industrial design portfolio

ADYA MANIMURUGAN

PRODUCT DESIGN

FURNITURE

UX RESEARCH

STORYTELLING

Contents.

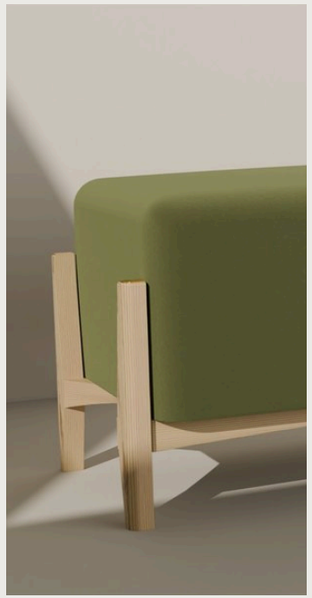
01



Hose Reel Cart

PRODUCT DESIGN
STUDIO PROJECT

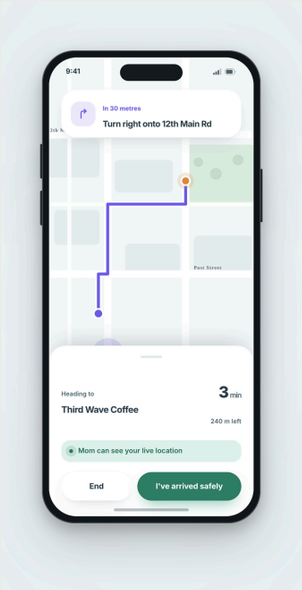
02



Magari Benches

FURNITURE DESIGN
INTERNSHIP AT MAGARI

03



Sasha

UX RESEARCH
INTERACTION DESIGN

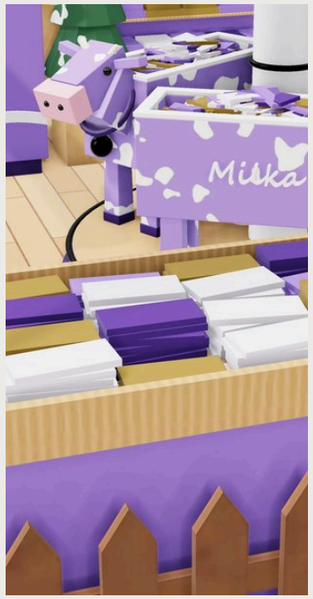
04



Toy Truck

INJECTION MOULDING
GROUP PROJECT

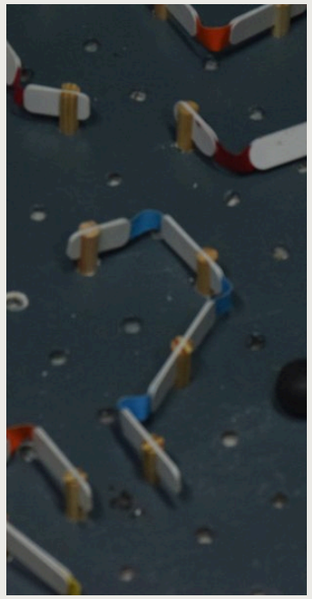
05



Milka

VISUAL MERCHANDISING
GROUP PROJECT

06



Maze

TOY & GAME DESIGN
PLAYFUL INTERACTION

07



Spours

BIOMIMICRY
BATHROOM COLLECTION

On Instagram, @adya_manimurugan

Content creation

I'm an industrial designer first. On Instagram I just do what every designer does: look a little deeper at everyday things. Turns out a lot of people wanted to look too.

39.7K
people looking closer with me, since January 2026

1.1M
views on a single reel. Day 21, the measuring tape ↗

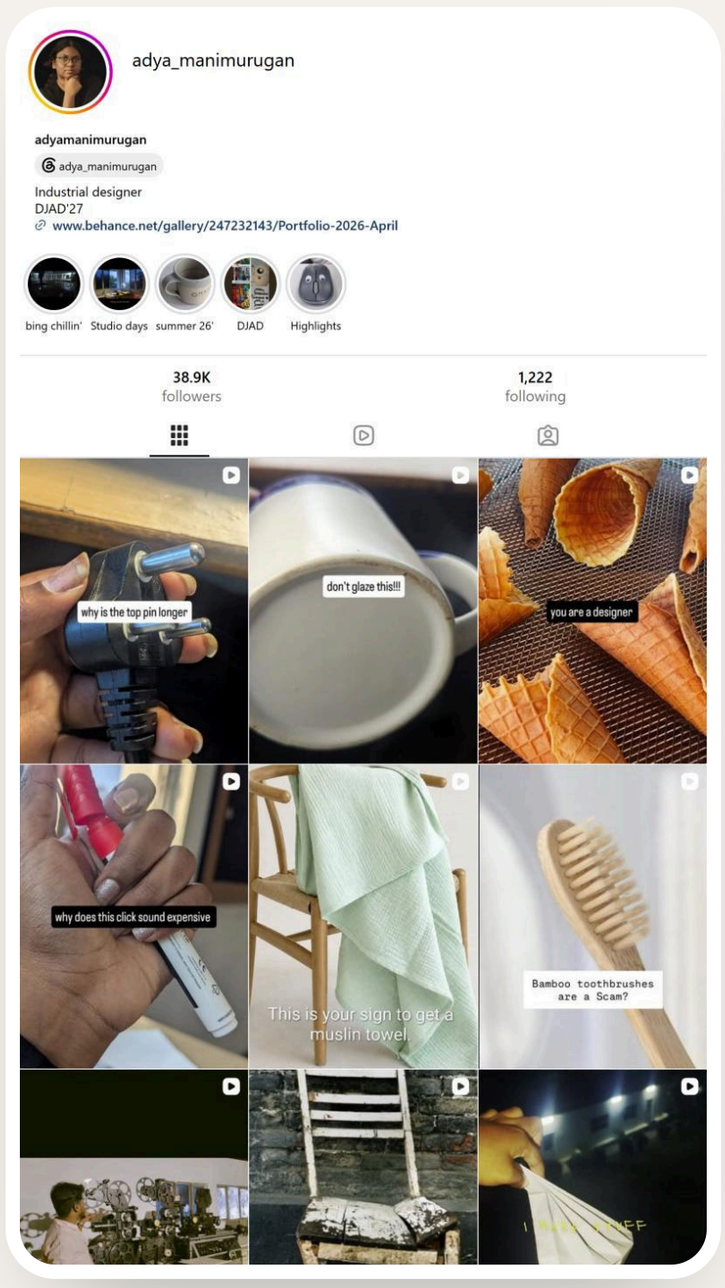
4.67M
views in the first 90 days

2.07M
accounts reached

90K+
profile visits

Featured series

The Intent Series: 21 everyday objects, one simple question each. Why is it made this way?



About

I question everything: how things are made, and how they could be better. Design is in everything, and every product has a story. I find it, build it, and tell it.

SOFTWARE

Rhino

KeyShot

Fusion 360

Illustrator

InDesign

Photoshop

HANDS ON

Sketching

Woodworking

Prototyping

Metal fabrication

COMMUNICATION

Writing

Storytelling

Content creation

EMAIL

adyamanimurugan@outlook.com

INSTAGRAM

@adya_manimurugan

PHONE

+91 80988 80044

Education & Experience

DJ ACADEMY OF DESIGN
Bachelor's in Industrial Design

2023 – Present

MAGARI, BANGALORE
Furniture design internship

Summer 2026

CONTENT CREATION
Instagram · 4.67M views

2026 – Present

MENTORED BY
Sajith Gopinath, Vatsal Shah, Ajith Kumar, Dinesh Kumar N, Rahul Ajmera, Jenny Andrews

Studio projects

Values

Look closer
Make it by hand
Tell the story

Hose Reel Cart.

A one-wheel cart that carries 30 metres of garden hose, pays it out as you walk, and winds it back with a spin of the drum.

DISCIPLINE
Product design
Studio project

TIMELINE
3 weeks

MENTORED BY
Dinesh Kumar N

01 Research — On the grounds, with the gardeners
02 Define — The walk is the work
03 Ideate — Thirty sketches, one question
04 Develop — One pipe, four jobs
05 Prototype — Walk it loaded

Research

On large grounds, thirty metres of hose is still moved entirely by hand. I watched the gardeners at work: four kinds of effort, every day, for one hose.

CARRIED

DRAGGED

WOUND BY HAND

LEFT ON THE SOIL

Define

What the site allowed, and what any answer had to respect.

Weak taps
Water comes from roof tanks, so nothing can rely on pressure.

Heaviest when full
A full hose weighs several times an empty one, and it is full when it has to move.

Three grounds
Grass, loose sand and paving, plus kerbs. Small castors sink, so the wheel is large.

Four people
Gardener, supervisor, purchaser and plumber all touch the same hose.

Existing products make the hose better, or its storage better. None of them make the walk better, and the walk is most of the work.

Ideate

One question drove every page: **"How can I effortlessly move this on uneven terrain?"**

The first sketch and the first barrow: the two that carried through to the final cart.

Rejected

Two directions that didn't make it, and why.

TWIN-DRUM TROLLEY: FAR TOO BIG TO PUSH OR STORE

AIRPORT-TROLLEY RING: NOWHERE FOR THE HOSE TO SIT

Develop

No crank
Ridged HDPE rings on both drum flanges. Spin from either side, with either hand.

One pipe, four jobs
Each Ø32 rail carries the wheel, arches over the axle, stands as a foot and ends in the grip.

Water through the axle
A brass swivel on a hollow stainless axle, so the hose works unwound, half out or fully out.

Small details
A drum brake, a dock that wipes sand off as it winds, and a foot stop for slopes.

FROM THE GRIP END

EXPLODED

WATER IN THROUGH THE AXLE

Ø340 WHEEL, WIDE FOR SAND

Three small parts

Three small parts that decide whether it is usable.

Drum brake
A sprung friction plate holds the drum so it cannot over-run and spill hose when you pull hard.

Hose dock
The nozzle parks in a fixed block. Two rubber lips wipe sand off the hose as it winds back in.

Wheel stop
Pressed down with a foot. It keeps the cart where it was put, including on a slope.

Dimensions

Narrow enough for a garden gate, low enough to push with straight arms.

ALL DIMENSIONS IN MILLIMETRES.

Materials and finishes.

Satin black powder coat
FRAME RAILS, PLATES, DROPOUTS
Steel tube Ø32 × 2.5; one bent pipe each side

Off-white powder coat
DRUM FLANGES, WHEEL RIM
2 mm steel sheet with a pressed stiffening bead

Stainless steel 304
AXLE, CARRY TUBE, FACE PLATE
Wet all day, so nothing that rusts near the water path

Brass
SWIVEL, SIDE PORT, OUTLET COUPLING
Bought swivel: water reaches the hose while the drum turns

Warm grey HDPE / TPE
GRIPS, GRIP RINGS
Soft where the hand is, hard where it wears

Orange PA / ABS
DRAG KNOB, OUTLET COLLAR
The two things you touch to control the water: easy to find

PVC, 4-layer
HOSE
30 m × 1 in internal diameter

Rubber, PU, EPDM
TREAD, FOOT SLEEVES, WIPERS
Grip on wet paving; wipers scrape sand off as it winds

How it works

The questions people asked first, answered by the parts.

How does water reach the hose while the drum turns?

- A bought brass hose-reel swivel sits on the end of the hollow SS 304 axle (Ø40 × 5, with a bore plug).
- Water enters through the side port pipe, runs down the axle, and leaves through the outlet coupling with its orange collar.
- So the hose can be used fully wound, half out or fully out.

How is it wound back without a crank?

- Both drum flanges carry a ridged HDPE grip ring in four segments.
- You spin the drum by hand, from either side, with either hand.

What stops the drum running away?

- A drum brake: SS 304 wear disc, composite or leather friction washer, a keyed pressure plate and a music-wire spring.
- The orange Ø70 drag knob sets how hard it bites; a PTFE washer keeps it smooth.

What keeps it still on a slope?

- A foot-operated wheel stop: lever, shoe, pin, spring and pedal, in steel with an EPDM shoe.
- Both feet end in PU sleeves (90 Shore A), so it doesn't skate on paving.

How does sand stay off the hose?

- The hose leaves through an HDPE fairlead dock with two wiper lips, coarse and fine, in EPDM or nitrile.
- As it winds back, the lips scrape the sand off before it reaches the drum.

What is bought, and what is made?

- Bought: two UCFL208 flanged bearing units, the brass swivel, the Ø340 × 100 wheel, and the M14, M16 and M20 fasteners.
- Made: the two bent Ø32 rails, the 2 mm pressed flanges, the 16 Ø16 core rods that form the drum, and the plates.

Prototype

Built by hand in the workshop to test the idea at full scale. It carries the full coil, one person walks it loaded, walking pays the hose out, and turning the drum winds it back.

"None of them make the walk better, and the walk is most of the work."

Magari Benches.

A two-month summer internship at Magari, Bangalore. Elden and Marlow are two of the pieces I designed there: dining benches taken from the first Post-it to joinery a workshop can build.

DISCIPLINE

Furniture design
Internship at Magari

TIMELINE

2 months, summer internship

01 **Brief** — A generic bench, not a boring one

02 **Directions** — Post-its on a cork board

03 **Sketch** — Profiles and the leg-to-seat junction

04 **Model** — Two benches in CAD

05 **Detail** — Joinery, seat box, upholstery build-up

06 **Finish** — Ash, wool and brass

The brief

"A generic bench may not be a boring one. What makes a Magari bench is in the details." A dining bench has to seat two or three people, slide under a table, take daily knocks, and still look calm. So the design is in the leg, the joint and the seam.

Directions

Quick directions first, one idea to a Post-it, so nothing got precious too early.

Sketches

Elevations to find the profile, then perspective studies of the one place a bench is judged up close: where the leg meets the seat.

These were further developed into models.

Elden

Paired leg units hold the seat between them like a frame holds a picture. A long curved arm runs between the units and carries the load; a brass cap finishes each leg top.

480 — MM TO THE CROWN

32 × 50 — MM SOLID ASH LEG

705 — MM LONG ARM

5 — PIECES, KNOCK-DOWN

ELDEN, IN MOSS WOOL AND ASH.

FRONT ELEVATION.

LEG UNIT AND BRASS CAP.

Elden: principal dimensions

All dimensions in millimetres. Heights measured from finished floor.

Elden: how it comes together

Eight steps, bottom up. Nothing in steps 1 to 6 is visible on the finished bench.

Marlow

A soft, rounded seat that the legs tuck into rather than sit under. The upholstery is built over plywood ribs on a glued frame, and the seam is piped so the rounded ends stay crisp.

75 × 75 — MM SOLID ASH LEG BLANK

5 — MM TUCK GAP AT EACH LEG

10 — PLYWOOD RIBS INSIDE

10 × 70 — MM TENONS, RAILS INTO LEGS

MARLOW, IN TERRACOTTA WOOL AND ASH.

THE TUCK AT THE LEG.

Marlow: principal dimensions

All dimensions in millimetres. Heights measured from the underside of the feet.

Plan outline taken from the model: gently bowed sides, shallow arched ends, legs set into the corners. Legs 70 × 70 at the top, tapering to about 41 at the foot, cut from a 75 × 75 × 400 blank.

Marlow: how it comes together

Eight steps, bottom up. Unlike Elden this one is glued: the frame and the upholstery are built as one.

Materials and finishes.

Solid ash, oiled
LEGS, ARMS, FRAMES
Pale, straight-grained and strong in thin sections; a hard-wax oil keeps it light

Moss wool
ELDEN SEAT
A dense wool with a soft hand; earthy against the pale ash

Terracotta wool
MARLOW SEAT AND PIPING
Warm and forgiving of daily use; the piping is one shade deeper

Brushed brass
ELDEN LEG CAPS
A small, precise detail where the eye lands first

Birch ply 15 / 18 mm
HIDDEN SEAT BOX, RIBS
Stable and screw-holding, never seen

Beech
LOOSE TENONS
Hard enough to carry the joints

HR40 / HD35 / HD30 foam
SEAT BUILD-UP
Firm at the base, softer at the top

PTFE glides
UNDER EACH LEG
So the bench slides without marking the floor

> "A generic bench may not be a boring one. What makes a Magari bench is in the details."

MAGARI, SUMMER INTERNSHIP 2026

UX CASE STUDY · SAFETY · MOBILE

Sasha.

A safety companion for women travelling alone, designed for the uneasy minutes before anything goes wrong.

ROLE
UX research
Interaction design

TIMELINE
2 weeks

MENTOR
Rahul Ajmera

OUTPUT
3 personas, a journey map, a 15-screen clickable prototype

THE PROBLEM
Staying safe costs women attention, time and money on every trip. Every safety app waits for the emergency.

THE RESPONSE
Sasha works in the long, uneasy window before it: verified safe havens nearby, a guided route her circle can see, and a call that needs no screen.

01 Discover
02 Define
03 Reframe
04 Design
05 Prototype

Discover

Interviews with women who travel alone

"Travelling alone as a woman often means you can't just relax like everyone else. You have to constantly watch your surroundings, guess how locals will treat you, and worry about getting stuck in unsafe areas."

INTERVIEW PARTICIPANT

That sentence became the brief. The problem is not a lack of emergency tools. It is what staying safe costs on every trip, what one participant called the safety tax.

I spoke with women aged 18 to 25 who travel often, from last-minute day trips to solo adventures, chosen for different travel styles so the findings would not describe one kind of traveller.

FRIGHTENED — CONFIDENT

Kavya
STUDENT
Wants to travel alone but is frightened. Knows harassment happens and feels current tools are not enough.

Meera
CREATIVE PROFESSIONAL
Wants a movie-like sense of freedom. Held back by family worry and by basic problems, dirty washrooms and bad stays, that break the mood.

Veda
EXPERIENCED TRAVELLER
Organised and well prepared. Accepts the risk, but resents how much daily work managing it takes.

Three points on one spectrum of confidence. All three want the same thing: to stop managing risk.

Define

Fifteen insights, three personas, one journey

05 — Parents feel at peace when they know where their daughter is.

06 — The moment the phone dies, anxiety spikes and parents call to check up.

10 — A "Bus Anna" or a fellow passenger often looks out for solo women.

11 — Being followed turns the trip into risk management instead of exploration.

12 — Women don't want to be micromanaged. They want to feel like their own person.

13 — Travel costs women extra time, effort and money just to feel safe.

14 — Every small choice, where to sit, which café, is a quick safety test.

15 — Women prefer travelling with the crowd.

A safety app easily becomes a surveillance app for the parent, so every feature had to pass one test:

does this make her feel watched, or covered?

Five phases of a solo trip

Spark and planning
INSPIRED, OVERWHELMED
OPPORTUNITY
A women-vetted directory

Preparation and departure
PREPARED, ANXIOUS
OPPORTUNITY
Automatic, passive check-ins

In transit, micro-choices
ALERT, HYPER-VIGILANT
OPPORTUNITY
A women-rated map of safe spaces

On-the-ground risk
DEFENSIVE, THREATENED
OPPORTUNITY
A discreet "unsafe" trigger

Arrival and reflection
RELIEVED, EMPOWERED
OPPORTUNITY
Community routes and safety logging

Reframe

Where every safety app arrives too late

Something feels wrong — Something is definitely wrong — Something happens

Sasha works here — Safety apps act here

The gap between the first two beats is long: minutes, sometimes much more. The gap between the last two is almost nothing. Every safety product acts at the right-hand end, after the useful window has closed.

How might we

make a woman travelling alone feel covered, not watched, in the uneasy minutes before anything has gone wrong?

i
Covered, not watched
Her circle sees a live journey, never a history. Location history stays on her phone.

ii
Calm, not alarming
No red, no sirens, no panic styling, so it is safe to open in public.

iii
Before the emergency
The main action is "walk me somewhere safe", not "call the police".

Design

Two sides of one relationship: the woman travelling, and the one person watching over her

GETTING IN

A first name, an age and a role. Nothing else.

Every extra field is a reason to abandon a safety app before it has protected anyone. Each permission says why, in plain words, and states the limit: "Your circle only sees a live journey, never a log of where you have been."

SPLASH — SIGN IN — PROFILE AND ROLE — PERMISSIONS, WITH LIMITS

FOR HER

Safe havens on a map, not in a list.

A list makes her read; a map shows which way is safe at a glance (insight 14). Each haven says why it is safe, in the interviewees' words: staffed round the clock, CCTV, well lit. A guided route names exactly who can see her, and arrival closes the loop so nobody has to call (insight 6).

HER CIRCLE — HAVENS NEARBY — GUIDED ROUTE — ARRIVED SAFELY

THE DISCREET TRIGGER

Three presses. No screen.

Three presses of the side button within 1.8 seconds call her circle. No unlocking, nothing on screen for a stranger to see, and ordinary phone use can't set it off. It is the only feature that works when she can't safely look at her phone.

WHAT SHE SEES — WHAT HER PROTECTOR RECEIVES

FOR HER CIRCLE

Enough to stop worrying. Nothing more.

Battery, last check-in and whether a journey is running (insights 5 and 12). When she calls, her protector can route her to a verified haven while staying on the line: the "Bus Anna" of insight 10, as a named person she can rely on.

WHO YOU WATCH — PROTECTOR HOME — GUIDING HER IN — ARRIVAL VERIFIED

Decisions worth defending

Violet, not red — Red reads as emergency and frames her as a victim before anything has happened.

No on-screen SOS — A button you have to find, unlock and tap is useless in the moment it is for.

The protector sees little — More data would look impressive, and would break insight 12.

The watcher is named — "Mom can see your live location", not "sharing is on": concrete and consensual.

Design system

One palette, one typeface, one set of components across fifteen screens. The map is drawn in the same palette, so it belongs to the product.

Aa
Figtree
400 · 500 · 600 · 700 · 800

Primary	Safe	Haven	Ink	Surface
#6C5CE7	#2E7D64	#DE8B3C	#2C3E49	#E9F1F2
Actions and the route line	Live status and arrival	Verified safe places	All primary text	Page background

Reflection

The research gave me a product the moment I stopped reading it as a list of fears and started reading it as a timeline. Fifteen insights don't tell you what to build; noticing that fourteen of them happen before the emergency does.

The hardest part was restraint. Nearly every feature I wanted to add made her more watched. "Covered, not watched" was easy to write and hard to keep.

Covered, not watched.

Toy Truck.

A toy truck designed for injection moulding: every part shaped, joined and finished the way a factory would make it.



DISCIPLINE
Injection moulding
Group project

TIMELINE
2 weeks

MENTORED BY
Ajith Kumar

01 **Brief**
A toy a factory could make

02 **Ideate**
Sketched and sized at 200 mm

03 **Part design**
Walls, drafts, bosses

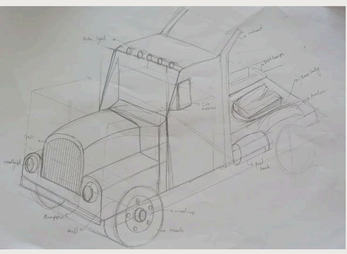
04 **Material**
ABS and SAN

05 **Assembly**
Screws, heat seal, ultrasonic weld

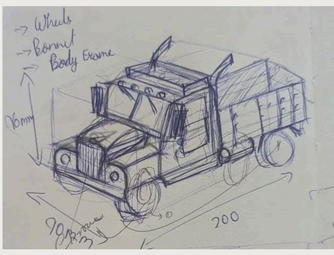
06 **Final**
Rendered in KeyShot

Ideation

First sketches, then the parts named and the whole truck sized at 200 mm.



PARTS LABELLED.



SIZED AT 200 MM.

A closer look

Designed for injection moulding, part by part. ABS for the body, base and wheels; SAN for the windscreen.



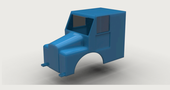
WHEELS, ABS, CHROME-PLATED CAPS.



BASE, ABS, MATTE BLACK.



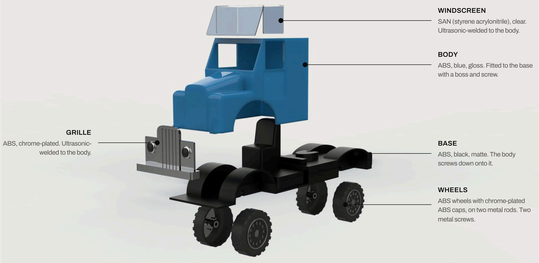
GRILLE, ABS, CHROME-PLATED.



BODY, ABS, GLOSS BLUE.

Material and assembly

Every part, what it is moulded in, and how it is held. Nothing is glued: the grille and the windscreen are welded on, the body screws down, the wheels ride on rods.



Designed for the mould

Draft on every wall
Walls are drafted along the direction the tool opens, so each part releases cleanly.

Side cores
Where a part has undercuts, the mould uses side cores instead of splitting the part.

No visible fixings
Ultrasonic welds for the grille and windscreen; a boss and screw for the body, hidden under the base.

One finish per part
Gloss blue, matte black, chrome: each finish is moulded or plated, never painted on.

> “Design the part for the mould, and the toy follows.”

VISUAL MERCHANDISING · GROUP PROJECT

Milka.

A Christmas pop-up store for Milka's 125th birthday at Mall of Asia, Bangalore, in an 18 × 18 ft space, 8 ft high. Designed in a team of six for families with children and for adults who want a comforting treat, built in 3D and as a scale model.

DISCIPLINE	SPACE	TEAM	TIMELINE	MENTORED BY
Visual merchandising Group project	18 × 18 ft, 8 ft high	Six, every stage shared	3 weeks	Jenny Andrews

01 **Concept** — A birthday party for Lila
02 **Precedents** — Pop-ups and the elements of VM
03 **Space plan** — Zones and the visitor's path
04 **3D model** — Every piece in Blender
05 **Scale model** — Foam board, to scale
06 **Colour** — A Milka Christmas in the Alps

A birthday party for Lila the cow

The store is a Christmas birthday party for Lila, Milka's cow. A cow carousel holds the merchandise, Alpine carts sell the chocolate, and a Lila photo booth lets people take a picture home.

The brief

Three things pulled against each other in one small square.

18 × 18 ft, 8 ft high
Shelves, carts, a carousel, a photo booth and billing, with room left for families to move.

Christmas, in Milka's colours
It had to feel Christmassy without leaving the brand's lilac, white and chocolate.

Never flat
A small store can read as one wall of product. It needed layers the eye could travel through.

Precedents

We studied existing pop-ups and brand installations, followed the elements of visual merchandising, and placed Milka in its market: accessible premium, between everyday chocolate and luxury.

POP-UPS AND INSTALLATIONS STUDIED.

WHERE MILKA SITS: ACCESSIBLE PREMIUM.

Sketches

We planned the space first, then each piece in it.

THE LAYOUT, THE ENTRANCE GATE AND THE SHELF CARTS.

Floor plan

Every measurement, each zone in colour, and the path a visitor takes: in through the gate, around the carousel, past the shelves and carts to the photo booth, and out past billing.

Visual hierarchy

Three heights so the eye always has somewhere to go: the striped carousel canopy is the tallest point, at the centre; the arched photo booth and the Alpine backdrop hold the back wall; the carts and the counter sit low, where hands reach. Christmas comes through in the pine trees, the snow and the canopy stripes, all in Milka's own colours.

3D model

Our sketches became a 3D model in Blender: the gate, the carousel, the carts and the booth. Drag to walk around the store, pinch or scroll to zoom.

Scale model

A foam board model built to scale, so the sizes feel real.

Colour

A Milka Christmas in the Alps: the brand's lilac, its chocolate, its mountains and snow.

Milka lilac	Chocolate	Alpine sage	Snow
#A586CD	#9E6C4A	#4B8159	#FFFFFF
How people spot Milka from across a mall.	The browns of the chocolate, in the carts and fences.	The Alps, in the pine trees.	Snow on the peaks and the striped canopy.

> "A store you can walk around in 3D before it exists, and a model you can hold."

MILKA POP-UP · TEAM: ADYA, AMBIKA, KEERTHANA, SRESHTA, DEVIKA AND SHRADDHA

TOY & GAME DESIGN · PLAYFUL INTERACTION

Maze.

A customisable maze inspired by the humble paper clip.
The player builds the walls first, then finds the way out.

DISCIPLINE
Toy & game design
Playful interaction

TIMELINE
15 days

MENTORED BY
Sajith Gopinath

The paper clip

The brief: choose an everyday product, empathise with it, and turn it into a toy, game or playful object. I took one of the most overlooked masterpieces, the paper clip, and deconstructed its DNA: its bends, its angles, the way it holds. Bent by hand, it became a vocabulary of wall pieces: the U, the V, the hook and the zig-zag.

Who it is for

Players aged 14 to 18. Adolescence is a transition from childhood to adulthood: identity, independence, peer influence, testing what you can do, all at once.

The gap

Most games are passive. The player follows a path someone else designed.

What this age wants

Control, and something they made themselves to show their friends.

Design question

How might the player become the architect of the challenge, not just the one solving it?

Making it

A pegged plywood board with clip-shaped wall pieces that slot in anywhere. Dowels cut on the bandsaw, walls cut, sanded and colour-coded, the board drilled on a grid and painted.

Playing it

Players build the walls, set the traps, then find the way out. Building the maze teaches how to structure a challenge; solving it builds the patience and clarity to navigate any mess, and to see new paths where others see dead ends.

> “Most games hand you a path. This one hands you the walls.”

DESIGN INTENT · TOY & GAME DESIGN

BIOMIMICRY · BATHROOM COLLECTION

Spours.

A towel, soap and ring tray inspired by the organic layers of the Turkey Tail mushroom, reimagining traditional Madhubani art with a sleek, contemporary aesthetic.

DISCIPLINE
Biomimicry
Bathroom collection

TIMELINE
3 weeks

MENTORED BY
Vatsal Shah

01 Brief — Indian craft × the forest
02 Craft study — Madhubani
03 Nature study — The Turkey Tail mushroom
04 Synthesis — Layers and colour
05 Context — Why the bathroom
06 Form — Clay mockups to final

The chosen craft: Madhubani

Defined by intricate Kachni (hatching) and Bharni (filling) styles that leave virtually no empty space. Rhythmic, hand-drawn lines turn flat surfaces into detailed visual narratives.

The forest element

The Turkey Tail mushroom's thin, fan-shaped layers become a stacked structural system, and its concentric colour bands and alternating "hairy and smooth" textures become a tactile experience in earthy tones.

Finding the common ground

Madhubani and the Turkey Tail share a DNA of vibrant colour and layered texture. Merging folk pattern with organic, fan-shaped form creates something both visually rich and highly tactile.

From forest damp to bathroom sanctuary

Inspired by the mushroom's ability to thrive in moisture, the pieces are engineered for damp environments, making the bathroom the natural home for the collection.

Clay mockups

Form studies in clay before committing to the final pieces.

"A collection that bridges folk art and fungi through their shared language of colour and layers."

SPOURS · TOWEL TRAY, RING TRAY & SOAP TRAY

Let’s talk

Email	adyamanimurugan@outlook.com
Instagram	@adya_manimurugan
Phone	+91 80988 80044