

# DESIGN STUDIO



# DESIGN STUDIO

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The main objective of Design Studio is to develop students' imagination in design and allow them to produce designs that have dialogue and balance between poetic and pragmatic thinking. Design Studio provides design students with the skill to work under both intuitive and practical contexts.

This subject includes problem-solving, opportunity mapping, brainstorming, mind mapping, design proposal, ideations, prototype etc.



interio

GODREU  
INTERIO

# Brainstorm

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rectangular design  
aesthetics valuable elegant  
workdesk delivery affordable  
minimal dresser fixtures  
accessories lighting  
appliances cabinets accent chair  
office chairs beaurer Godfrey  
matined wardrobe bean bag couch  
springs velvet sofa cottage furniture  
dressing table satin ottoman  
eco-friendly console  
Continental style  
furniture design  
valuable elegant  
affordable  
high quality  
sensos  
elaborate rods  
curtains  
couch  
recliners  
sofa bench  
rustic product  
bookshelf stool  
latest technology  
cupboards  
shelves  
cost conscious  
country furniture  
creative  
ergonomic  
simplified  
bentwood chairs

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**430 CITIES  
52 COMPANIES  
800 DEALERS**

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- Presence over **430 cities**
- **52 company** owned stores
- Over **800 dealers**
- One of the largest divisions of Godrej & Boyce Mfg. Co. Ltd. – part of the Godrej Group
- One of India's largest engineering and consumer product group.
- The brand boasts of noteworthy awards received so far- CII Exim Bank Award for Business Excellence 2017, Superbrands 2017-18, Asia's most admired brand 2016, Reader's Digest Most Trusted Brand 2018 Gold (Home Furniture) and Reader's Digest Most Trusted Brand 2018 Gold (Modular Kitchens).



Godrej  
Interio

# GODREJ INTERIO'S: USP

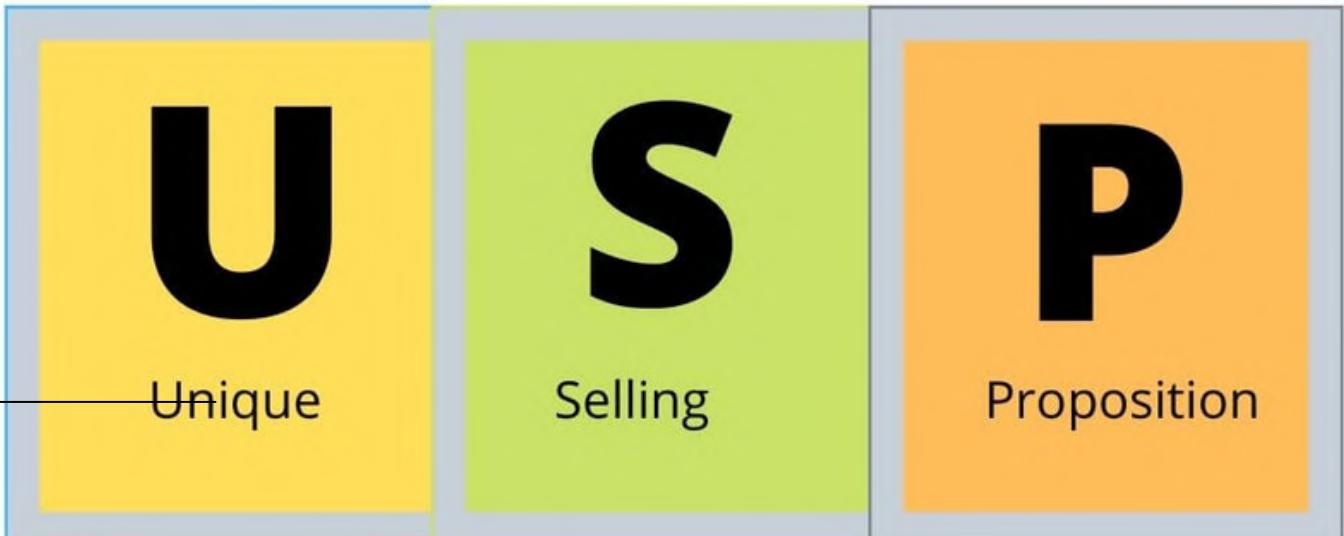
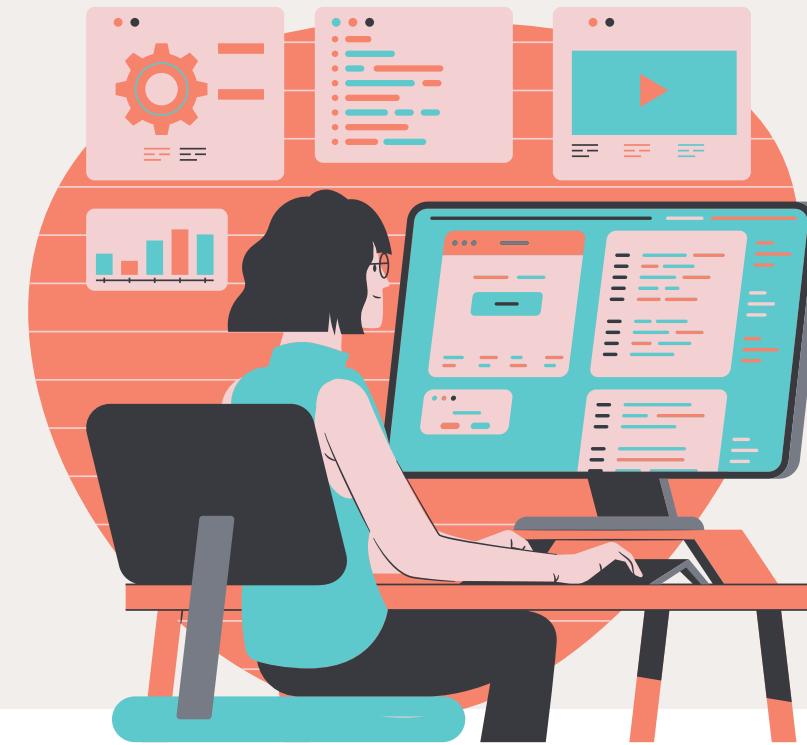


The USP of Godrej is that they provide superior quality and affordable products for day to day needs. Thereby, they provide a cheap alternative to the middle class.

Quality

Cheap

Affordable



The following table illustrates Godrej segmentation, targeting and positioning:

| Type of segmentation | Segmentation criteria                       | Godrej target customer segment                                                                                                                                      |
|----------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Geographic           | Region :<br>Density :                       | India<br>Metro cities<br>Urban and Semi-Urban                                                                                                                       |
| Demographic          | Age<br>Gender<br>Occupation<br>Social Class | 30 to 55+<br>Males & Females<br>Students, employees, professionals, interior designers, builders, homemakers,<br>Working class, Middle class and lower middle class |

Behavioral

Degree of loyalty

Benefits sought

Personality

User status

'Hard core loyals'  
'Soft core loyals'  
'Switchers'

Cost effectiveness, quality

Easygoing and determined

non-users, potential users, first-time users and  
regular users

Psychographic

Social class

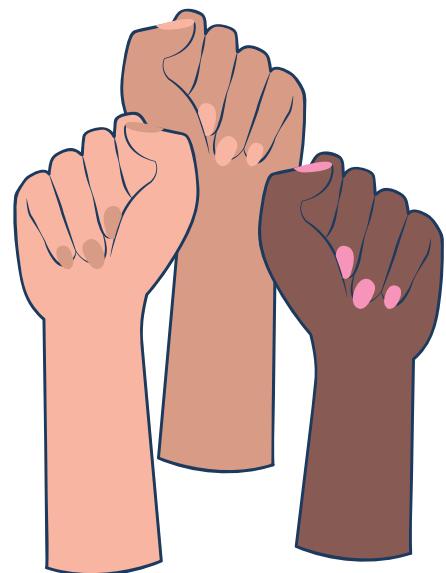
Lifestyle

Lower class, working class and middle class

Culture oriented  
Safety oriented  
Outdoor oriented  
Explorer

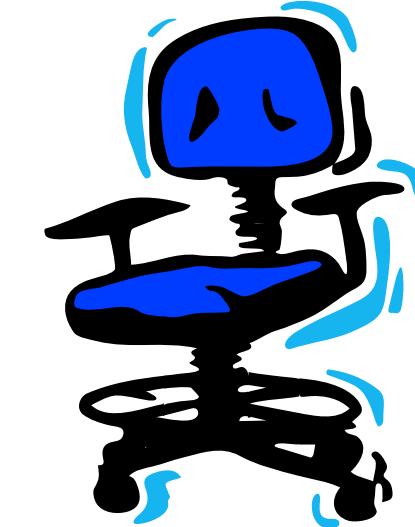
## STRENGTH

- Strong Brand Portfolio
- Loyal Customer Base
- Innovation
- Strong Reach



## WEAKNESS

- Low Market Share
- Heavy Competition
- Limitation on Expansion



## OPPORTUNITIES

- Multi-dimensional
- Technology
- Increasing Demand



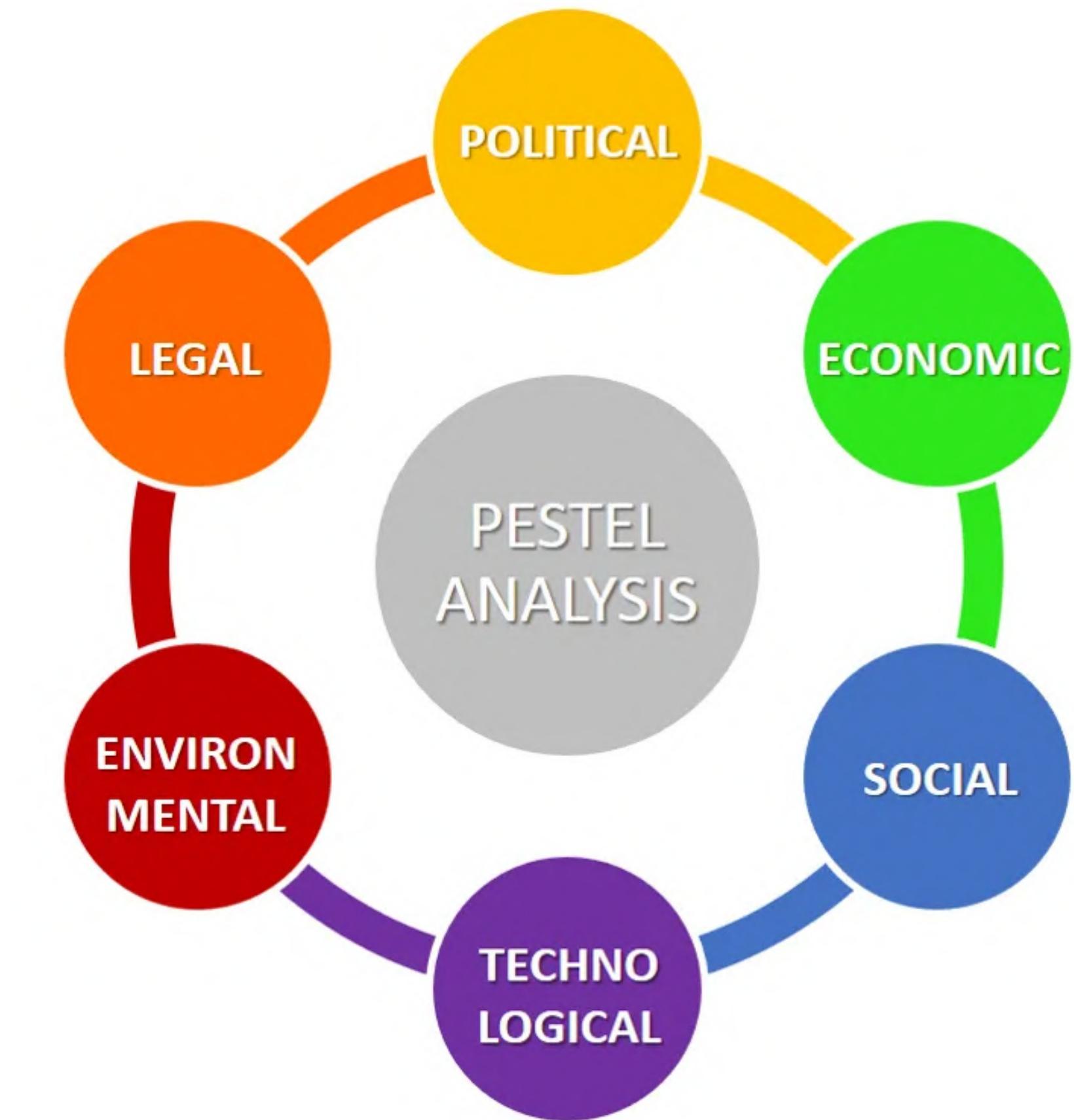
## THREATS

- High Competition
- Regulations
- Sector Unorganized Competition
- Rivalry



# PESTLE ANALYSIS

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## POLITICAL

- Rise in populism leading to greater instability in the market.
- Increasing inequality leading to changes in the taxation.
- Improvement in the investment sentiment in the Capital Goods sector.
- Adherence to World Trade Organization's regulations on Construction Services industry.



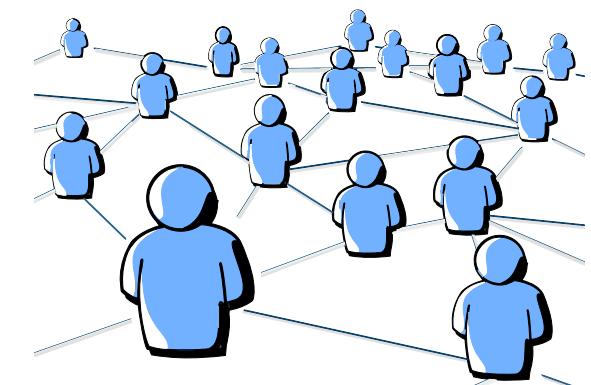
## ECONOMICAL

- Increasing liberalization of trade policy of India can help Godrej Properties to invest further.
- Godrej Properties can access vibrant financial markets and easy availability of liquidity.
- Increase in investment in developing core infrastructure to facilitate and improve business environment.
- Government intervention in the Capital Goods sector and in particular Construction Services industry



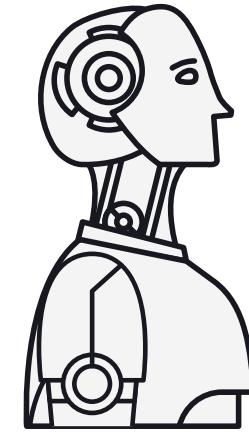
## SOCIAL

- Increasing trend of income inequality has altered the power structure.
- Society of India is different from the home market of Godrej Properties.
- Customers are giving higher preferences to experiential products rather than traditional value proposition in Capital Goods sector.



# TECHNOLOGICAL

- 5G and its potential
- Technological innovation is fast disrupting the supply chain.
- Technology transfer and licensing issues for Godrej Properties



# ENVIRONMENT

- Waste management taking increasing importance for players such as Godrej Properties.
- Recycling is fast emerging as a norm.
- Regular scrutiny by environmental agencies adding to the cost of operations.
- Greater awareness among customers have also put environmental factors at the center.

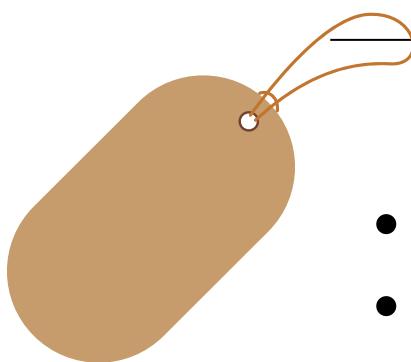


# LEGAL

- Data Protection Laws impacting Godrej policies
- Greater environment protection requiring Godrej to shift to green solution
- IPR protections impacting patents and trademarks



# PRICE



- 
- Pricing Policy is competitive and individual
  - Believes in value added price system
  - Pricing policy helps in market penetration
- 



# MATERIAL USED BY GODREJ



GALVANISED STEEL



MARINE PLY



WOOD



NATURAL  
FIBRES

COTTON



PLASTIC



# Colours and Furnishing



Cyan Sofa



Plum Set



Dark Grey



Yellow Kitchen



Blue Kitchen



Red Kitchen

# COMPETITORS



LIVSPACE.COM

India's most trusted home  
interior design & renovation  
service company.



PEPPERFRY.COM

A recent startup with a  
gigantic evaluation and unique  
service model.



EVOK.IN

A C2C turned online store with  
elite furniture collection.

# COMPETITORS



## ADANI ENTERPRISES

It is a conglomerate company that has expertise in defence and solar space.



## INTERNATIONAL HOLDINGS

It is a company with investments in diversified businesses.



## BLEACH CHEM

Chemical, transportation, healthcare and energy sectors.

# Design Brief

To design a range of study table category for  
a selected age group of a specific market region.

# MARKET AND TREND STUDY



# *Japanese design : furniture brands/designers/collection*

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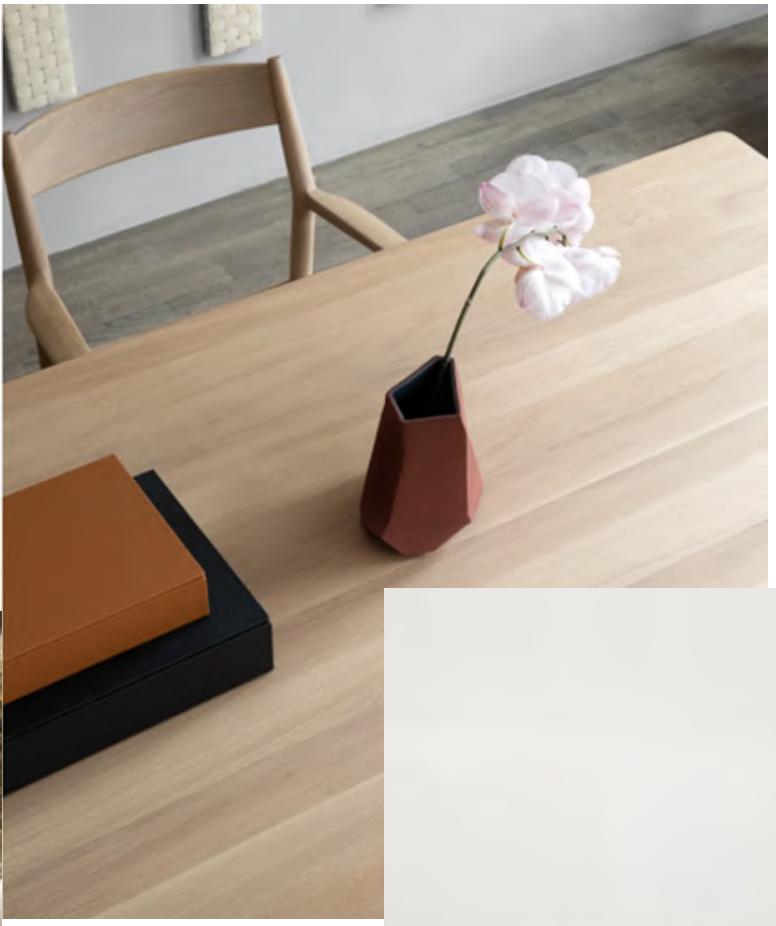
The first thing that springs to mind when I think of Japanese design is a feeling of zen; a sense of ease and tranquility, translated into spaces that feel restorative to be in and designs that are quietly beautiful.

*'What sets Danish and Japanese design apart from other design traditions is our uncompromising focus on designing places, spaces and things that last,' says Norm Architects*



## Maruni

Established in 1928, Maruni is a Japanese wooden furniture manufacturer with the motto of 'Industrialised Craftsmanship'. They seek to balance artisanal wood techniques with high-tech machinery to create simple wooden furniture that highlights the natural beauty of the wood and the sophisticated skills of their artisans.



## Kinuta Collection

The first is the Kinuta Collection by Norm Architects and Keiji Ashizawa Design, comprised of 12 considered furniture pieces. They take their name from two apartments in the Kinuta ward of the Setagaya district in Tokyo that Keiji Ashizawa Design has renovated. The designs take inspiration from the architecture and the courtyard that connects residents to the outside nature.

Inspired by the temples, shrines and gardens of Japan, the exhibition itself at Kinfolk was designed as a 'tactile sanctuary' with natural materials and earthy tones that allowed the furniture to quietly sing.



## Artek – FIN/JPN Friendship Collection

For Milan Design Week, Finnish brand Artek celebrated the 100 year anniversary of diplomatic relations between Finland and Japan by commissioning designers, architects and craftsmen to explore the shared values between the two cultures. Some took inspiration from Japanese rituals, while others reinterpreted classic Alvar Aalto designs.

'Despite their geographical separation the countries share a deep kinship; both pursue the essence of a simple life, possess an affinity with nature, a love of silence, a reduced visual language and a respect for craftsmanship,' says Artek.



## Karimoku New Standard

A highlight of Milan Design Week for me was not the flashy shows and installations but a hidden-away home and secluded garden in the Brera district conceived by Japanese brand Karimoku New Standard (KNS). Serving drinks and nibbles prepared by Japanese chef Shiori Goto, it was the perfect spot and green oasis to escape the madness of the design week and relax a while.

# Benchmark unveils ergonomic desk design

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Furniture maker Tom Parfitt at Benchmark designed a new compact sit-stand desk made for flexible home workspaces. The solid timber desk is created in line with the principles of biophilic design and ergonomics to encourage movement in the consumer's everyday life.

This clever desk design features a contemporary rounded profile, a mechanism to allow the top to rise and fall smoothly, and a compact footprint ideal for city apartments and home offices.

Benchmark is a brand to look to when creating transparent products. This is evident in each furniture piece it produces holding a Red List Free and Declare label. As the population transitions into new working-from-home dynamics, consider sustainable and ethically made solutions for consumers looking to invest in their home office.



## Pedrali's recycled grey

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Pedrali launched its first collection of 100% recycled plastic chairs. The Italian manufacturer of contract and residential furniture already works with certified raw materials across its product range; however, this is a new material for the brand, made from 50% post-consumer plastic waste and 50% industrial plastic waste. The furnishings are designed with considered production processes aimed at limiting consumption and avoiding waste. Products created in this plastic are recyclable and eco-compatible. The Babilia XL seat, for example, can be fitted with wooden legs, making it an all-round eco-friendly item. Designers and brands continue to investigate sustainable colours developed from amalgamating leftover waste materials, including 'good grey tone'. This is a key theme across Pedrali's collection and this warm neutral tone brings a comforting feel to interiors.



# Muji



Wooden desk Oak

\$ 399.00

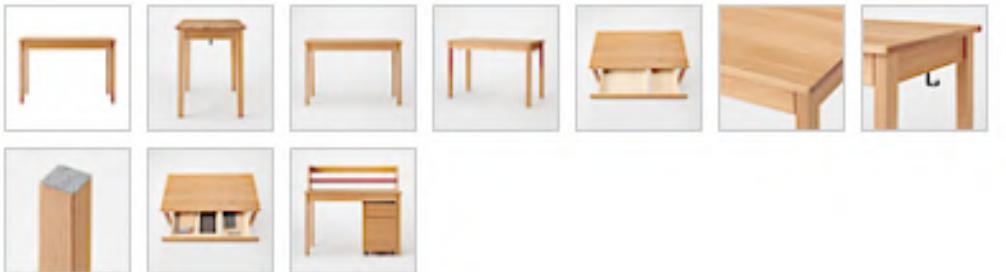
[PRODUCT DETAILS](#)



Wooden desk Cabinet Oak veneer

\$ 279.00

[PRODUCT DETAILS](#)



# Maruni



TABLE 180 (rectangular, wooden top)  
Tako



TABLE 180 (rectangular, corian® top)  
Tako



TABLE 200 (rectangular, wooden top)  
Tako



TABLE 160 (rectangular, corian® top)  
Lightwood



TABLE 200 (rectangular, corian® top)  
Tako



TABLE 220 (rectangular, wooden top)  
Tako



TABLE 220 (rectangular, corian® top)  
Tako



TABLE 180 (rectangular, veneered top / solid  
wood top)  
T&O



TABLE 200 (rectangular, veneered top / solid  
wood top)  
T&O



TABLE [wood leg] 190 Low / High  
MALTA



TABLE [wood leg] 200 Low / High  
MALTA

# Tendo

**F-6174SG-NT**

テーブル



**F-6843SG-NT**

テーブル



**F-2741SG-NT**

テーブル



**F-6841SG-CH**

デスク



**F-8081SG-CH**

キャビネット

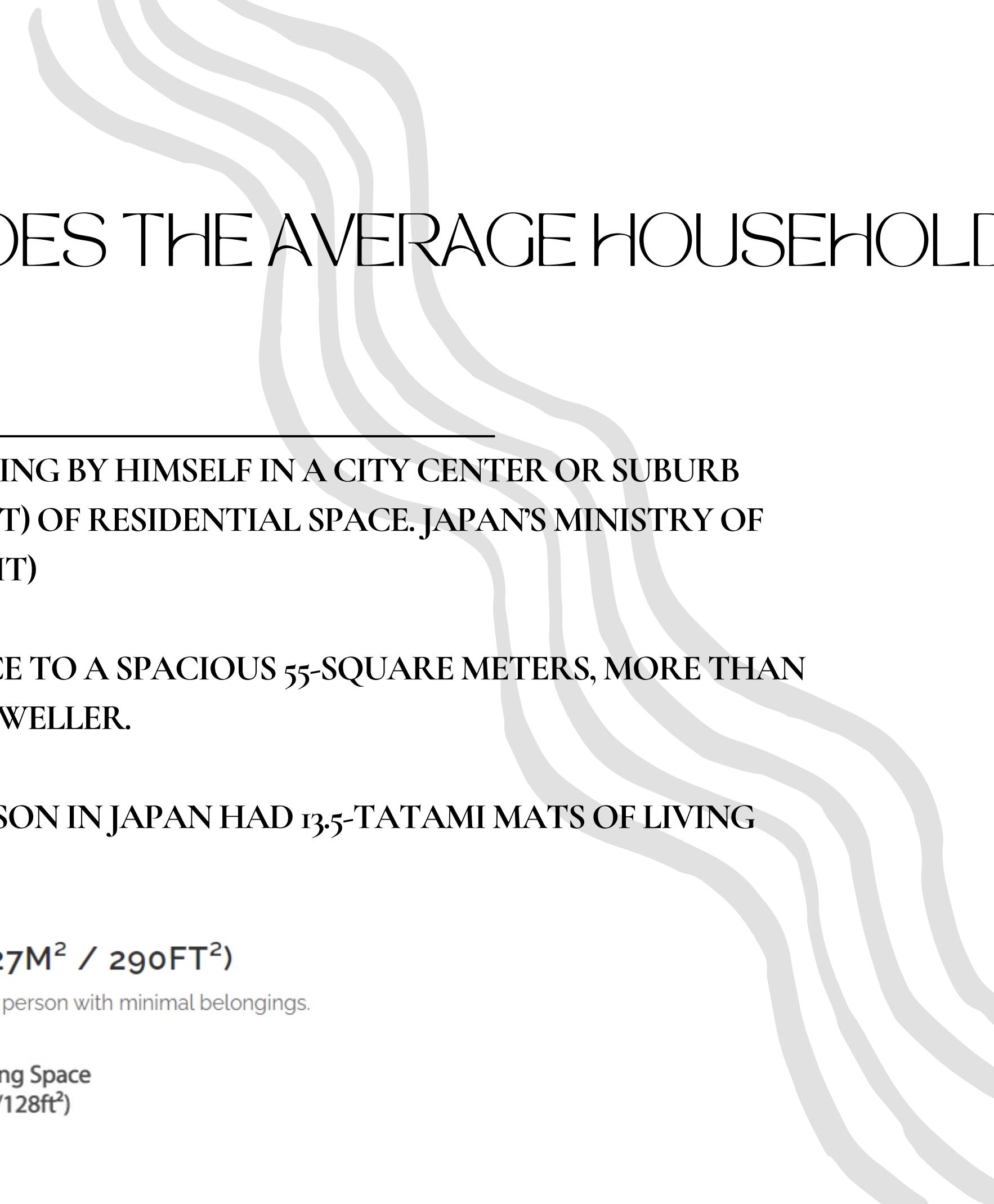


**F-2742SG-BW**

テーブル



# HOW MUCH LIVING SPACE DOES THE AVERAGE HOUSEHOLD HAVE IN JAPAN?



- ACCORDING TO THESE GUIDELINES, A SINGLE PERSON LIVING BY HIMSELF IN A CITY CENTER OR SUBURB SHOULD HAVE AT A MINIMUM 25-SQUARE METERS (269-SQFT) OF RESIDENTIAL SPACE. JAPAN'S MINISTRY OF LAND, INFRASTRUCTURE, TRANSPORT AND TOURISM (MLIT)
- LIVE IN THE COUNTRYSIDE, THE MLIT RAISES ITS GUIDANCE TO A SPACIOUS 55-SQUARE METERS, MORE THAN DOUBLE THE MINIMUM RECOMMENDATION FOR A CITY-DWELLER.
- FOR THE COUNTRY AS A WHOLE, ON AVERAGE, EACH PERSON IN JAPAN HAD 13.5-TATAMI MATS OF LIVING SPACE OR 22.3-SQUARE METERS.

## APARTMENT 1: 1K / STUDIO (27M<sup>2</sup> / 290FT<sup>2</sup>)

Properties of this size are most suitable for a single person with minimal belongings.

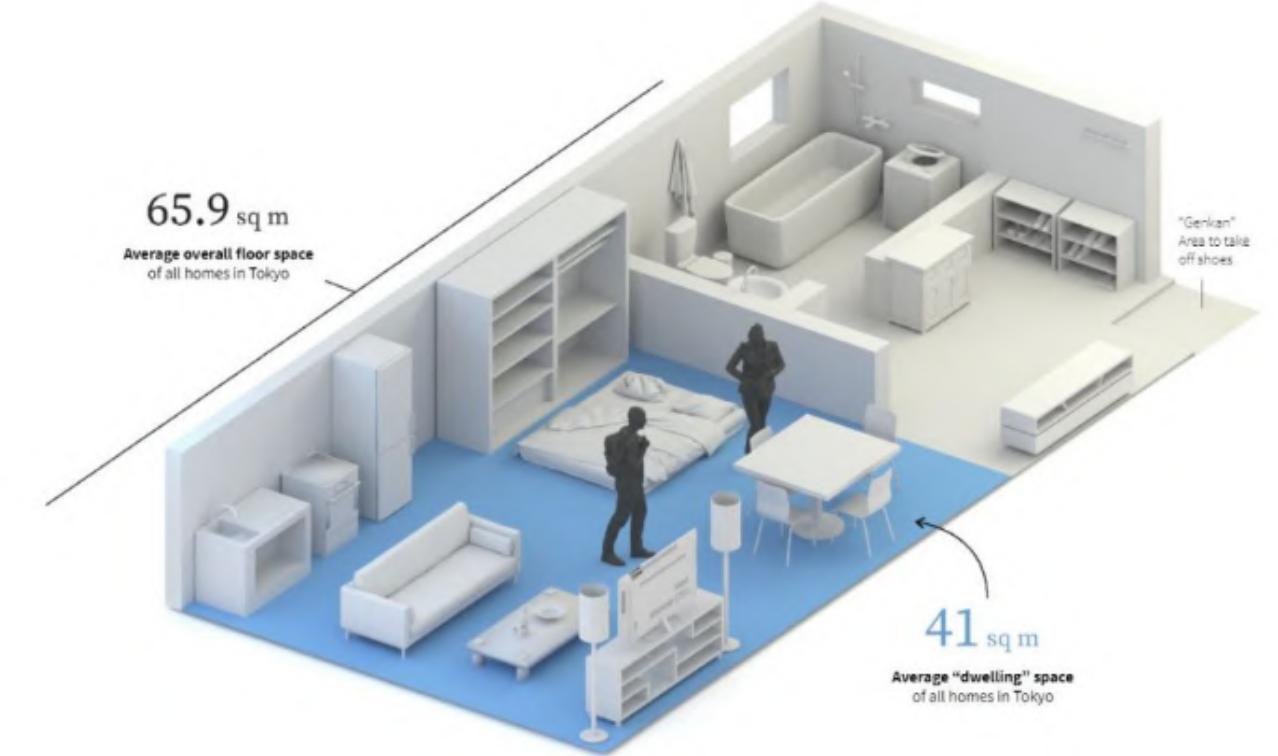
Bedroom/Living Space  
7.2J (11.88m<sup>2</sup>/128ft<sup>2</sup>)



*76,000 apartments in Tokyo are only 9.8 sqm in size.*



MANY EVEN TINIER PLACES EXIST IN TOKYO. IT IS ESTIMATED THAT ALMOST 76,000 APARTMENTS IN TOKYO ARE ONLY 9.8 SQM IN SIZE.



IN 2019, THE FLOOR SPACE OF AN APARTMENT IN TOKYO IS APPROXIMATELY 65.9 SQM. BUT THE ONLY 41 SQM IS USED AS LIVING SPACE, IN OTHER WORDS, TO SERVE SLEEPING, COOKING, AND DINING ACTIVITIES.



*The crazy small apartment of less than 4.8 sqm in size accounts for 0.6% of Tokyo condos*

- iR WHICH MEANS i ROOM IS THE SMALLEST AND CHEAPEST TYPE OF APARTMENT. USUALLY DESIGNED WITH A SLEEPING LOFT , A UNIT BATH , A COMPACT KITCHEN, A POSSIBLE SPACE FOR WORKING OR DINING,
- iR IS LESS THAN 13 SQM IN SIZE.
- DESPITE ITS CRAZY SMALL FLOOR SPACE, iR IS GETTING EXTREMELY POPULAR AMONG YOUNG PEOPLE.
- ABOUT 60 PERCENT OF RESIDENTS ARE OFFICE WORKERS, AND ANOTHER 30 PERCENT STUDENTS).

AS MENTIONED ABOVE, THE AVERAGE SIZE FOR AN APARTMENT IN TOKYO IS CLOSE TO 65 SQM.



# *Redesign Brief*

To design a minimal study table for  
15-17 years age consuming as little space as possible for  
middle class students in Japan region.

# Consumer Segmentation

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## Geographics

Region : Japan

Density: Urban

## Psychographics

Lifestyle : Students

Social Status : Middle class

Interests : Reading, Singing and  
Gardening.

## Demographics

Age - 15-17 years

## Behavioural

Purchase Behaviour: Minimal and  
Functional seeking

Benefits sought: Contemporary  
and useful

User Status : To study

Occasion : Universal

# DEMOGRAPHICS AND PSYCHOGRAPHICS

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## TARGET AUDIENCE:

- People of age 15-17 years
- Both urban 1R area
- For both genders
- For middle class people
- People with space issues at home
- People seeking less space consuming furniture
- Students who have a habit/routine of reading/bookworms

## Features:

- Less space consuming
- Functional
- Easy to use
- Minimal
- Light weight

THEME: JAPANESE FESTIVALS  
INSPIRATION: JAPANESE MOTIFS

# BOARDS

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# THEME BOARD

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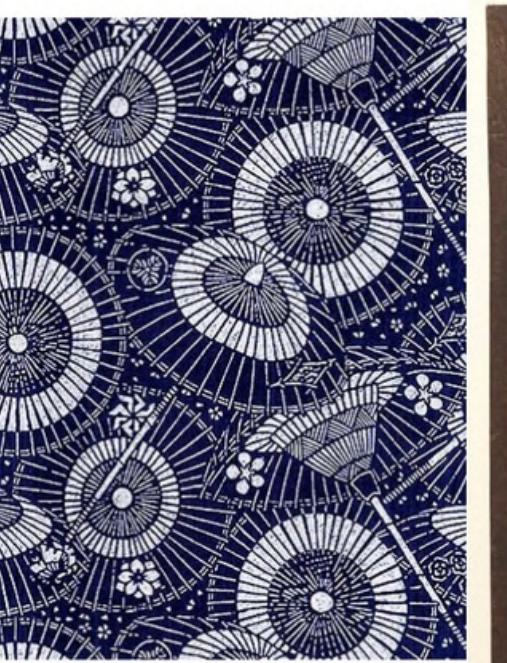


## KEYWORDS

- TRADITIONAL
- CELEBRATORY
- WELL-LIT
- ETHNIC
- HOLY
- RELIGIOUS
- HEAVILY DECORATED

# INSPIRATION BOARD

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## KEYWORDS

- FLORAL
- CONTINUOUS
- SYMMETRICAL
- REGULAR
- REPETITIVE
- SYMBOLIC
- STRUCTURAL
- PALINDROMIC

## CLIENT BOARD

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### KEYWORDS

- TEENAGERS
- LITERATE
- STUDIOS
- BOOKWORM
- ERUDITE
- AMBITIOUS
- INTELLECTUAL
- ACADEMIC



Wood



Mica



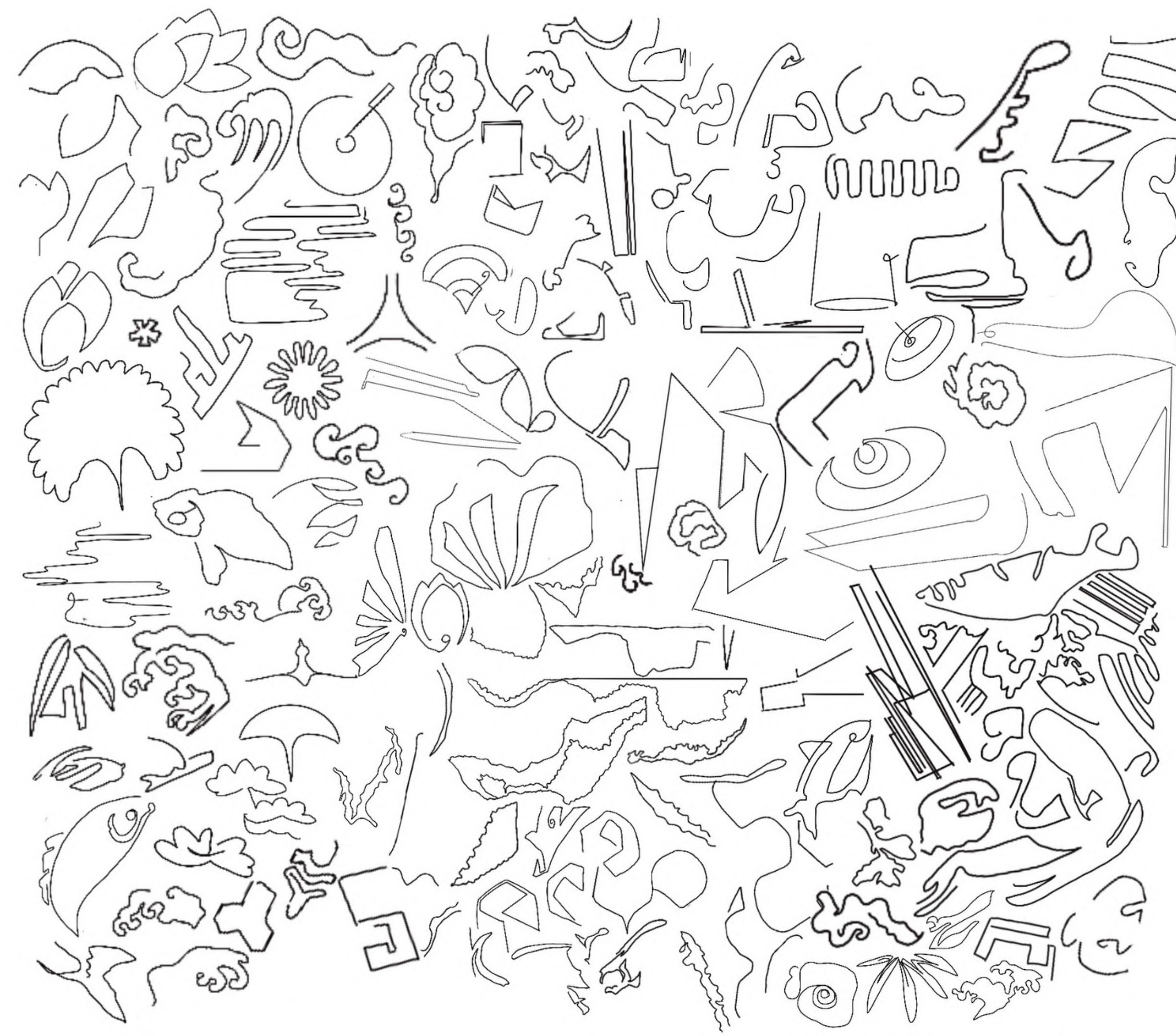
Polished  
Brass



MATERIAL  
BOARD

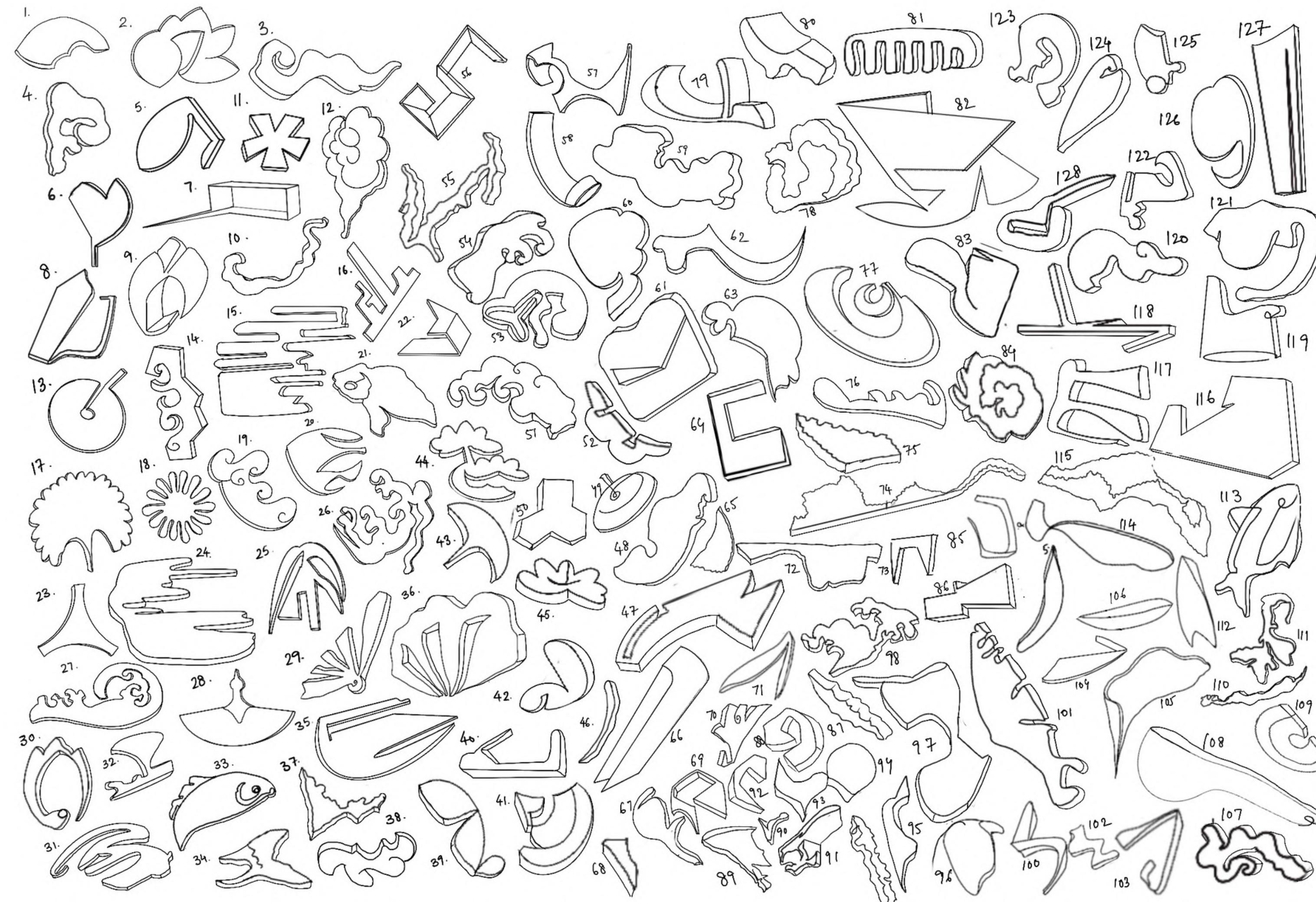
# FORMS

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SHAPES

# FORMS

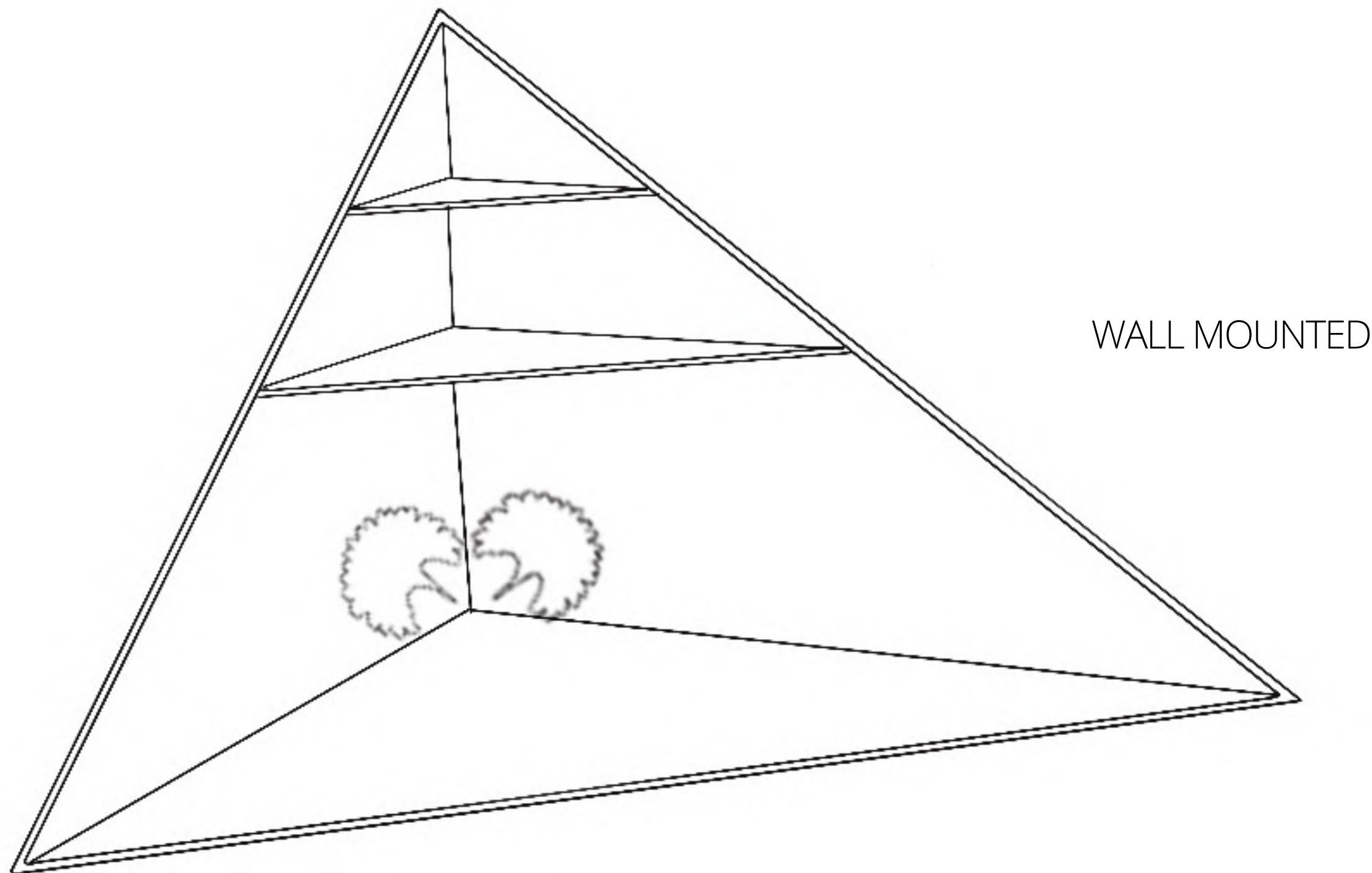


# IDEATIONS

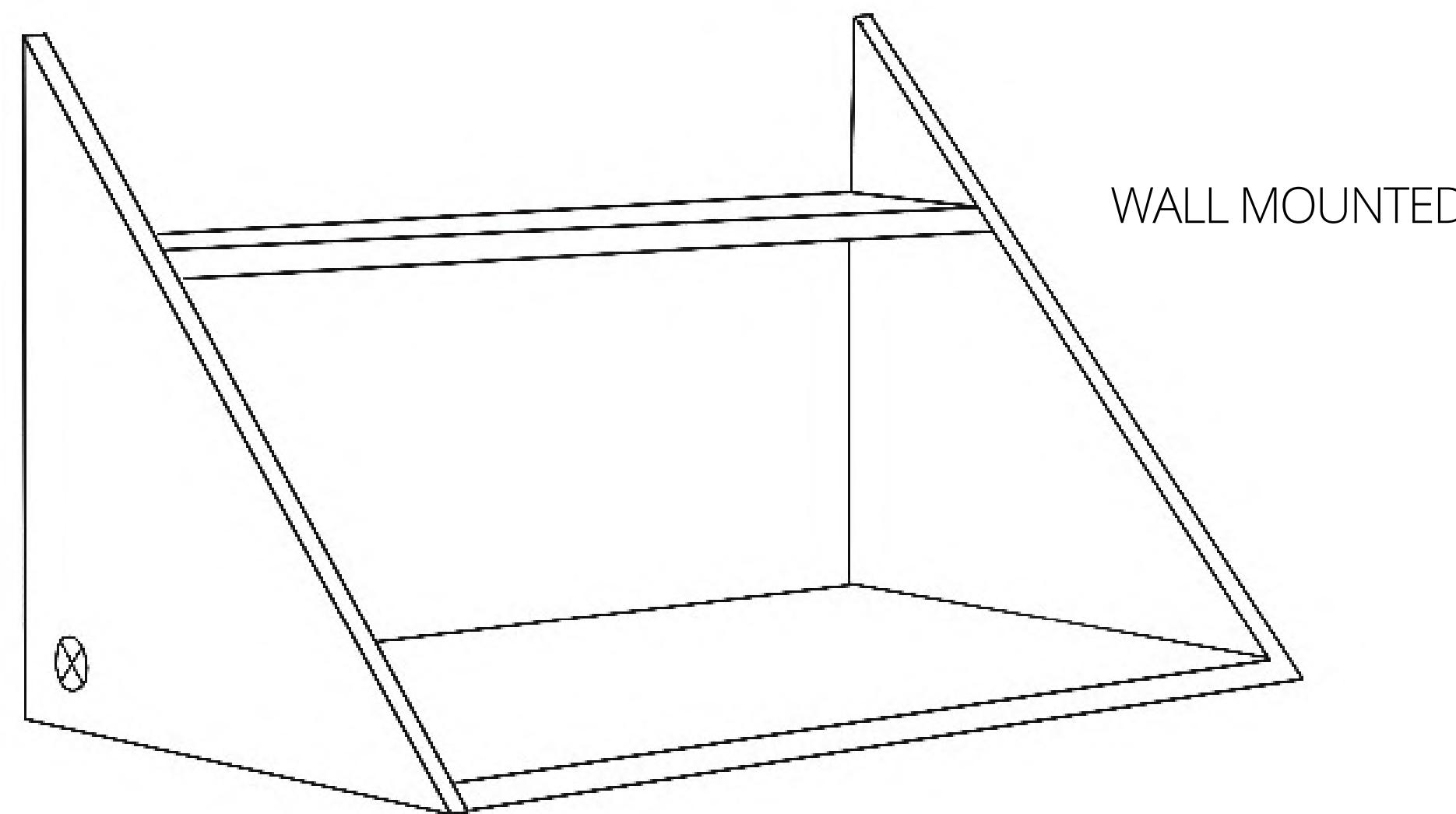
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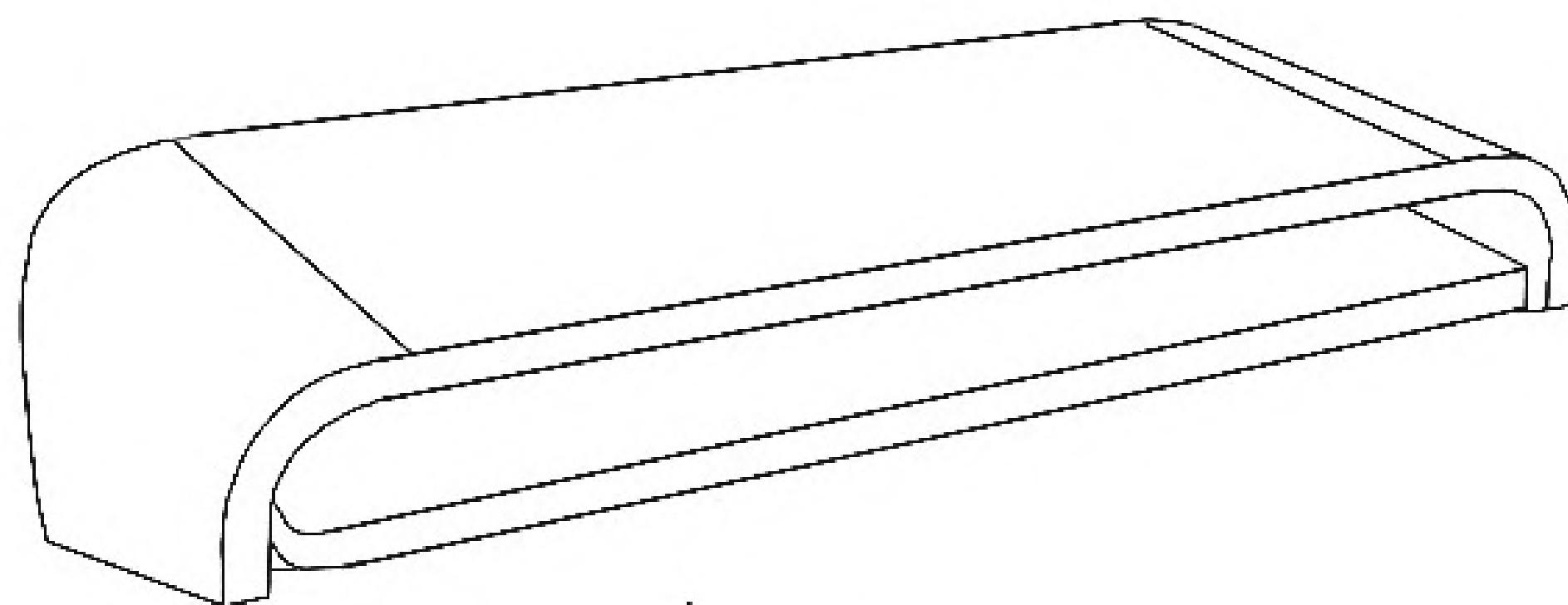
## IDEATION



# IDEATION



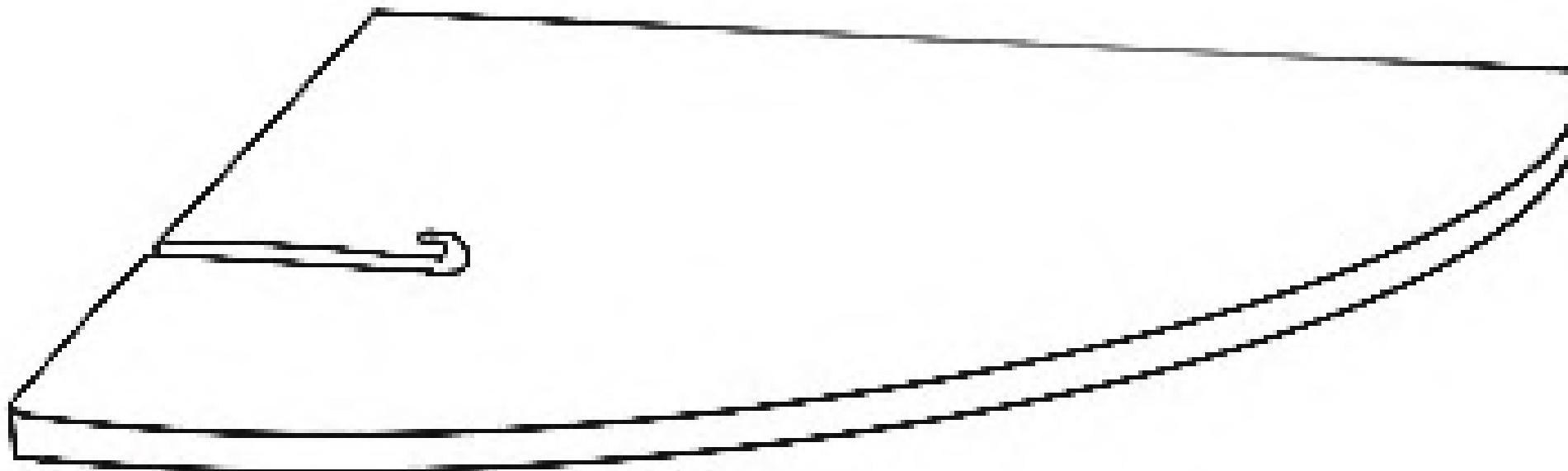
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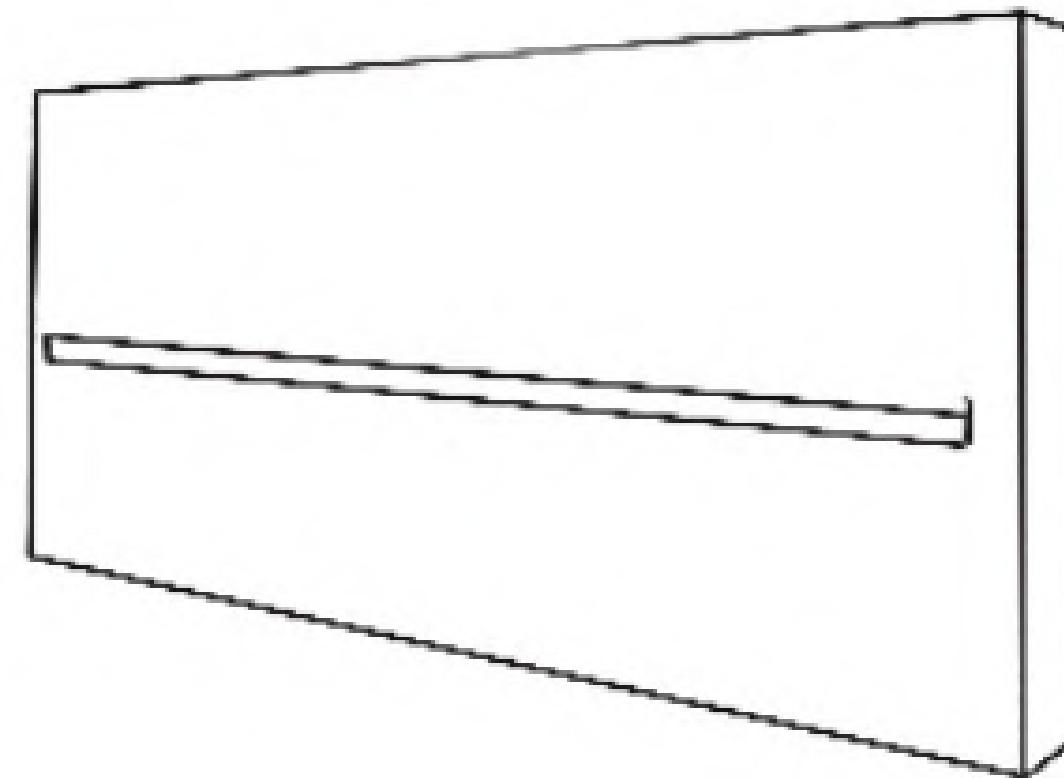
WALL MOUNTED

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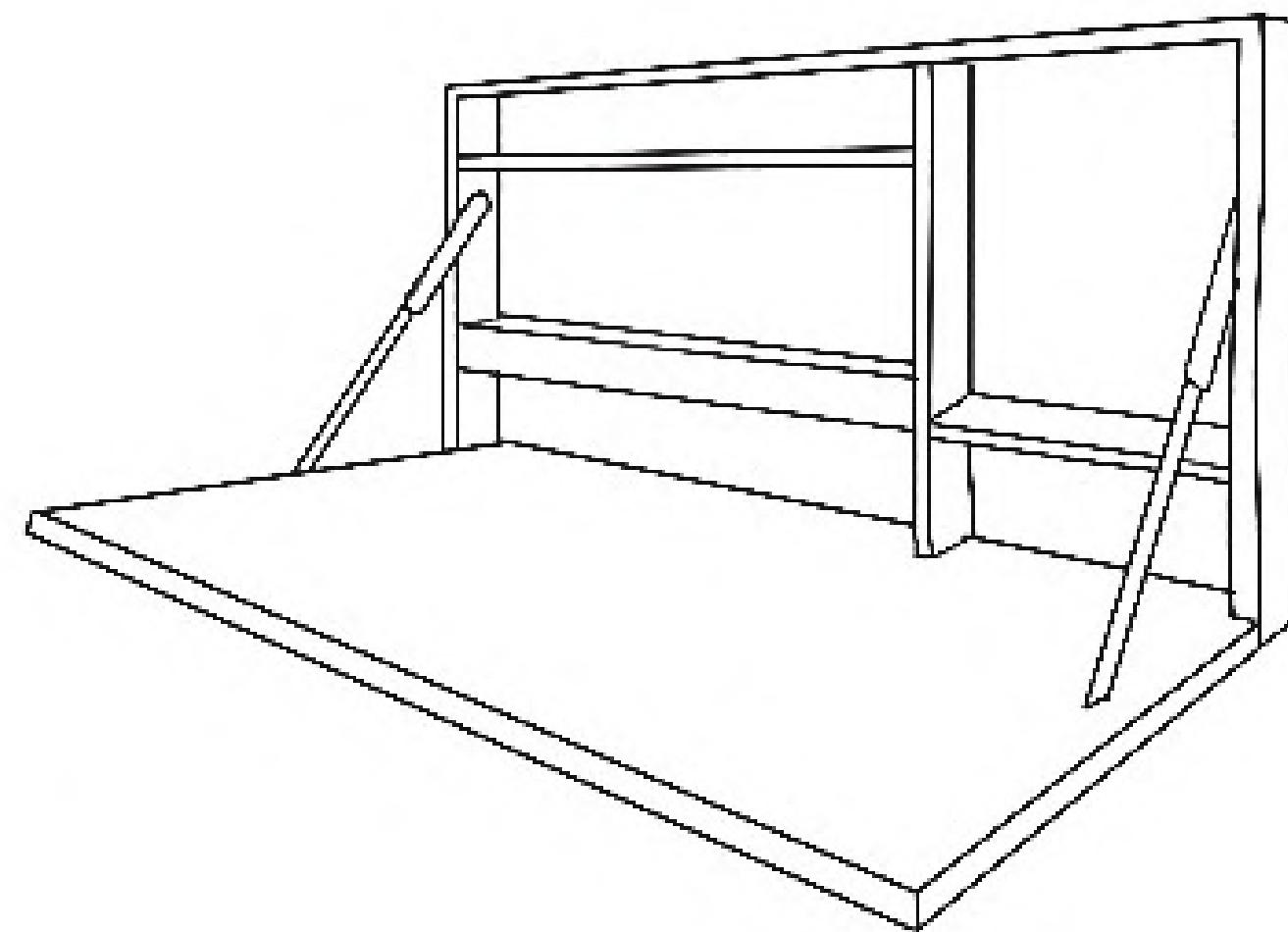
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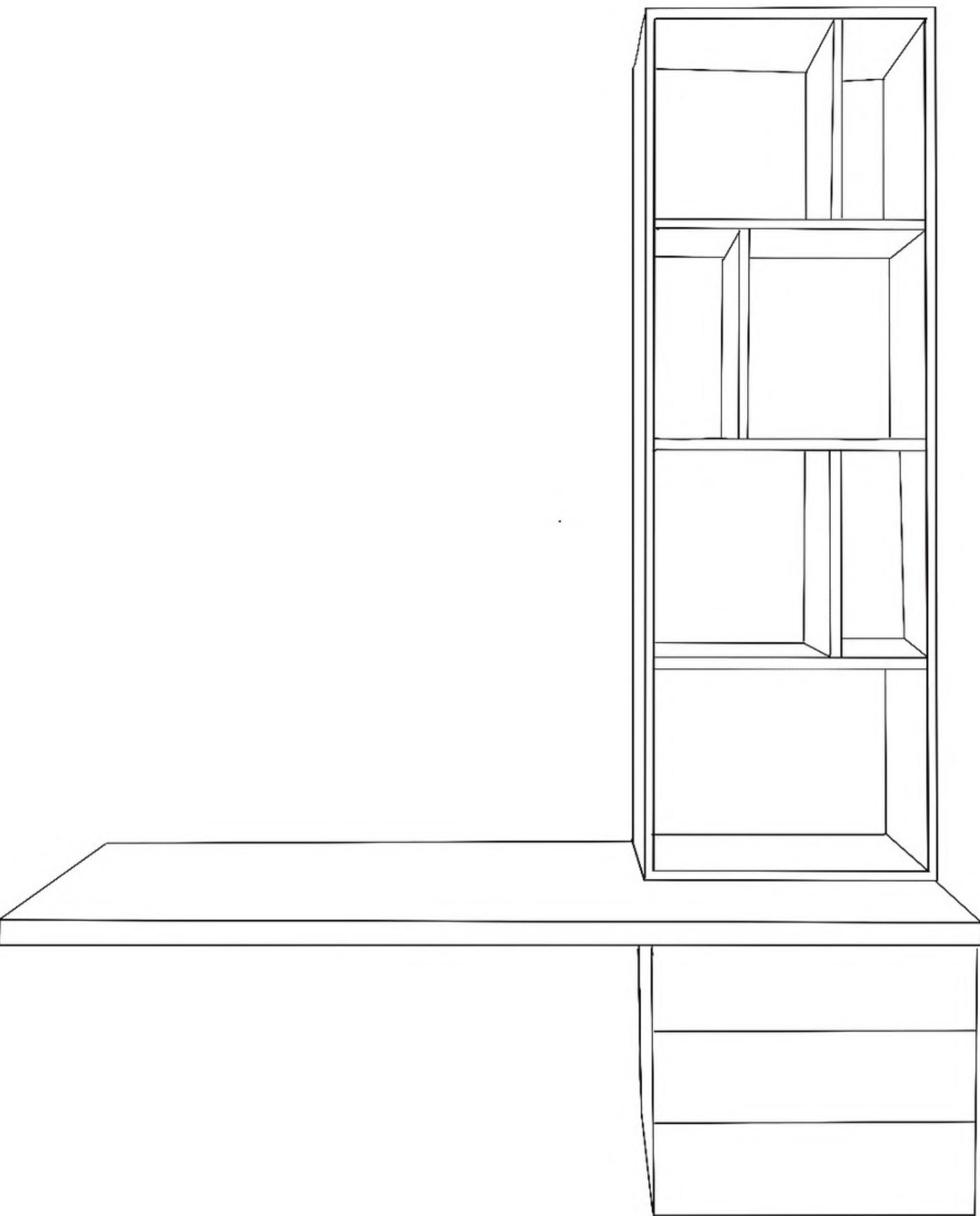
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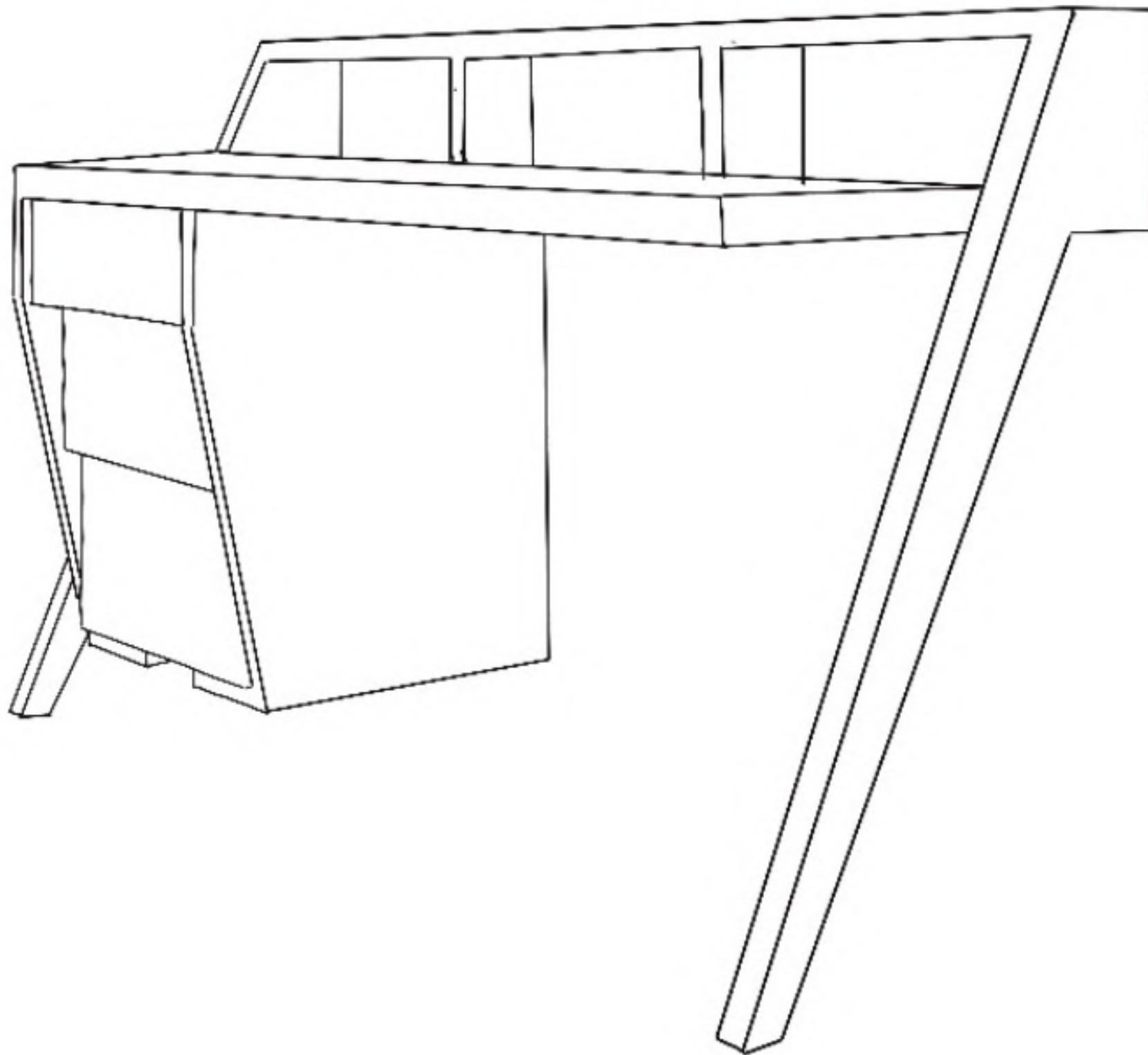


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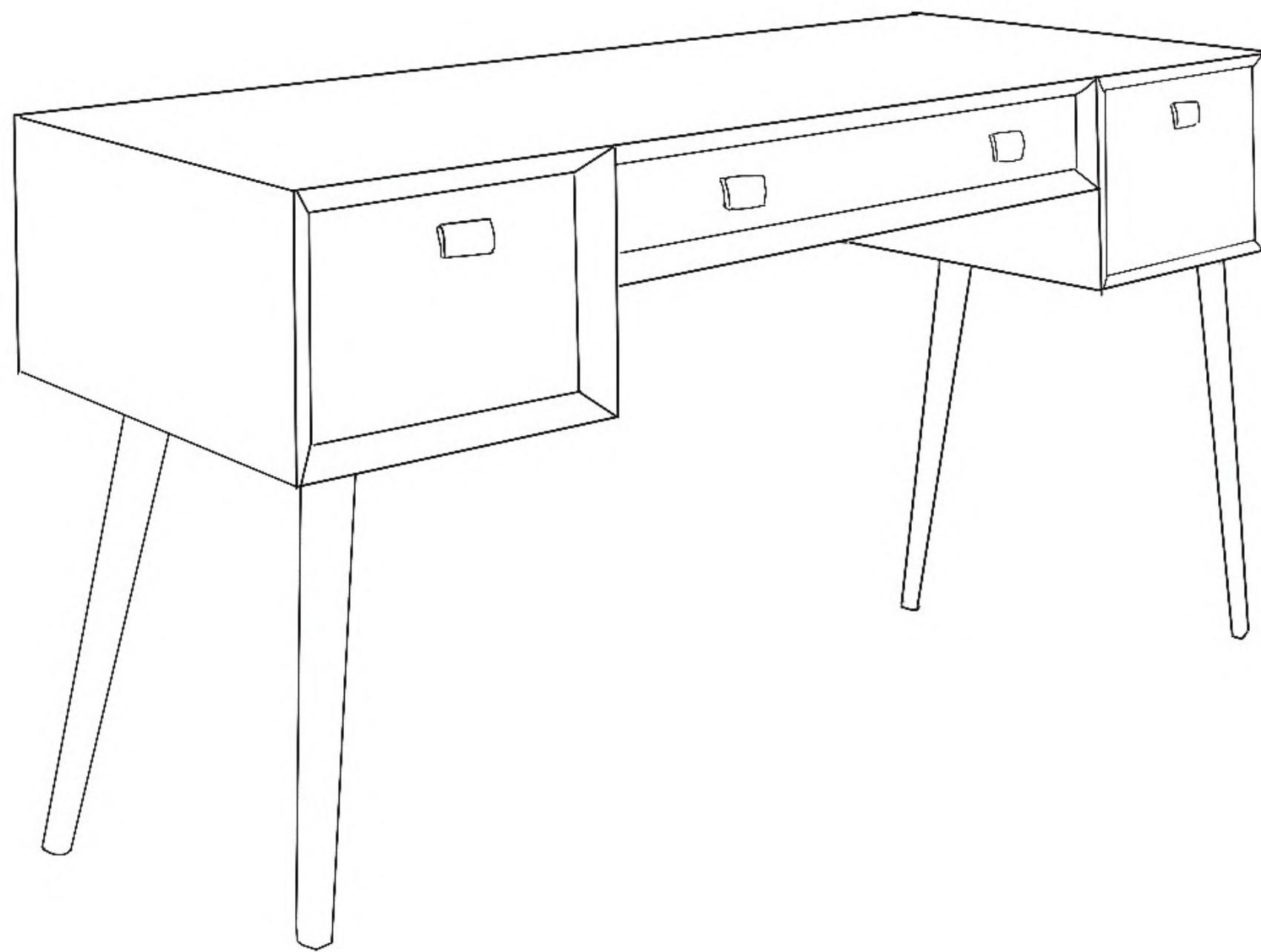


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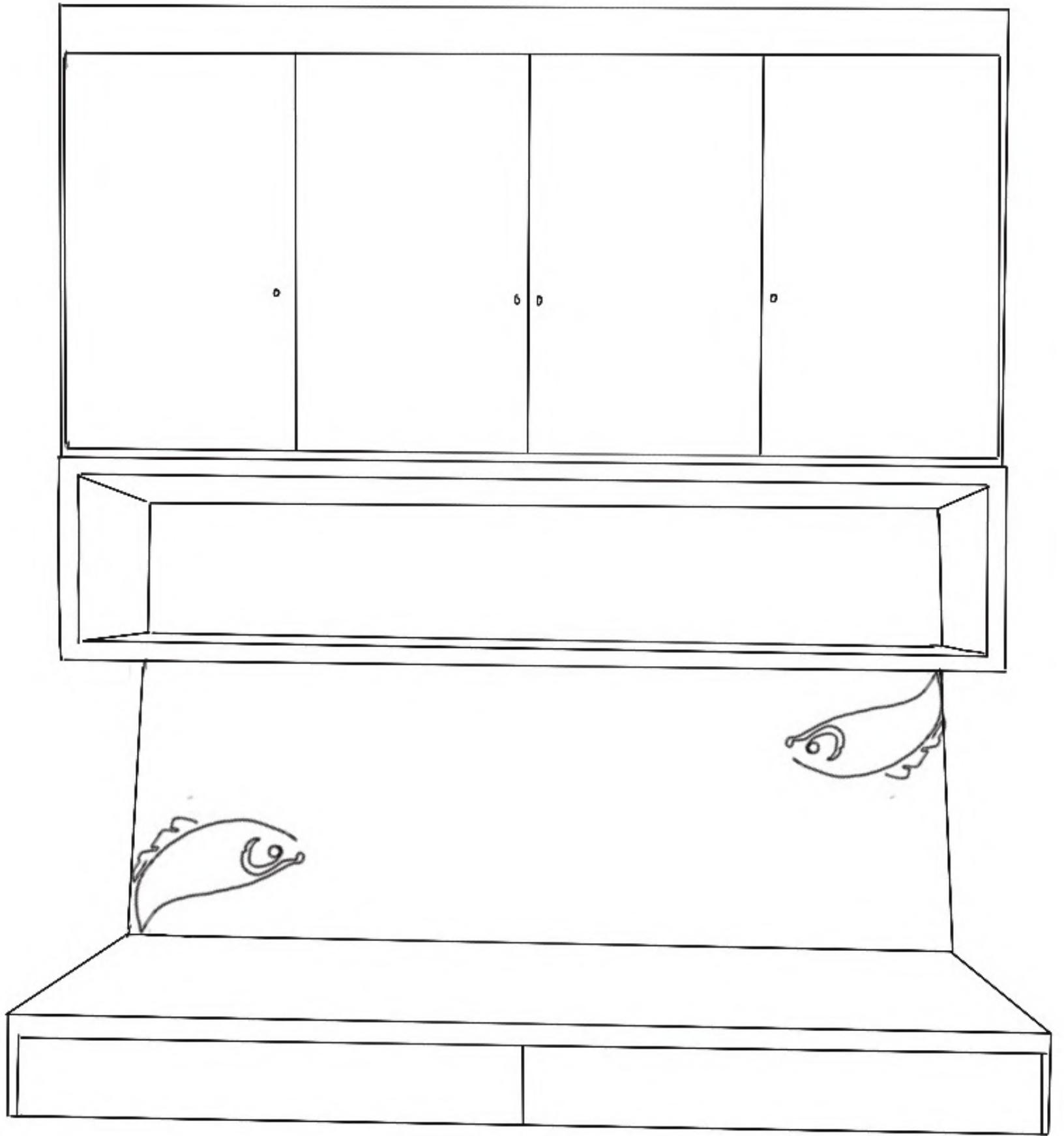
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# IDEATION



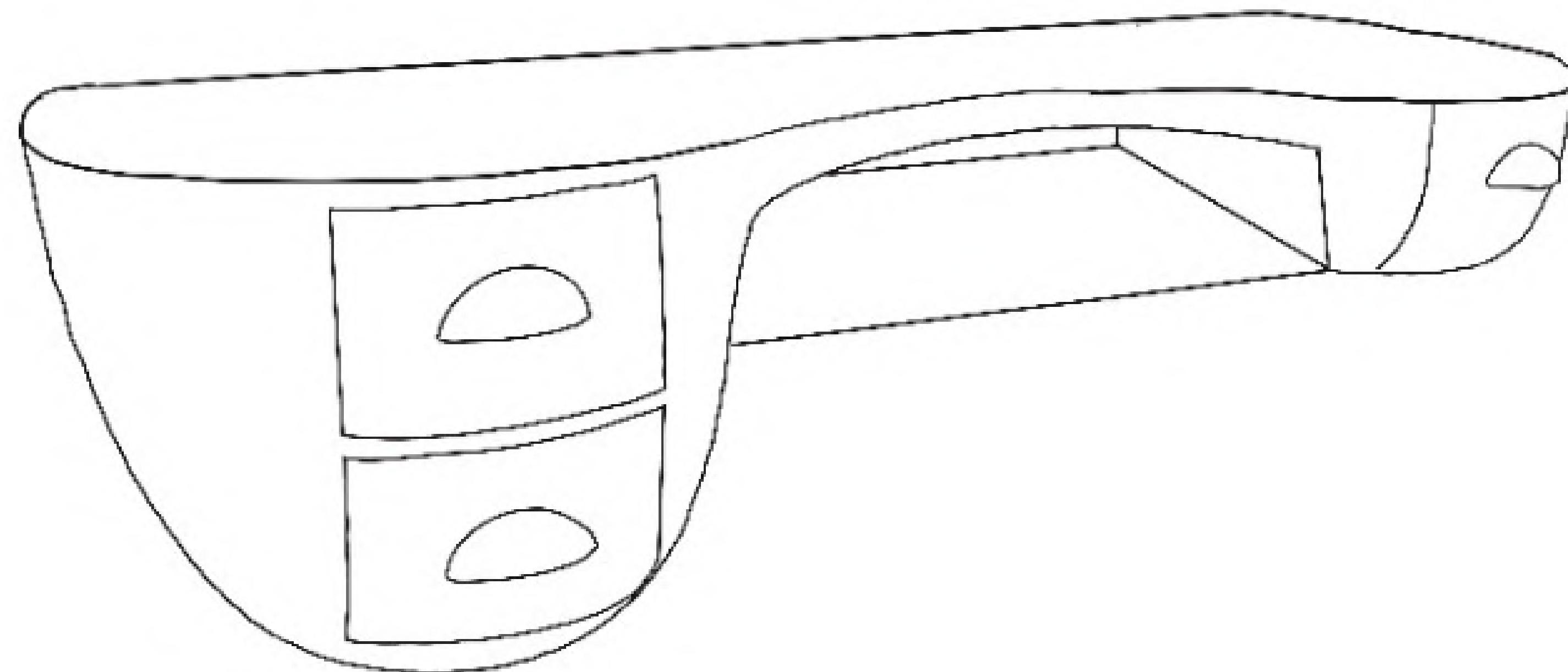
IDEATION



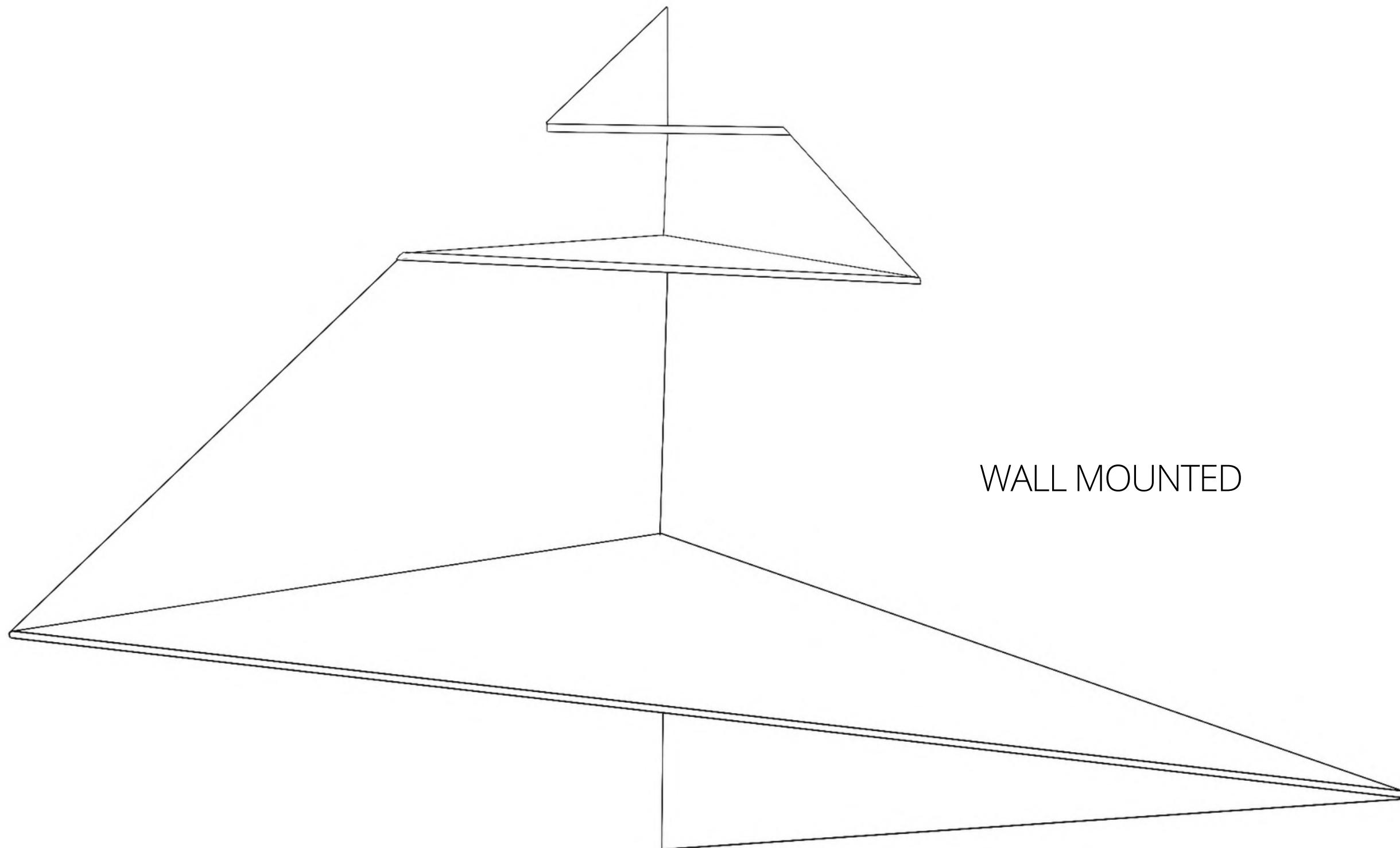
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# IDEATION

WALL MOUNTED

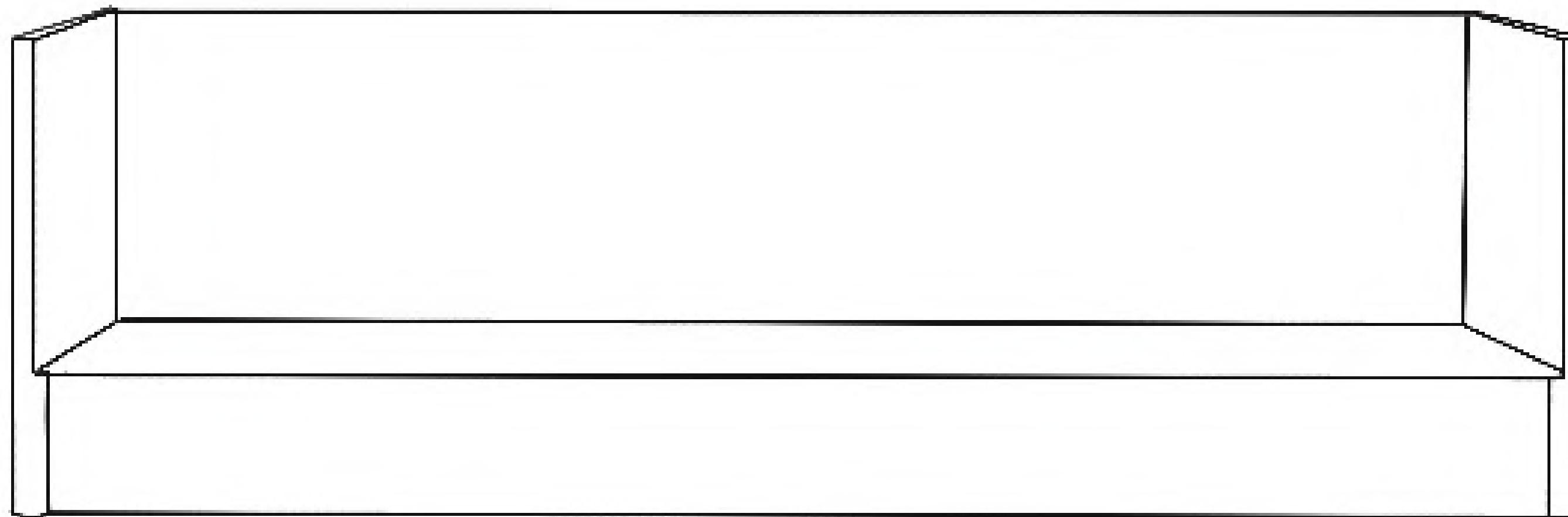


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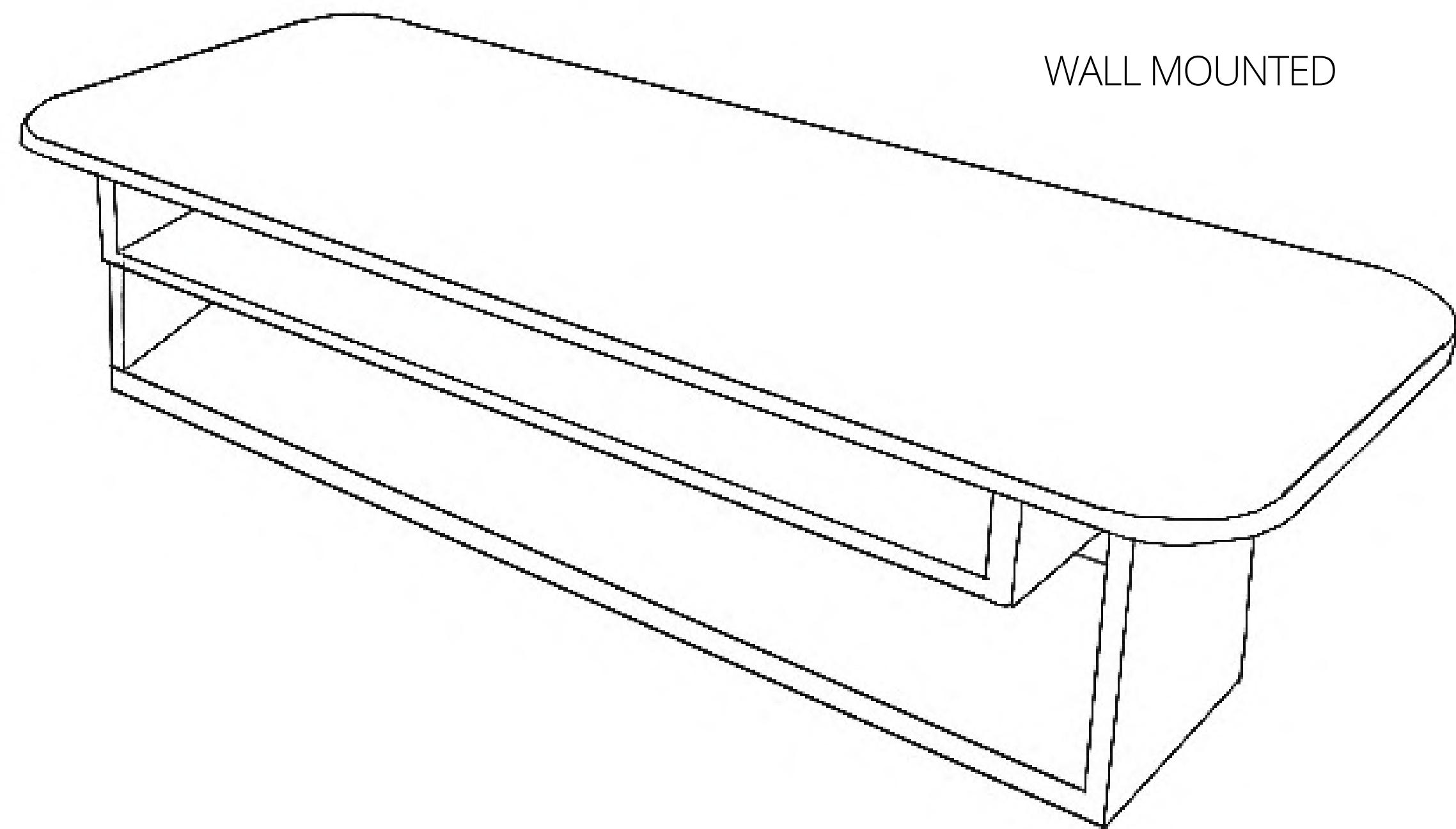


IDEATION

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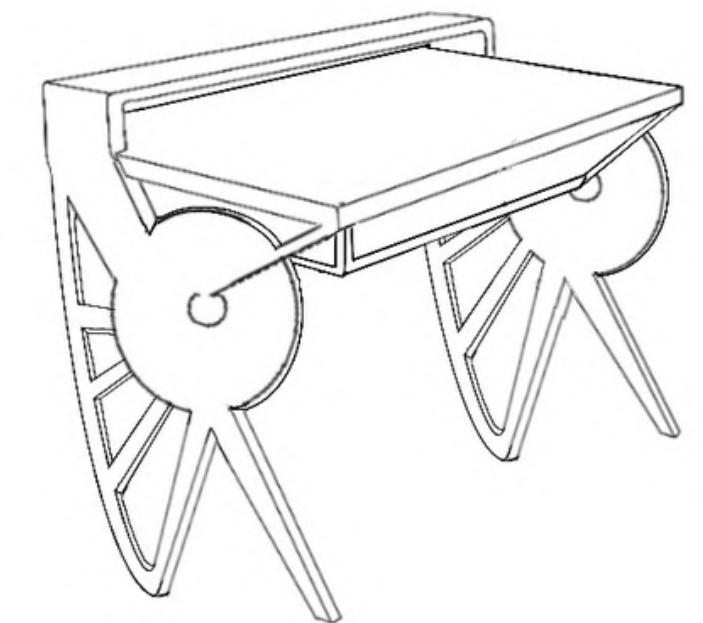
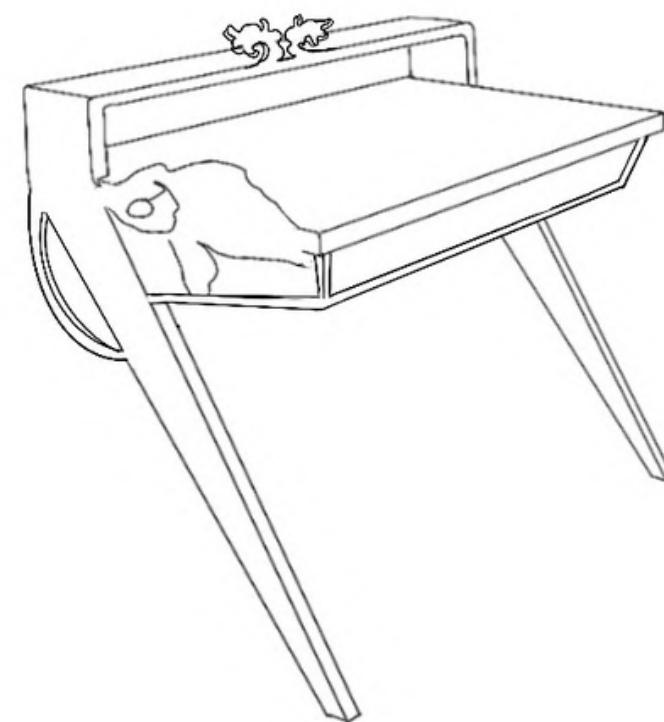


IDEATION



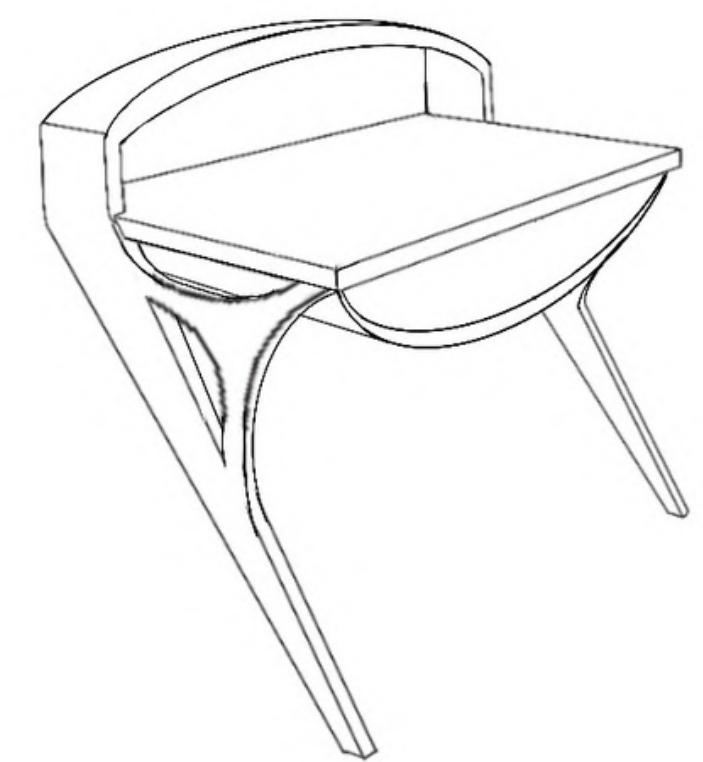
WALL MOUNTED

SELECTED



RANGE

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RENDERED  
DESIGN

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PRODUCT 1

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## PRODUCT 2

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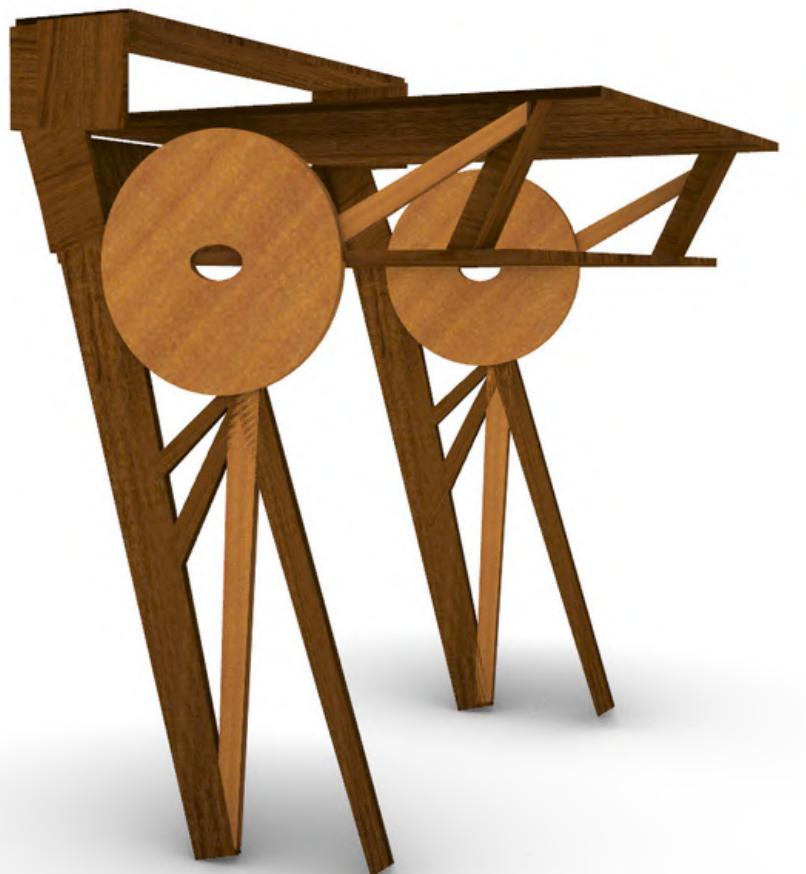






PRODUCT 3

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PRODUCT 4

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PRODUCT 5

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# SPECIFICATION SHEET

The product is a study desk.

The product is made out of wood, nails, paint and polish.

## KEYWORDS

- Minimal
- Contemporary
- Functional
- Working
- Symmetrical

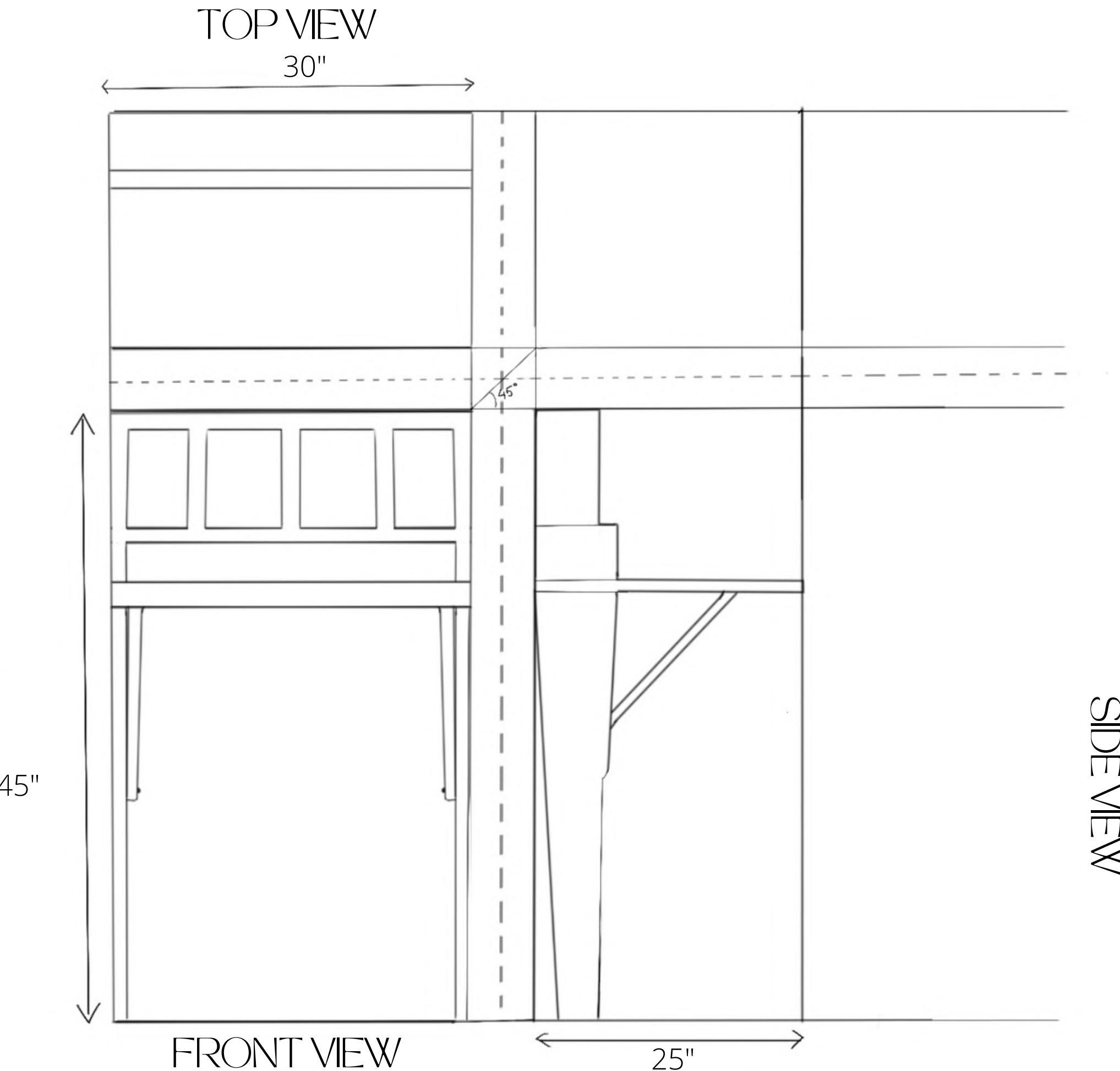
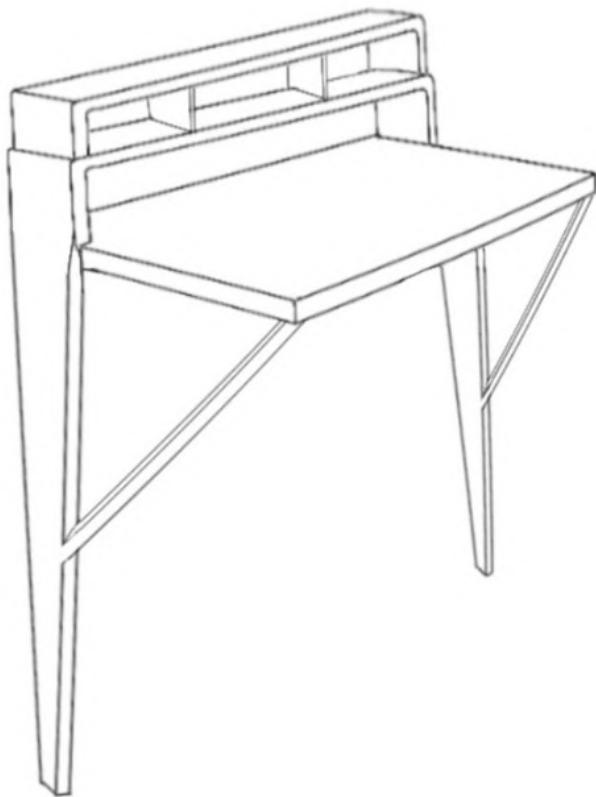
|                                                                                               |            |                                                                                             |            |
|-----------------------------------------------------------------------------------------------|------------|---------------------------------------------------------------------------------------------|------------|
| YEAR                                                                                          | 2022       |                                                                                             |            |
| REGION                                                                                        | JAPAN      | PRODUCT TYPE                                                                                | FURNITURE  |
| GENRE                                                                                         | MINIMALISM | PRODUCT NAME                                                                                | STUDY DESK |
| <hr/>                                                                                         |            |                                                                                             |            |
| MATERIAL                                                                                      |            | MATERIAL SWATCHES                                                                           |            |
| <br>NAILS  |            | <br>WOOD |            |
| <br>POLISH |            | <br>MICA |            |
| <hr/>                                                                                         |            |                                                                                             |            |
| DIMENSION                                                                                     |            | AREA: JAPANESE 12 SQ M ROOM                                                                 |            |
| <ul style="list-style-type: none"><li>• BED BENCH:<br/>30"L x 25"B x 45"H</li></ul>           |            | FINISH:                                                                                     |            |
|                                                                                               |            | <ul style="list-style-type: none"><li>• POLISH ON WOOD</li></ul>                            |            |
| <hr/>                                                                                         |            |                                                                                             |            |
| COLOUR SCHEME                                                                                 |            |        |            |

# TECHNICAL DRAWING

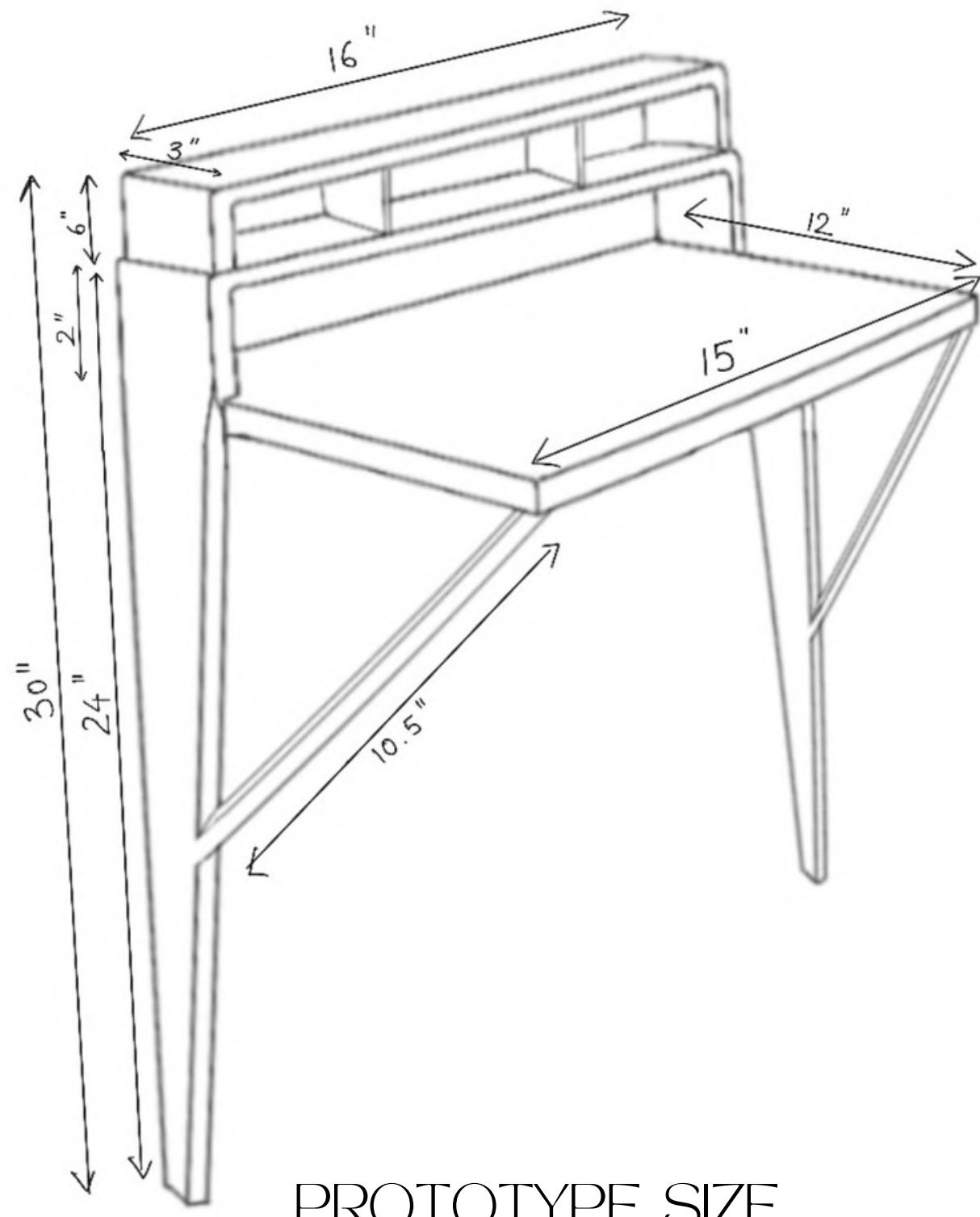
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LXBXH  
45" X 30" X 25"

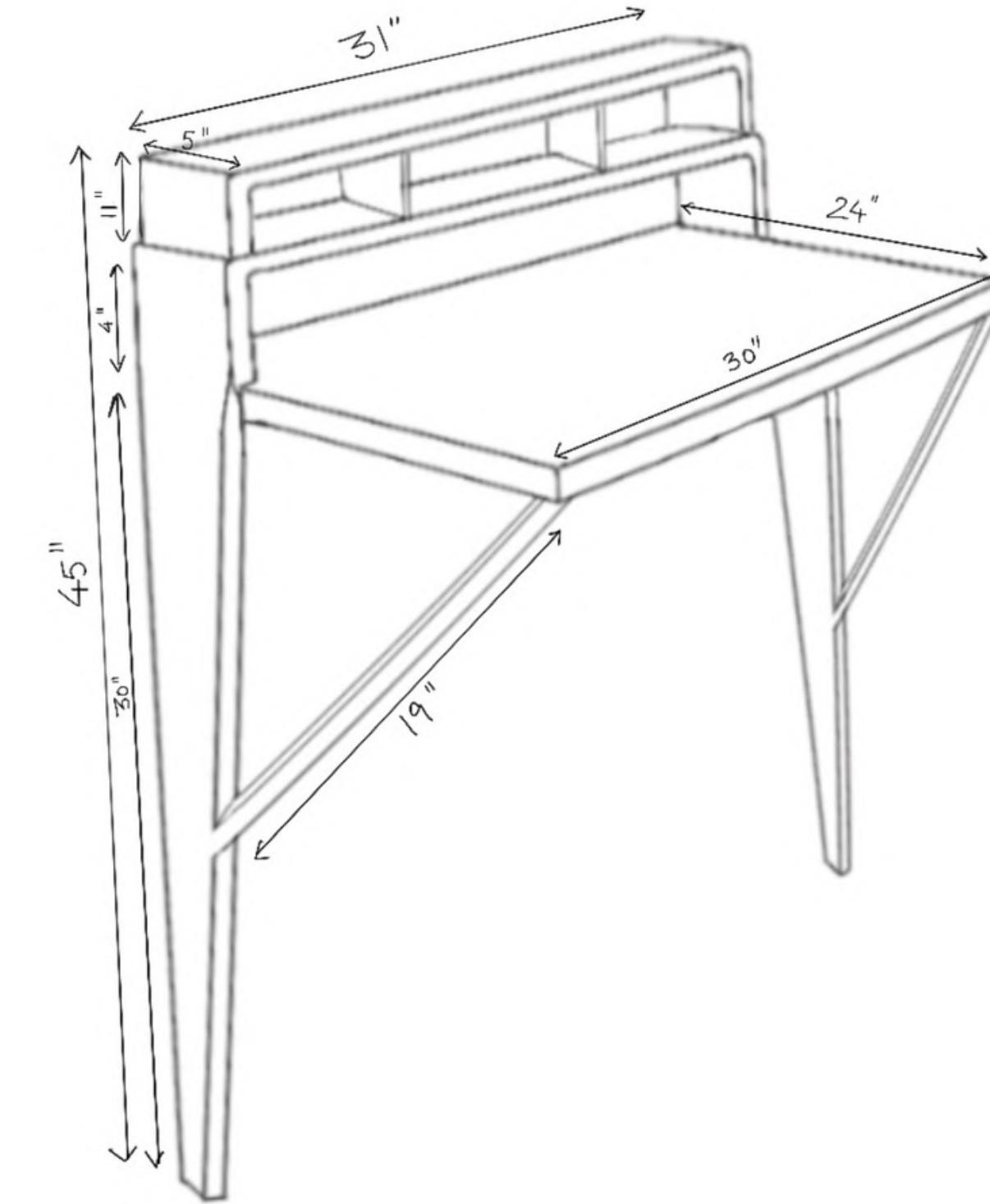
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## SIZE AND MEASUREMENTS

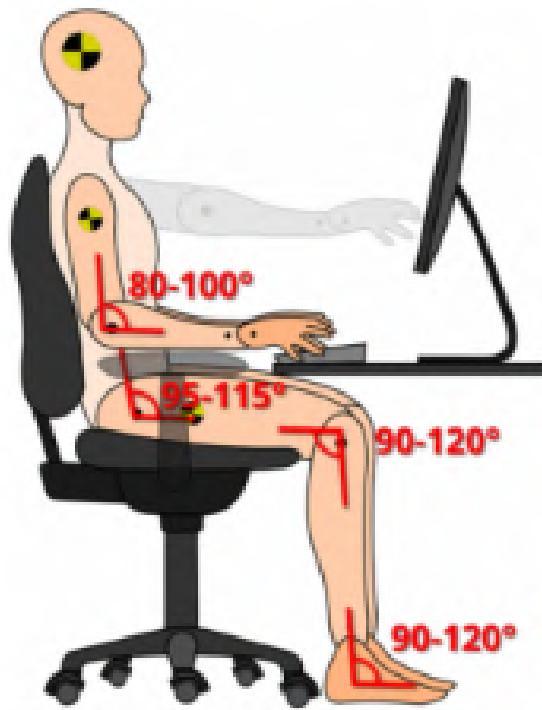


PROTOTYPE SIZE

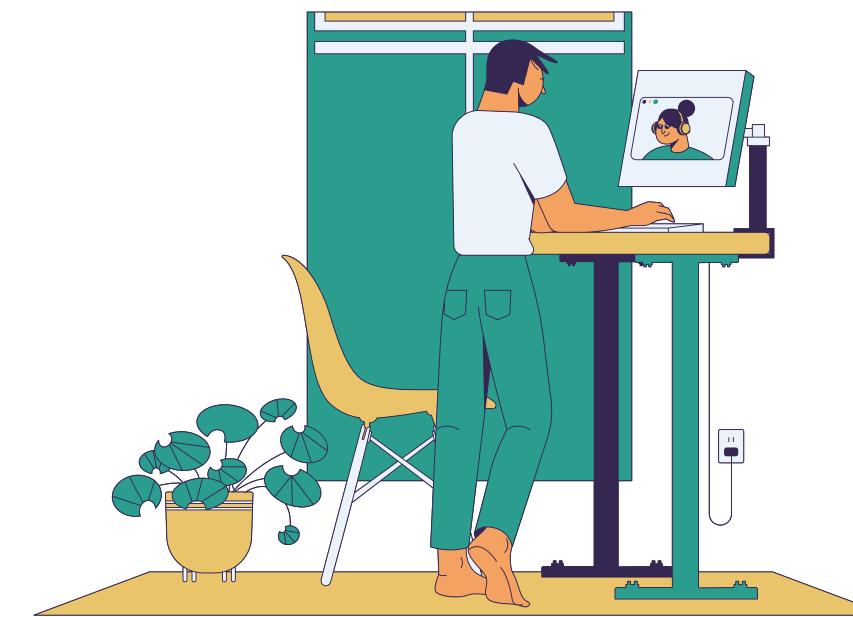


PRODUCT SIZE

# Ergonomic issues



A representation of what would be considered ergonomically neutral; the head is relatively straight forward to view the screen, the shoulders are relaxed, arms are resting comfortably to one's torso, the person is comfortably sitting with their back on the backrest of their chair, and the keyboard and mouse are in a comfortable position for prolonged typing and mousing.



# RULA SHEET

## RESULT: ACCEPTABLE POSTURE

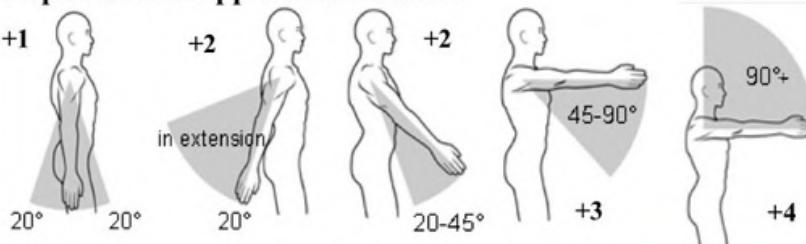


### RULA Employee Assessment Worksheet

based on RULA: a survey method for the investigation of work-related upper limb disorders, McAtamney & Corlett, Applied Ergonomics 1993, 24(2), 91-99

#### A. Arm and Wrist Analysis

##### Step 1: Locate Upper Arm Position:



Step 1a: Adjust...

- If shoulder is raised: +1
- If upper arm is abducted: +1
- If arm is supported or person is leaning: -1

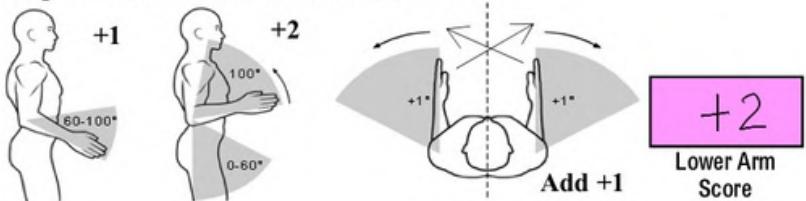
#### SCORES

Table A: Wrist Posture Score

| Upper Arm | Lower Arm | 1           | 2           | 3           | 4           |
|-----------|-----------|-------------|-------------|-------------|-------------|
|           |           | Wrist Twist | Wrist Twist | Wrist Twist | Wrist Twist |
| 1         | 1         | 1           | 2           | 2           | 2           |
| 1         | 2         | 2           | 2           | 2           | 3           |
| 1         | 3         | 2           | 3           | 3           | 3           |
| 2         | 1         | 1           | 2           | 3           | 3           |
| 2         | 2         | 2           | 3           | 3           | 3           |
| 2         | 3         | 3           | 4           | 4           | 4           |
| 3         | 1         | 1           | 3           | 3           | 4           |
| 3         | 2         | 2           | 3           | 4           | 4           |
| 3         | 3         | 3           | 4           | 4           | 5           |
| 4         | 1         | 1           | 4           | 4           | 4           |
| 4         | 2         | 2           | 4           | 4           | 4           |
| 4         | 3         | 3           | 4           | 5           | 5           |
| 5         | 1         | 1           | 5           | 5           | 5           |
| 5         | 2         | 2           | 5           | 6           | 6           |
| 5         | 3         | 3           | 6           | 6           | 7           |
| 6         | 1         | 1           | 7           | 7           | 7           |
| 6         | 2         | 2           | 8           | 8           | 8           |
| 6         | 3         | 3           | 9           | 9           | 9           |

+1  
Upper Arm Score

##### Step 2: Locate Lower Arm Position:

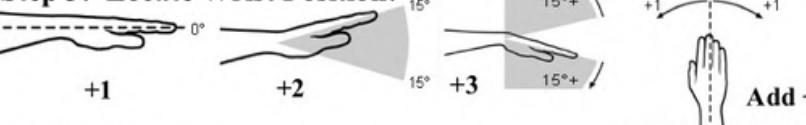


+2  
Lower Arm Score

Step 2a: Adjust...

- If either arm is working across midline or out to side of body: Add +1

##### Step 3: Locate Wrist Position:



+2  
Wrist Score

##### Step 4: Wrist Twist:

- If wrist is twisted in mid-range: +1
- If wrist is at or near end of range: +2

+1  
Wrist Twist Score

##### Step 5: Look-up Posture Score in Table A:

Using values from steps 1-4 above, locate score in Table A

##### Step 6: Add Muscle Use Score

- If posture mainly static (i.e. held>10 minutes), Or if action repeated occurs 4X per minute: +1

Posture Score A  
+  
Muscle Use Score

##### Step 7: Add Force/Load Score

- If load < .4.4 lbs (intermittent): +0
- If load 4.4 to 22 lbs (intermittent): +1
- If load 4.4 to 22 lbs (static or repeated): +2
- If more than 22 lbs or repeated or shocks: +3

Force/Load Score  
—  
Wrist & Arm Score

##### Step 8: Find Row in Table C

Add values from steps 5-7 to obtain Wrist and Arm Score. Find row in Table C.

Table A: Wrist Posture Score

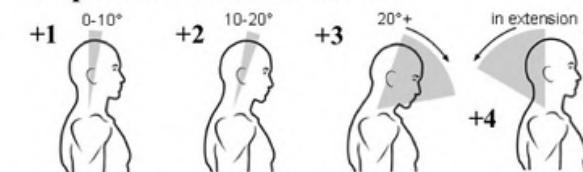
| Upper Arm | Lower Arm | 1           | 2           | 3           | 4           |
|-----------|-----------|-------------|-------------|-------------|-------------|
|           |           | Wrist Twist | Wrist Twist | Wrist Twist | Wrist Twist |
| 1         | 1         | 1           | 2           | 2           | 2           |
| 1         | 2         | 2           | 2           | 2           | 3           |
| 1         | 3         | 2           | 3           | 3           | 3           |
| 2         | 1         | 1           | 2           | 3           | 3           |
| 2         | 2         | 2           | 3           | 3           | 3           |
| 2         | 3         | 3           | 4           | 4           | 4           |
| 3         | 1         | 1           | 3           | 3           | 4           |
| 3         | 2         | 2           | 3           | 4           | 4           |
| 3         | 3         | 3           | 4           | 4           | 5           |
| 4         | 1         | 1           | 4           | 4           | 4           |
| 4         | 2         | 2           | 4           | 4           | 4           |
| 4         | 3         | 3           | 4           | 5           | 5           |
| 5         | 1         | 1           | 5           | 5           | 5           |
| 5         | 2         | 2           | 5           | 6           | 6           |
| 5         | 3         | 3           | 6           | 6           | 7           |
| 6         | 1         | 1           | 7           | 7           | 7           |
| 6         | 2         | 2           | 8           | 8           | 8           |
| 6         | 3         | 3           | 9           | 9           | 9           |

Table A: Wrist Posture Score

Table A: Wrist Posture Score

#### B. Neck, Trunk and Leg Analysis

##### Step 9: Locate Neck Position:

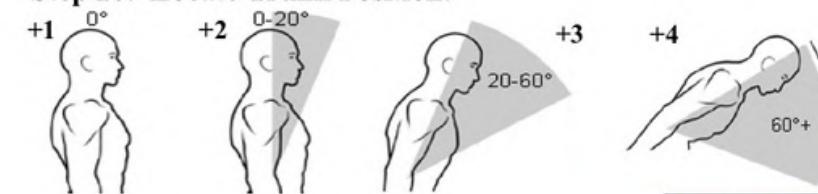


+2  
Neck Score

Step 9a: Adjust...

- If neck is twisted: +1
- If neck is side bending: +1

##### Step 10: Locate Trunk Position:



+2  
Trunk Score

Step 10a: Adjust...

- If trunk is twisted: +1
- If trunk is side bending: +1

##### Step 11: Legs:

- If legs and feet are supported: +1
- If not: +2

+1  
Leg Score

##### Table B: Trunk Posture Score

| Neck Posture Score | 1    | 2    | 3    | 4    | 5    | 6    |
|--------------------|------|------|------|------|------|------|
|                    | Legs | Legs | Legs | Legs | Legs | Legs |
| 1                  | 1    | 2    | 1    | 2    | 1    | 2    |
| 2                  | 2    | 3    | 2    | 3    | 4    | 5    |
| 3                  | 3    | 3    | 3    | 4    | 4    | 5    |
| 4                  | 5    | 5    | 5    | 6    | 6    | 7    |
| 5                  | 7    | 7    | 7    | 7    | 8    | 8    |
| 6                  | 8    | 8    | 8    | 8    | 8    | 9    |

Posture Score B  
+

##### Step 12: Look-up Posture Score in Table B:

Using values from steps 9-11 above, locate score in Table B

##### Step 13: Add Muscle Use Score

- If posture mainly static (i.e. held>10 minutes), Or if action repeated occurs 4X per minute: +1

+

##### Muscle Use Score

##### Step 14: Add Force/Load Score

- If load < .4.4 lbs (intermittent): +0
- If load 4.4 to 22 lbs (intermittent): +1
- If load 4.4 to 22 lbs (static or repeated): +2
- If more than 22 lbs or repeated or shocks: +3

—  
Force/Load Score

##### Step 15: Find Column in Table C

Add values from steps 12-14 to obtain Neck, Trunk and Leg Score. Find Column in Table C.

—  
Neck, Trunk & Leg Score

#### Scoring: (final score from Table C)

- 1 or 2 = acceptable posture
- 3 or 4 = further investigation, change may be needed
- 5 or 6 = further investigation, change soon
- 7 = investigate and implement change

2  
Final Score

Task name: \_\_\_\_\_ Reviewer: \_\_\_\_\_ Date: / /

This tool is provided without warranty. The author has provided this tool as a simple means for applying the concepts provided in RULA.

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rarker@ergosmart.com (816) 444-1667

# REBA SHEET

RESULT: LOW RISK

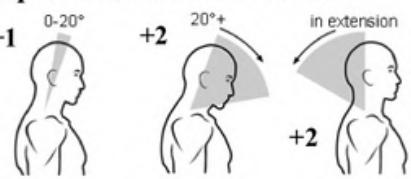


## REBA Employee Assessment Worksheet

based on Technical note: Rapid Entire Body Assessment (REBA), Hignett, McAtamney, Applied Ergonomics 31 (2000) 201-205

### A. Neck, Trunk and Leg Analysis

#### Step 1: Locate Neck Position



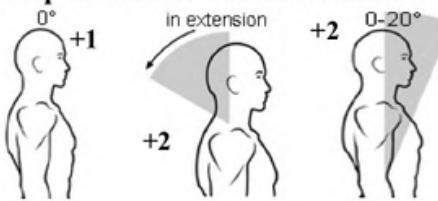
Step 1a: Adjust...

If neck is twisted: +1

If neck is side bending: +1

+1  
Neck Score

#### Step 2: Locate Trunk Position



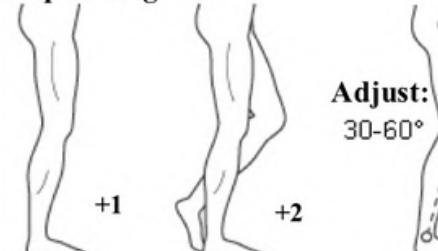
Step 2a: Adjust...

If trunk is twisted: +1

If trunk is side bending: +1

+1  
Trunk Score

#### Step 3: Legs



+1  
Leg Score

#### Step 4: Look-up Posture Score in Table A

Using values from steps 1-3 above, locate score in Table A

+1  
Posture Score A

#### Step 5: Add Force/Load Score

If load < 11 lbs : +0

If load 11 to 22 lbs : +1

If load > 22 lbs: +2

Adjust: If shock or rapid build up of force: add +1

+1  
Force/Load Score

#### Step 6: Score A, Find Row in Table C

Add values from steps 4 & 5 to obtain Score A.  
Find Row in Table C.

=  
Score A

#### Scoring:

1 = negligible risk

2 or 3 = low risk, change may be needed

4 to 7 = medium risk, further investigation, change soon

8 to 10 = high risk, investigate and implement change

11+ = very high risk, implement change

### SCORES

|      |         | Neck    |         |         |
|------|---------|---------|---------|---------|
|      |         | 1       | 2       | 3       |
| Legs | 1       | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 |
|      | 2       | 2 3 4 5 | 3 4 5 6 | 4 5 6 7 |
| 3    | 2 4 5 6 | 4 5 6 7 | 5 6 7 8 | 6 7 8 9 |
| 4    | 3 5 6 7 | 5 6 7 8 | 6 7 8 9 | 7 8 9 9 |
| 5    | 4 6 7 8 | 6 7 8 9 | 7 8 9 9 | 8 9 9 9 |

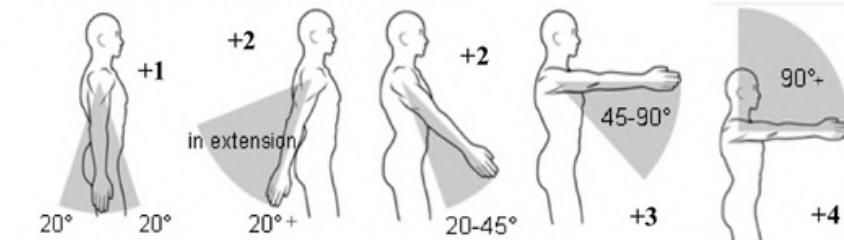
|       |       | Lower Arm |       |  |
|-------|-------|-----------|-------|--|
|       |       | 1         | 2     |  |
| Wrist | 1     | 1 2 2     | 1 2 3 |  |
|       | 2     | 1 2 3     | 2 3 4 |  |
| 3     | 3 4 5 | 4 5 5     | 5 5 5 |  |
| 4     | 4 5 5 | 5 6 7     | 6 7 8 |  |
| 5     | 5 6 7 | 7 8 7     | 8 8 8 |  |
| 6     | 6 7 8 | 8 9 8     | 9 9 9 |  |

|                                                            |    | Table C                                  |     |     |     |     |     |     |     |     |     |     |  |
|------------------------------------------------------------|----|------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
|                                                            |    | Score B, (table B value +coupling score) |     |     |     |     |     |     |     |     |     |     |  |
| Score A<br>(score from<br>table A<br>+load/force<br>score) | 1  | 2                                        | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  |  |
|                                                            | 1  | 1 1                                      | 1 2 | 3 4 | 3 4 | 3 4 | 5 6 | 5 6 | 6 7 | 7 7 | 7 7 | 7 7 |  |
| 2                                                          | 1  | 2                                        | 2   | 3   | 4   | 4   | 5   | 6   | 6   | 7   | 7   | 8   |  |
| 3                                                          | 2  | 3                                        | 3   | 3   | 4   | 5   | 6   | 7   | 7   | 8   | 8   | 8   |  |
| 4                                                          | 3  | 4                                        | 4   | 4   | 5   | 6   | 7   | 8   | 8   | 9   | 9   | 9   |  |
| 5                                                          | 4  | 4                                        | 4   | 5   | 6   | 7   | 8   | 8   | 9   | 9   | 9   | 9   |  |
| 6                                                          | 6  | 6                                        | 6   | 7   | 8   | 8   | 9   | 9   | 10  | 10  | 10  | 10  |  |
| 7                                                          | 7  | 7                                        | 7   | 8   | 9   | 9   | 9   | 10  | 10  | 11  | 11  | 11  |  |
| 8                                                          | 8  | 8                                        | 8   | 9   | 10  | 10  | 10  | 10  | 10  | 11  | 11  | 11  |  |
| 9                                                          | 9  | 9                                        | 9   | 10  | 10  | 10  | 11  | 11  | 11  | 12  | 12  | 12  |  |
| 10                                                         | 10 | 10                                       | 10  | 11  | 11  | 11  | 11  | 12  | 12  | 12  | 12  | 12  |  |
| 11                                                         | 11 | 11                                       | 11  | 11  | 12  | 12  | 12  | 12  | 12  | 12  | 12  | 12  |  |
| 12                                                         | 12 | 12                                       | 12  | 12  | 12  | 12  | 12  | 12  | 12  | 12  | 12  | 12  |  |

+1      +1      +1  
Table C Score      Activity Score  
Final REBA Score

### B. Arm and Wrist Analysis

#### Step 7: Locate Upper Arm Position:



Step 7a: Adjust...

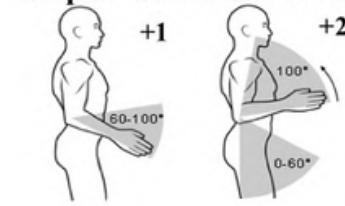
If shoulder is raised: +1

If upper arm is abducted: +1

If arm is supported or person is leaning: -1

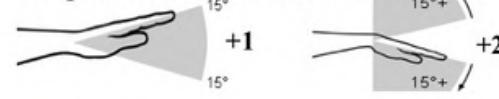
+1  
Upper Arm Score

#### Step 8: Locate Lower Arm Position:



+2  
Lower Arm Score

#### Step 9: Locate Wrist Position:



+2  
Wrist Score

Step 9a: Adjust...  
If wrist is bent from midline or twisted : Add +1

#### Step 10: Look-up Posture Score in Table B

Using values from steps 7-9 above, locate score in Table B

+2  
Posture Score B

+  
+2  
Coupling Score  
=

+2  
Score B

#### Step 13: Activity Score

+1 1 or more body parts are held for longer than 1 minute (static)

+1 Repeated small range actions (more than 4x per minute)

+1 Action causes rapid large range changes in postures or unstable base

Task name: \_\_\_\_\_ Reviewer: \_\_\_\_\_ Date: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

This tool is provided without warranty. The author has provided this tool as a simple means for applying the concepts provided in REBA.

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# COST ANALYSIS

| S NO. | MATERIAL                               | COST OF MATERIAL.                          | COST OF MATERIAL. USED |
|-------|----------------------------------------|--------------------------------------------|------------------------|
| 1..   | JAPANESE CYPRUS                        | RS 1850 / 100 CUBIC FEER                   | RS 2775                |
| 2..   | MICA                                   | RS 650 PER SHEET                           | RS 975                 |
| 3..   | POLISH                                 | RS 400 PER BOTTLE                          | RS 400                 |
| 4..   | METAL<br>( NAILS AND ADJOINING HINGES) | RS 20 PER 100 GRAM NAILS<br>HINGES- RS 450 | RS 470                 |

PRODUCT PRICE: RS 2880