

EXPLORING SPACES IN

CHILDREN'S FURNITURE

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IDC | IIT BOMBAY

GUIDE : Prof. PURBA JOSHI

“

We worry about what a child will become tomorrow, yet we forget that he is someone today.”

~ Stacia Tauscher



“

WHY CHILDREN'S FURNITURE



USER STUDY

- Primary and Secondary Users
- Parents as buyers
- Homes – Space, Available furniture
- Pattern and frequency of use

- Collapsible table
- Movable
- Use of pillow to adjust height





- Collapsible table – not in use
- Plastic and metal chair
- Portable study table
 - maximum use
 - Printed board games



- No specific furniture
- Plastic chairs – kid size
- Designated study area – adult size

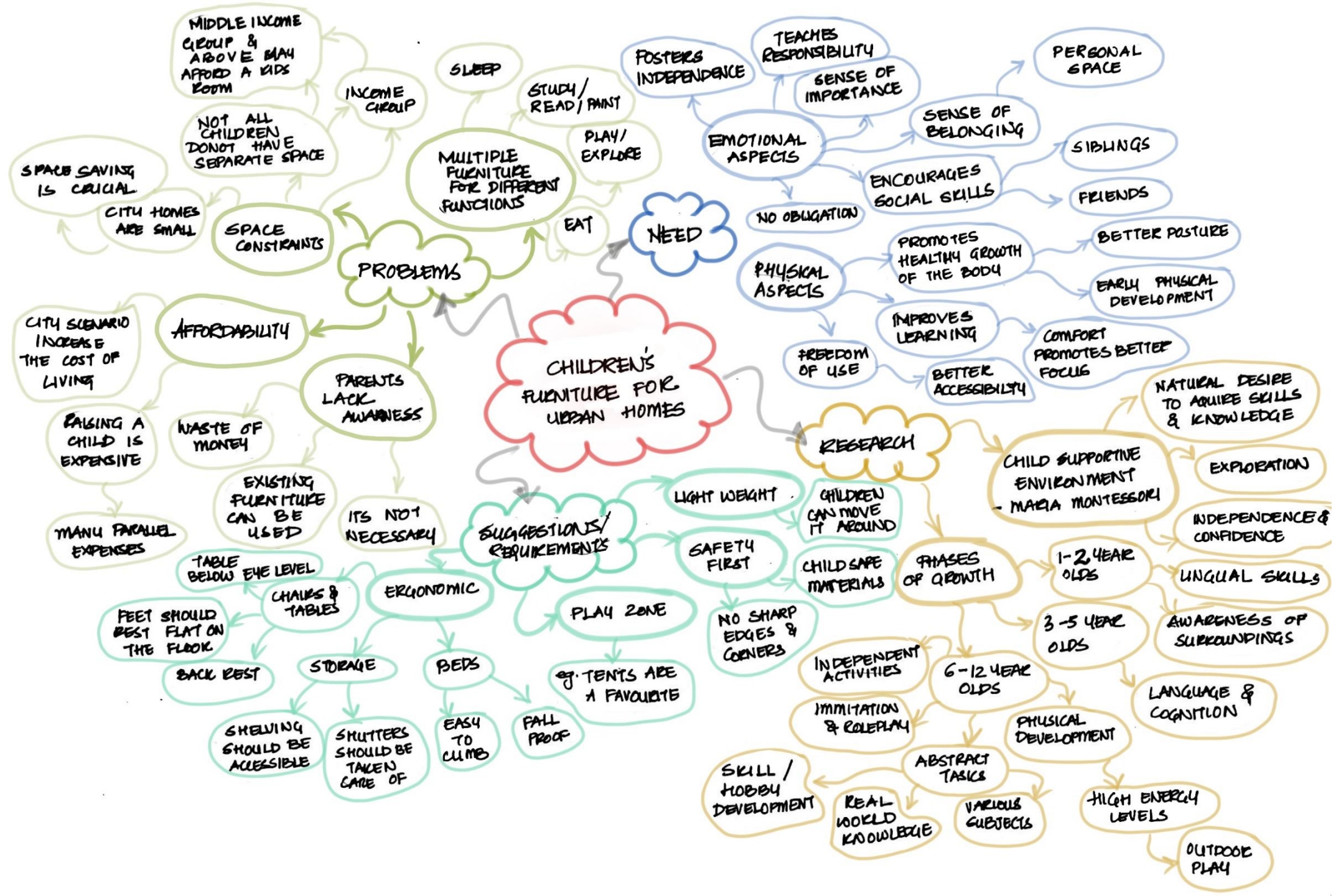


- Wall mounted collapsible table
- Two height adjustments
- Heavy weight
- Glass centre
- Locking mechanism - unsafe



- Collapsible table – Table mate
- Multiple height and angular adjustments
- Light weight

MAPPING



NEED

Emotional Aspects

- Building self-confidence and independence.
- Responsibility.
- Feeling important and respectful.

Physical Aspects

- Delicate physique which is under development.
- Physical discomfort and insecurity interferes with learning.
- Hampers normal growth and development of the child.
- Safety is an advantage.



RESEARCH

Child – Supportive environment :

Maria Montessori

Natural desire to –

- Acquire skills and knowledge
- Explore
- Be independent and confident
- Imitate the immediate surroundings –

Role play

1 – 2 Year Olds

- Lingual Skills
- Awareness of surroundings



3 – 5 Year Olds

- Speaking
- Walking
- Cognitive and perceptive skills



6 – 12 Year Olds

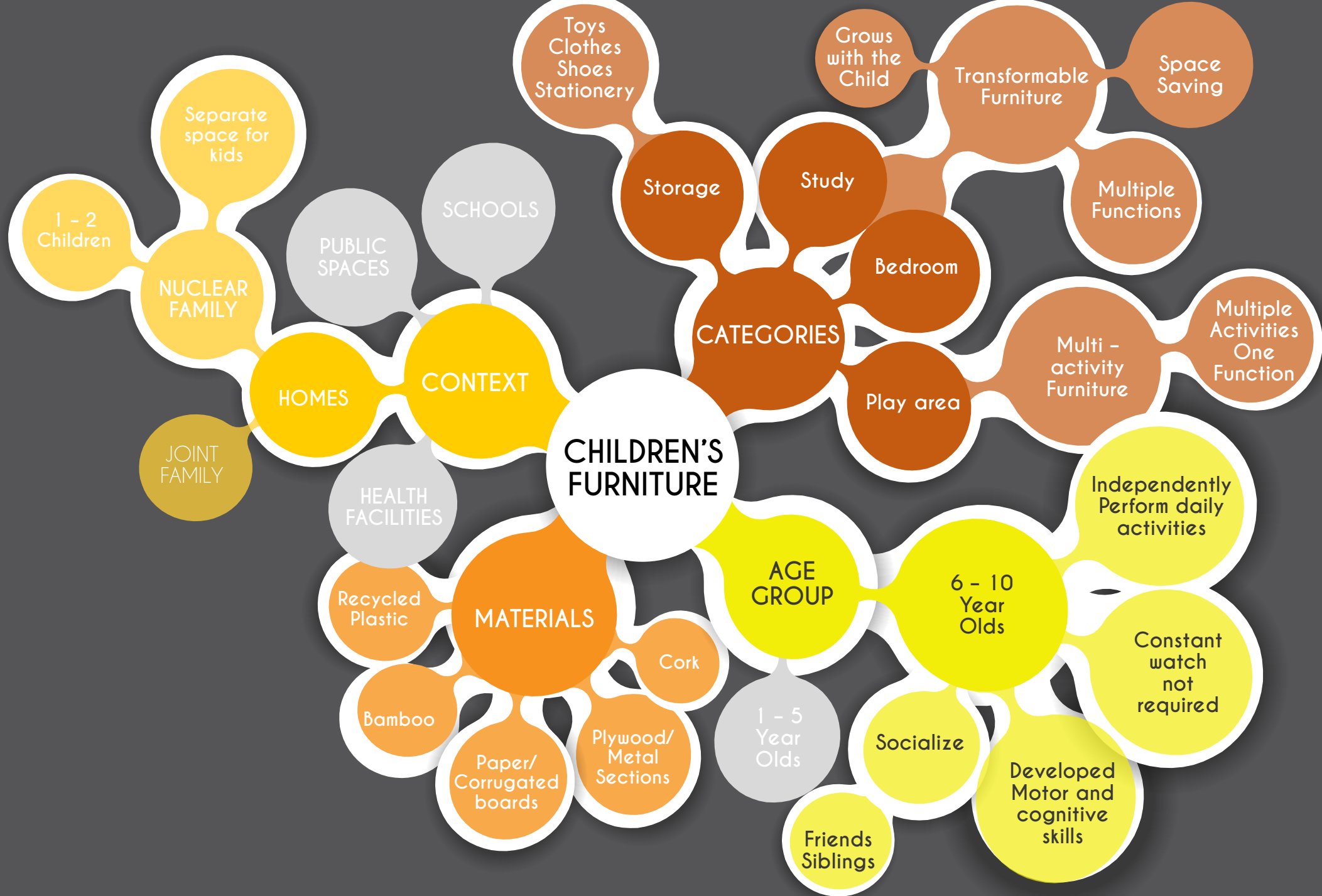
- Abstract Tasks
- Physical Development – High energy levels



PARALLEL PRODUCTS



CONTEXT MAPPING





DESIGN STATEMENT

To design furniture that is playful, affordable and grows with the child for the age group of 6 – 10 years.

It should imbibe a sense of belongingness in the child and encourage the natural attributes such as socialising and independence of this age group.

DESIGN BRIEF

USERS

- Primary Users – 6 – 10 Year Olds
- Secondary Users – Parents

USER REQUIREMENT

- Playful, affordable kids furniture that grows with the child

MICRO ENVIRONMENT

- Homes

BROAD PRODUCT SPECIFICATIONS

- Safe and Child friendly
- Playful and interesting
- Multi-functional
- Adapt to the growing age
- Should last at least 5 years
- Easy to use

KEYWORDS

FUNCTIONALITY

ERGONOMIC
SPACE SAVING
SAFE
LIGHT WEIGHT
AFFORDABLE
PLAYFUL

FORMAL LANGUAGE

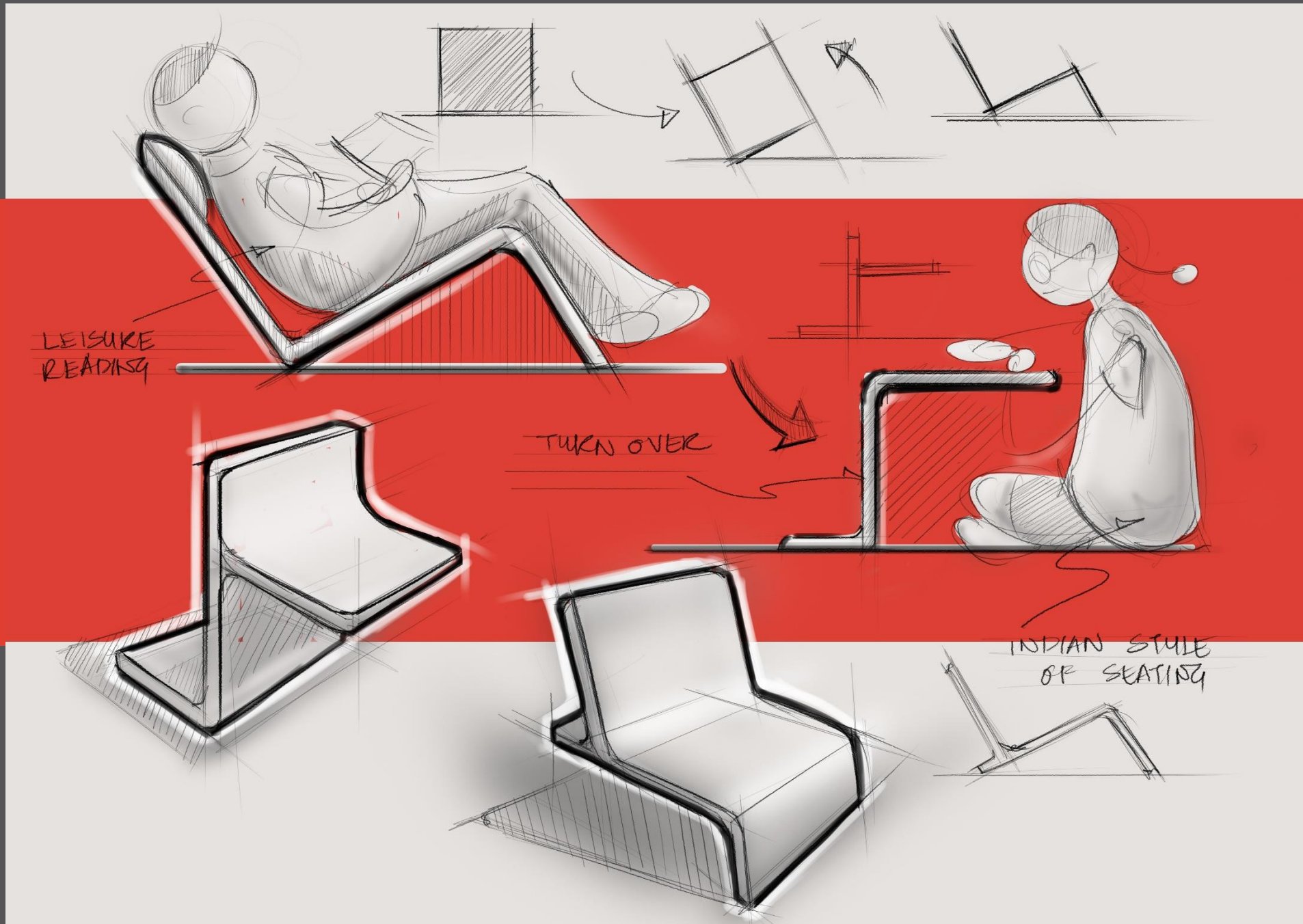
PLAYFUL
COLOURFUL
FUN
SOFT / ROUNDED
LIGHTWEIGHT
DYNAMIC

LOOK AND FEEL

MINIMAL
COLOURFUL

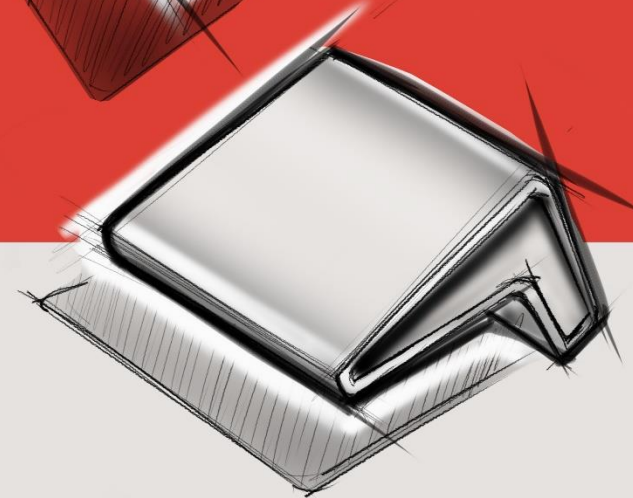
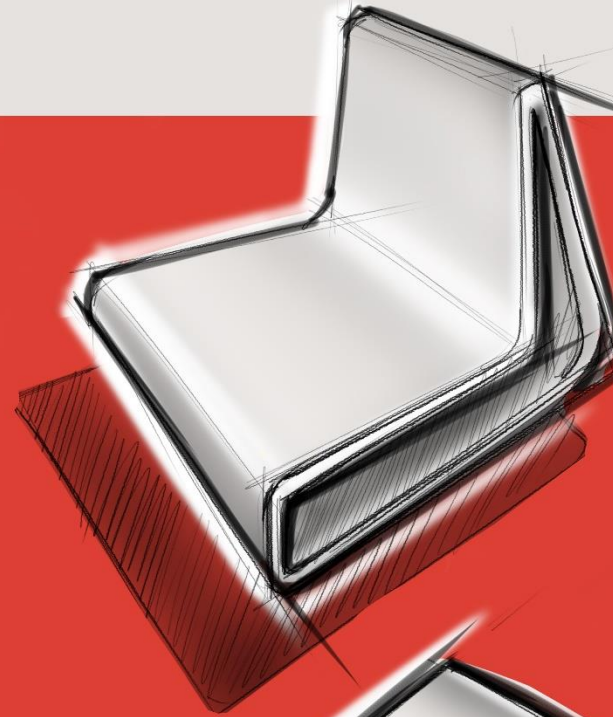
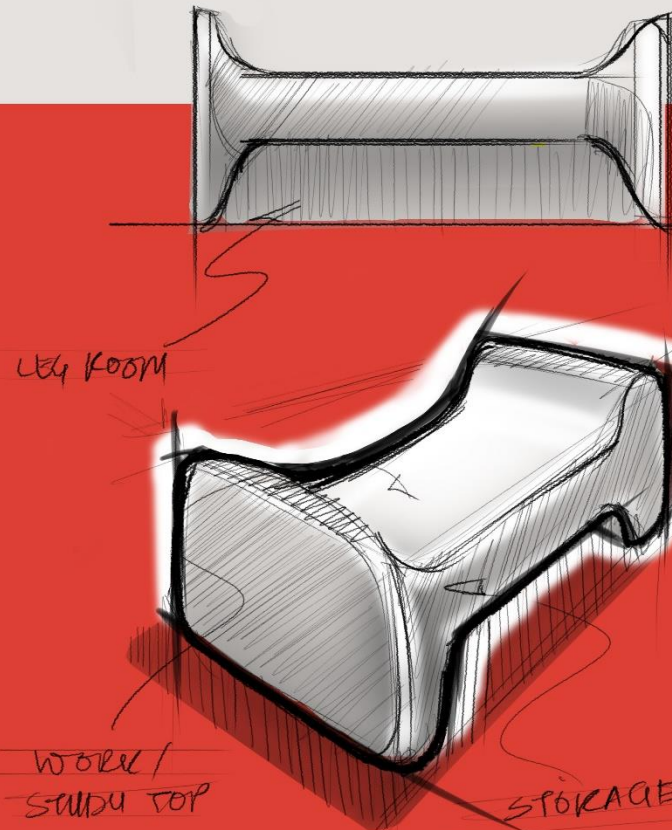


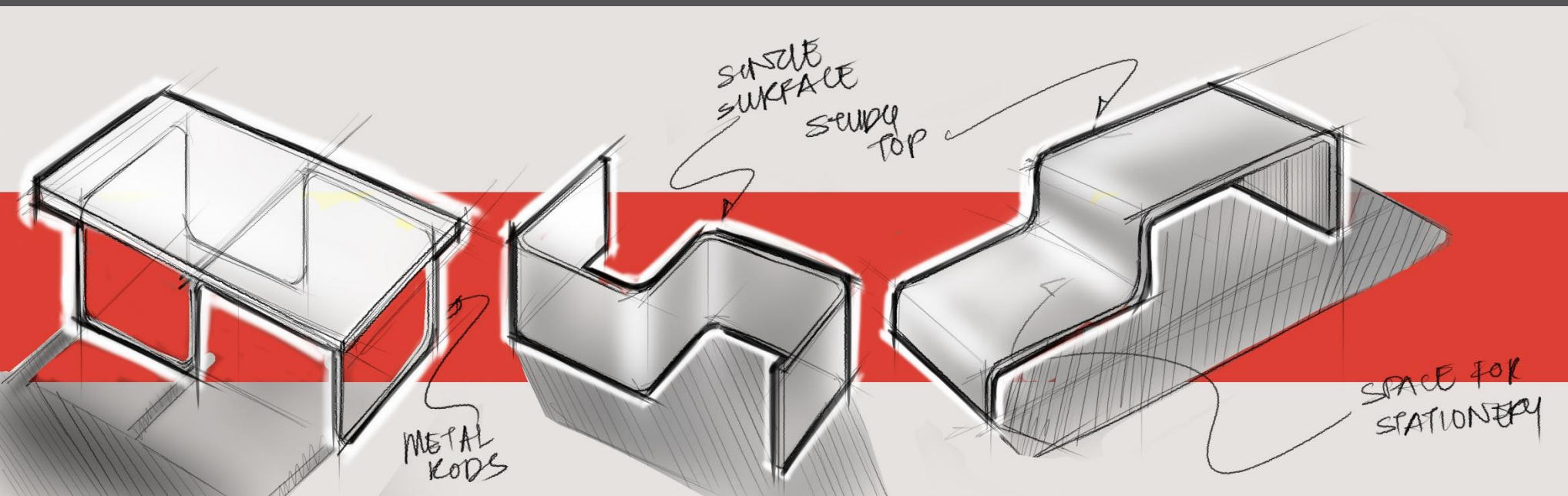
INITIAL IDEATION



Experimenting
with Orientation

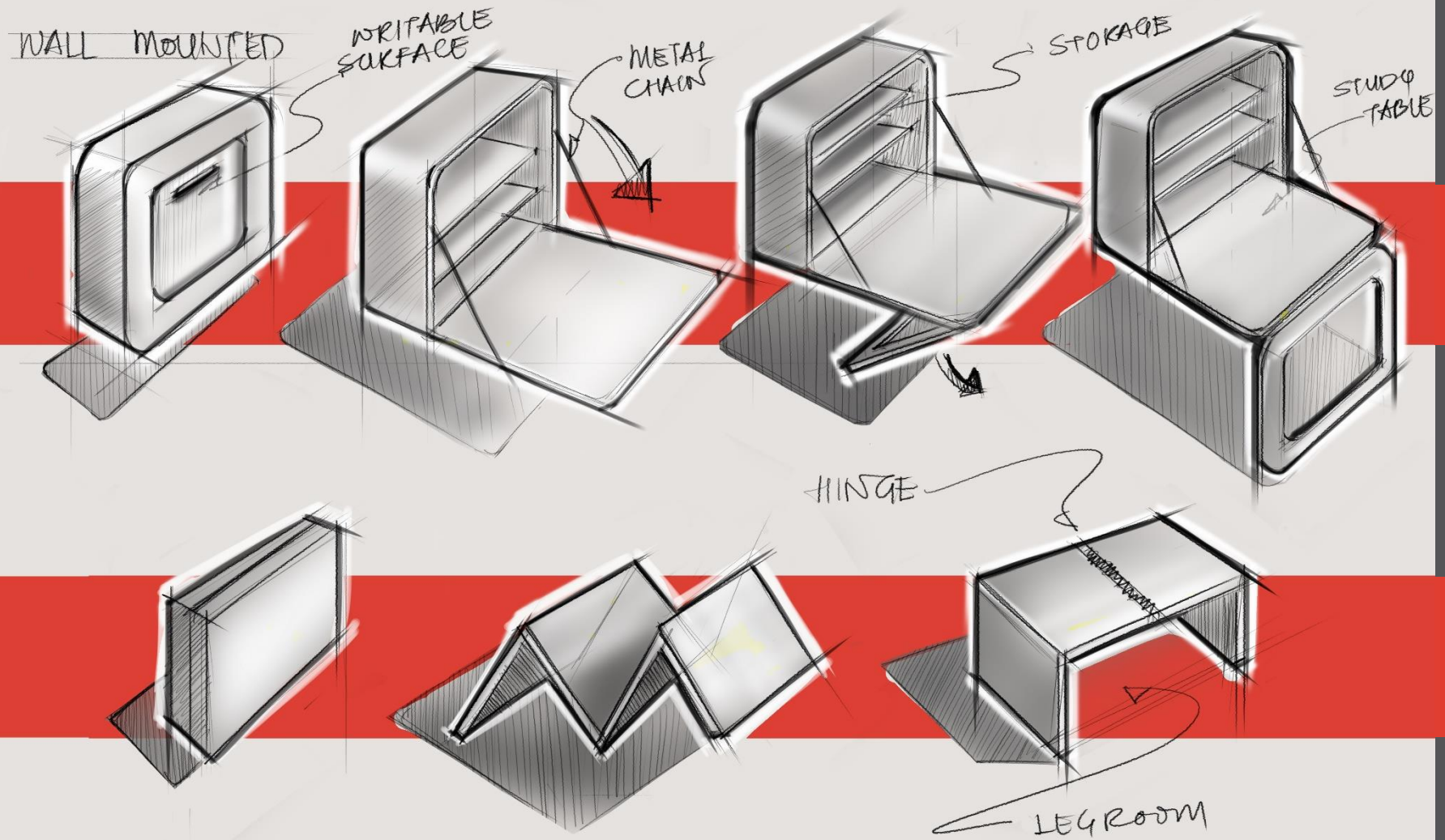
Experimenting with Orientation

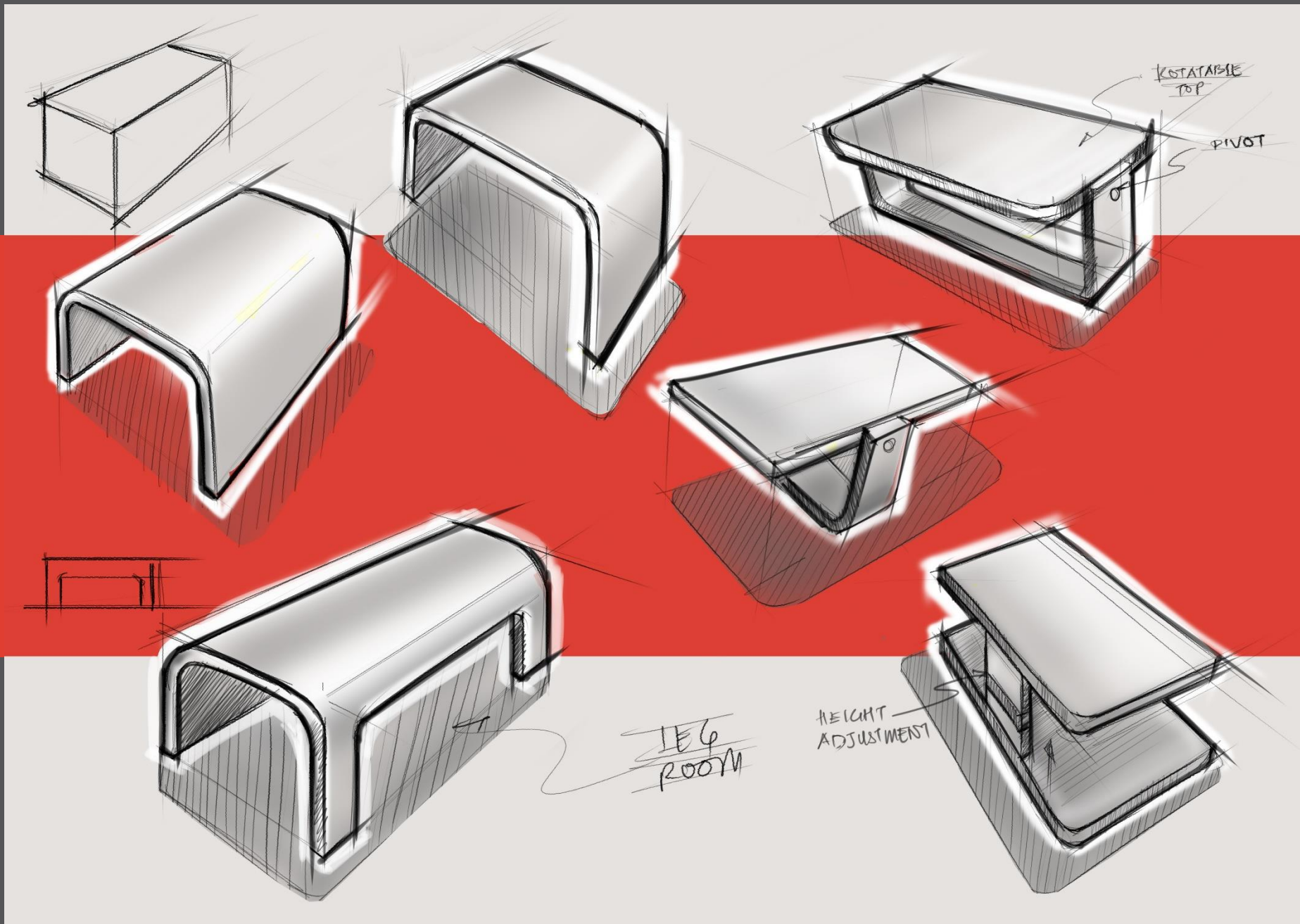




Single Surface

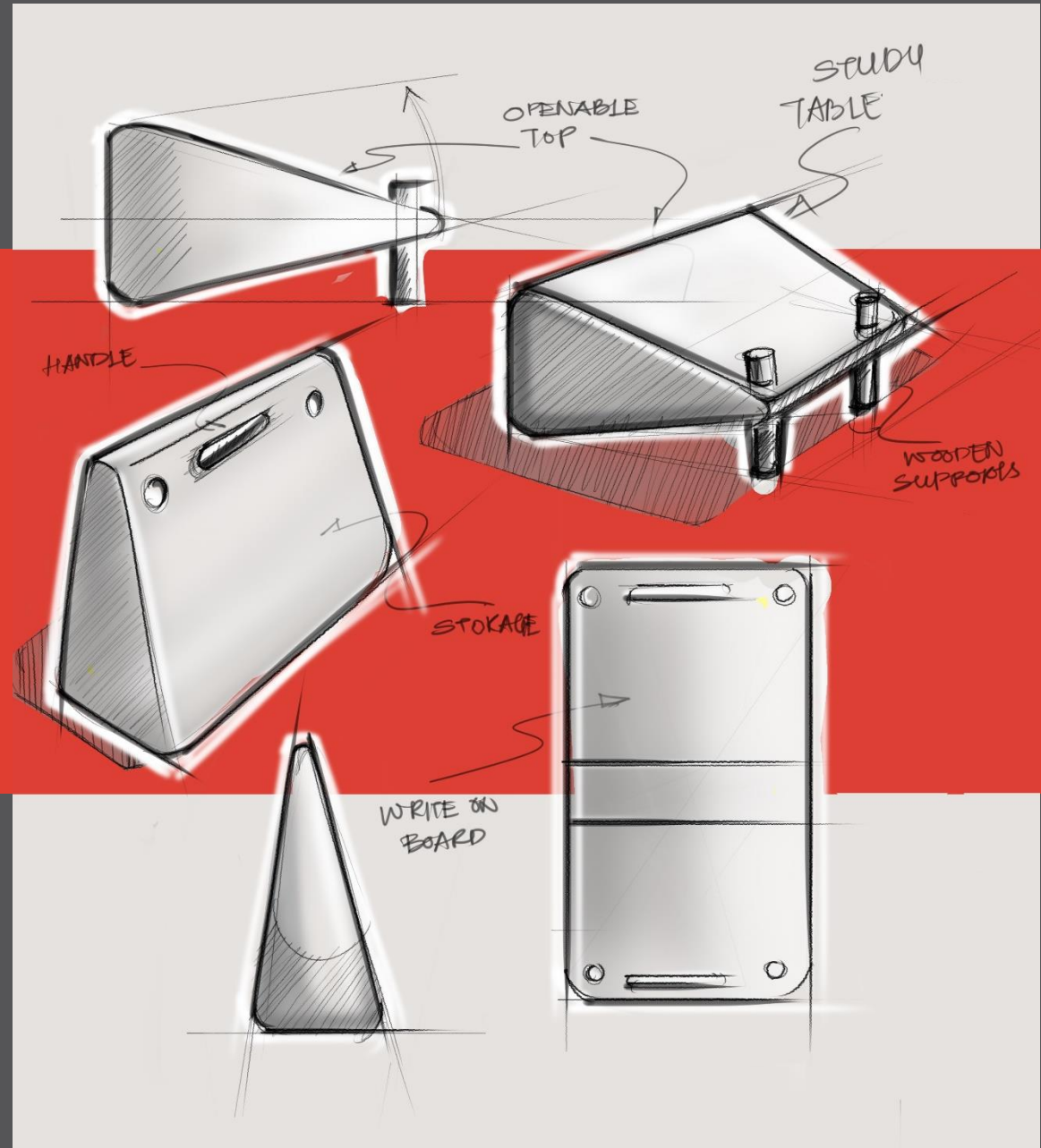
Wall Mounting And Collapsibility

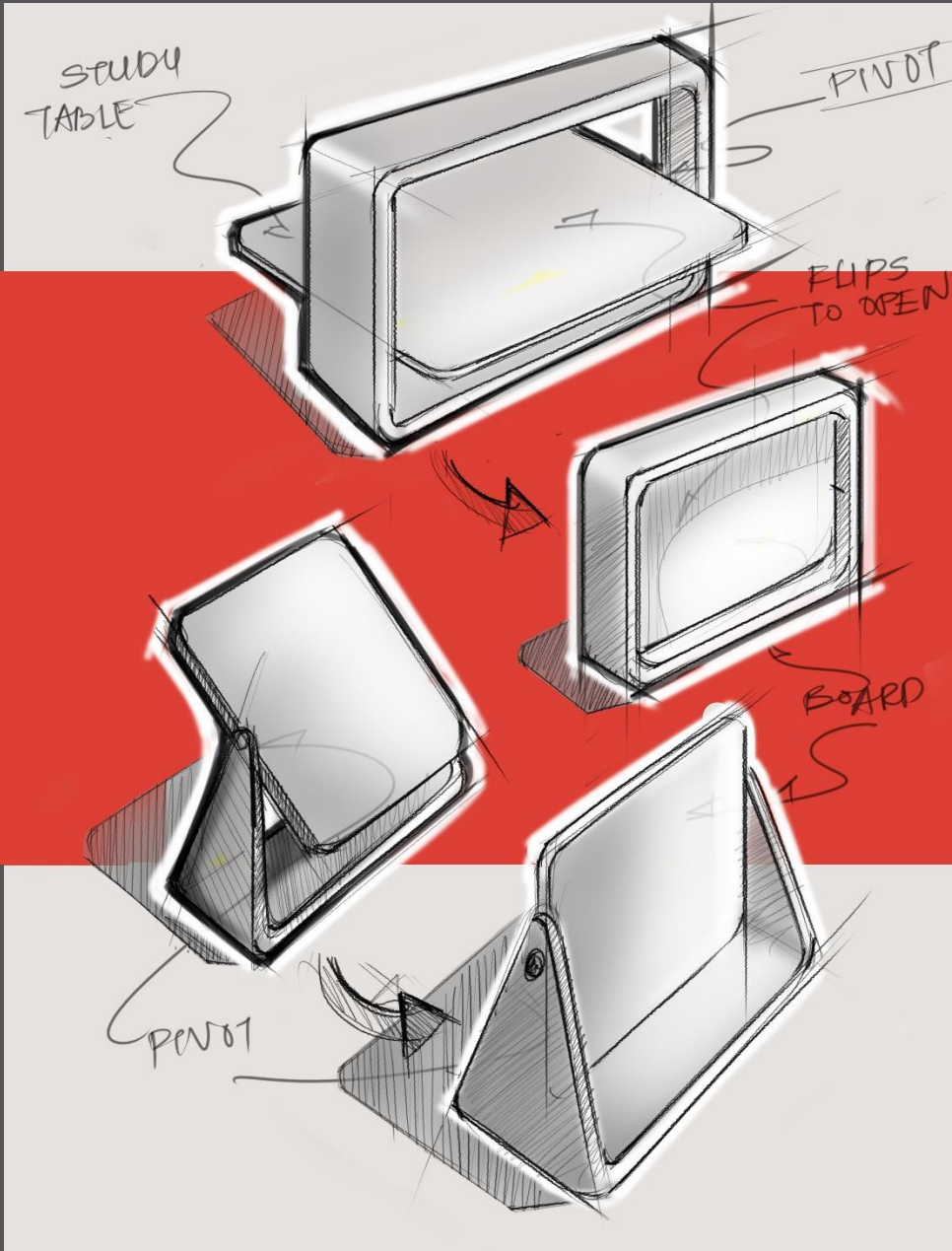




Manipulating
Cuboid Surfaces

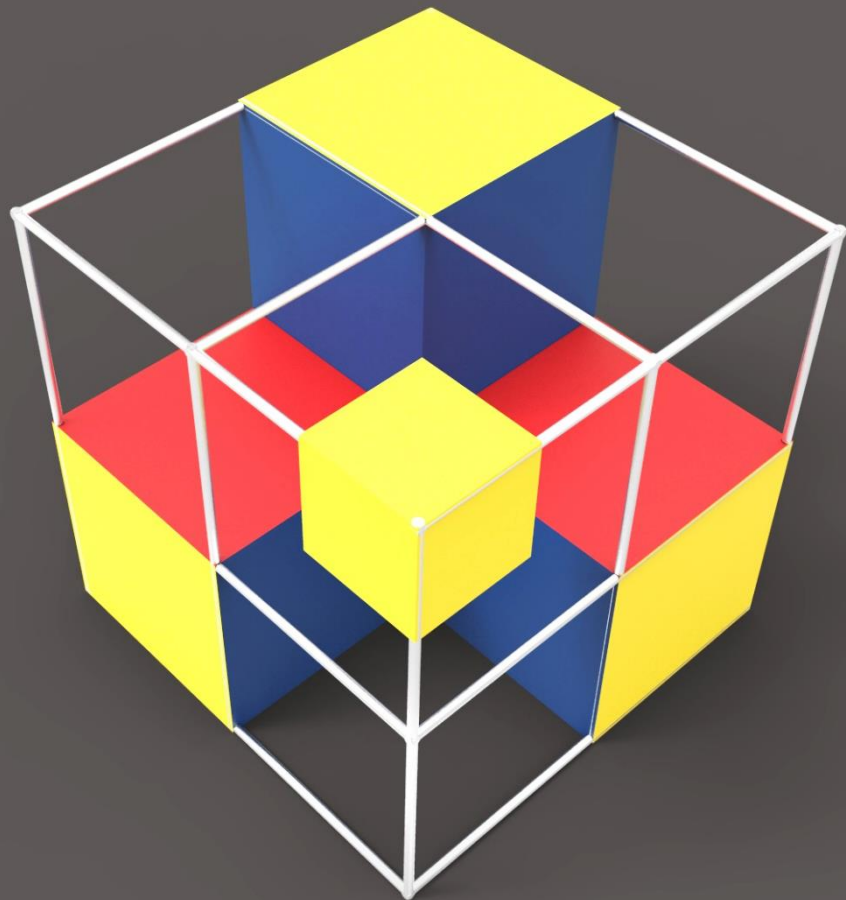
Multi - Functional





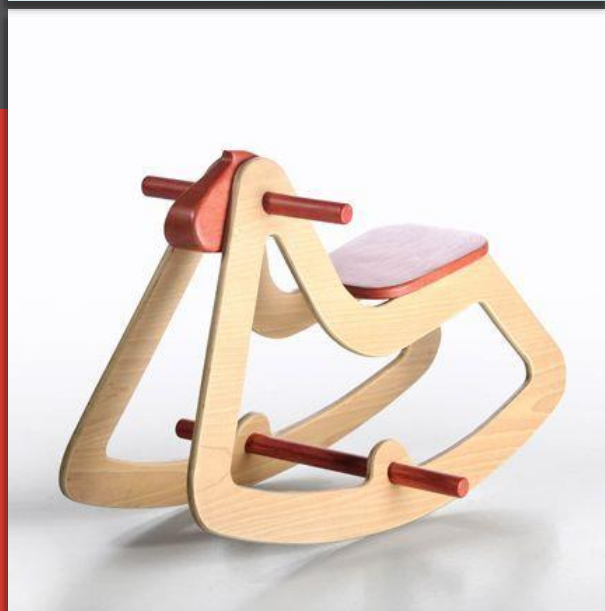
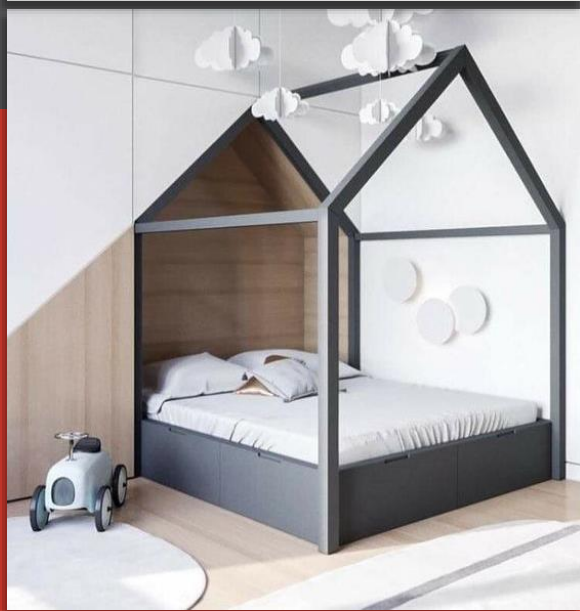
Pivot Inspirations

EXPERIENCE
PLAYFULNESS
EXPERIENCE



BAUHAUS

AS
INSPIRATION



minimal



balance of mass



lines

sheer



airy

lightweight



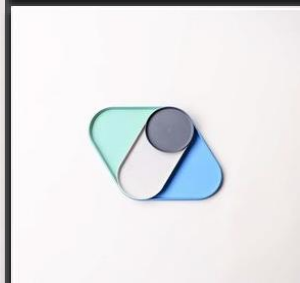


fun



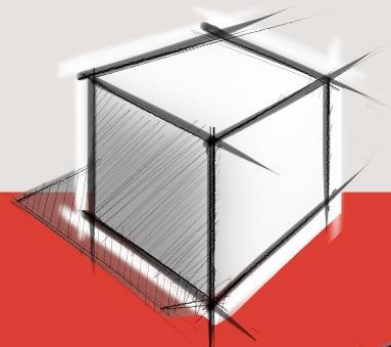
adaptive

surprise

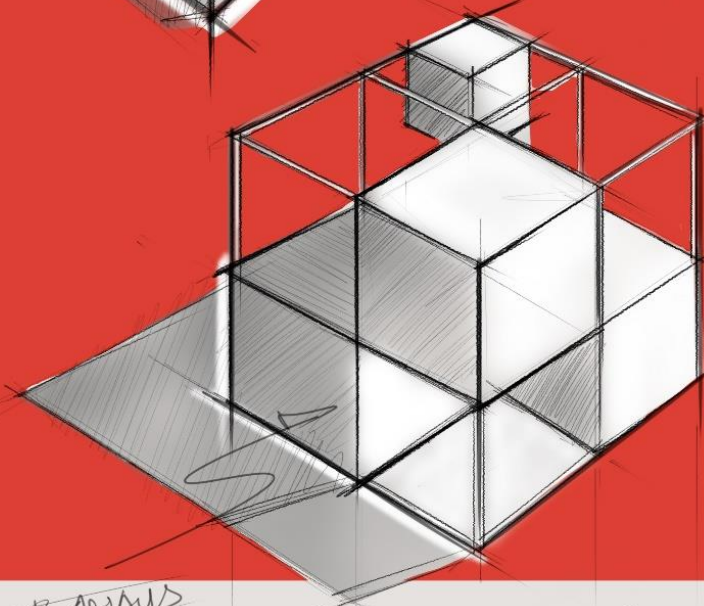


novelty

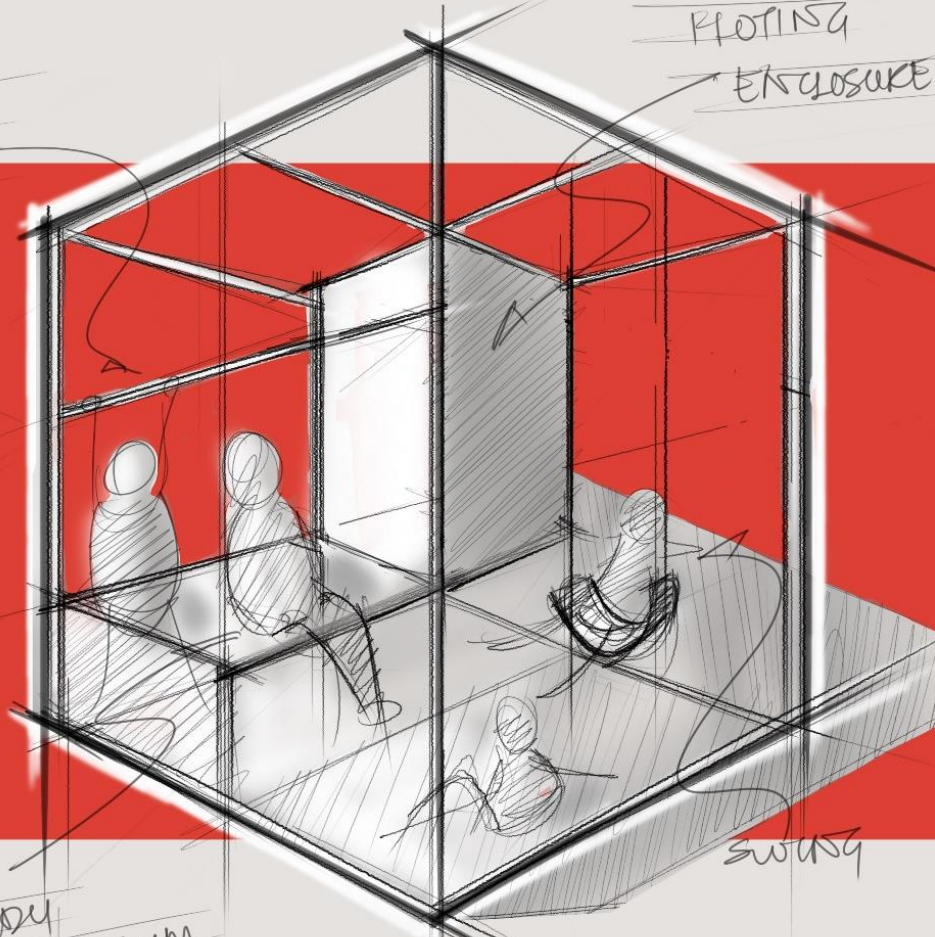
playful



MONKEY
BARS



BAPPAUS
INSPIRED
CUBE

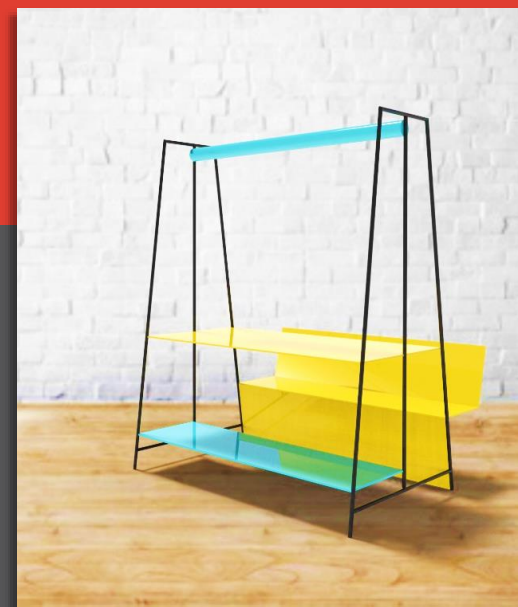
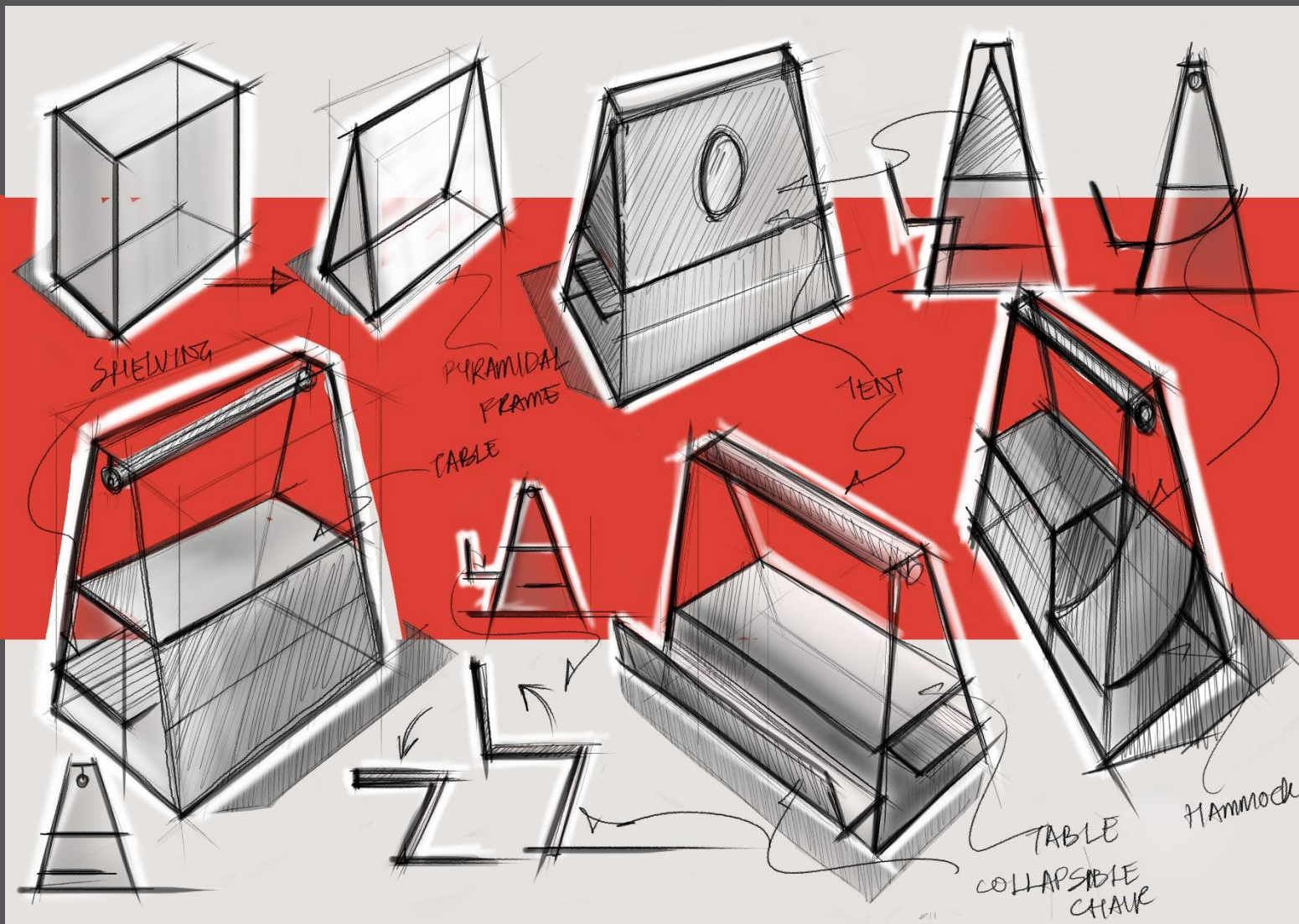


ENCLOSURE

STUDY
TABLE CUM
SEATING

SWING





A decorative graphic on the left side of the slide. It features a large, light red circle that is partially cut off by the left edge. Overlapping the right side of this circle is a dark gray rectangle. The text 'ADDING FUNCTIONS' is written in white, uppercase letters across the middle of the dark gray rectangle.

ADDING FUNCTIONS

ERGONOMIC DATA

6 – 10 Year Olds

HEIGHT

Girls – 1 to 1.5 m
Boys – 1 to 1.5 m

WEIGHT

Girls – 14 – 49 kg
Boys – 14 – 52 kg

CHAIR HEIGHT

0.35 m – 0.45 m

TABLE TOP HEIGHT

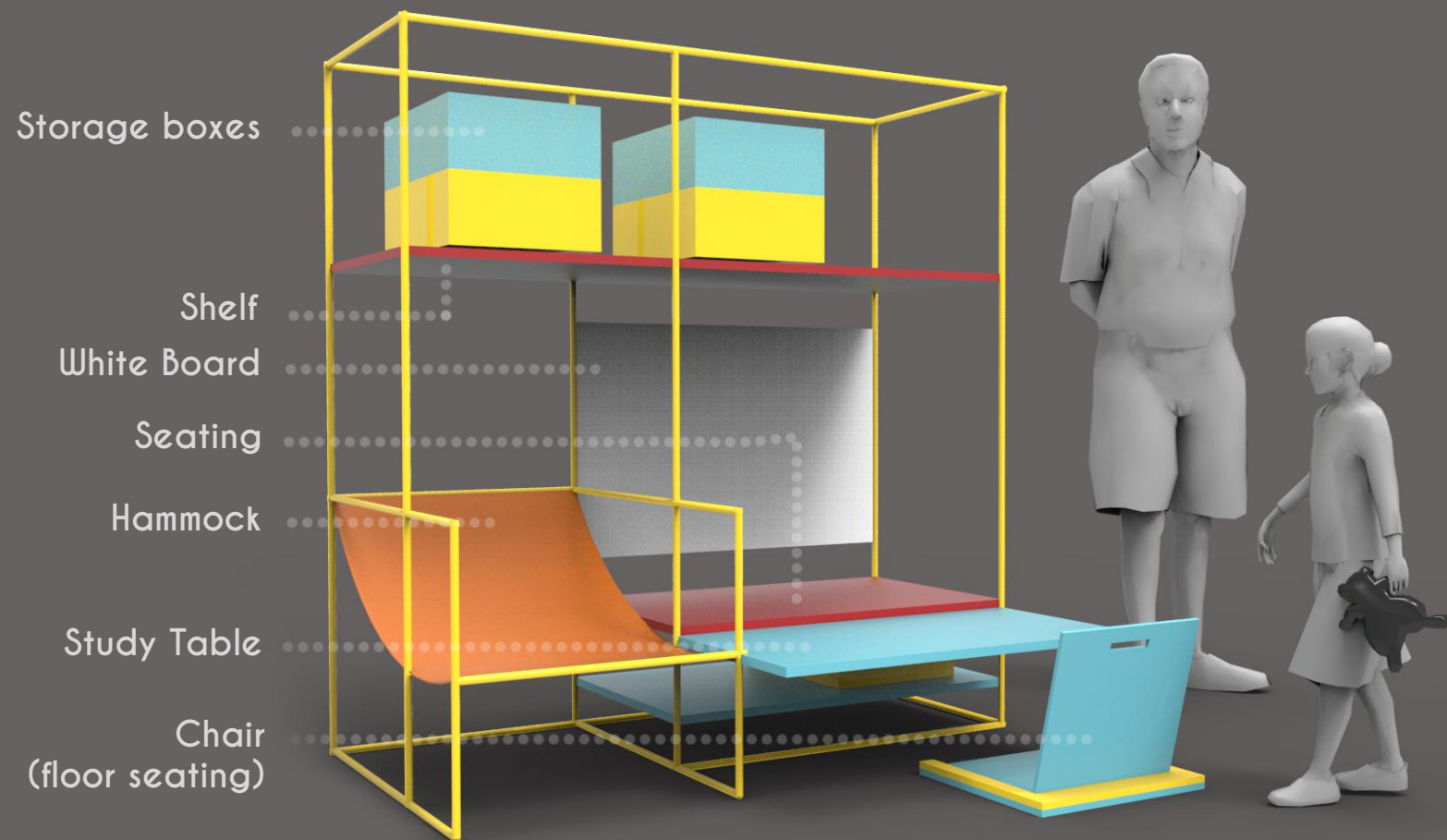
0.55 m – 0.70 m

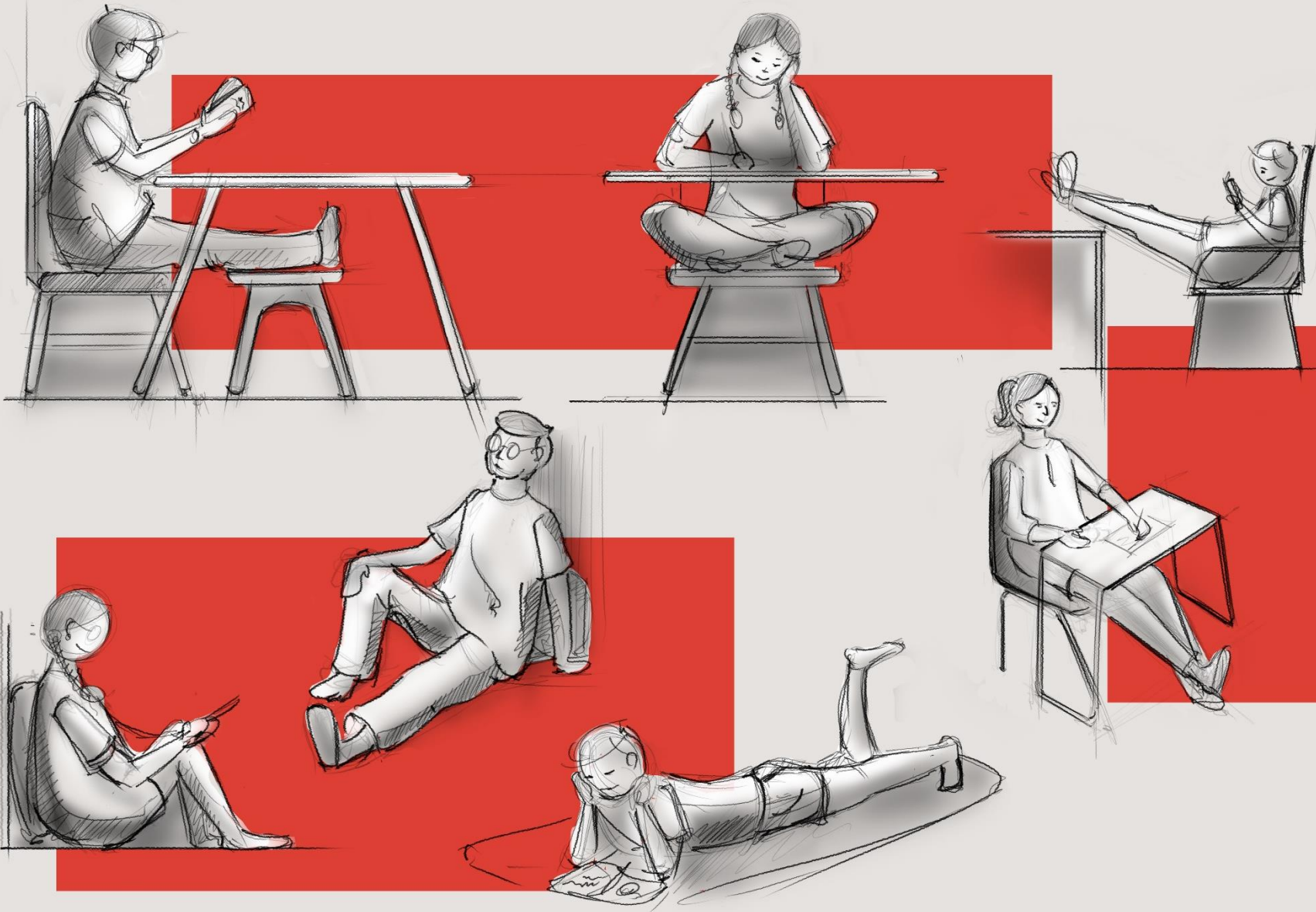
BACKREST ANGLE

0 – 5 Degrees from
vertical – formal seating

BED SIZES

Width – 0.9 m (adult)
Length – 1.3 – 1.9 m





WHY FLOOR
SEATING?



RIG BUILDING AND USER TESTING





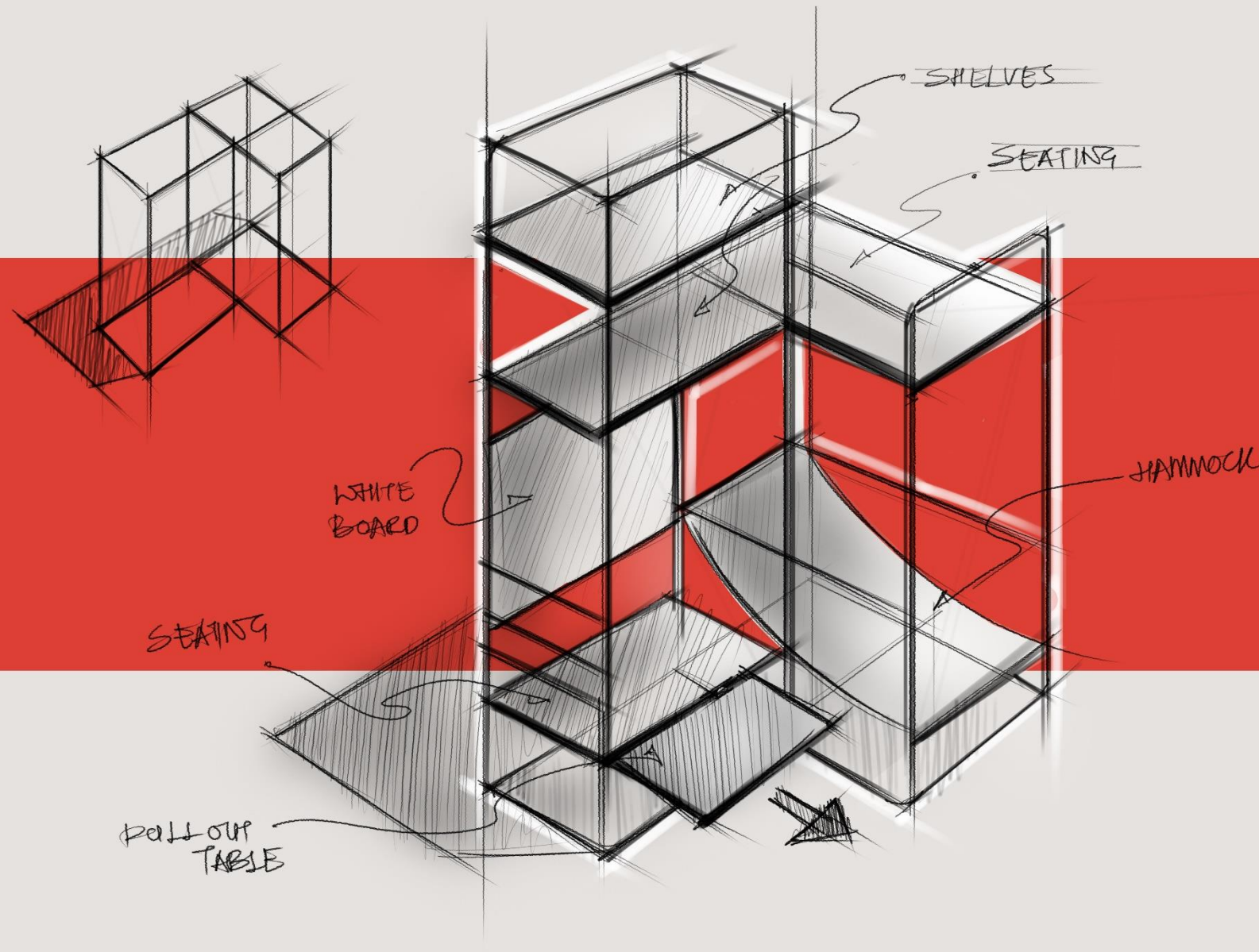


Users

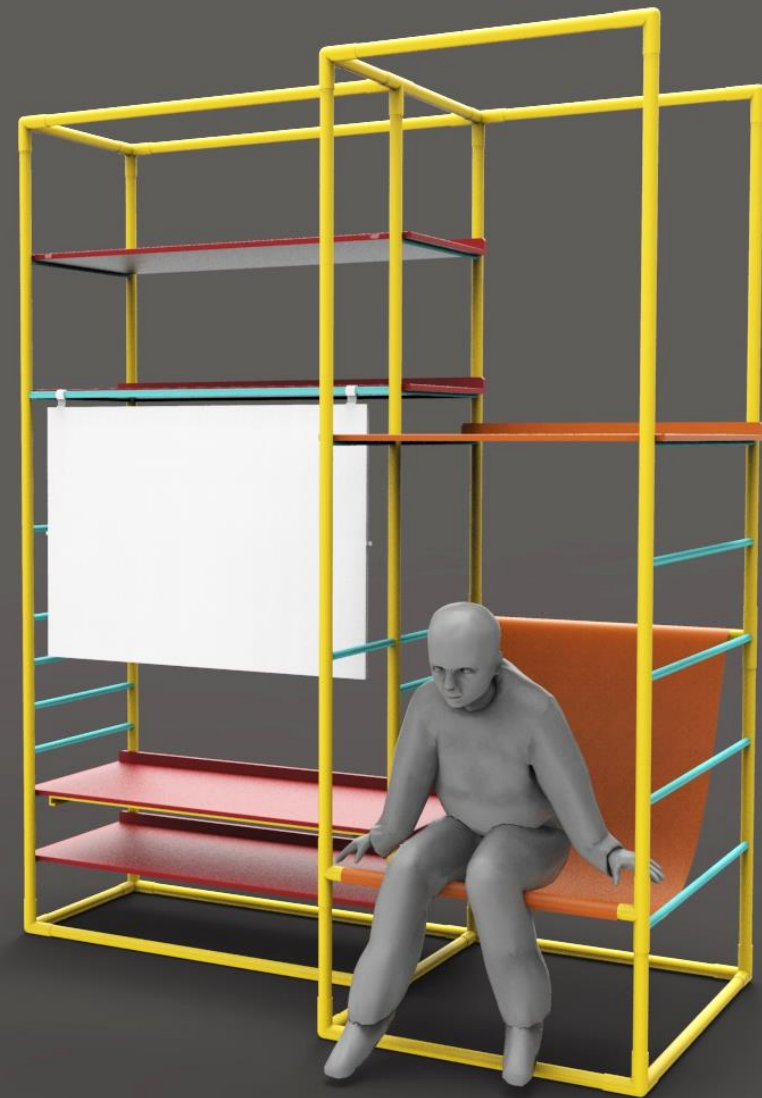
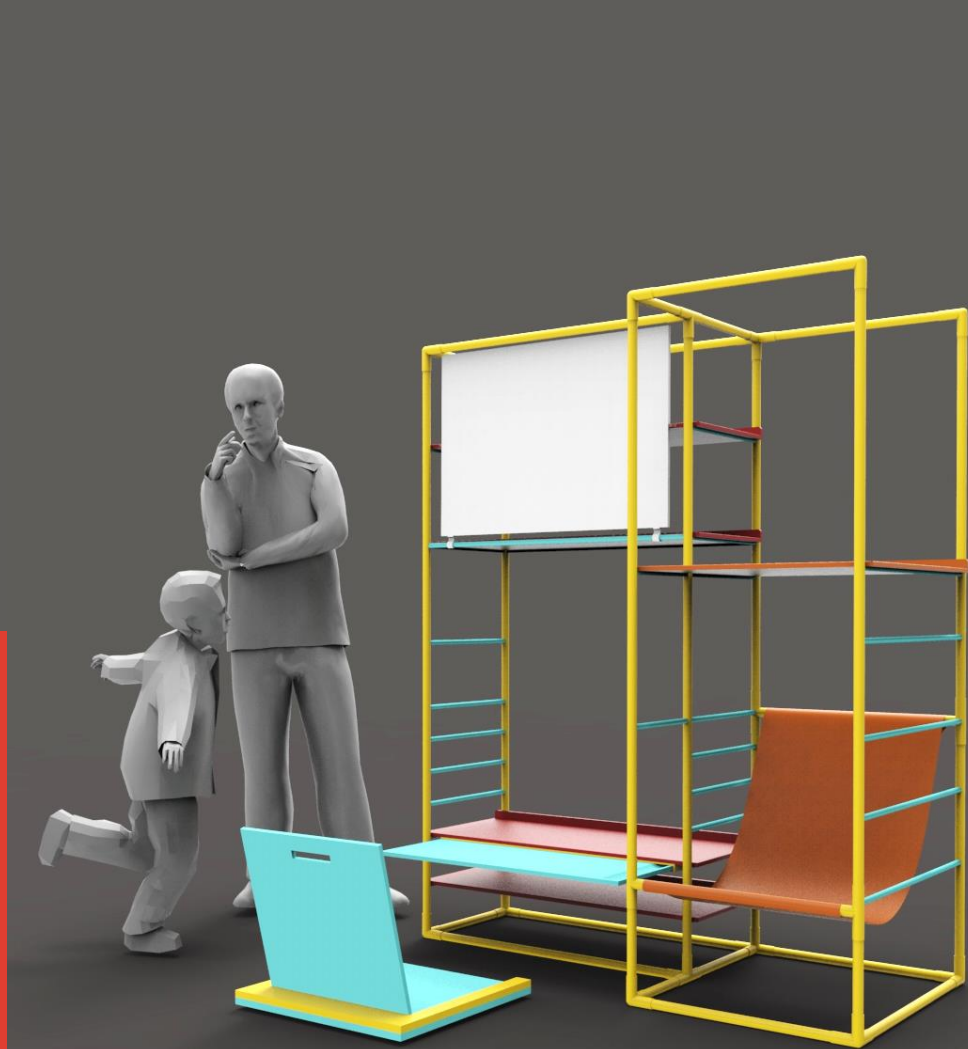
- Anay , 7
- Brahmori, 10
- Aditya, 8

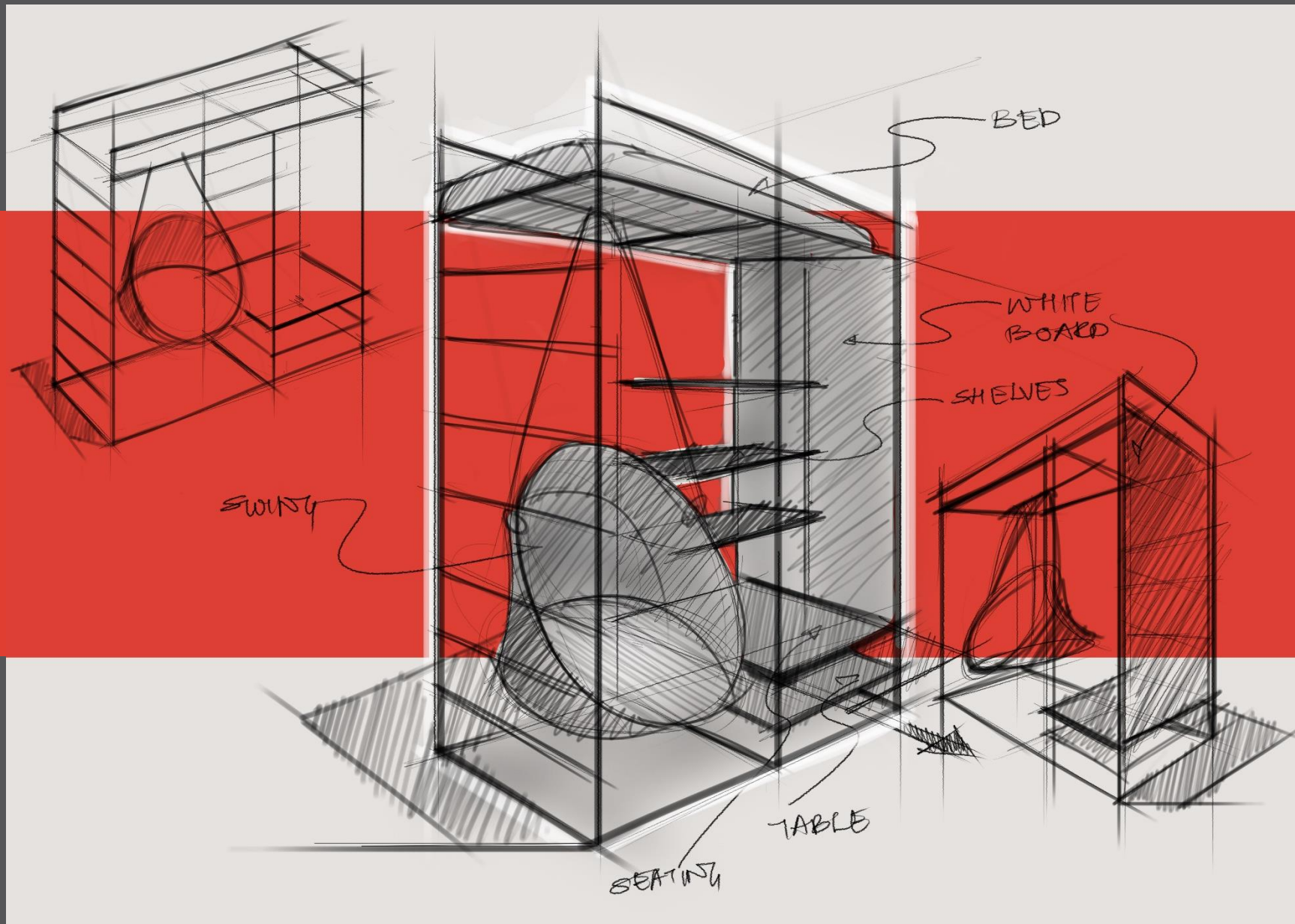
Feedback

- Hammock was a favourite
- Climbing on top was not a comfort zone
- Preference of floor seating over a chair
- Drawing on the board – preference of white board over black, chalk board
- Bed could be a part of the assembly

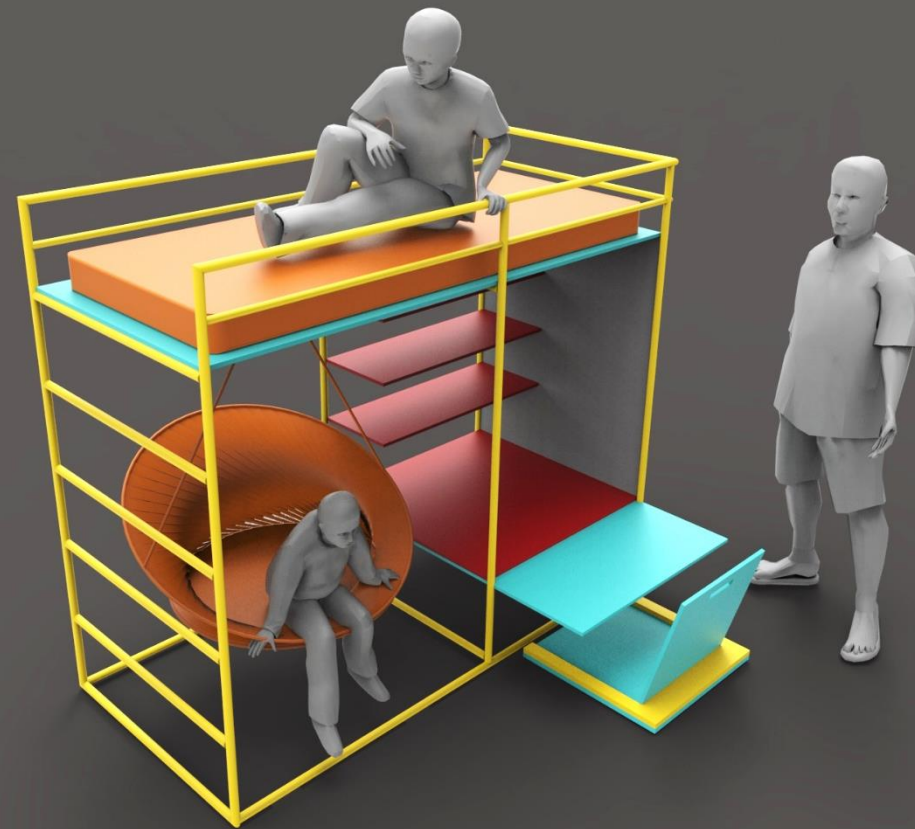
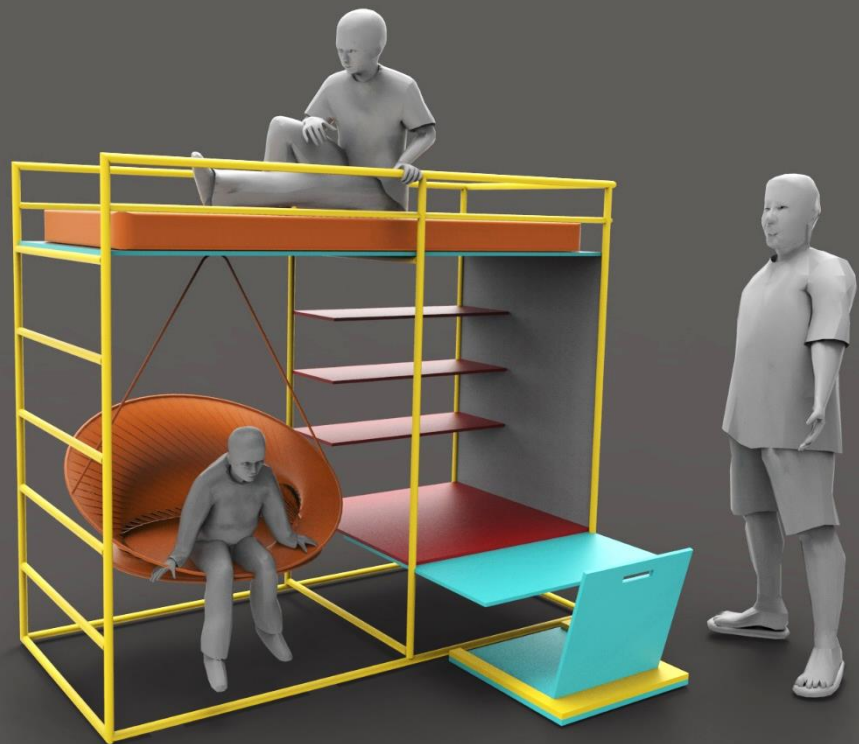


- Working with a cuboidal form

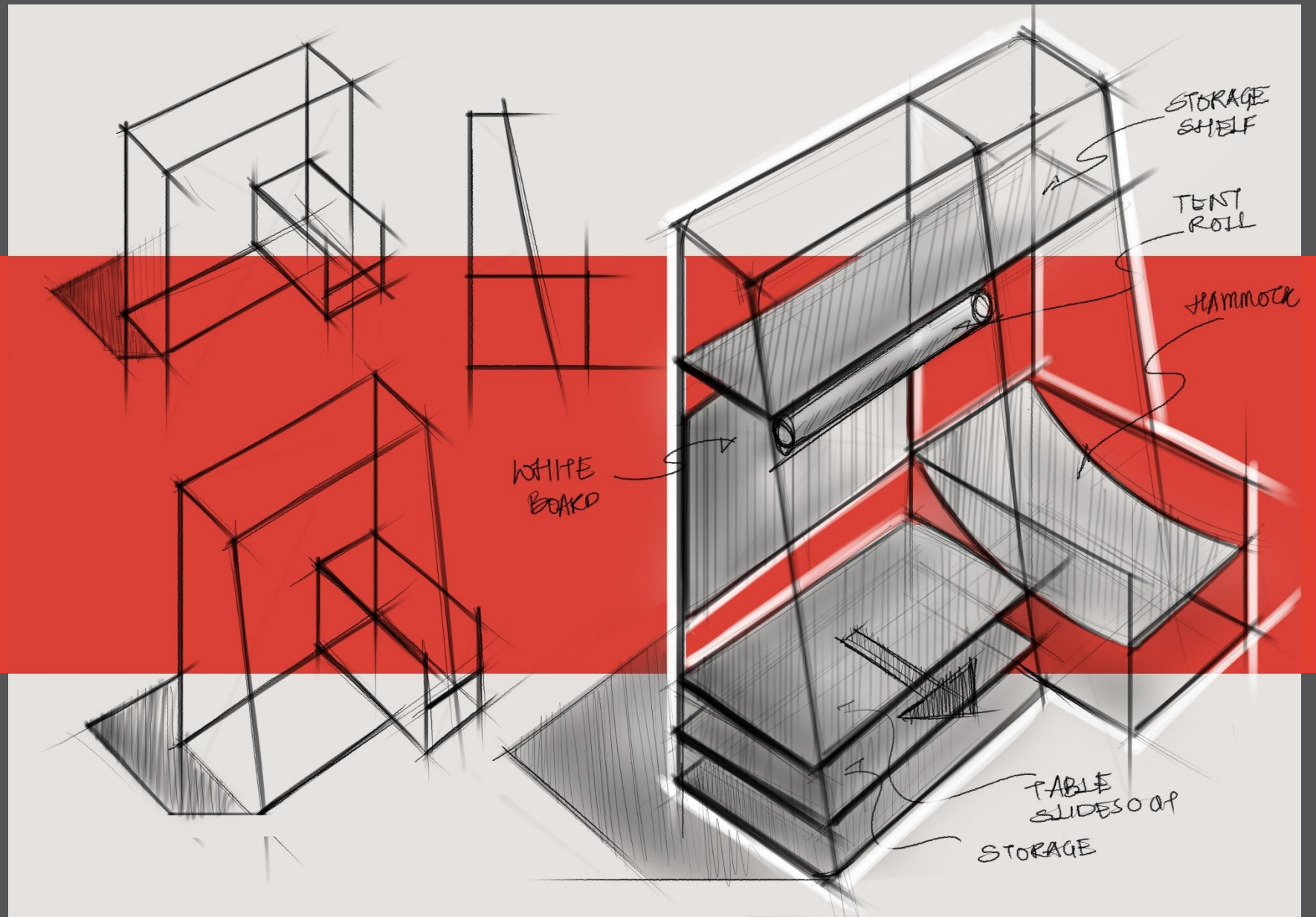


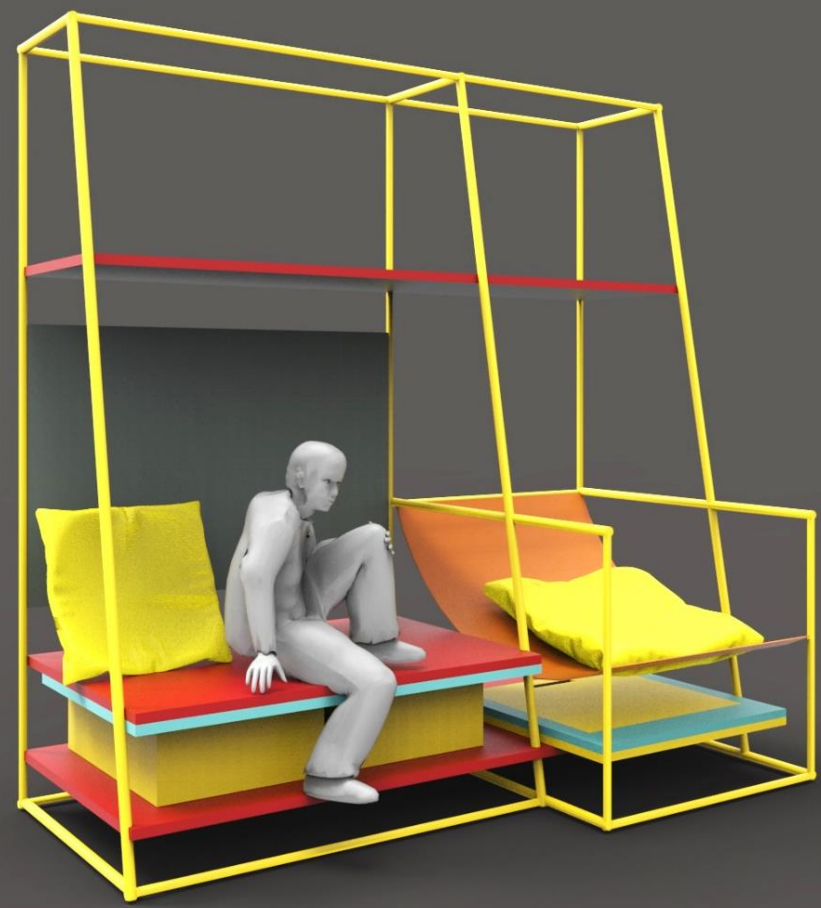


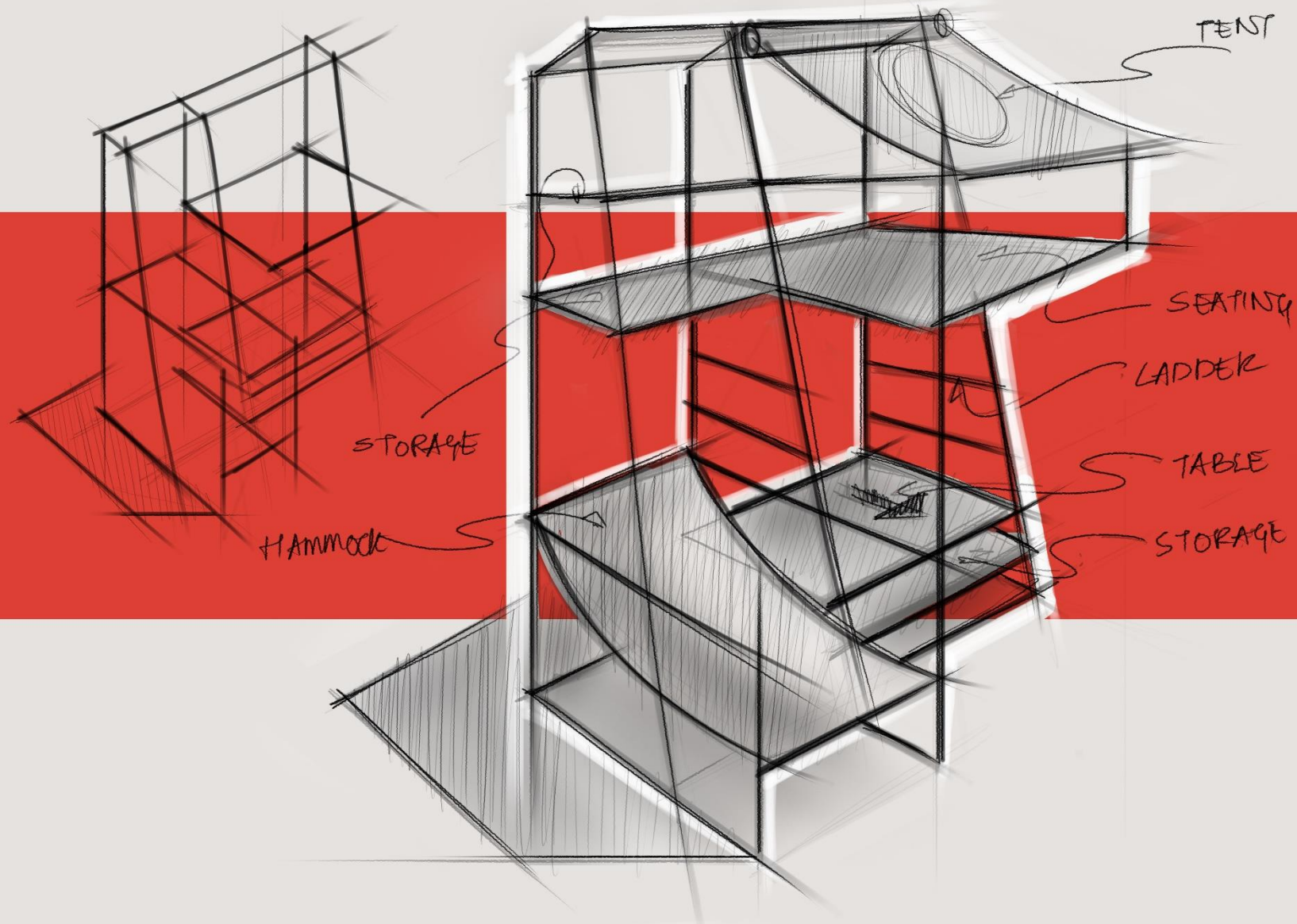
- Working on the idea of a bunk bed



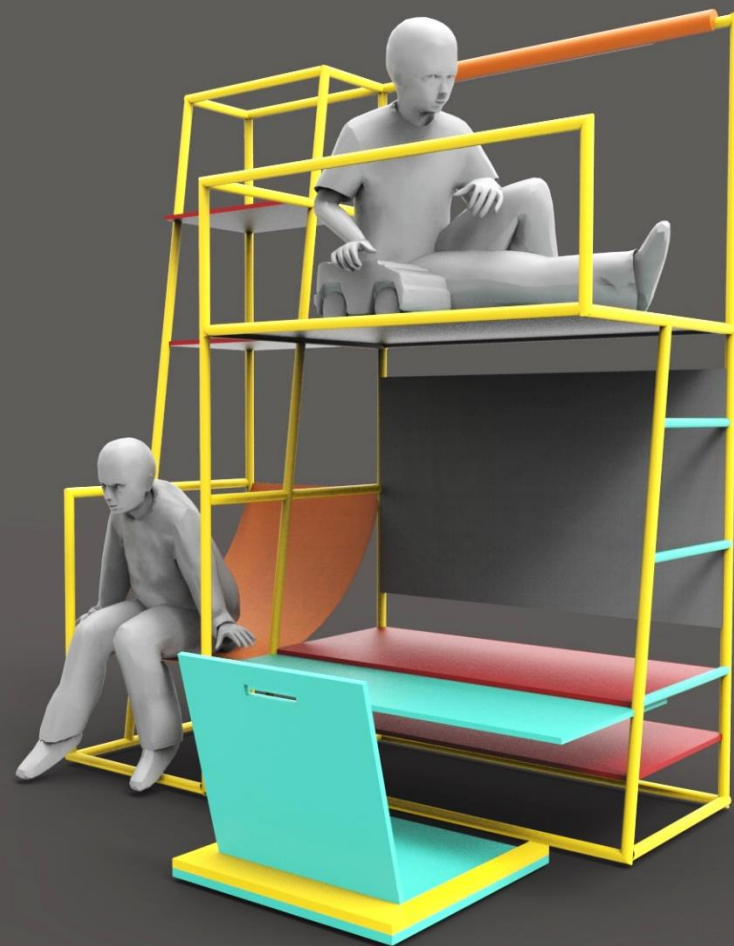
- Reducing the surface area of top shelves



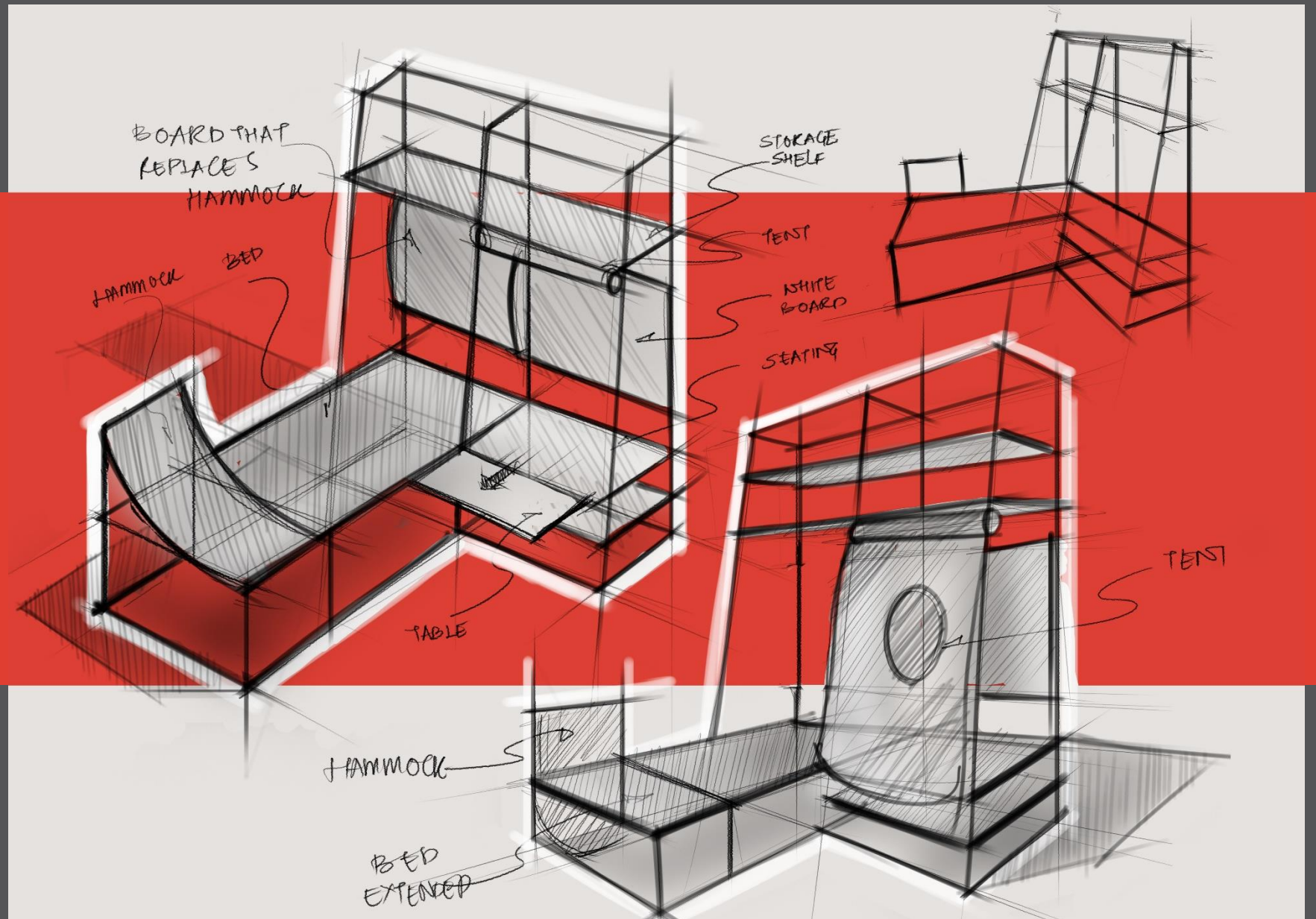




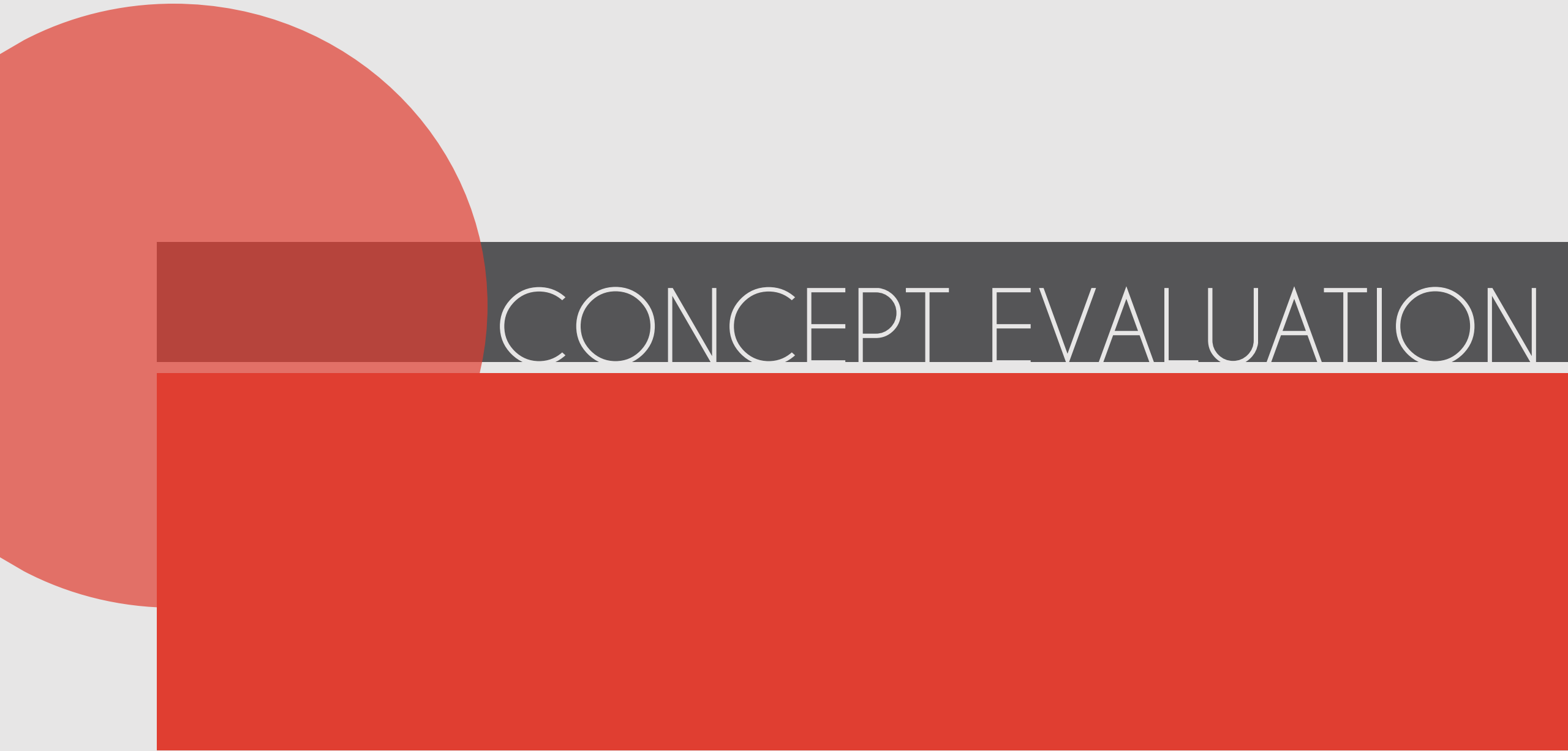
- Adding a tent on top



- Incorporating a bed as a part of the assembly





An abstract graphic design featuring a large, semi-transparent red circle on the left side. A horizontal dark gray bar spans the width of the image, containing the text "CONCEPT EVALUATION" in white, uppercase, sans-serif font. Below this bar is a solid red rectangle that also spans the width of the image.

CONCEPT EVALUATION



Compact

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Playful

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Safety

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Formally

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Social

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16

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FINAL CONCEPT

INTRODUCING...

A *POD* SIZED WORLD

- Adaptable
- Compact
- Fun
- Social
- Space



- Detach the hammock and have a bigger bed.
- Slide the table out and here's a study area.



- Seating and study that transforms into a tent.
- Hammock for leisure reading, story telling, relaxing....



- Sitting on the floor is a problem?..
Just raise the table and add a chair.



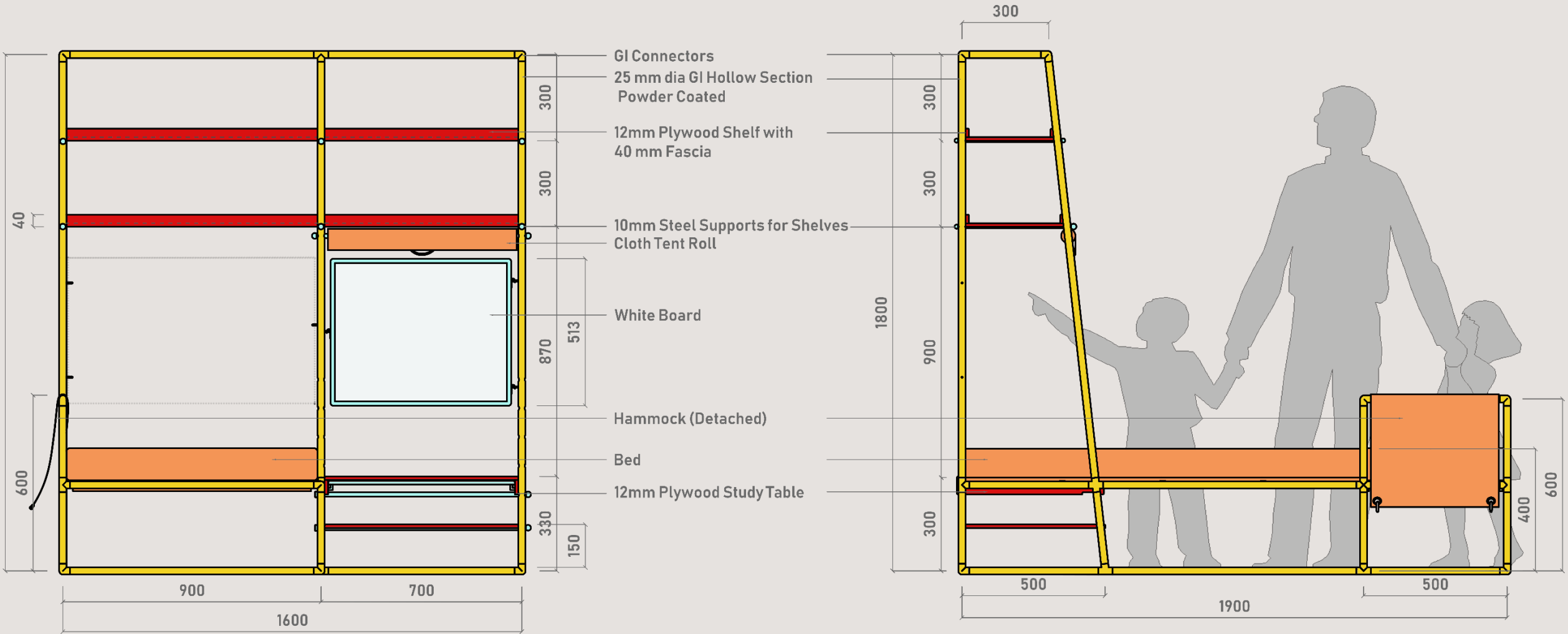
- Having friends over is more fun now.



An abstract graphic design featuring a large red circle on the left side, partially overlapping a dark gray horizontal bar that spans the width of the image. The circle is divided into two shades of red, with a darker shade in the center. The dark gray bar is positioned in the upper right quadrant. The word "DETAILS" is written in white, uppercase letters on the right side of the dark gray bar.

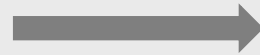
DETAILS

MEASURED DRAWINGS



All dimensions are in mm

FLATPACK

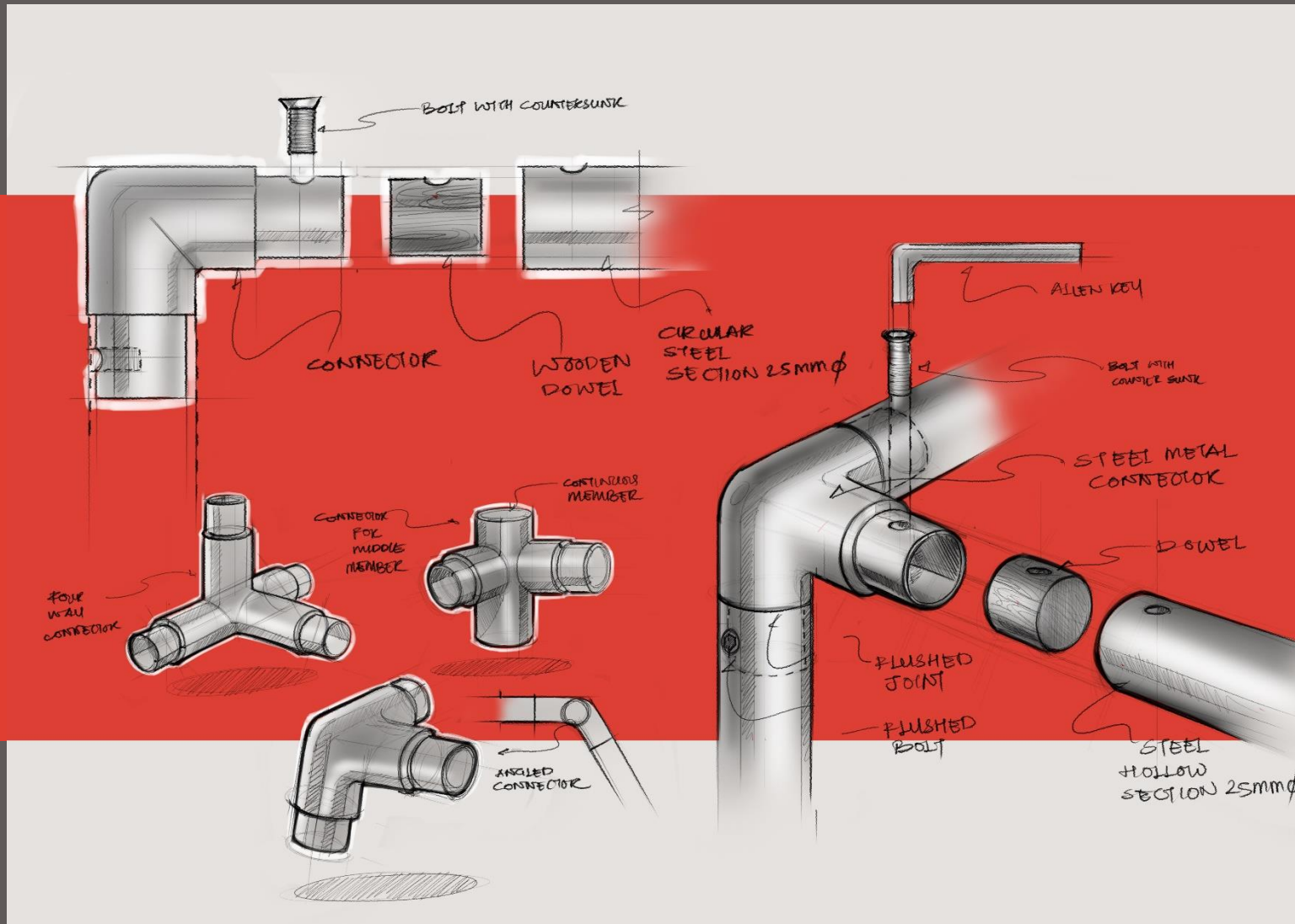


2000

300

1000

All dimensions are in mm

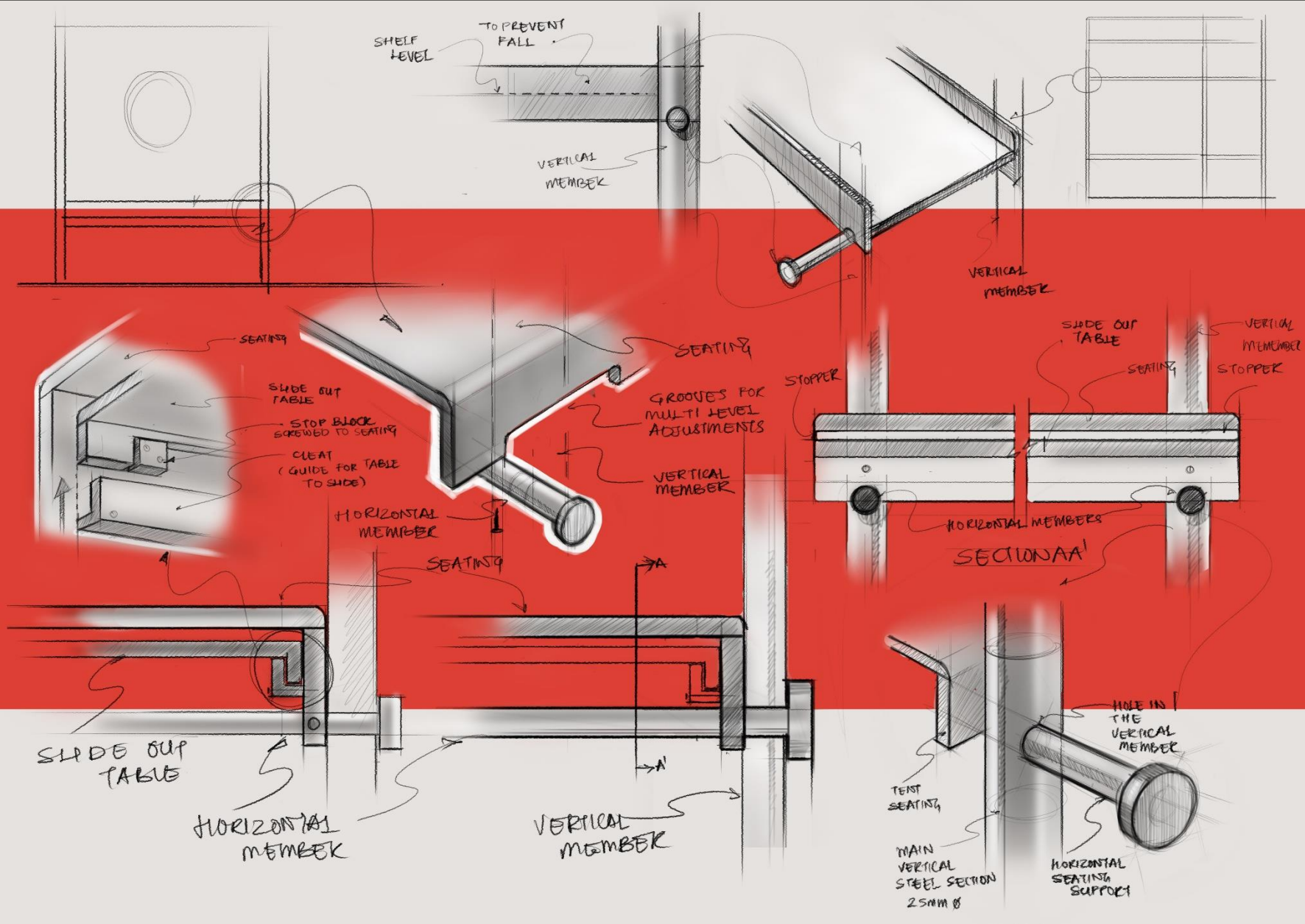


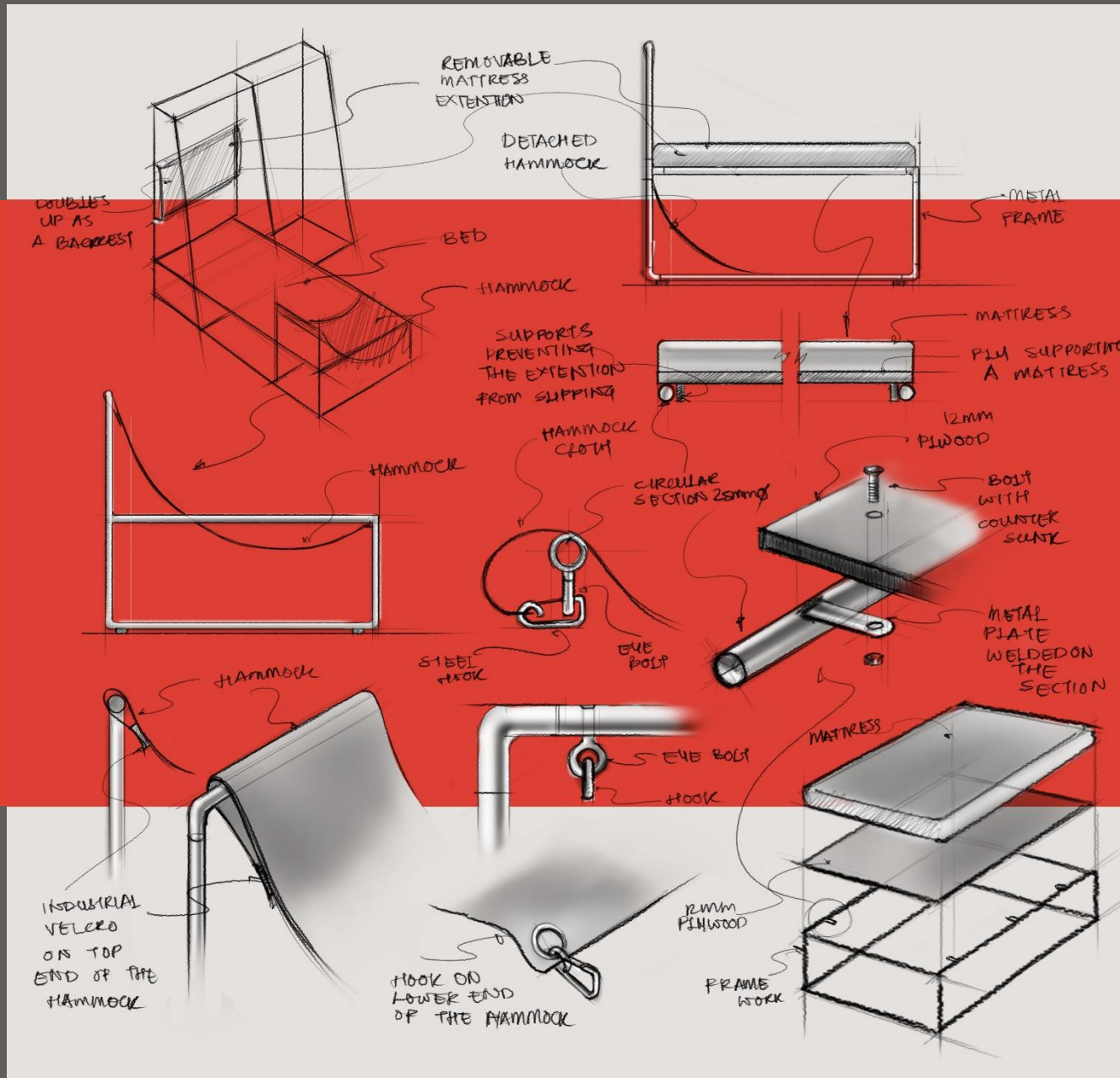
JOINERY DETAILS





SHELVING DETAILS

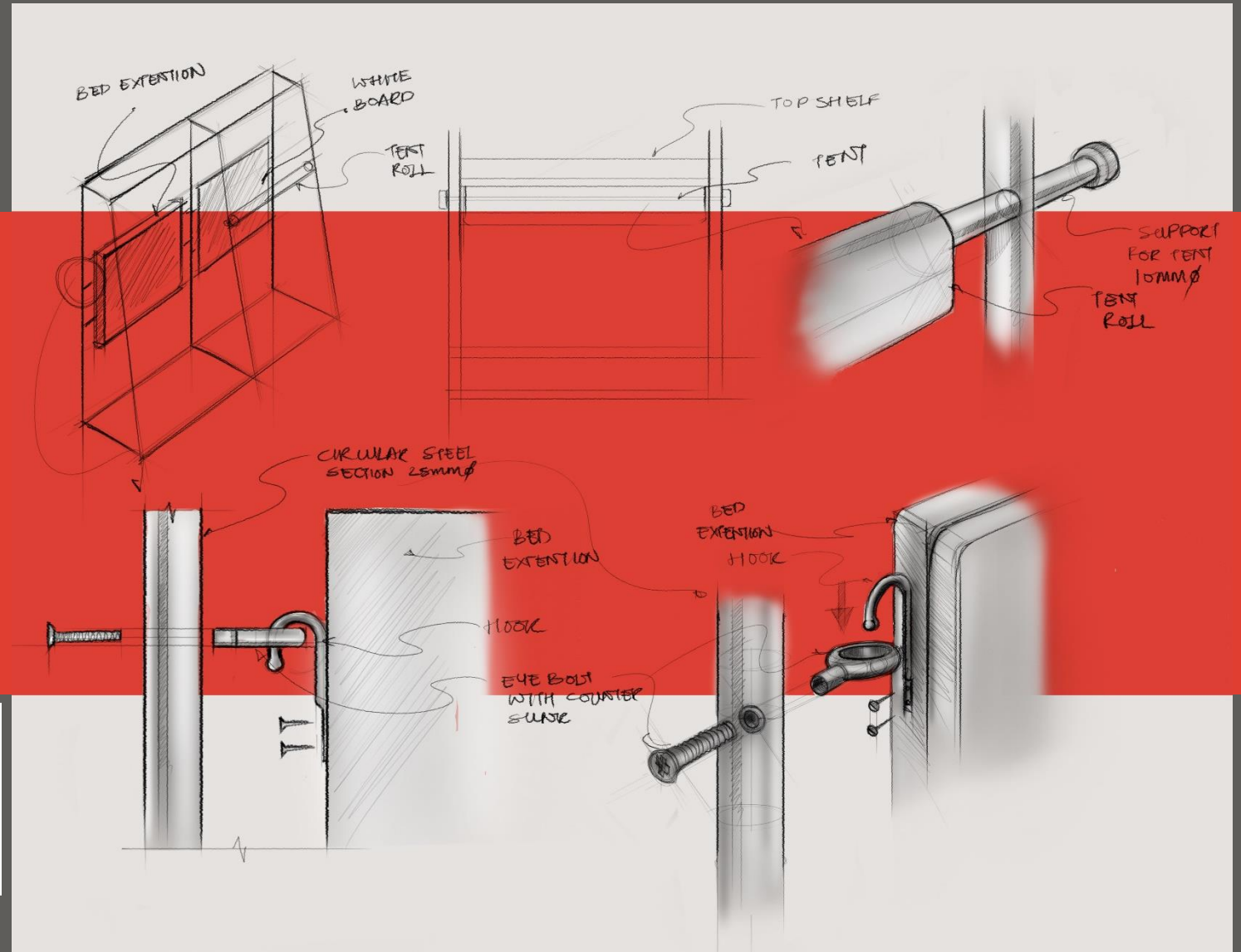


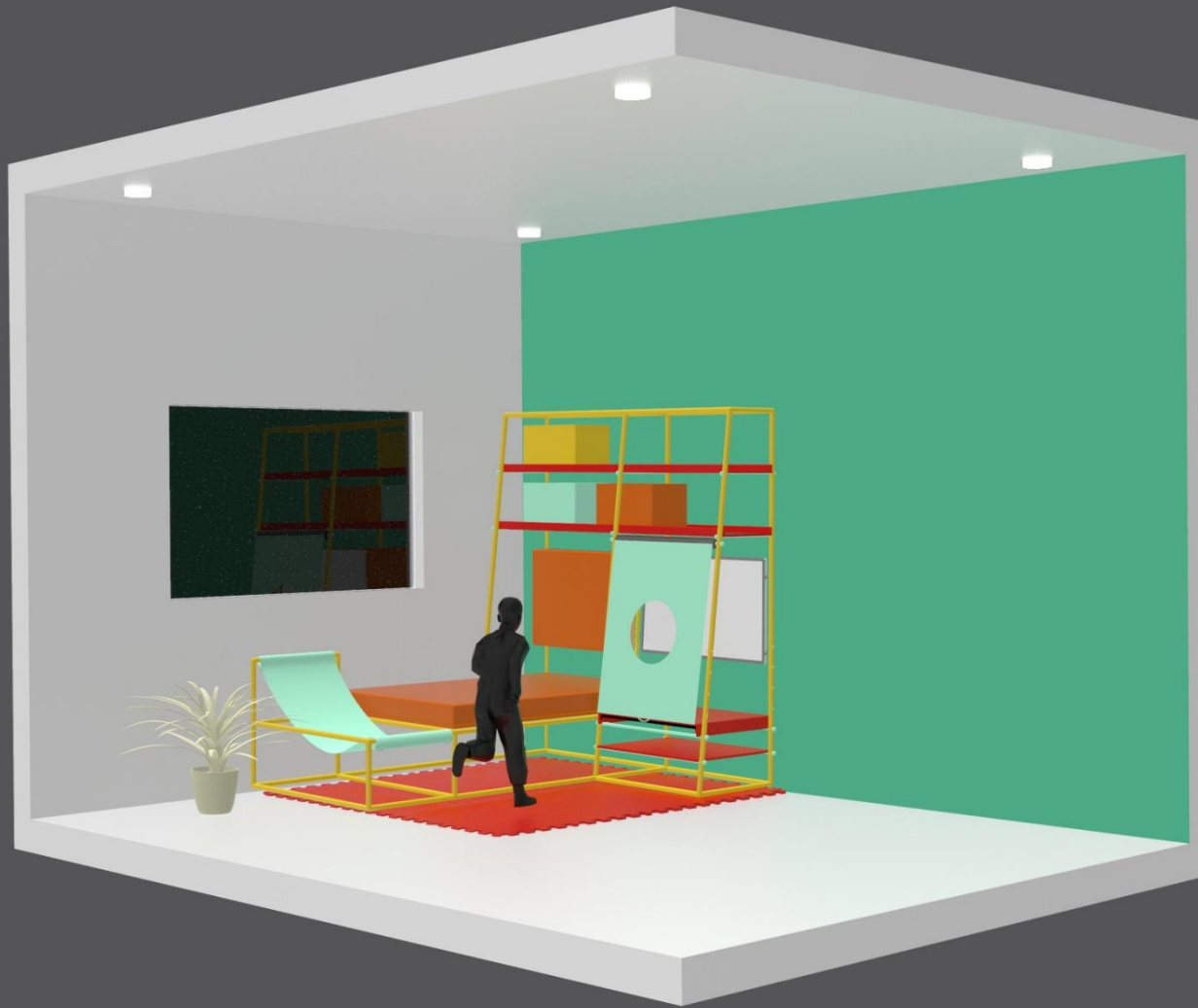


HAMMOCK and BED



TENT and BOARD



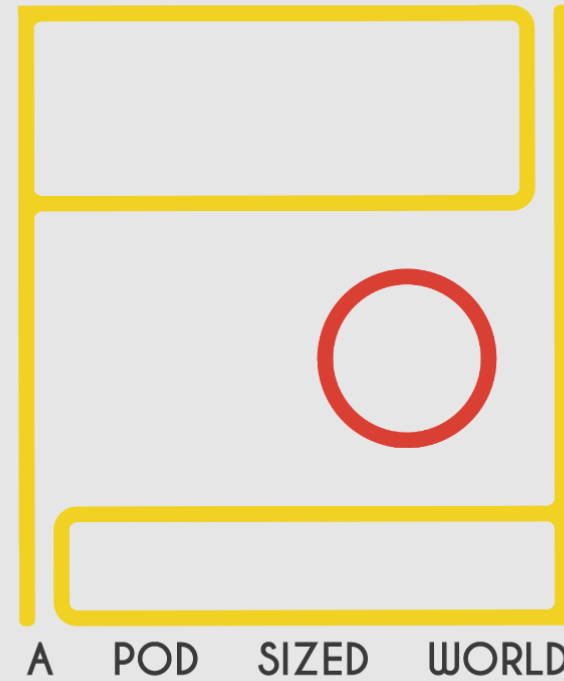
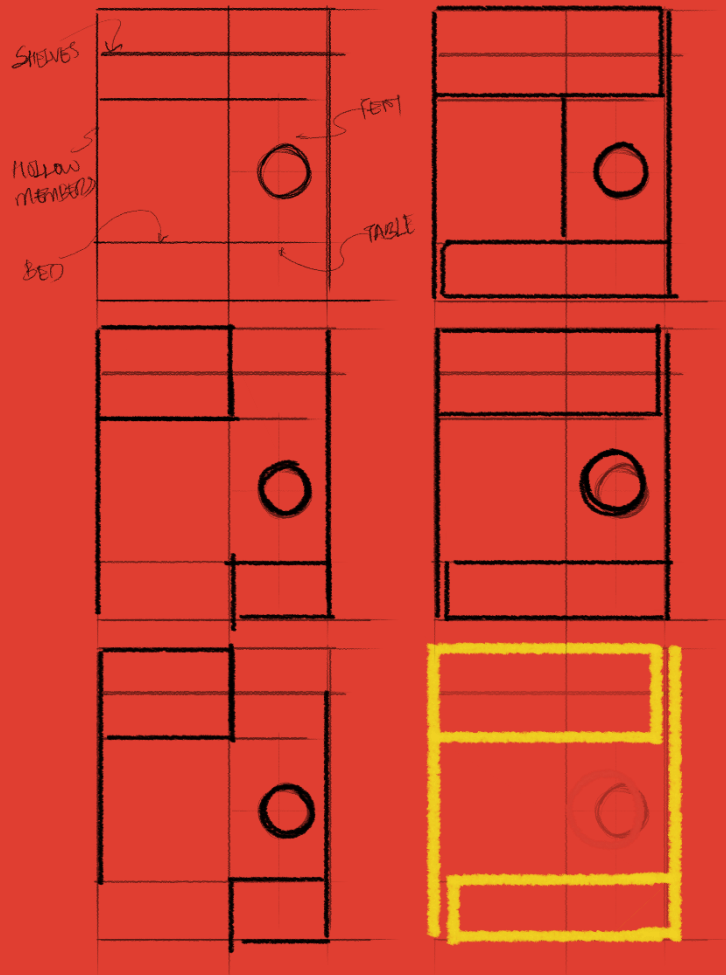


In a room of 3m by 4m

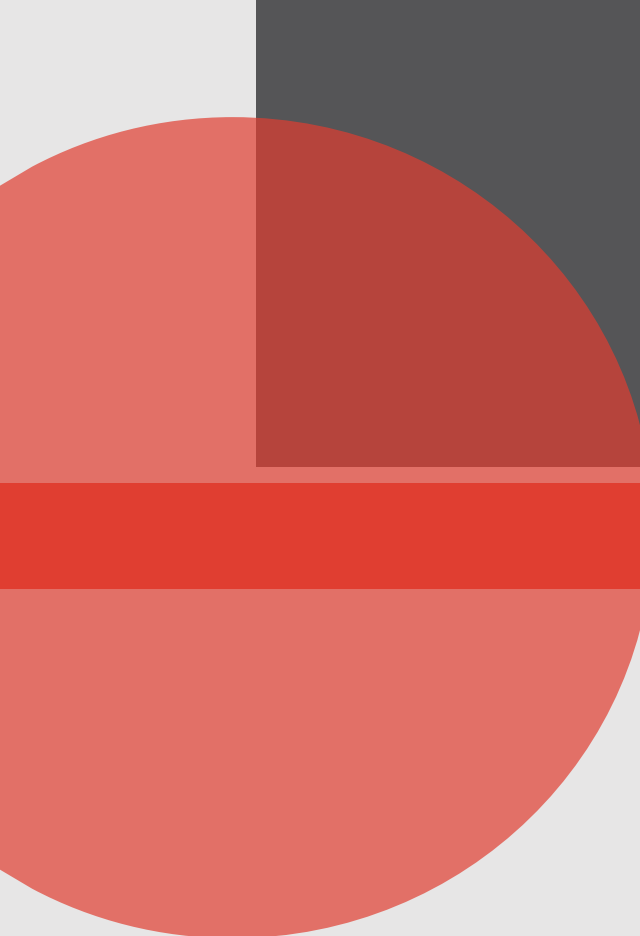


In a room of 3m by 2m

BRANDING



The logo is inspired from the front elevation of the product. The word 'Pod' refers to shell o space that children can call their own.



LEARNINGS

- Creating an experience through form.
- Incorporating knowledge of architecture into industrial design.
 - Understanding children as users.
 - Understanding of buyers perspective in the market.
- Better understanding of scale and proportions through rig building and user testing.
- Co-working with the users to validate design through their feedback.
 - Understanding the process of sourcing materials.

It was an enriching experience.

REFERENCES

Websites

- <https://www.stanfordchildrens.org/en/topic/default?id=the-growing-child-school-age-6-to-12-years-90-P02278>
- <https://www.stylus.com/hmnvsl>
- <https://thenounproject.com/>
- <https://thenounproject.com/search/?q=kids%20playing>
- <https://thenounproject.com/search/?q=babies>
- <https://thenounproject.com/search/?q=homes>
- <https://www.dezeen.com/2016/10/03/teehee-kids-adjustable-customisable-units-childrens-furniture/>
- <https://in.pinterest.com>
- <https://in.pinterest.com/facostore/crazy-design/?lp=true>
- <https://www.treehugger.com/eco-friendly-furniture/two-in-one-simple-small-transformer-table-can-turn-into-two-chairs.html>
- <https://in.pinterest.com/pin/104708760069755287/?lp=true>
- <https://www.apartmenttherapy.com/these-kits-let-kids-build-their-own-furniture-no-allen-wrench-needed-251130>
- https://weburbanist.com/2009/07/29/15_furniture_transform_space_apartment_home/
- <https://www.urmc.rochester.edu/encyclopedia/content.aspx?contenttypeid=90&contentid=P02278>
- <http://montessoritraining.blogspot.com/2008/07/montessori-philosophy-moving-from.html>
- <http://cheltenham-nursery.co.uk/iframe.html>
- <https://theartstack.com/artist/tatiane-freitas/artwork-2010-my-old-new-chair>
- <https://www.theatlantic.com/international/archive/2016/08/chairs-history-witold-rybczynski/497657/>
- <http://www.325gliderinfantry.com/height-weight-chart-girls/indian-children-weight-and-height-chart-0-to-18-years-of-height-weight-chart-girls/#main>
- <https://www.communityplaythings.com/-/media/files/cpus/product/product-info-pdfs/tablechairheightguides.pdf>
- https://img2.wantitall.co.za/prodimages/m10-stainless-steel-eyebolt-with-screw-304-ss-threaded-ring__41jCyr-X07L_SL160_.jpg
- <https://2.imimg.com/data2/HF/GU/MY-4301919/cone-point-grub-screw-500x500.jpg>
- <https://2.imimg.com/data2/HF/GU/MY-4301919/cone-point-grub-screw-500x500.jpg>
- <https://in.pinterest.com/emtanner/henry-s-room-ideas/?lp=true>

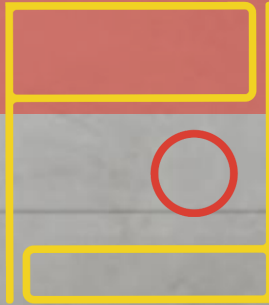
Books

Art with Children - Daphne Plaskow

Transmaterials – volume 1,2,3 - Blaine Erickson Brownell

Collapsibles - Per Mollerup

THANK YOU



A POD SIZED WORLD



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