



## Final Exam

G12

Jalileh Ailar  
Jain Arihant  
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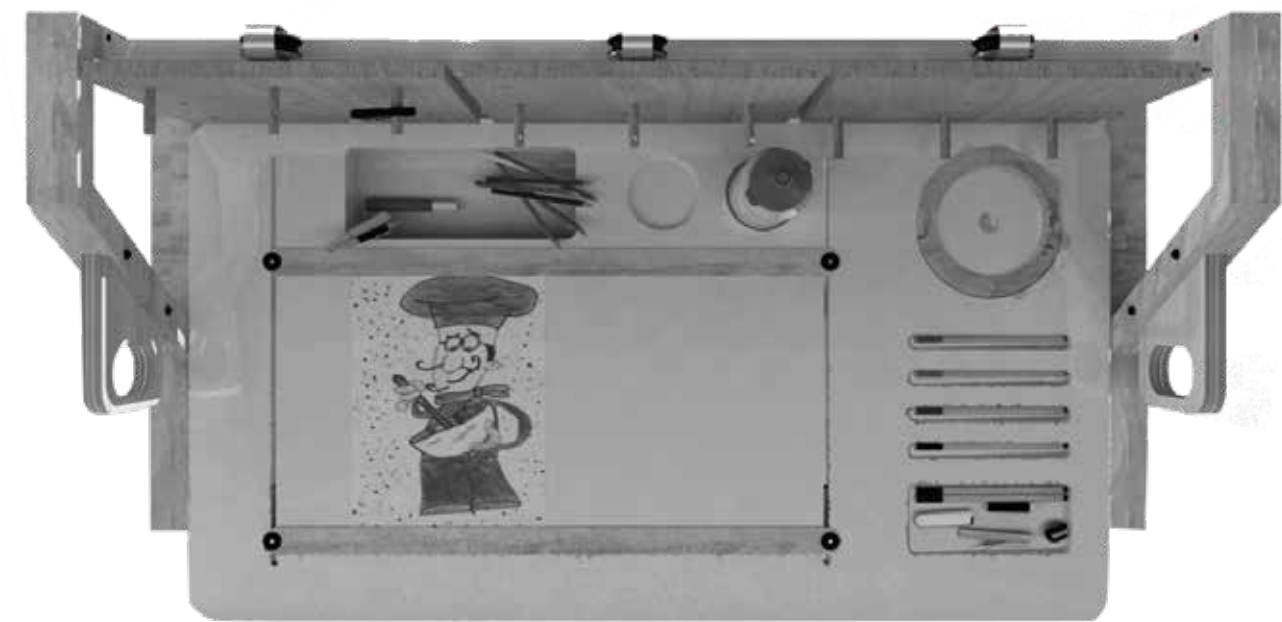
PRODUCT DESIGN STUDIO

prof. .L. Imbesi , prof. S. Paris  
MS Product Design

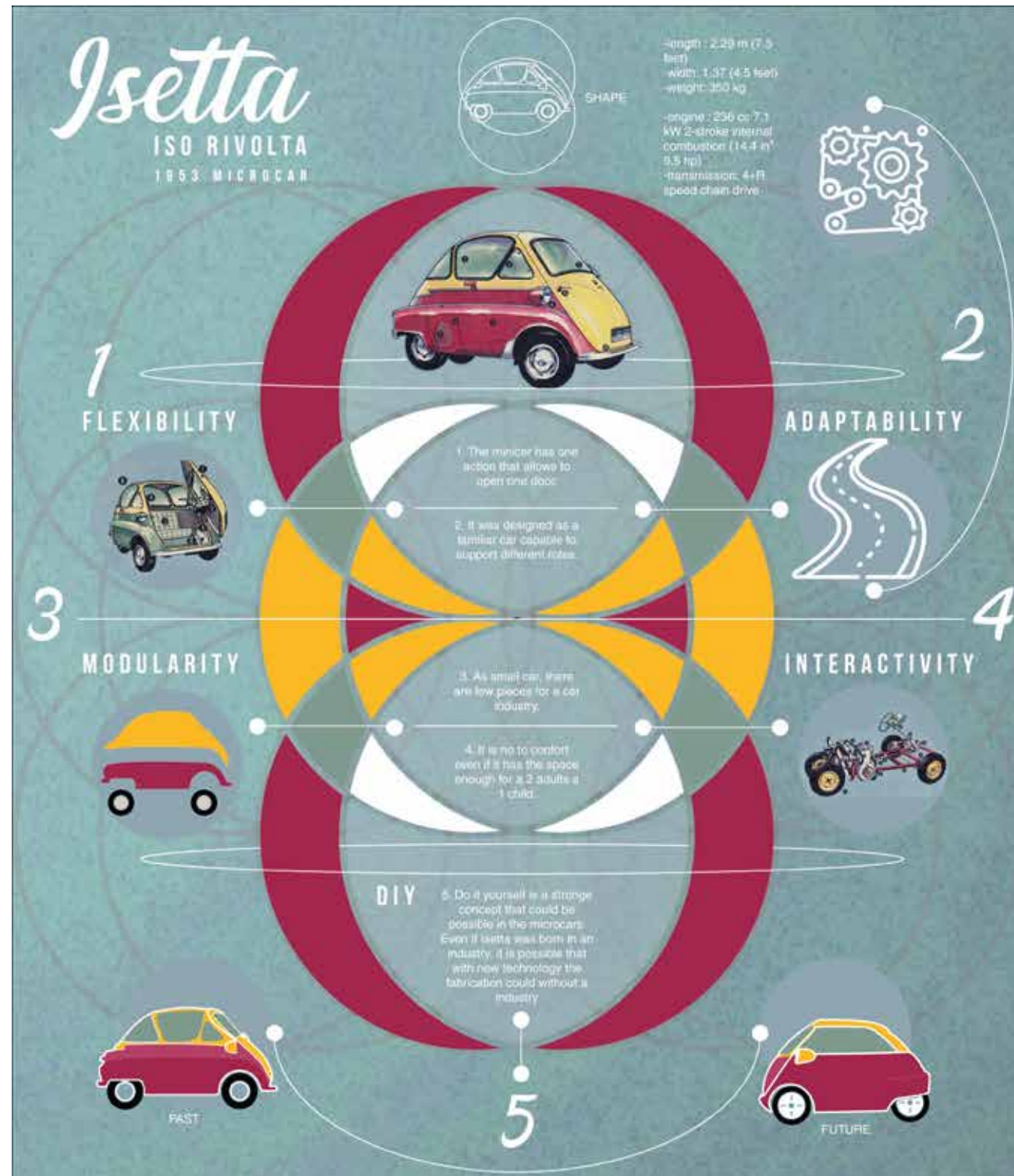
A.A. 2019-20  
Facoltà di Architettura

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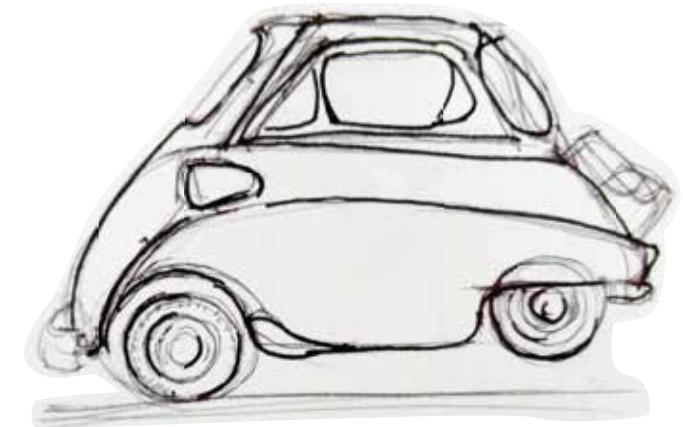


# STUDY CASE



In the pictures we can see the main views of the car. It is notable to say that the car has a retractable roof and when the door is open the interior space is depicted. The interior was thought for two persons maximum or two persons and a child.

Also it is important to describe the influence of the streamline modern style because there are elements with the tear shape, for example the headlights.





# KEYWORDS

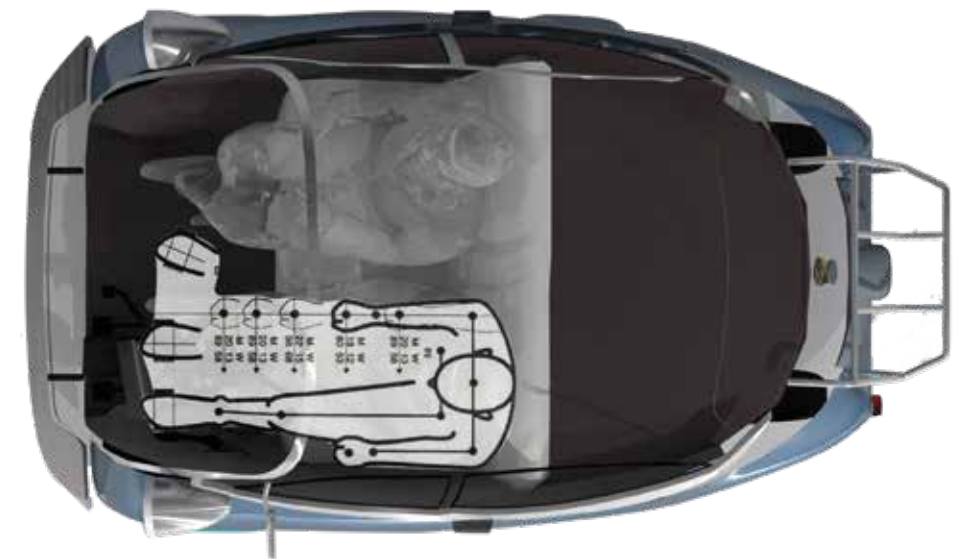
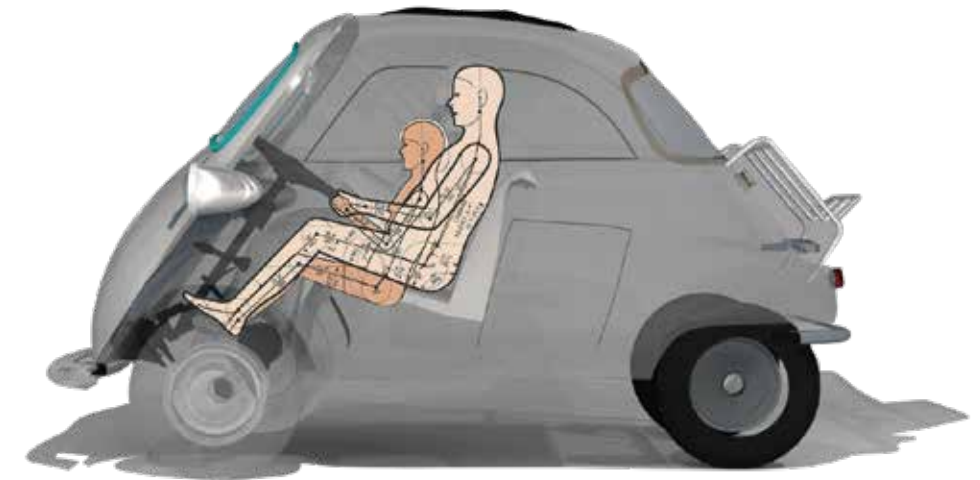
## - ADAPTABILITY



One of the main concepts in the Isetta analysis is the adaptability of the different actions and the relation between the system of human - object - environment. This ergonomic aspect permits to have the activities with minimum space possible.

## - INTERACTIVITY

The second main concept is the interaction related to the activities that person could do in the interior of the car.



ADITI BAHL



P 2

A 44 years-old girl  
University teacher  
Mother of one girl of 7 years-old  
Height 165  
Style: Formal / elegant  
Sport: Long walks in natural landscapes  
She prefers to drink tea  
She has a cat called Noir  
She lives in London  
She has a close friend called Hannah  
She likes cinema, anthropologist books, films  
She does not expend a lot of time in social medias



I need more hands  
After taking her daughter to the school,  
Aditi goes to her job, the university.



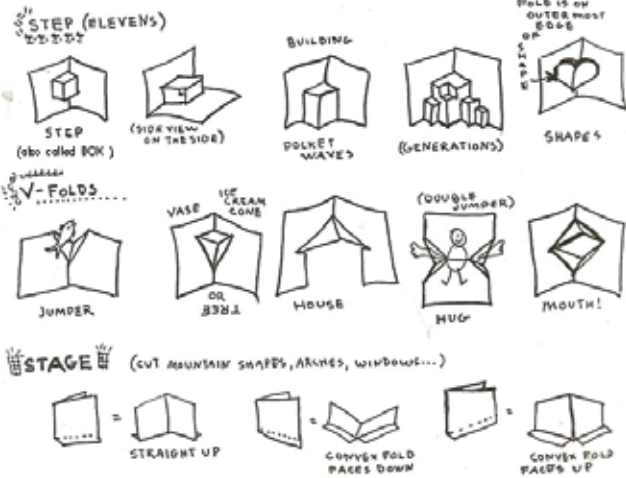


In order to analyze the pop-up creation, we also to talk with a pop-up workshop kid's teacher in order to understand better the process for learning the basis of pop up.

A part for the materials, the teacher explained that one of the problems after the class is the paper garbage that generates. Also to be organized is important in order to have a clean space.



Pop-up Reference



Aditi as a book lover has a bookcase with Anthropology books. Also she has plants, eases to take care because she does not have much time, familiar photos and also scultures from India and from Africa. The background is divided in two places, one for working and the other a terrace where her daughter plays and moreover, her dog sleeps. Addiotanally, we can consider interesting to put the object, lsetta microcar, not as the main function, as a car, we imagine another context that is a playzone for her daughter or also a place to reading.



She always wake up at 8,put on her sport clothes and shoes and go for jogging.

Then take a shower, make and drink coffee while she is stand up near window and look at outside & her car.  
She used to drink a coffee at home and has her breakfast at 10 in her university or work place.

Open the closet,Put on her clothes,sit on the chair,put on her shoes,go to university and work.  
(She has a big closet because she had a lot of T-shirt, jeans and shoes.

Comes back home, drink a cup of tea, have a quick dinner.(supper)

Do her homework including: put her laptop on the desk.sit on the chair, put her hands on the desk to work with the mouse.

She had a calender,specially takes note for her work days, because her work time is flexible.  
She has some artistic paintings and photographs on the wall.

She goes to bed at 12 o'clock.she has a queen size bed.

Sometimes her friend comes to her room and sit on the bed or floor and hang out with each other.

Lecture - Microactions

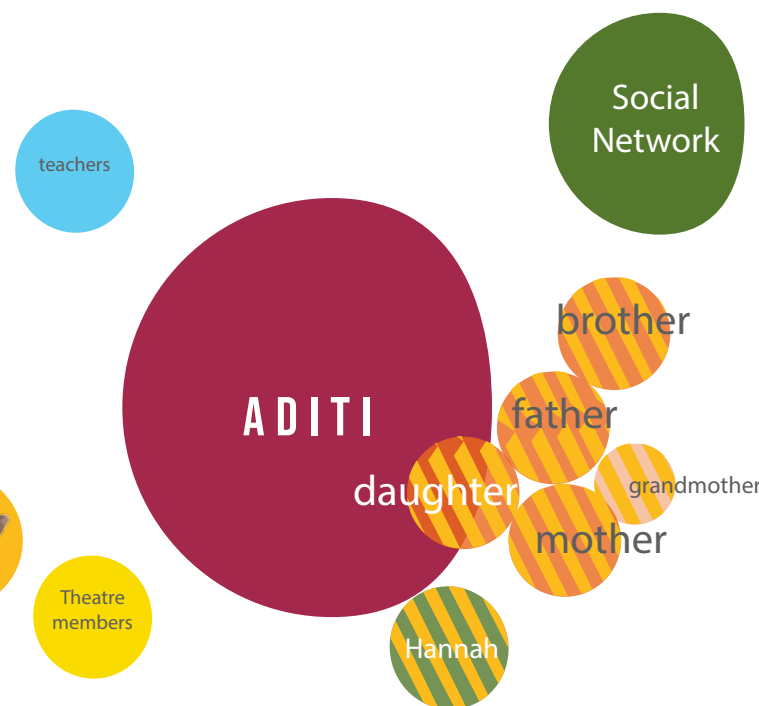




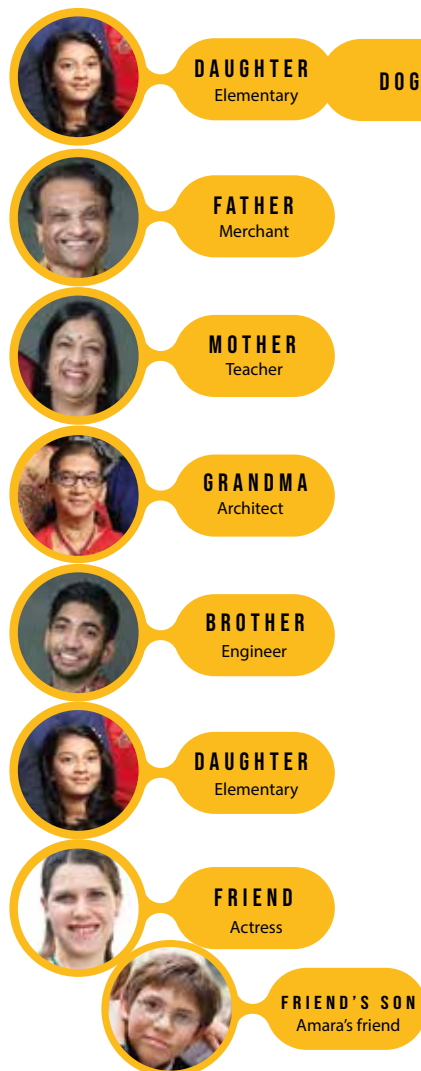
# ADITI BAHL



## SOCIAL SCENARIO



## RELATIVES



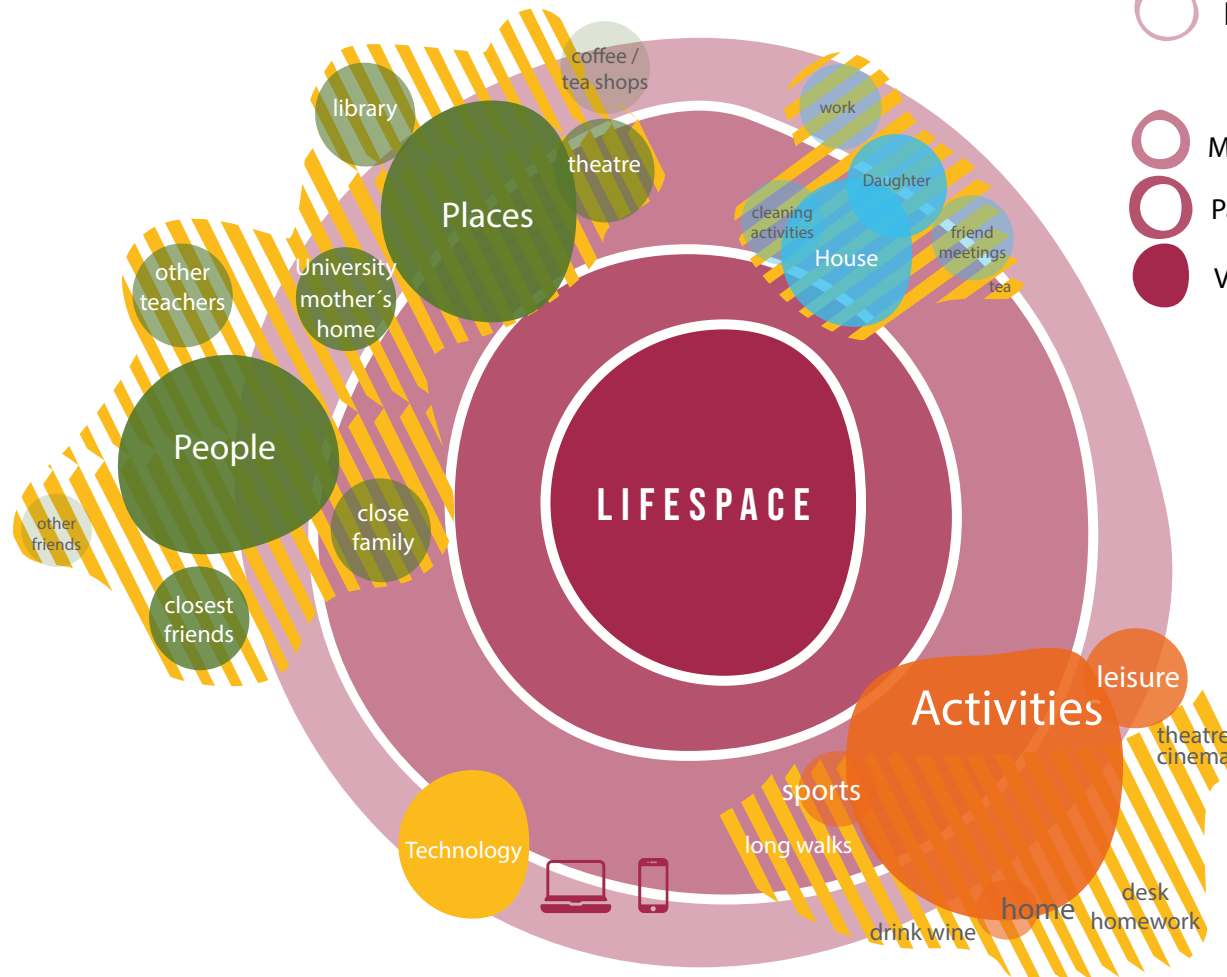
## PROFILE

Aditis sit on her working table long time check her mails and look out her daily tasks, look at some presentation to her teaching lecture for the students in the morning and evening. Sometimes in the night when work on peak hours, but she wants to always be like her table very clean and organized she also carry some dry fruits in her working table in order to she can eat during the work as healthy snacks.

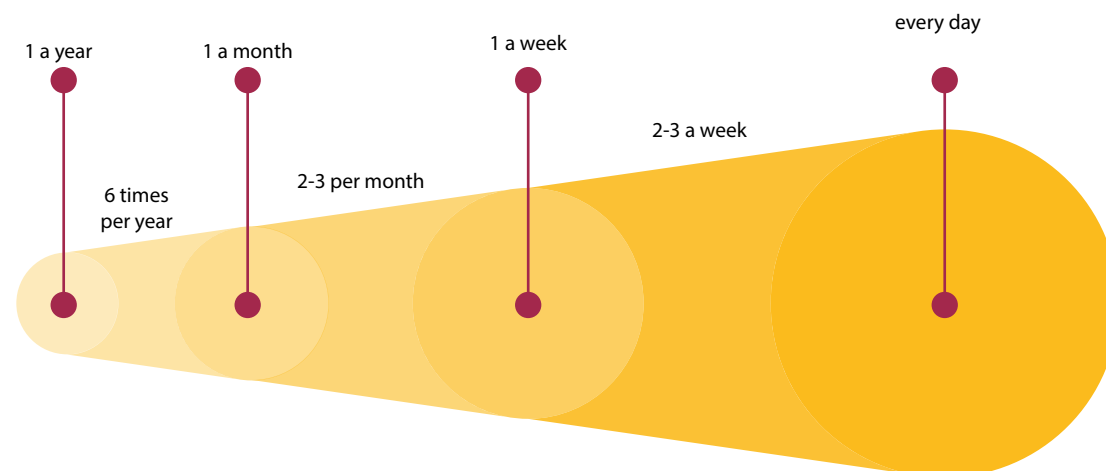
Aditi loves plants to much So, she put many indoor plants inside the house and she also put some beautiful plant beside her working table and positivity during the work.

Aditi want stuffs in her Working table is Laptop and charger connection, Pen-drive, hard-disk, webcam, writing stuffs. Alarm and task clock,pen-pencils and high-lighter markers, task notebook, recently reading books, file folder, important documents beside the table, headphones, her spacts, speaker, instruments drover, fragrance diffuser,table light, dry fruits, container and water bottle holder in winter, hot water kettle holder, small task board beside, the table , table soothing indoor plant on her table.  
In Aditi house mostly family gathering and Parties going on.  
Aditi likes Hanging lights and indoor Plants .

- Independent
- Mostly Independent
- Partially Independent
- Very dependent



## FREQUENCY







DAUGHTER  
Elementary

STANDING



Amara likely to involve during the day with her school Homework, Lego bricks Game, art and craft, making collage, Popup books.

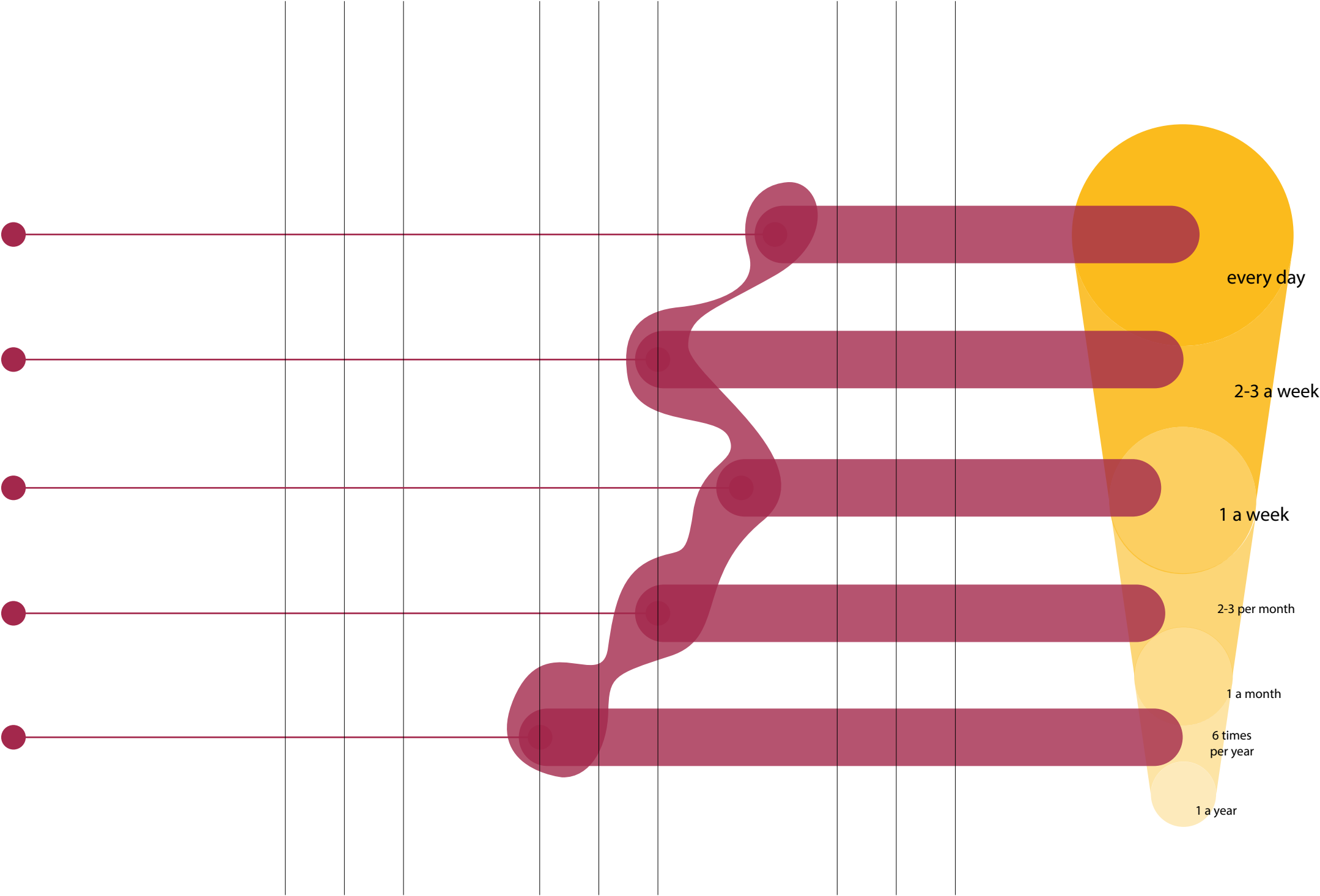
Amara very likely make drawings and she wants to put her drawings on wall or space and she wants space to put her daily activities on the wall.

Amara has also lots of craft material and Collage books. Storage


Sometimes she helps Amara to makes mood boards about festival and monthly activities

Dancing together with some recently bollywood songs and festival folk songs

INTIMATE                      HALF                      NOT INTIMATE                      FREQUENCY



AMARA

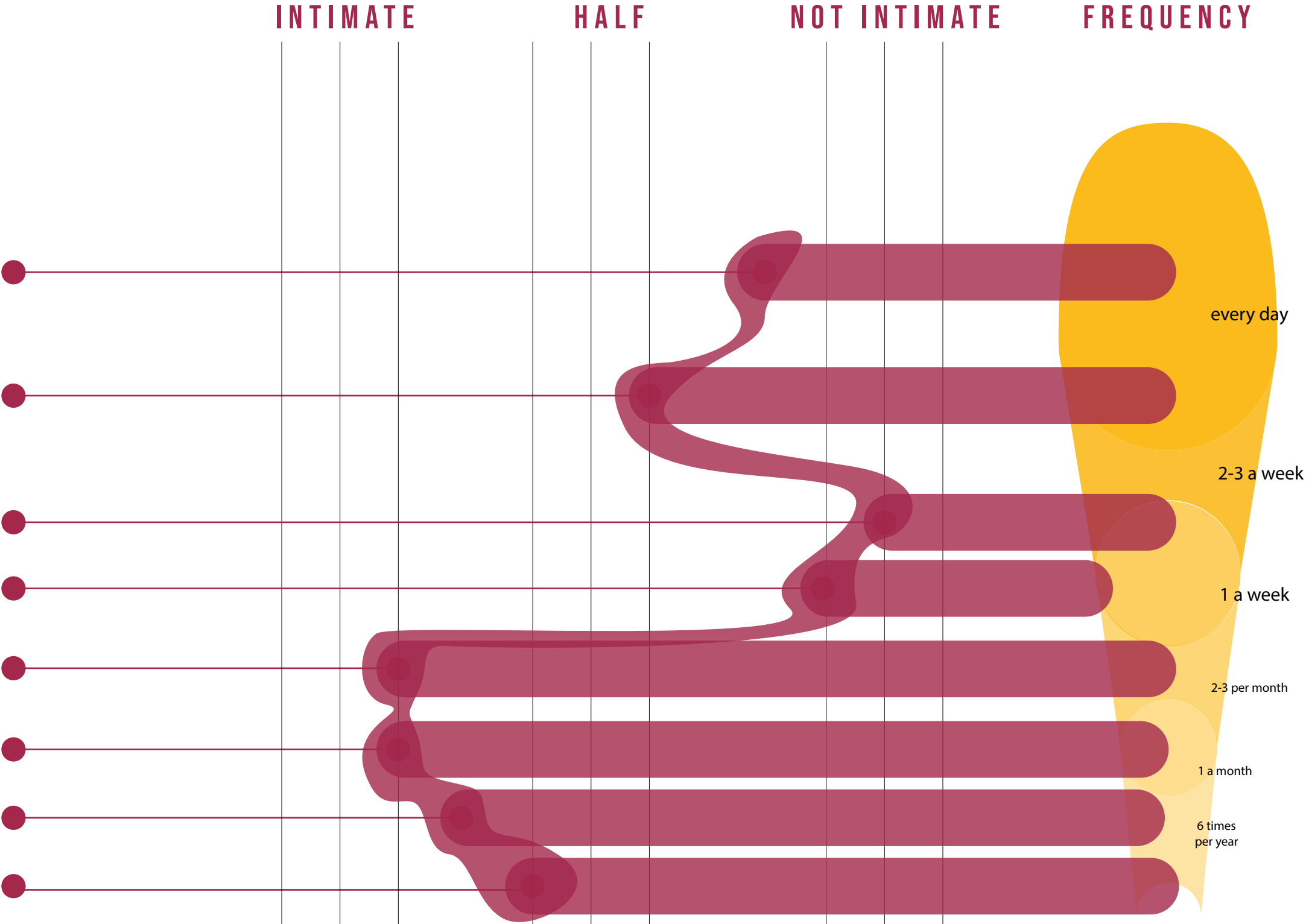


DAUGHTER  
Elementary



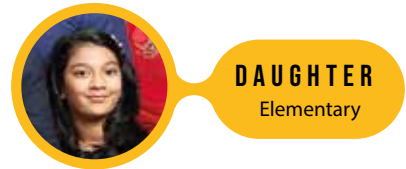
SITTING

- Amara likely to involve during the day with her school Homework, Lego bricks Game, art and craft, making collage, Popup books.
- Amara very likely make drawings and she wants to put her drawings on wall or space and she wants space to put her daily activities on the wall.
- Feed their dog
- She is very conscious about her Dauhter's health / snacks / Peals, Chapati, Rice, green Salad.
- Watch movies or cartoons
- Tell stories, read books
- Amara do Video calls in the laptop with her Relatives
- Amara's friends come to play with her





# AMARA



## LYING DOWN

Watch movies or cartoons

Tell stories, read books

# MILO

DOG



## ACTIVITIES

Resting with his owners

Feeding

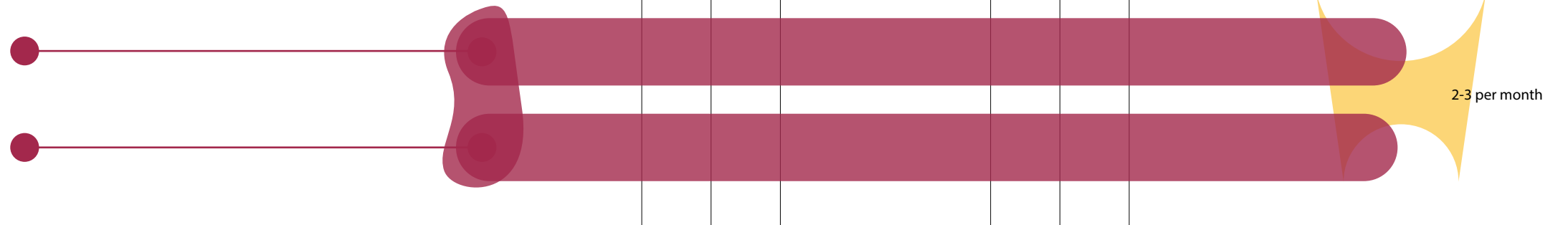
Playing with his owners

INTIMATE

HALF

NOT INTIMATE

FREQUENCY

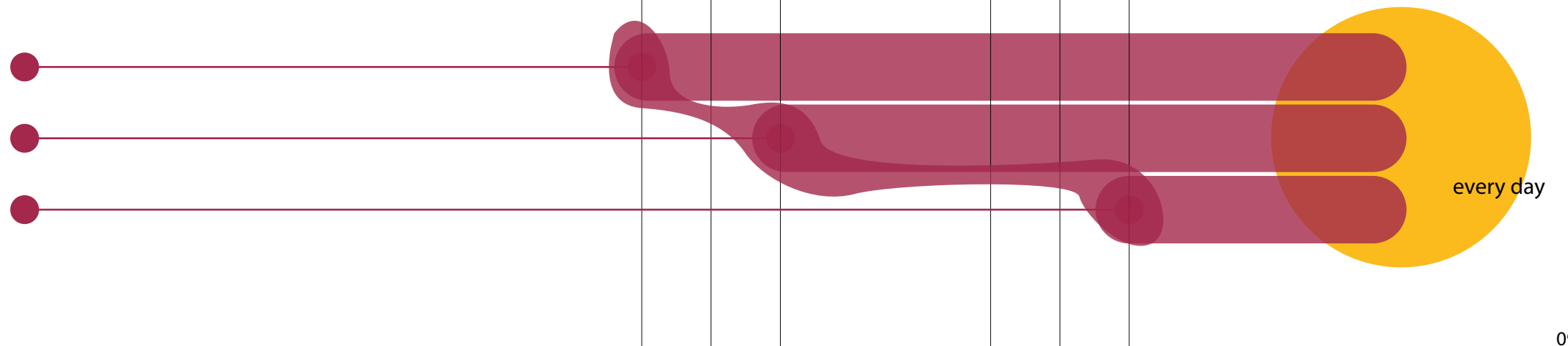


INTIMATE

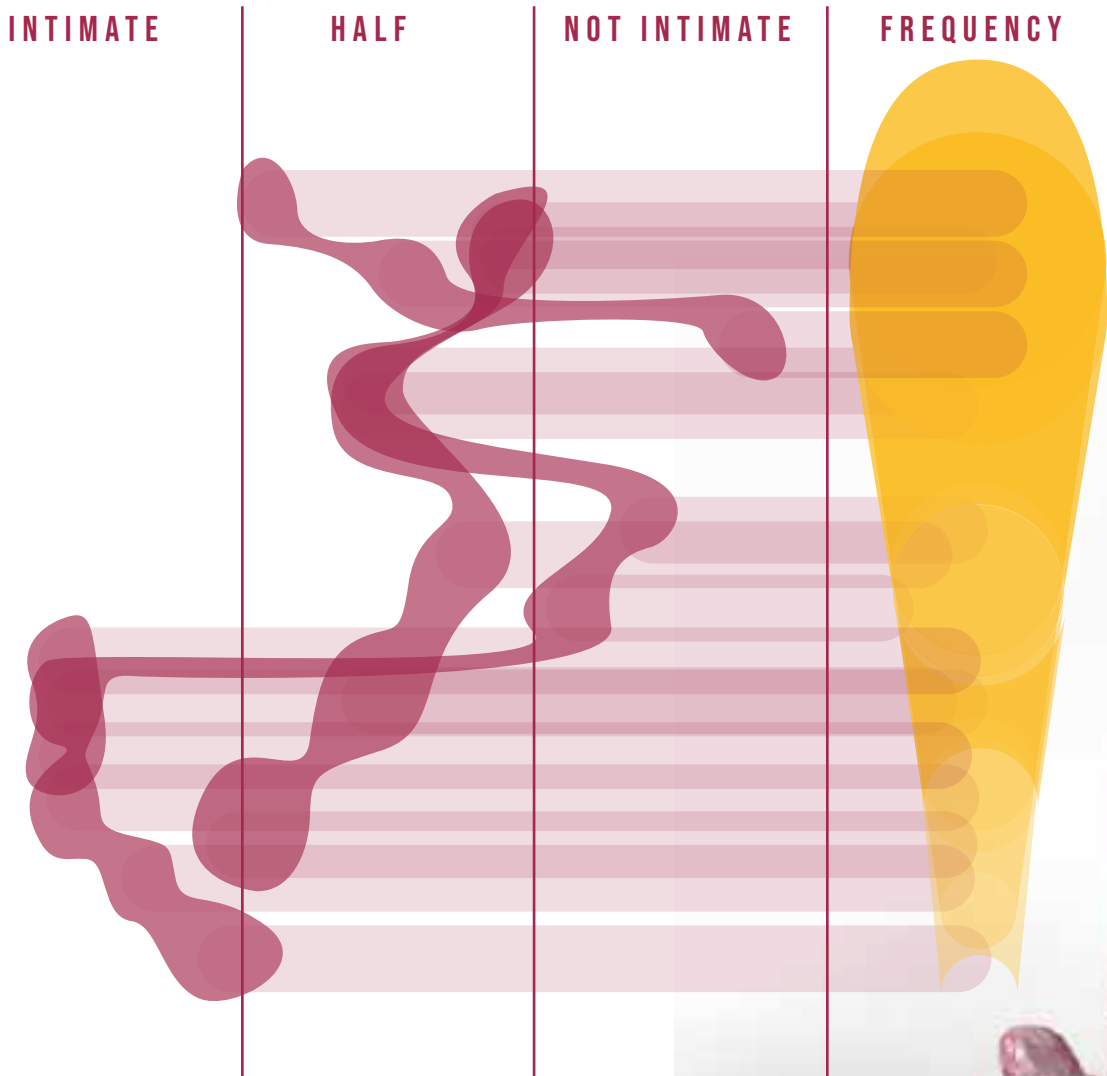
HALF

NOT INTIMATE

FREQUENCY



INTIMATE / FREQUENCY / ACTIVITIES / GESTURES

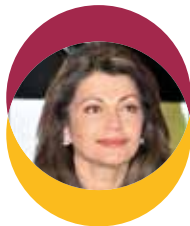


The first result about the analysis is the more use of opened spaces is for frequently activities, moreover, the intimate spaces is for non usual activities.





ADITI BAHL DYNAMICS

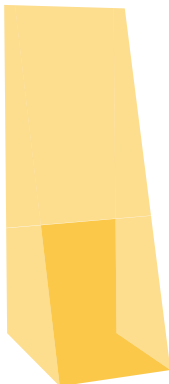


AMARA



MILO

One of the results shows the necessity of moving rhe activities to other parts of the room. One idea is to stack some parts of the structure and putting in other parts,

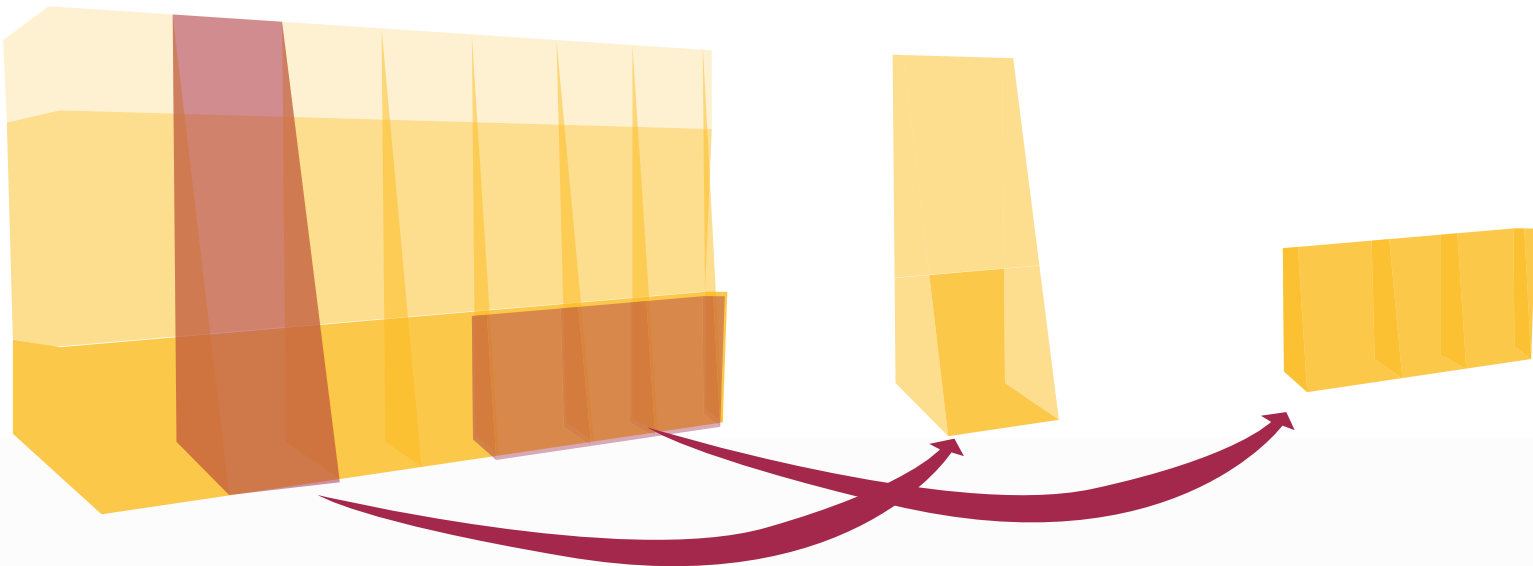


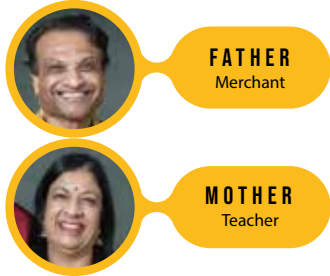
Divide modules for activities

Module for making pop-ups



Resting module





FATHER  
Merchant

MOTHER  
Teacher



ACTIONS

STANDING

Talking / familiar issues

Discussing / political and religious

Life activities / daughter school tasks

SITING

Eating traditional food

Drink tea

Telling stories

LYING DOWN

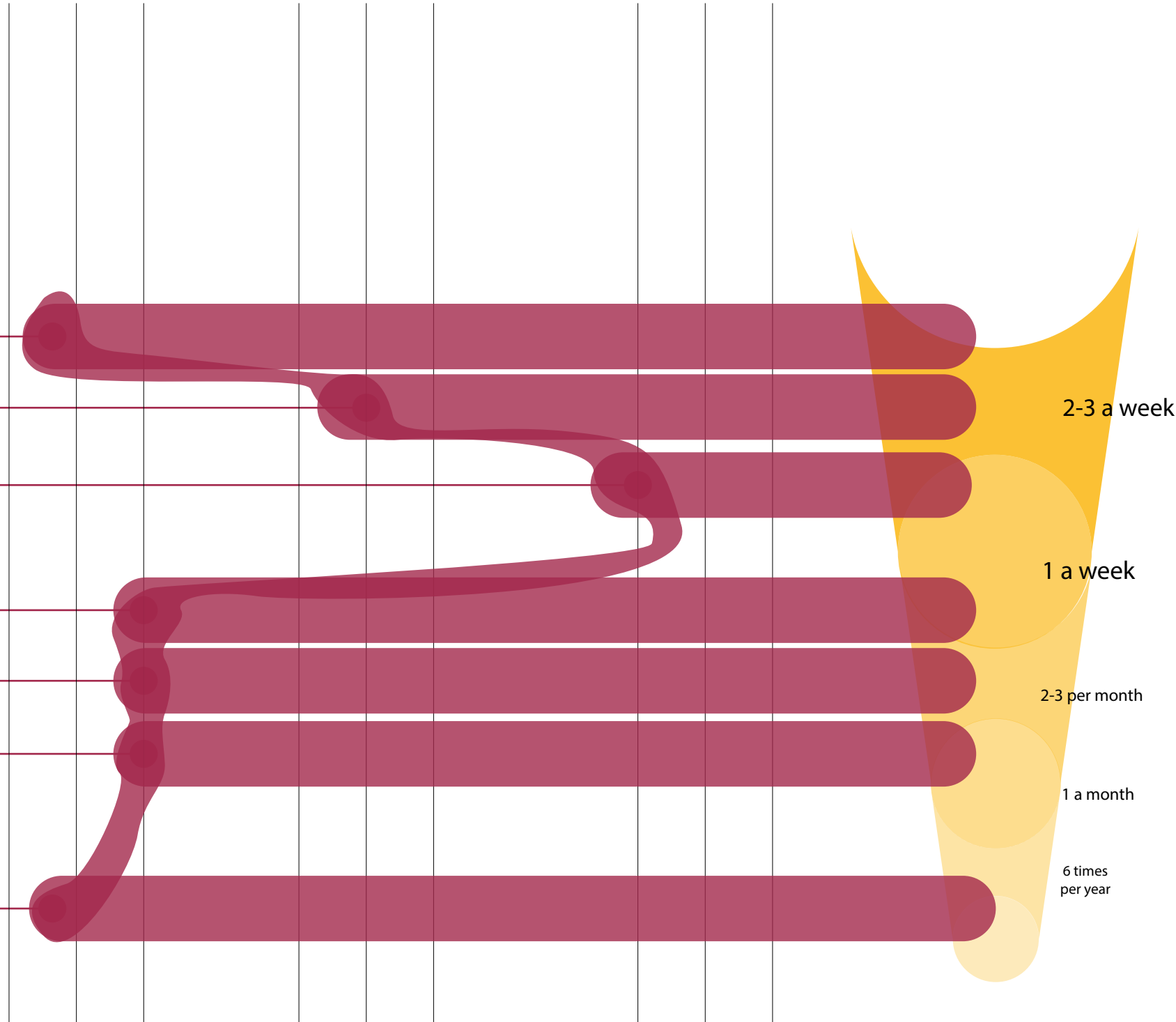
Watching movies

INTIMATE

HALF

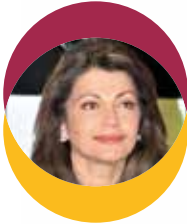
NOT INTIMATE

FREQUENCY





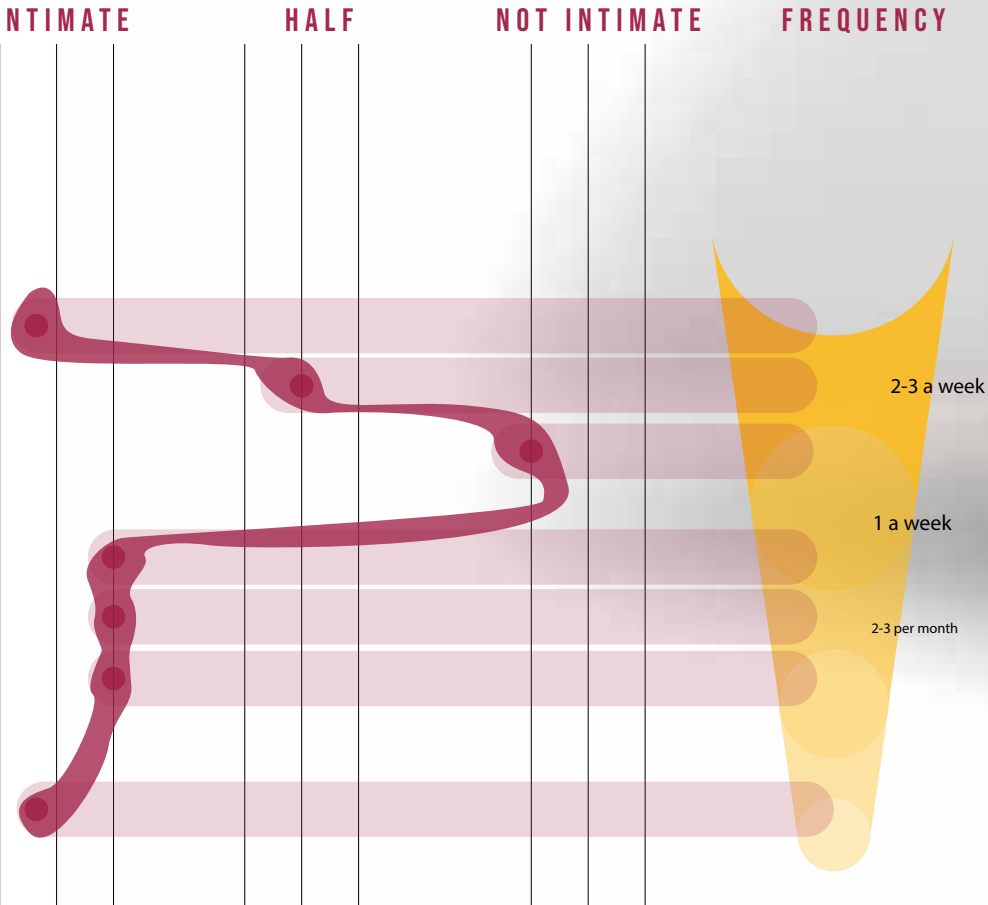
ADITI BAHL DYNAMICS



FATHER  
Merchant



MOTHER  
Teacher



As the first general conclusion in this graph, we discovered that it is important to have a private space for parents and Aditi meetings.

- 1. In India there is too many festivals Like
- 2. Major festivals - Holi, Raksh - Bandan , Diwali, Christmas, New Year
- 3. Adities Birthday
- 4. Amara Birthday
- 5. Sometimes Amara Gr andmother and Grandfather Anniversary and birthday celebrate in Aditi house because Aditi give surprise to them.



## ACTIONS

## STANDING

Talking / art and films

Issues life

Problems with her son

## SITING

Eating Indian food

Drink wine

Making pop ups books  
playing between kids

INTIMATE

HALF

NOT INTIMATE

FREQUENCY

2-3 a week

1 a week

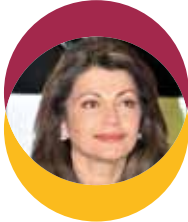
2-3 per month

1 a month

6 times  
per year



ADITI BAHL DYNAMICS

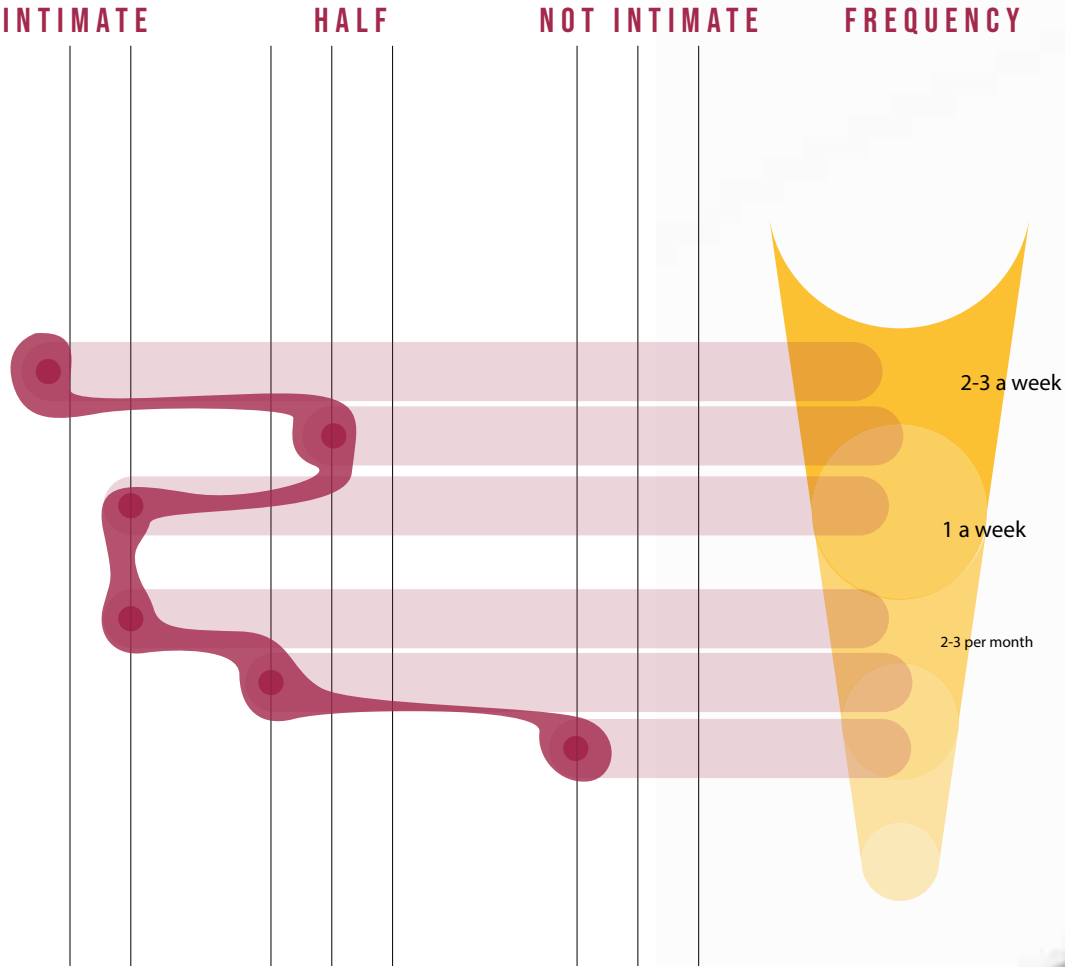


FRIEND  
Actress



FRIEND'S SON  
Amara's friend

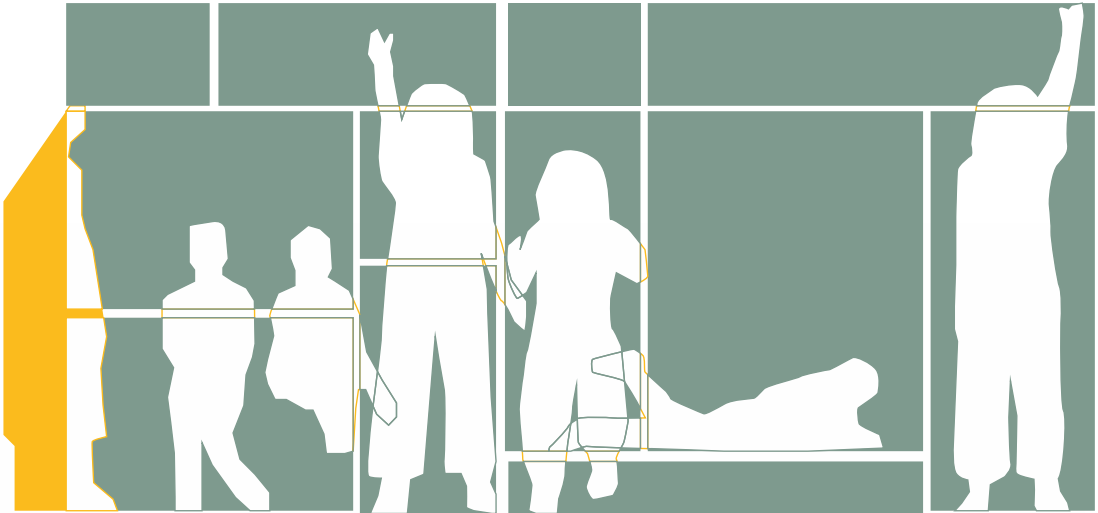
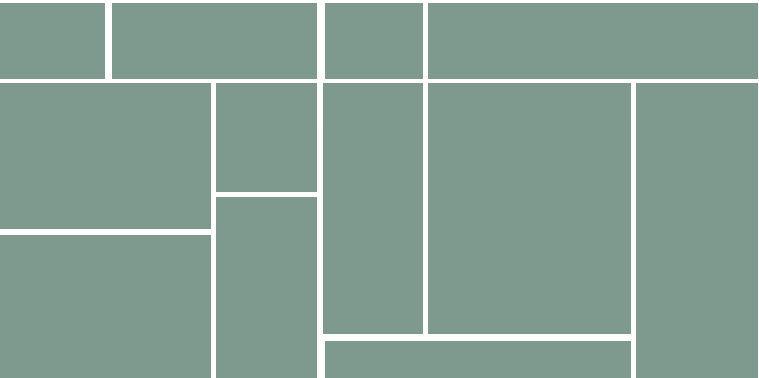
There are two important actions, first stable to find a private place for Aditi and her friends talks. And the other is to turn flexible the system in order to have parts of the furniture in other places of the room for playing activities between kids.



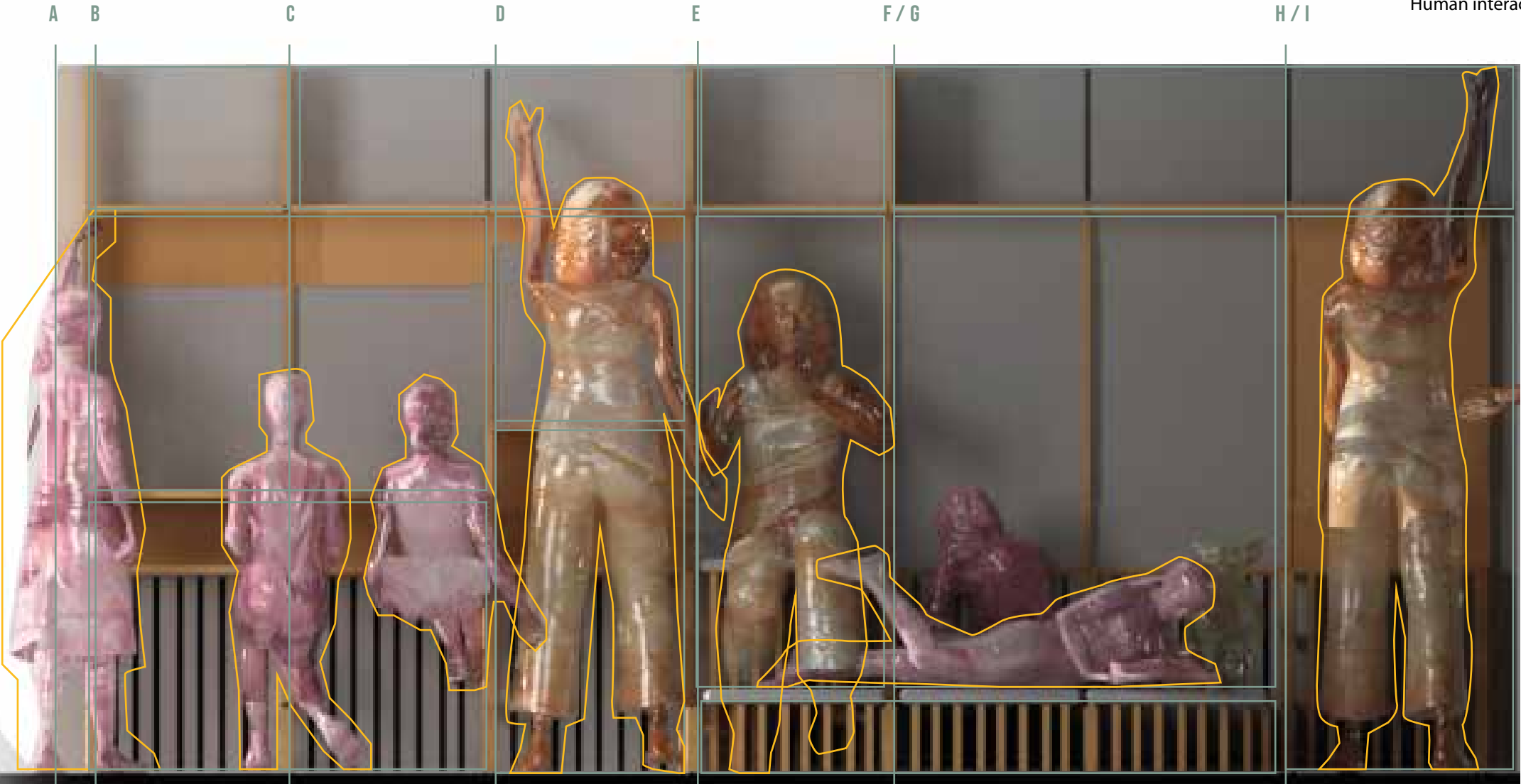
THE SYSTEM

PROJECT  
SECTION ANALYSIS

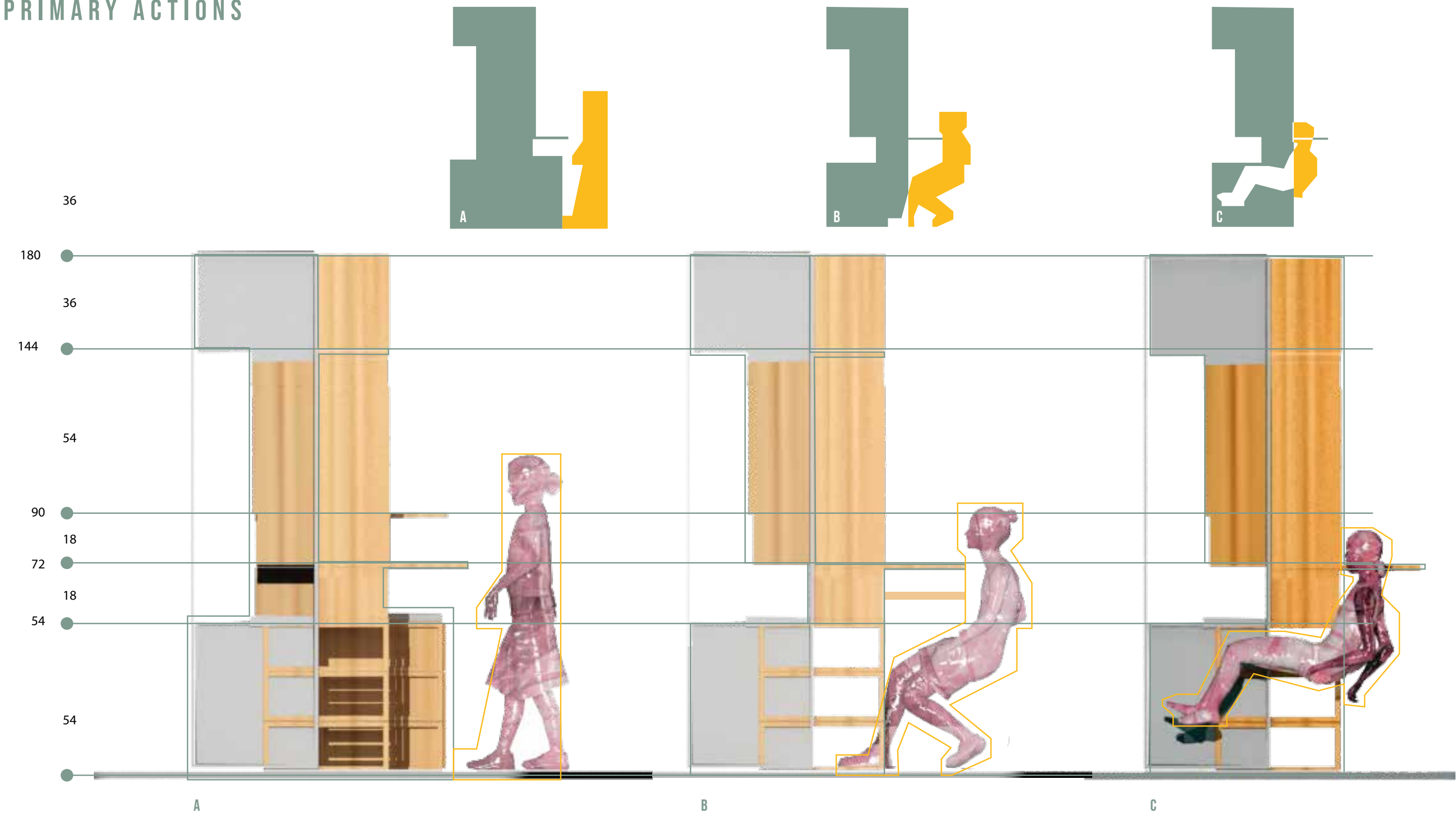
Modular system



Modular system  
Human interaction

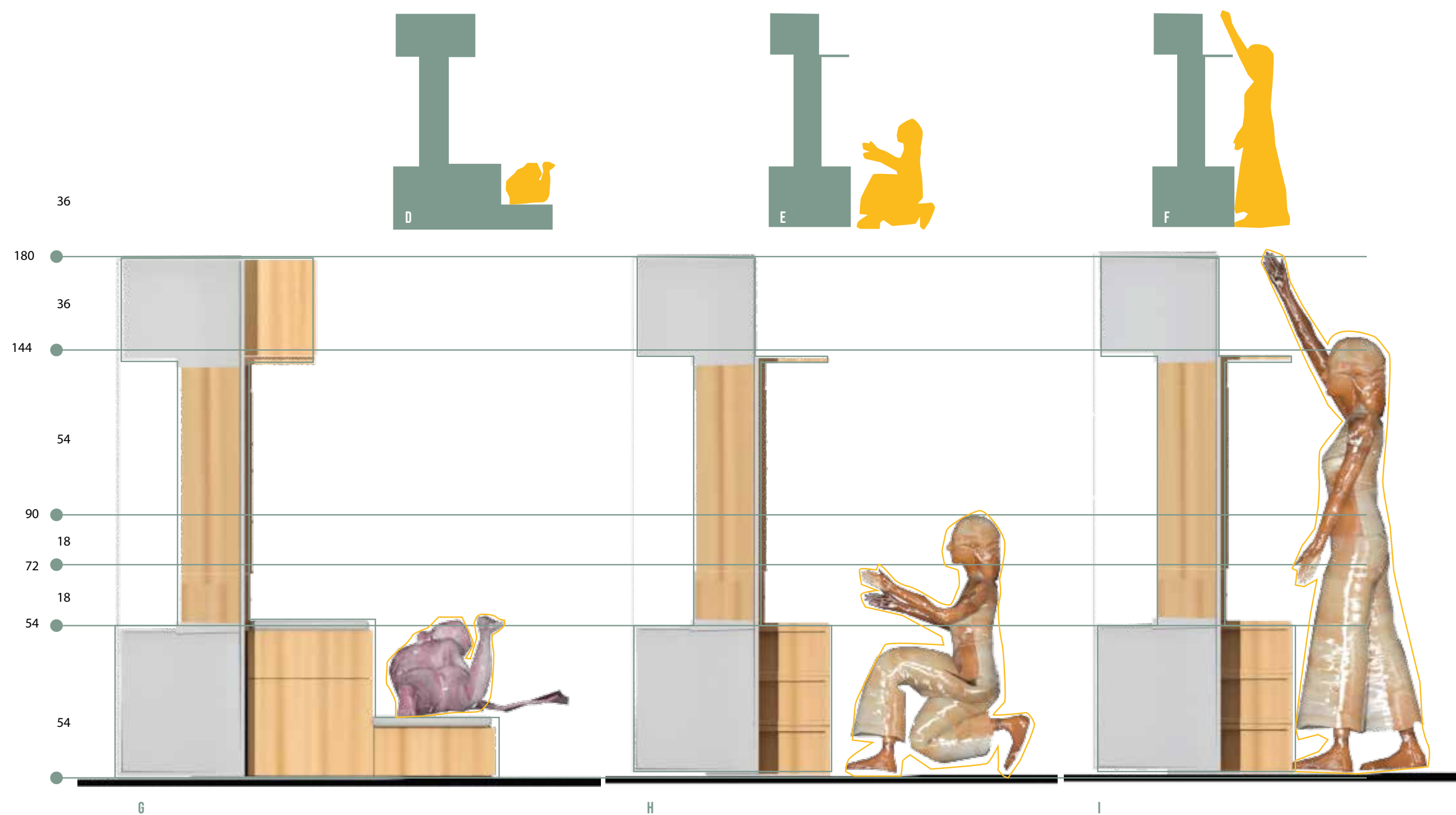


PRIMARY ACTIONS

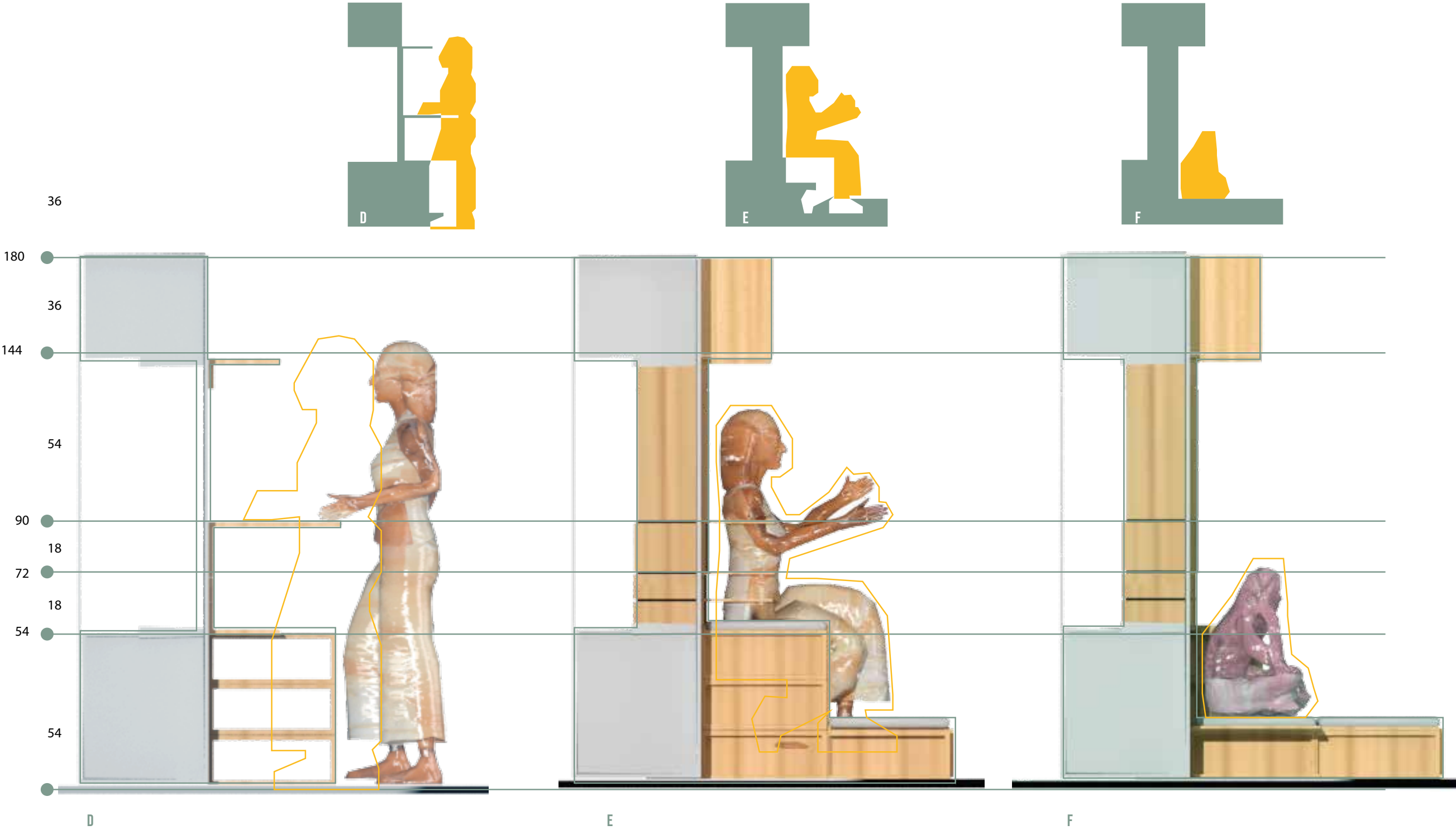


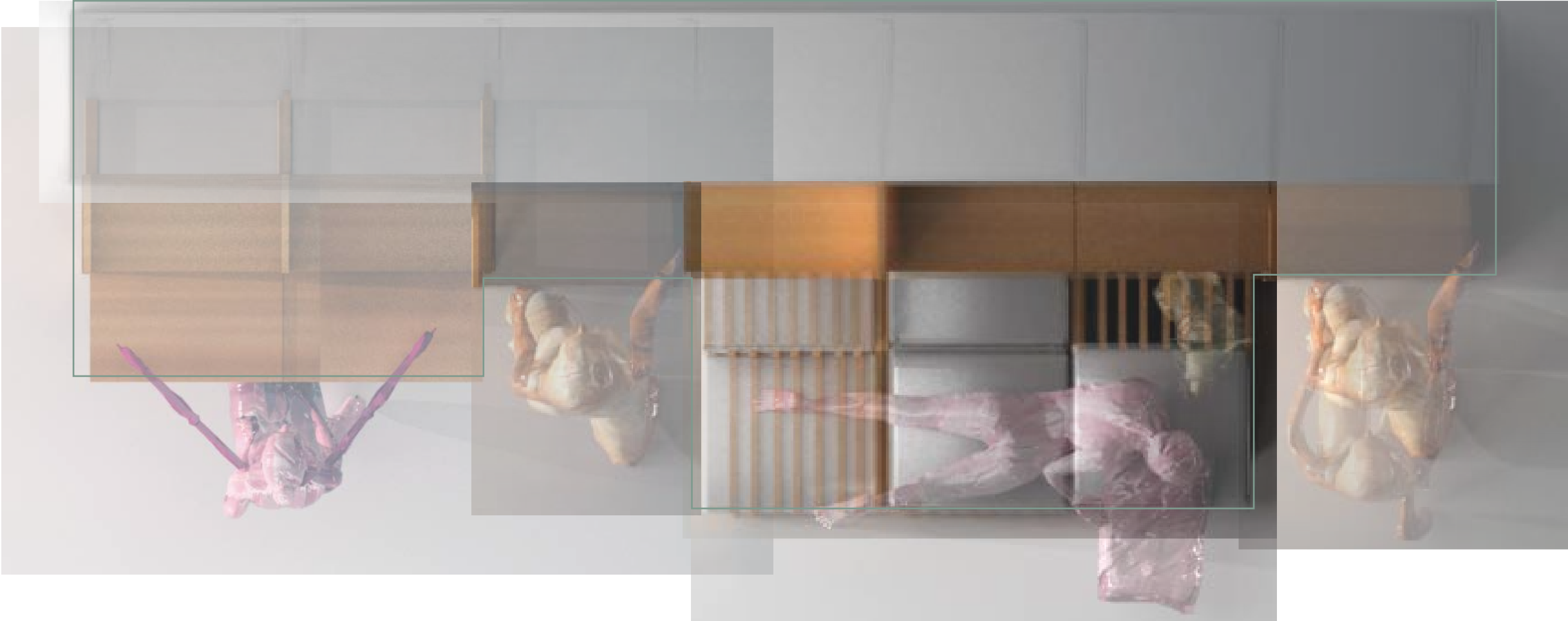


SECONDARY ACTIONS



PRIMARY ACTIONS



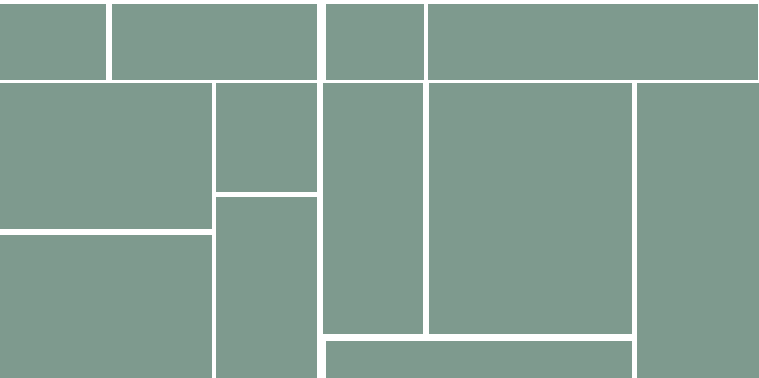




Top

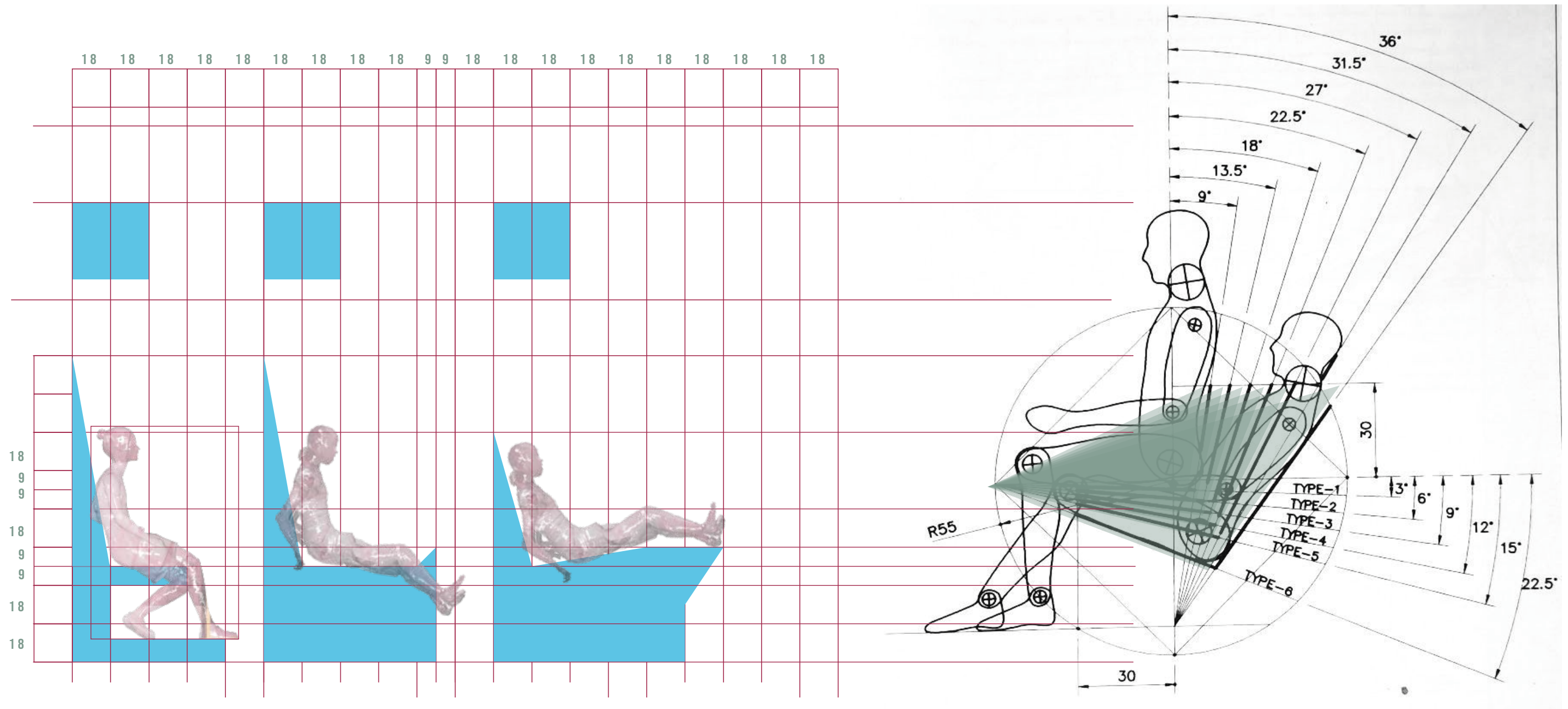


Front

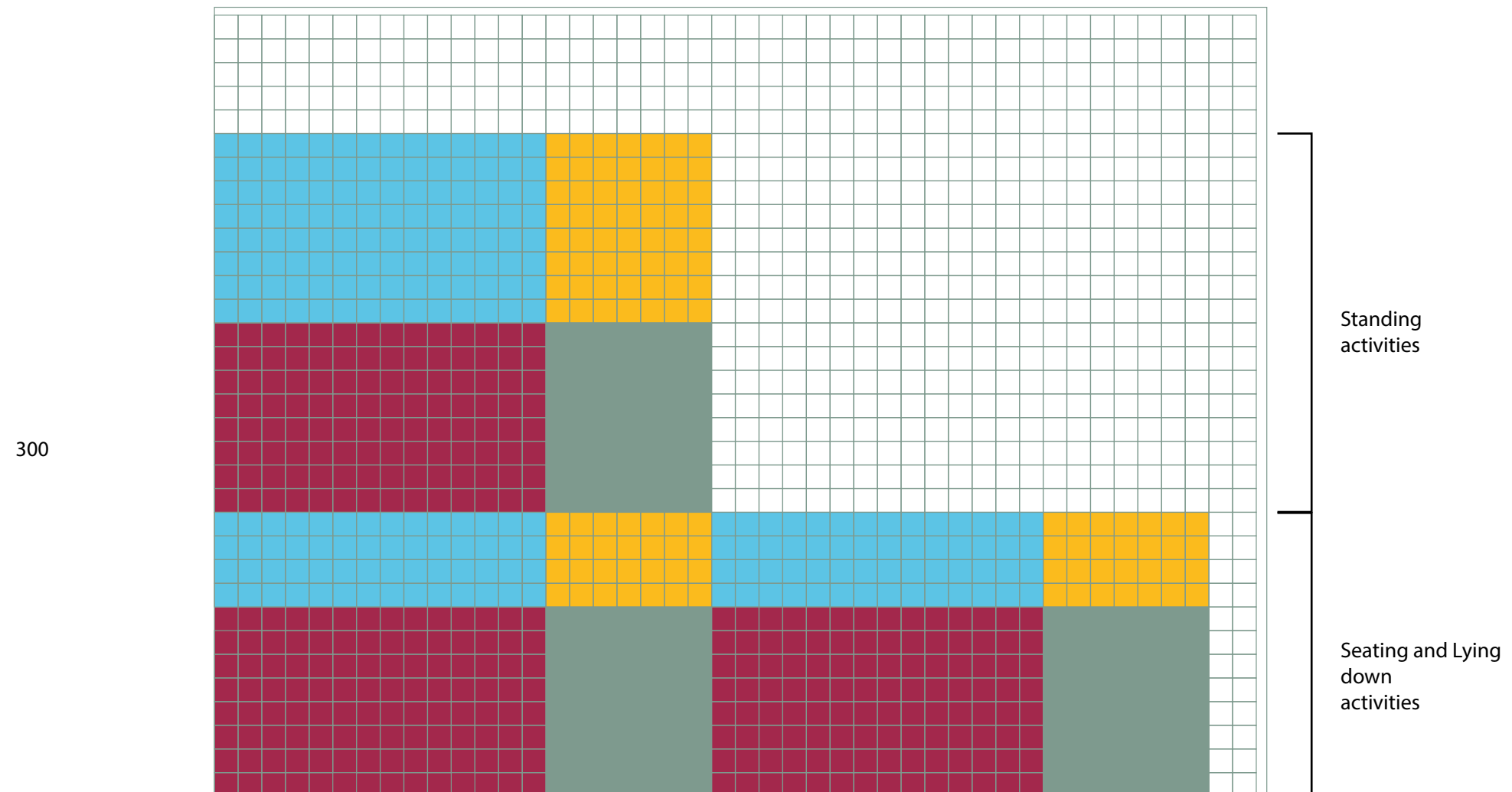
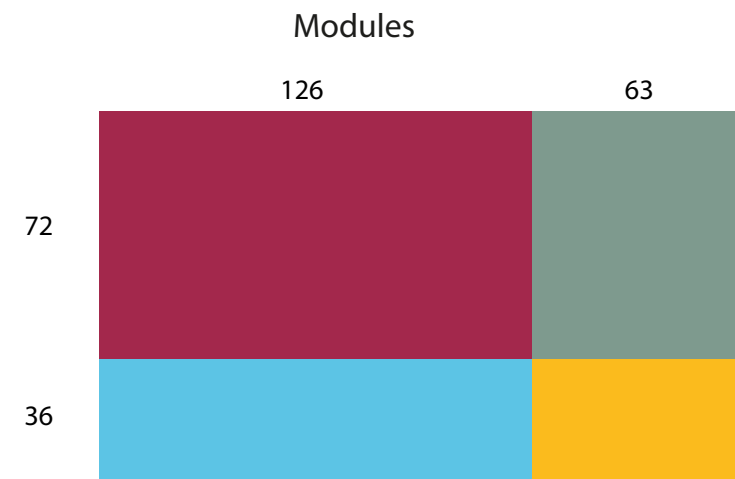


Lateral





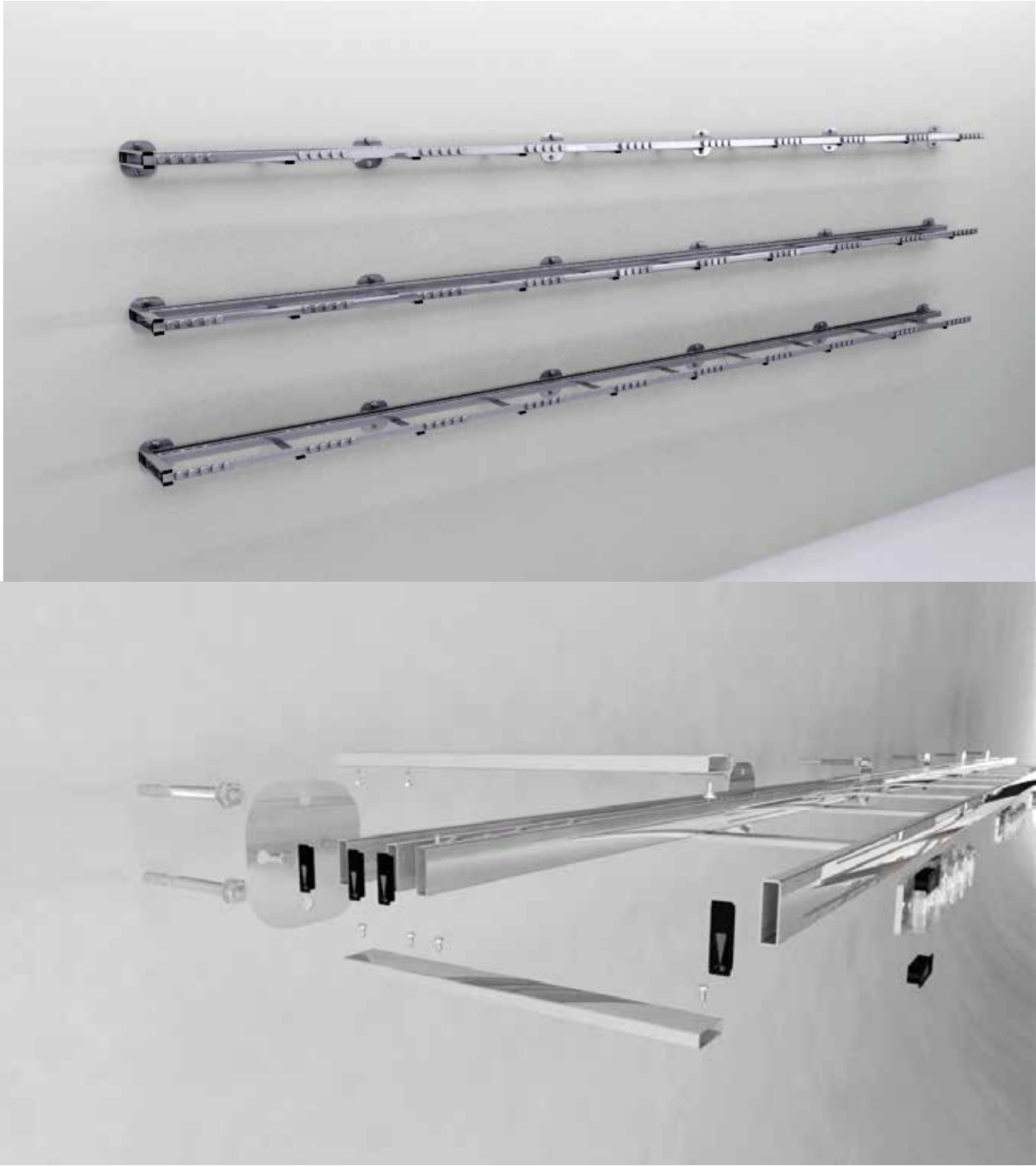
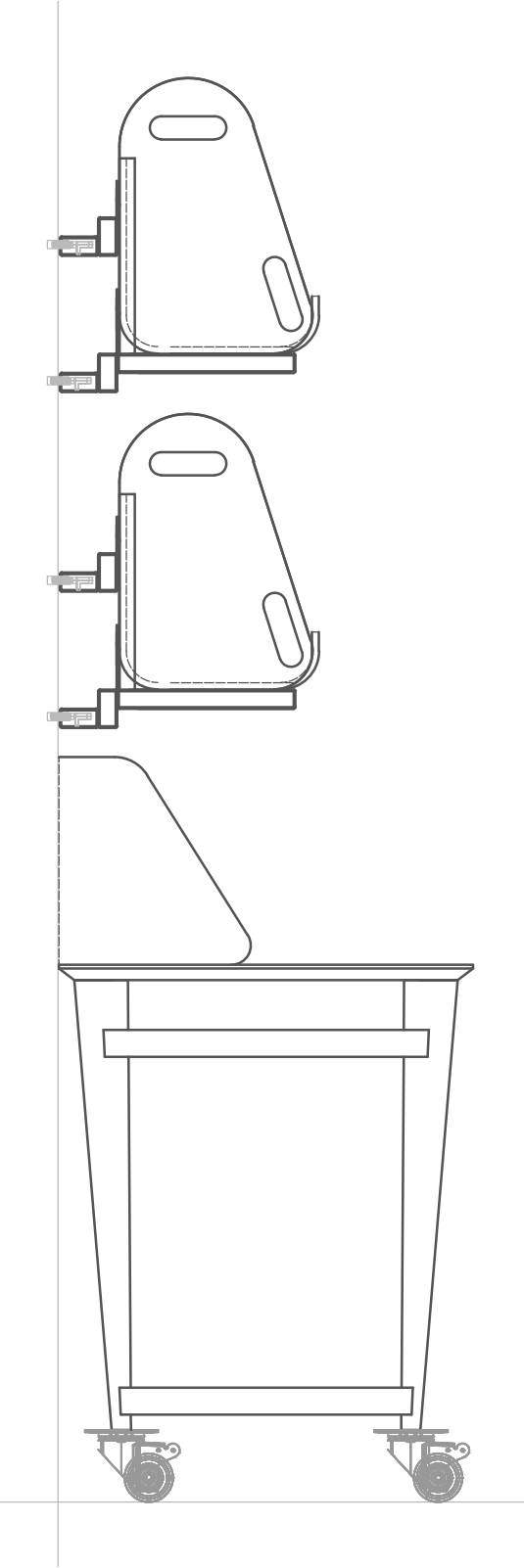
Sitting grades are using to have specific and different modules for the both primary and secondary actions.







THE STRUCTURE



COMPONENTS



Alluminium structure 3" X 3/2"



The linear guide rail systems consist of a guide rail, one or two cam roller carriages and the selected number of end stops.

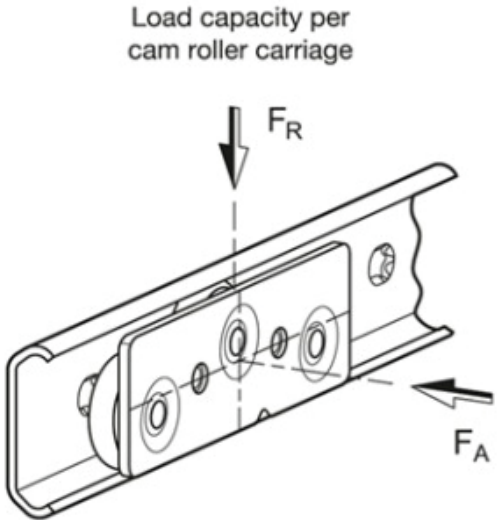
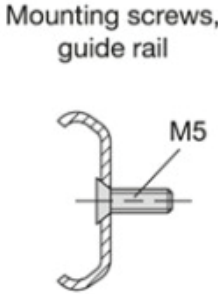
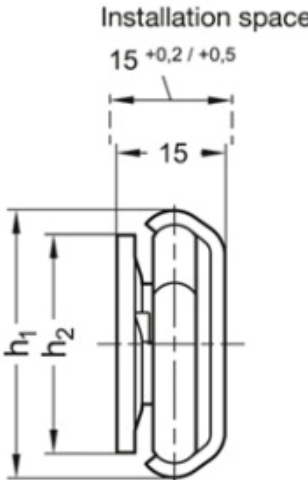
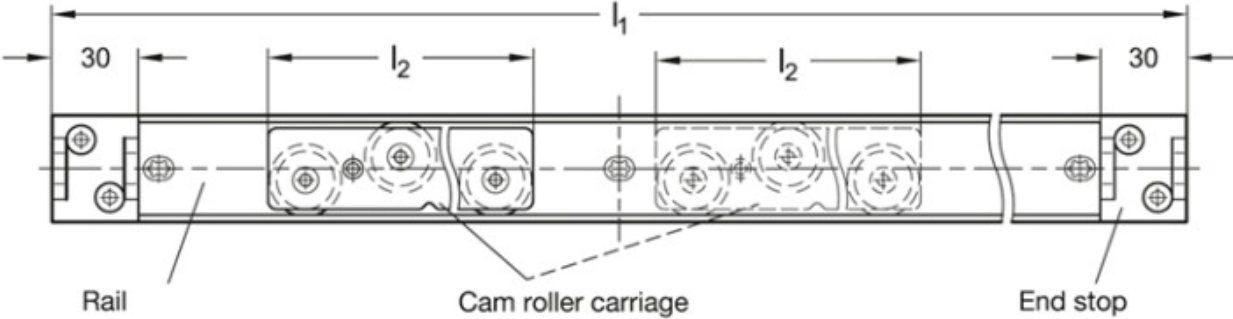
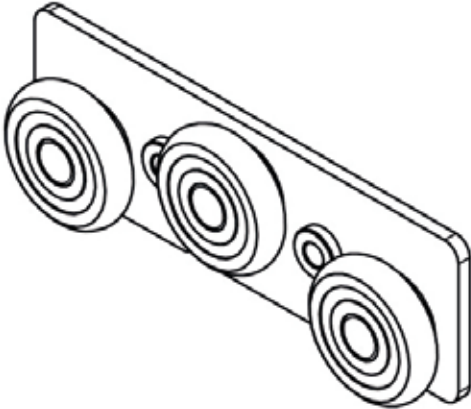
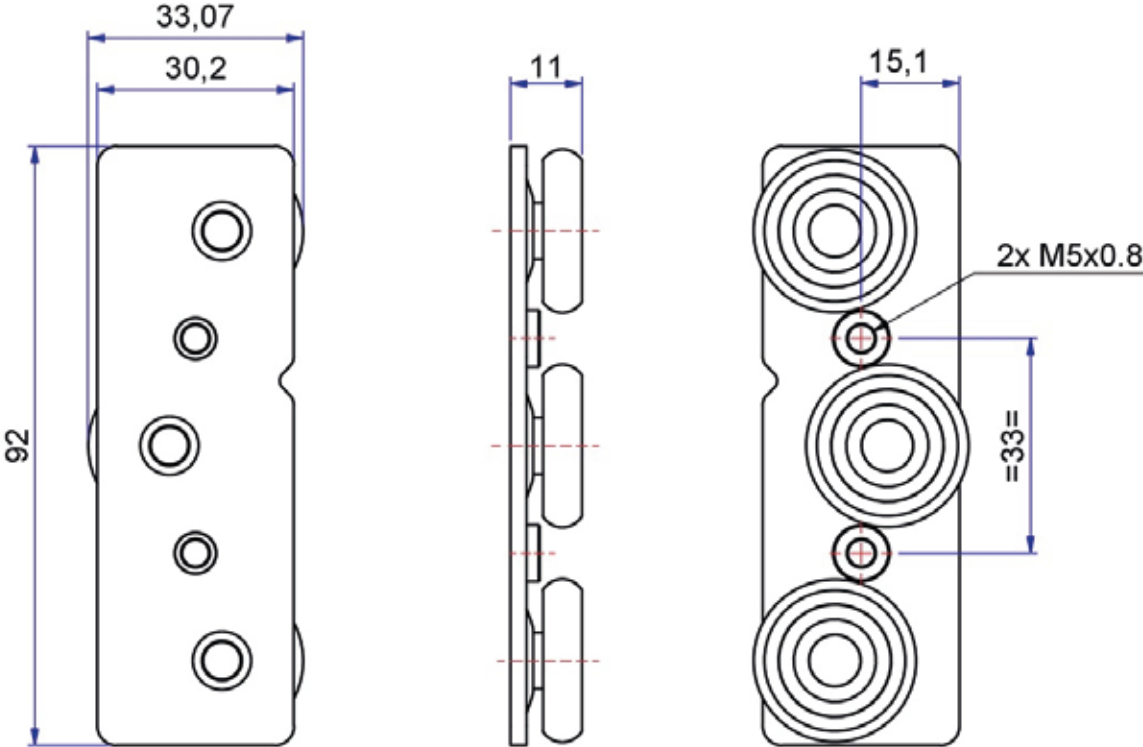
Steel  
zinc plated, blue passivated  
Stainless Steel NI

Base body  
Stainless Steel  
Roller  
ball-bearing, 2R  
Stainless Steel

End stop  
Stainless Steel AISI 304

Operating temperature -20 °C to 100 °C

SLIDING MODULES

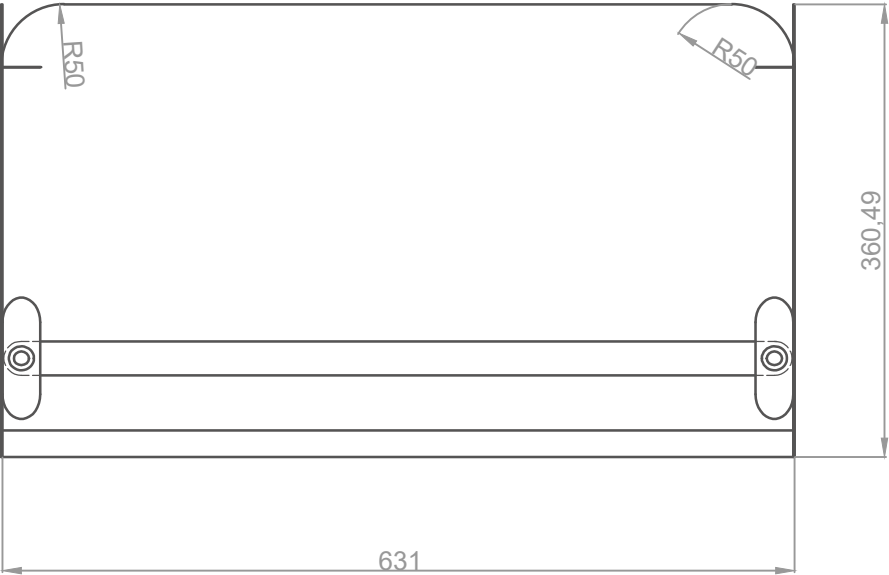
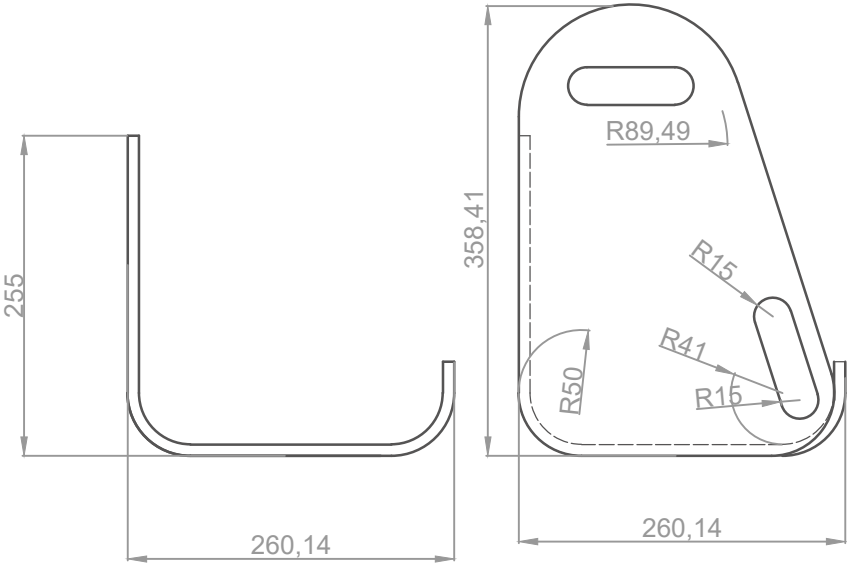


SLIDING SEQUENCE





BOOKSHELF MODULES



DESKTOP  
ZONE





Hanging tools

Container tools

Trash hole

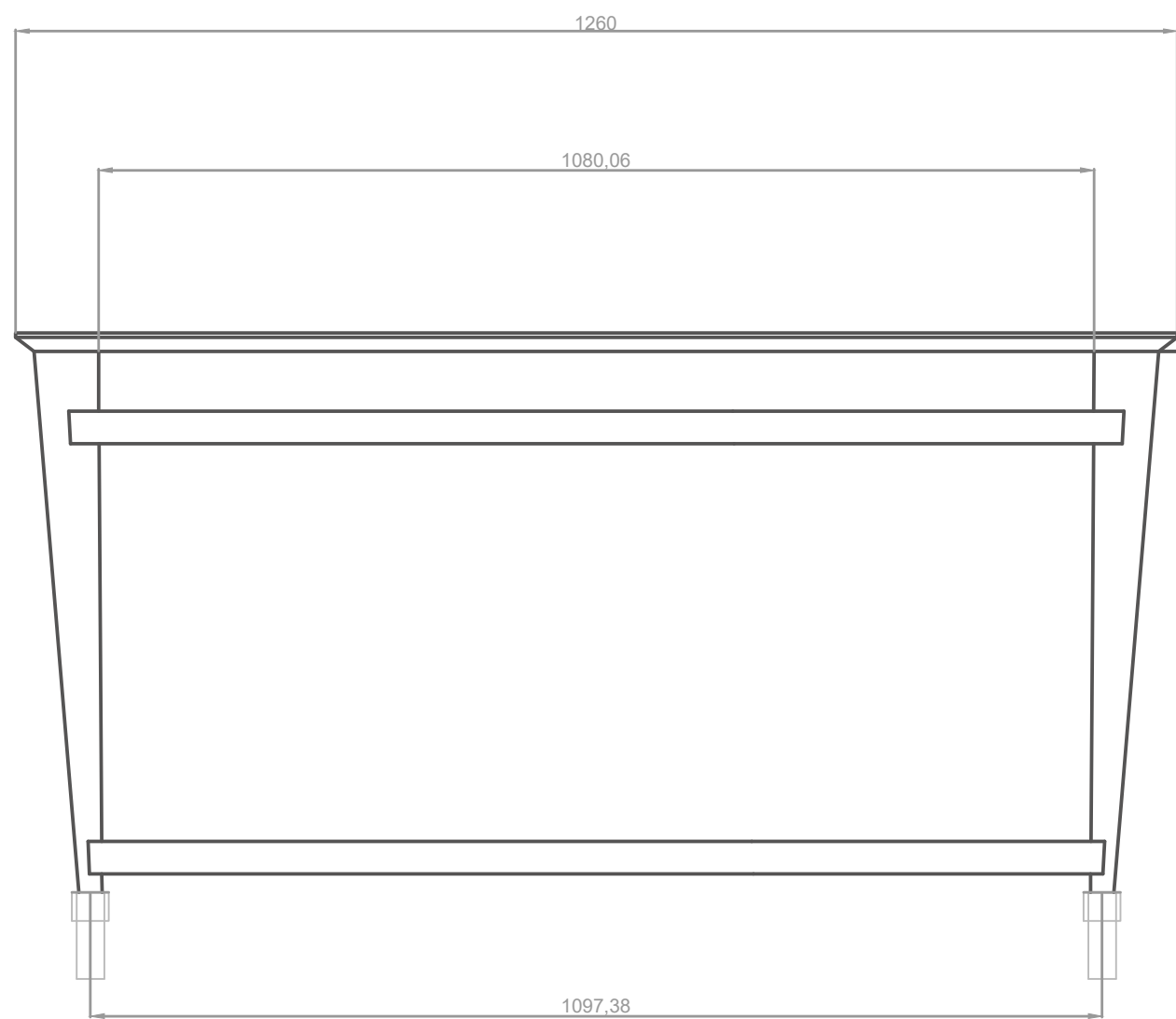
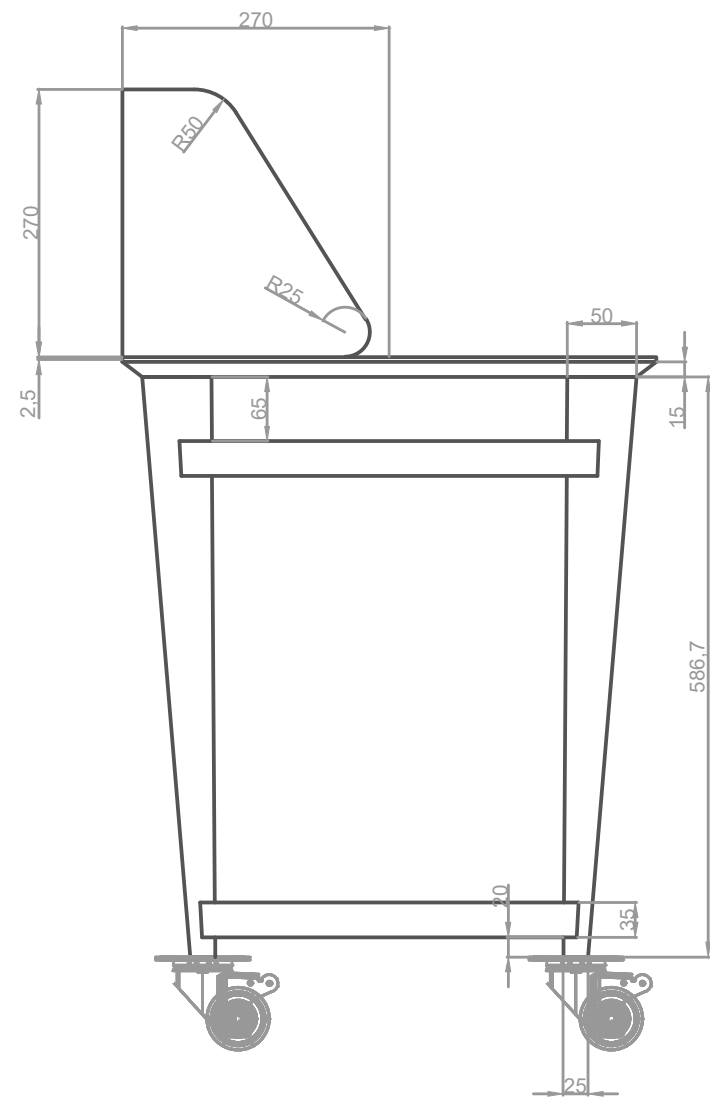
Container tools



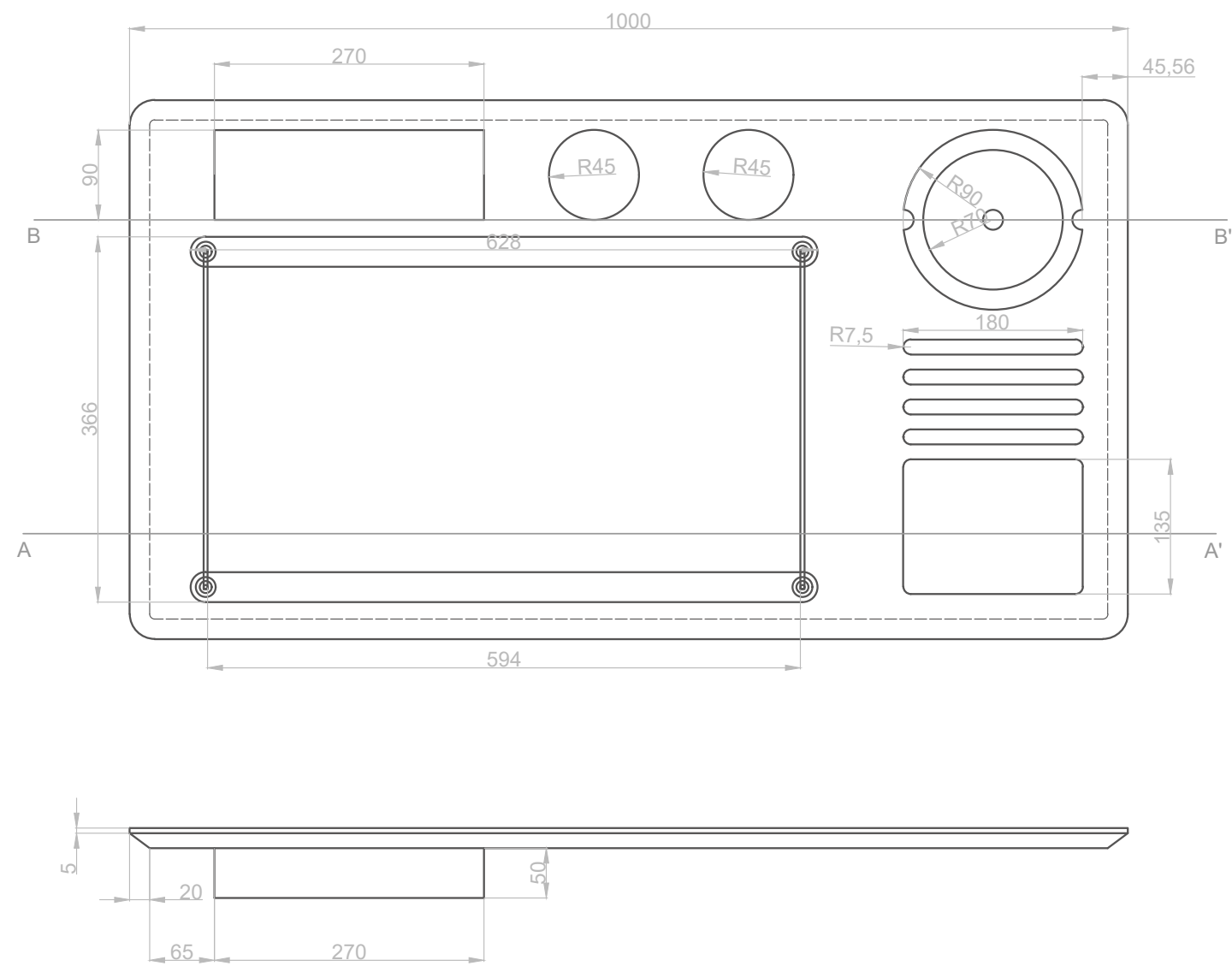
Joint







Desktop Top view



Section B B'



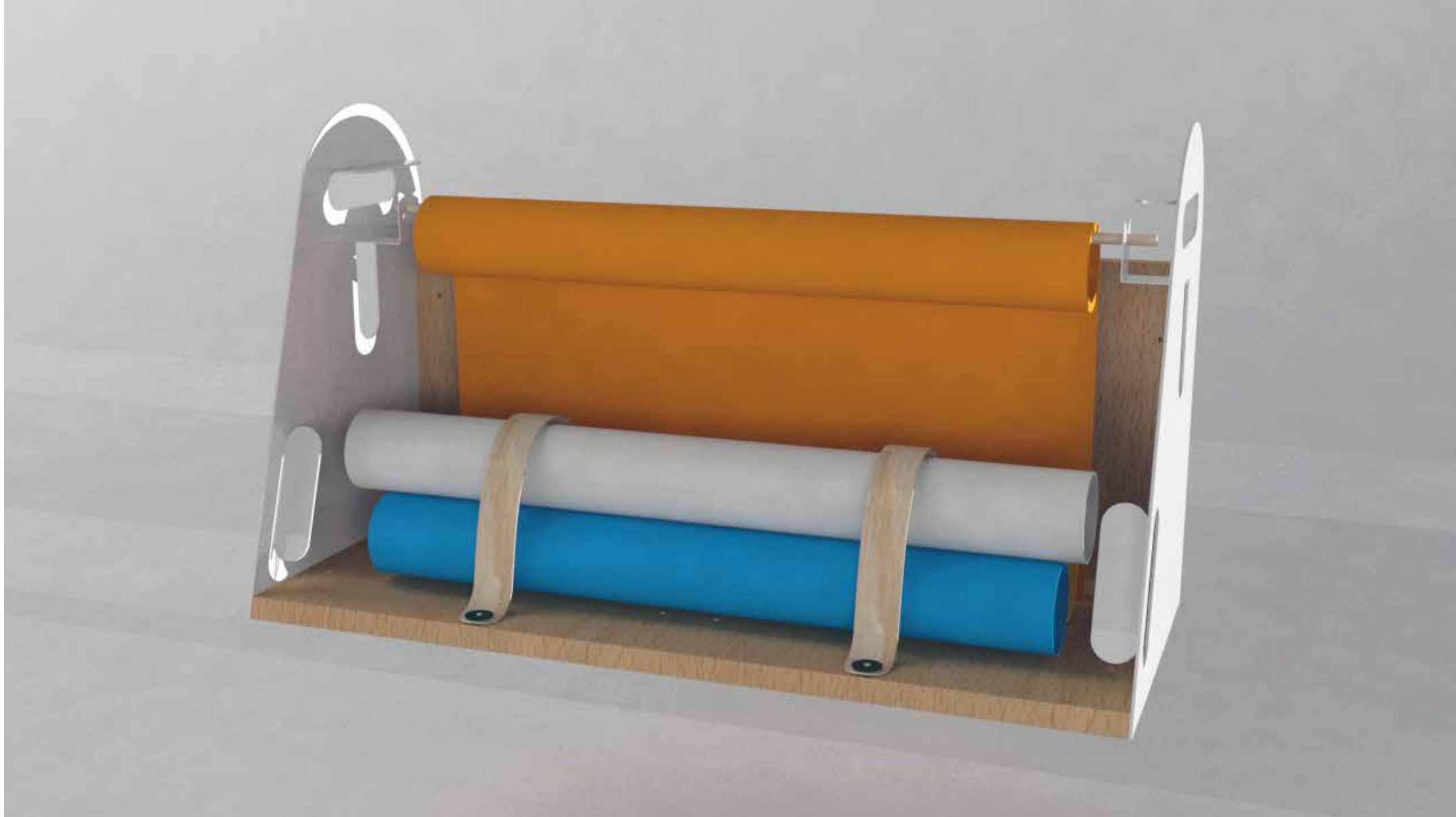
Section A A'





# DESKTOP ZONE

Auxiliar system

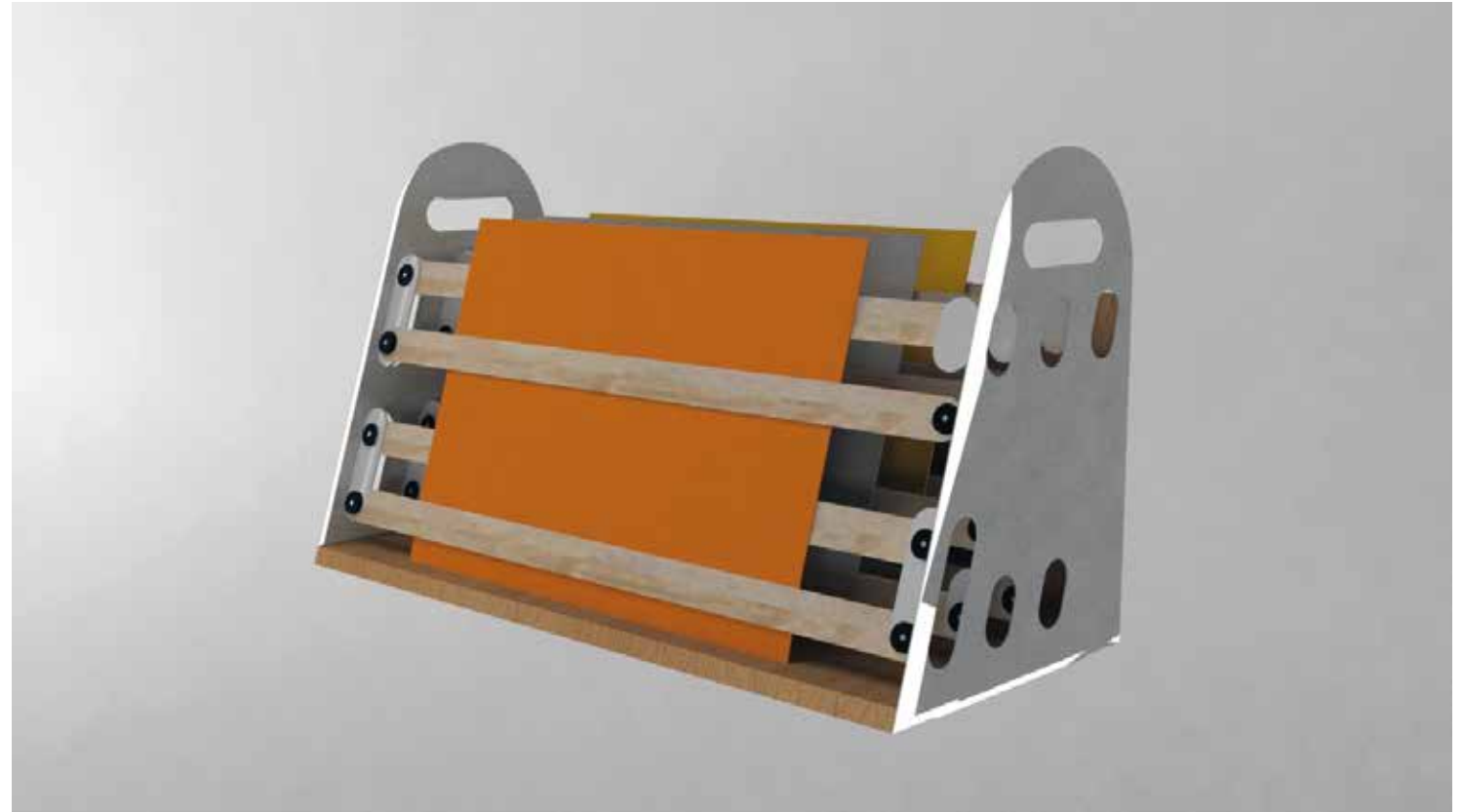


Roller papers



## DESKTOP ZONE

Auxiliar system



Papers

RELAZING  
ZONE



110°



130°

170°

JOINTS



Material: hot-rolled steel  
Color: black  
Material Thickness: 2.3 mm  
Surface: electroplating zinc  
Size: 230 X 70 mm

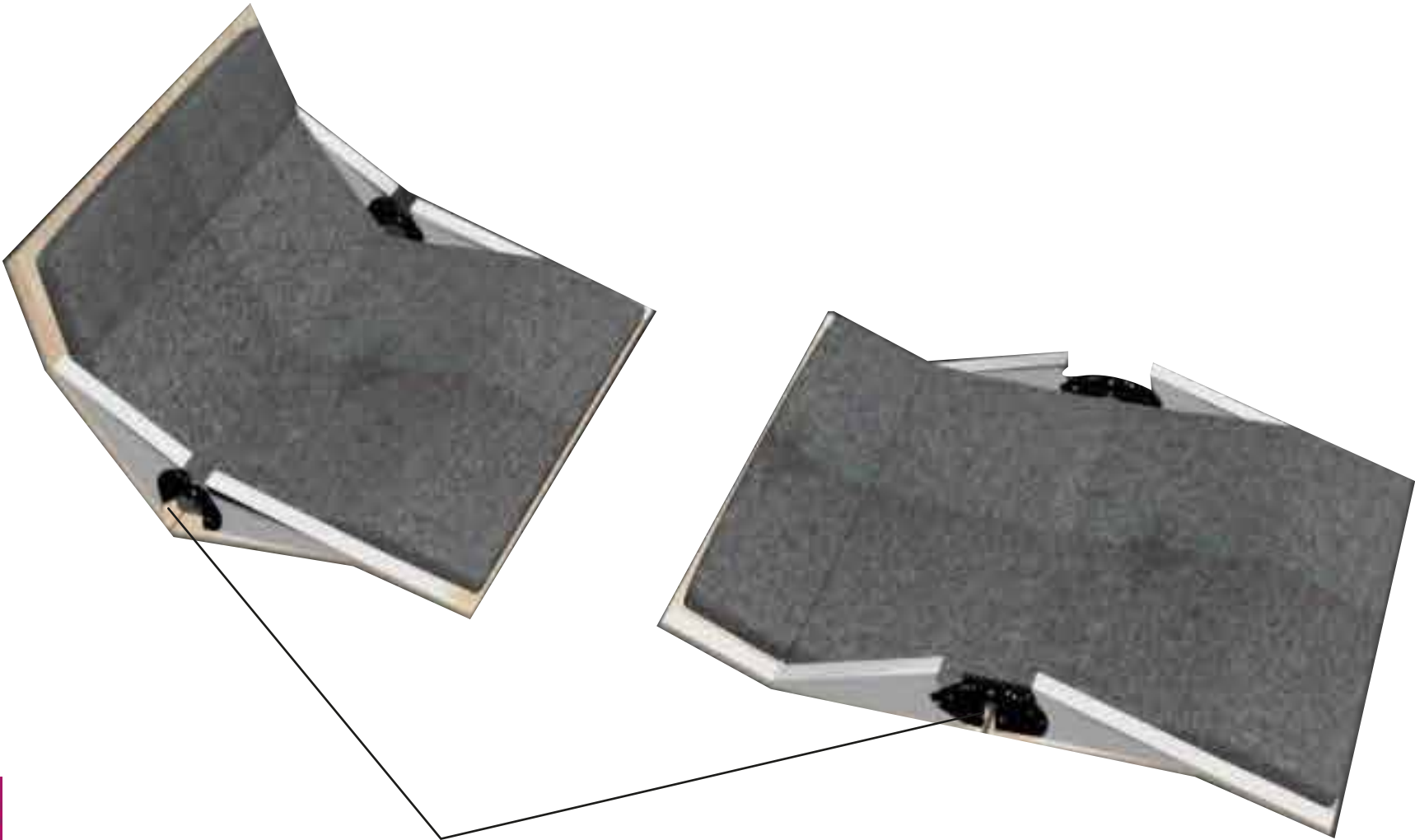


32MM

### TECHNICAL JOINTS DETAILS

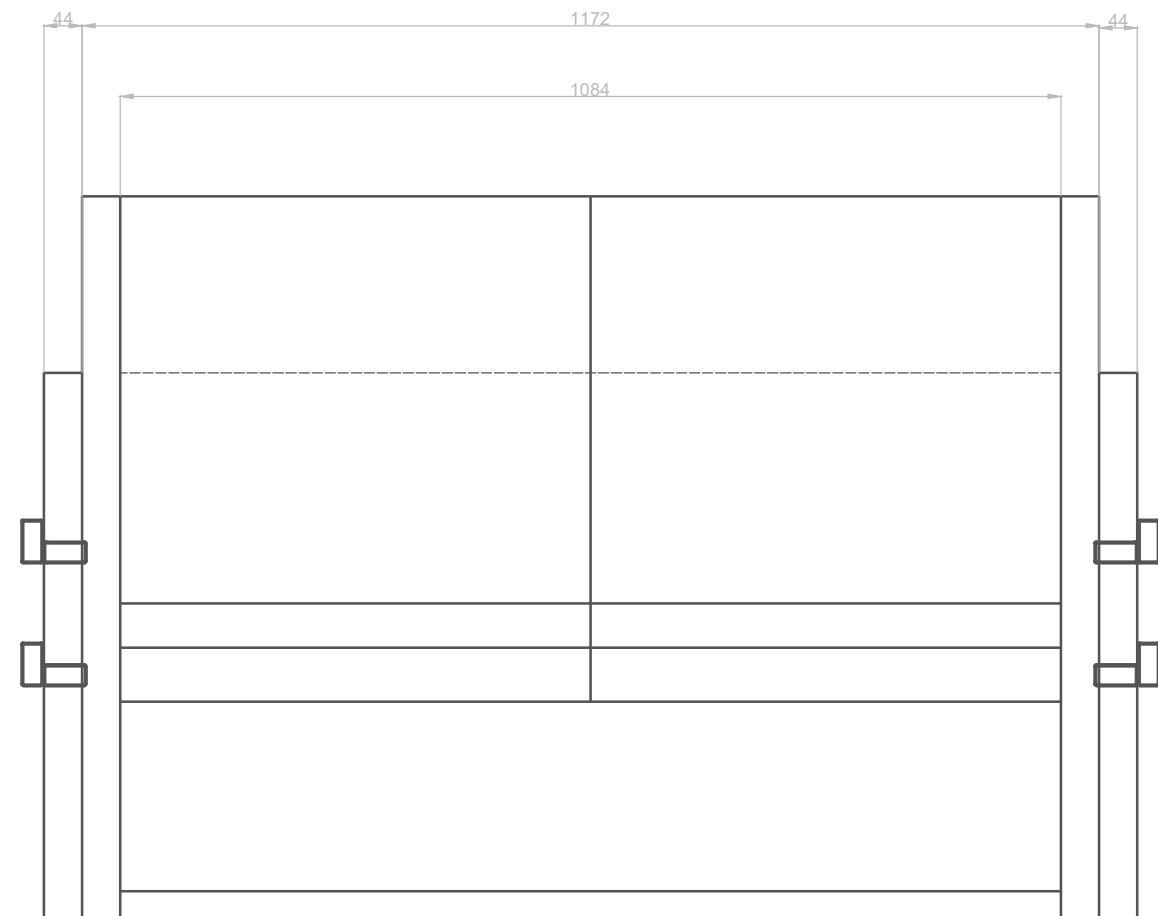
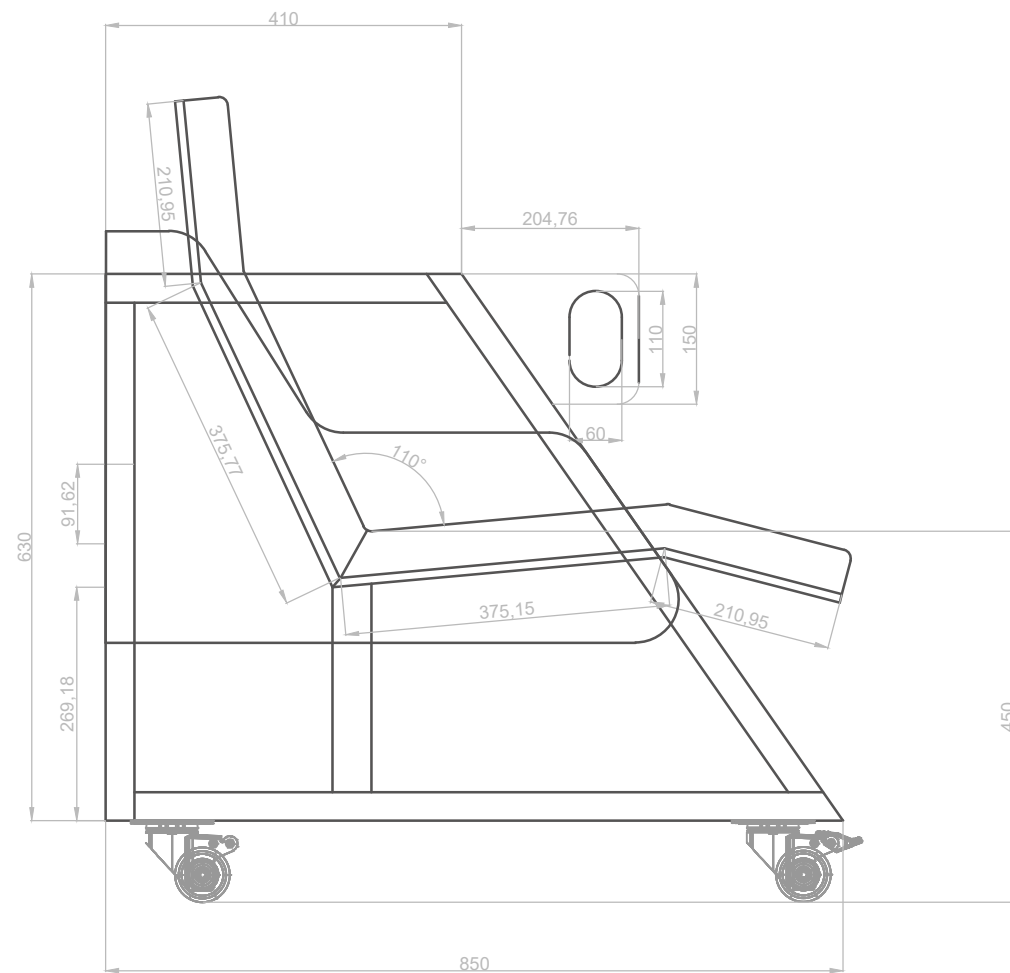
LOAD CAPACITY :KG 500 - 350  
WHEEL TYPE : PHENOLIC WHEEL  
DIAMETER :INCH 8--INCH 4  
SURFACE THREATMENT : ENVIRONMENTAL  
PROTECTION ZINC PLATING, ELECTROPHORETIC  
PLASTIC POWERING COATING ,  
THICKNESS OF PLATE :MM 5.5.

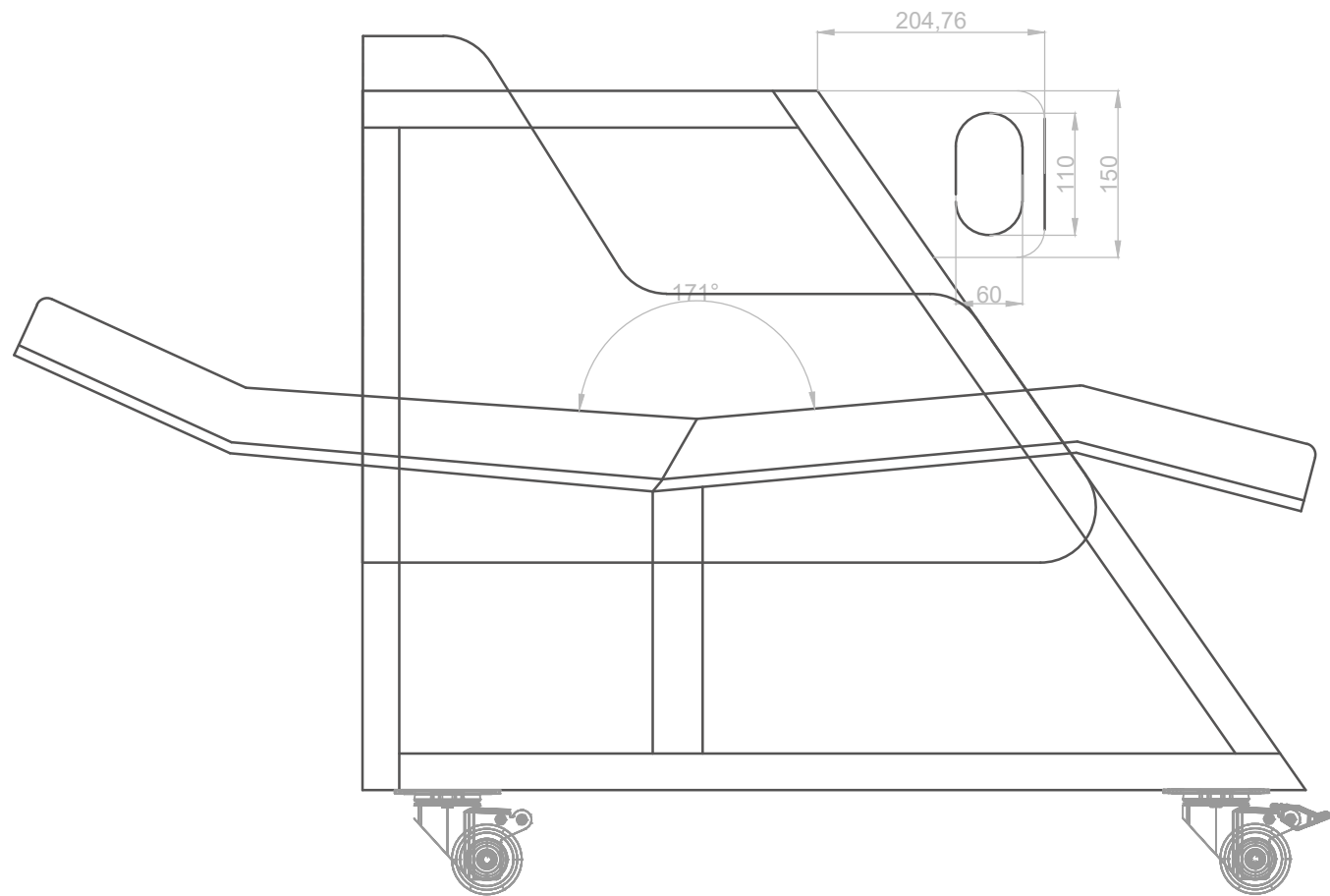
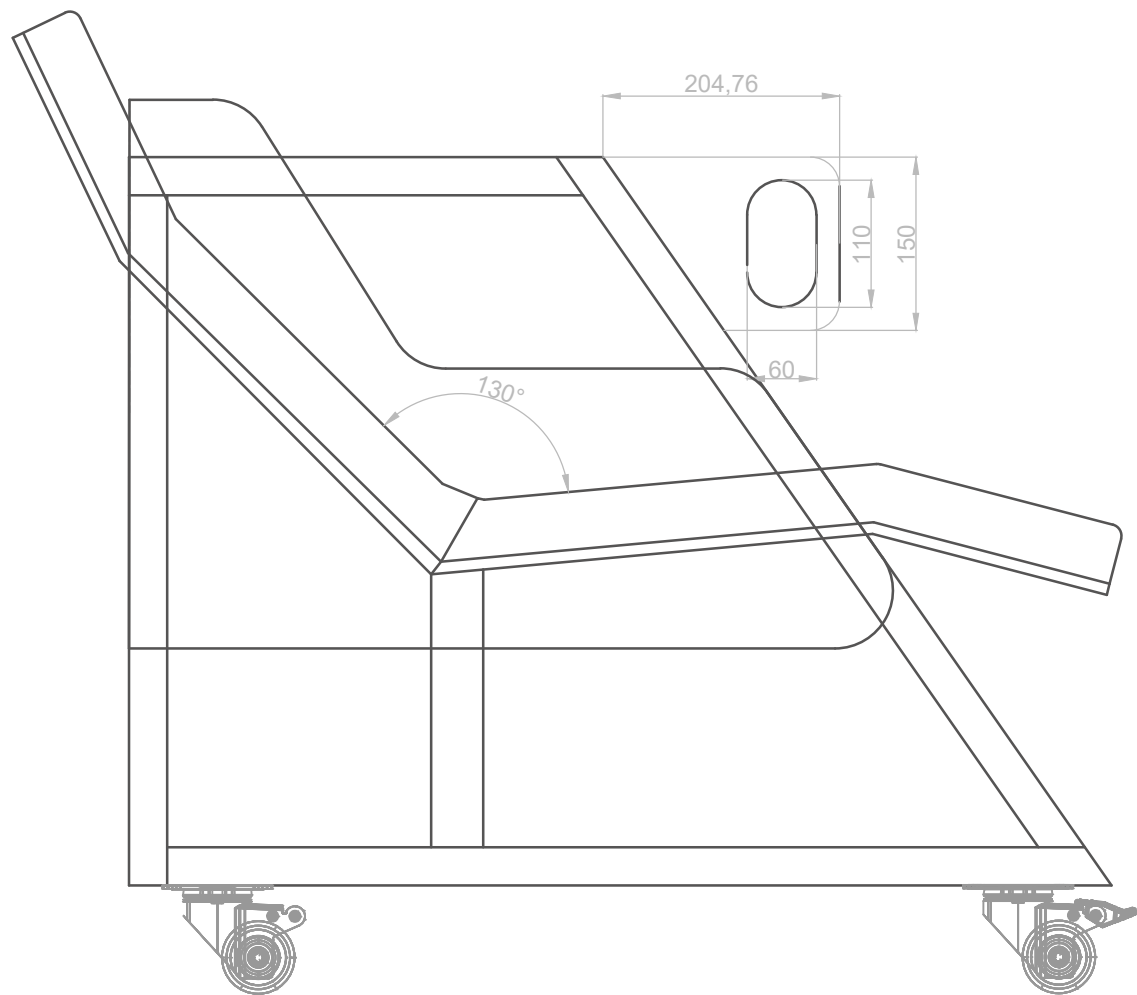
### NT WHEEL DETAILS















- Red Oak wood is commonly used for furniture, joinery, flooring, panelling, decking and veneers
- Durable, long-lasting wood
- Attractive wood grain
- Less likely to warp when exposed to sunlight
- Good water resistant properties
- Highly resistant to wear and tear
- Stains and polishes well
- Ideal for liming

- Is a type of wooden material constituting of lignocellulosic fibers combined with resin and wax in the presence of high pressure and temperature.

- Has a smooth feel consistent on the entire material is less costly than Plywood.  
For its finishing, painting is easier compared to typical wood can be shaped to suit various designs.

#### Using steam to bend wood

Bending a solid wood slat can be a hard task depending on the thickness of the slat and the type of wood, so much so that for some woods and plank thicknesses we can only do it with industrial machinery and not in a home workshop. However, if we talk about softwoods and thicknesses of a few centimeters it is a task that practically anyone can face.

This method consists of using steam to moisten and weaken the wood structure long enough to bend it.

#### Using veneers or sheets to bend wood

And if I don't have the means to do it in the previous way, how to bend wood? Well, the answer is not complex, using plates.

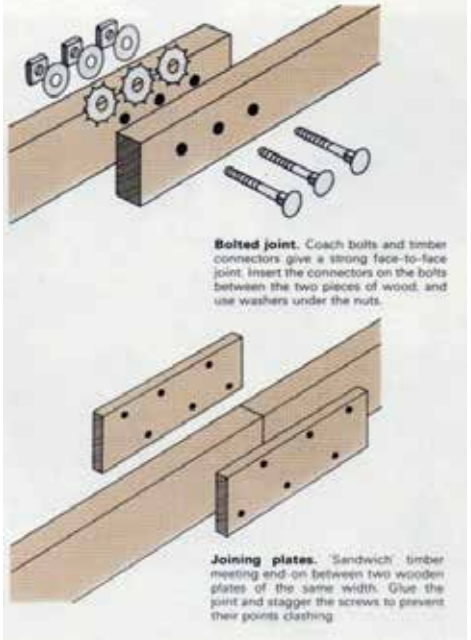
#### Wood Bending Groove Technique curving wood grooves

This way of bending wood is especially recommended in plywood and MDF (measured density board), although it can also be used in solid woods, as long as they are flexible woods. It consists of weakening an area of the wood strip that we are going to bend by making parallel cuts that reduce its thickness.

#### Bolted joint

Coach bolts used with timber connectors make strong face-to-face joints for roof trusses.

Insert the connectors — metal washers with toothed edges — on the bolts between the joining faces. Tighten the nuts and the connectors bite into the wood, increasing the shearing strength of the joint. Use washers under the nuts.





SCENARIOS











Space is vacant because they can customise the space as their own need when Amara will grow. That's why we intentionally left the some space for their future needs and consequences.





## Final Exam

G12

Jalileh Ailar  
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PRODUCT DESIGN STUDIO

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