

Calibrating Social Interactions: Elderly x Children



**PLEASE OPEN THIS FILE
USING ADOBE INTERACTIVE,
THANK YOU SO MUCH!**

Calibrating Social Interactions:

**Between the elderly and children in a
neighbourhood**

By Chua See Woon, Mariel

National University of Singapore
Bachelor of Arts Industrial Design
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Guided by Donn Koh

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01 Hello

Introduction

Personal Motivation

Questions, Questions, Questions



PERSONAL MOTIVATION

Like many Singaporeans, I grew up in the HDB heartlands. My first few friends were actually ones I made at the playground!

As children, we were so spontaneous in making new friends. We would go around asking, “*Want to play catching¹?*” and suddenly, we would all be friends. Growing up in such an environment has helped me define that true sense of neighbourliness - to know someone and be known.

I remember, as we played we would run past a lone elderly resting under the void deck. Most of the time, it would just be the same *ah ma²*, who sits there everyday.

Observing that as a child, was what carried my thesis. The mental image of the lone elderly was stuck with me.

QUESTIONS, QUESTIONS, QUESTIONS

Why are we sharing a space but not sharing a moment?

How could we have allowed each other to be seen; and directing our attention to each other?

By recognising each other’s presence, perhaps it could have created a deeper sense of neighbourliness between us.

I wondered if more can be done to instill a deeper sense of social inclusion for the elderly among us.

Perhaps tapping on the openness of children?

¹ The Singaporean version of a game of tag

² An endearing colloquial way of addressing an elderly lady



02 Many Sandboxes

Research

Benchmarking

Understanding Existing Solutions

Social Initiatives of Ageing in Place



Few of the many initiatives that aim to solve elderly loneliness. There is a **growing trend towards social inclusion of the elderly within their communities**. More so, with initiatives that bring the different generations together.

BENCHMARKING

Co-location

Large Scale



Kampung Admiralty



3G Playgrounds



Tampines Hub



Senior Wellness Centres



Inter-Gen Playground

Intersecting

Interacting



Novel Void Deck Kitchen



#ForgetMeNot



Neighbours for Active Living



School Inter-gen Progs



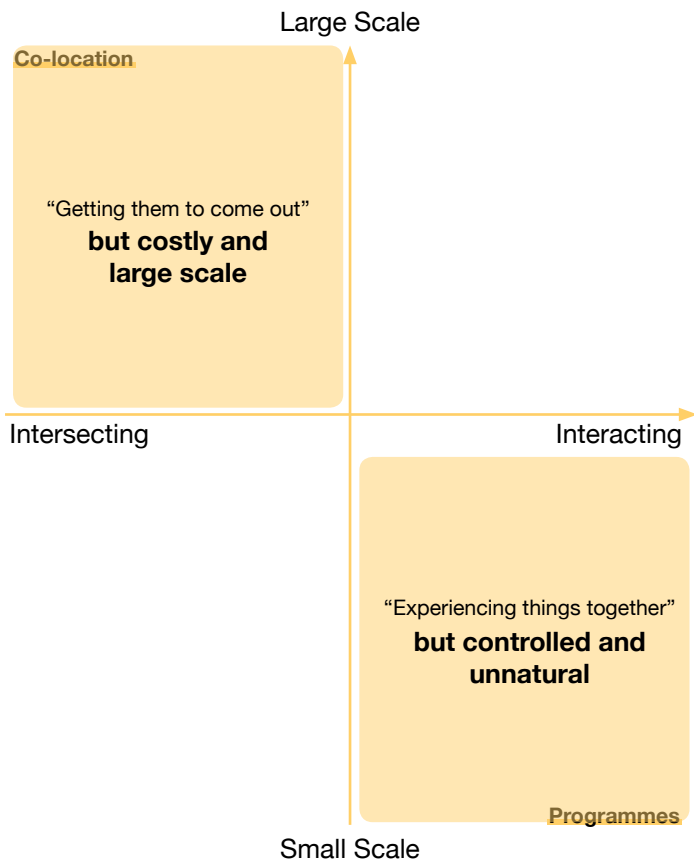
Pairing Progs

Programmes

Small Scale

The trend highlights two main movements by the government. The first, focusing on **co-location of intergenerational amenities**. The second, programmes that enforces **activities for the elderly in their communities**.

UNDERSTANDING EXISTING SOLUTIONS



Co-location:

"Getting them to come out"

- ✓ Natural intersections created between different groups of people
- ✗ Costly large scale architectural movements
- ✗ Sense of passive interaction
"Minding my own business"

Programmes:

"Experiencing things together"

- ✓ Active interaction
- ✓ Relationship building
- ✗ Controlled and unnatural
For it to succeed, both elderly and children have to be in the same programme to experience the interaction
- ✗ Short-lived
- ✗ Cannot be replicated outside of controlled environment

Base on the directions that existing solutions have tried, the **optimal way of achieving social inclusion** among elderlies can be interpreted as the sum below.

$$\text{Social Inclusion} = \text{"Getting them to come out"} + \text{"Experiencing things together"}$$

It is **necessary to have a space** to invite the elderly to linger but **that alone is not a sufficient** cause for optimal social inclusion to happen.

Likewise, it is **necessary for the elderly to share a moment** with children but **that alone is not sufficient if it cannot be replicated** when taken out of a controlled setting.

03 Defining the Sandbox

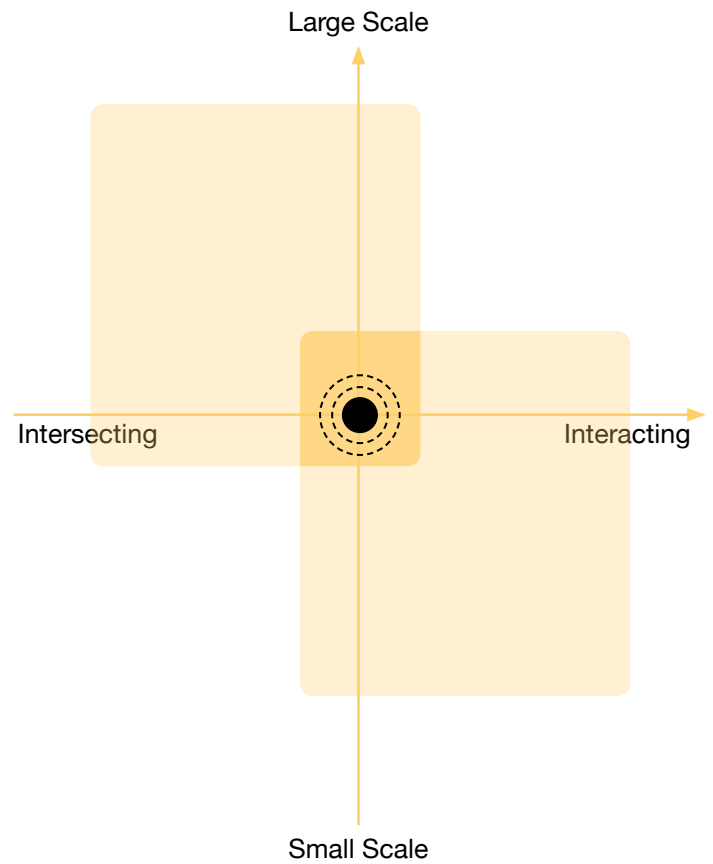
Design Specifications

Opportunity Area

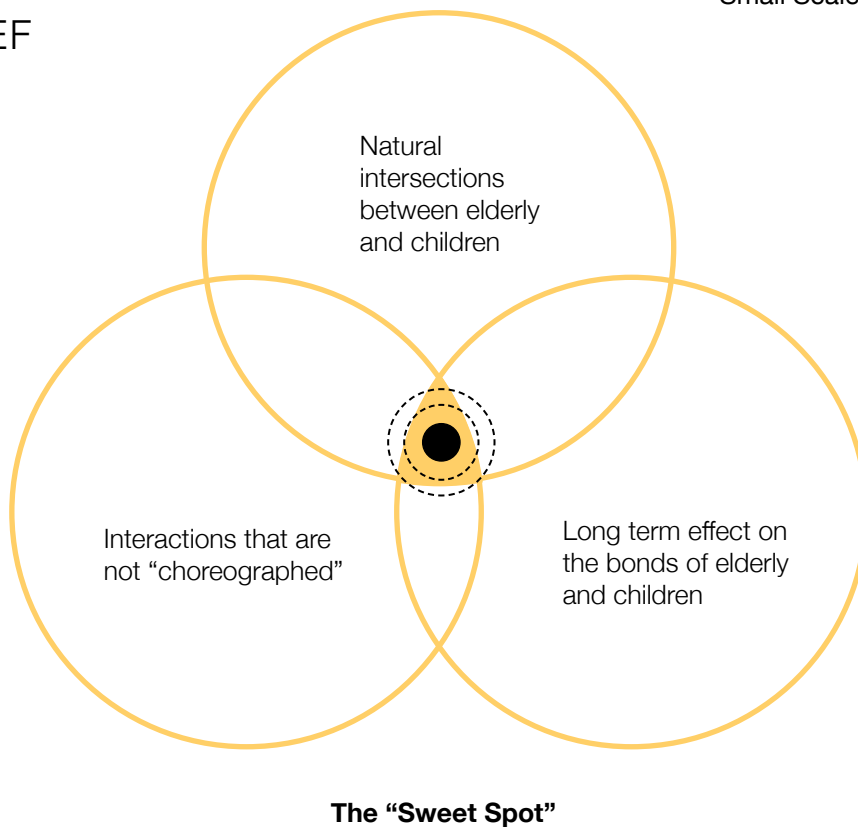
Design Brief

OPPORTUNITY AREA

This reveals an opportunity to design a nudge within an **easily accessed environment** by the elderly and children, that causes them to **naturally interact with each other**.



DESIGN BRIEF



Hence I wondered, there has to be a way to design a point that hits the above *sweet spot*.

How do we manipulate a natural setting to calibrate an interaction between elderly and children?

04 Exploring the Sandbox

Ideation

Guiding Questions

Brainstorm

Context Directions

GUIDING QUESTIONS

These questions will keep surfacing throughout the diary as they are critical in helping me evaluate my concepts

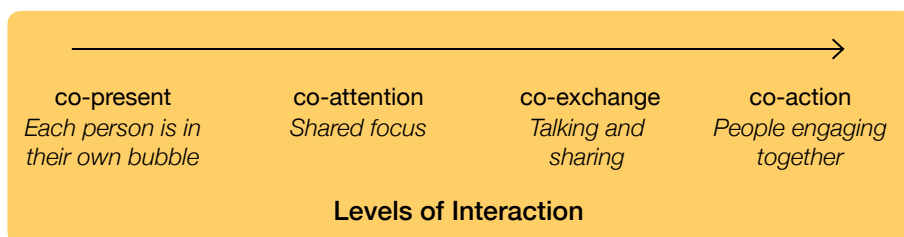
1. In what 'natural setting' should this social interaction occur?

Where elderly and children would naturally "hang out" within a neighbourhood.

2. What level of interaction is happening in that setting now?

3. What is the next appropriate level of interaction?

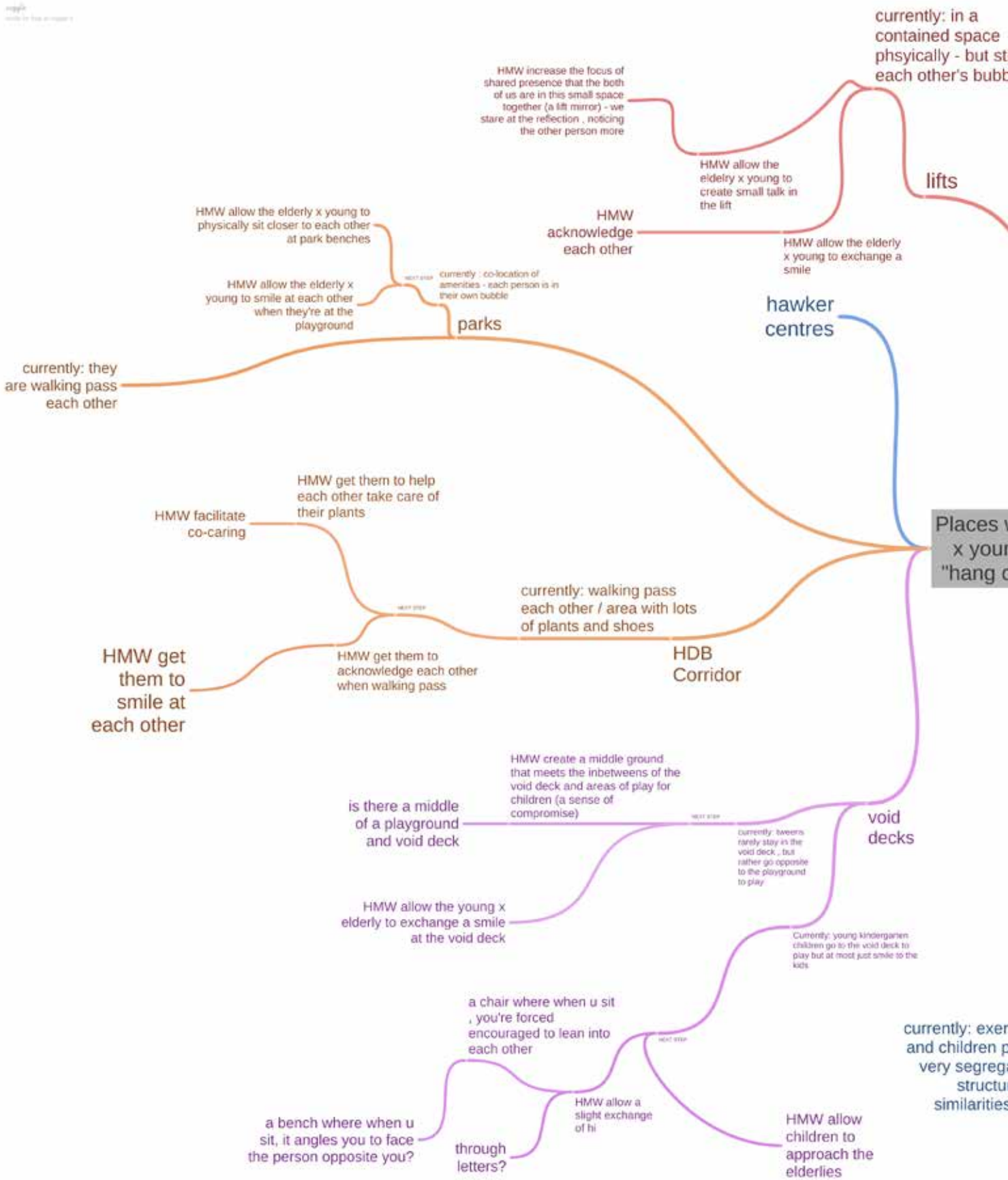
Interaction is evaluated with academic reference on the "Four Levels of Social Interaction":



Four levels of social interaction. Hoay Nee, T., & Hayat Khan, D. British Journal of Arts and Social Sciences, Vol.8Noni (2012)

BRAINSTORM

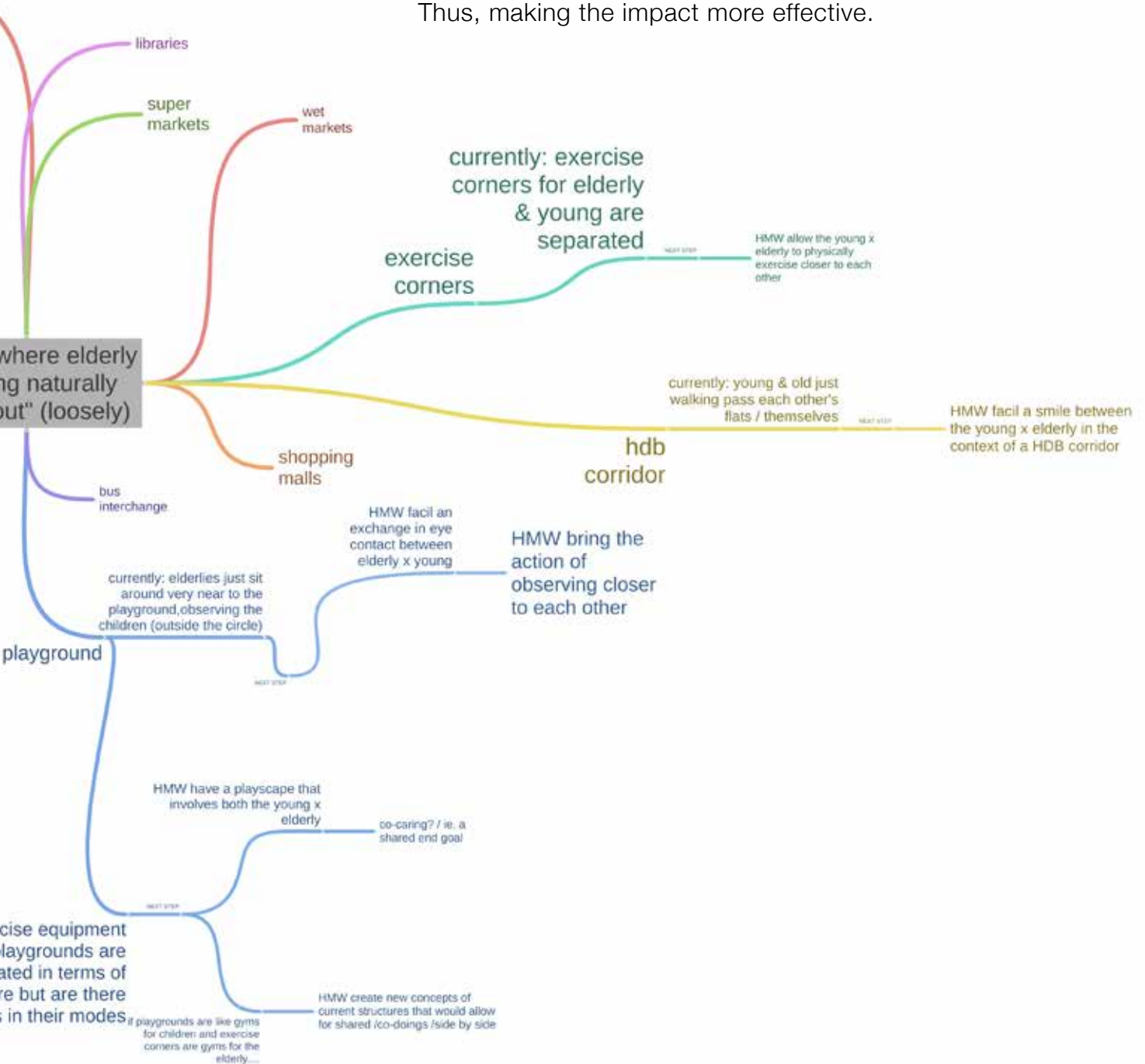
maple
made by Lisa Anagnostis



My brainstorm was heavily guided by the above 3 questions. On the whole, many of these intersections experience **brief transient encounters**. This meant that any pair of elderly and child are **not as likely to encounter the same two people again**. This made designing a nudge in these areas not longlasting.

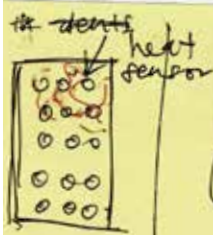
Hence, I decided to focus within a neighbourhood in intersections like **lifts, HDB corridors and playgrounds**. As distant neighbours, they are **more likely to frequent the same space** for longer periods of time. Elderlies would be seen more as a **“familiar face”** than a “never-see-before” stranger.

Thus, making the impact more effective.



CONTEXT DIRECTIONS

① Lifts



HEAT REDNESS. INDICATES THE NO. OF PPL THAT HAS PRESSED IT, IN A GIVEN TIME. (DATA AWARENESS) "OH SO, SO MANY PPL ARE GOING BACK AT THIS TIME"



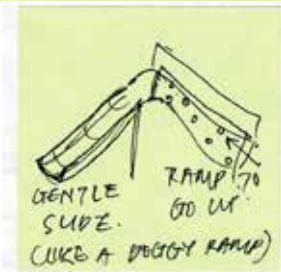
AN IMAGE APPEARS AS THE LIFT MOVES, APPEARS ONLY WHEN MORE THAN ONE PERSON IS THERE. YOU SEE THE PERSON.



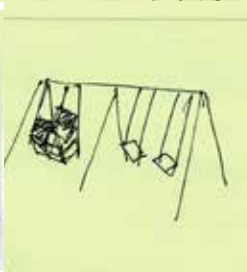
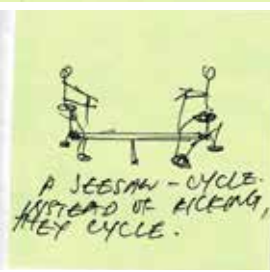
WHAT IF WE CAN PROMPT NEIGHBOURS TO HELP EACH OTHER WATER PLANTS.



DOING THINGS PHYSICALLY CLOSER TOGETHER.



WHAT DOES AN ELDERLY PLAYGROUND LOOK LIKE? GREEN GRASS NOT YOUR MUM'S BERRIES (CORNER).



From a quick ideation spam(left), it revealed that intersections like lifts and corridors still held very brief encounters. In which, people are merely *just passing by*. Also, it is **difficult to ensure a specific moment where both users meet**.

Whereas, a **playground environment** is in fact a place that is **most utilised** by just this two groups in a neighbourhood. It is a space where they **consciously choose to linger at**. A space that is relaxed and **allows for frequent bump encounters** that I could leveraged on.

Hence, it felt natural and honest to focus on bringing elderly and children at the playground area together.

05 Digging the First Hole

Concept #1

Observations

Concept

Insights

OBSERVATIONS

What level of interaction is happening in the playground environment now?

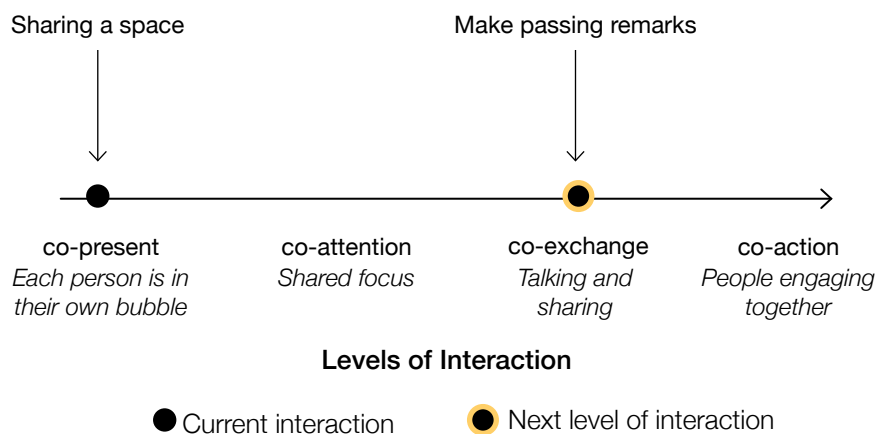


Playgrounds are co-located alongside elderly exercise corners.

Exercise corner on one end and the playground on the other.

Despite sharing the area, they aren't fully present with each other.

What is the next appropriate level of interaction?

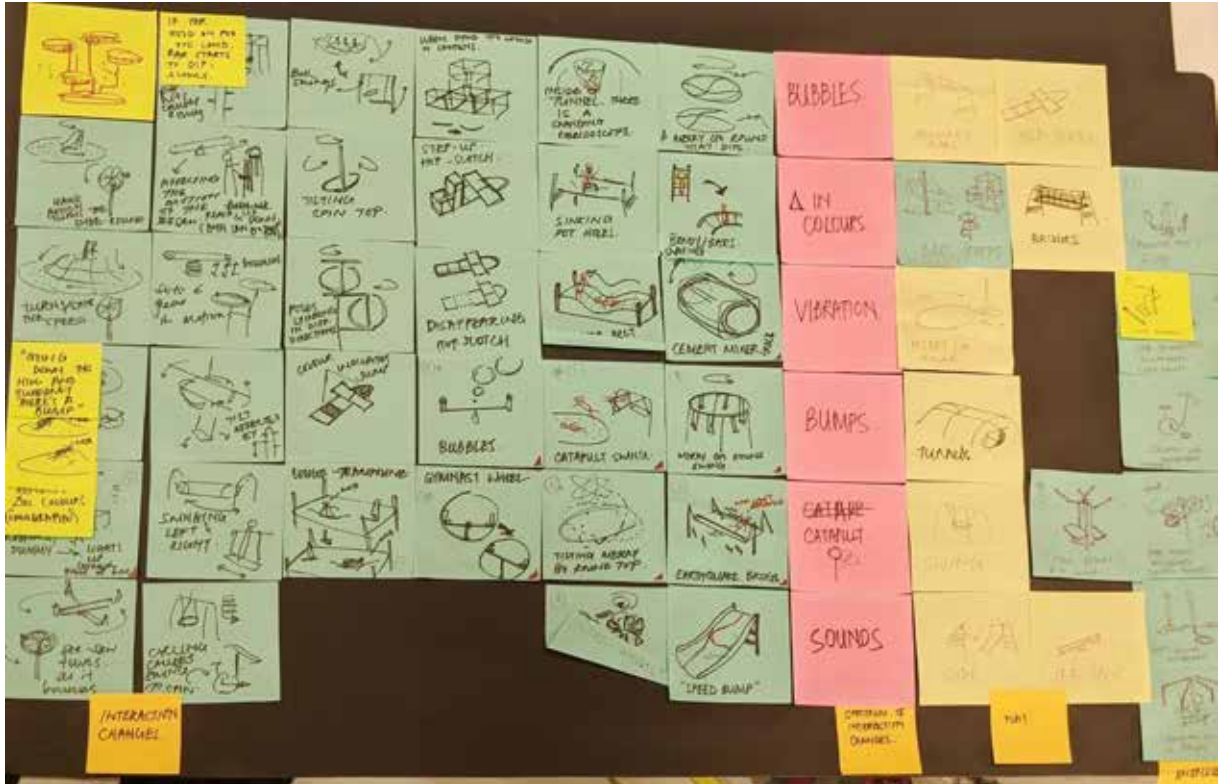


I considered the spectrum of interaction and wondered how I might **bridge the divide between the exercise corner and the playground.**

How might I nudge them to first notice each other and then create a basis to get them to have small conversations.

CONCEPT

A series of collaborative play equipment that enhances social interaction between the 2 groups. Done through a cause and effect mechanism, where the action of one alters the playscape of the other, intending to spark dialogue.



Listing of:

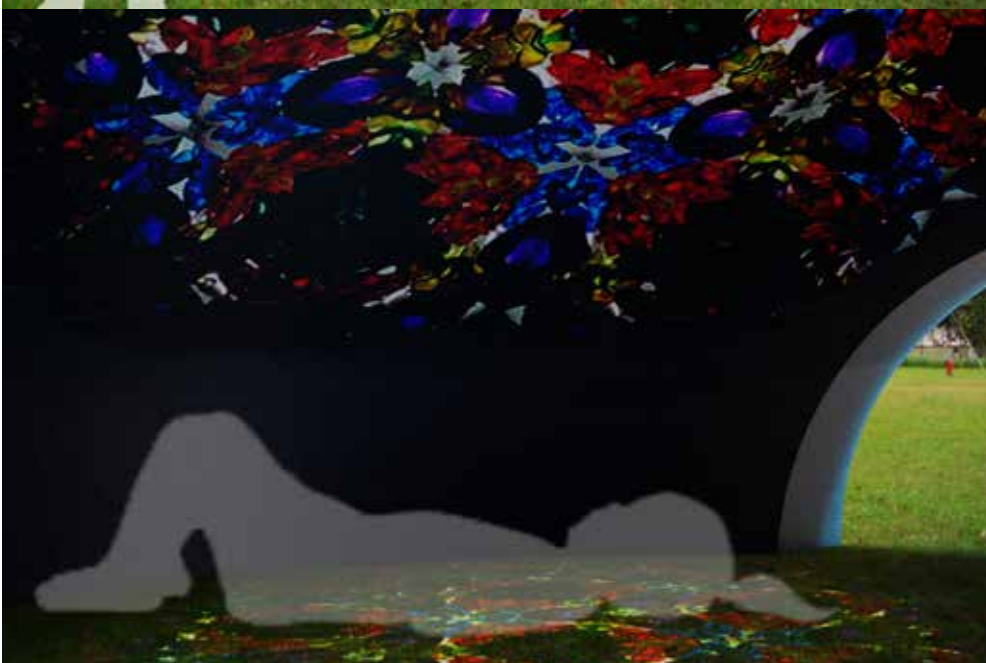
1. Gesture to effect type - "Rotating/cycling" to "generating/tilting"
2. Existing structures vs New structures
3. Degree of effect type - Explosive mist generation to slight colour change



1. Elderly cycles using the exercise equipment to generate mist.



2. Elderly rotates exercise equipment, in turn, rotating a kaleidoscope that a child can enjoy



When the elderly does their exercise, they change the way children experience their play environment.

The intention is to cause children to stop, look up and notice the elderly - hopefully getting them to go "ah ma, please spin faster?"

INSIGHTS

1. Unnecessary complexity in structures

Are we able to allow for interaction without the need for sensors or technical connections?

2. Effect types felt more like a nuisance than enjoyable

This is especially so since it will be in a HDB neighbourhood and creating mist may be a nuisance to people around

3. Felt like an “interactive installation”

Appeal was novel but not enduring enough for users to want to continue playing with it

TRYING AGAIN

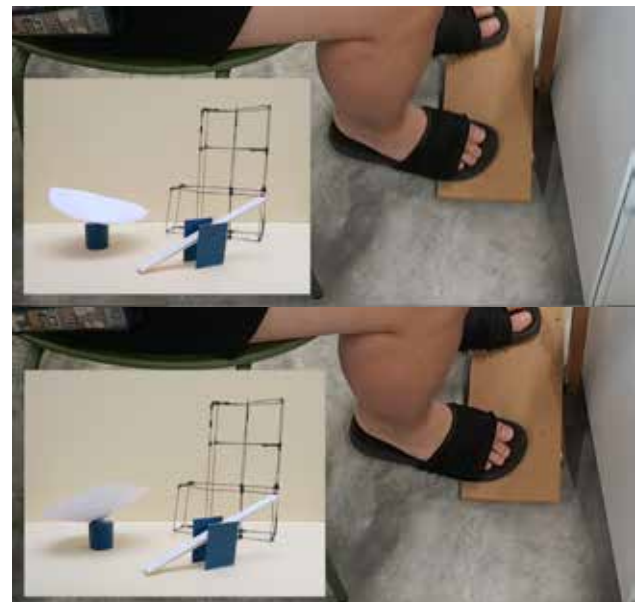
This time, I explored slightly minimal effect types and looked at matching them with existing play furnitures. I tried to **connect the gestures with how an existing play furniture might react.**

3.

(Please wait, video may be loading)



Elderly rotates knob to produce bubbles on the seesaw, as though the elderly is 'pumping' the bubbles.



How much they tilt their legs, will cause how much the merry-go-round tilts.

INSIGHTS

1. Matchings between gestures and effect type were illogical

Why was the knob meant to trigger bubbles, when it could also trigger a tilt?

2. Unfamiliar mechanisms

Although structures may be identifiable to users, mechanisms felt out-of-the-blue and shocking

3. Interaction was one-sided

It was not obvious that the elderly was the one generating the fun for children

06 Digging the Second Hole

Concept #2

Observations

Concept

Insights

OBSERVATIONS

I narrowed my focus into the **social interactions within the playground** base on the observations below.

What level of interaction is happening within the playground now?

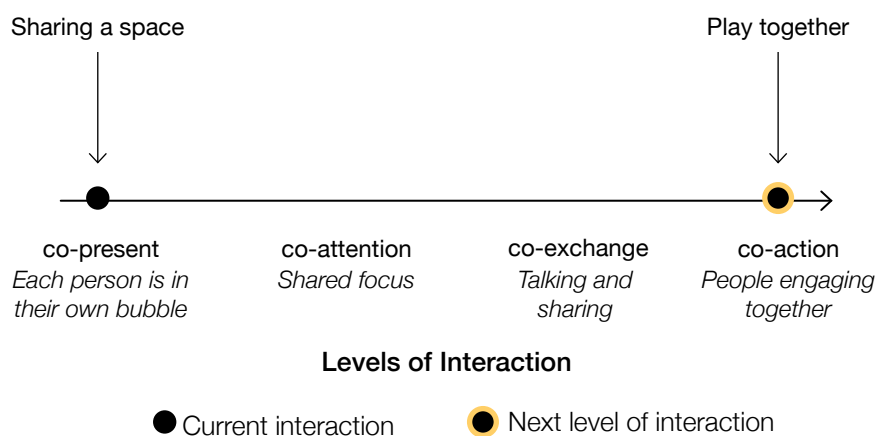


Along the playground, there will be benches facing it.



In the evenings, elderly would come out and chill on those benches, watching children play.

What is the next appropriate level of interaction?



Due to the way the furnitures are laid out, the elderly and children are closer in proximity. Hence, I wondered how could we nudge them even closer and **invite the users to ultimately engage in play together.**

CONCEPT

Redesigning familiar playground furnitures with a playful touch.

Done through exploring tweaks in their proportions to nudge elderly and children to engage in play together.



1. Swing

What if a swing was not for one person? What if the seat was not a typical bowl shape?

The seat is expanded allowing for more people to sit facing each other. Users have to move in tandem to move the swing.



2. See-saw

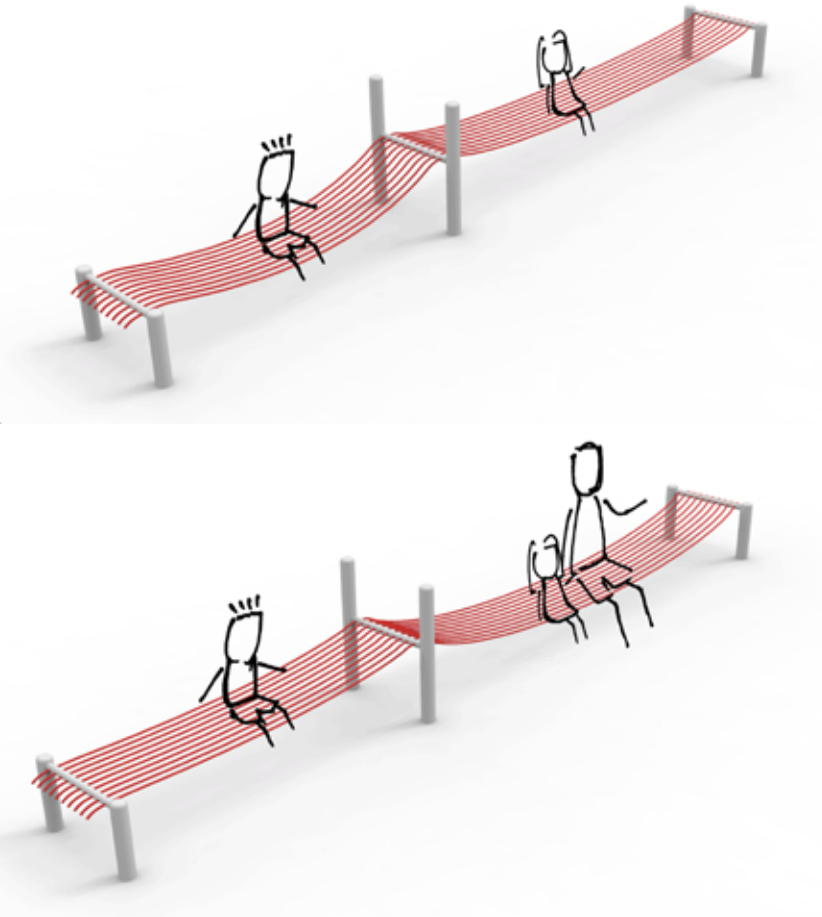
What if a see-saw did not go up and down? What if there was no long torque in the centre?

This seesaw goes in different directions base on the weight that is applied. It's roundness gives a sense of togetherness.

3. Bench

What if a bench was not static?
What if the bench was not hard?

As if there is a spring, when someone heavier sits on one side, the opposite end becomes taut.



As previous structures felt foreign to a user, I focused on tweaking existing play furnitures so that it would feel intuitive.

In the above tryouts, I **questioned the archetype of their basic structures**. They were aimed at finding out if changes to their shape/proportions could afford for more active interaction.

INSIGHTS

1. Structures were intimidating for the elderly

At the most basic level, structures should tune to the comfort level of the elderly - Ergonomic? Elder-gonomic! (structural)

2. To be “age-friendly” is more than just ergonomics - it is also, the psyche of users

What may be engaging to a 10 y/o, may not be engaging to a 70 y/o - vice versa (the psychological impact of an activity)

07 Digging the Third Hole

Concept #3

Epiphany

Criteria Specifics

Ideation

Concept

Insights

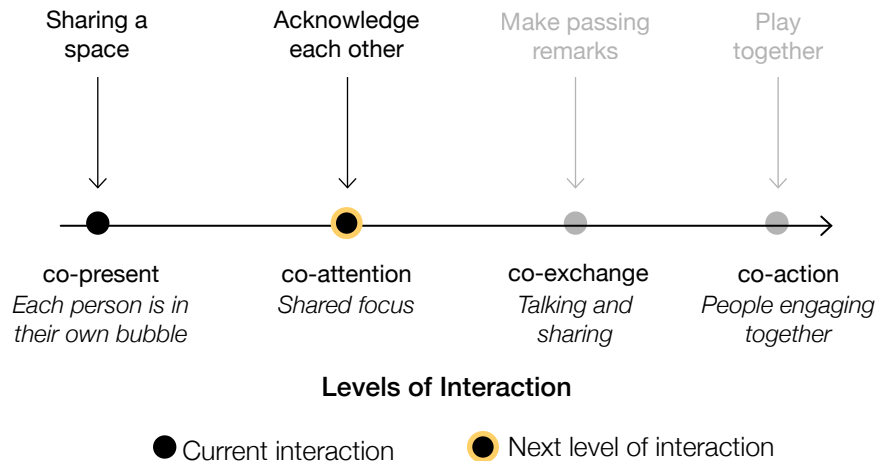
EPIPHANY

In intending to spark the beginning of a social relationship, I went too far in exploring the levels of social interaction.

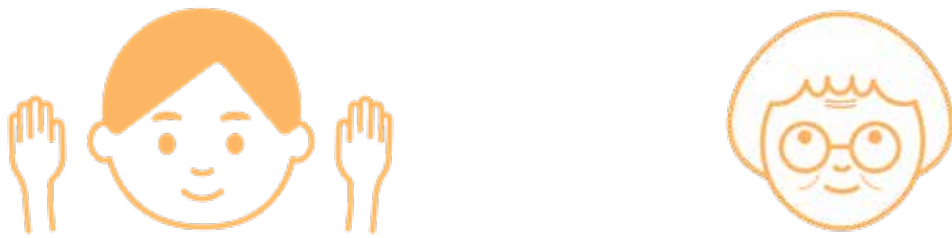
In a layman's way, I began to understand that we need to **design a “just enough” structure to make people behave in a “just enough” way.**

To concentrate on what is essential to the relationship between the two groups; a design that **delightfully guides the users to reach the desired goal in their own time.**

What is the next appropriate level of interaction?



If sharing a space is the current status quo, then the next “just enough” would be to acknowledge each other’s presence.



The idea here is to **promote the start of meaningful bonds** between the 2 groups by **increasing the “encounter-ness”**.

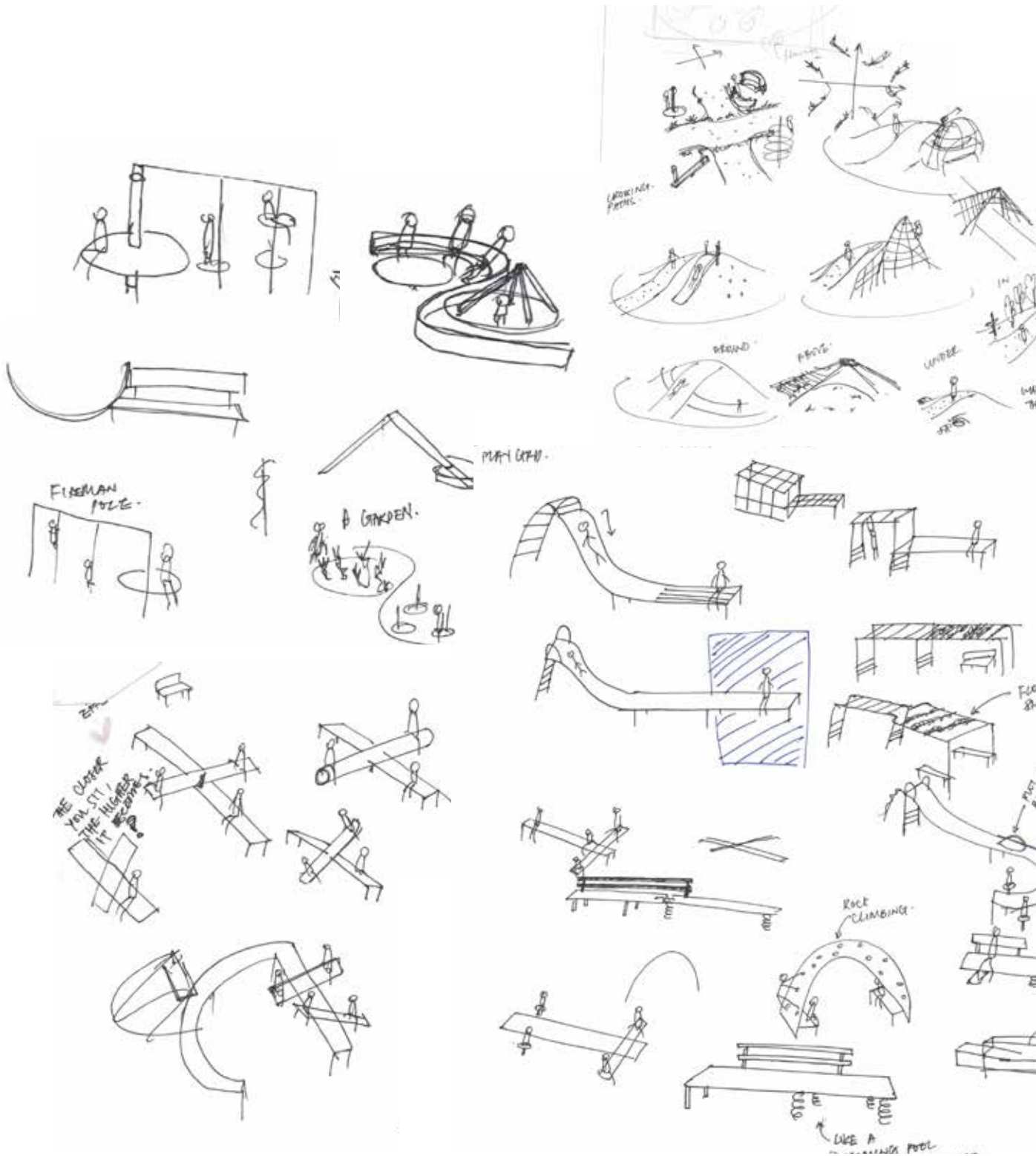
Where children playing around in the space are able to have at least **eye contact and a smile to the elderly sitting around there.**

CRITERIA SPECIFICS

- 1. Not a nuisance to other residents**
- 2. Compatible fixtures at playground**
No complex mechanisms
- 3. Afford for non-verbal interactions**
- 4. Appeal should be enduring**
Familiar playground furniture
- 5. “Ergonomically” age-friendly**

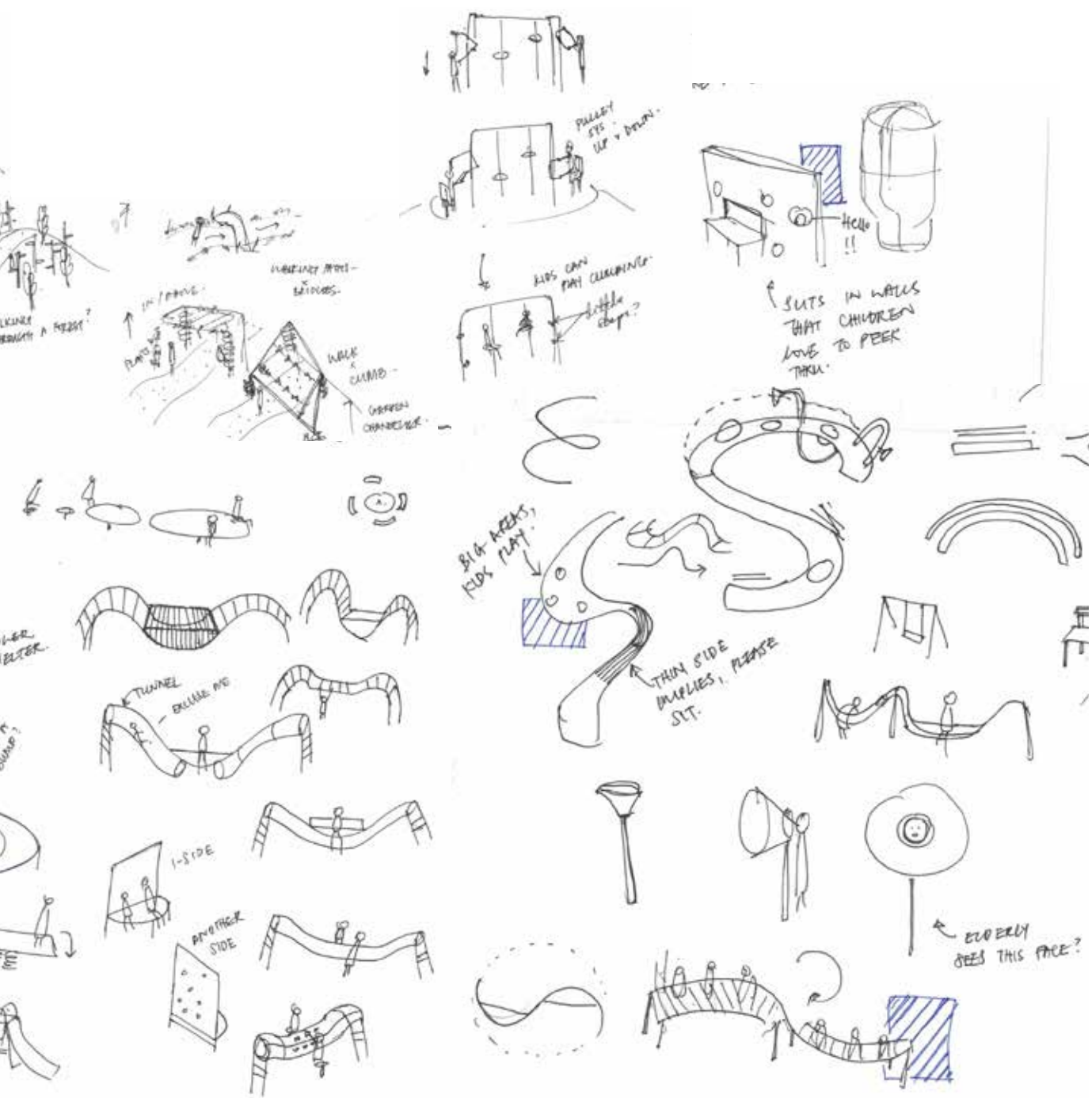
IDEATION

What if the bench the elderly sits on, is also the same "bench" that the child plays on?



Being near

Proxi



BREAKING, BENDING, TWISTING, WARPING, BUMPING.

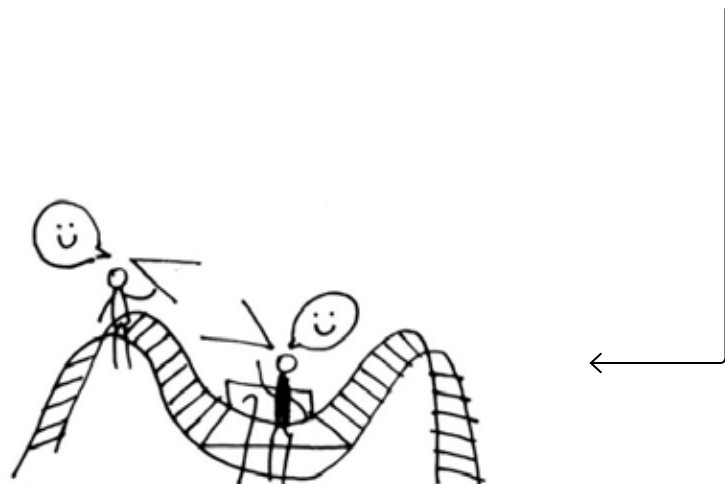
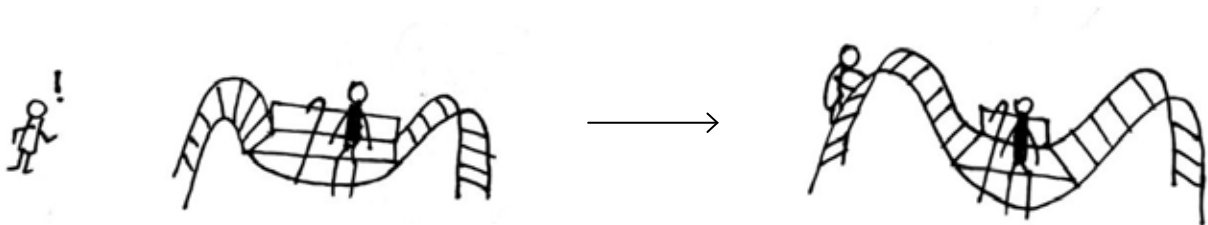
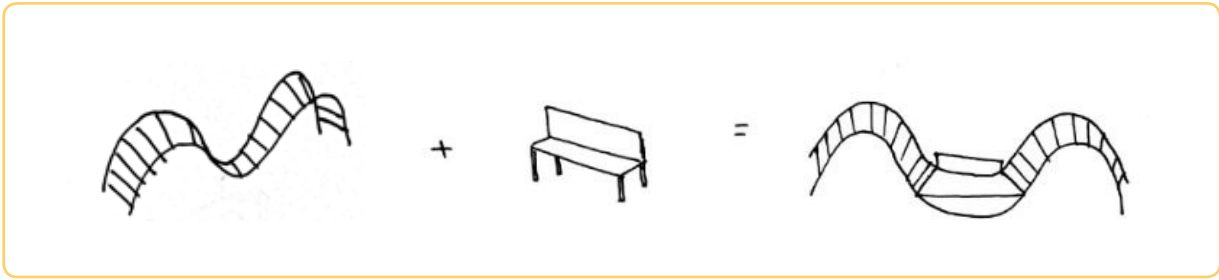
Crawling everywhere

CONCEPT

Witty modifications on playground furniture to afford for non-verbal interactions between elderly and children.

Calibration of social interactions through the arrangement, positioning or hybridising of existing furniture.

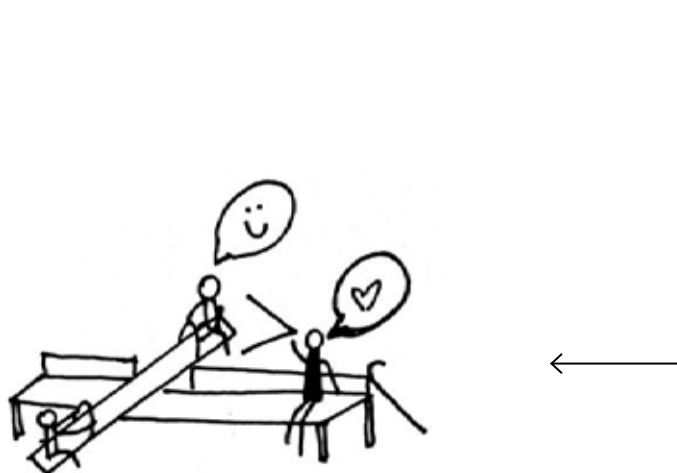
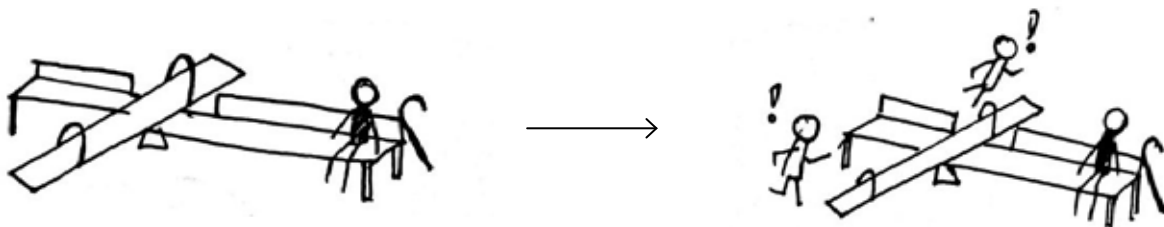
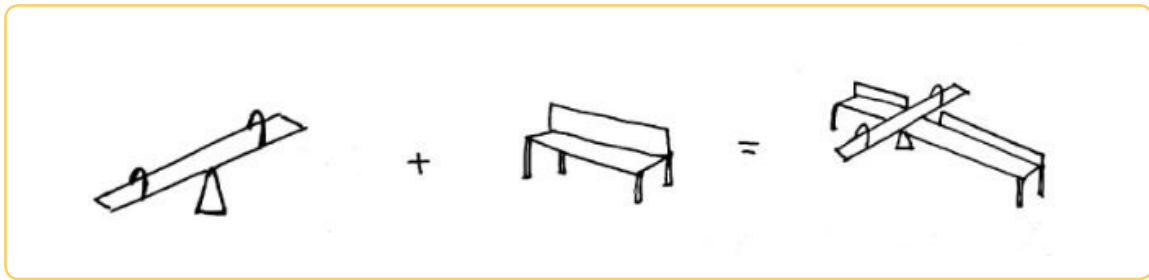
1. Climb-Bench-Structure



Spaces between play structures affords as places for engagement.

As children reach the peak, they are greeted by a little surprise of their new friend.

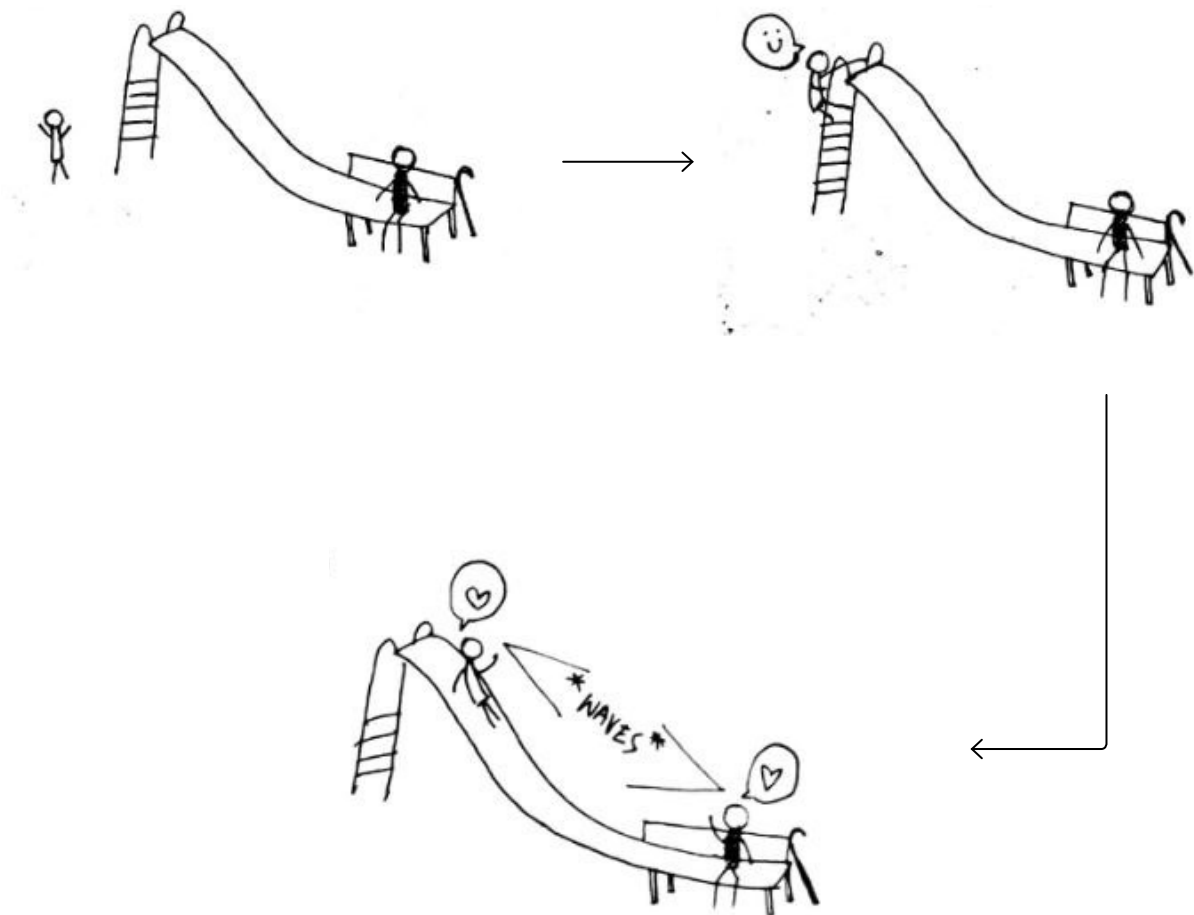
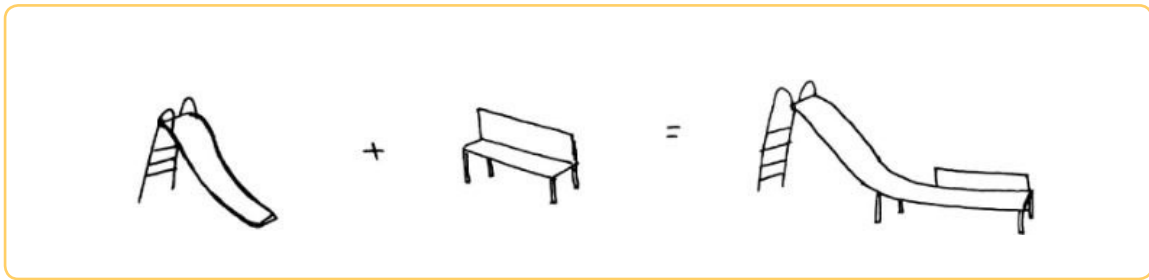
2. Seesaw-Bench



Abrupt breakage of a plane bench, allows it to take on a 'supporting' role. In this case, the plane of the bench acts as the fulcrum of a seesaw.

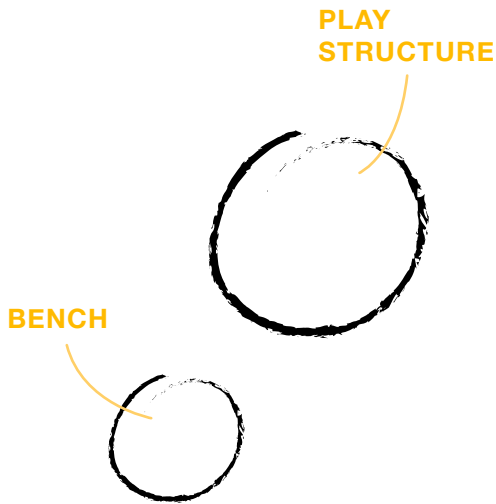
As the elderly rests, children are invited to 'sit' with them.

3. Slide-Bench



Warping the typology of a slide, naturally evolved it into a bench. **This pairing was the most promising because of its structural soundness and effortless merging.**

It is as if, children are *sliding right up* to the elderly, creating a shared moment between them.



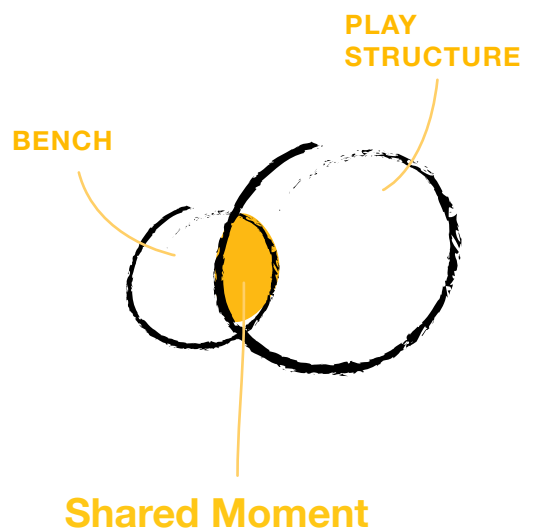
BEFORE SOCIAL CALIBRATION

HOW IT CALIBRATES SOCIAL INTERACTION?

Although users aren't doing the same things together, the fact that they are **mutually experiencing the same object creates a feeling of togetherness.**

The pairings enhances the little interactions at a playground. Even if it was seconds of a smile, a moment was shared nonetheless.

From *"I watch your joy"* to now, *"we share the joy"*.



AFTER SOCIAL CALIBRATION

08 Preparing Building Tools

User Testing

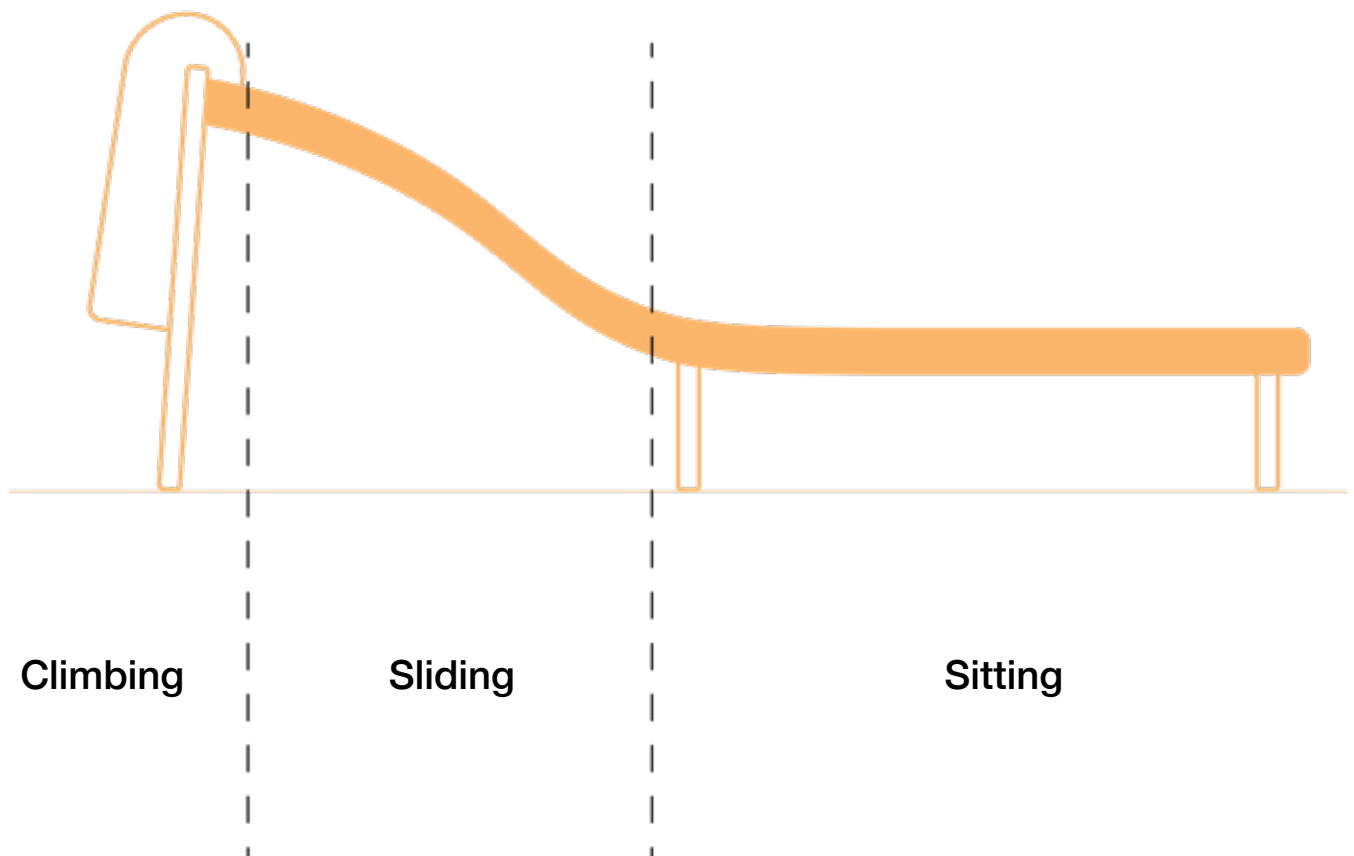
Categorising Zones

Experimenting and User Observations

User Testing Reflections

Objectives

CATEGORISING ZONES



EXPERIMENTING & USER OBSERVATIONS

Initial testing focused on the skeleton of the slide-bench.

1. Which positions and angles are optimal for non-verbal interaction?

What is the comfortable distance between elderly and child?

2. Children's reactions/behaviours/interaction with the structure

Would children run across the bench?

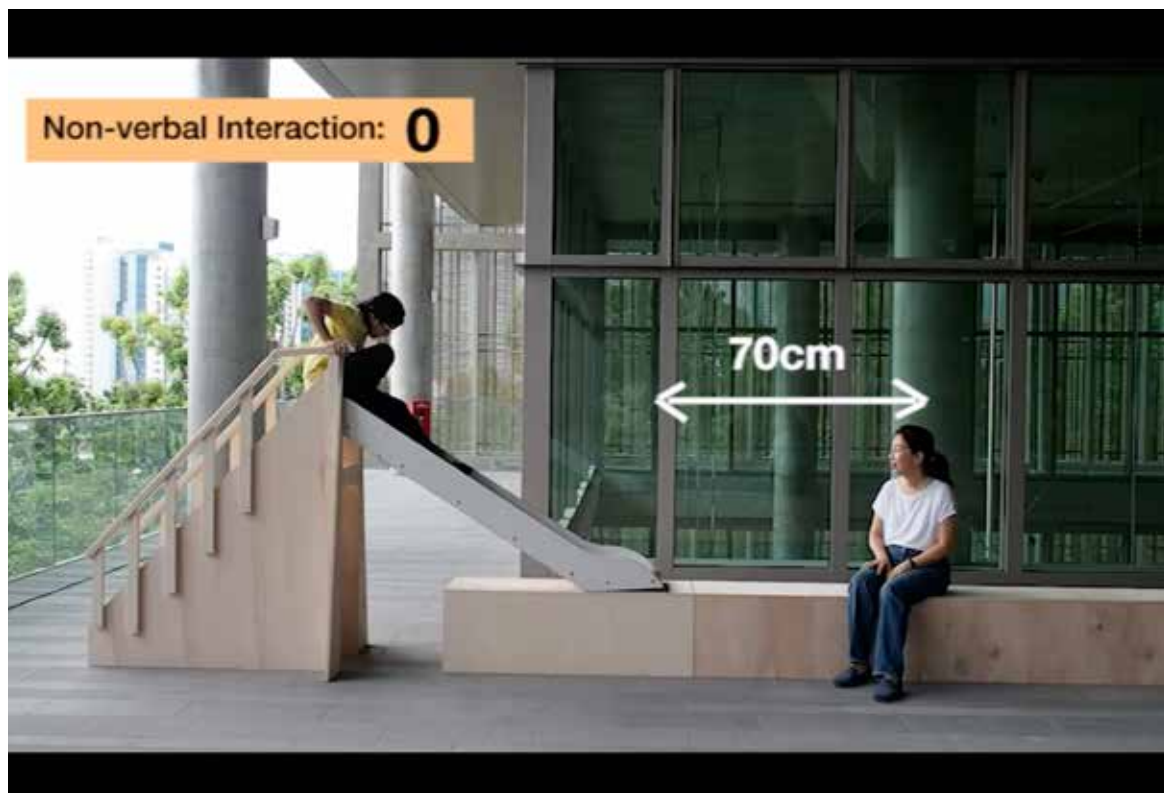
Would it feel like the elderly are blocking their way?

3. Rough grasps of the scale

4. How much of a slide or how much of a bench?

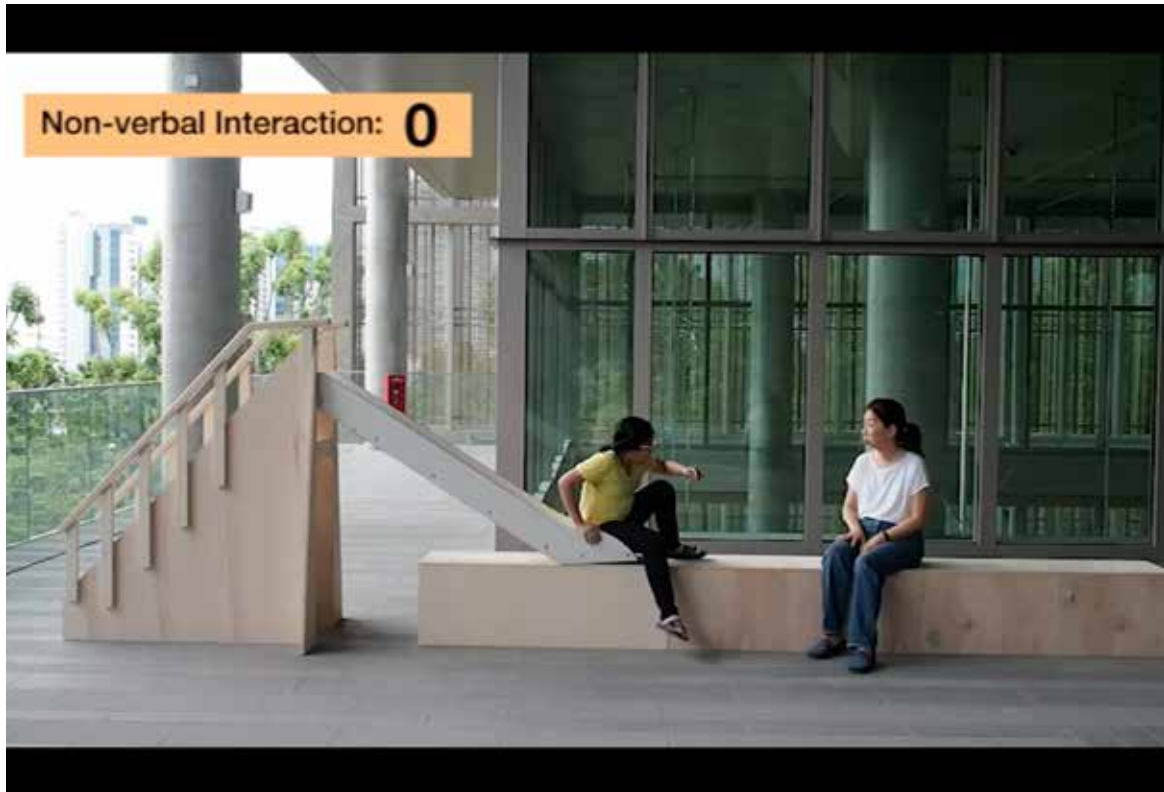
Take #1: Linear Slide + 70cm

1.



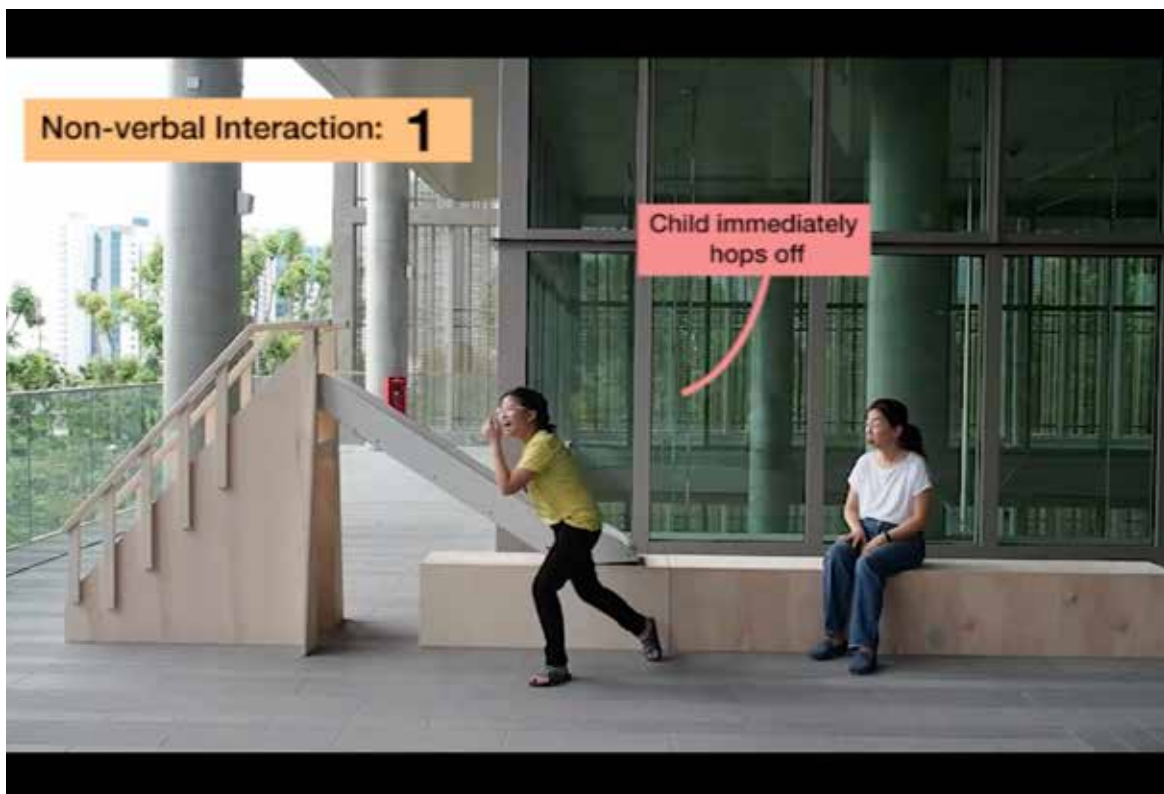
Started at the closest possible distance.

2.



A smile is exchanged.

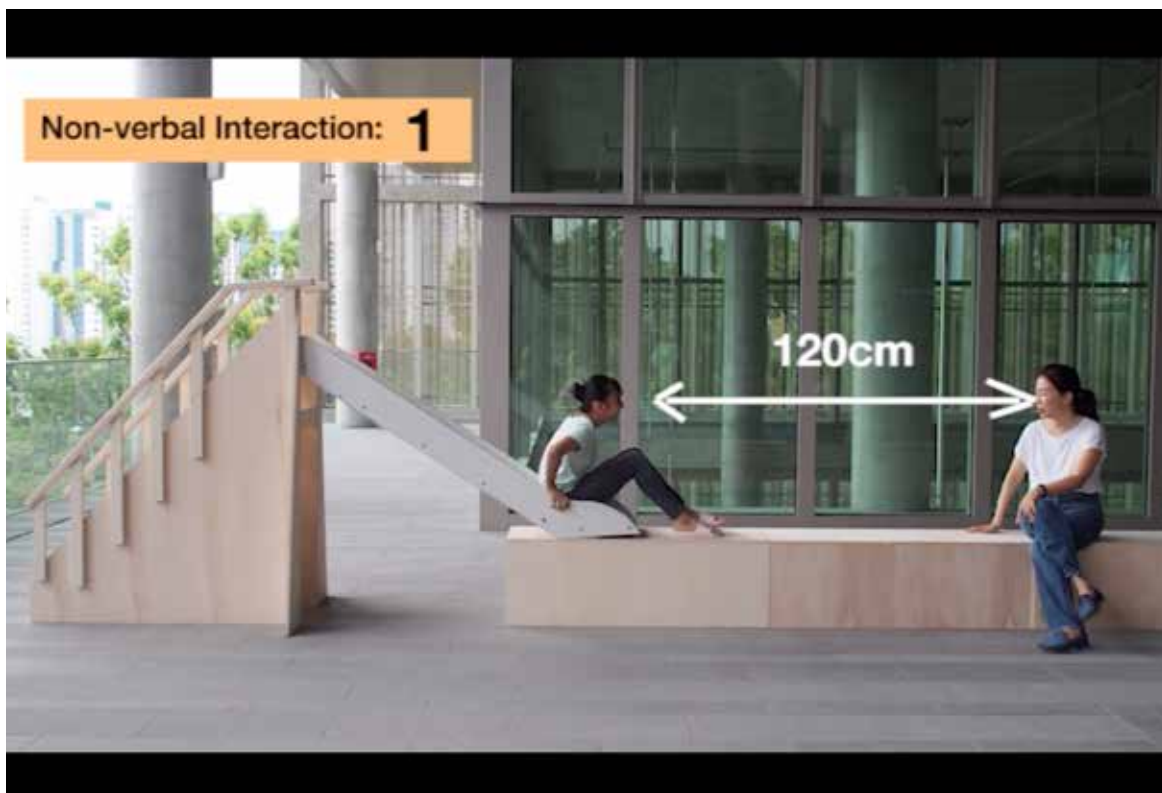
3.



Both child and elderly felt like they were going to knock into each other.

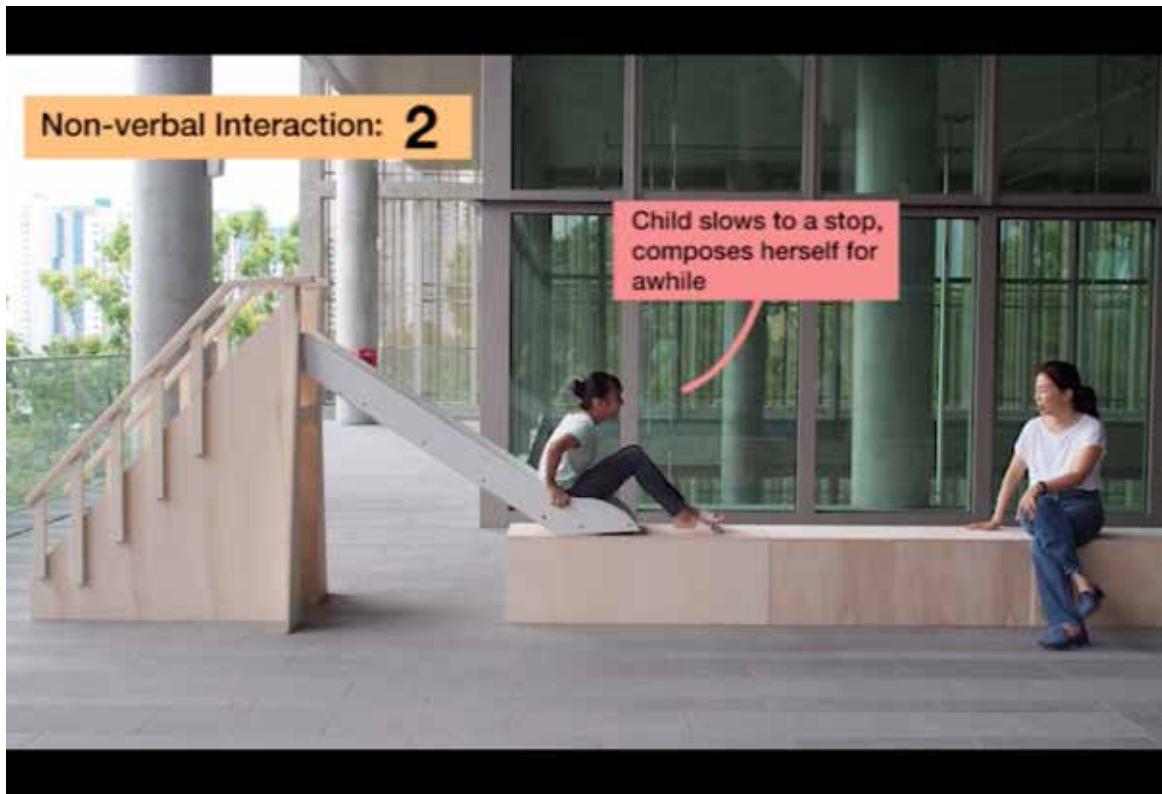
Take #2: Linear Slide + 120cm

1.



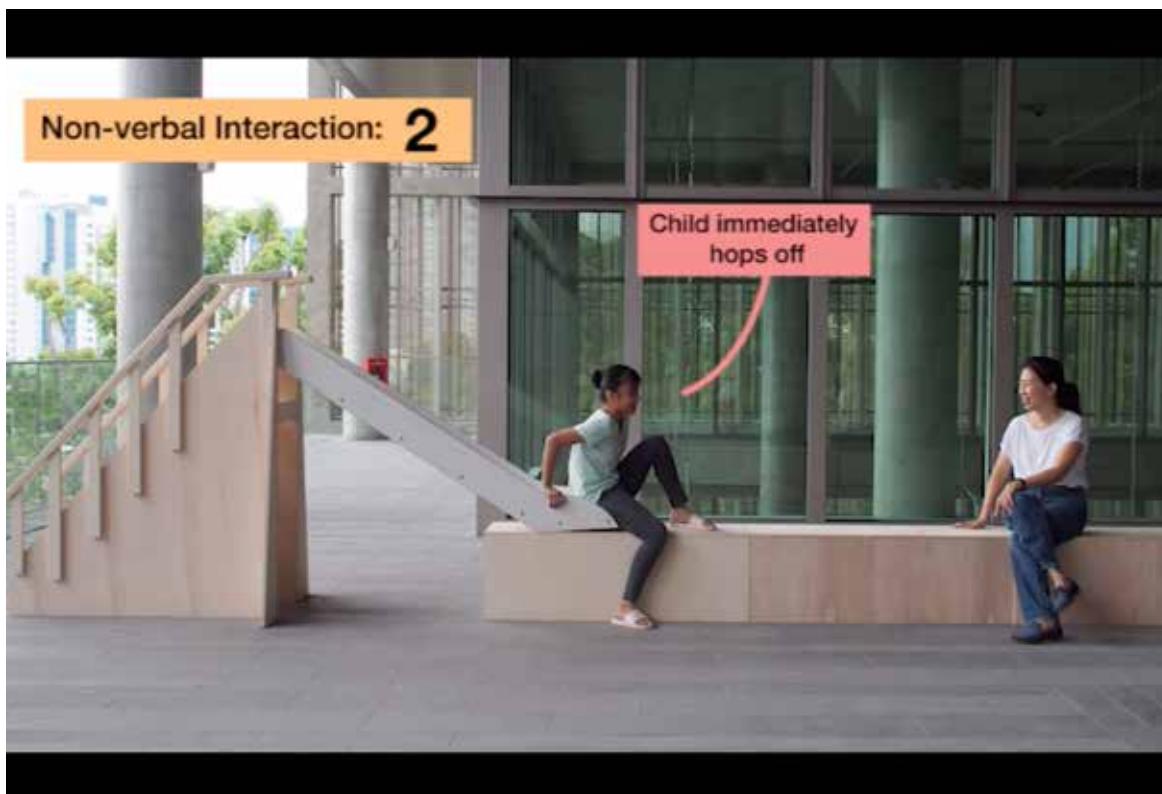
Distance is now at a comfortable range.

2.



Child had time to compose herself, look up and glance.

3.

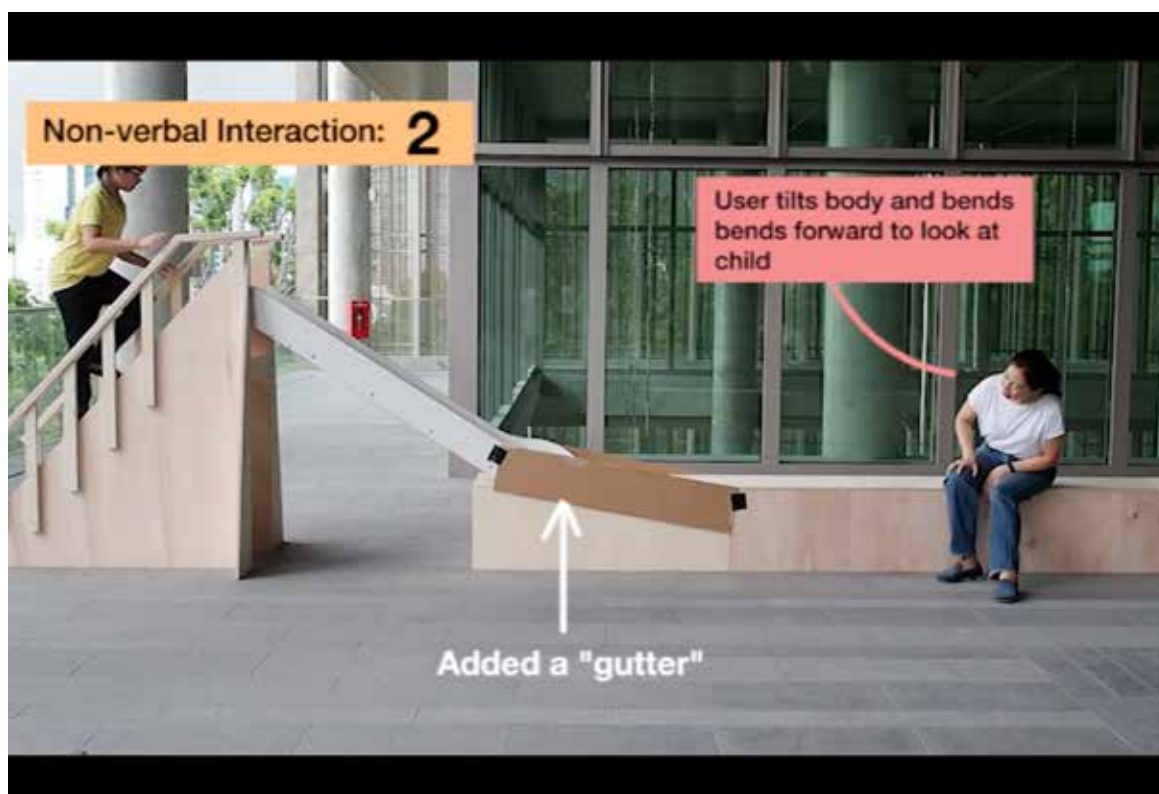


A natural reflex action of the child? She still decides to hop off.

Take #3: Linear Slide + 120cm + Gutter

How can we nudge the child to go closer?

1.



A gutter is added. The linear slide also meant that the elderly had to tilt her head awkwardly.

2.



Child scoots a little closer.

Take #4: L-Shaped Slide + Gutter

What if eye contact felt natural (without the elderly having to tilt her head)?

1.



The bench is now made perpendicular to the slide. Elderly is facing the child directly, as she slides down. Feels as if they could give each other a high-five!

2.



3.





USER TESTING REFLECTIONS

The L-shaped arrangement allows for a comfortable visual encounter. It creates subtle demarcations of slide and bench zones, without the feeling of separation.

Although there were non-verbal interactions exchanged, these moments did not feel magical. The whole thing felt **disjointed and one-dimensional; too linear, too uncomfortable.**

Perhaps, the sharp right angle of the L-shape form, gave the feeling of harshness and rigidity.

OBJECTIVES

1. 'Fun' for children

Would a child play this for hours? Are there different ways the child can play?

2. Elderly to feel like they can be comfortable sitting there

Is it inviting? If there was a backrest?

3. Creating more defined moments

More than just a smile; Putting meaning to the structure

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09 Putting Sand into Mould

Concept Development I

Designing Moments

CAD Visualisation

Insights

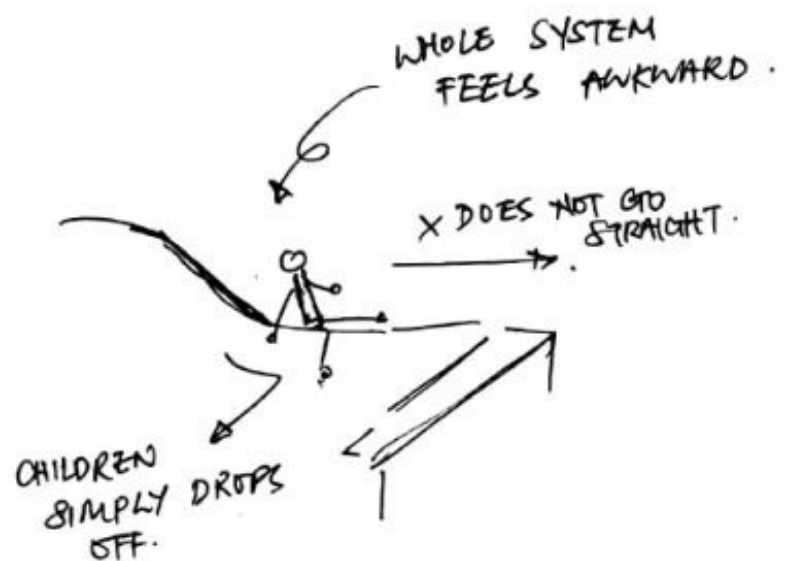
Criteria Specifics for Slide-Bench



Almost feels like a high-five can be given...almost

Form felt disjointed and one-dimensional.

How can we harmonise the slide and bench?



An awkward system

DESIGNING MOMENTS

What is the least possible intervention that can liven the interaction?

The smallest change that can make people go *ooooo I didn't know I needed this...*



A Burrow

What if the slide lets the child go all the way down?

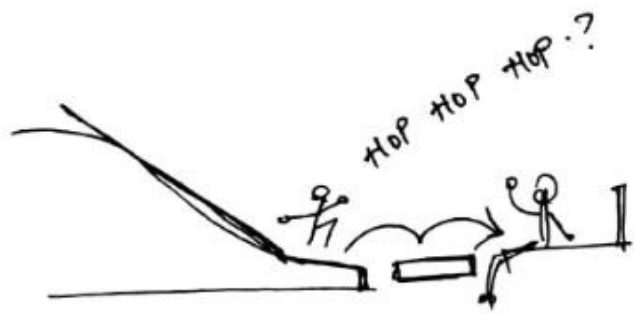
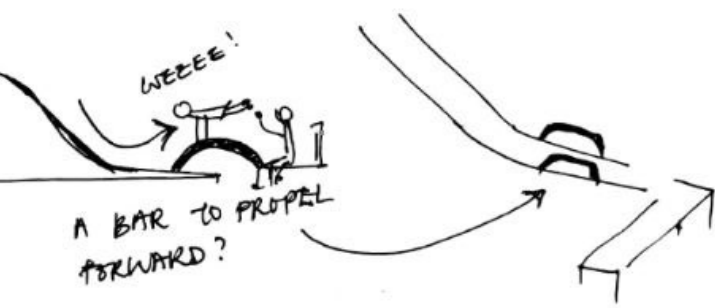
When he comes back up, his face peers over to see his new friend.



A Hill

As the child scurries up, the hill levels him to the same height as his new friend.

At this stage, the hill felt the most promising. It was a small change that could prompt a natural moment between elderly and child.



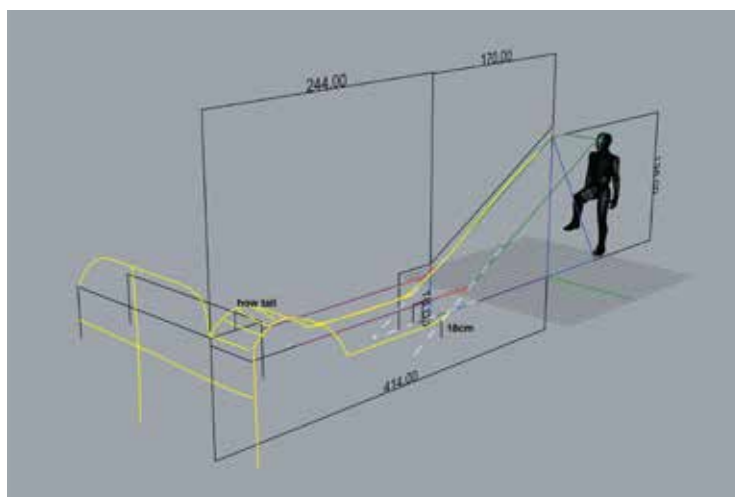
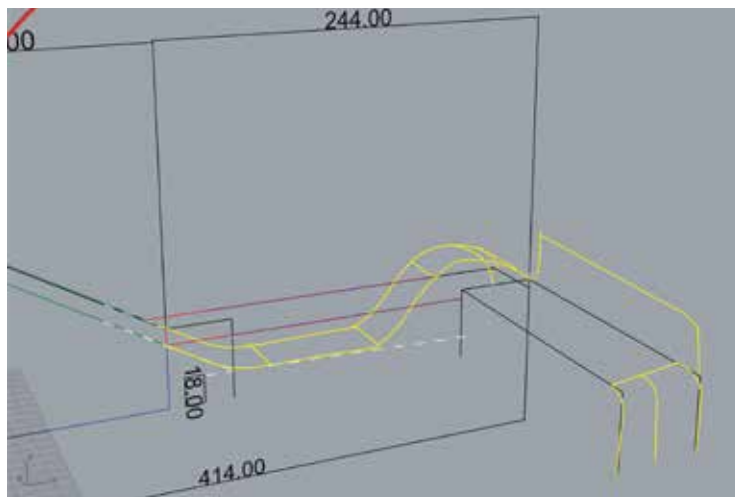
A Pair of Bars

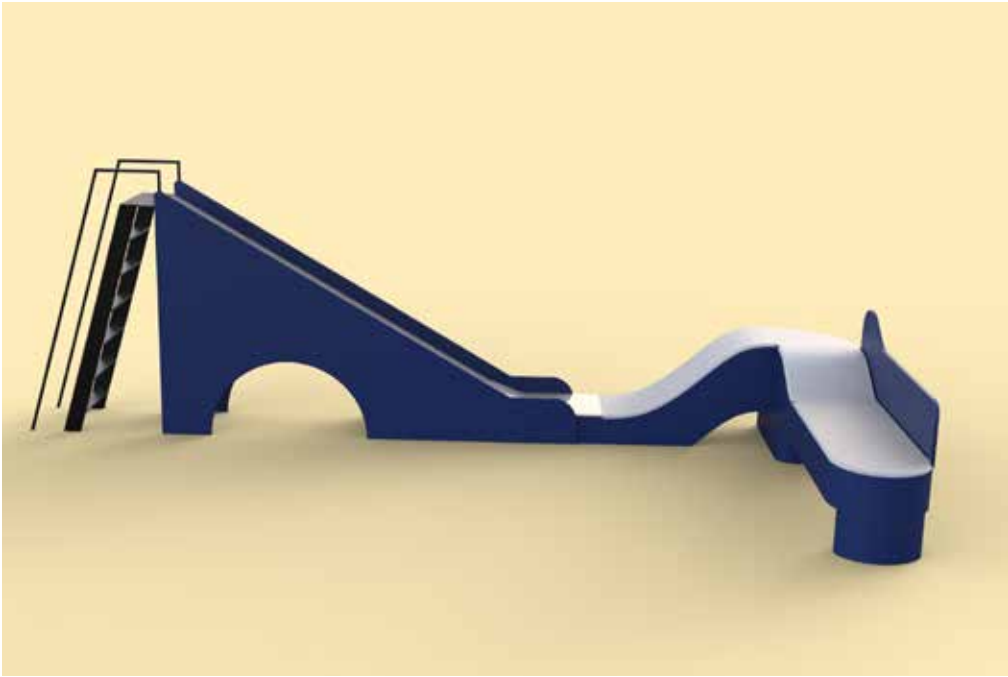
Like a little gymnast, the bars steadies him and propels him forward.

A Springboard

"The floor is lava!"

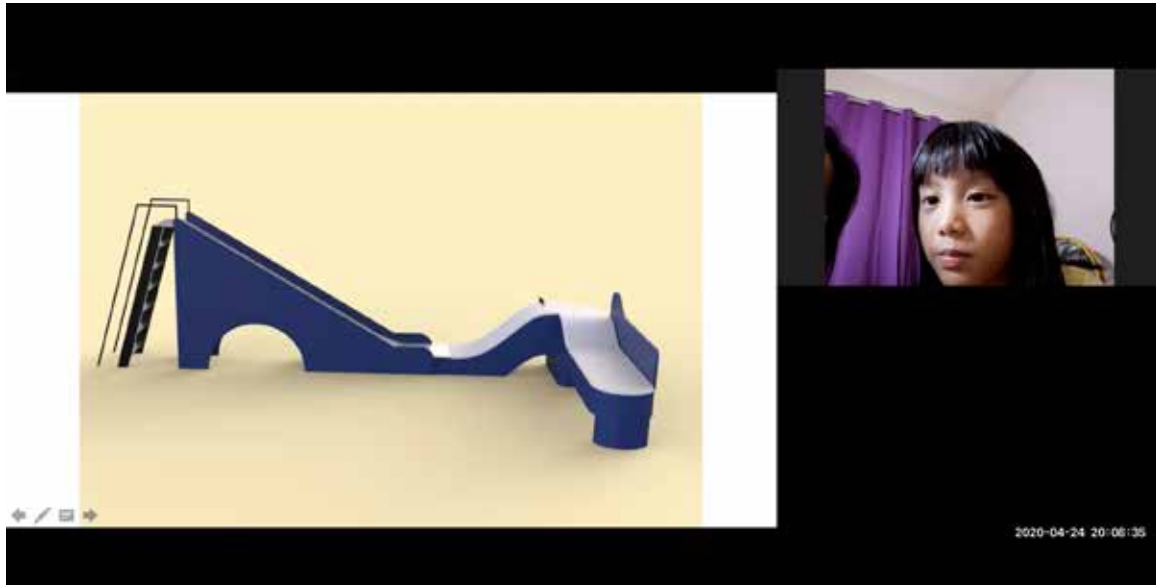
CAD VISUALISATION





ZOOM USER TESTING

Due to the circuit breaker, I interviewed children over zoom, here are a few of them. I tried to help them imagine by rendering in different first person perspective.



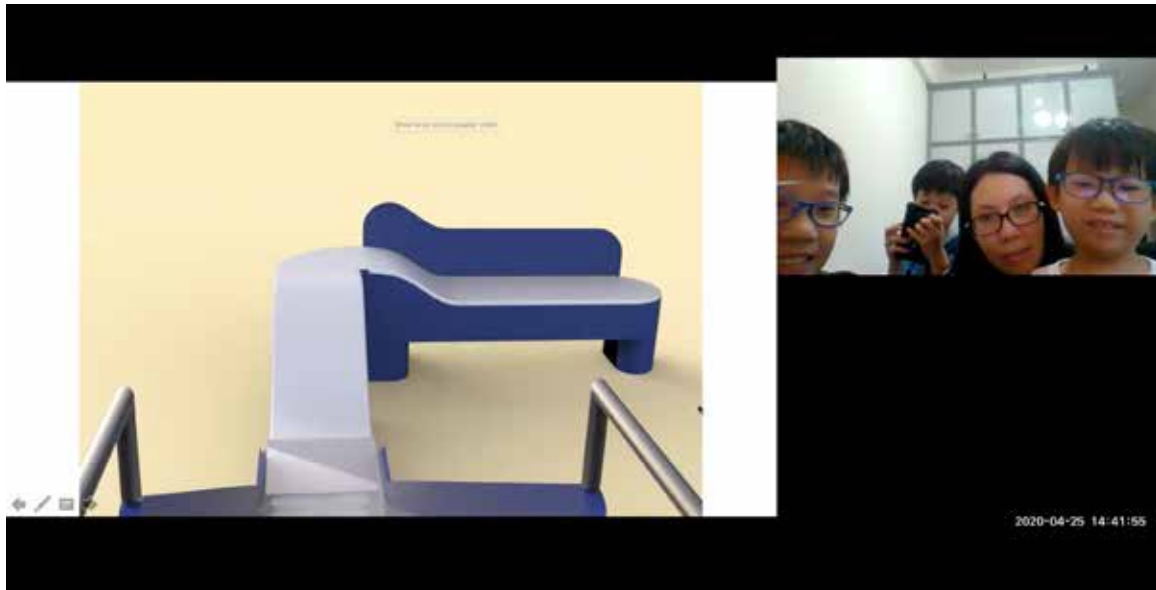
“Me and my friends will go on it and then it will be like a roller coaster!”

- Eman, 8

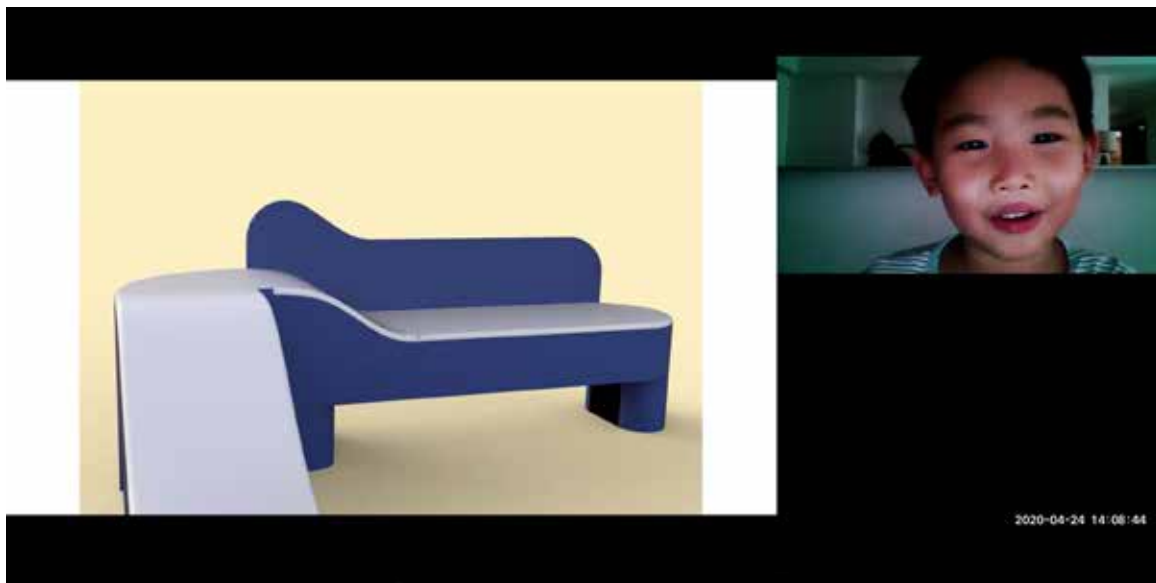


“I won’t climb, I scared fall down”

- Zuyyin, 8



“I feel like I will knock down the elderly”
- Shalom, 10



“I see the old man, I will say HOLAAAA”
- Emanuel, 7

I learnt more about how to interview children! But what was interesting, children were aware about safety concerns. This means that visually, the form had to mitigate any doubts.

INSIGHTS

1. The points of bench and slide were too defined

In my head, the elements felt like they gelled together. However, after viewing in 3D, we see that each part felt abrupt.

2. To aim for an even more minimal intervention

In part of trying to make them harmonise, was also in discovering the beauty of combining simply - the hill felt cheap.

CRITERIA SPECIFICS FOR SLIDE-BENCH

1. Alluring

What if, it looks like one big giant slide?

2. Blurred boundaries between slide and bench

3. Child can hop on/off with ease

10 Mixing Sand with Water

Concept Development II

Top View Form Exploration

Visual Mood

Element Board

Meaning to Form

Proportion Study

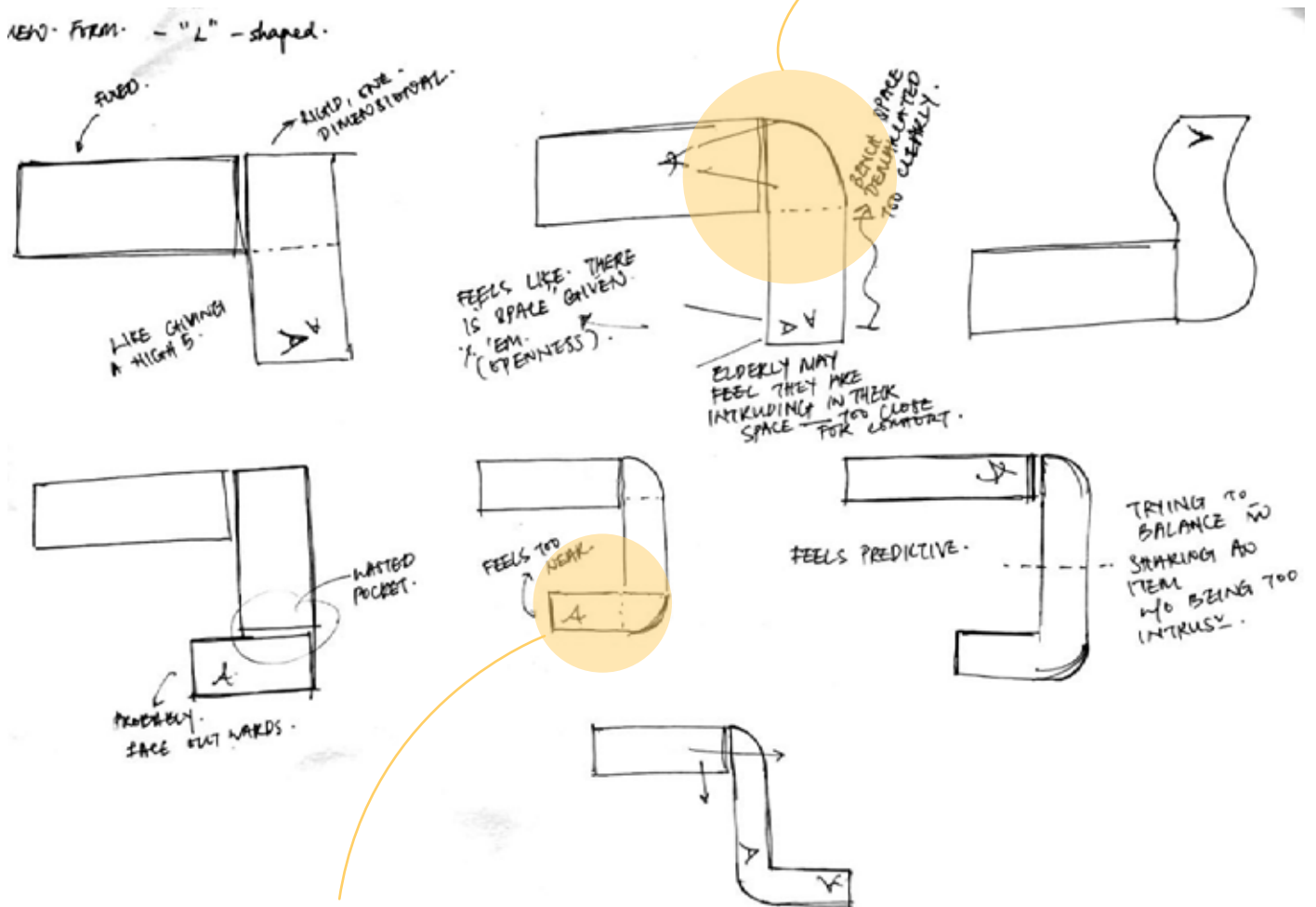
Details

TOP VIEW FORM EXPLORATION

The harsh angular shapes gave it a sense of disjointed-ness. I began to study how we can **create continuity in the elements**.

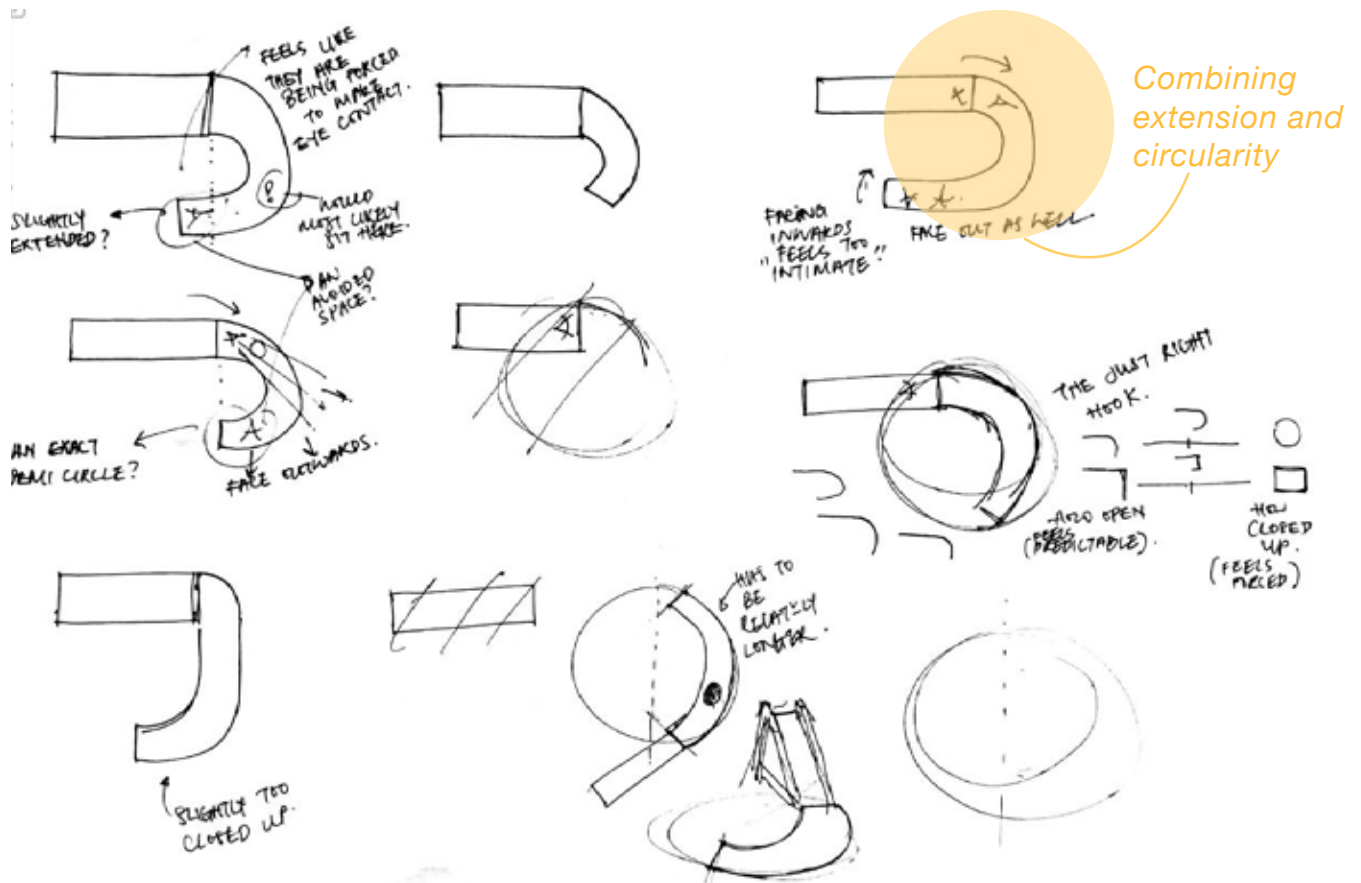
L-Shaped

A simple curve is able to change the whole character of the object - it looks friendlier now!

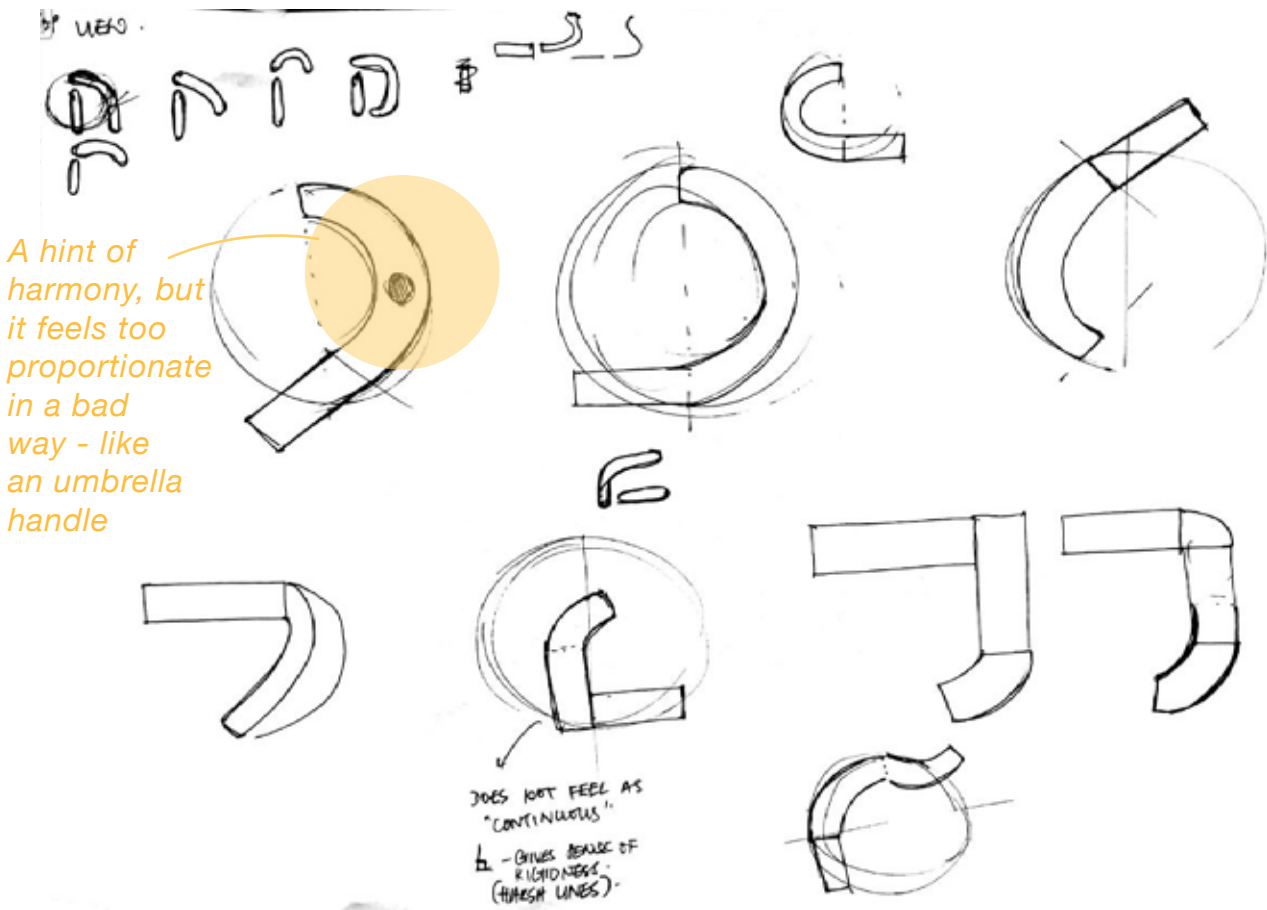


Extending the 'life', so it does not feel abrupt but rather feels completed

J-Shaped



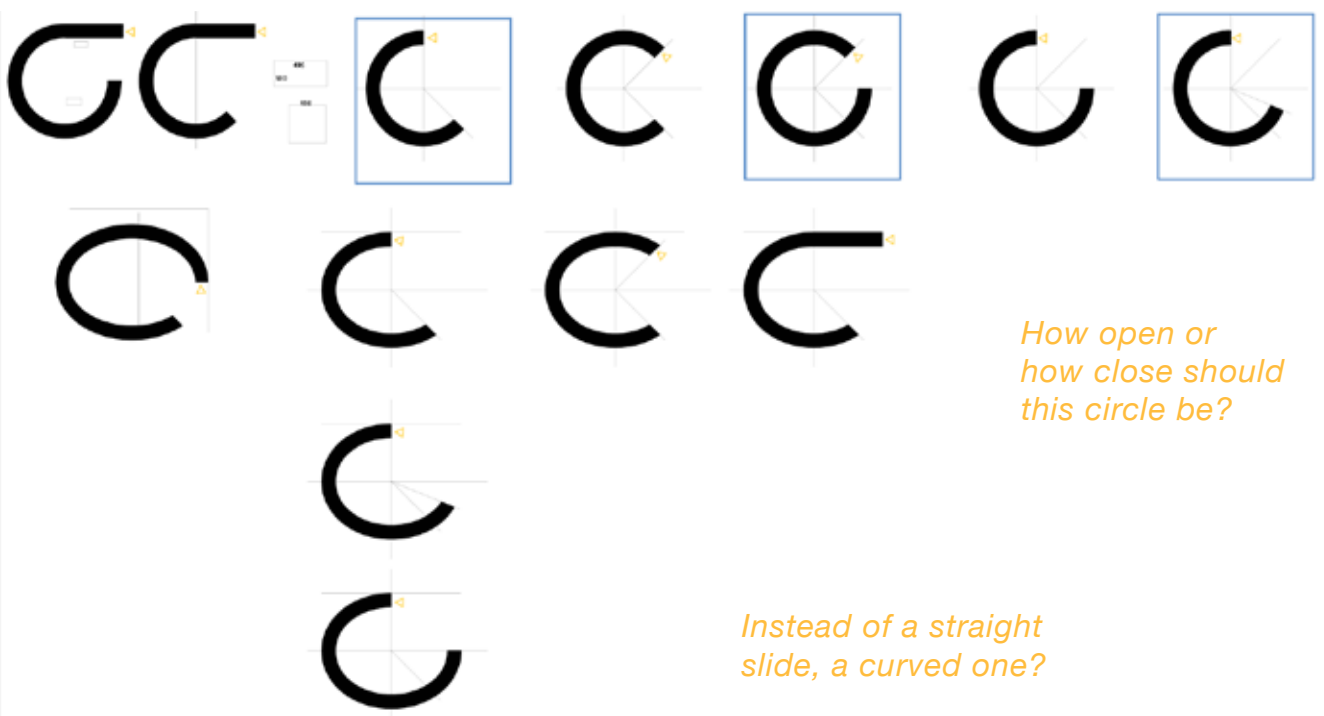
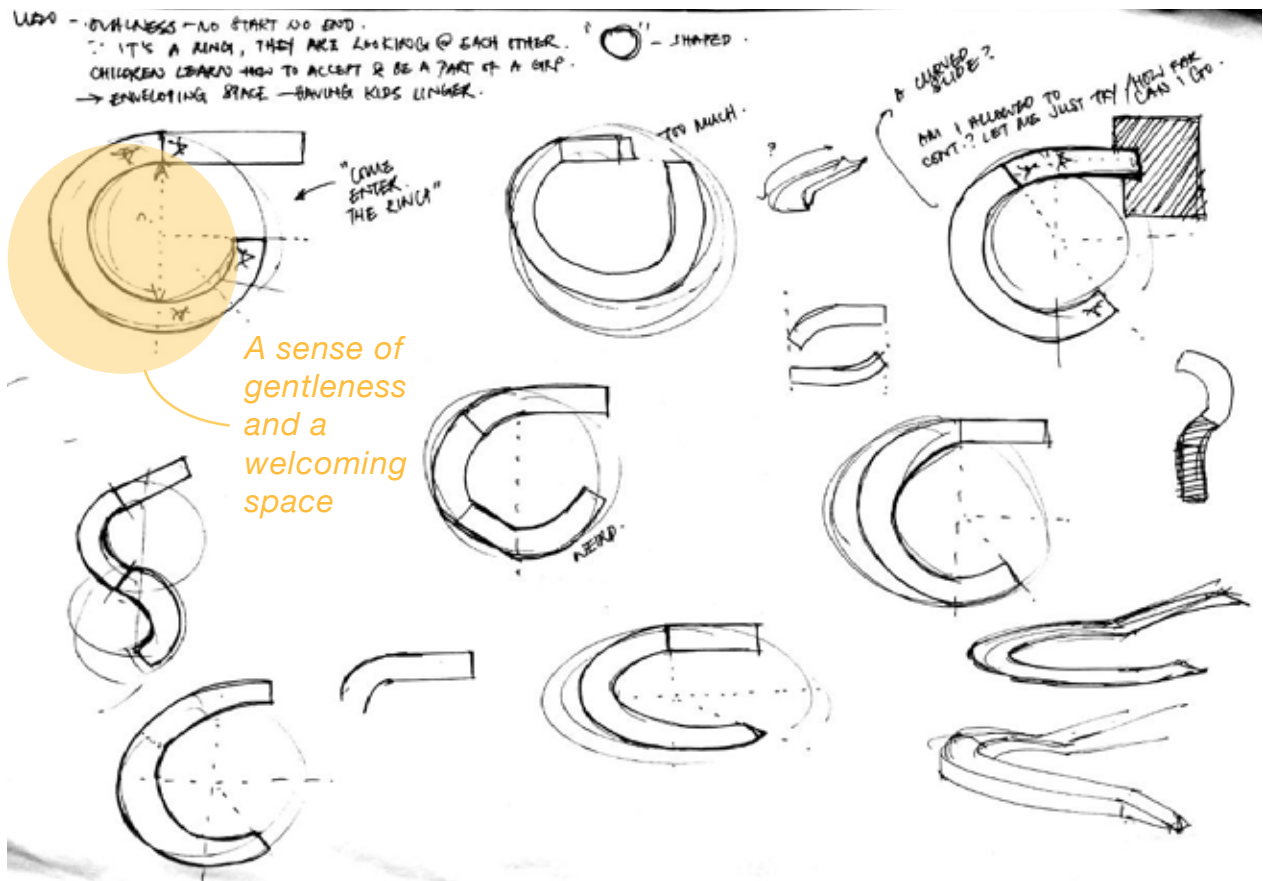
Combining extension and circularity

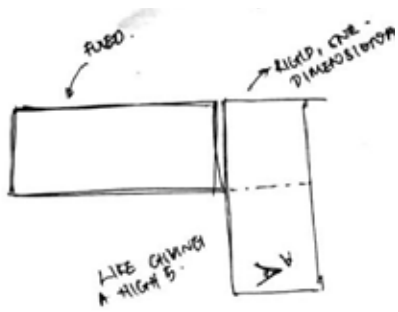


A hint of harmony, but it feels too proportionate in a bad way - like an umbrella handle

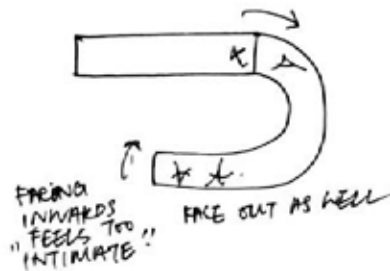
DOES NOT FEEL AS "CONTINUOUS"
- GIVES SENSE OF RIGIDNESS (HARSH LINES)

O-Shaped

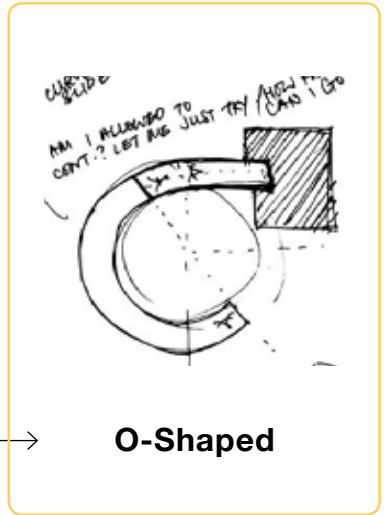




L-Shaped



J-Shaped



O-Shaped

The concept of Slide-Bench is a gentle nudge to bring users together. A softer rounder shape, becomes a more accurate representation of this:

Highlighting the meaning of **blurred boundaries between elderly and child**. The ring-ness to suggest **an enveloping space for both to linger**. The functional aspect of a circle being that, at all angles, **we allow each other to be seen**.

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VISUAL MOOD

The board defines the emotional notions of Slide-Bench. This is a guide to compose a language that communicates a quiet confidence.



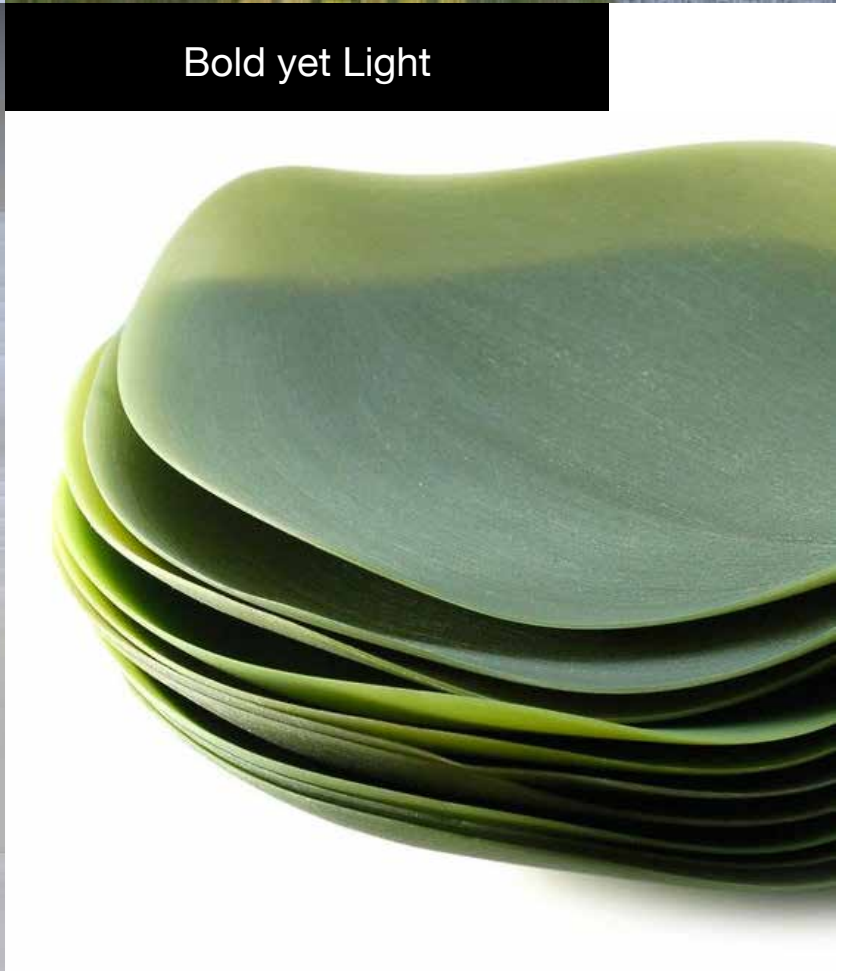
**Quiet
Confidence**

Honest



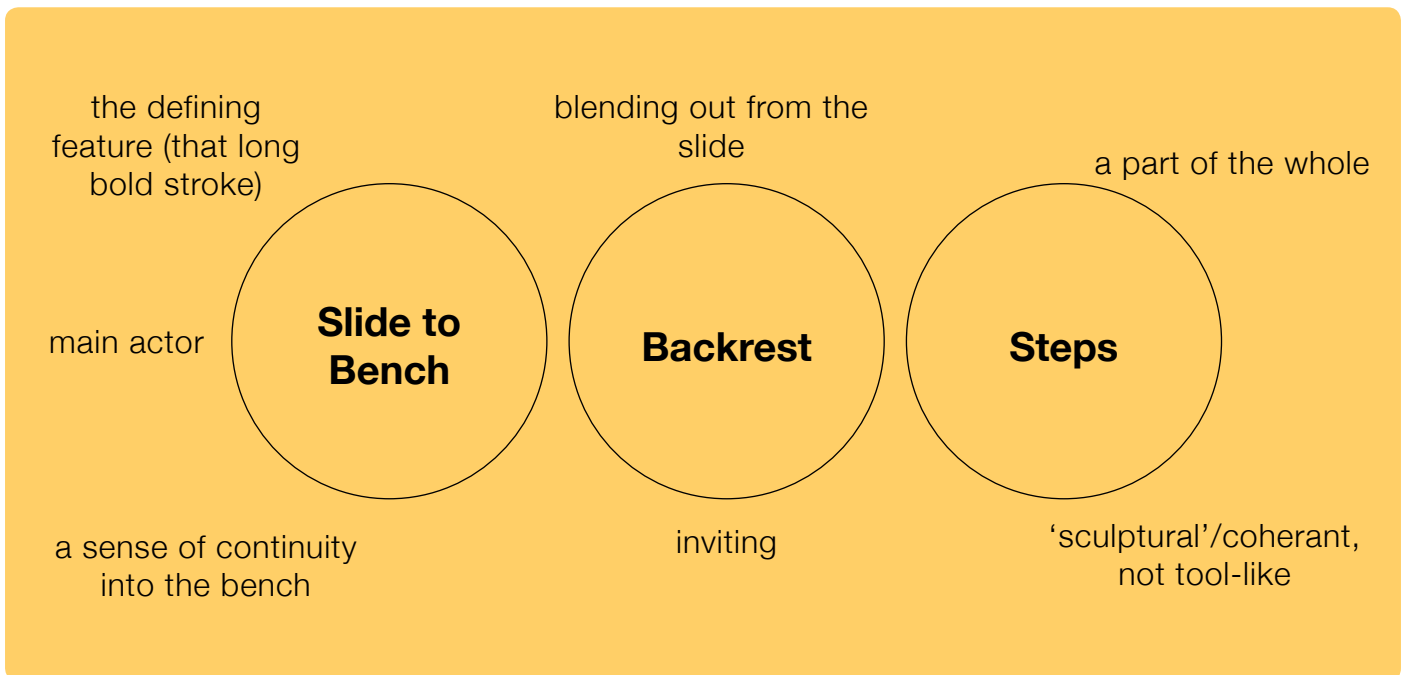


Bold yet Light



ELEMENT BOARD

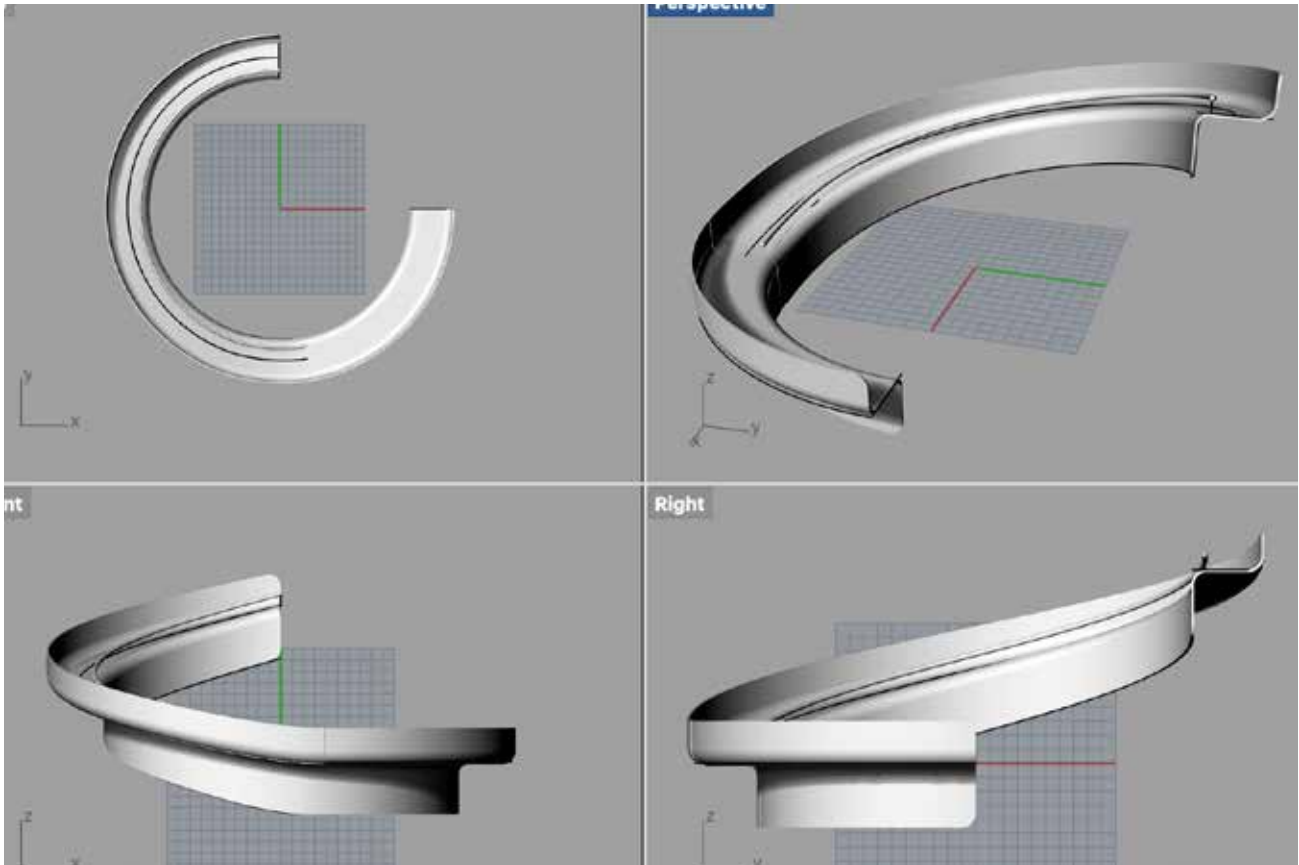
This is a word board of each element, and the role they play as part of the system.



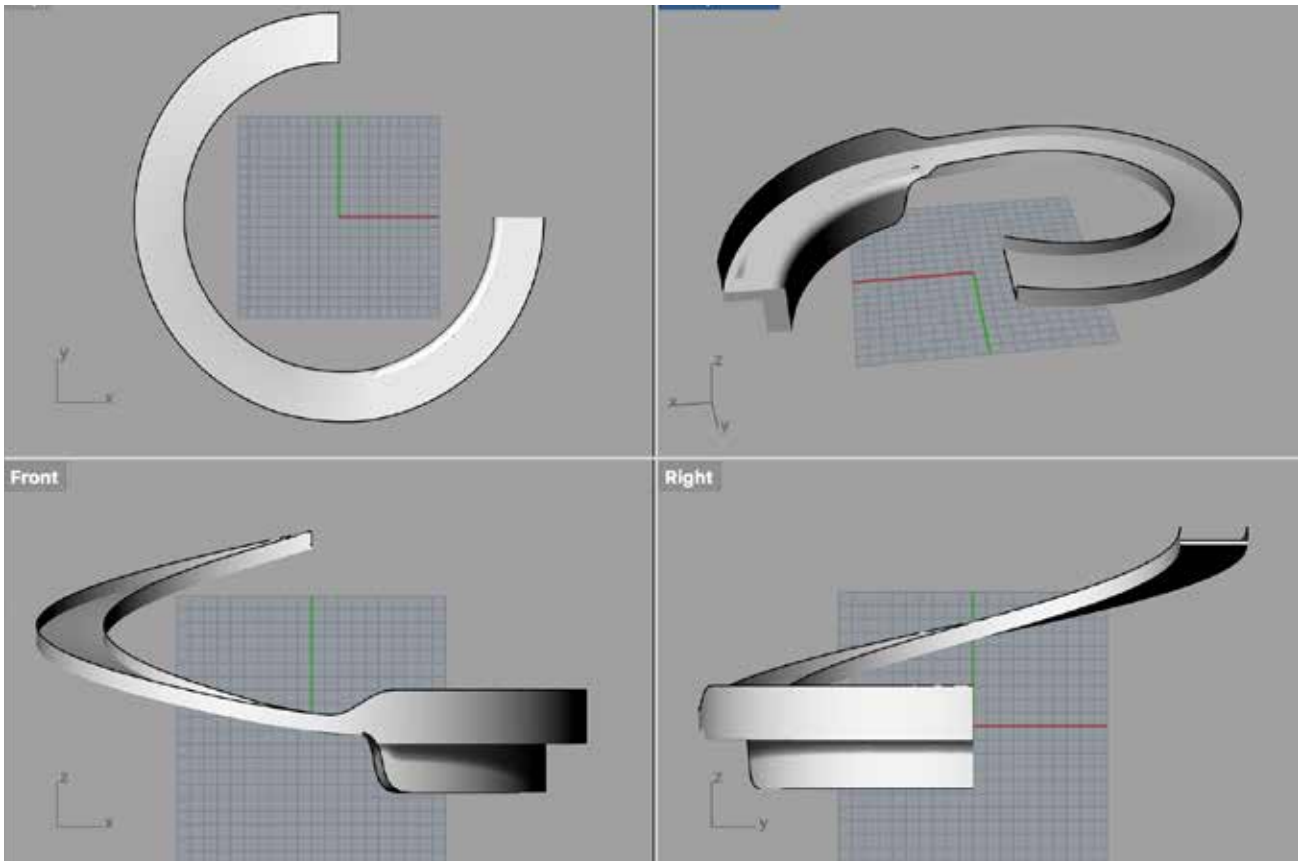
MEANING TO FORM

Quick CAD explorations of **overall** form.

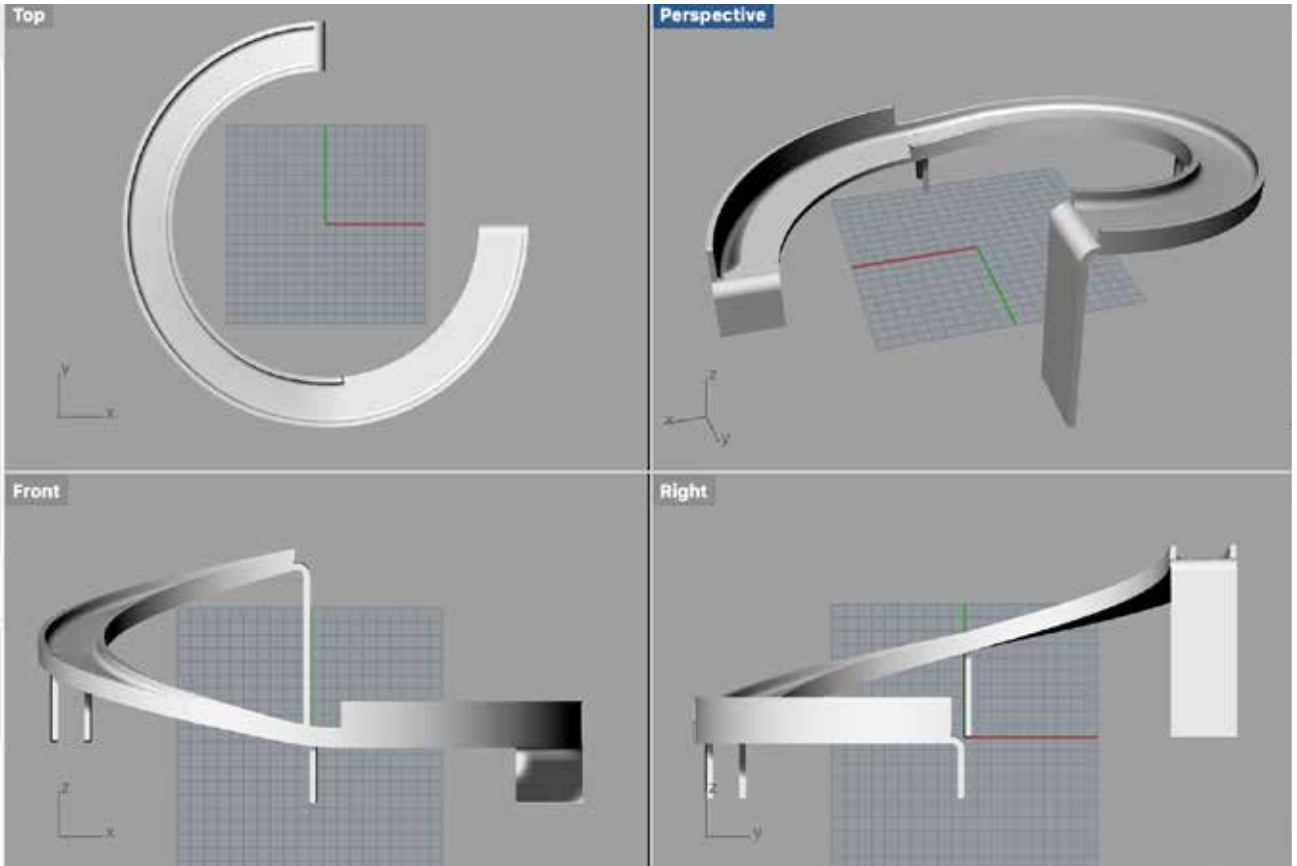
1.



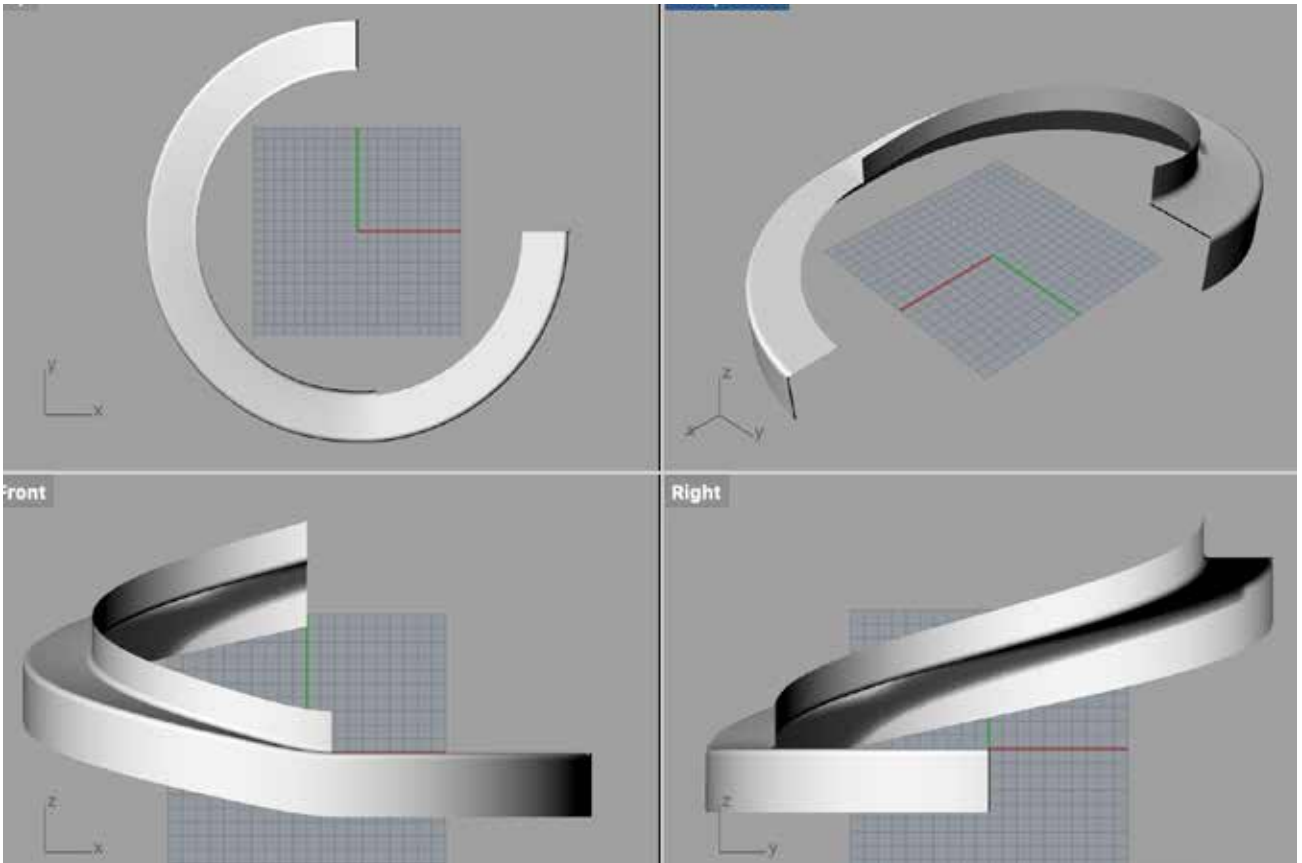
2.



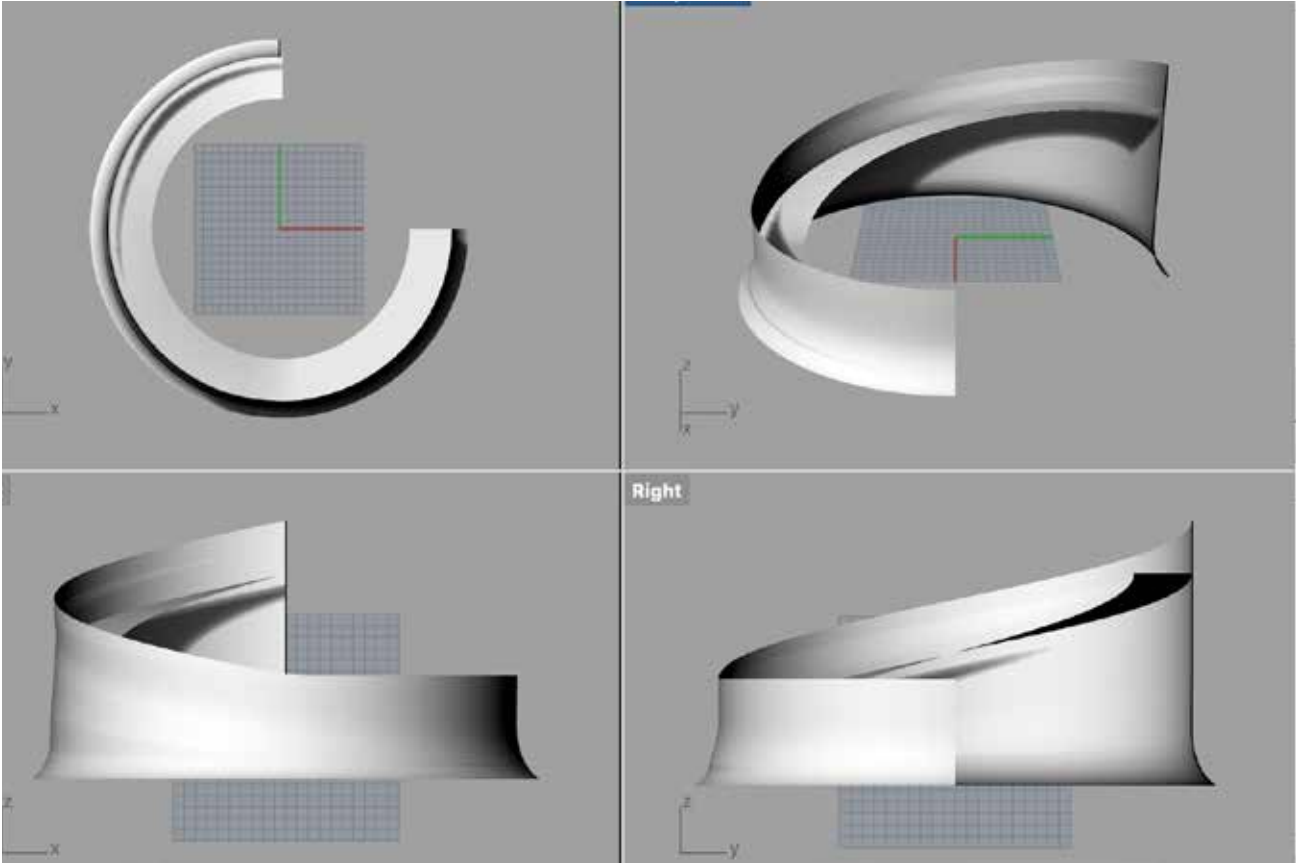
3.



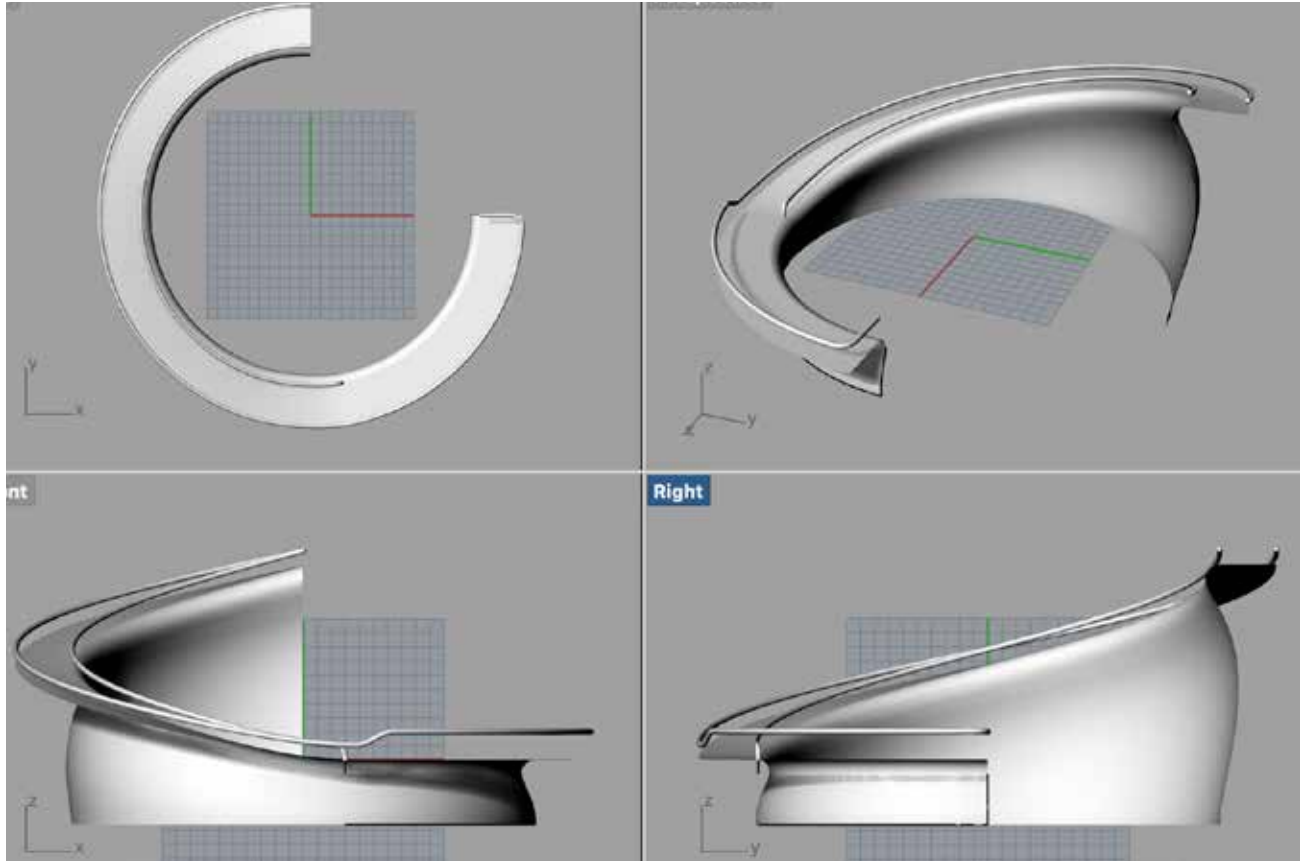
4.



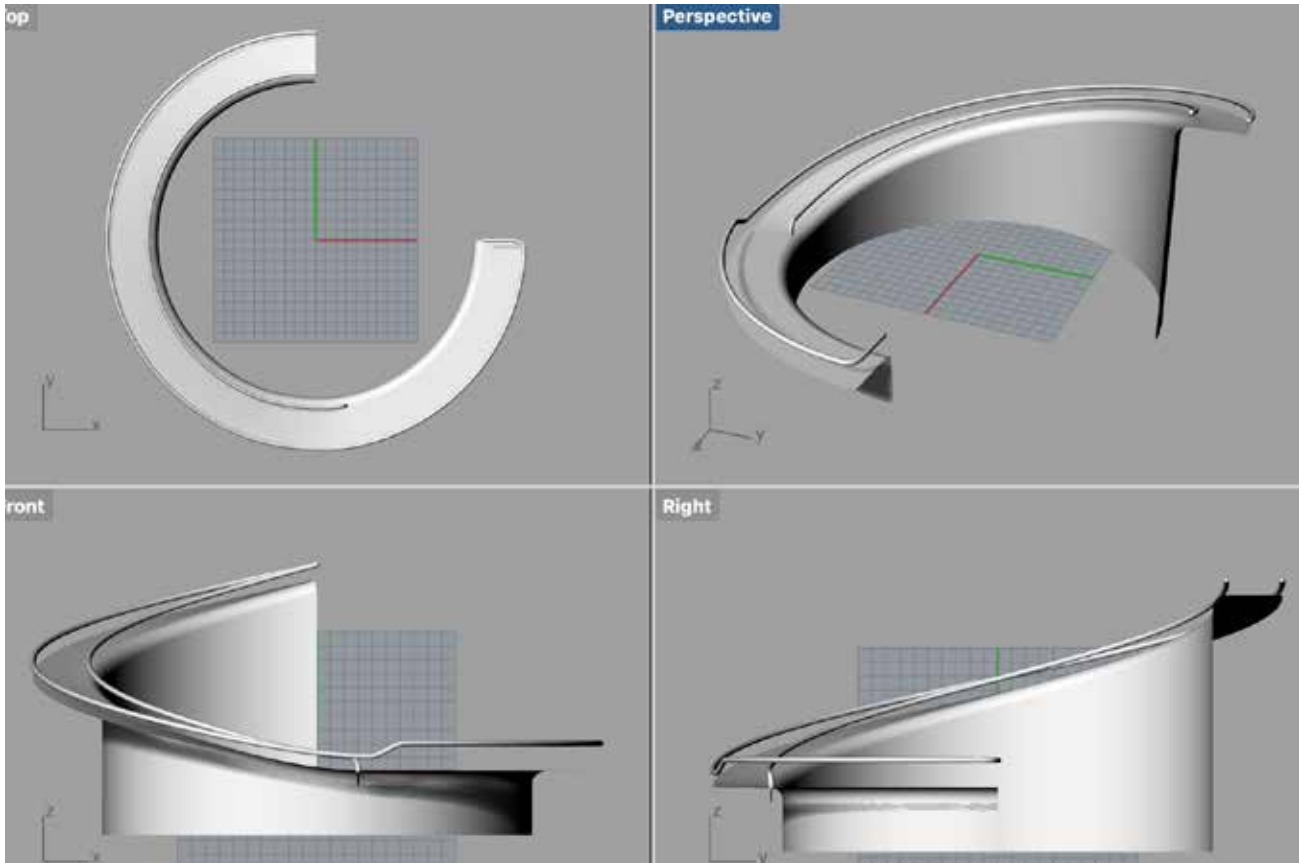
5.



6.



7.



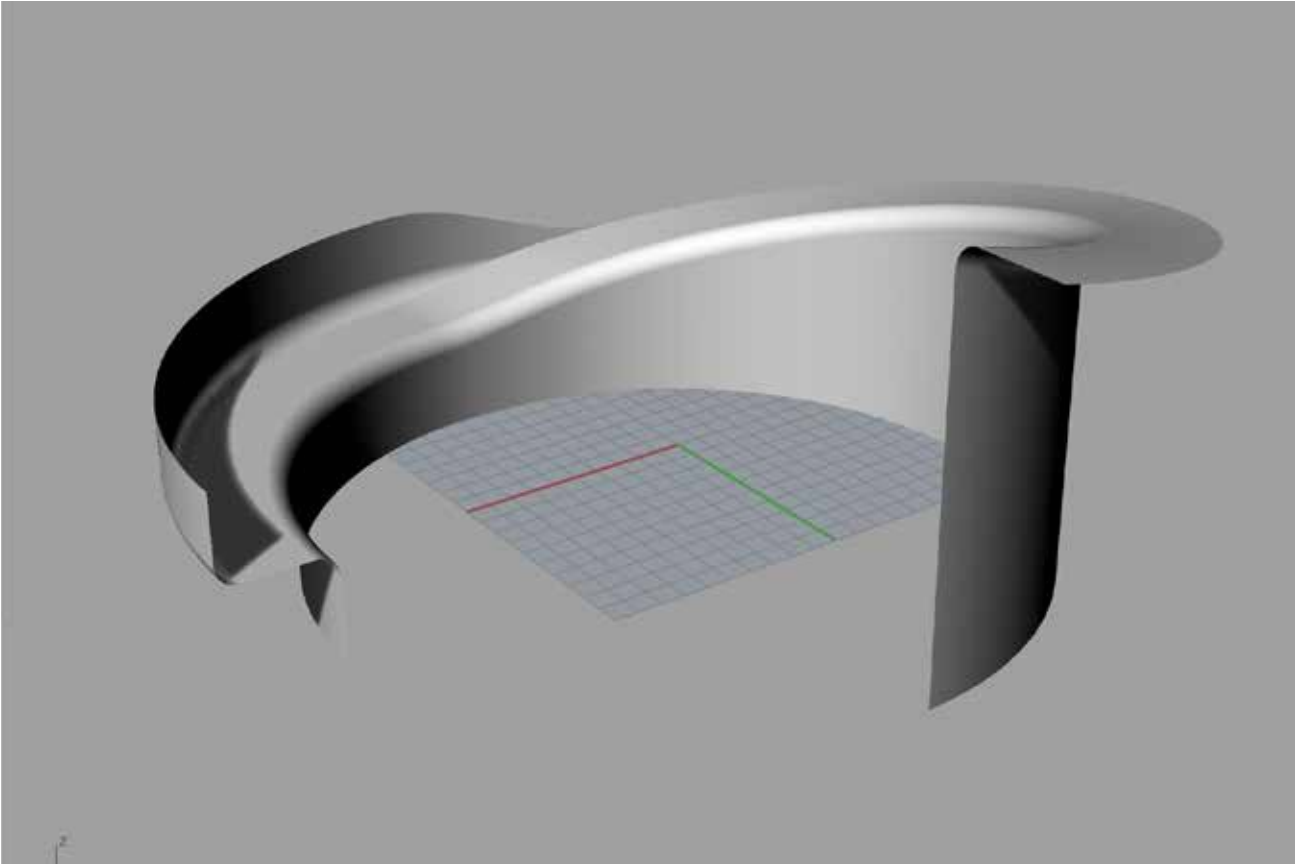
Elements taken from the visual board were used in the explorations.

Form no.7 was the chosen one. It's shape was minimal and distinct. As compared to other explorations, it was void of noise. The straight extruded wall centred the focus within the circle.

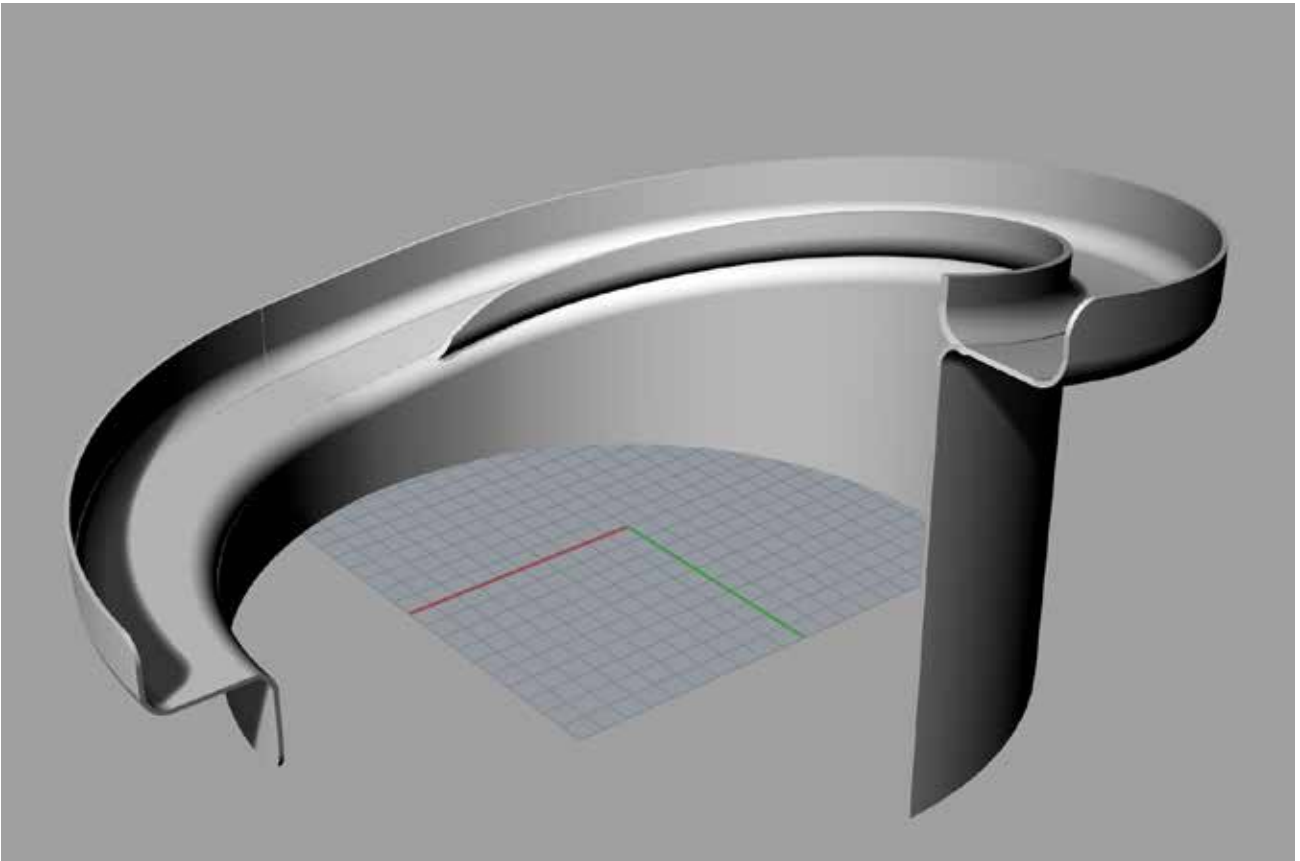
MEANING TO FORM

Quick CAD explorations of **chosen** form.

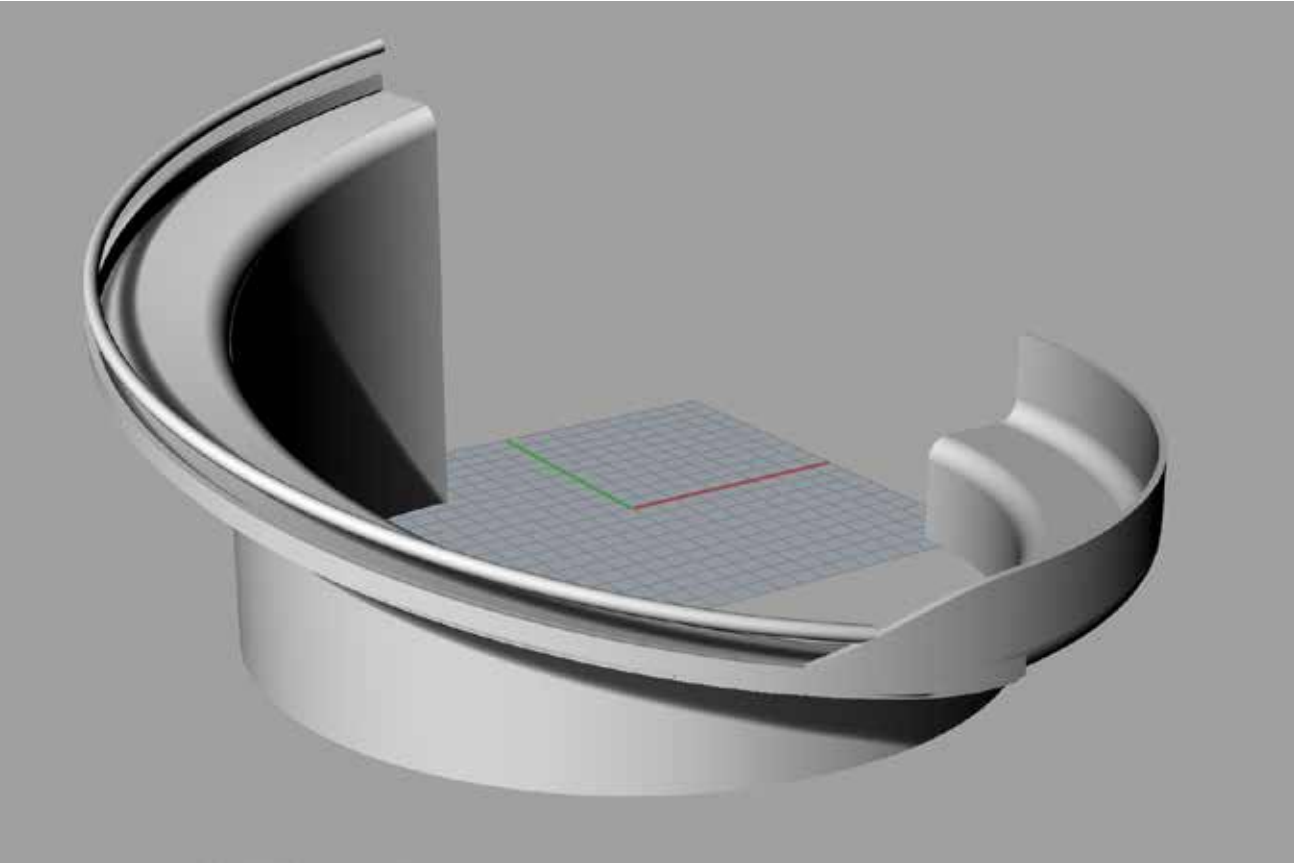
1.



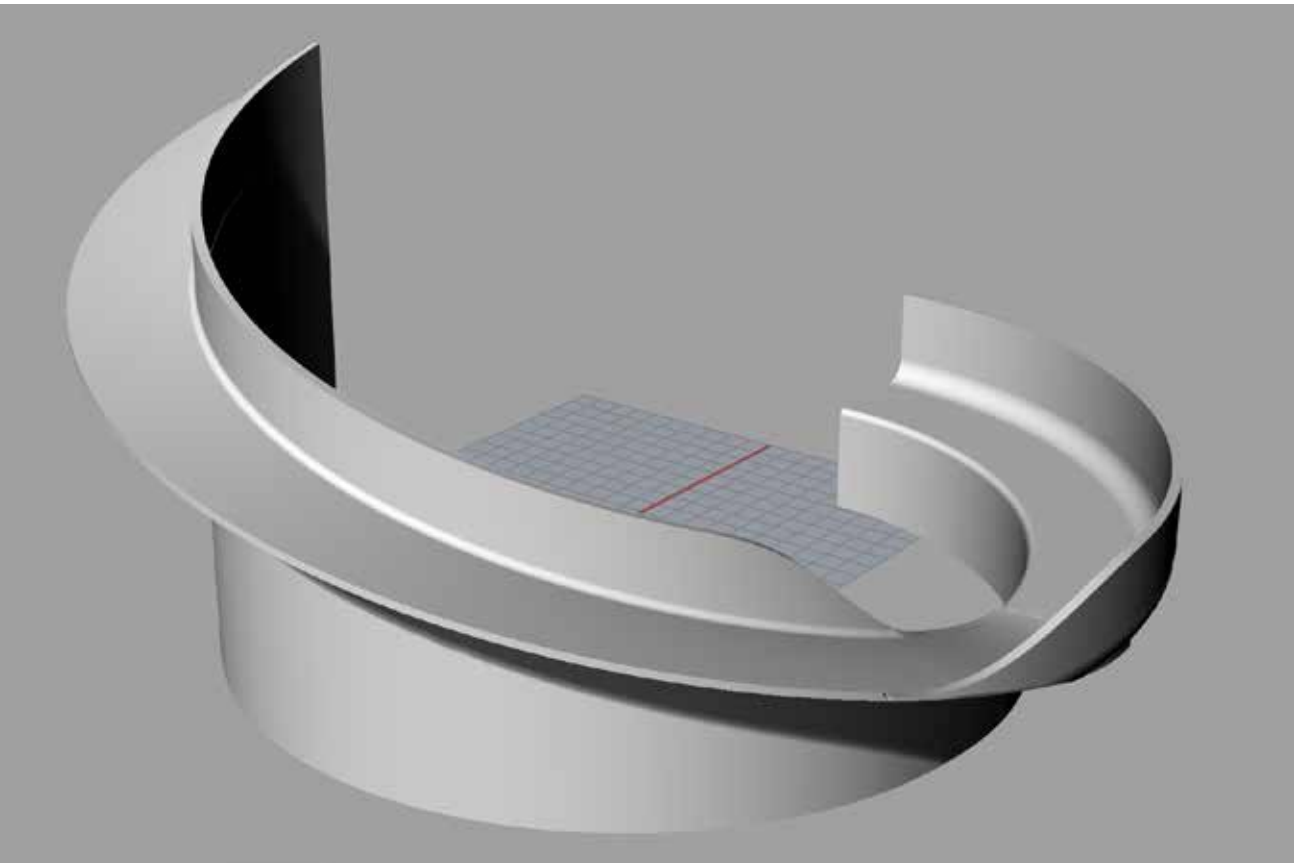
2.



3.

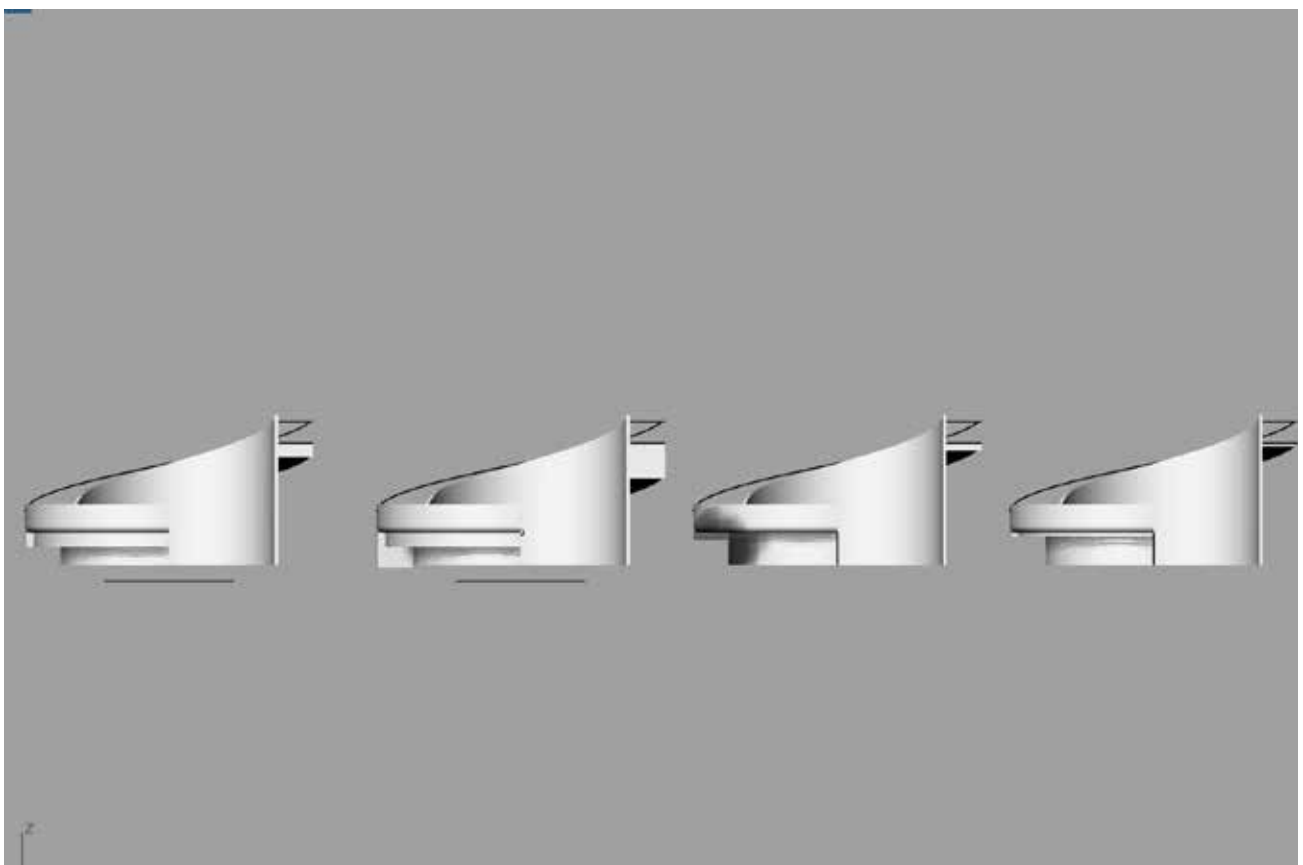
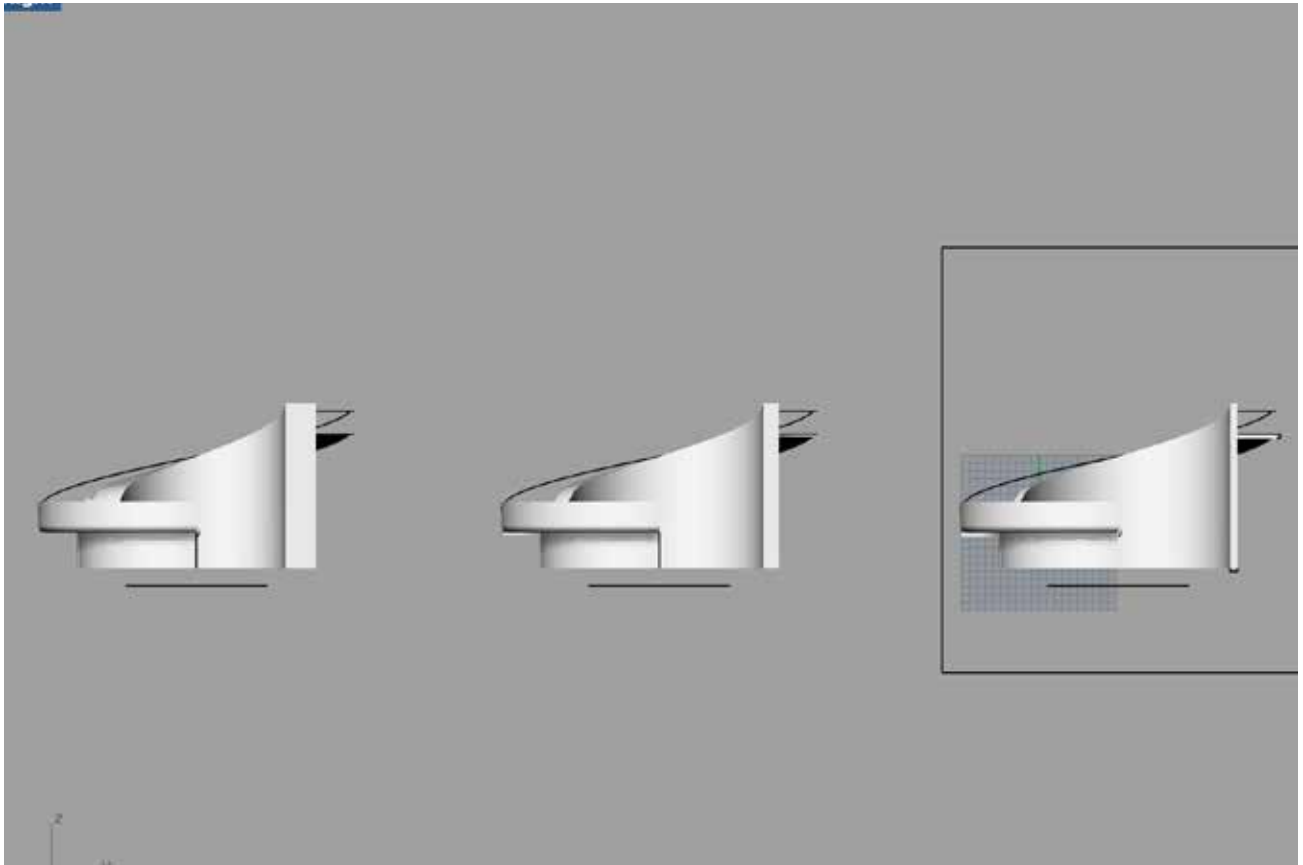


4.



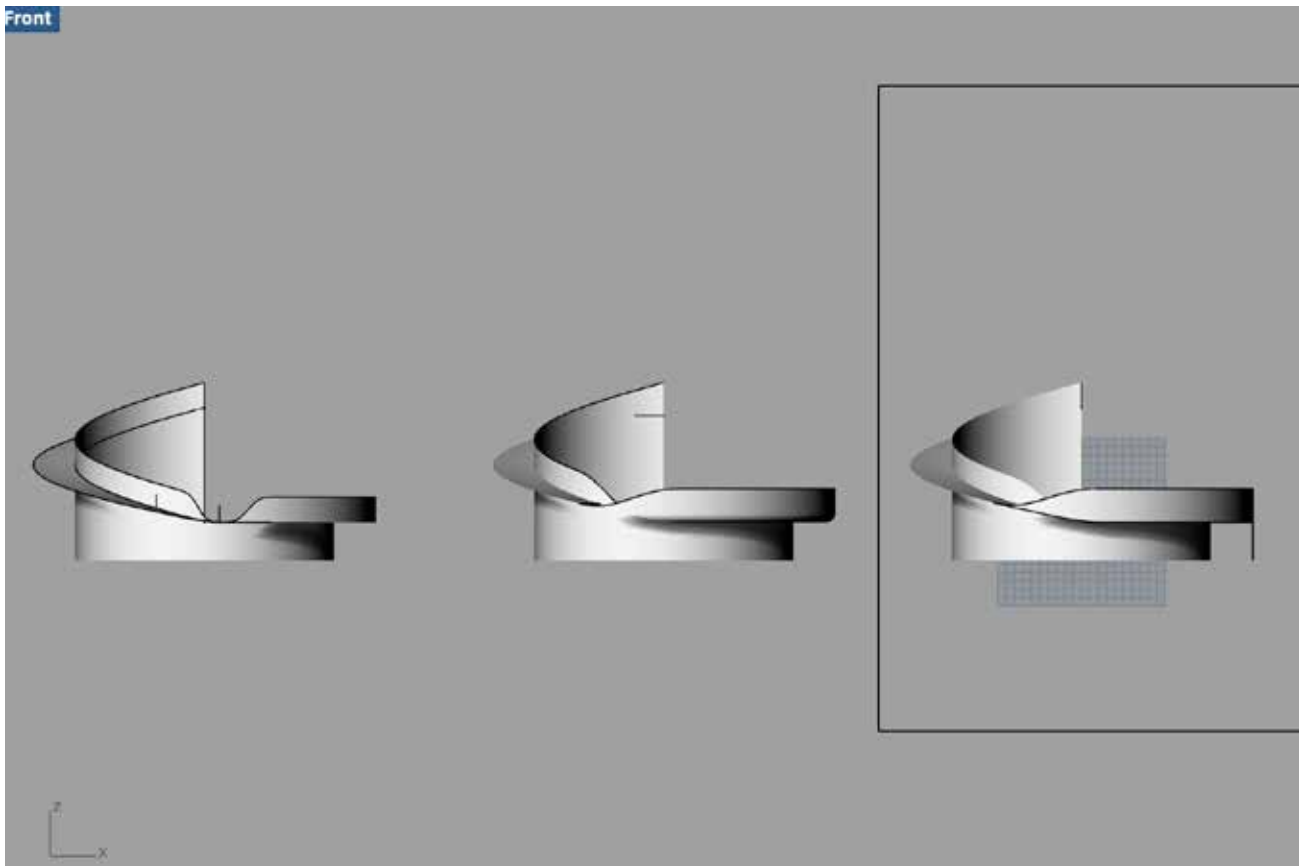
PROPORTION STUDY

Form no.4 was chosen: the inside-out element gave a sense of flow and rhythm.
Below, I study how varying the thickness of the slide/wall gives a different character
- *heavy vs light*



PROPORTION STUDY

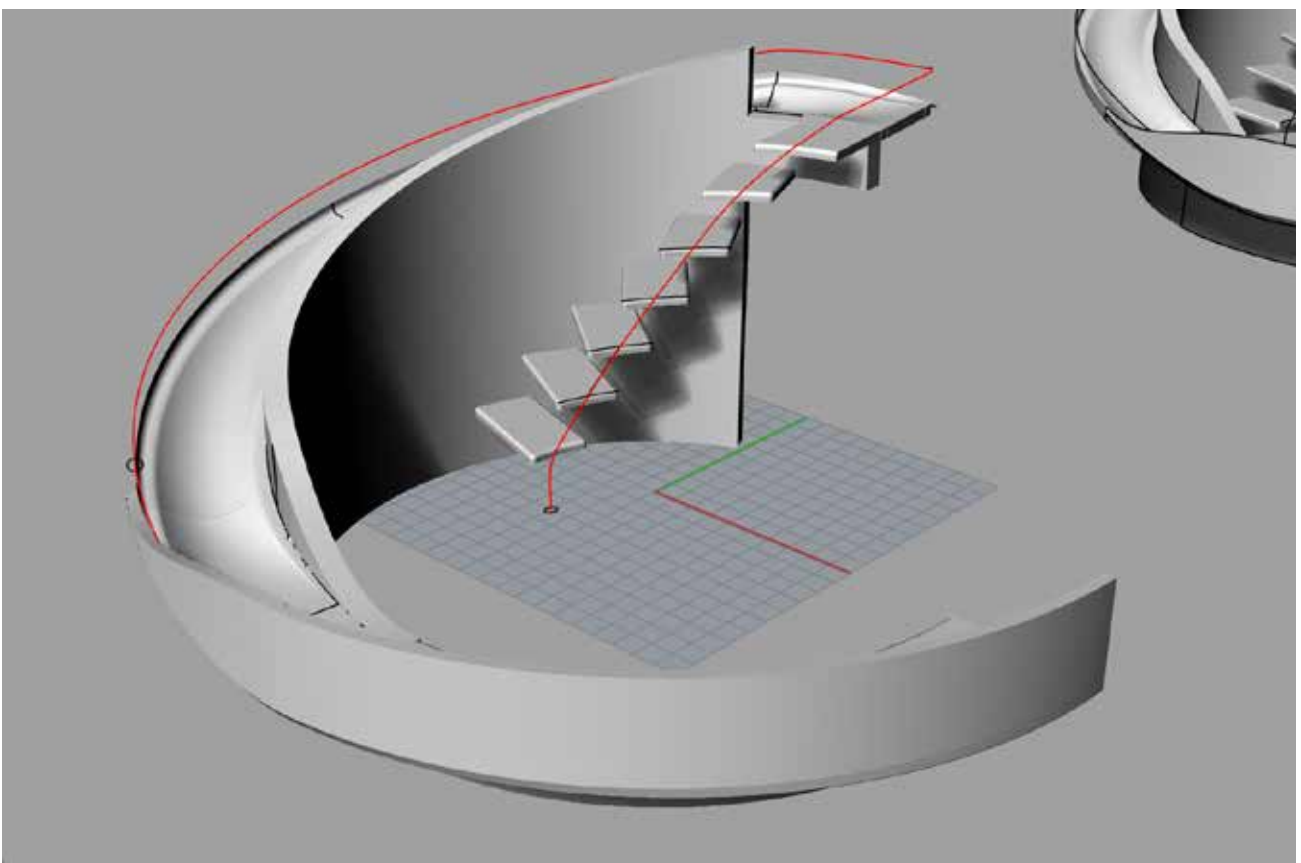
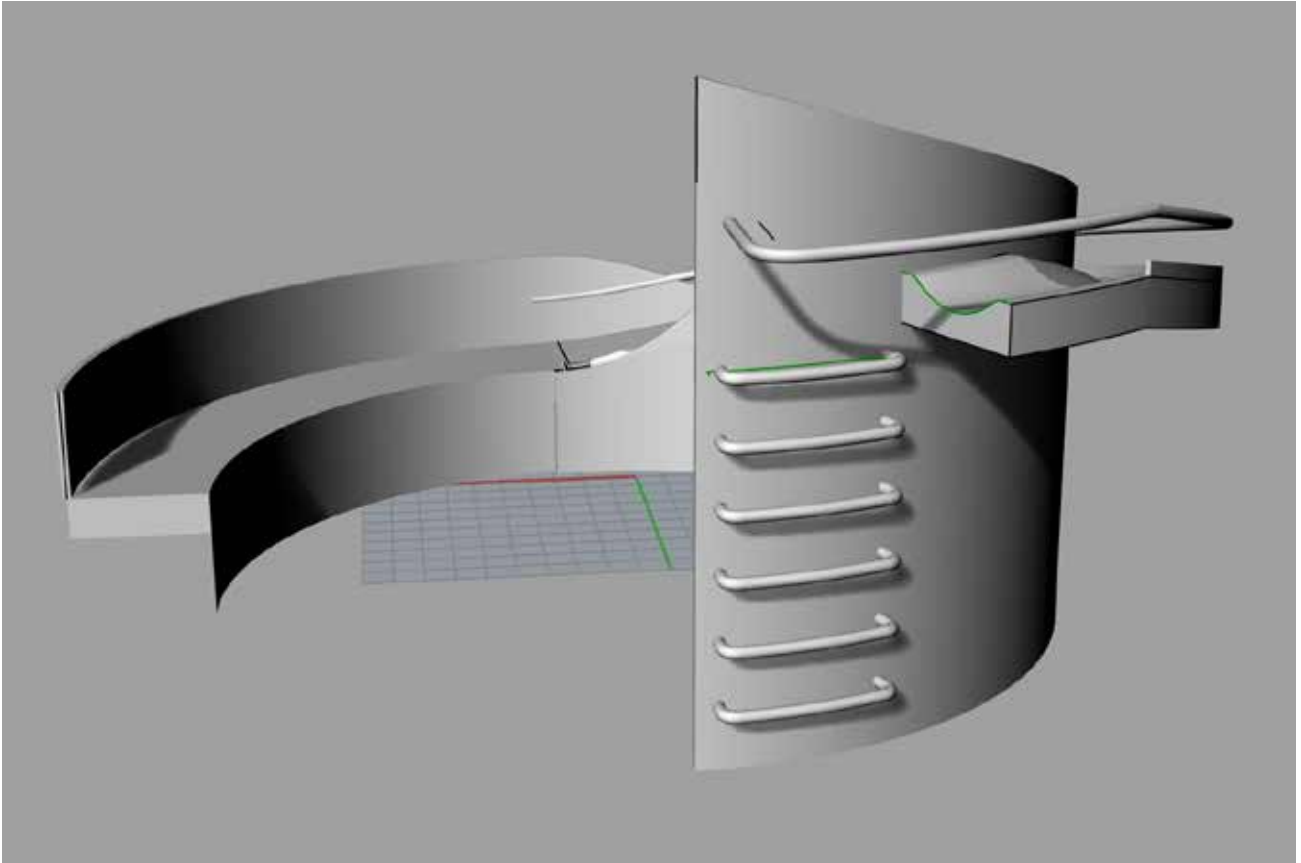
The flow of the waves.



How the waves flowed had more than 'aesthetic' considerations. As children slide down, the walls needed to create a sense of safety as well as direct them on when to drop off as they approach the bench - so they will not 'knock' into the elderly.

DETAILS

Harmonising functional elements - railings and steps.
Rather than having an awkward ladder sticking out, the main wall afforded for an area to build the climbing structure.



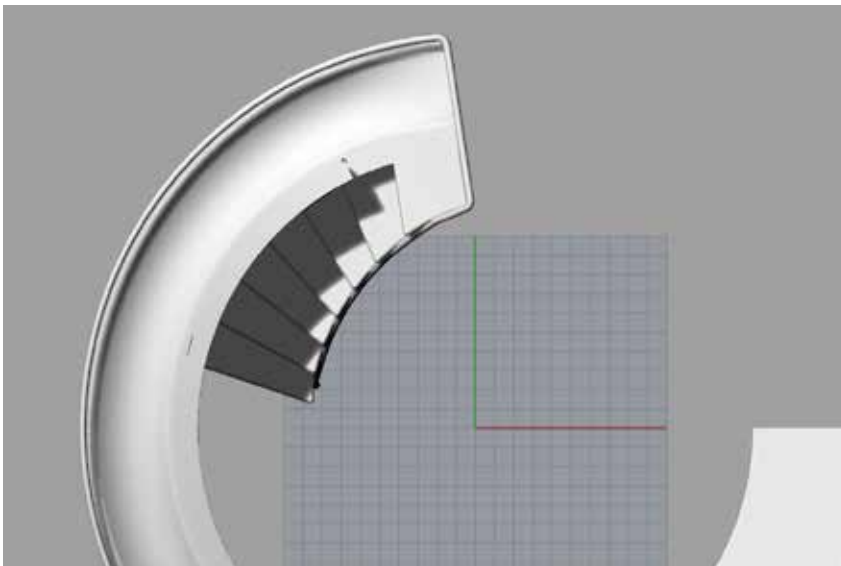
11 Removing the Mould

Design Finalisation

Form consolidation

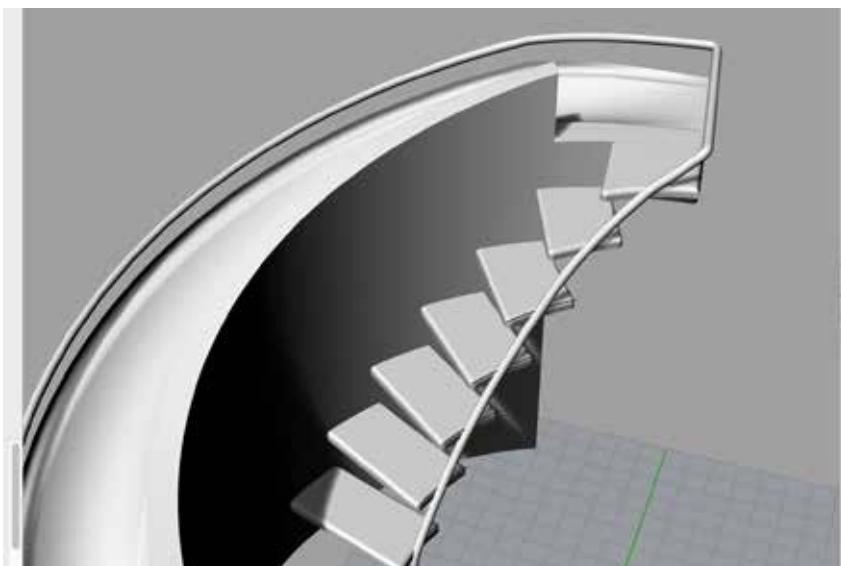
How it's made

FORM CONSOLIDATION



Stairs

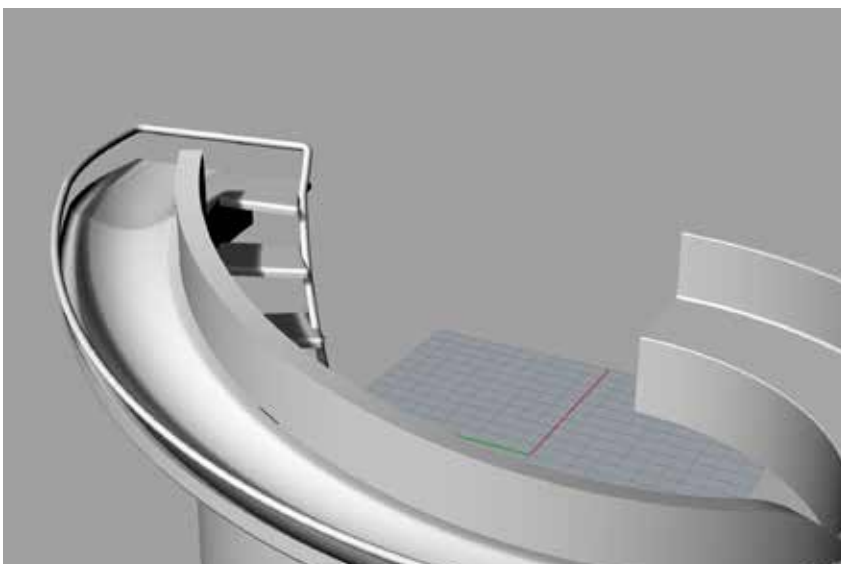
The steps follow the contours of the ring. These were attempts at unifying the element in the same language as the structure.



Rails

A simple pipe, parallel to the structure was decided on. This was meant to maintain the focus on the form.

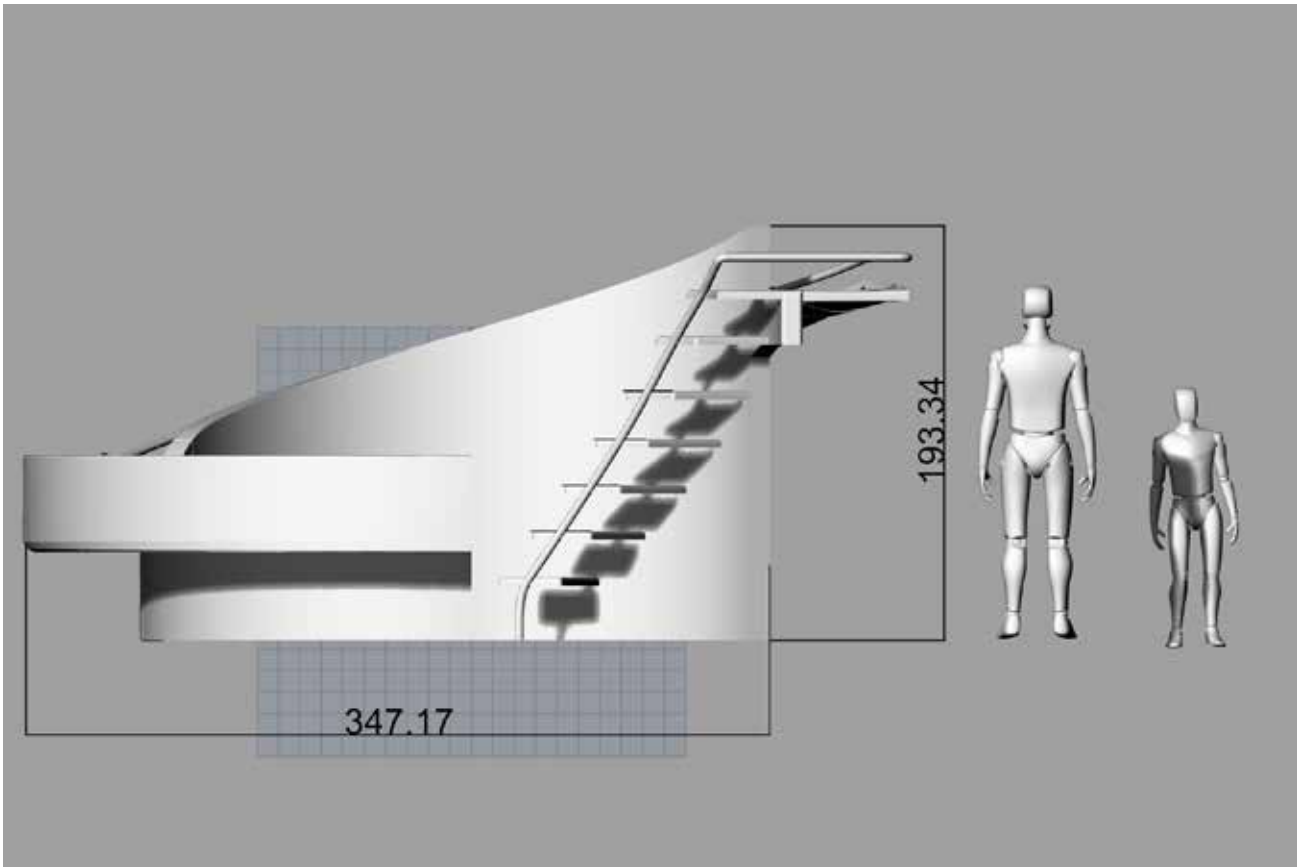
Reduce the visual noise.



Slide

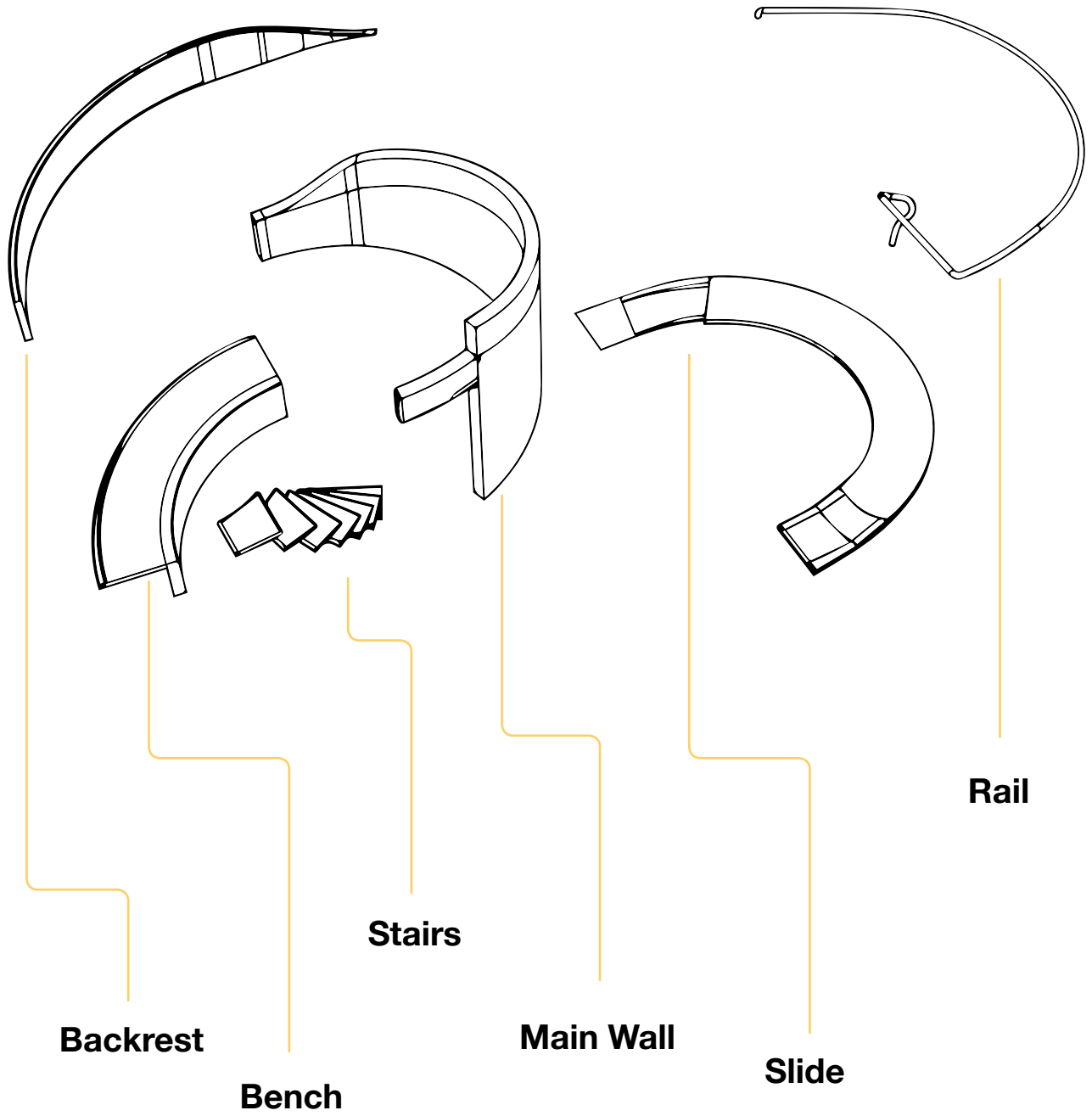
Instead of a straight platform, the slide has a slight U-shaped cross section. The concave cross-section was done in balance with the railing.

As it is important to retain the slide's language, a dip in the slide's surface meant we wouldn't need a big handle that could distract from the form.



Units are in cm.

HOW IT'S MADE



HOW IT'S MADE



The steps and slide is connected via the main wall through this mechanism.

Metal tubings are inserted through the structures to keep it sturdy.

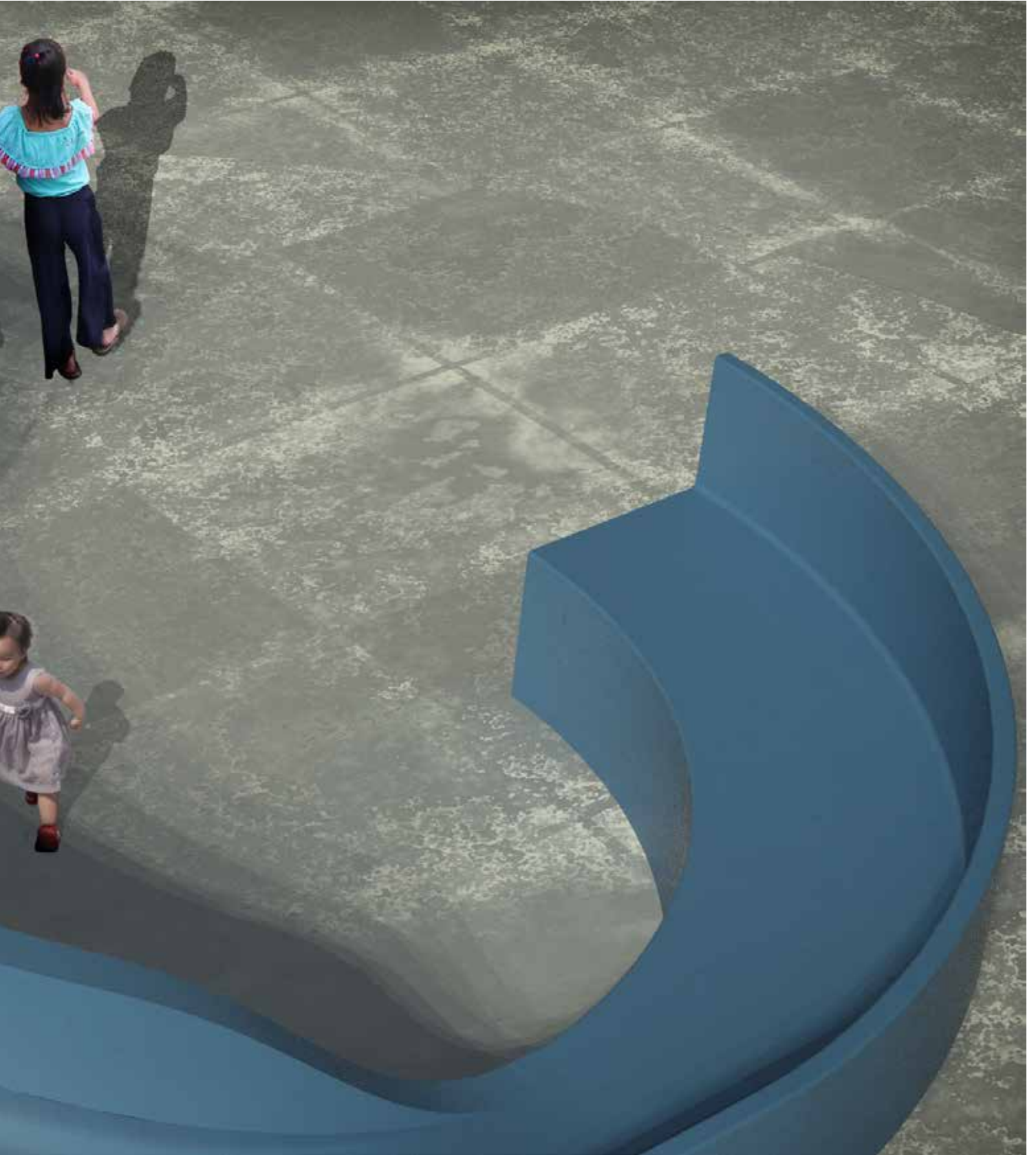
Material: Fibreglass or metal coated plastic

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*To the friends who gave time for me to discuss with them over google hangouts.
To the church mates who points me back to Jesus.
To my cousins for helping me user test.*

To my parents for refraining from watching the TV in the living room.

To God.