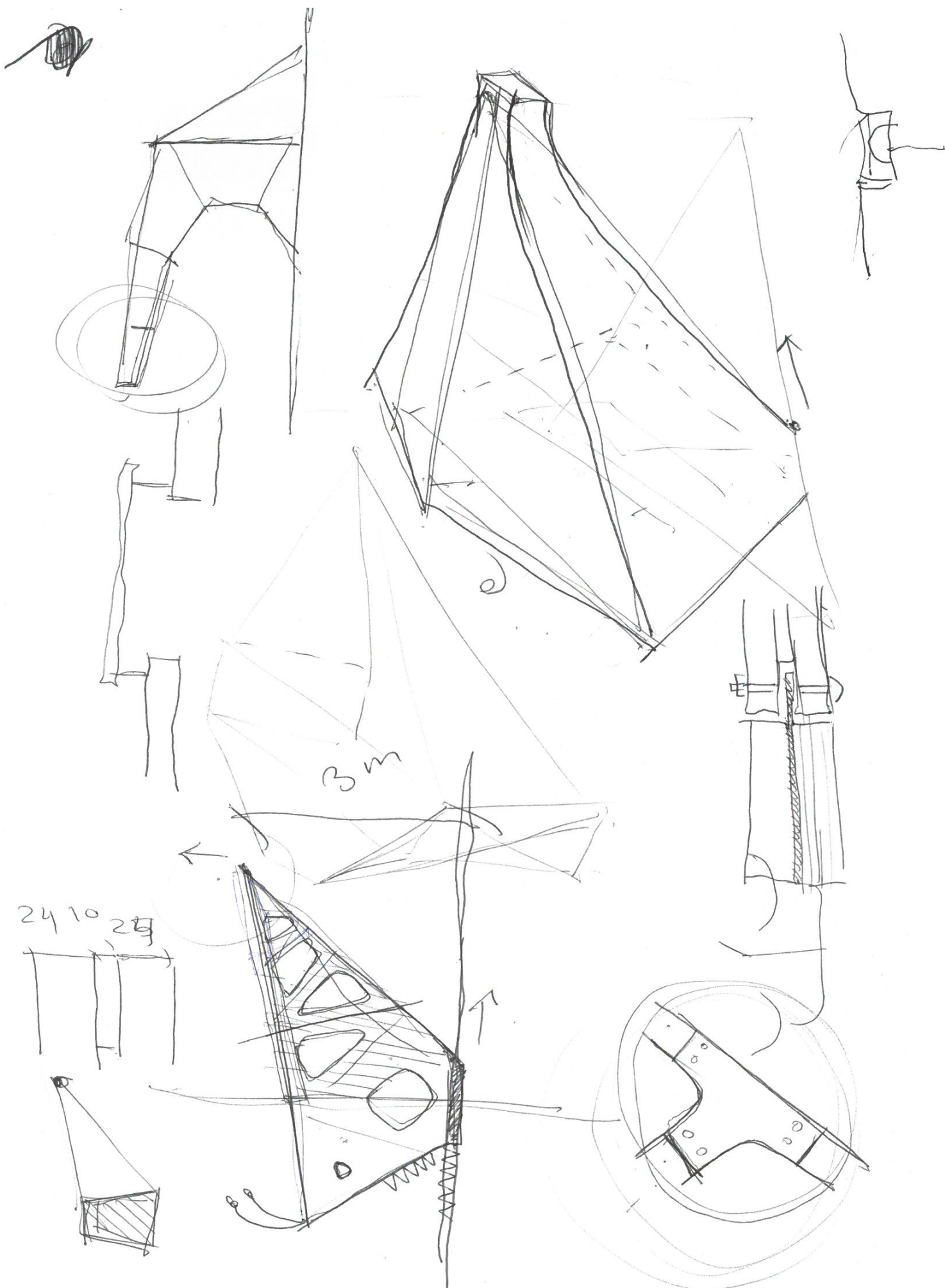
2400

1200

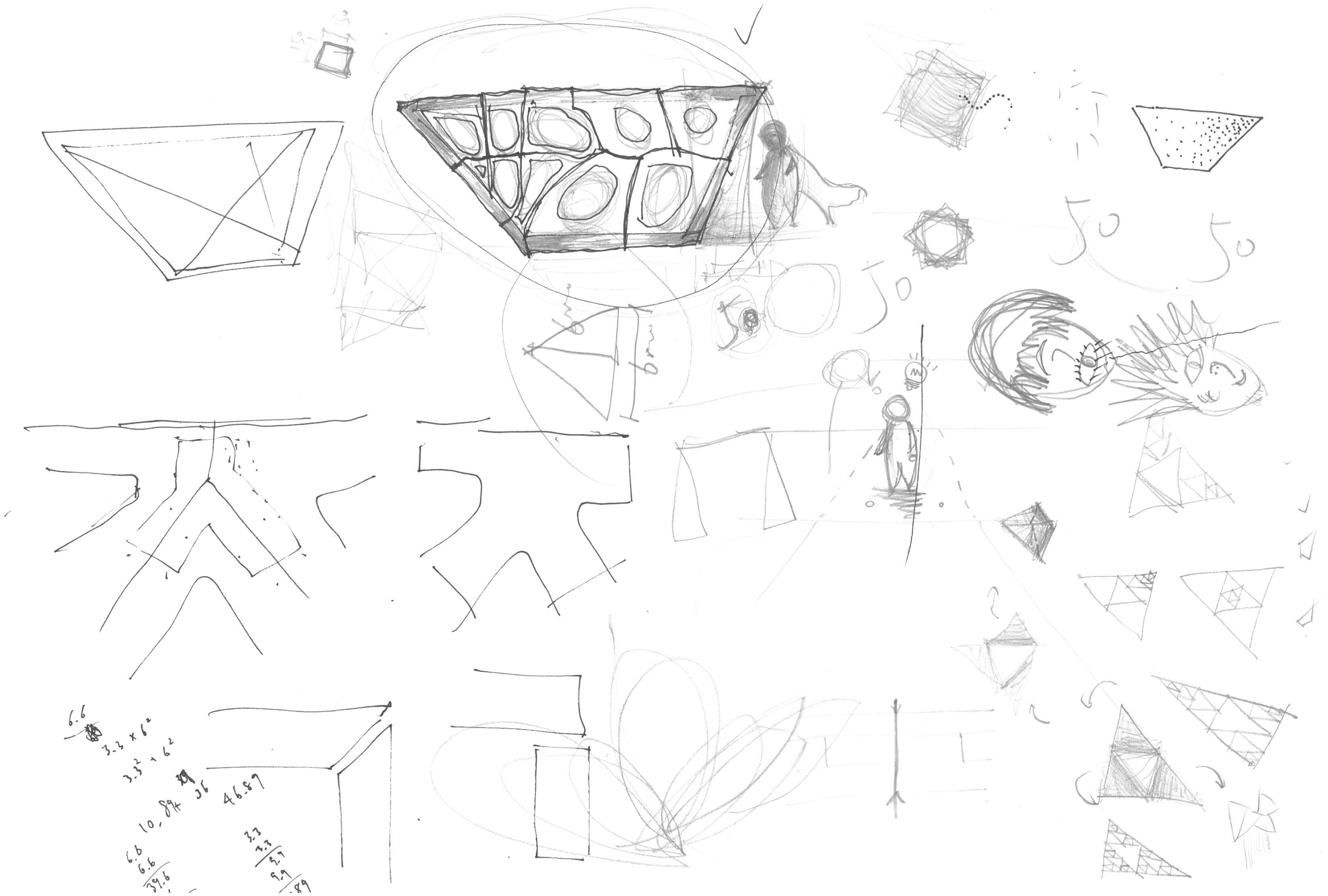


X

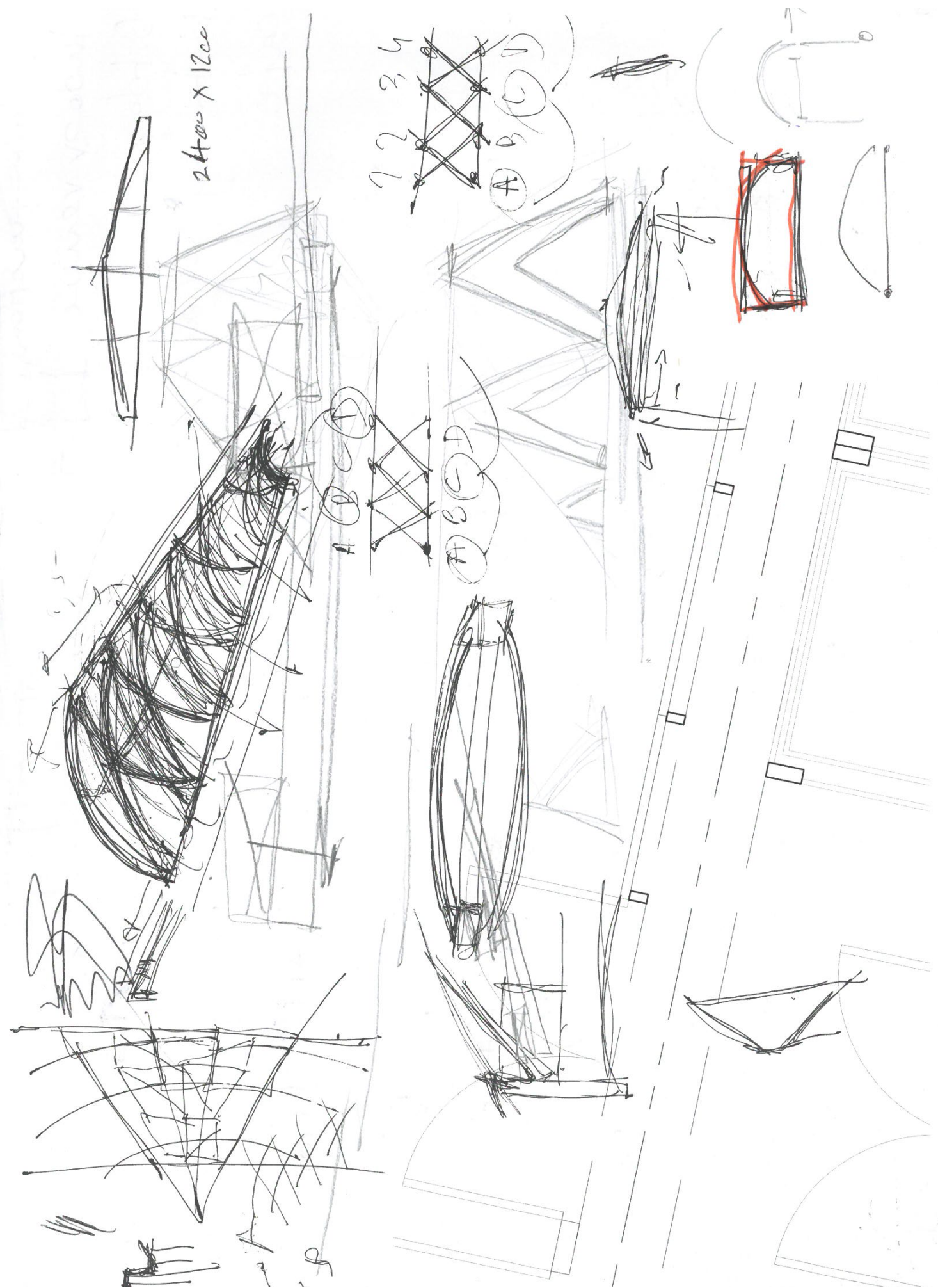
GROUP'S SKETCHES



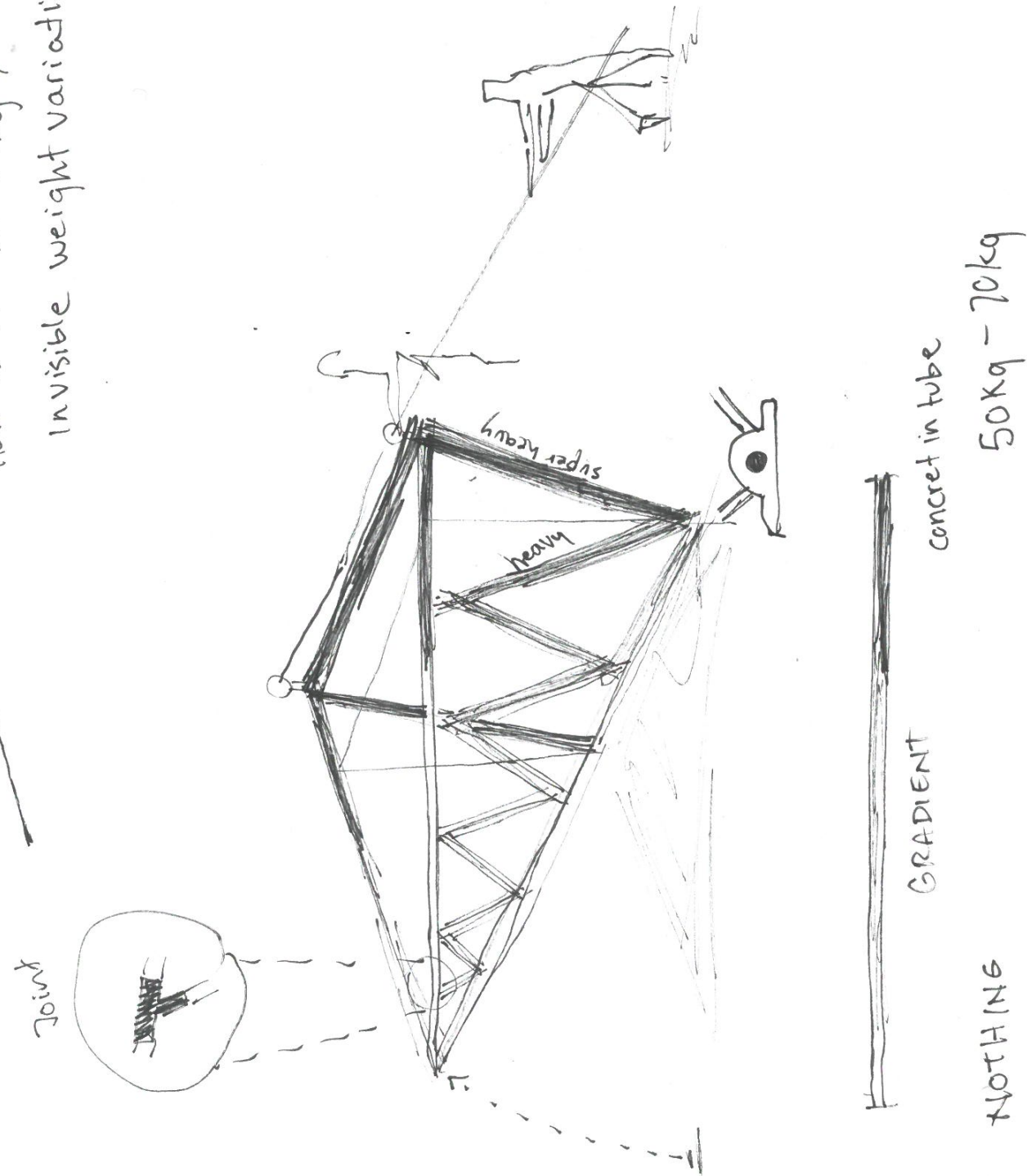
GROUP'S SKETCHES



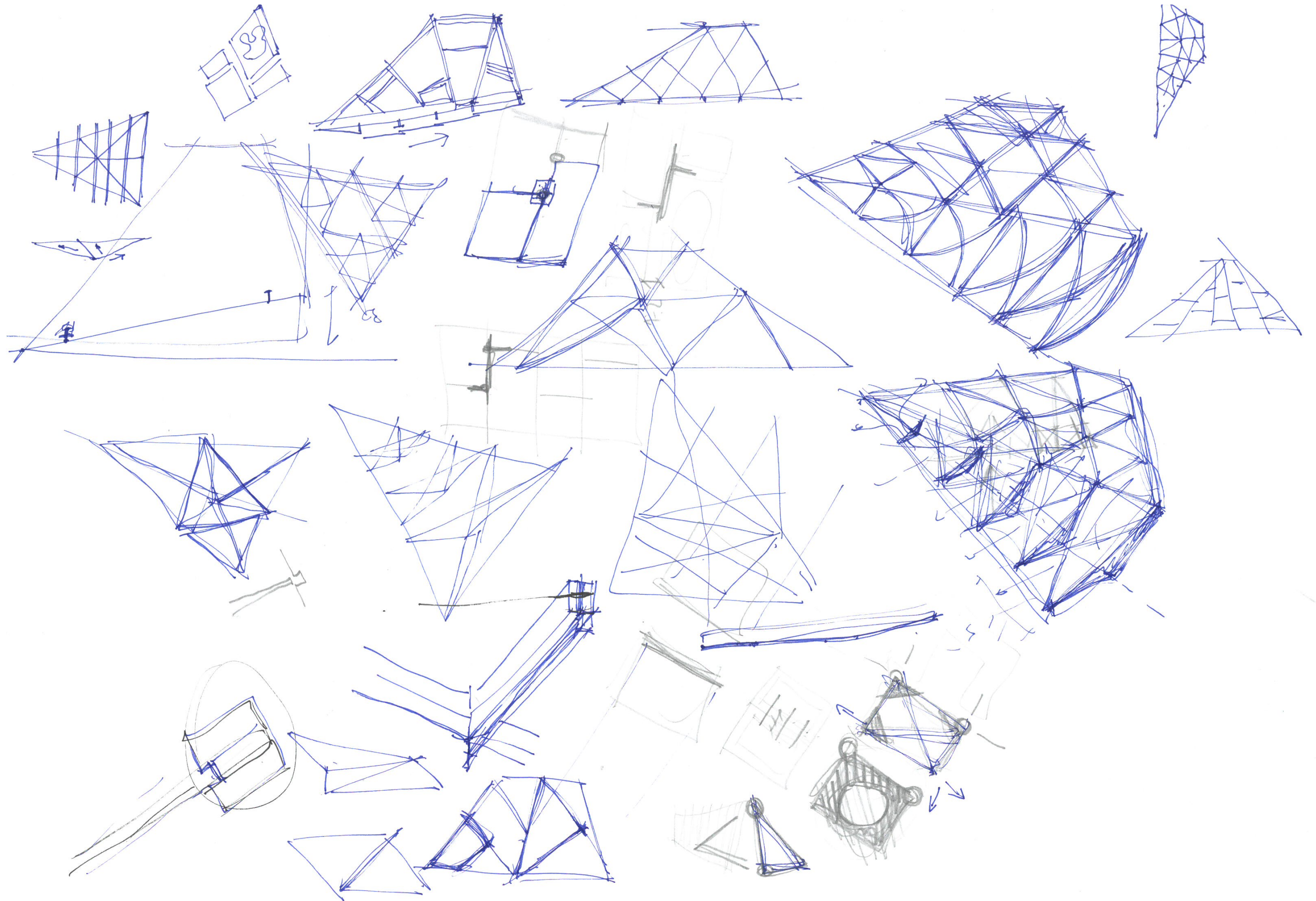
GROUP'S SKETCHES



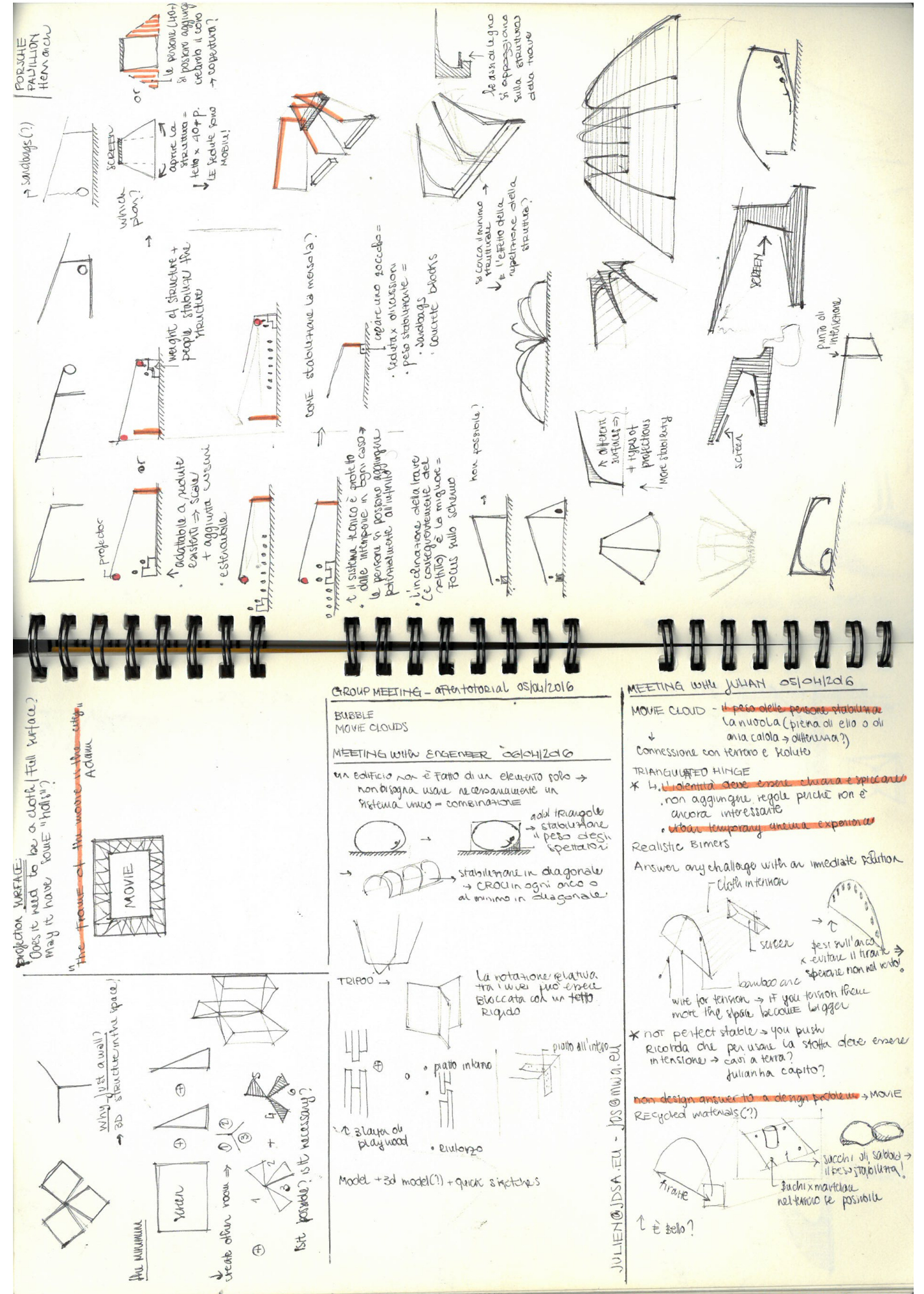
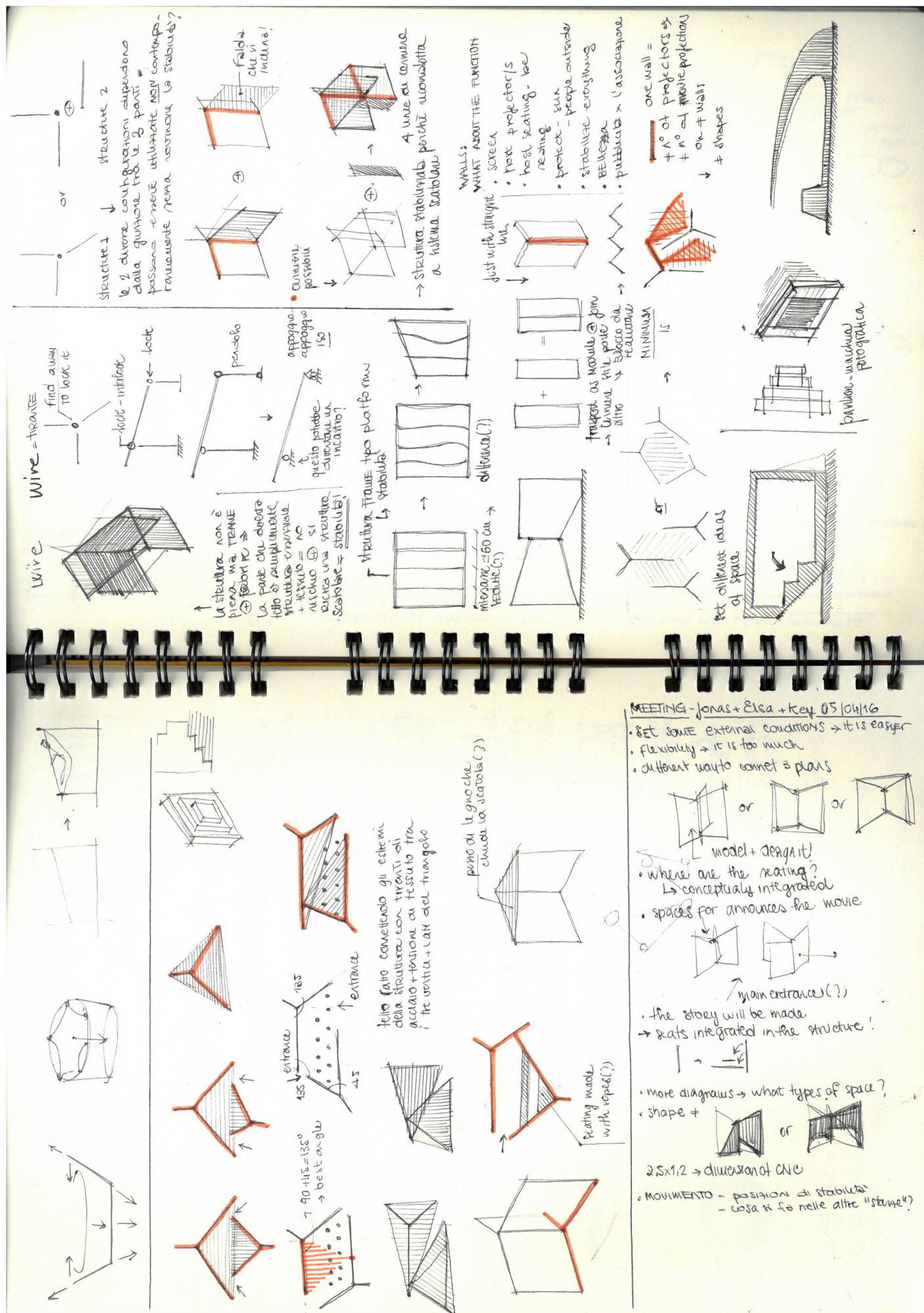
"How is it standing?"
Invisible weight variation



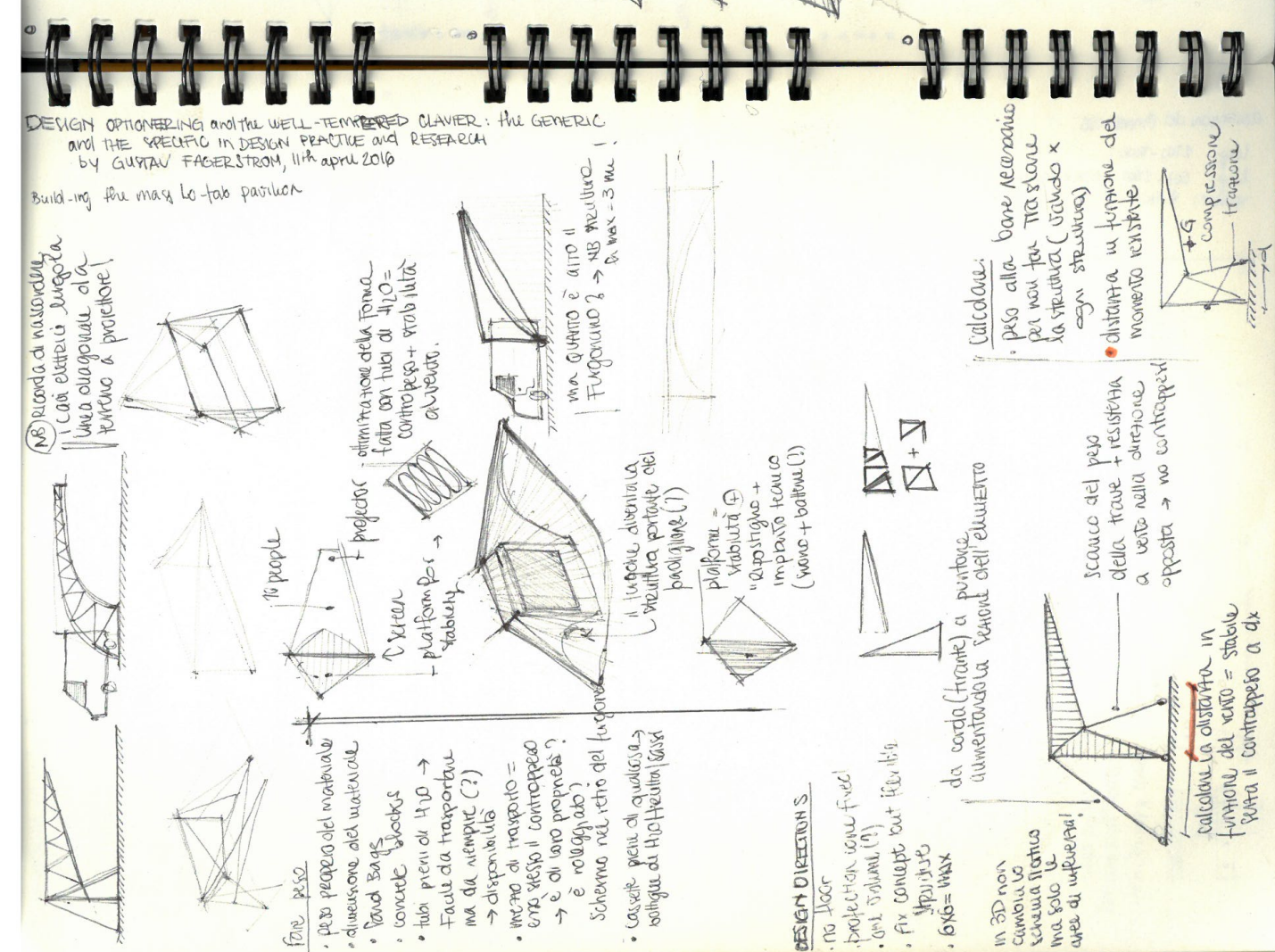
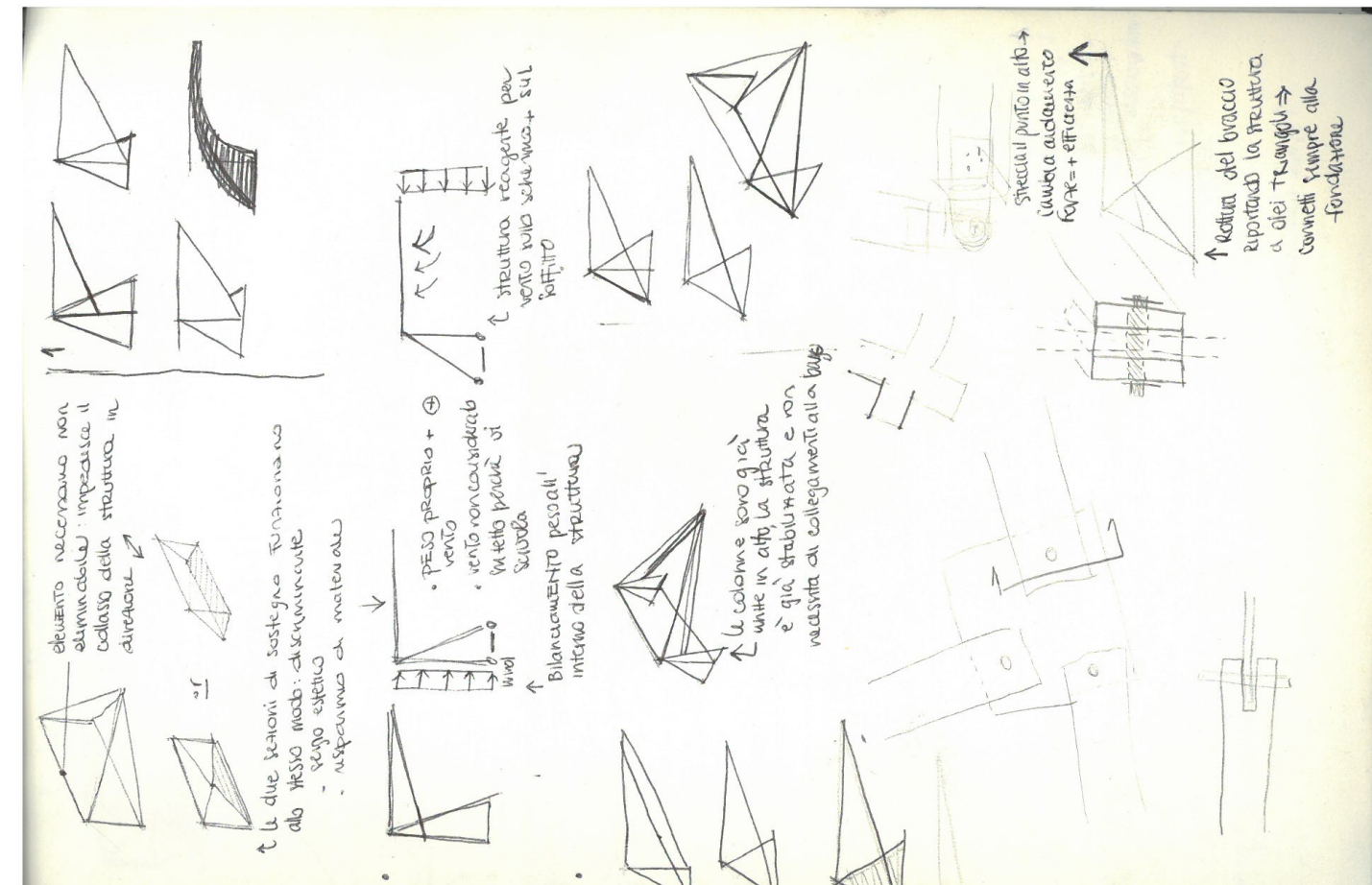
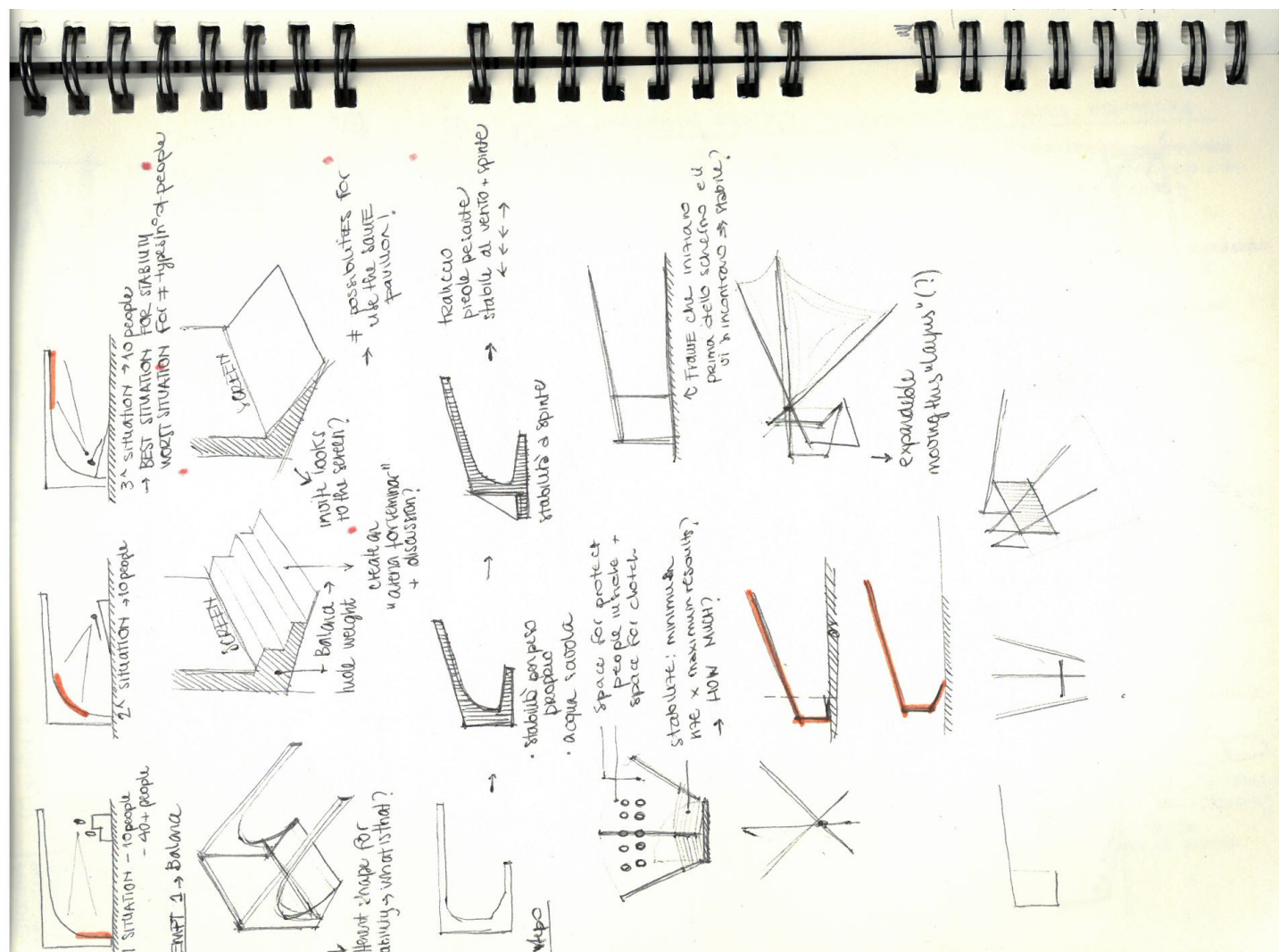
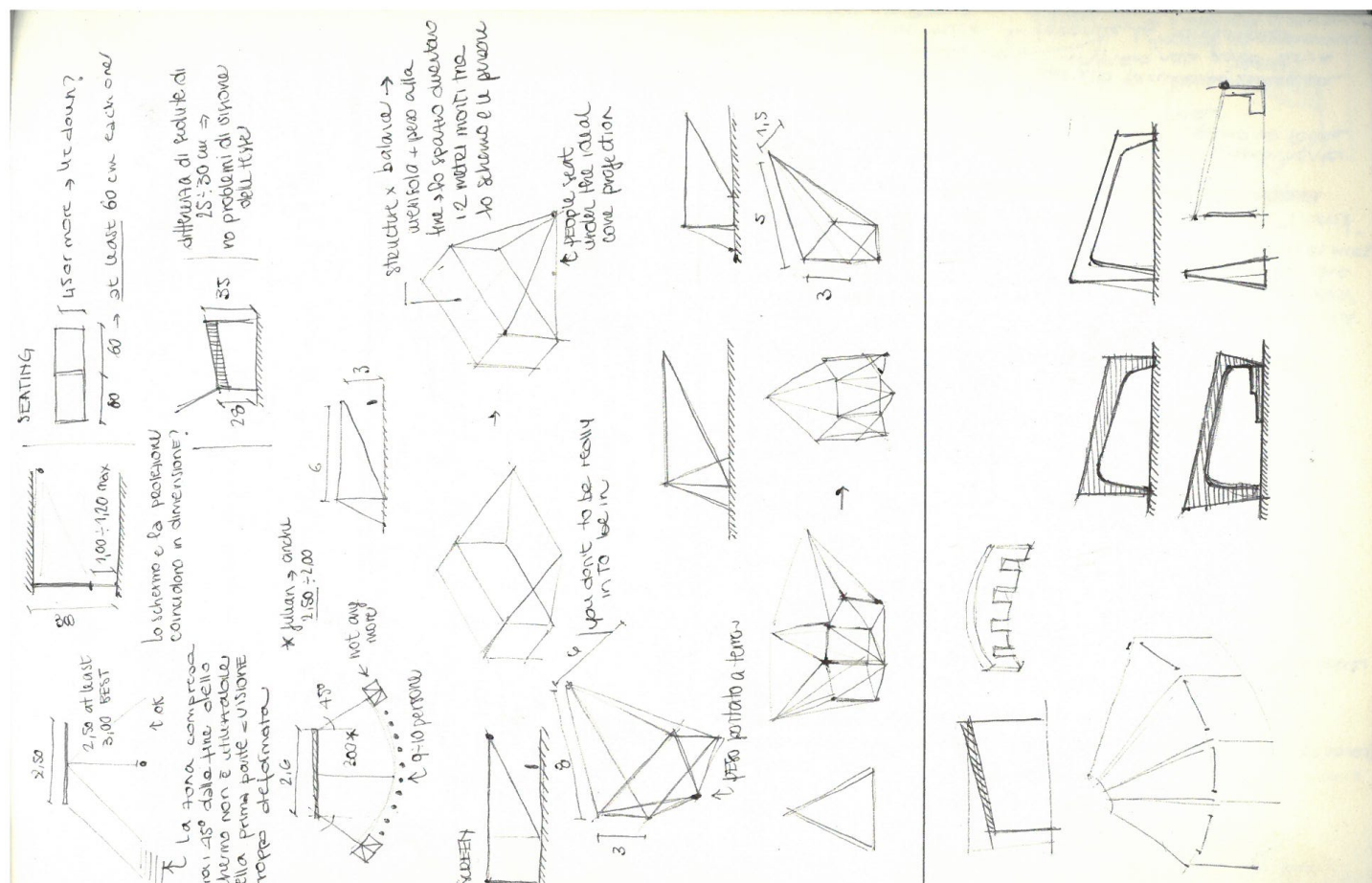
GROUP'S SKETCHES



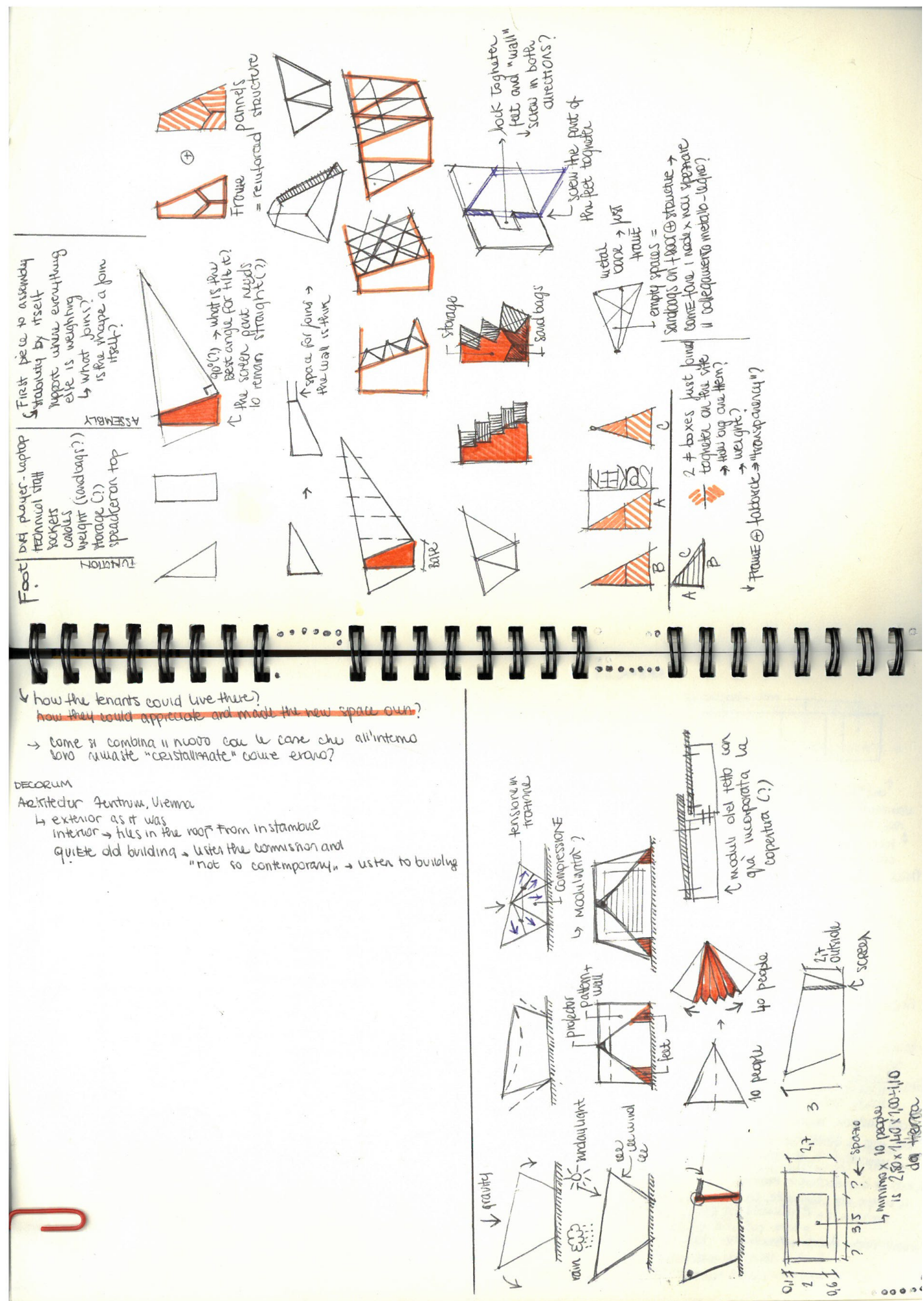
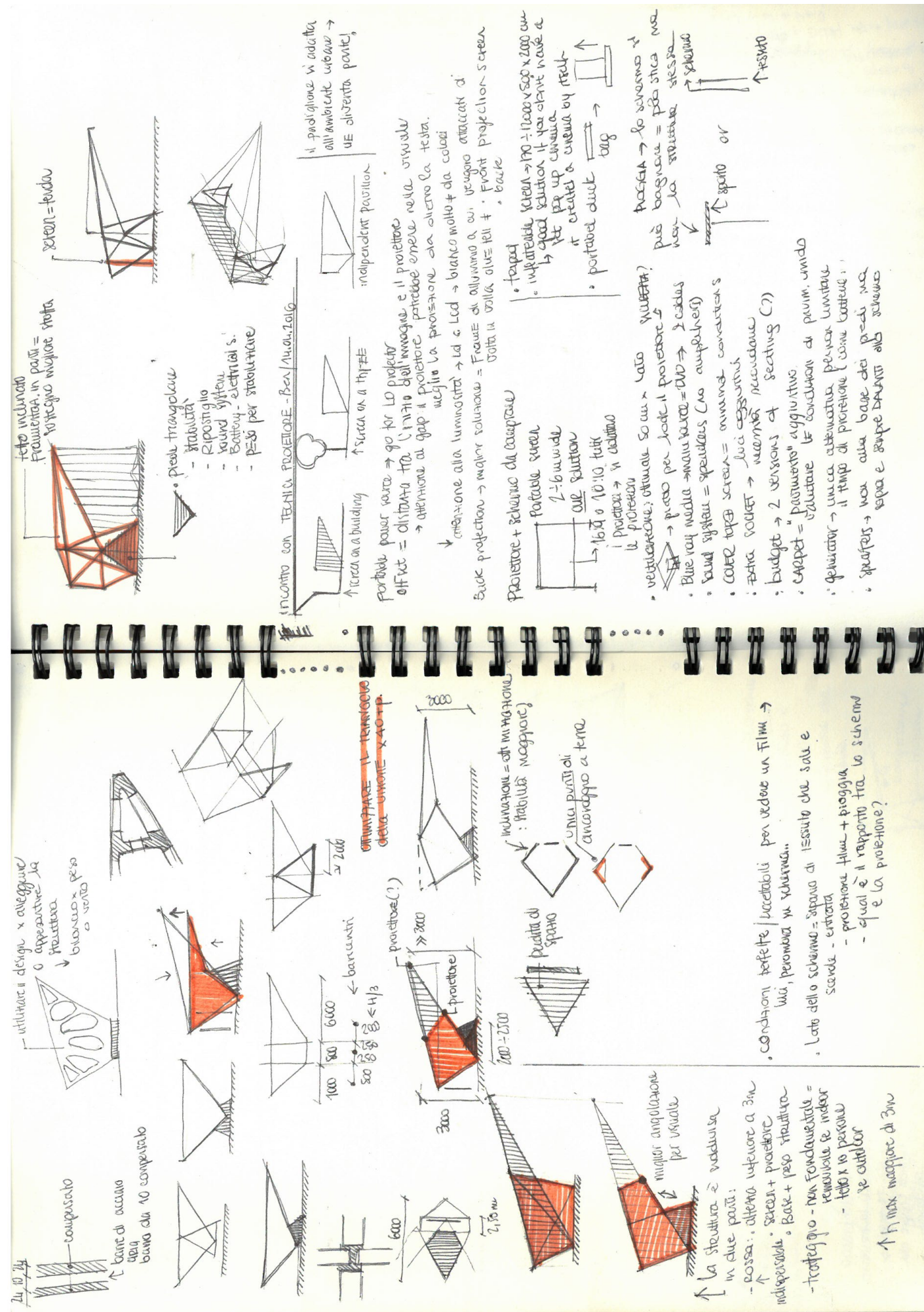
DANIELA'S SKETCHES



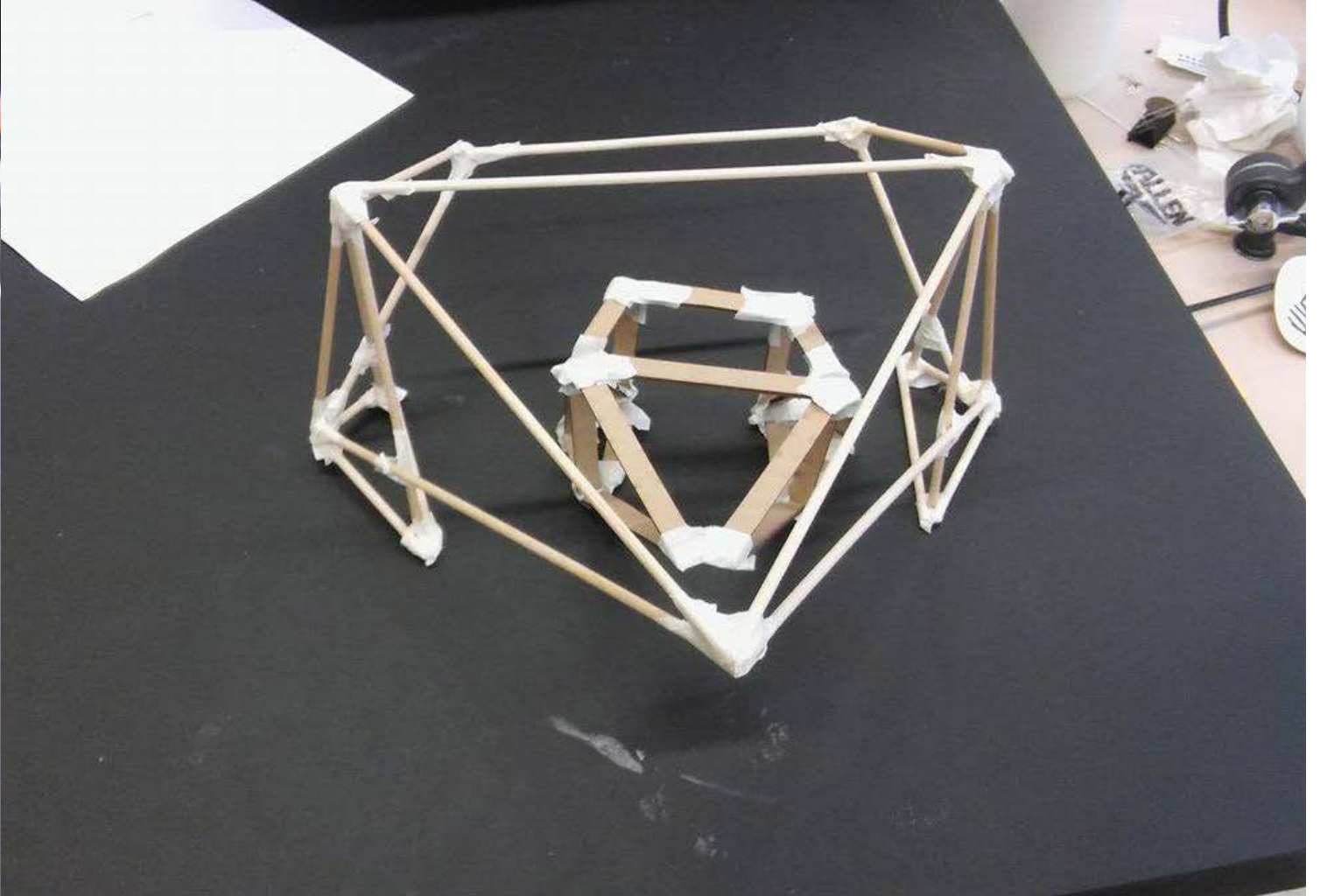
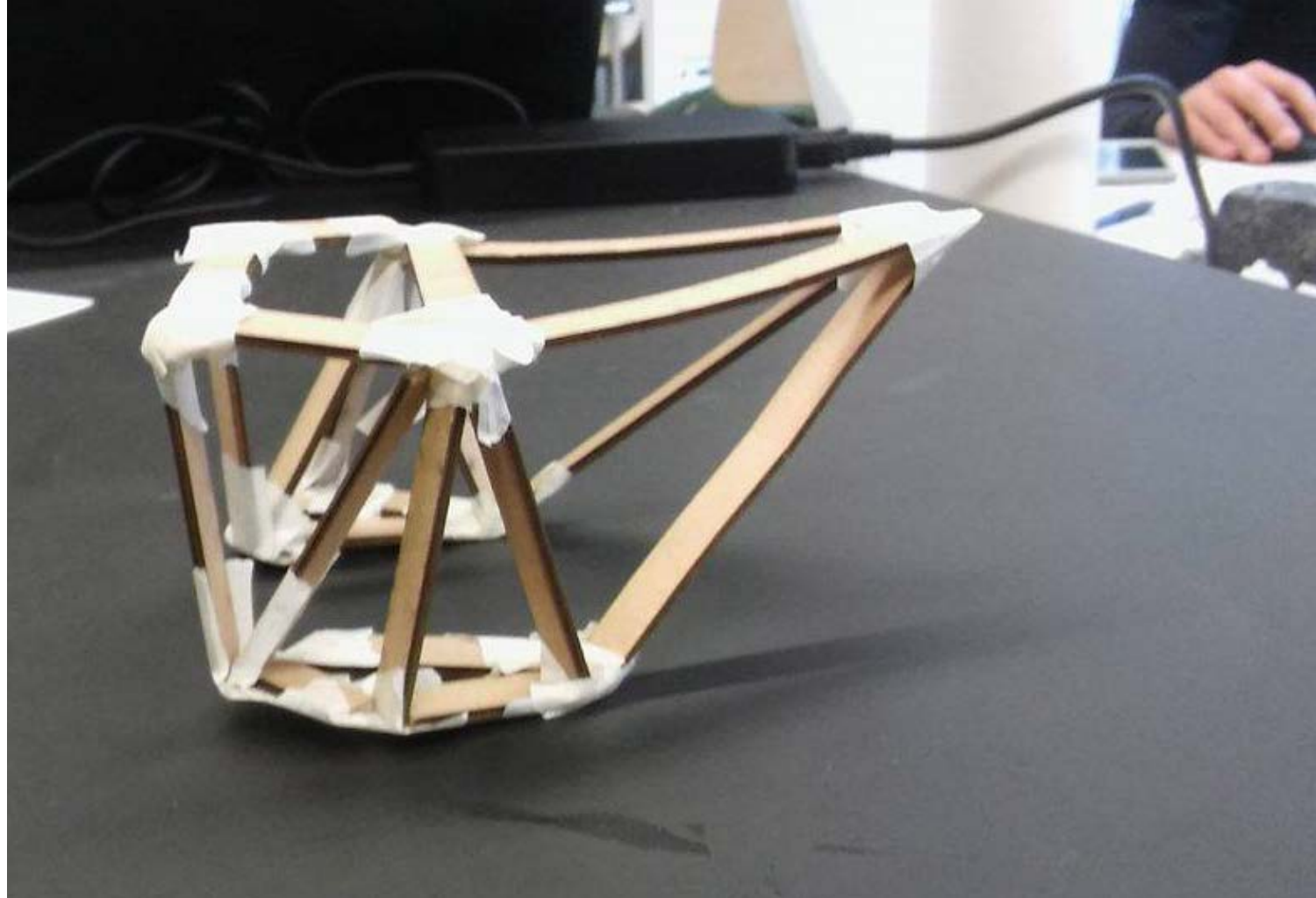
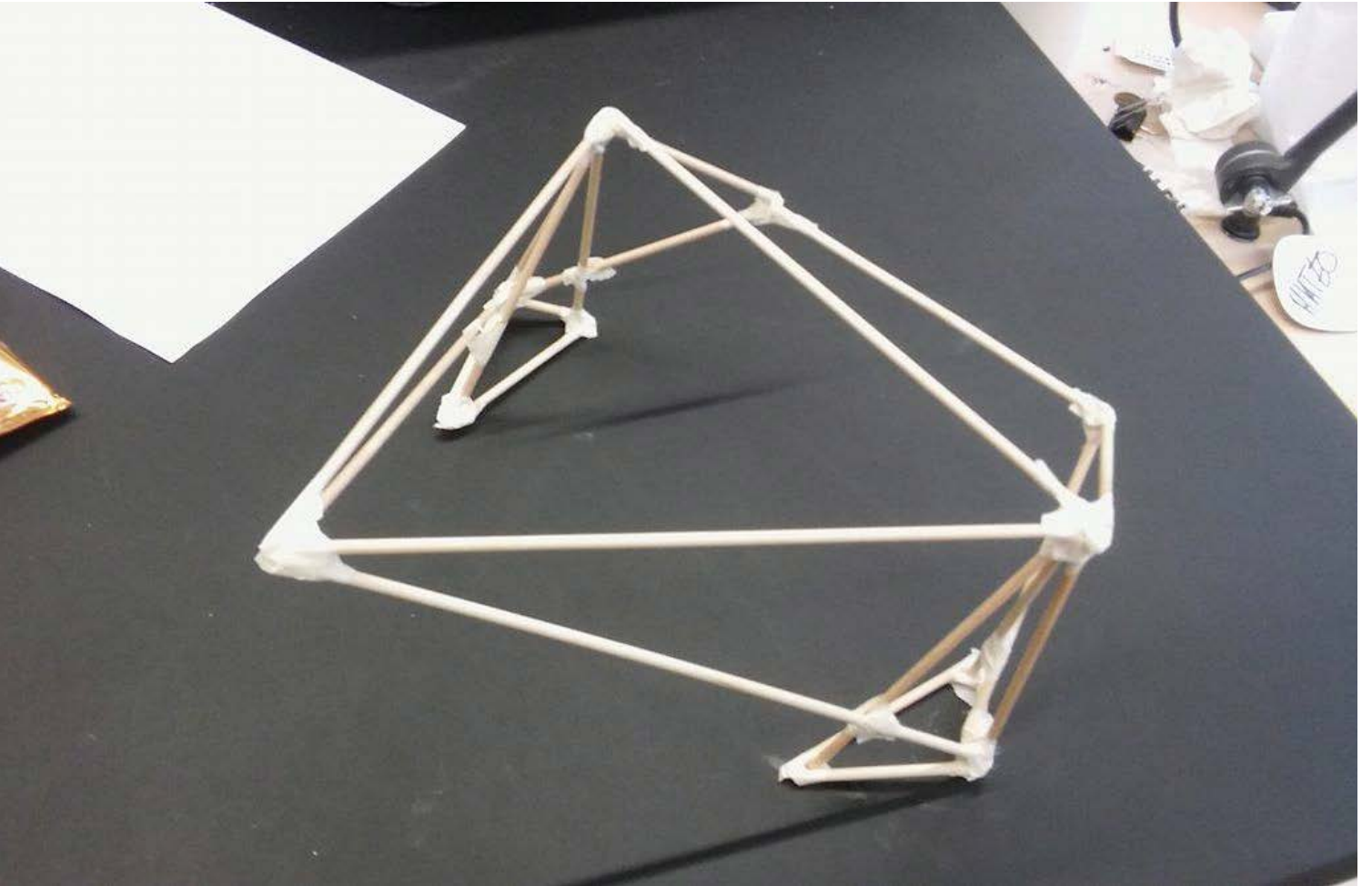
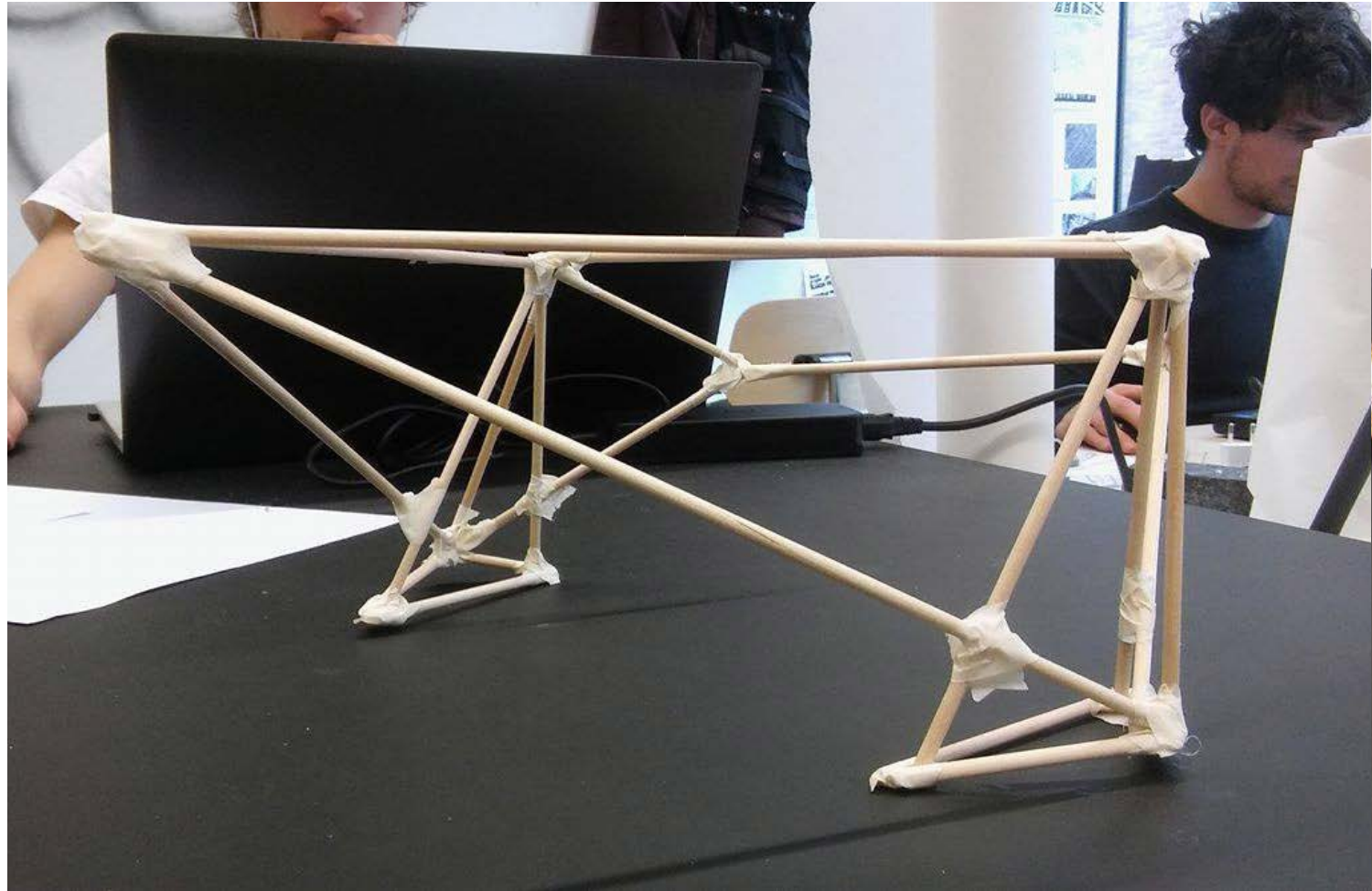
DANIELA'S SKETCHES



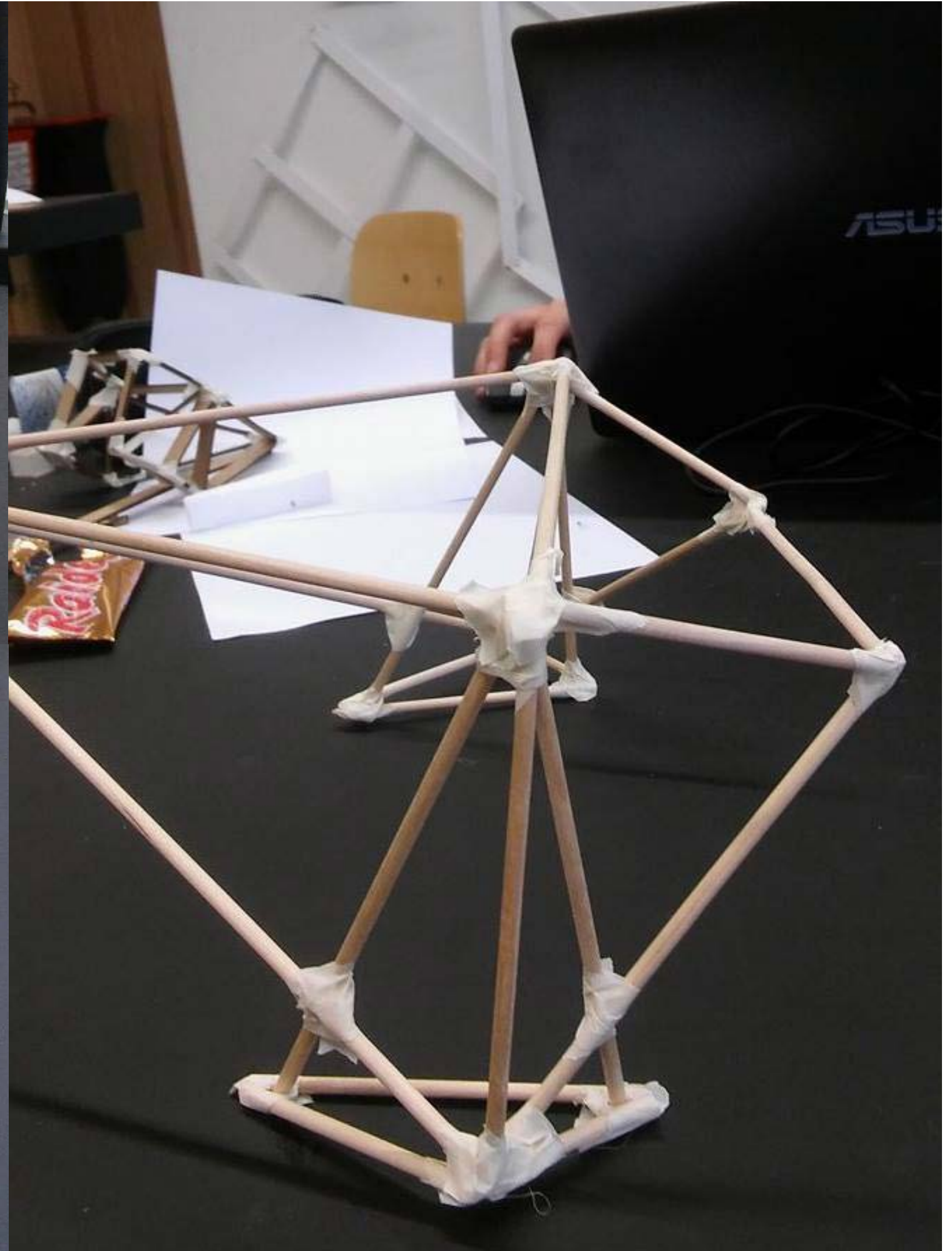
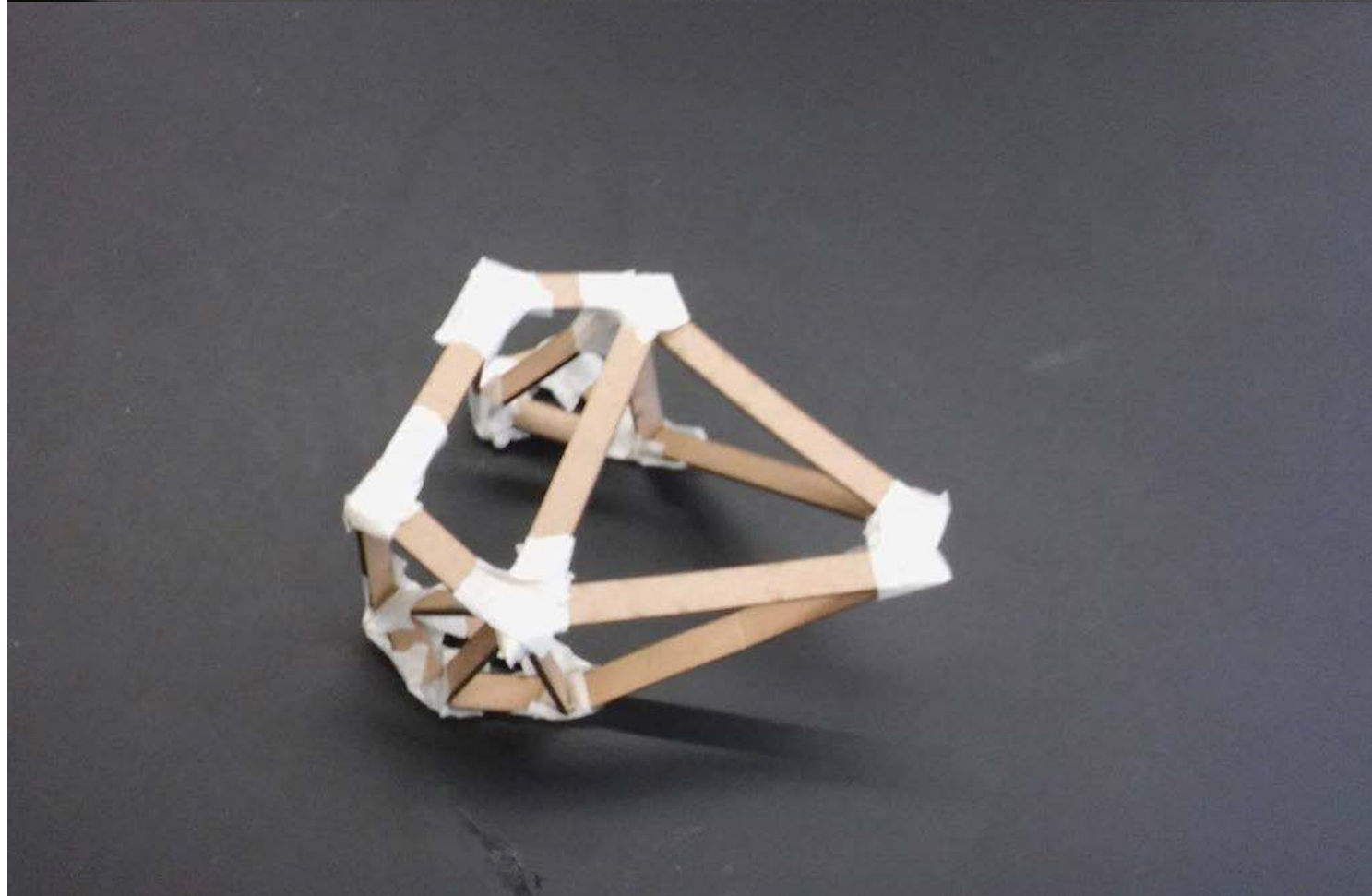
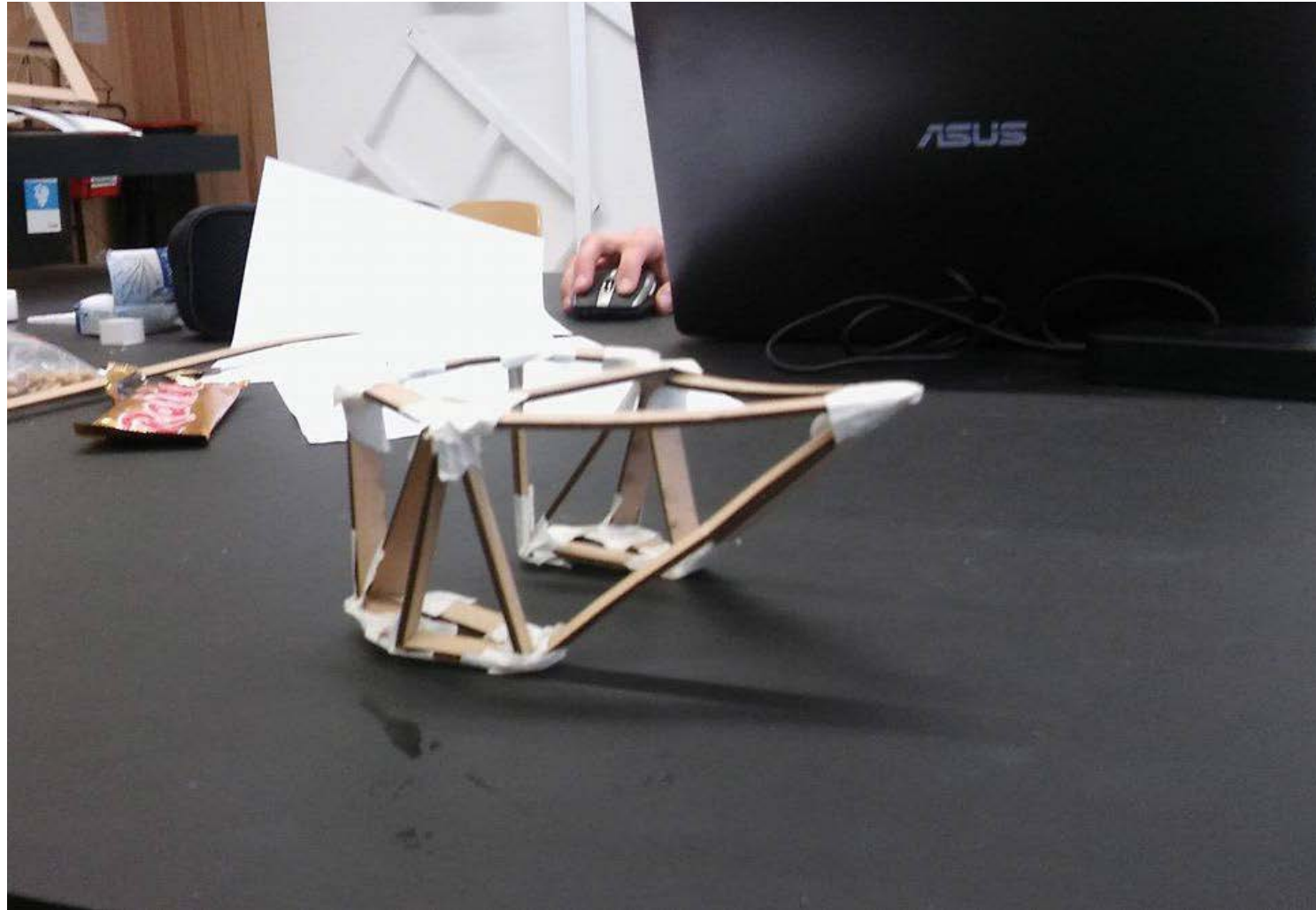
DANIELA'S SKETCHES



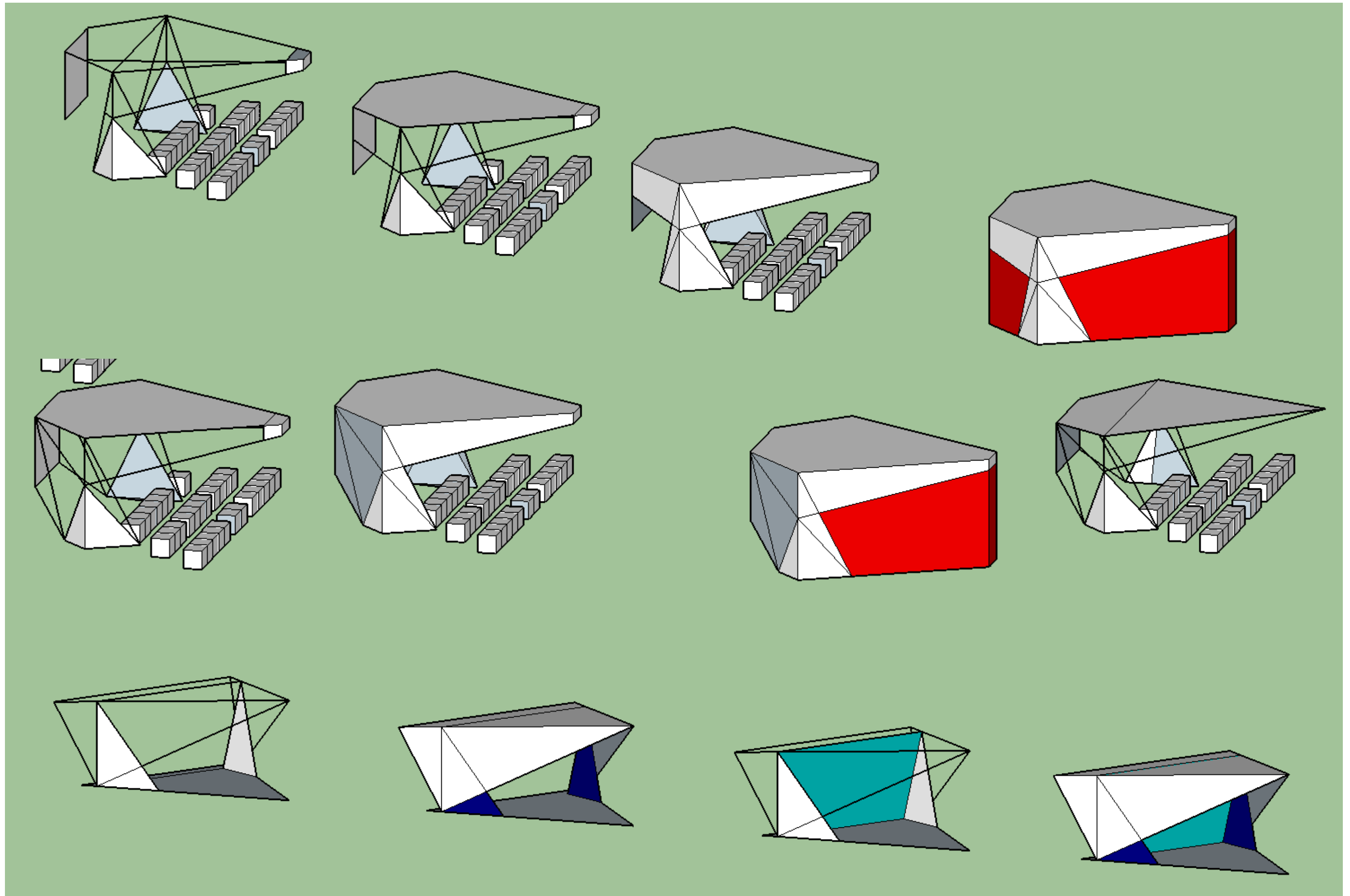
STUDY MODELS_ADD 'FEET' TO THE STRUCTURE



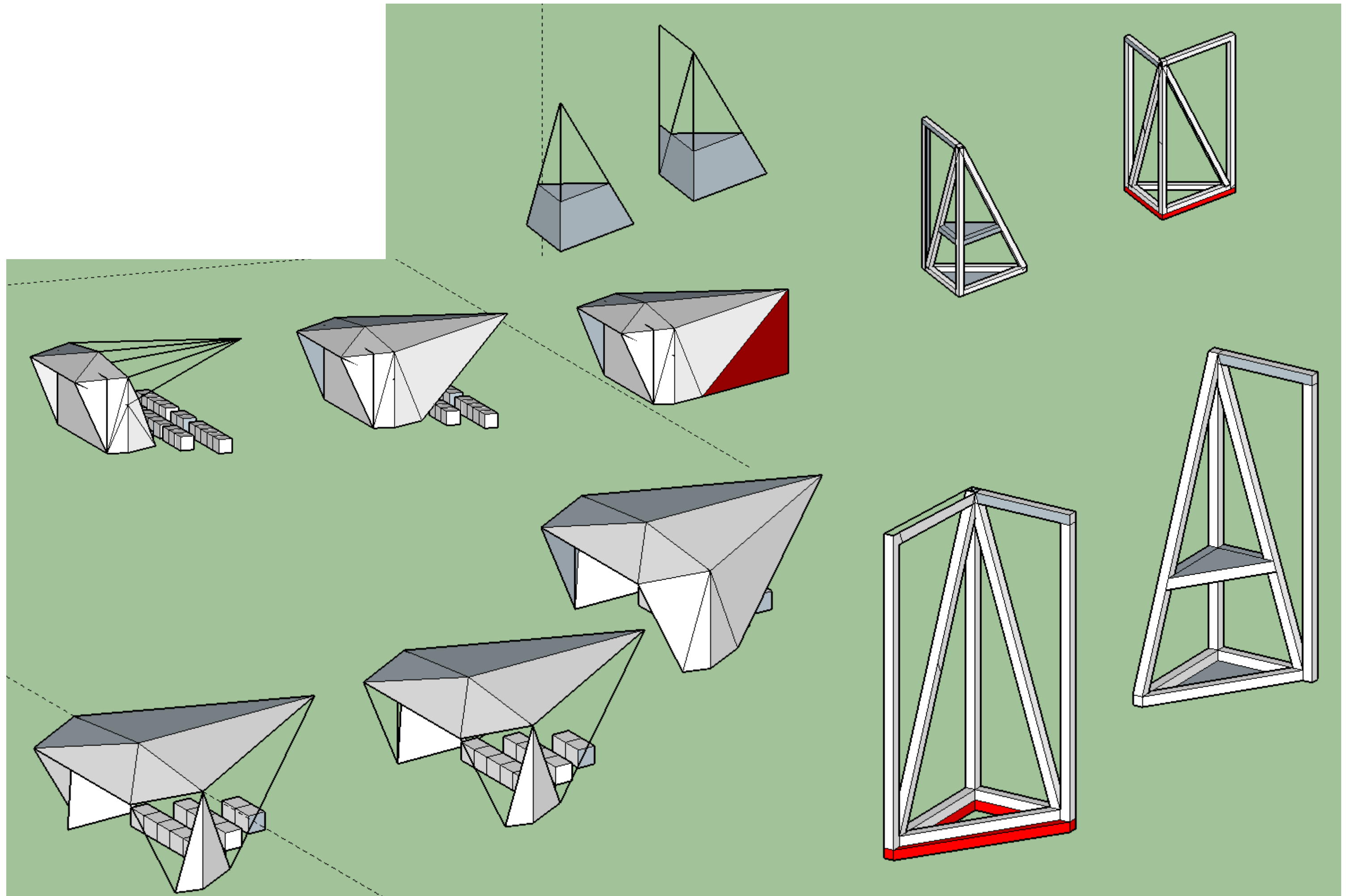
STUDY MODELS_ADD 'FEET' TO THE STRUCTURE



3D MODELS_ADD 'FEET' TO THE STRUCTURE

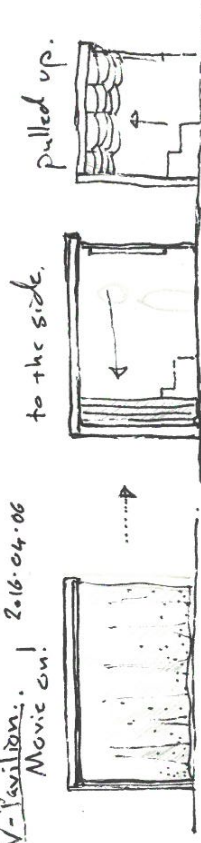


3D MODELS_ADD 'FEET' TO THE STRUCTURE

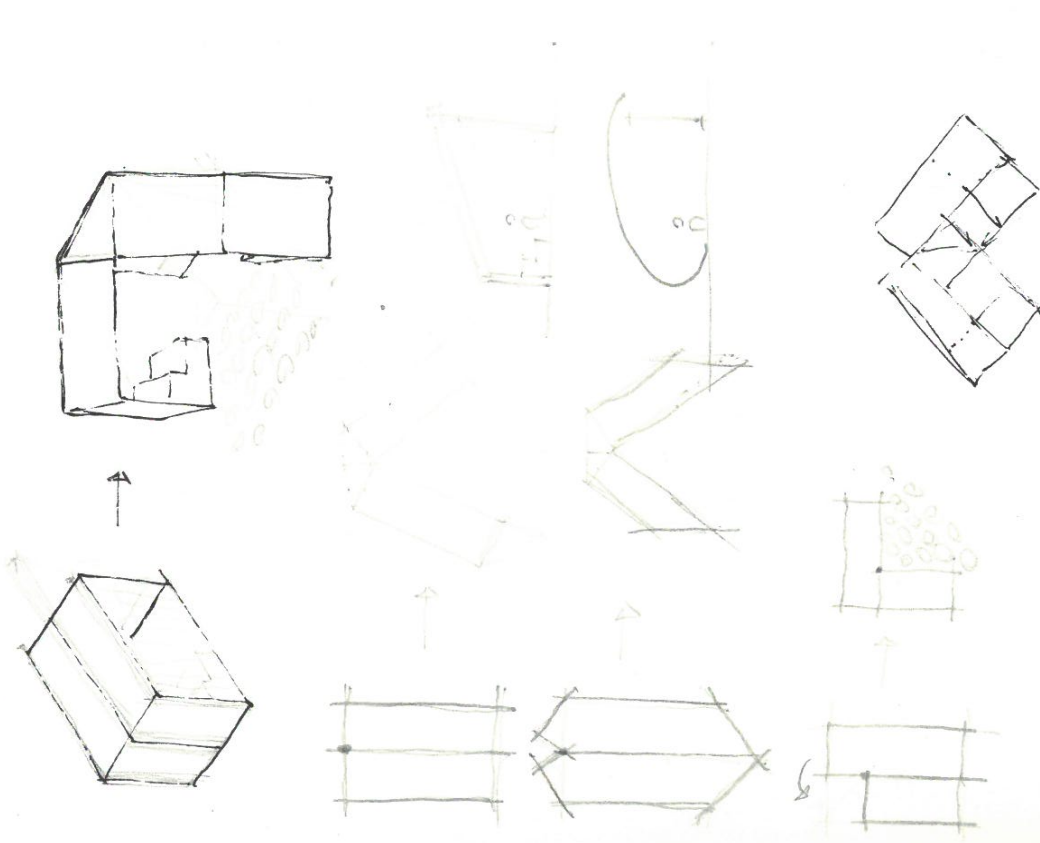


V-Position: 2.16.04.06

Movie on!



Thick frame.



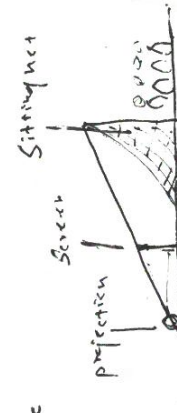
→ How much not
With the maximum
Outcome?
→ Think & Check.



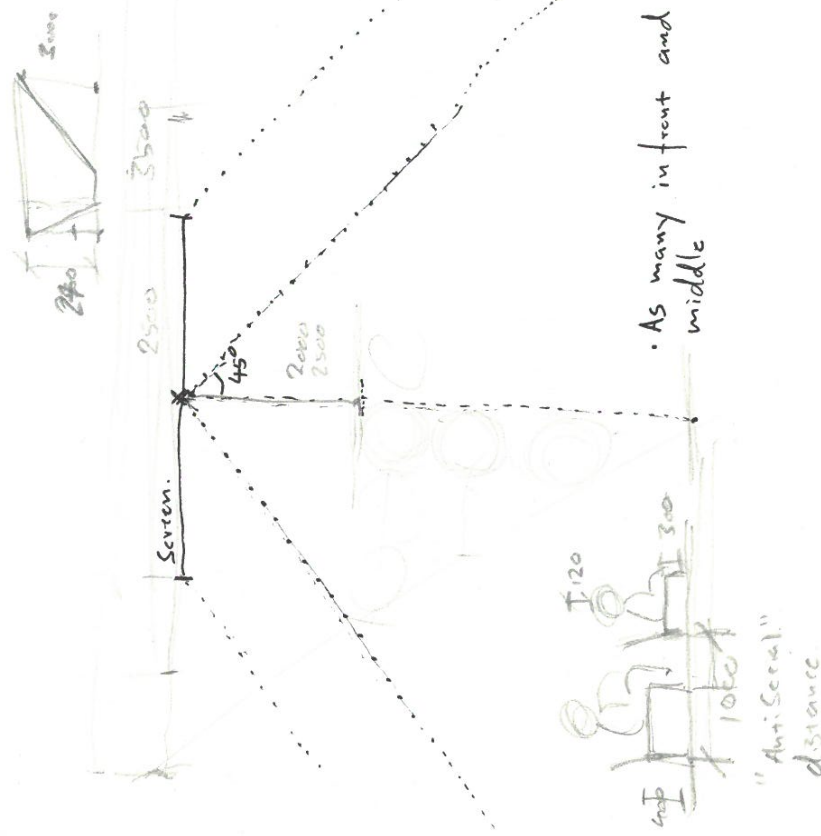
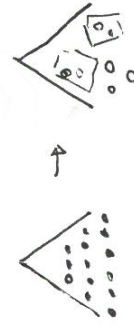
- Bubble light, easy to transport, shapeable
- Tense, Structurally different, performant
- Accordion, Malleable, needs more developing
- Cloud.
- Triangle, Stability, doesn't fold too often.
- Net.
- Organic.
- Concept
- Space arrangement
- Structure
- Material + Cost.

Sandbag users should enjoy before
during & after.

- Don't make people suffer from the design.
- Maximum impact, least effort.

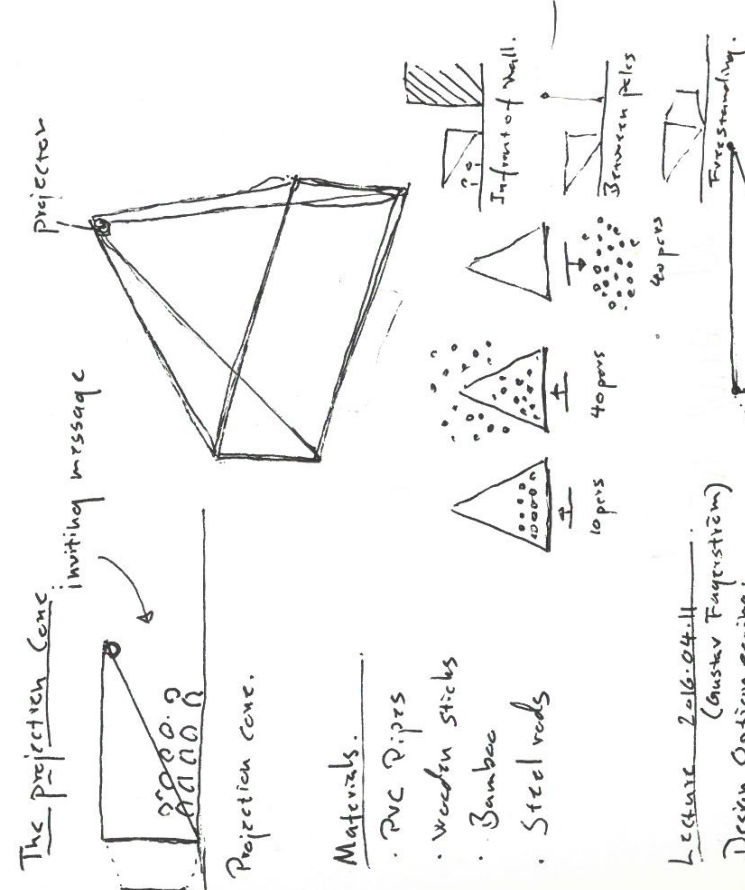


Centroid.



- Understand the problem. → Solve the problem.
- The results should work afterwards. (Focus!)
- Start from the users. (How will it be used?)

1. How do the users get aware? Concept
2. How do they approach? Concept
3. What will make them stay? Concept.
4. How will they stay? Cover, seating, movement.
5. How will they leave? movement.
6. What/How will they remember it? Concept.



Materials:

- PVC Pipes
- Wooden sticks
- Bamboo
- Steel rods

Lecture 2.16.04.11
Gustav Fugentzen

Design Option eering!

Create multiple Solutions
With parametric design.

"Engineers know what
they're solving. Architects
don't always know what
to solve"

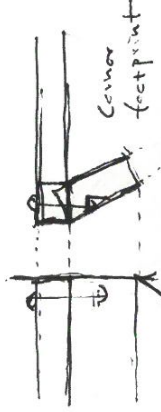
• No floor.

• Projector + Screen fixed.

• One volume.

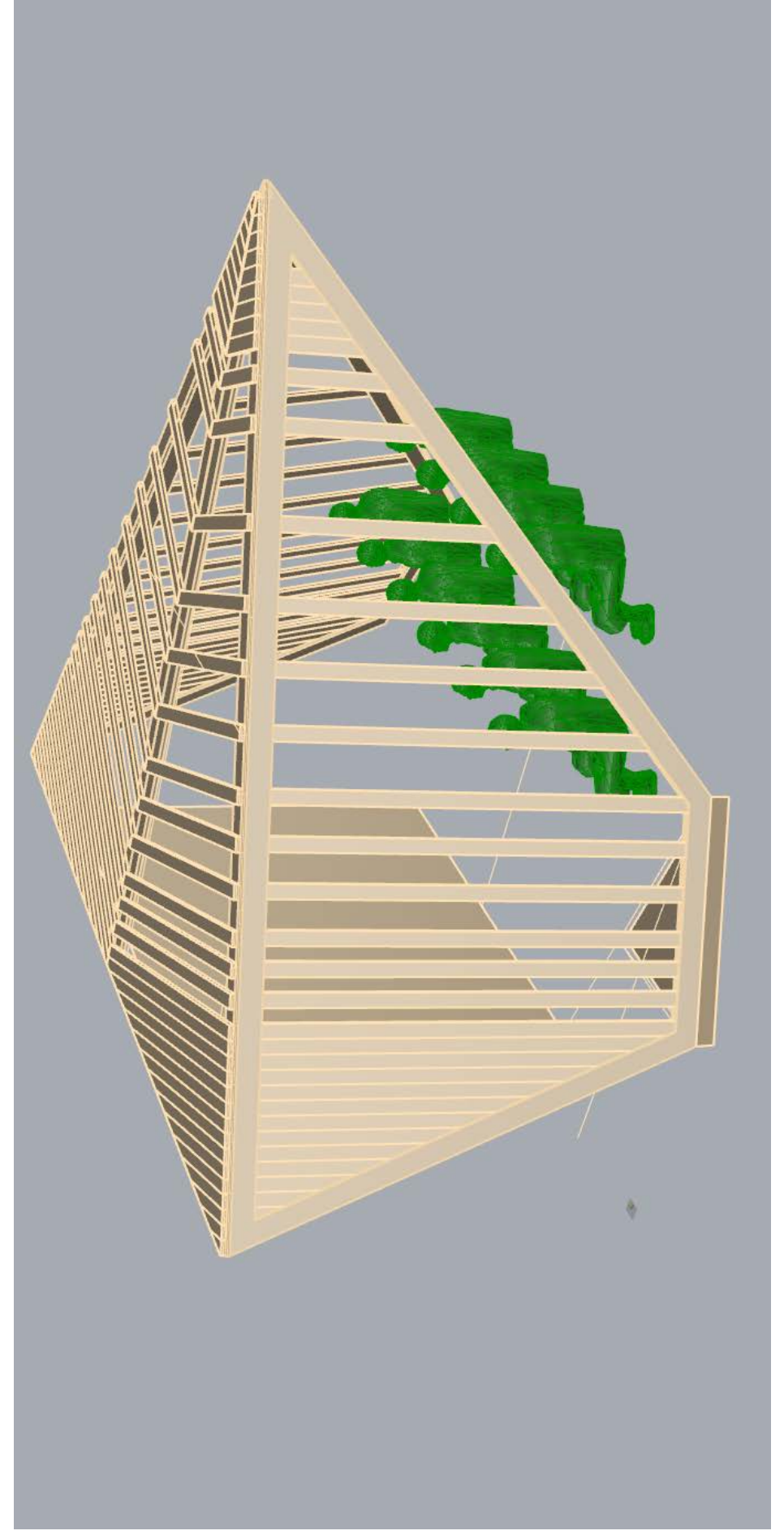
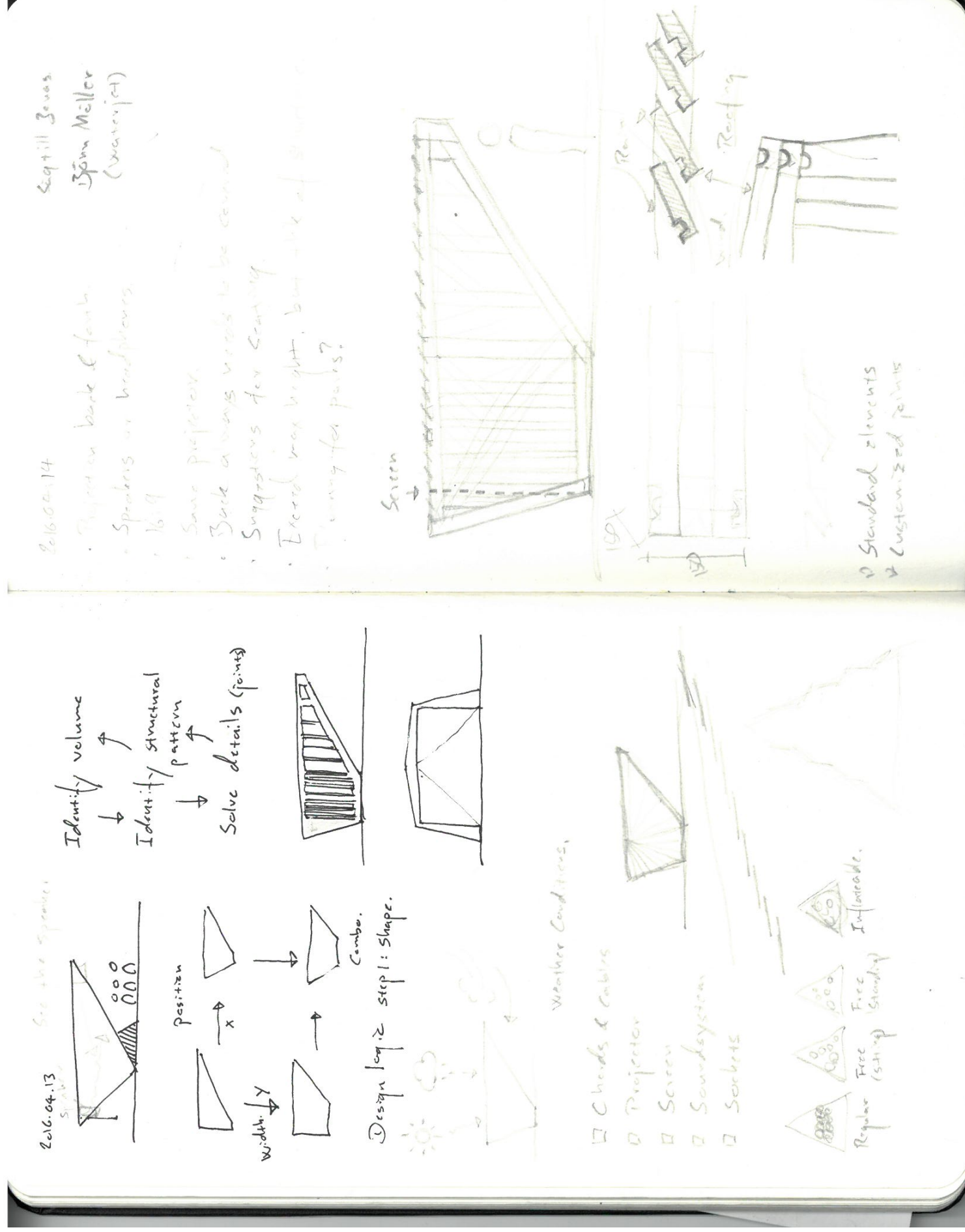
• Think about
Anxiety beam.

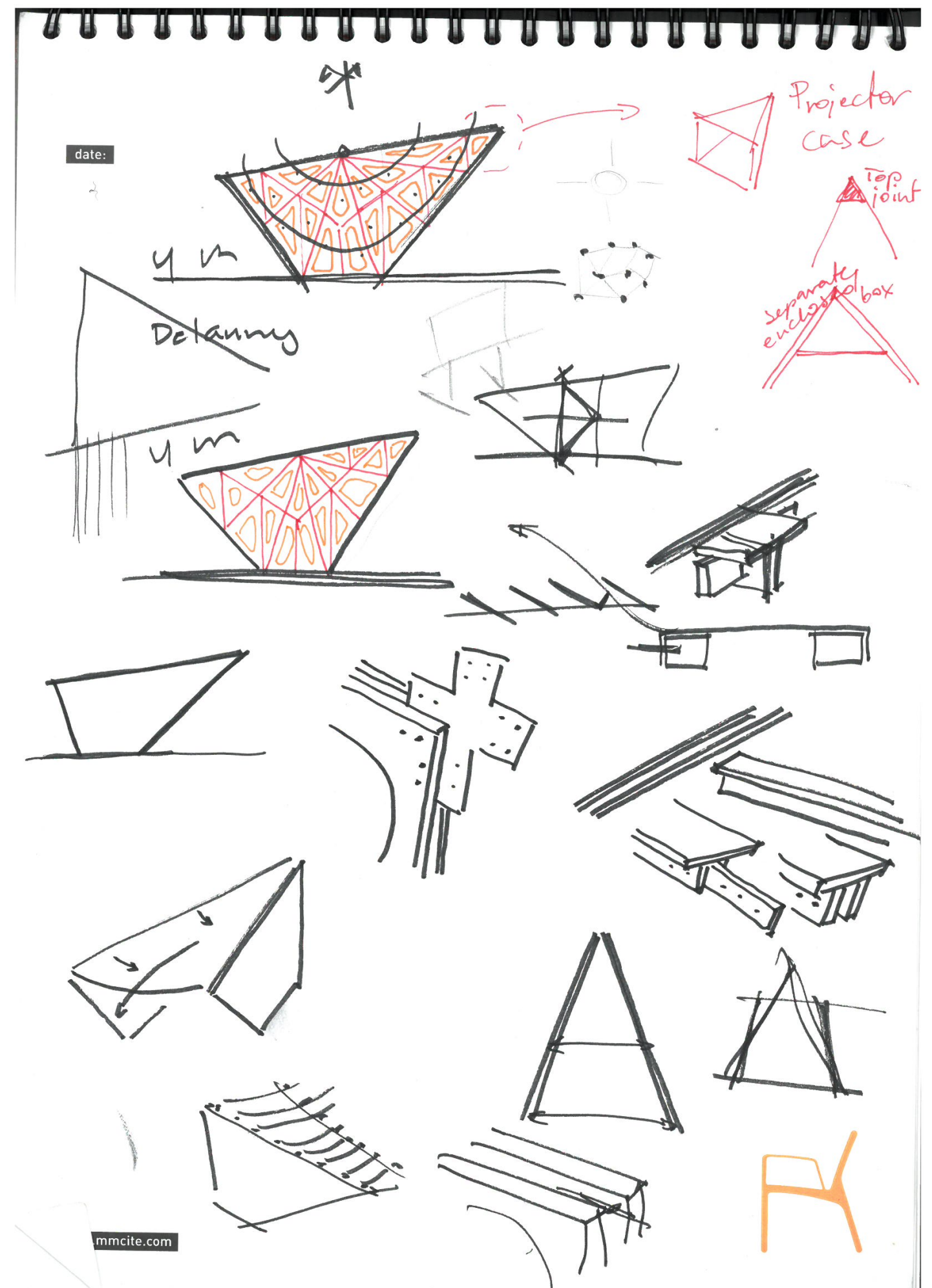
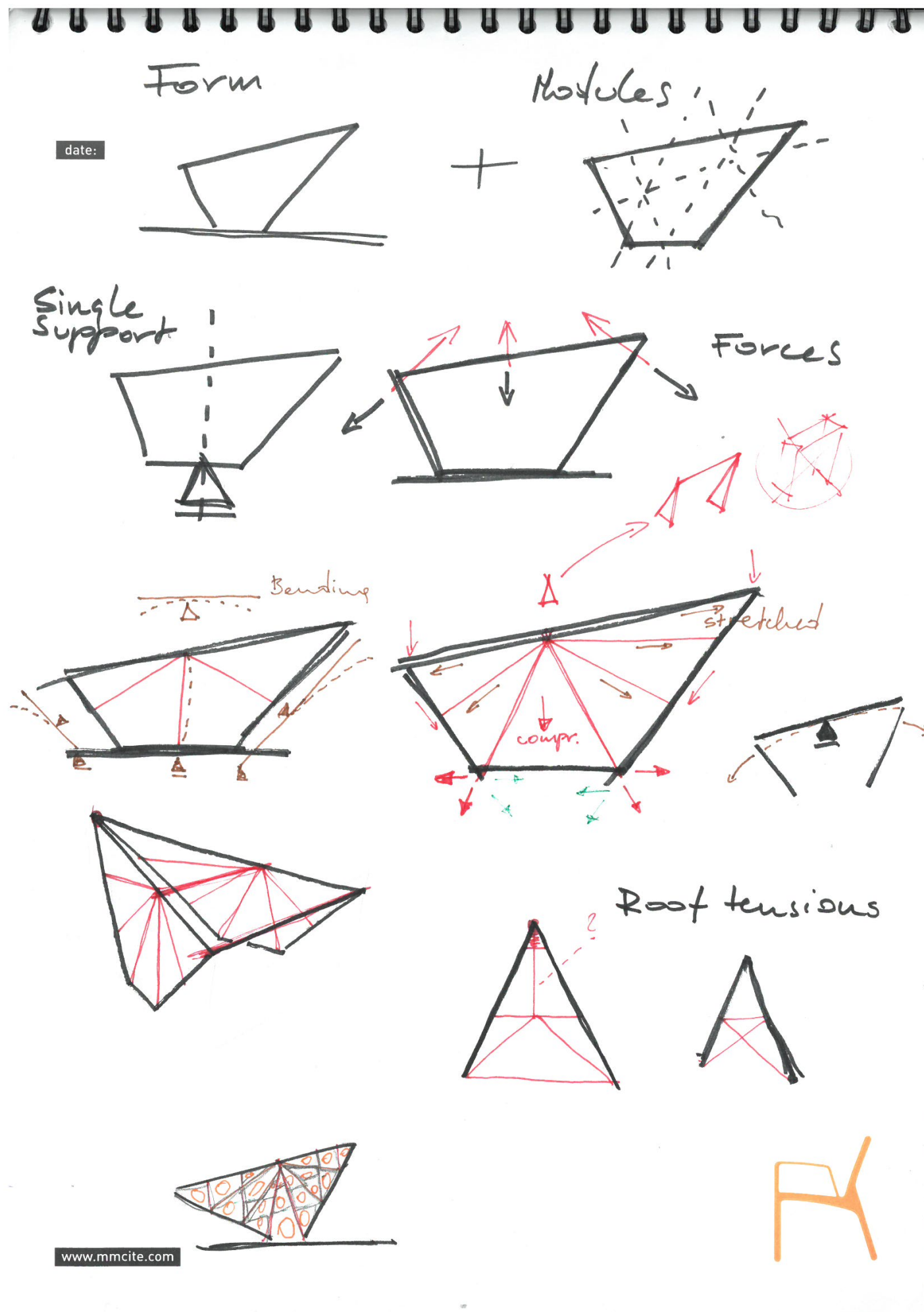
• 6x6 x 3



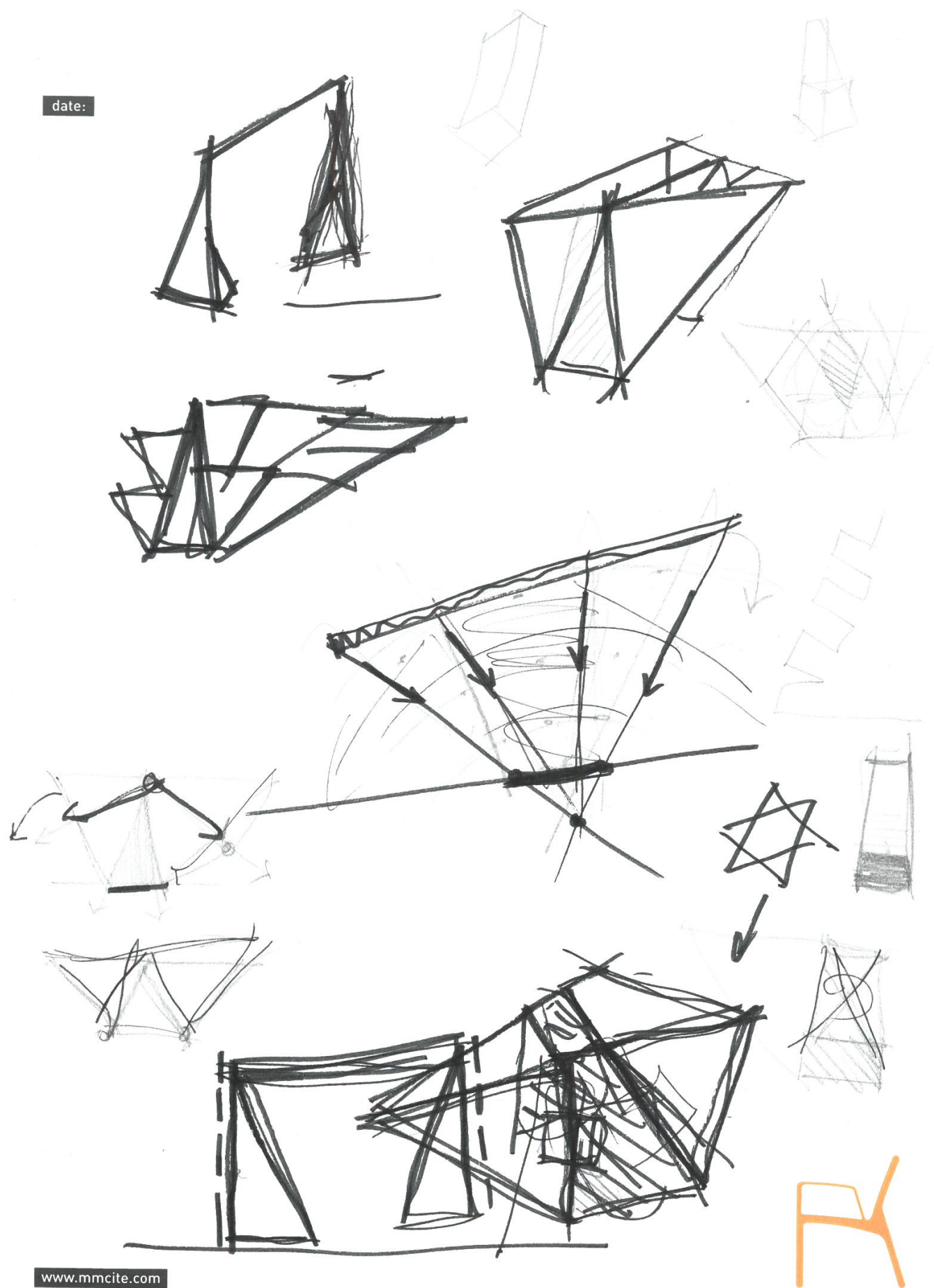
Corner
footprint

XINGA'S SKETCHES

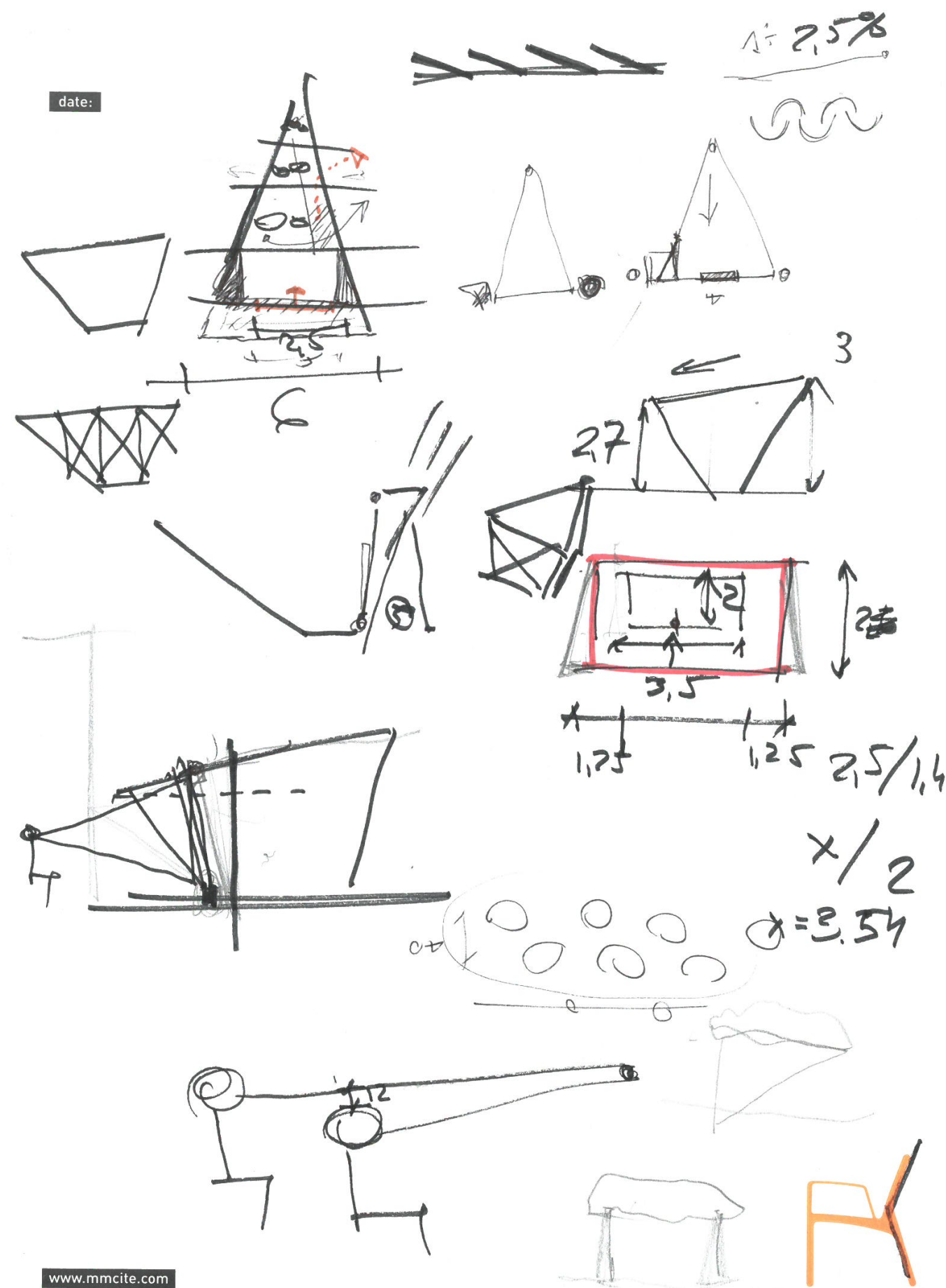




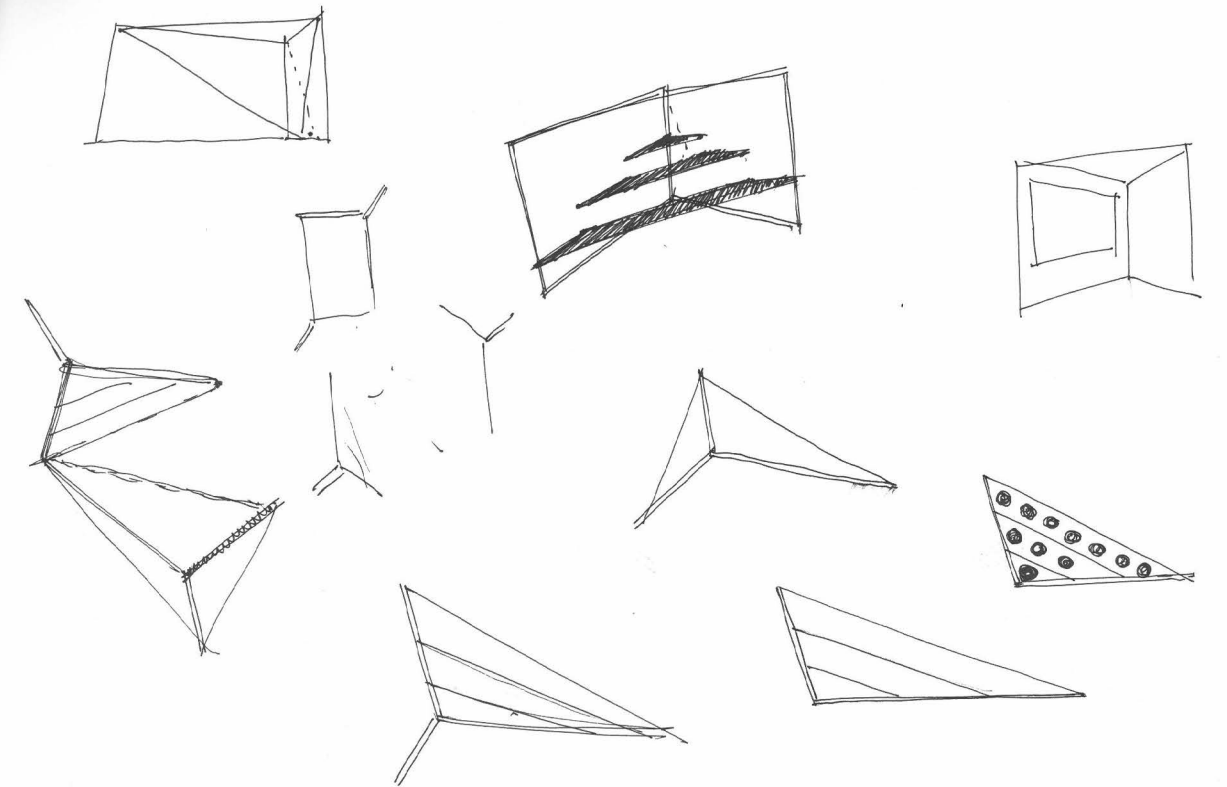
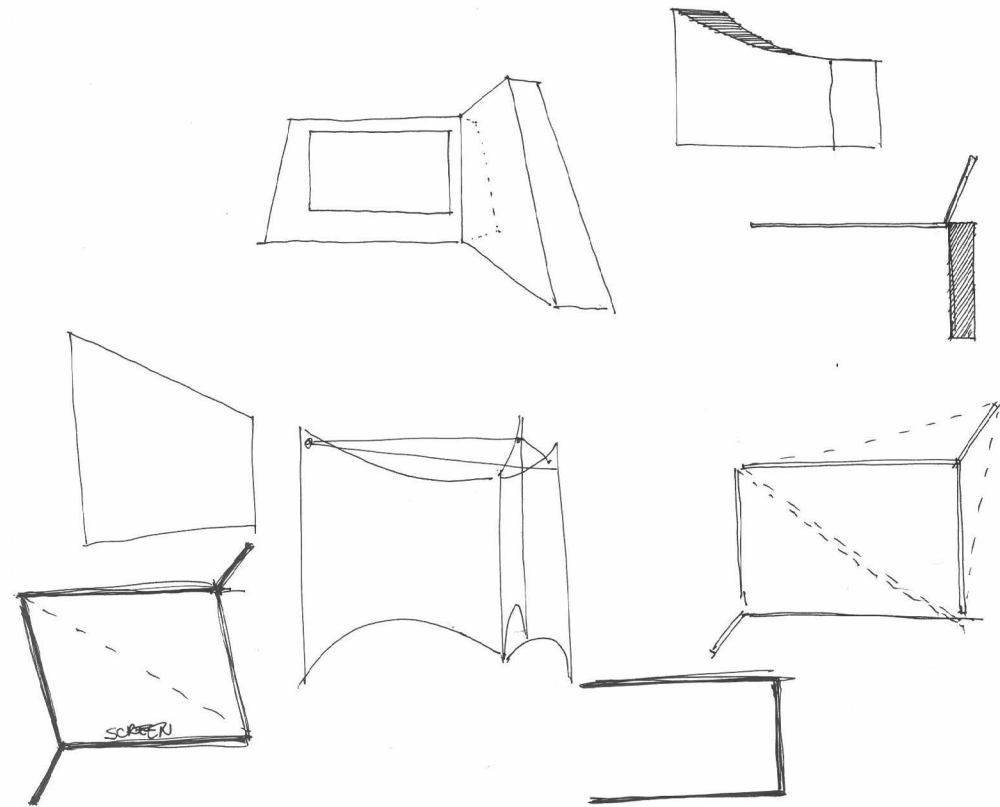
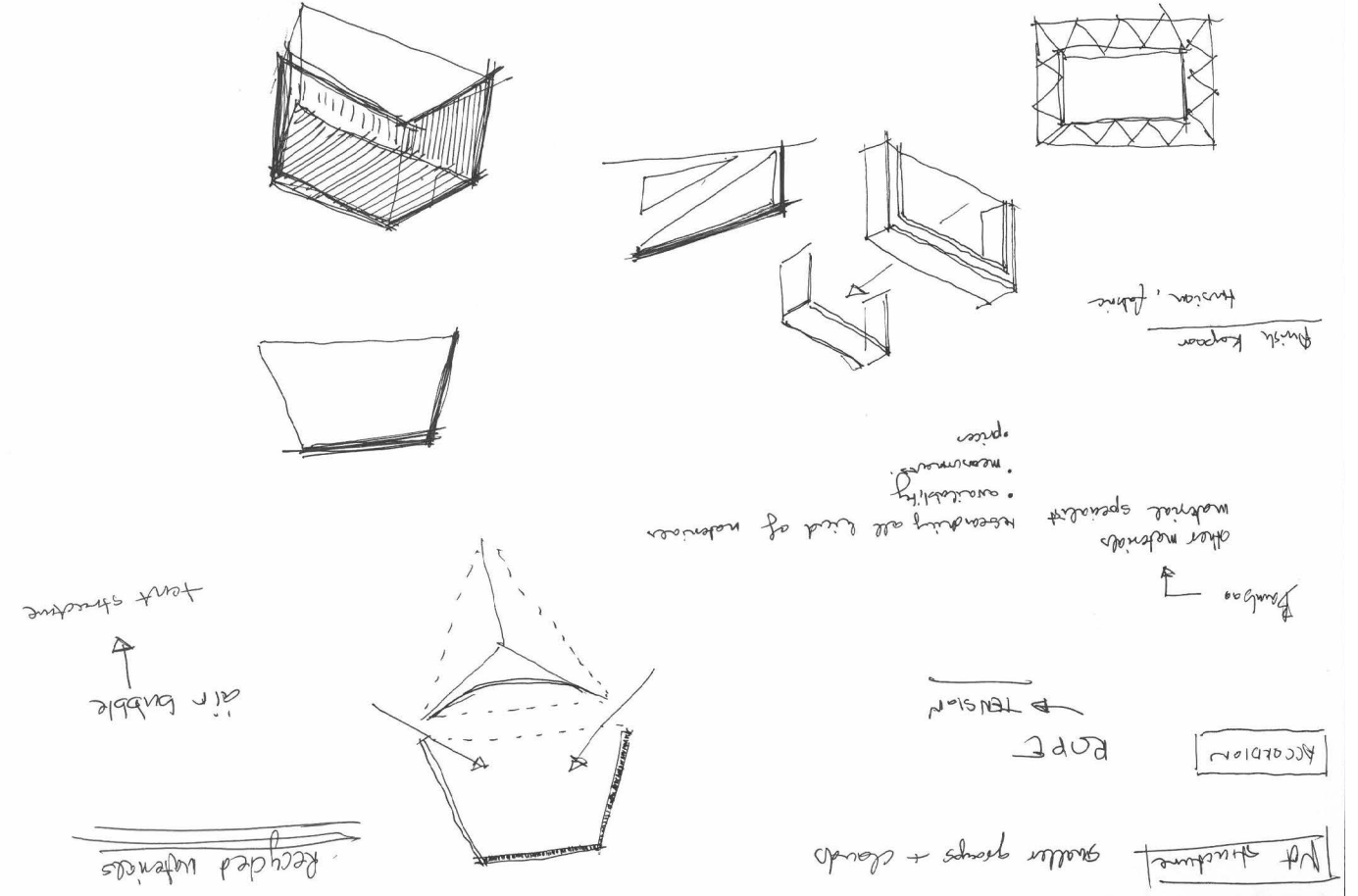
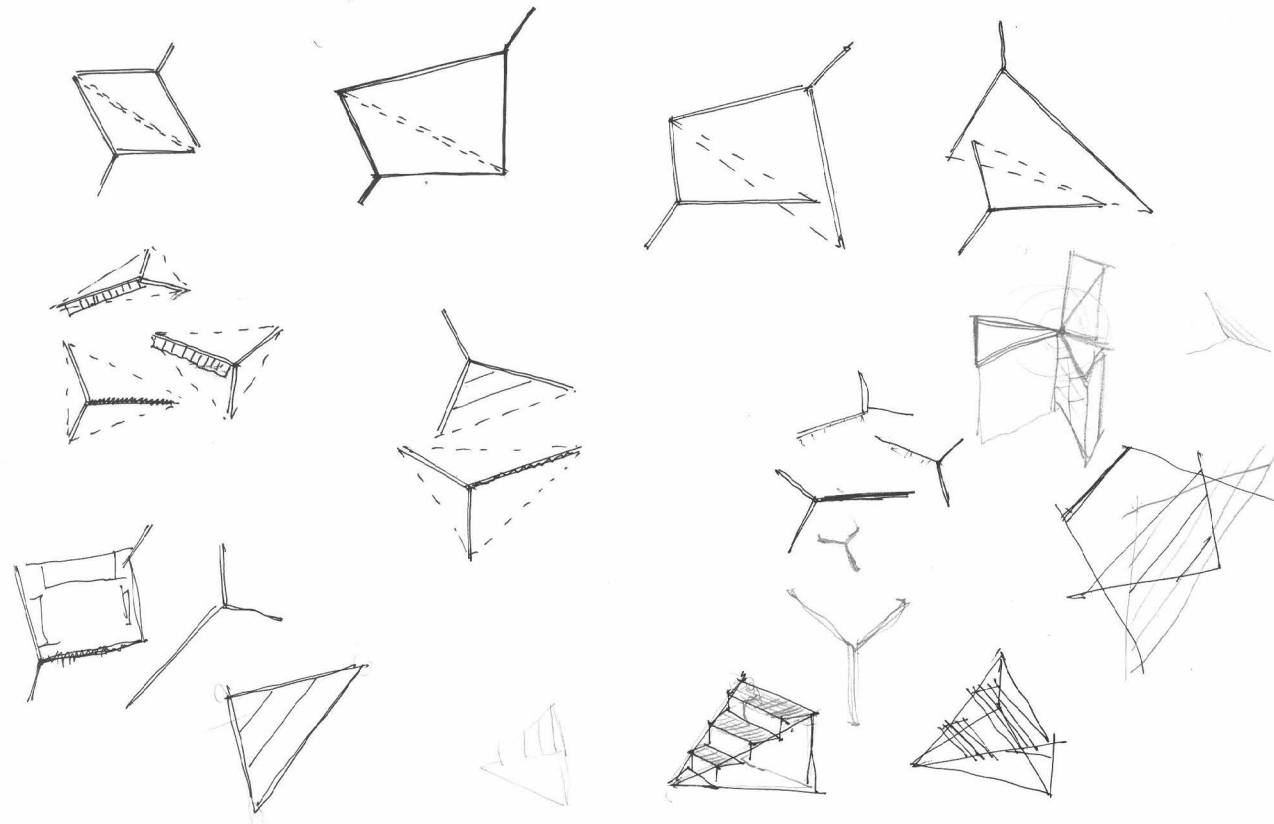
date:



date:



MATTEO'S SKETCHES



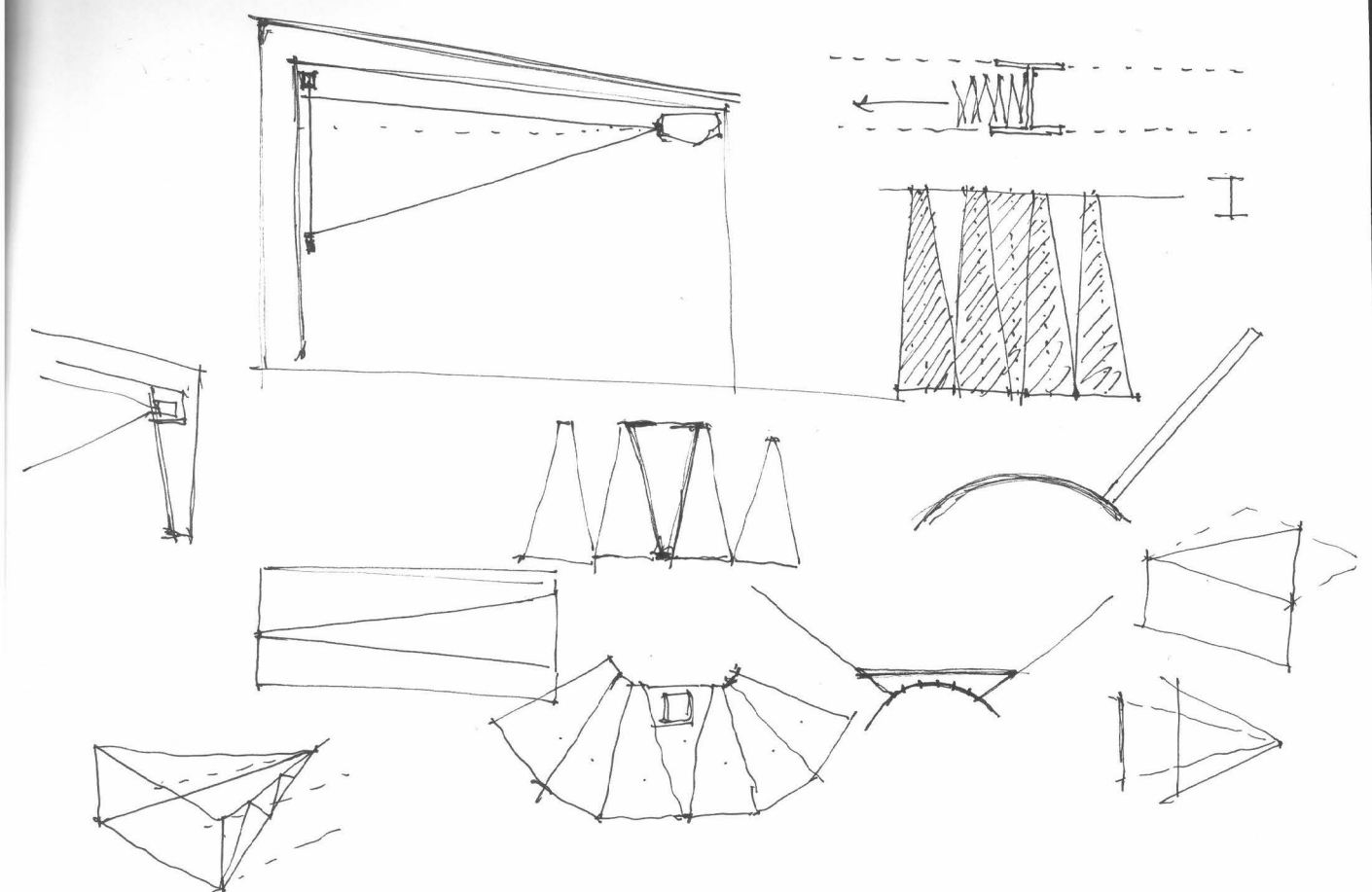
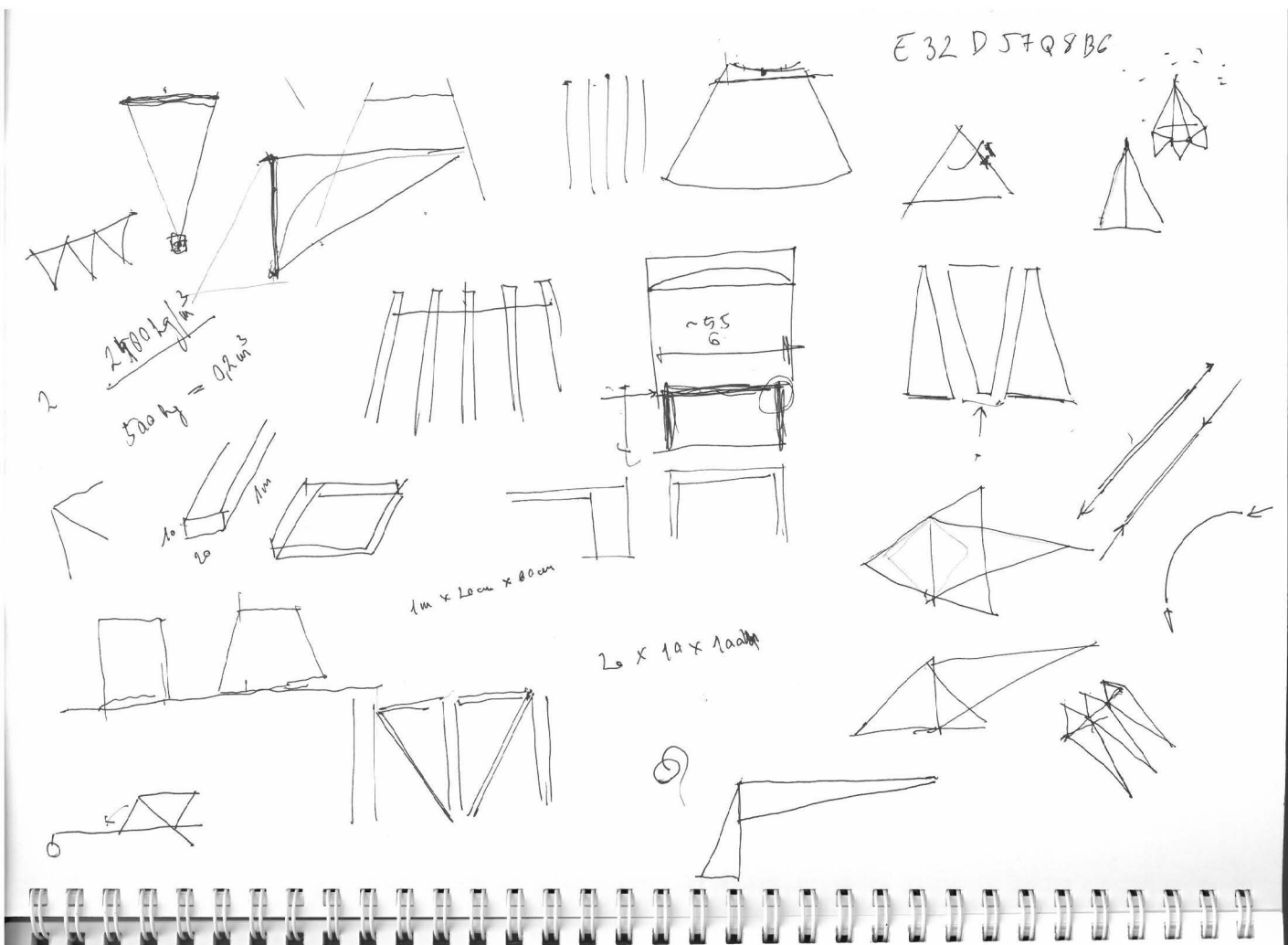
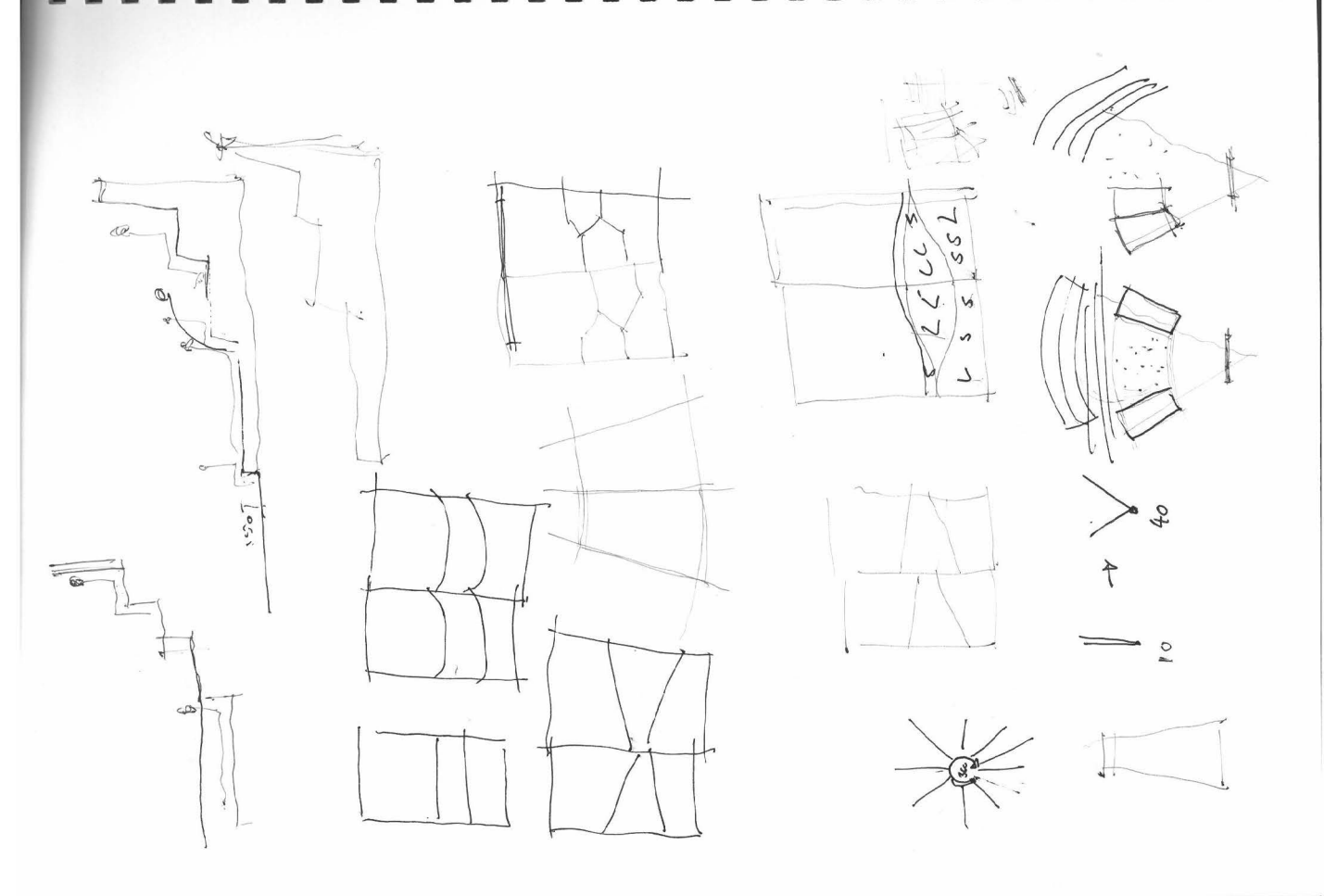
[illegible]

$$\frac{250}{18} = \frac{x}{9}$$

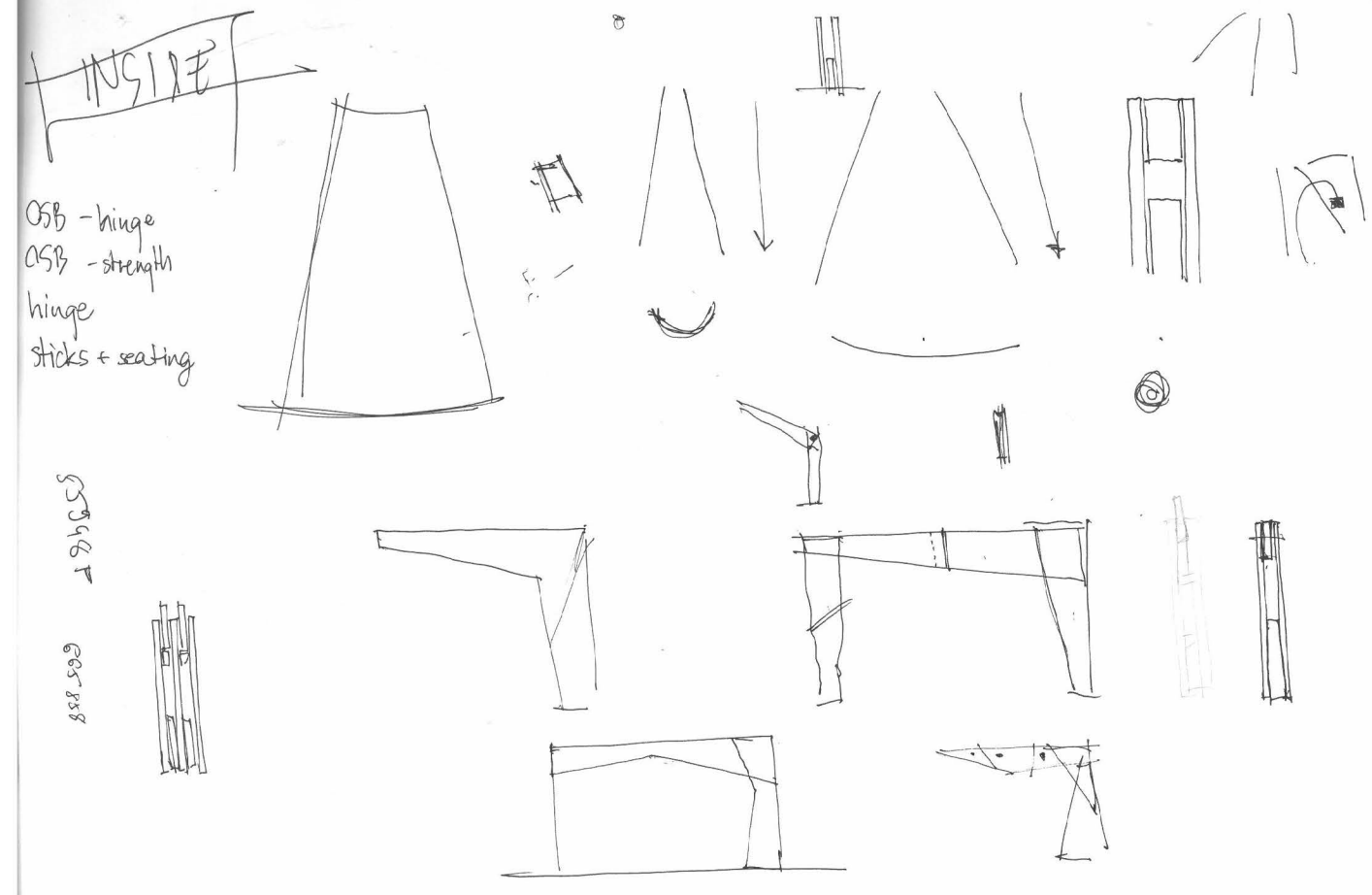
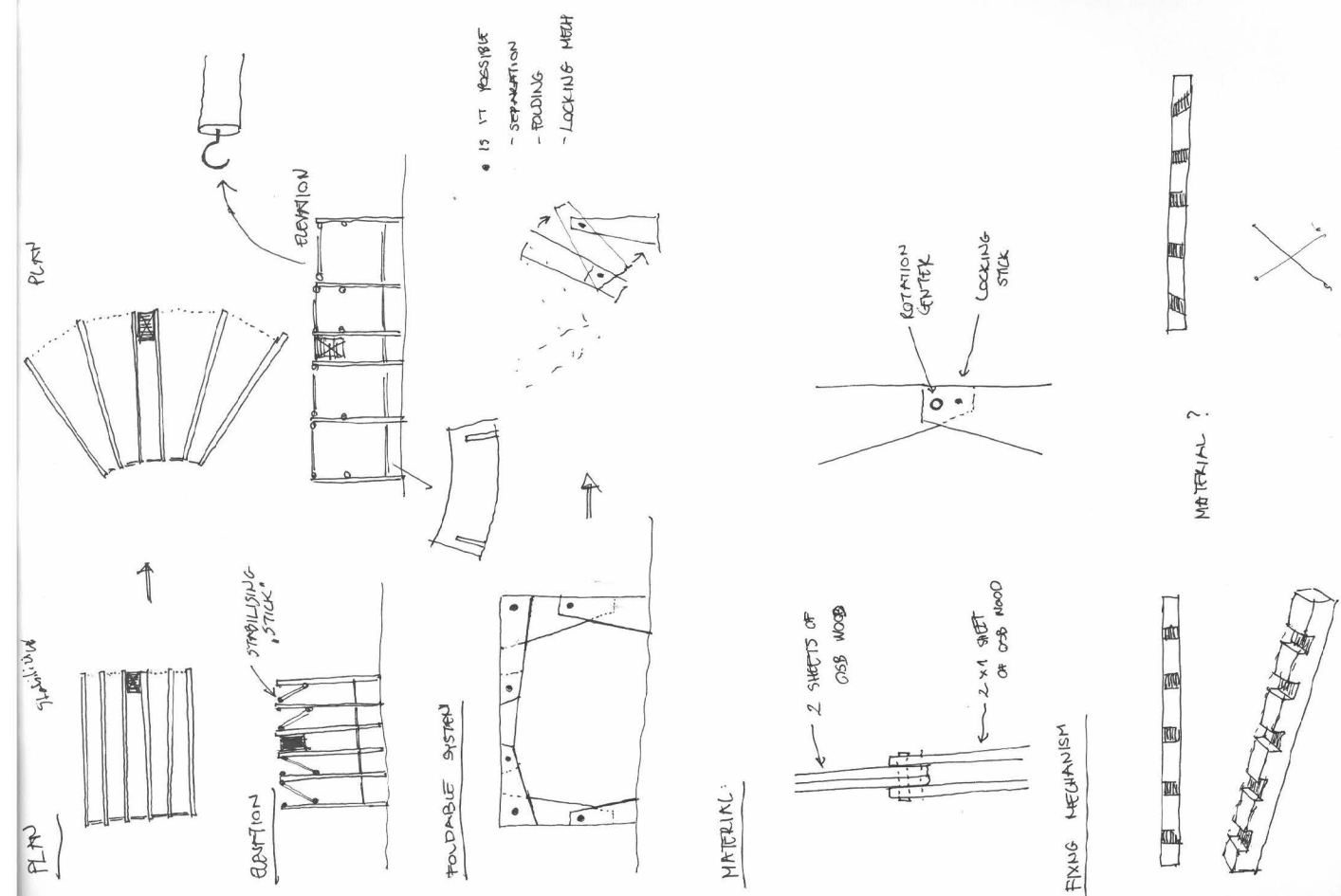
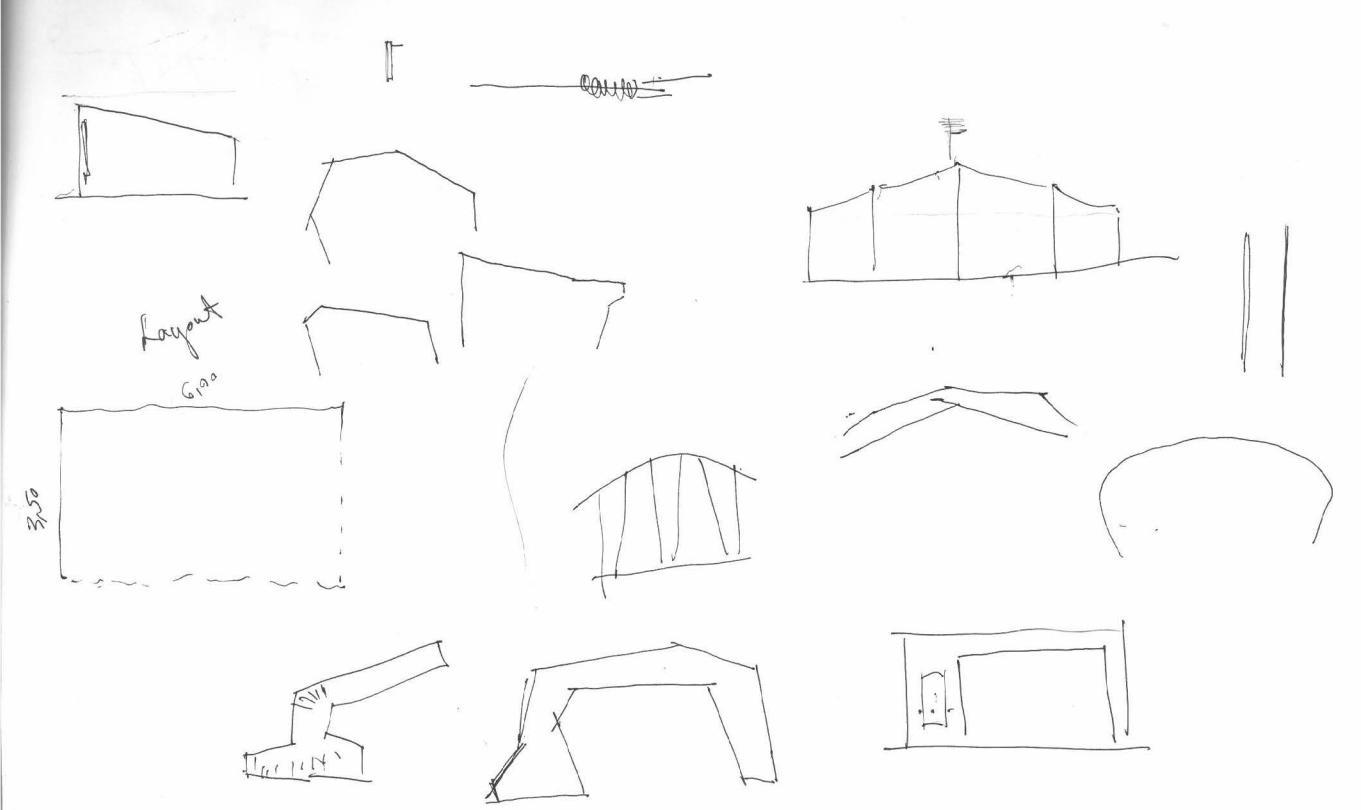
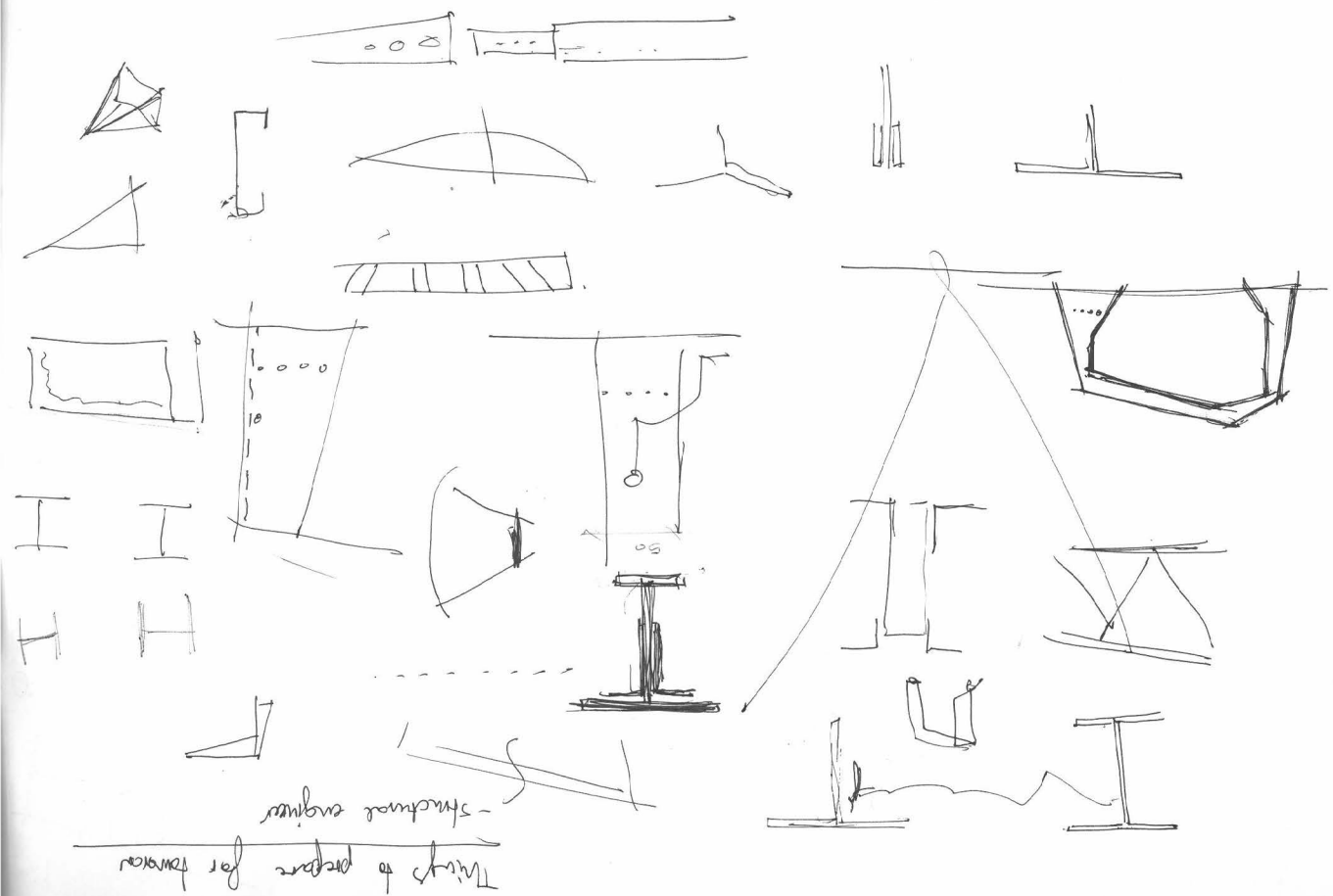
$$9 \cdot \frac{250}{18} = x$$

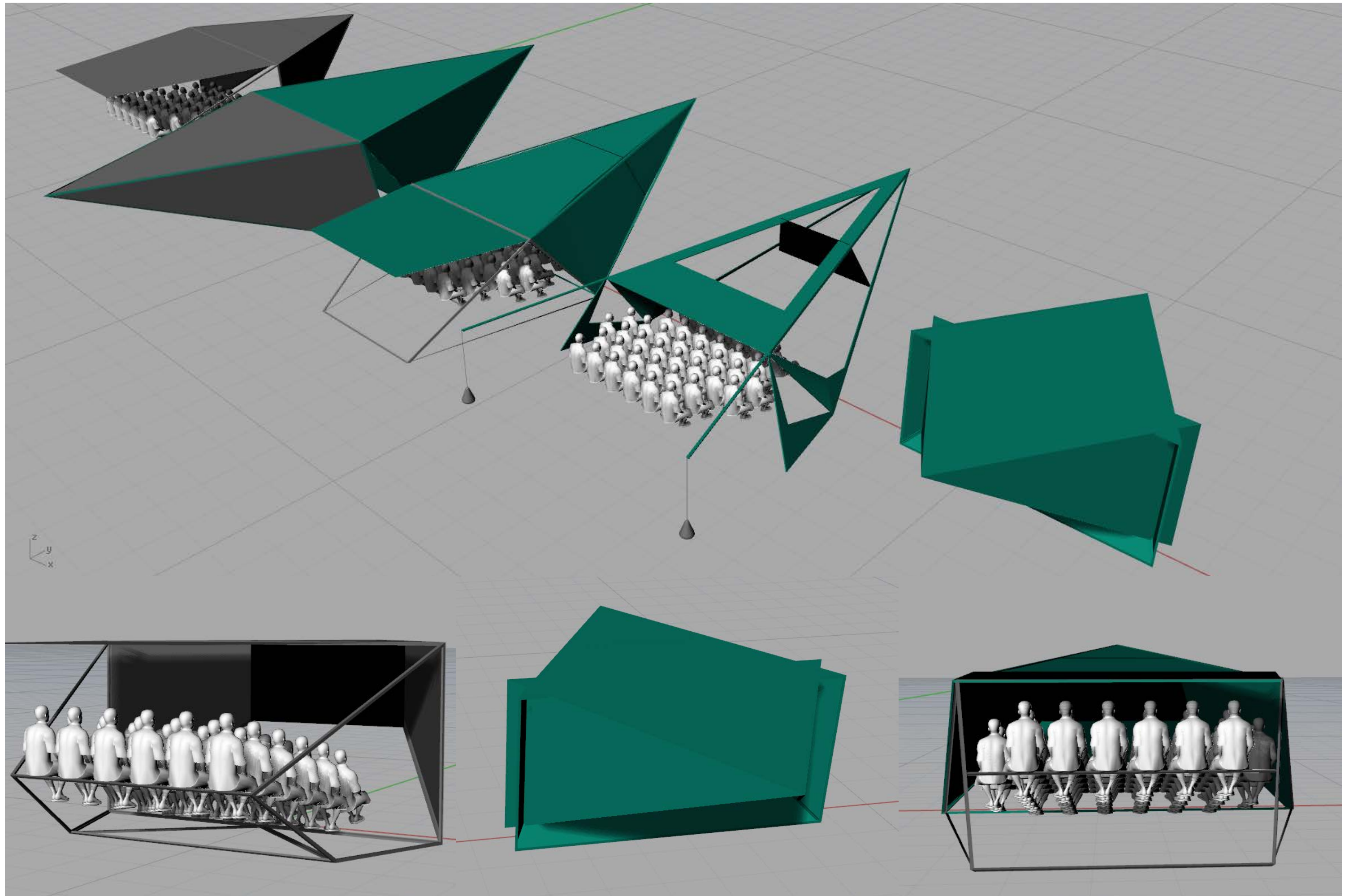


SOLID \rightarrow HEAVY, NOT TRANSPORTABLE

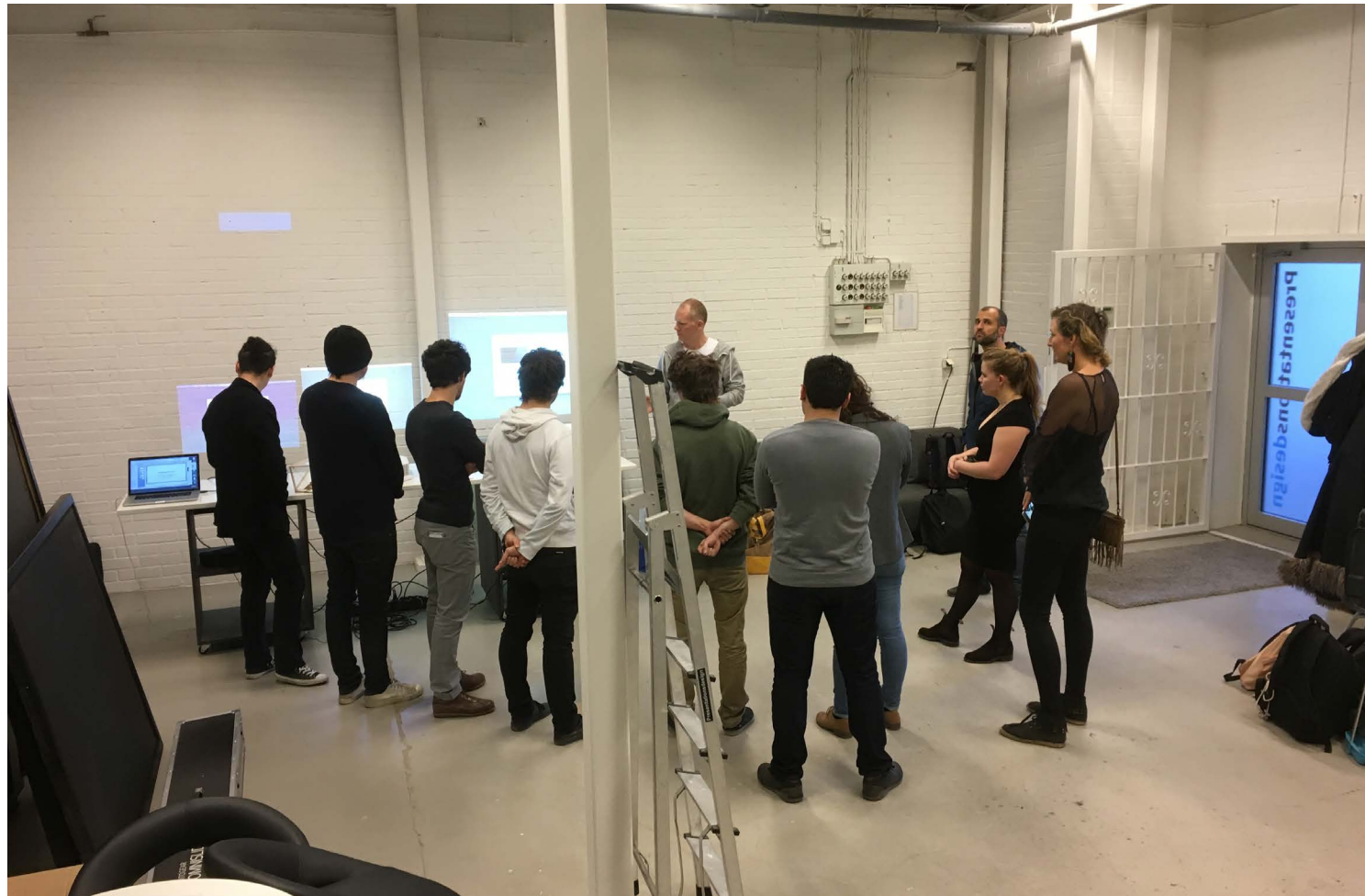
[illegible]

MATTEO'S SKETCHES





MEETING: HOW DOES A PROJECTION WORK?



MATERIALS AND ESTIMATION OF COSTS

1	Material	Quantity	SEK/unit (incl VAT)	Total SEK	%	Specifications	Source
2	Construction Plywood	10	803,5	8035	41%	24 x 2400 x 1200 mm	http://www.beijerbygg.se/store/privat/byggmaterial/byggskivor/plywood/k-pl
3	OSB	0	229	0	0%	15x2397x1198 mm	
4	Wooden beam (flooring)	6	133,25	799,5	4%	45x120x5400 mm	http://www.beijerbygg.se/store/privat/tr%C3%A4produkter/plank-reglar/byggr
5	Fabric (Tarp)	30	300	9000	46%	150 m wide	https://www.tyg.se/21-354-010_presenning-yacht-3.html
6	Wires (Steel)	1	745	745	4%	50 m, 3 Om	http://www.p-lindberg.se/detalier/staalwire
7	Screweye	3	70	210	1%	2 pack	https://www.byggmax.se/spik-och-skruv/krokar-och-%C3%B6glor/skruv%C3%9E
8	Screws	3	209	627	3%	140 mm x 25 units (package)	https://www.byggmax.se/spik-och-skruv/tr%C3%A4skruv/tr%C3%A4skruv-tft-p
9							
10				19416,5			
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22				8400	31%		
23				18000	66%		
24				900	3%		
25							
26				27300			

1	Material	Calculator	Plywood	Plywood	Plywood	Plywood
2	Length	450	2400	2500	2440	2400 mm
3	Width	420	1200	900	900	1200 mm
4	Thickness	18	12	15	12	21 mm
5	Weight	1,701	17,6	N/A	12,75	34 kg
6						
7	Price per unit	N/A	189	299	269	469 sek
8	Price per m2	N/A	65,6	132,9	122,5	162,8 sek/m2
9						
10	Volume	0,003402	0,034560	0,033750	0,026352	0,060480 m3
11	Density (ca 500kg/m3)	500	509,3		483,8	562,2 kg/m3
12						
13						
14	Common plywood thickness (mm)	5	9	12	15	18
15		21	24	27	30	up to 50
16						
17						
18	Questions	Any specific type of wood needed?				
19		Must it be construction plywood P30?				
20		Is the material suitable for outdoor use (rain, sun, wind)?				
21		It the material suitable for this type of structure?				
22						

WISA®-Spruce

WISA-Spruce är en lätt och mångsidig skiva av hög kvalitet. Den är tillverkad av miljöcertifierad nordisk gran och är idealisk för byggnationer i bärande konstruktioner, i tak, golv och väggar. Skivan används allmänt också inom snickeri och emballageindustrin.

- Limning**

Vattenfast krysslimning med fenolhartslim enligt standarden EN 314-2/klass 3.
- Yta**

Ytkvalitet II och III enligt Handbook of Finnish Plywood (uppfyller kraven i standarden EN 635-3). Finns även tillgänglig i en förbättrad II kvalitet: G.
- Bearbetning**

Kantbearbetning kan erhållas på begäran.

Tjocklekar och vikter		Antal skikt		Tjocklek (mm)		Vikt Kg/m² – cirka	
Nominell tjocklek (mm)		Tjocka faner	Tunna faner	Min	Max	Tjocka lager	Tunna lager
5	-	3		4,8	5,6	-	2,6
9	3	5		8,8	9,5	4,1	4,5
12	5	7		11,5	12,5	5,5	6,4
15	5	7		14,3	15,3	6,8	7,3
18	7	9		17,1	18,1	8,6	8,7
21	7	11		20,0	20,9	9,7	10,3
24	9	13		22,9	23,7	11,0	11,0
27	9	13		25,2	26,8	12,0	13,3
30	-	15		28,1	29,9	-	14,5

Andra tjocklekar (upp till 50 mm) och konstruktioner finns tillgängliga på begäran.

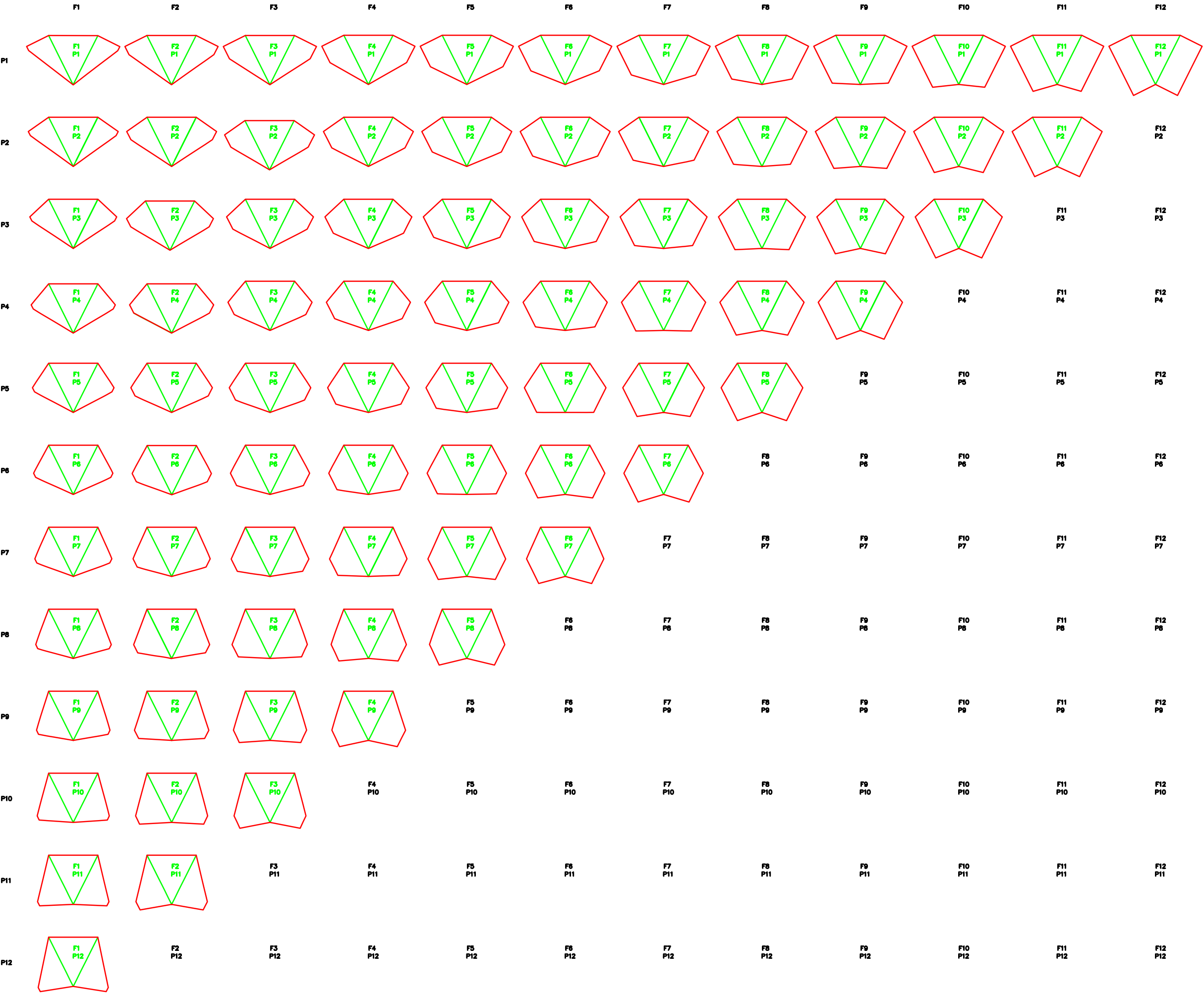
Number Slider

Parameters

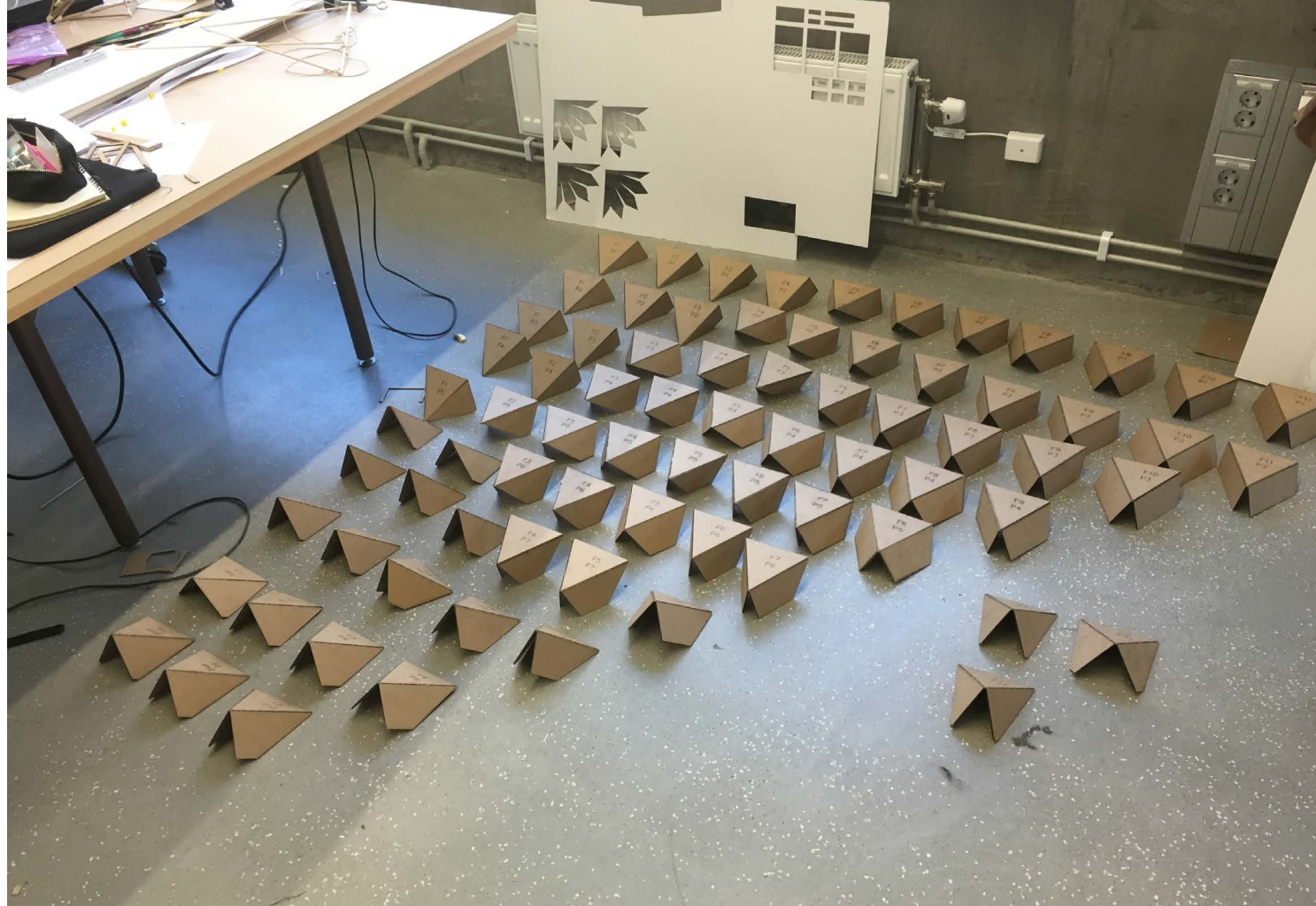
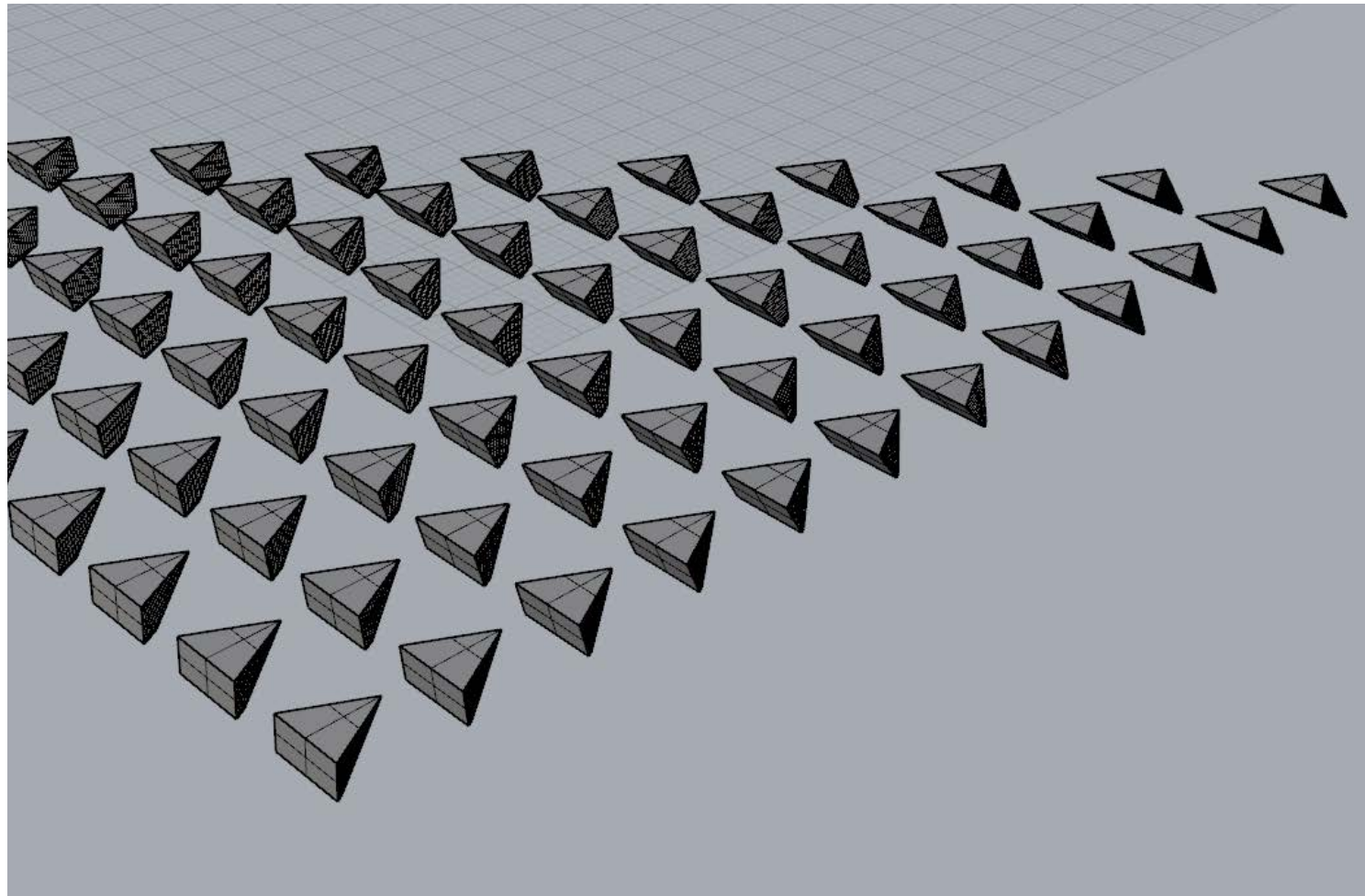
Divide Curve

[illegible]

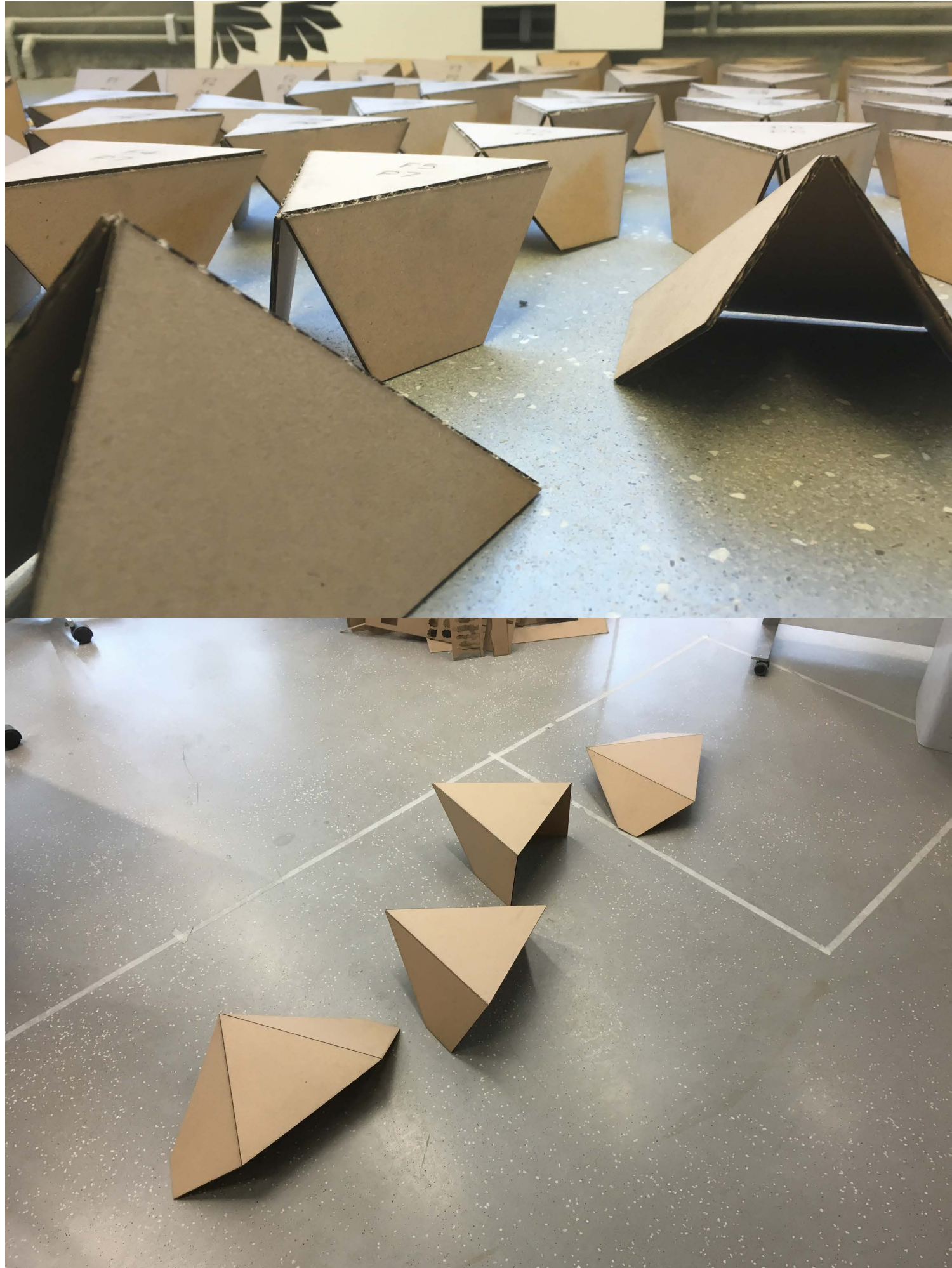
SCRIPT: OPTIMIZATION OF THE SHAPE



SCRIPT: OPTIMIZATION OF THE SHAPE



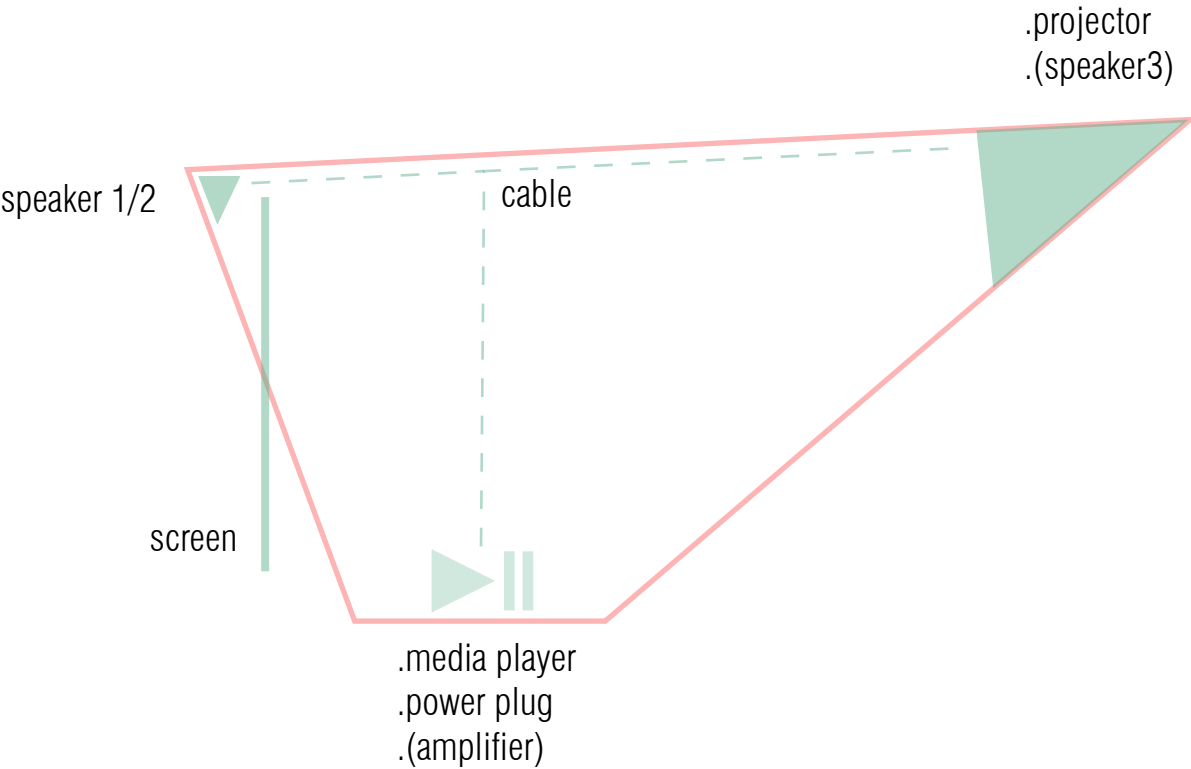
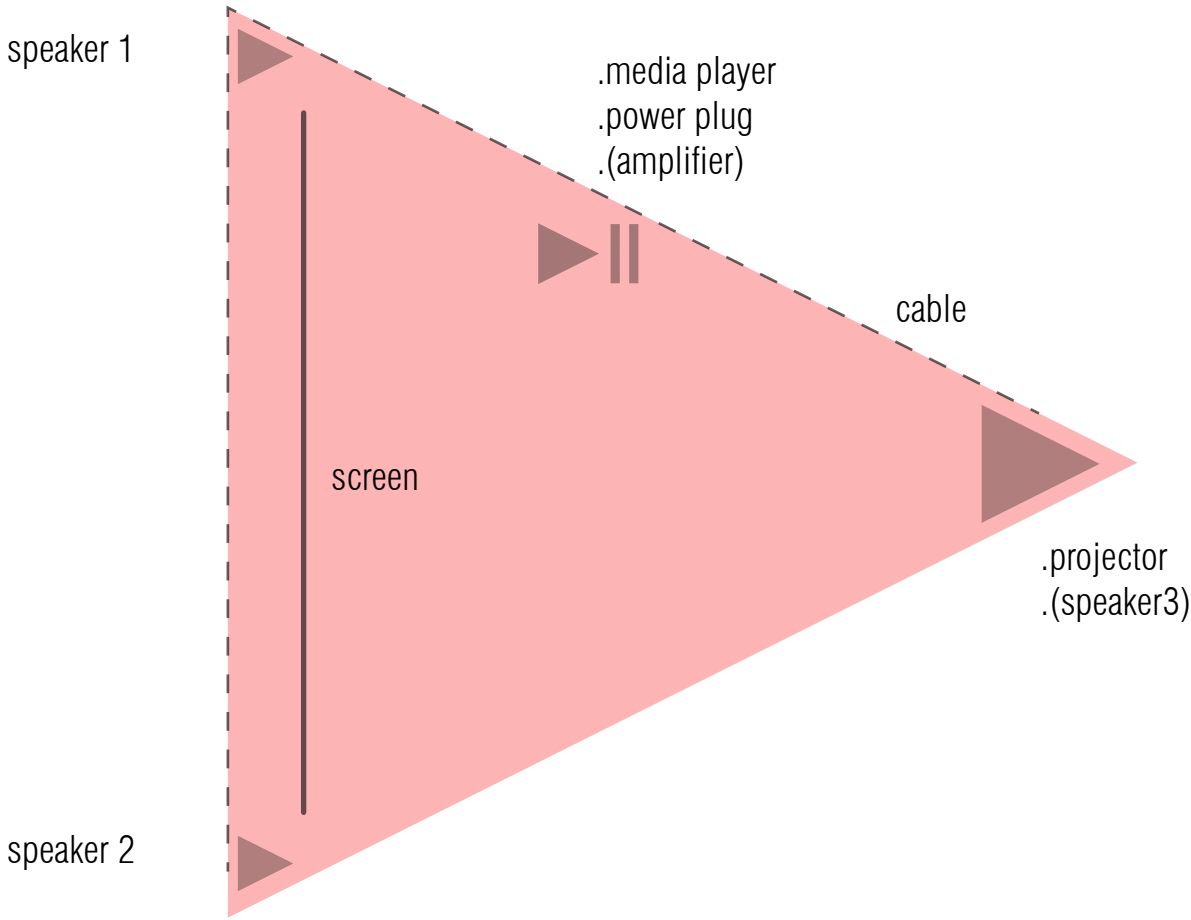
SCRIPT: OPTIMIZATION OF THE SHAPE



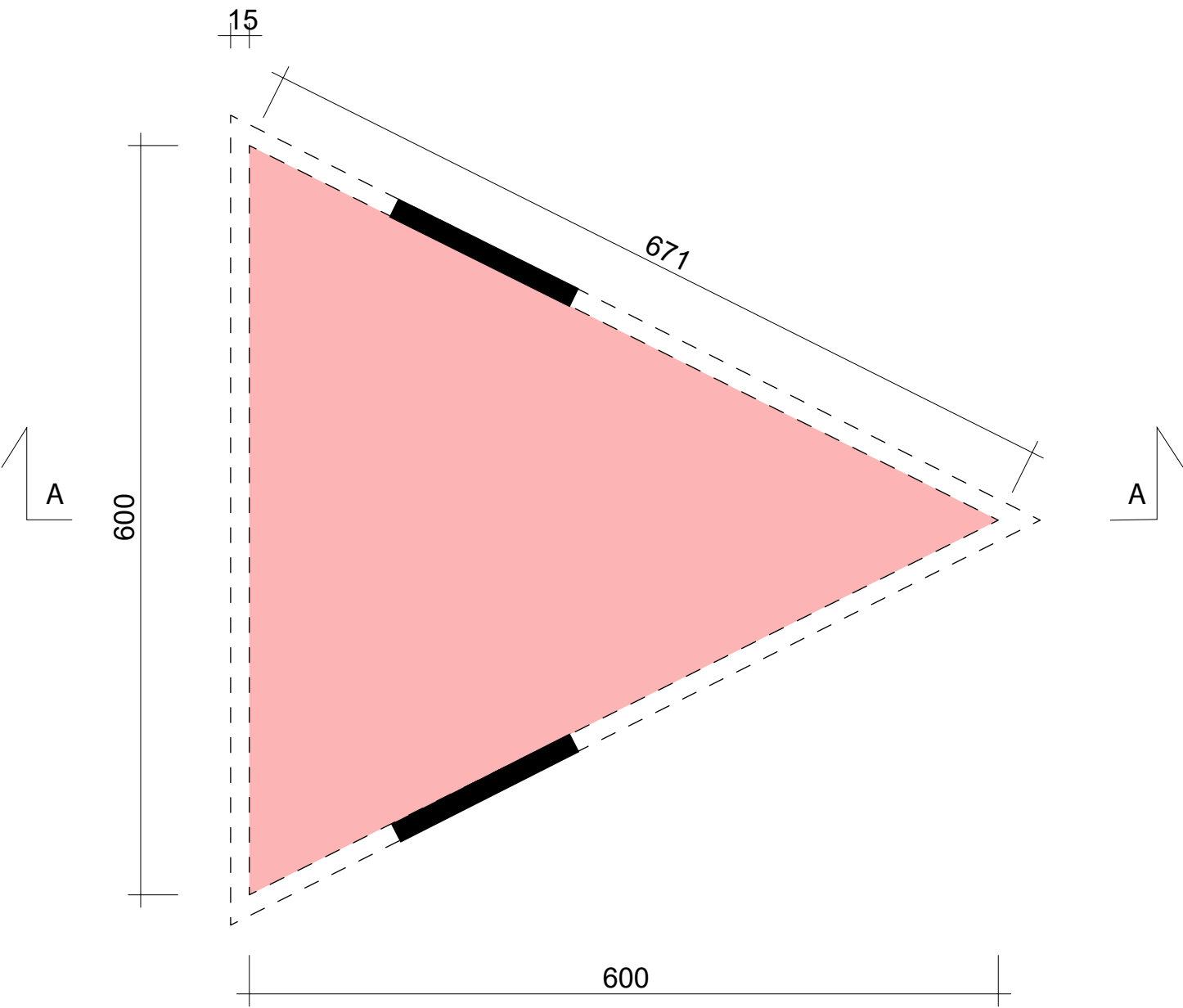
FULL SCALE MODEL



Equipment placement

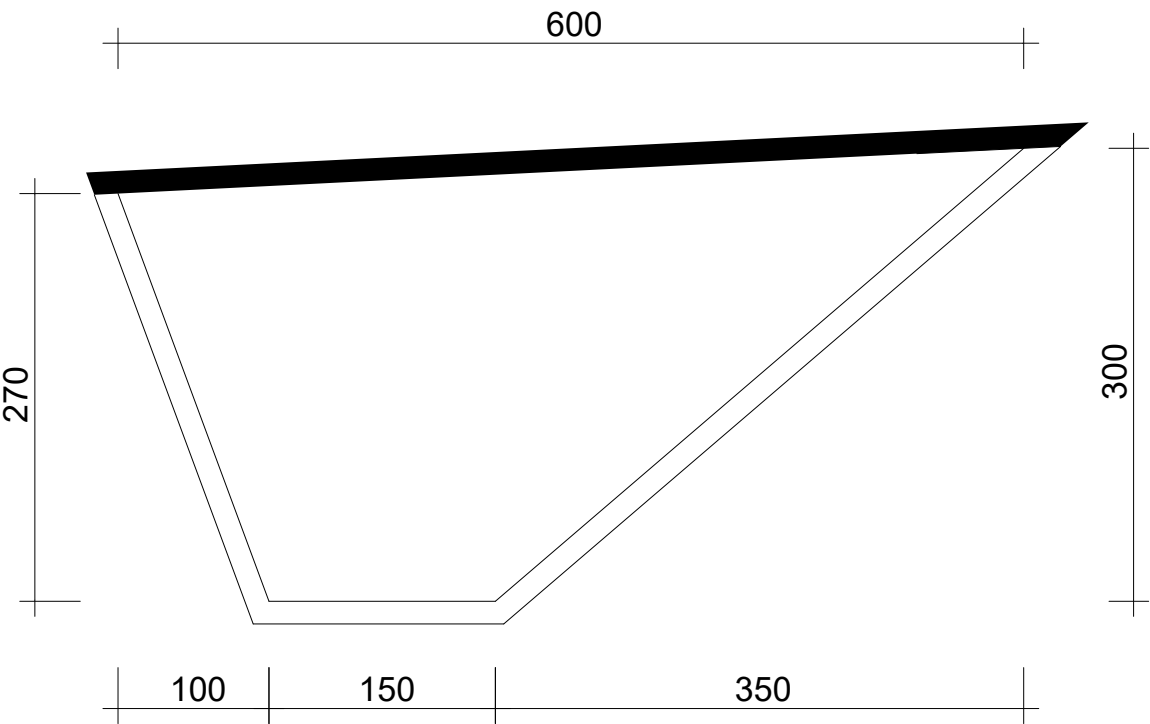


Footprint 18sqm

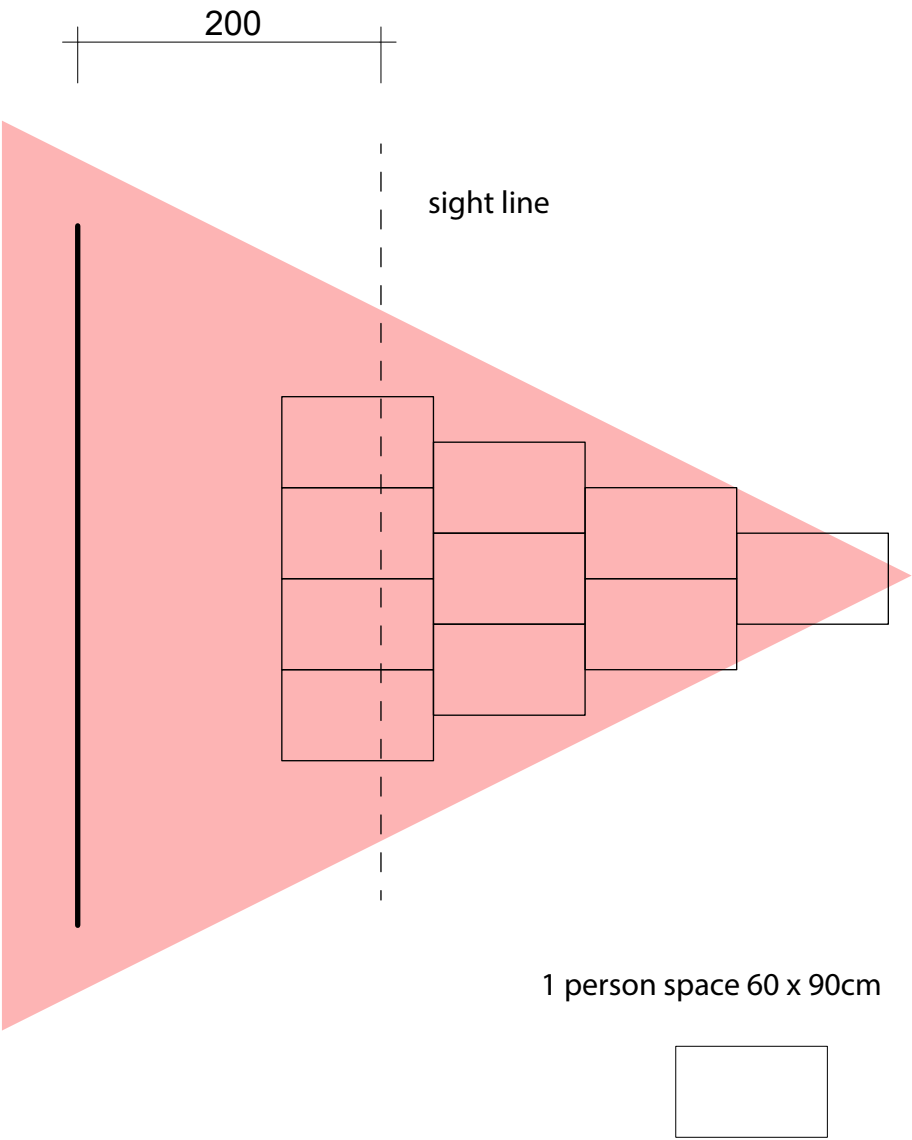


scale 1:50

Section A-A



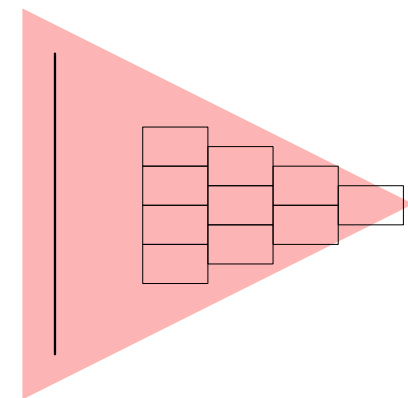
Minimum distance from the screen
10 people audience



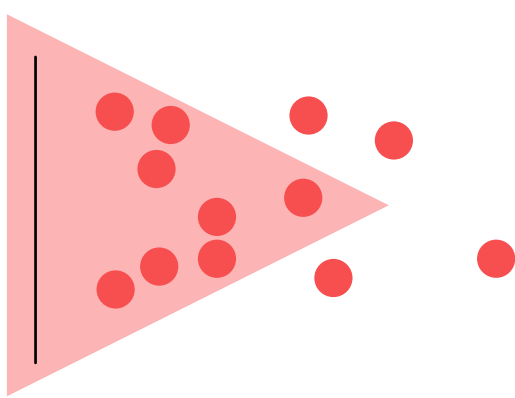
Screening arrangement

“Closed cone”

projection inside /
10 sits

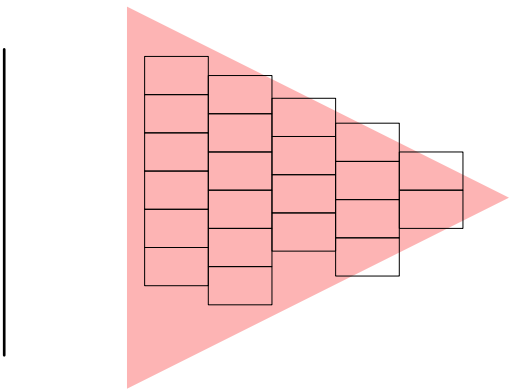


standing audeince/
freely sitted

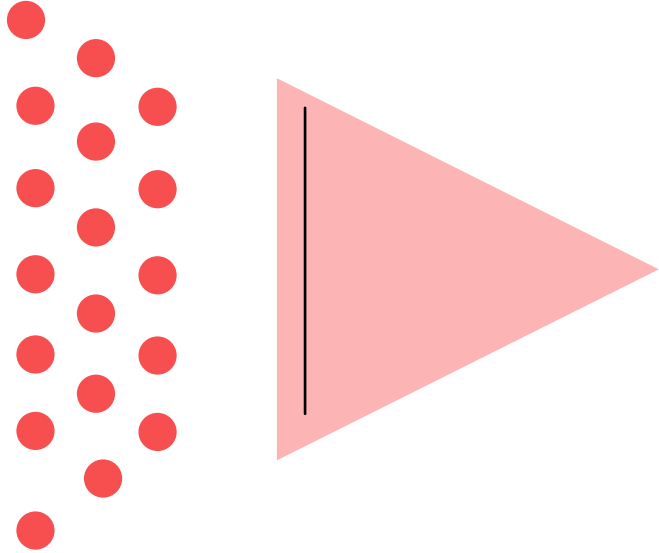


“Opened cone”

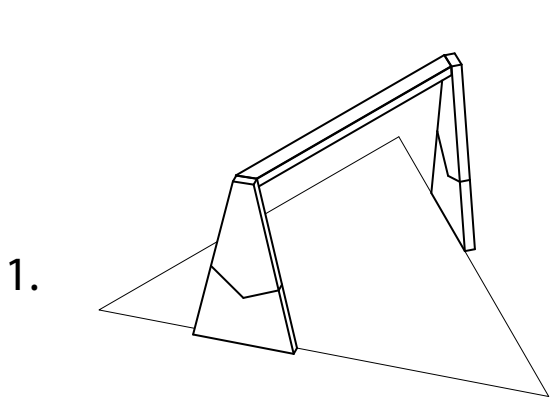
projection outside /
around 21 sits



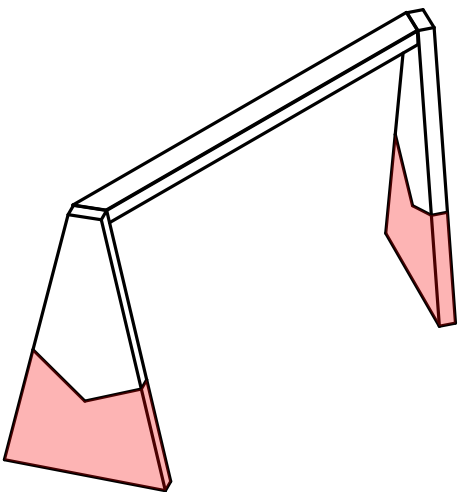
audience outside /
unlimited sits



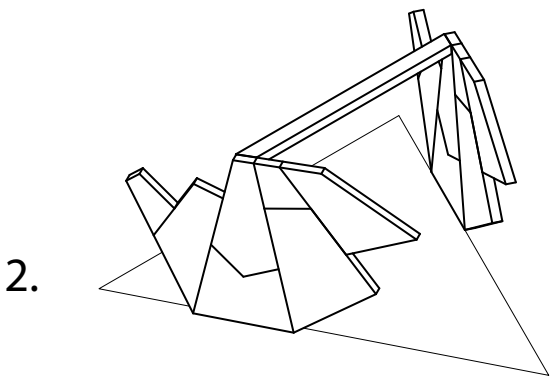
Assembly steps



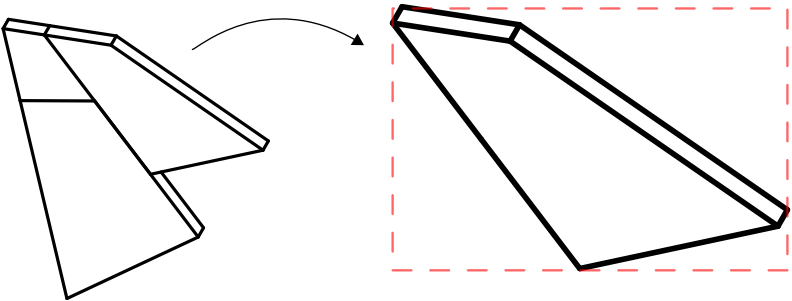
Middle frame



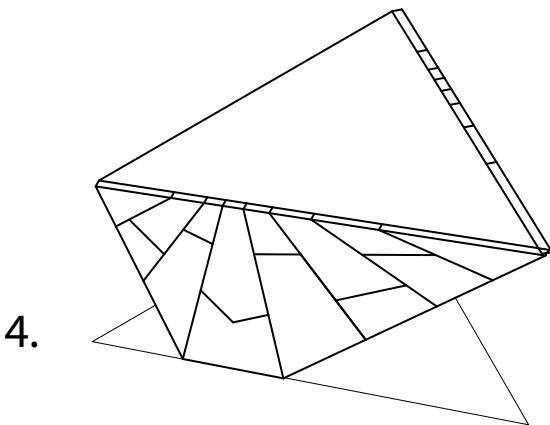
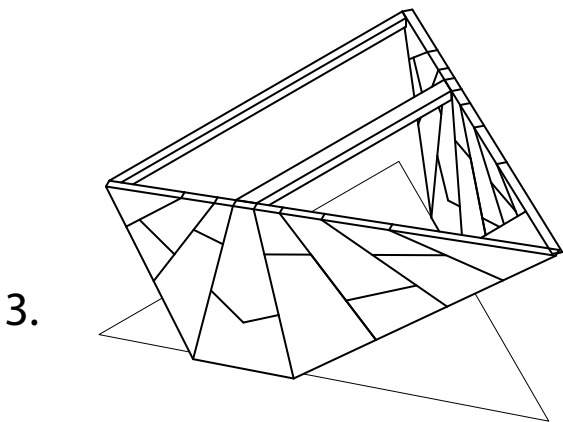
.Needed load hidden inside
.Shelves for media player etc.



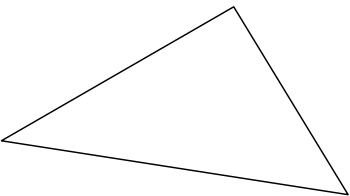
Growing walls



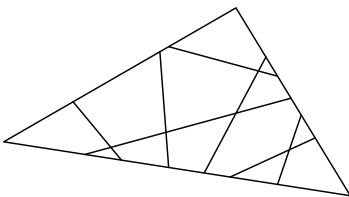
.Each single module not exceeding
1.5m in dimensions and 20kg weight



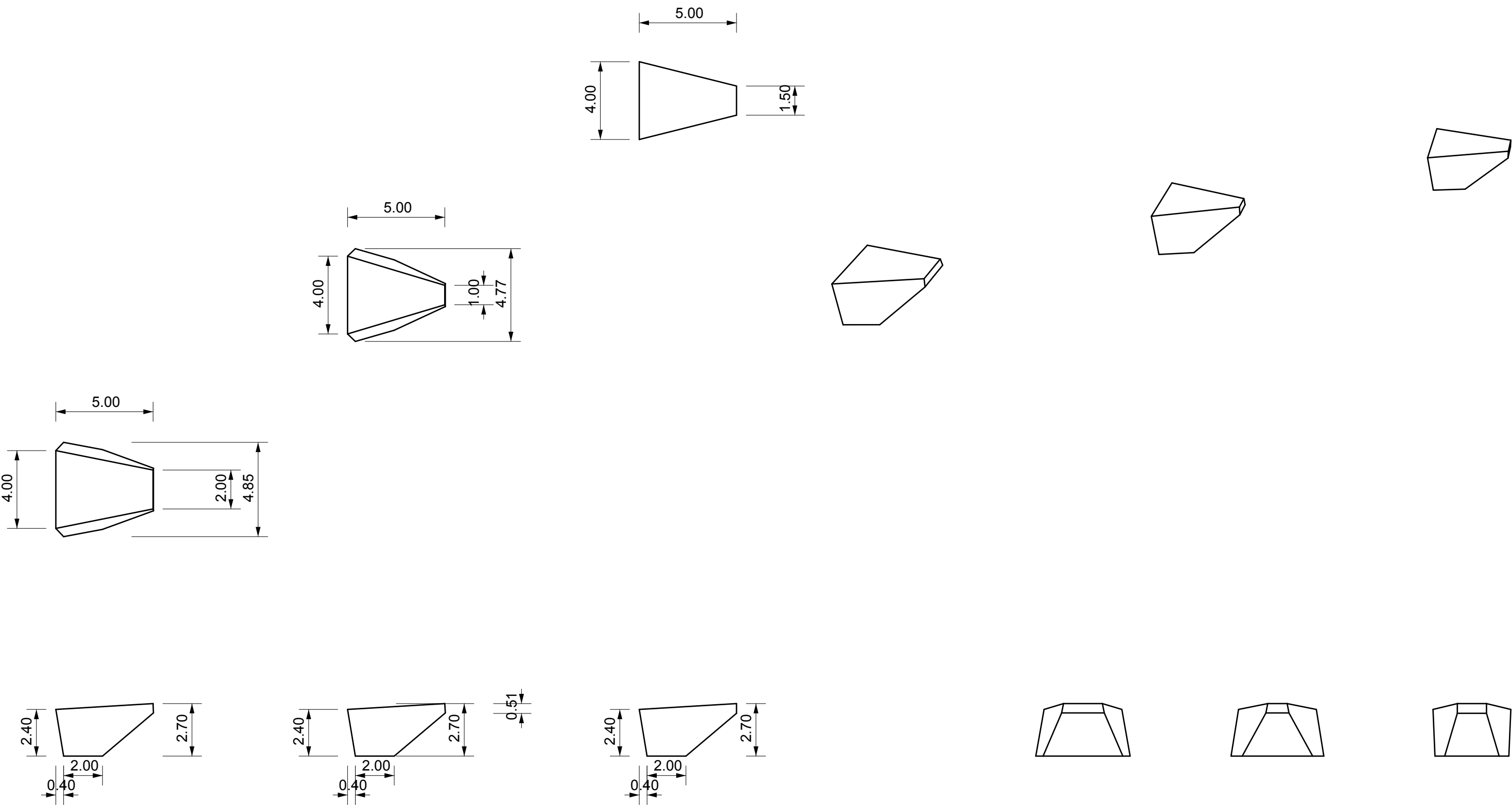
Roof

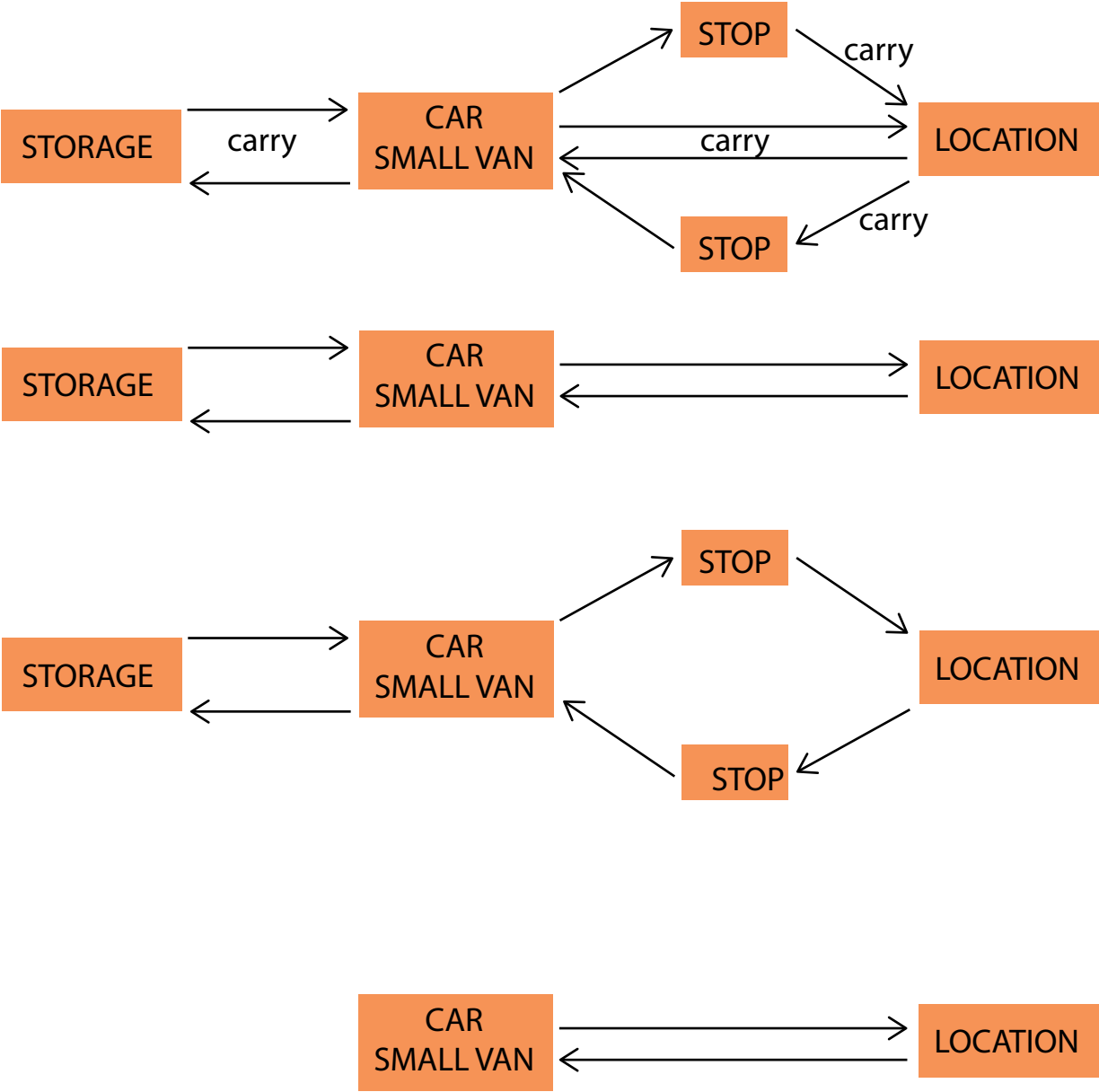


.Textile roof stretched on top
of supporting structure

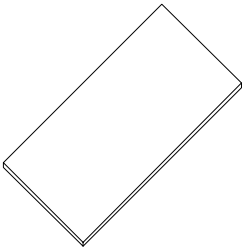


.Roof as structural elements

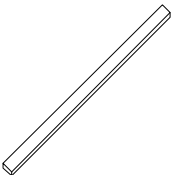




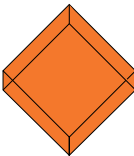
MATERIALS, DIMENSIONS AND WEIGHT



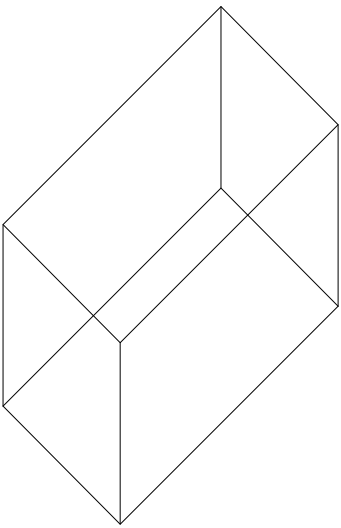
PLYWOOD
max dimensions: 1200x2400 mm
500 kg/mc



WOODEN BIM
300-400 kg/mc

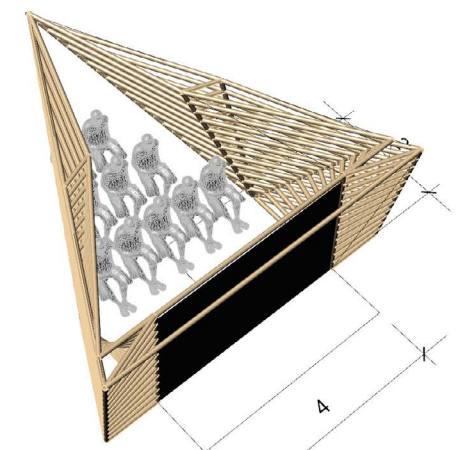
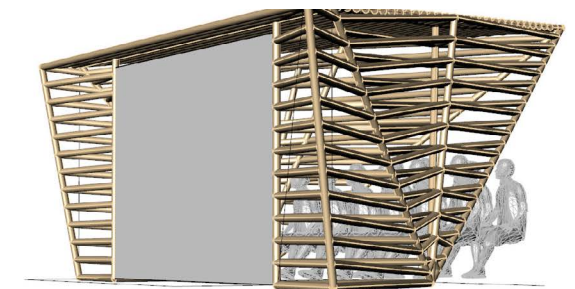
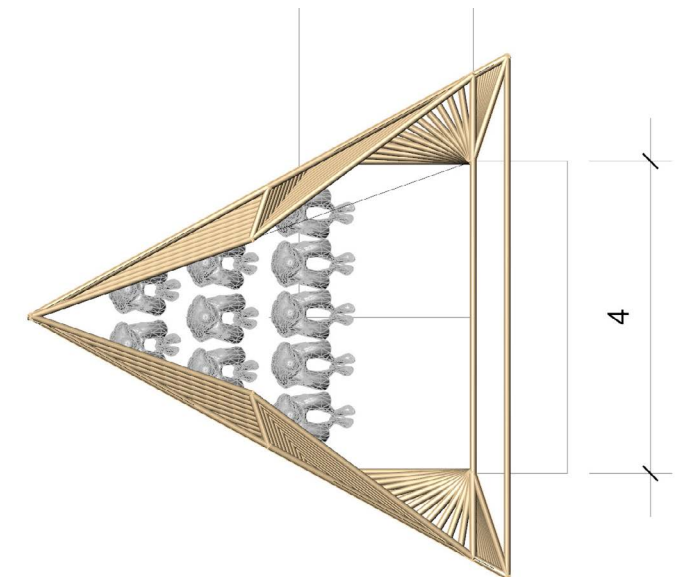
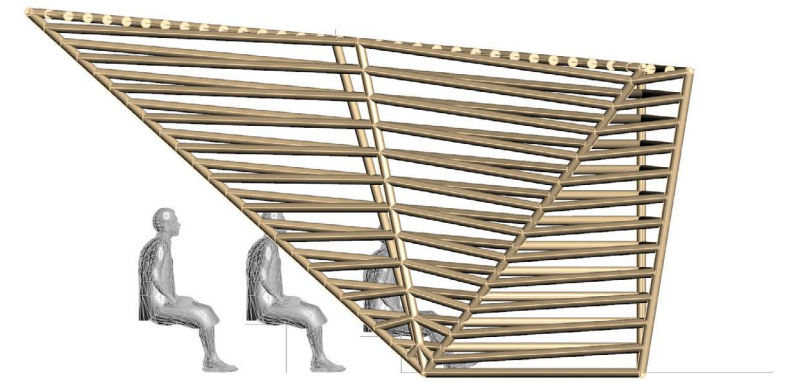
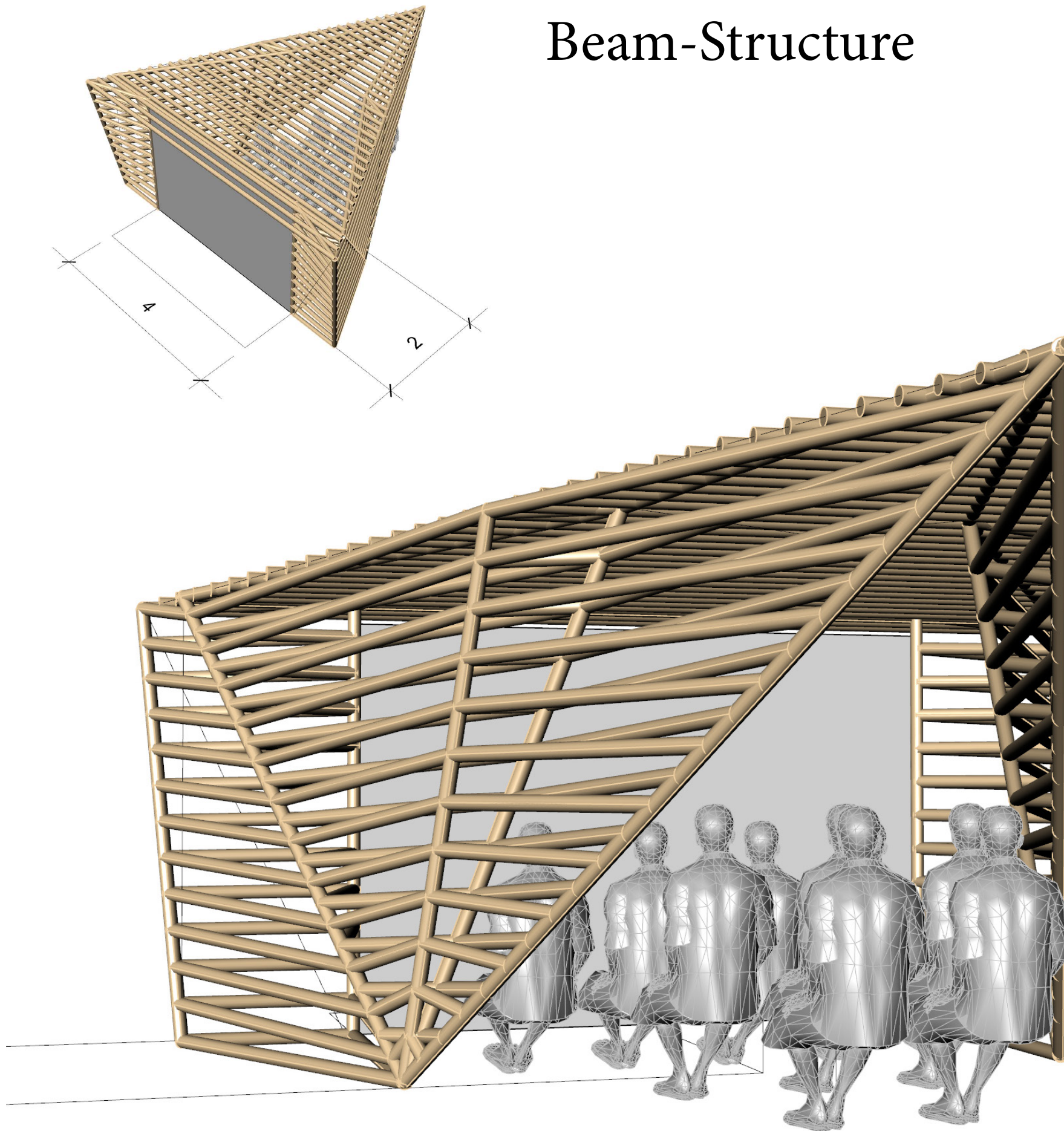


OUR MODULS
max dimensions: 1000x1000 mm
max weight: 20 kg

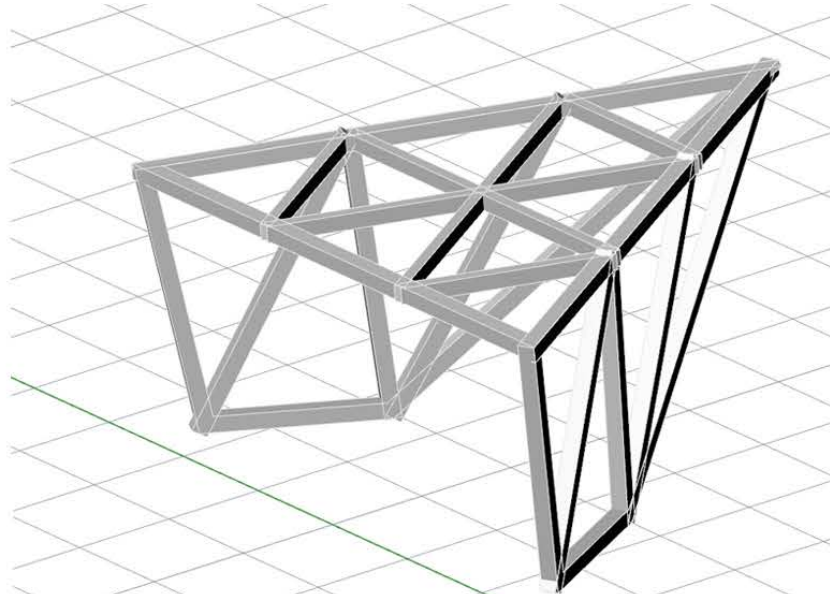


OUR PAVILION IN A VAN
max dimensions: 3300x1800x2000 mm

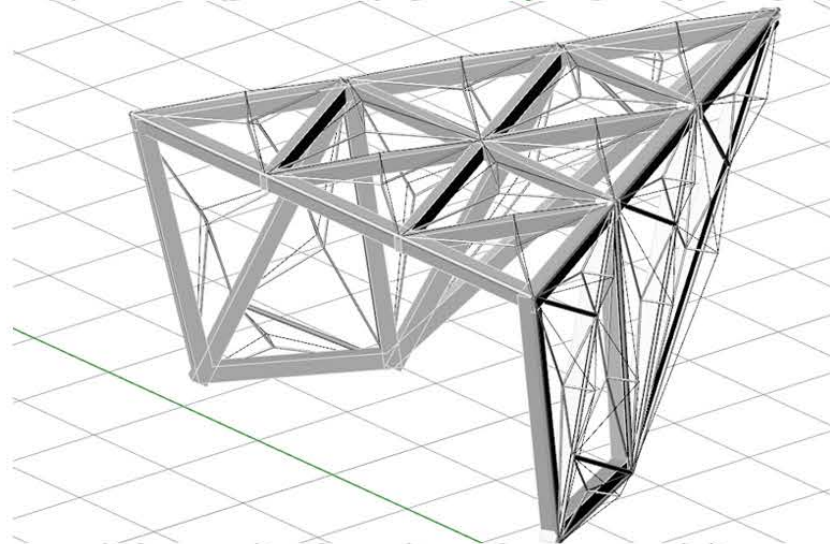
Beam-Structure



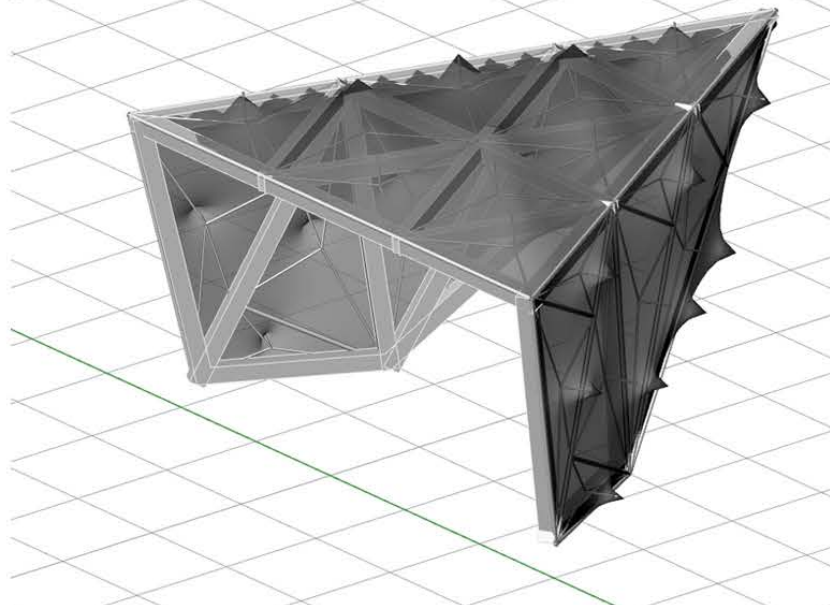
Step 1



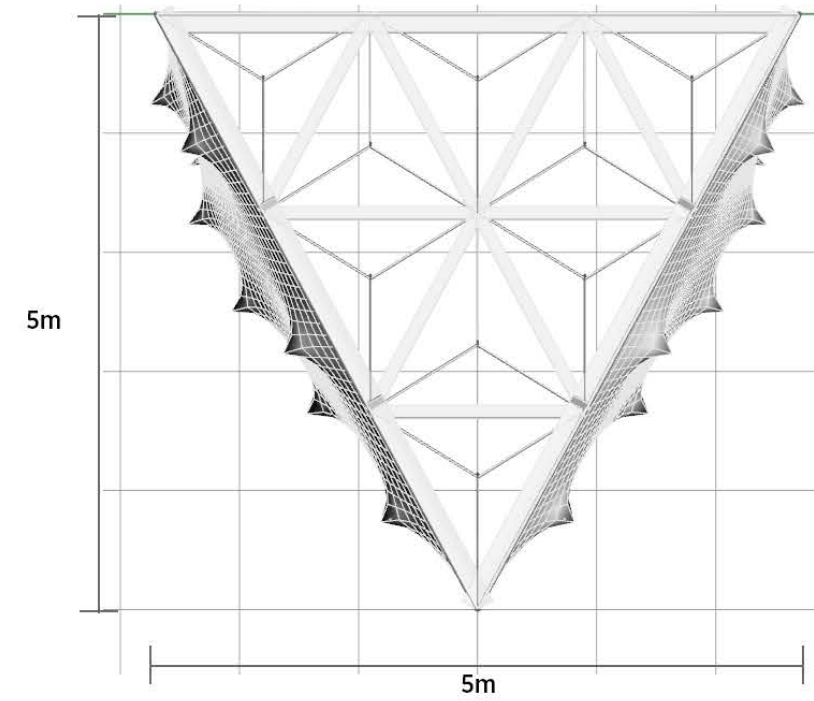
Step 2



Step 3



Plan



Set up all main
Timber frame

Put up all Pre-fabricated
steel frame fix on main frame

Put membrane cover on
all structure

