

# DESIGN FOR HAPPINESS IN A TRANSITION SPACE

Master Thesis Report

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MSc Design for Interaction

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Master Graduation Project Thesis

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Master Thesis:  
Design for happiness in a transition space

**MSc Design for Interaction**

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This project was carried out in collaboration with  
the **Delft Institute of Positive Design**.

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“There is no path to happiness,  
happiness is the path.”

Buddha

“What we seek, at the deepest level, is inwardly to resemble, rather than physically to possess, the objects and places that touch us through their beauty.”

Alain de Botton, *The Architecture of Happiness* <sup>26</sup>

# Summary

Every human being and every conscious life form on this planet aims to be happy. Happiness is something everyone is after - consciously or unconsciously. People try to 'achieve' it through various actions that are meaningful to them. There are many definitions and interpretations of happiness. Gautam Buddha wisely once said- "There is no path to happiness, happiness is the path." One tends to naturally wonder whether happiness is a journey, a state, a 'thing' to be achieved or is it an object of value? It can best be defined as a state for which certain preconditions are necessary. Many scholars have studied how Architecture and Urban spaces influence our state of happiness. This project aimed to create positive design interventions in the transition space of the Faculty of Industrial Design Engineering, TU Delft. These interventions will provide moments of happiness and support a positive state of mind during the daily journey of users across the transition space. The project aimed to find out how best to apply the 20 Urban Happiness Ingredients tool set by *Samavati and Desmet (2021)*<sup>4</sup> to design a transition experience. Insights from Generative Research were used to conduct Research through Design that used a Positive Design Approach. The main insights found were that the users of the IDE transition space needed to feel the fundamental human needs of security, autonomy and stimulation while in transition.

A number of ideation iterations led to the conception of an arch that supported those three needs.

The arch was chosen as the embodiment of those needs because historically, it has always been a powerful metaphor for communicating and aiding transition. It allows the bi-directional nature of a transition to be a function, it has deep cultural meanings and it has the ability to frame a great view. The result of this graduation project is a spatial installation (or spatial product) called 'Waves of

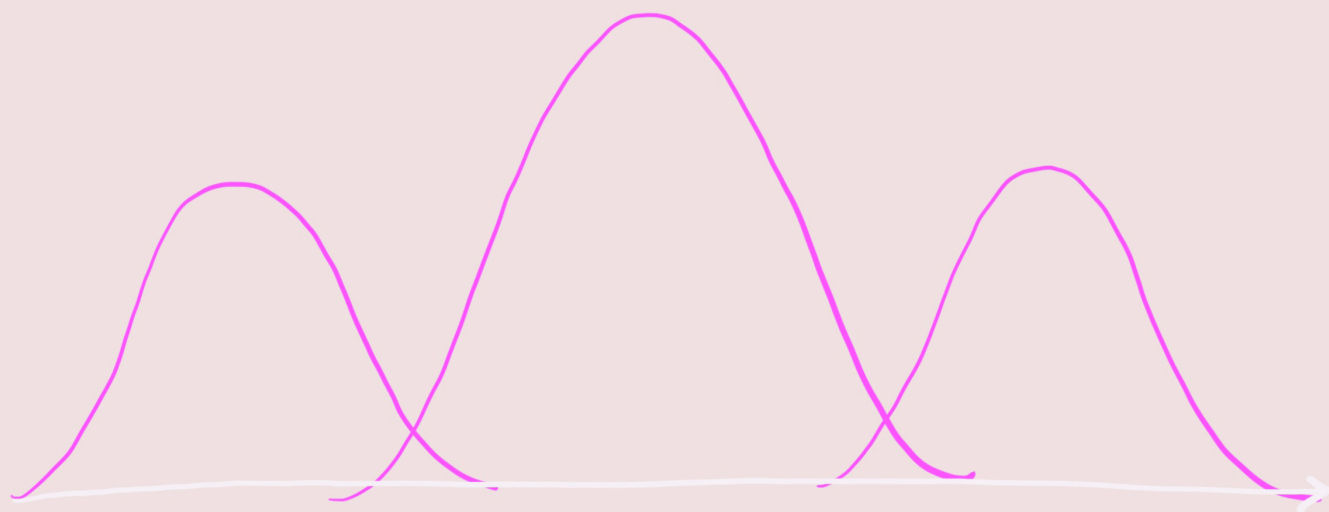
Happiness'.

It creates several moments of joy through the interactions that have been designed. The meaning created by the design is that the users must choose to take a meaningful pause while in transition to momentarily forget their worries by experiencing pleasure. These moments of pleasure remind one of pleasant memories such as childhood. The design also builds upon the need for users to practice self reflection and fulfill the virtue of self-care. The form and aesthetics of the design played an important role in satisfying the universal need for beauty. Computational Design techniques were used to design the structure depicting the 'Waves of Happiness'. User feedback indicated that the users would exit the designed transition experience with a positive state of mind after having experienced moments of joy.

'Compatibility with needs and desires of users', 'Interactive and fascinating design', 'Multisensory richness experiences', 'Place identity, memorability & city image' and 'Aesthetic qualities' were the 5 main Urban Happiness Ingredients used in the design. The project ended with a discussion on how these ingredients can be applied better to transition experience design and what this master thesis project contributed to the domain of transition experience design.

## KEYWORDS:

*Happiness, Transition Space, Positive Design, Urban Happiness Ingredients, Research through Design, Generative Research, Arch, Design for Emotion.*



# Acknowledgment

As I reach this milestone in my education, I feel immense gratitude towards all the people who have made me who I am today.

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Pieter- your understanding of design, emotions and ethics in design research have inspired me ever since I attended your class during the PUUE course at IDE in my first year. I feel your elective Design for Emotion should be a core course for DFI because I learnt the most from it in two weeks than any other course. They will both continue to inspire me till possibly the very last day I practice design in my life. Thank you for your unfiltered and constructive critique especially when you nudged me to think of simpler solutions every time. Your words- “you are going to be a design leader one day, so be more confident” changed my life. I learnt from you that good design is that which brings the most meaning to a user and addresses their core needs. :)

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sometimes stem from a non-serious approach too! :) Sahar- You are honestly the nicest architect I know, believe me I have not met anyone so encouraging and helpful in the profession and it is quite rare. Thank you for always being ready to guide me and for sharing all the resources I needed to conduct my research. I think you embody the specialisation of your PhD- a happy architect :) I am grateful for your openness to discuss all of the ideas I had when we discussed the goals of the project at the very beginning of the project and for constantly supporting me.

I would like to thank my parents for all of their unconditional love, support, critique, sacrifices, hard work and patience in dealing with my moody design spurts. I would not have been here today pursuing my dream degree at my dream university without you. Thank you for letting me pursue what I love and silently doing everything you possibly could to encourage creativity ever since I was a little child. It is said in Hindu culture that parents are your Gods and it is indeed true. I would also like to thank my grandparents and family for constantly inspiring me with their simplicity and life's philosophy.

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# Contents

## 01. About the project

1.1	Introduction	14
1.2	Defining the Scope	18
1.3	Design Aim	19
1.4	Significance	19
1.5	Design Approach	20

## 02. Literature Review

2.1	What is Happiness?	24
2.2	What is known about Transition Spaces?	26
2.3	Designing Happy Experiences in Spaces	29
2.5	The Positive Design Approach	32
2.6	20 Urban Happiness Ingredients	33
2.7	Overview	36
2.8	Conclusion	38

## 03. The Context

3.1	Elements of the IDE Transition Space	42
3.2	What people do there: Observation Study and Theses study	44
3.3	What people feel there: Interviews	50
3.4	What people need there: Generative research with users	56
3.5	Three Scenarios of Use	64
3.6	Three Types of Users	64
3.7	Design Goal and Vision: Iteration 1	65
3.8	Relevant Urban Happiness Ingredients	66
3.9	Design Implications	67

## 04. Ideation

4.1	Transition Space Design: Exploring Concepts	70
4.2	Focusing on the Transition Experience	76
4.3	Designing an Arch	80
4.4	Evaluating the Concepts	86
4.5	Final Iteration: Design Requirements	92
4.6	Final Design Concept: Iteration 1	93
4.7	Reflection on the Design	96

## 05. The Design

5.1	Visualising the Positive Design Approach	100
5.2	Overview of the Final Design Concept	101
5.3	Designing the Interaction	109
5.4	The Design Process	115
5.5	Applying the Urban Happiness Ingredients	119

## 06. Design Evaluation

6.1	User Feedback on the Final Concept	122
6.2	Recommendations	127

## 07. Discussion

7.1	Reflection on the Design Goal	132
7.2	Contribution to Transition Experience Design	132
7.3	Applicability of and Contribution to the Urban Happiness Ingredients	133
7.4	Limitations	137

References	136
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Appendix	Annexure
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# 01

## About the project

- 1.1 Introduction
- 1.2 Defining the Scope
- 1.3 Design Aim
- 1.4 Significance
- 1.5 Design Approach

*This chapter explains the aim of the project, outlines the research questions, defines the chosen scope, explains the significance of the project and how the project was carried out.*



# 1.1 Introduction



Fig. 1.1: The IDE transition space

It is recognized that built spaces and open public spaces influence our feelings. People can experience both negative and positive emotions when perceiving and using such spaces. It can therefore be worthwhile to explore how such spaces can be designed to support positive experiences.

The beauty of architectural spaces can evoke positive feelings in people who experience them. For eg. stained glass windows in an old church combined with a high ceiling, heavenly light and organ music. On the other hand, hospital intensive care units which have cramped spatial layouts, monotonous dull color schemes and high alarm noise- create despair, fear, sadness and stress. A negative state of wellbeing is prolonged in healthcare, which must not happen. The happiness of people is therefore shaped by their collective experience in these spaces.

Corridor spaces are interesting transition points because their primary function is to either connect two built spaces or a public space and a built space. In an urban context, these corridor spaces can have the same or different size compared to the spaces they connect but they need not necessarily be narrow. In reality, while there is a change in the way both the preceding and succeeding spaces are used, there are usually no design elements in a 'corridor' space i.e. a transition space itself to interact with.

A positive design of a transition space can make the transition experience pleasurable, virtuous and personally significant to the user *Desmet, Pohlmeier and Forlizzi (2013)*<sup>1</sup>. It can set the foundation for a positive state of mind to be prolonged during the time spent in the adjoint spaces that feed into the transition space. Thus there is a huge potential in applying human centered design principles to an urban design

context.

This project focuses on designing a transition space in an urban context which can support happiness. It means that transition space will be perceived as a 'spatial product' that users interact with.

As a case, this project focuses on the transition space in front of the entrance to the Faculty of IDE, TU Delft (Fig. 1.1). Students, employees and visitors are the users of this space. Even though the transition space is connected to other TU Delft faculty buildings such as TPM, Pulse, 3ME and the Library, the chosen focal point of this thesis is the connection between IDE and the transition space.

There lies an opportunity in providing moments of happiness to these transition space users, through positive design. They will experience these moments both before and after they step into their academic and working lives daily. How can the interactions with the IDE transition space be designed to support a state of happiness?

This project seeks to explore, identify and apply the relevant ingredients for creating urban happiness in a transition space. It will lead to the creation of small moments of joy, pleasure and meaning for the humans of the IDE transition space. This will contribute towards their journey towards a happy working life.

One can begin by understanding the experiences that currently make the users of this transition space happy and the features or conditions that impede it. There is also a need to understand what the users truly need while in transition through it.

Many famous scholars have defined the state of happiness. To support a state of happiness, the designed experiences must be engaging for eg. *Csikszentmihalyi (1990)*<sup>2</sup> introduced the concept of a flow state while creating engaging experiences. Within the scope of this thesis, a happy state is considered

to be a state when people feel more positive emotions than negative emotions.

The architectural features, layout, constituent elements, way finding, presence of other people and similar variables that matter in the formation of spatial perception of the users are the objects of study while the transition space users and their behavior are the subjects.

The users of this transition space experience diverse interactions during their daily lives- at home, while commuting to the university and while crossing through the transition space. They engage with products and services before, during and after interacting with the transition space for eg. their phones, the clothes they wear, their bikes, cars, public transport, coffee, food, etc. In the reverse scenario, they also experience other things inside the IDE building and while leaving it through this transition space.

The aim was to create positive design interventions in the IDE transition space where nothing 'designed' currently exists to interact with, as users walk into and out of the IDE building. The project intends to achieve this by applying relevant ingredients of urban happiness.

**The aim was to create positive design interventions in the IDE transition space that provide moments of happiness and support a positive state of mind during the daily journey of users across the transition space.**



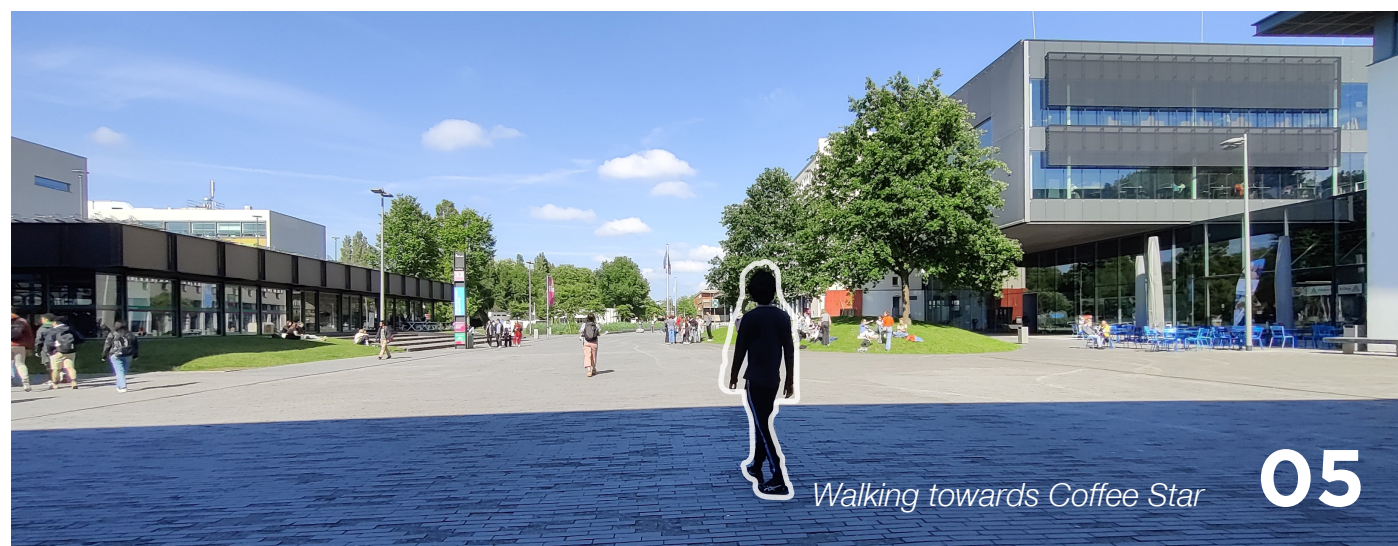
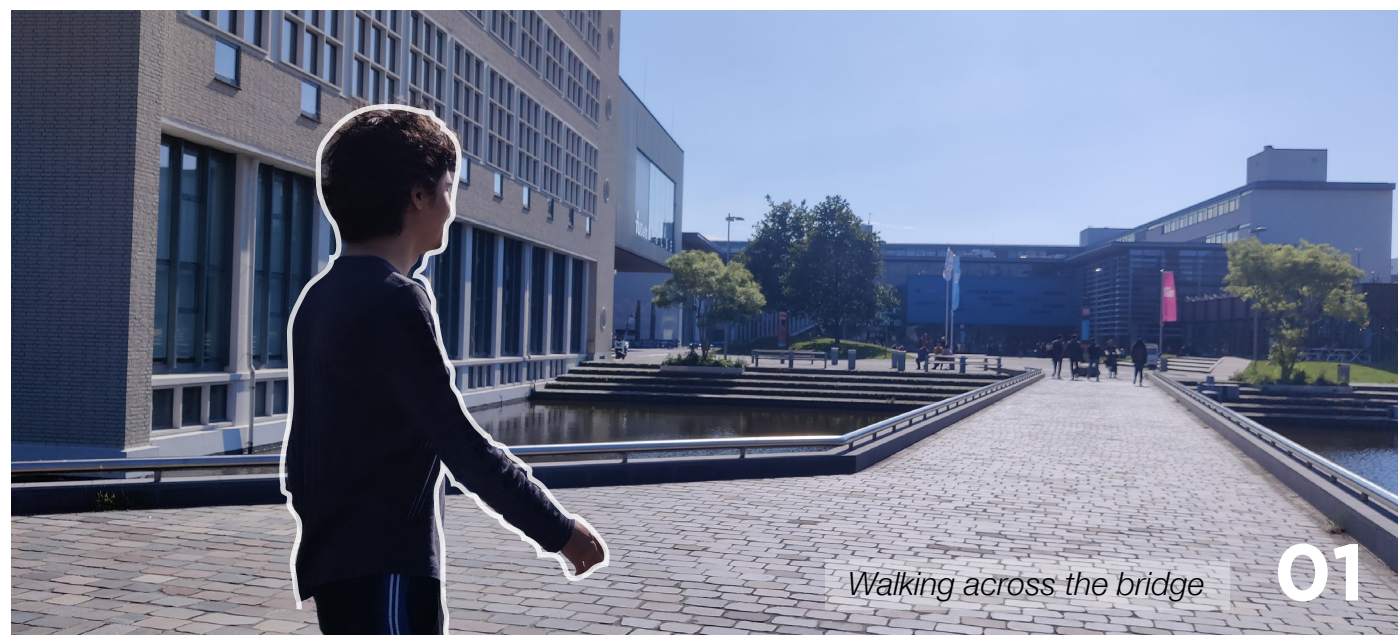


Fig. 1.2: Six current situations of using the IDE transition space.



## 1.2 Defining the scope

### The design question is- how can the user realize moments of happiness by interacting with a designed transition space?

In the case of the chosen transition space, there is a relationship between an open urban corridor space and the adjacent closed spaces. This relationship creates both a problem and an opportunity.

The open urban space (transition space) serves as a relaxation and gathering spot for the users. If the weather is not favorable and once their relaxing agenda is fulfilled, they return back to the closed spaces, for eg. IDE. There is an inlet and outlet of users between these spaces but no retention in the transition space.

The challenge of this retention problem is to enhance through design the potential of this blank 'canvas' urban space transition space in creating moments of happiness. Designing for happiness calls for the need to understand the relevant fundamental human needs *Desmet and Fokkinga (2020)*<sup>3</sup> within the context. They can be used to inspire the positive intention of the designed interaction with the transition space.

The problem addressed in this project is the lack of positive design elements in the IDE transition space that can create moments of happiness. Currently, users do not assign any meaning to the transition space and

it mostly functions as a corridor. The design question is- how can the user realize moments of happiness by interacting with a designed transition space?

Can this transition space design create a state of positive being and thus contribute towards the journey to a happy working life? How can the user interact with it meaningfully in a pleasant, joyful, absorbing and engaging way? How can the users be helped in switching emotions from their personal lives to their professional lives and vice versa through positive design?

The aim was to create positive design interventions in the IDE transition space that provide moments of happiness and support a positive state of mind during the daily journey of users across the existing transition space.

This is to achieve the creation of a new transition space to which the user assigns meaning and achieves a state of 'being' while interacting with it.

The main focus is designing for the experience of transition rather than the design of the entire existing transition space itself.

Once the nuances of the context of the transition experience are studied and the user needs are understood, ingredients of urban happiness can be applied.

## 1.3 Design Aim

The goal was to increase moments of happiness in the transition space in front of the IDE building entrance for those users who enter and leave the IDE building.

This was achieved by using the 20 Urban Happiness Ingredients *Samavati and Desmet (2021)*<sup>4</sup> through design and co-creation to create a series of design interventions and changes that in turn can create moments of happiness.

The 20 Urban Happiness Ingredients are the result of interdisciplinary research done at the Delft Institute of Positive Design.

The first outcome is to use them to design the IDE transition space to create moments of happy transition in a real life context.

The second outcome is the evaluation of the applicability of the 20 Urban Happiness Ingredients to transition space design. This is a reflection on how the Urban Happiness Ingredients framework can be used.

**This will be done by an exploration of the use of 20 Urban Happiness Ingredients through design and co-creation.**

## 1.4 Significance

This project aims to create a happy urban place based on interdisciplinary research. Its significance lies in the practical application of human centered design principles to an urban transition context for the first time to create happiness. While there are many papers that have studied the effects of built space on happiness and wellbeing, the practical application of design for happiness principles to an urban context (i.e. the vice versa) is yet to be explored. Hence this thesis aims to understand how best to apply these 20 Urban Happiness Ingredients and to identify the ones that are the most relevant for transition space design.

The context of an open urban transition space acts as a blank canvas for its design to drive the research process. There are valuable lessons in creating spatial solutions by following an iterative process involving co-creation with users. This thesis aims to compliment the traditional urban design and architectural design process which is mostly driven by architects and urban designers, by introducing human centered design as a lens and an intention.

The ever-changing nature of an urban place makes room for multiple design iterations that work to create rich experiences over time, something that cannot be done in a closed space once it is built. This freedom is highly valuable in learning how to create a happy place. It will ultimately also contribute to the design of built spaces in the future where happiness is a top priority for eg. hospitals and offices.

## 1.5 Design approach



The design process of iterations

The project began with narrowing the scope by creating a design brief (refer to the Appendix). Firstly, happiness theory was used as a starting point in learning how to create happy moments in the transition space. During the project, generative design techniques were used to let people express their latent desires in the transition space. Research by design was then conducted to gain insights into what types of positive design interventions can contribute to happiness in the IDE transition space. A Positive Design approach [Desmet, Pohlmeier and Forlizzi \(2013\)](#)<sup>1</sup> was used while designing. The design goal was iterated on **four times** during the project.

Literature was studied to understand significant topics such as happiness, happiness within the context of architecture, designing for happy experiences, the positive design approach and the 20 Urban Happiness Ingredients.

An observation study was then conducted as a part of the primary research. The transition space of IDE was documented with the help of photographs, sketches and by marking activities and interactions on a scaled map. This was done over the entire course of the

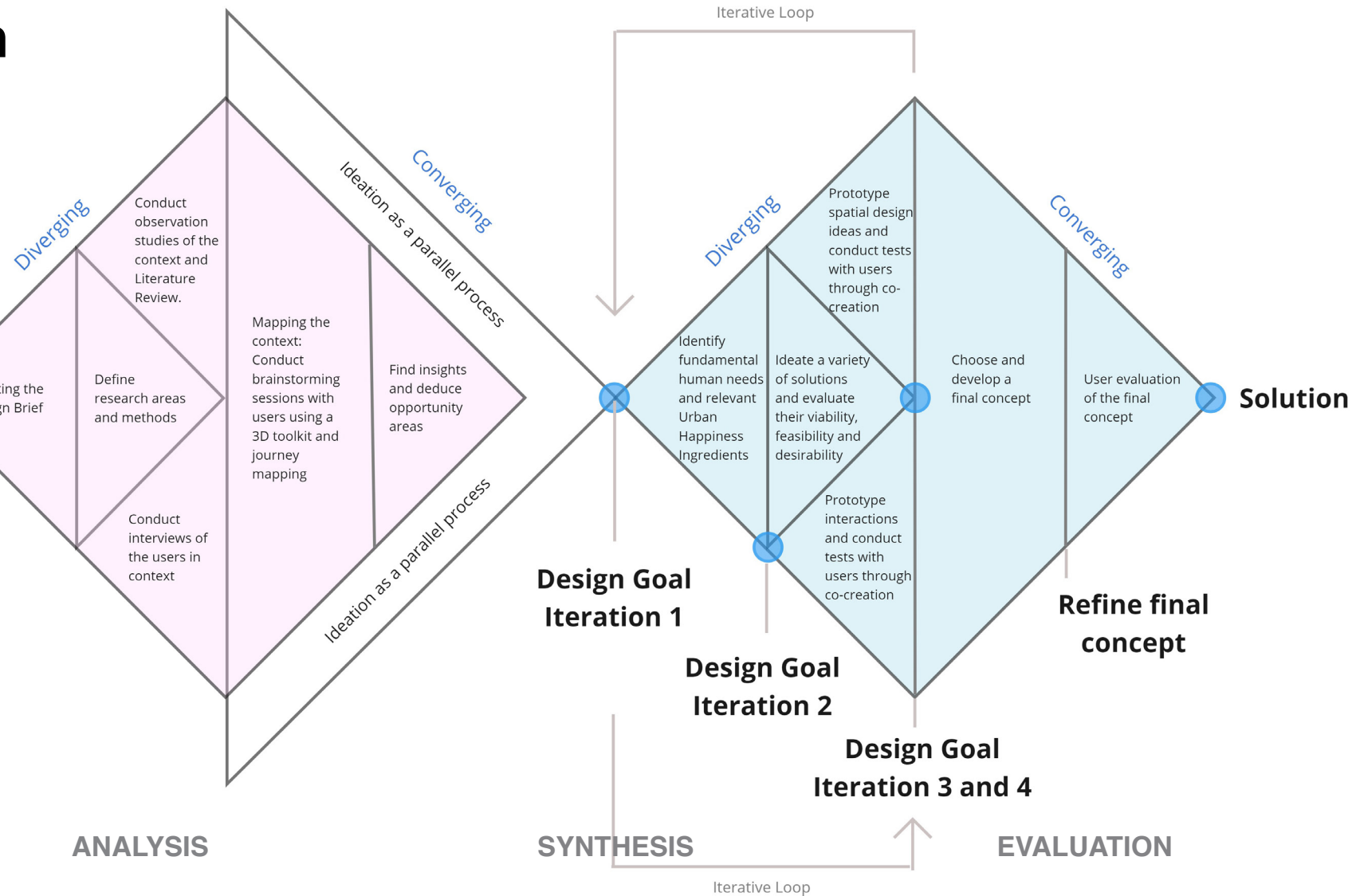


Fig. 1.3: Overview of the design approach

Adapted from *The Design Council (2004)*.<sup>5</sup>

project to study the variation of interactions in this transition space with respect to time. Particularly, the observation period was 8 months from October 2021 to May 2022. This activity was conducted to observe what people do in the transition space. Structured interviews were then conducted in order to dive deeper and understand what people feel in the transition space. The aim was to tap into their rich experiences through their memories and experiences to find out what they dream for in the future in the transition space. This gave the designer rich qualitative data from the Path of Expression to play with. [Sanders and Stappers \(2013\)](#)<sup>6</sup> To understand the latent desires and needs of the users in the transition space, brainstorming sessions were conducted. This allowed the users

to co-design the entire transition space with the designer to create happy moments. The unique part of these brainstorming sessions was the use of cartoon characters as avatars to act as agents for the enactment of ideas that users came up with. It allowed creative freedom with a child-like quality that helped users project their latent needs. Ideas were brought to life using a 3D toolkit.

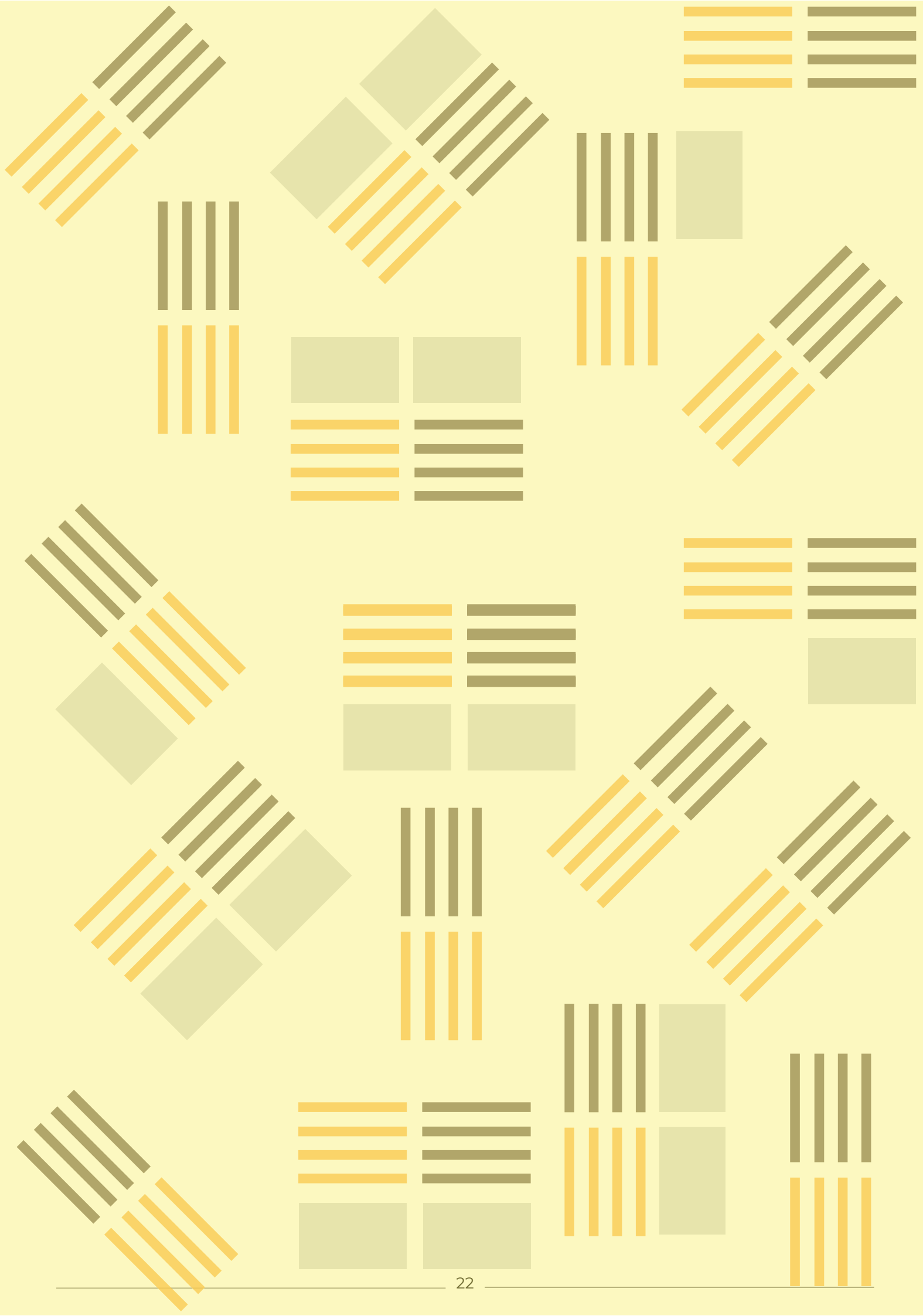
Insights from the research activities conducted until then were generated and a parallel ideation process began. This led to the first iteration of the problem definition. This was followed by multiple iterations of ideation and prototype testing. They were driven by the fundamental human needs of the users within the context and by deciding the most relevant urban

happiness ingredients. Ideas were also evaluated based on their viability, feasibility and desirability.

The final problem definition gave rise to the final concept which was evaluated by users. The designer then reflected on the goals of the project as well as the research questions raised.

The following chapters detail each phase of the project in depth through discussion and illustration of the research, design, findings and reflection.

**Generative design techniques, research by design and a positive design approach were used in this project. The double diamond model was slightly modified to incorporate ideation at an early stage to deal with the large scale of the project and the positive design approach.**



# 02

## Literature Review

- 2.1 What is Happiness?
- 2.2 What is known about Transition Spaces?
- 2.3 Designing Happy Experiences in Spaces
- 2.4 The Positive Design Approach
- 2.5 20 Urban Happiness Ingredients
- 2.6 Overview
- 2.7 Conclusion

*This chapter draws insights from literature on happiness, transition spaces, how to design happy experiences in spaces, how to apply the positive design approach and what the 20 urban happiness ingredients are. This basic understanding served as a guiding basis for creating questions in the interviews, conducting generative research as well as making observations in the research stage of the project.*



## 2.1 What is Happiness?

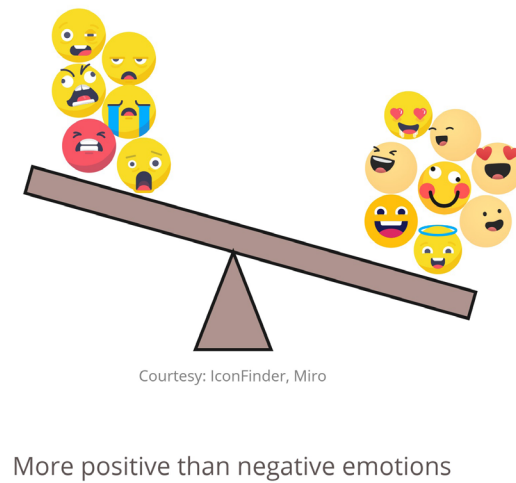
**“There is no path to happiness, happiness is the path.”**

**-Gautam Buddha**

Every human being and every conscious life form on this planet tries to be happy. Happiness is something everyone is after - consciously or unconsciously. People try to ‘achieve’ it through various actions that are meaningful to them. There are many definitions and interpretations of happiness. This designer is inspired by Gautam Buddha’s wise words- “There is no path to happiness, happiness is the path.” One tends to naturally wonder whether happiness is a journey, a state, a ‘thing’ to be achieved or is it an object of value? This elusive ‘feeling’ that we feel in waves throughout our lives binds us all together and constantly influences our interactions. It is deeply rooted in cultures and religions. Many cultures celebrate both the joy of birth and the joy of death. It was famously said that memories may fade away but what we feel during our experiences is never forgotten. This powerful ‘state’ of being happy has been studied by scientists and many definitions exist. For the scope of this thesis which aims to create moments of happiness in an urban context, the following definitions were selected as an inspiration and guide, from an

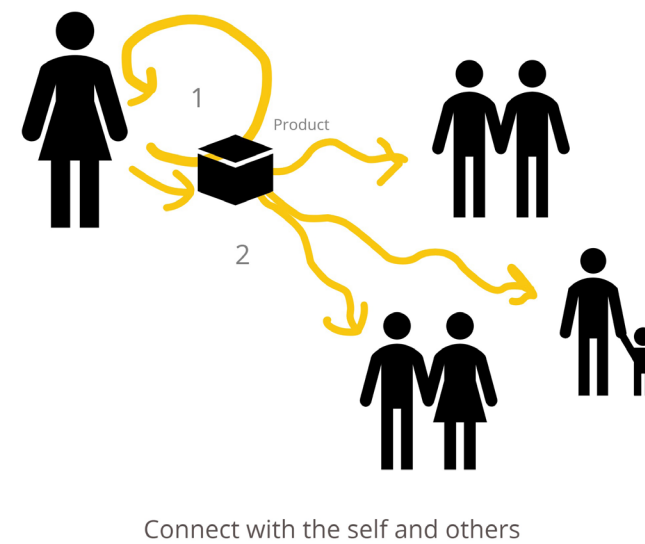
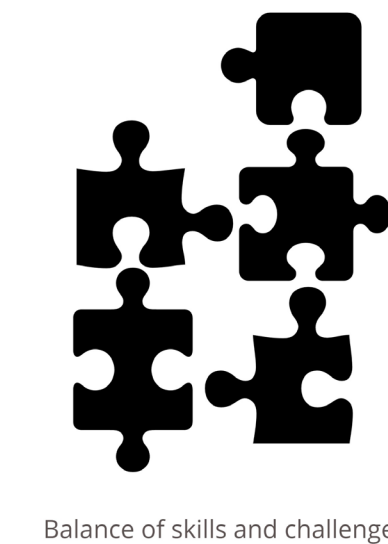
experience design perspective:

Happiness is a state in which one experiences joy and positive wellbeing while perceiving life to be full of meaning and purpose [Lyubomirsky \(2007\)](#)<sup>7</sup>. [Lyubomirsky \(2008\)](#)<sup>8</sup> also mentioned that happiness involves experiencing a personal fit with one’s lifestyle and strengths. Happiness is when people feel more positive emotions than negative emotions and there is an absence of stress. [Csikszentmihalyi \(1990\)](#)<sup>2</sup> famously concluded that people are happy when they achieve a flow state while engaging in activities that balance their skills and the level of challenge posed. A happy experience involves both pleasure and purpose when performing a task



**“Happiness is a state in which one experiences joy and positive wellbeing while perceiving life to be full of meaning and purpose”**

**-Lyubomirsky (2007)<sup>7</sup>**



**Fig. 2.1: Creating happy interaction experiences**

according to [Dolan \(2014\)](#)<sup>9</sup>. Researchers [Sääksjärvi, Hellén and Desmet \(2017\)](#)<sup>10</sup> found that activities that focus on others are more likely to raise the happiness level of people than those activities that focus on the self.

It can be summarised that for a user to be in a happy state while experiencing an interaction with a product, they must ([Fig. 2.1](#)):

1. Feel more positive emotions than negative emotions along the whole product experience journey, within the time line being considered.
2. Feel satisfied with respect to pleasure, meaning and purpose that the interaction creates.

3. Feel challenged enough to make the interaction experience interesting yet have the level of skills required to complete the interaction experience.
4. The interaction must connect the self with others where both receive attention.

[Desmet and Fokkinga \(2020\)](#)<sup>11</sup>’s research identified 13 fundamental human needs that drive human motivation to interact with products and people during their lives. Motivation is simply the cause for performing an action.

Therefore designing interactions that lead to a happy state of mind must be based on the underlying fundamental human needs that drive users.

## 2.2 What is known about transition spaces?

### 2.2.1 What is a transition space?

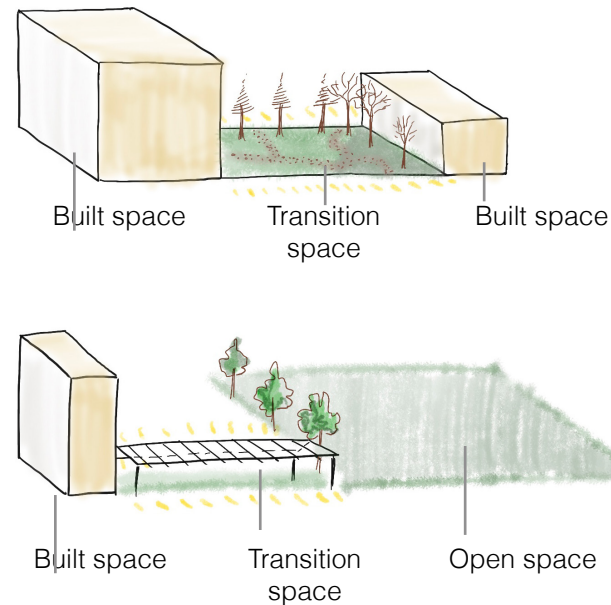


Fig. 2.2: A transition space

**Transition spaces** are the connecting spaces in between at least two built spaces or in between a built space and an open space. They are usually flanked by inlets or doorways to the adjoining spaces on both ends that mark a beginning and an ending of the transition experience- which is the focus of this project.

Typically they do not have a specific spatial function as compared to the adjacent spaces surrounding them. However, every user of an urban area or a building passes through a transition space several times on a daily basis. Therefore their most basic function can be to connect two spaces. The ambiguity of these transition spaces gives users the freedom of assigning a function and a meaning to them. When they are not particularly designed for specific activities, this ambiguity might lead to either chaos from multiple activities or boredom due to the lack thereof.

### 2.2.2 The transition experience

Thus the experience of a transition space has a huge impact on the way a user feels when they enter the next space. A transition experience can be abrupt, smooth or intermittent. It is an act of preparation for what lies ahead. There is always a 'before' and an 'after' experience connected to a transition space. A change of state occurs while in transition. An abrupt transition while entering a building leads to a failure of the inner spaces in the building to feel like a sanctum as explained by [Alexander \(1977\)](#)<sup>12</sup> in his famous book 'A Pattern Language'. This discussion makes designing a transition space a very important aspect of having positive spatial experiences and for our wellbeing. In Architectural spatial typology, staircases, corridors, courtyards, passages, colonnades, aisles, entrance foyers, terraces, elevators, escalators, travellers, etc. are some types of transition spaces. In urban spatial typology, some types of transition spaces are gardens, plazas, squares, terraces, markets, transport hubs, etc. (See Fig. 2.4 and Fig. 2.5).

The users of both of these transition spaces are always either commuting, looking to socialize with others, wanting to have a relaxing break, trying to get some fresh air or they are looking for a pleasurable and stimulating experience.

Transition experiences are also connected to the experiences of entering buildings and open spaces as seen in the work of [Visser \(2005\)](#)<sup>13</sup>. He concluded that pathways from the outside of a building to its inside and barriers in building entrances must have a friendly aesthetic expression. This creates an important feeling of being welcomed inside the built space to the user. In the instance of a rejection from a building, it must be subtle and gentle.

### 2.2.3 Interactions in Transition Spaces

People can pass through a transition space alone and also in a group. There tends to be active social interaction amongst the users. Users may want to perform a wide range of activities such as walking, sitting, standing, playing, selling, buying, talking, exchanging, giving, receiving, running, riding, swimming, sleeping, etc.

All of these rich interactions are driven by human motivations that are connected to their fundamental needs as well as the context of the surrounding spaces. The emotional valence of their experiences is determined by the degree to which their needs are satisfied by the design of the transition spaces. They experience negative emotions when their needs are not met and positive emotions when their needs are met as found by [Desmet and Hekkert \(2007\)](#)<sup>14</sup>.

It can therefore be concluded that the interactions with the design of transition spaces must consider the richness of the existing interactions and the desires of users in order to create happy transition experiences. Transition interactions are also governed by a limited time frame due to the intermediary nature of these spaces.

The more a transition space welcomes the user to feel free to perform activities, the richer the experiences become. Users may feel safe, rejected, intimidated or feel like they can trust the experience through personalized communication with the design as concluded by [A.M. van Veen \(2006\)](#)<sup>15</sup>.

### 2.2.4 Spatial Affordances

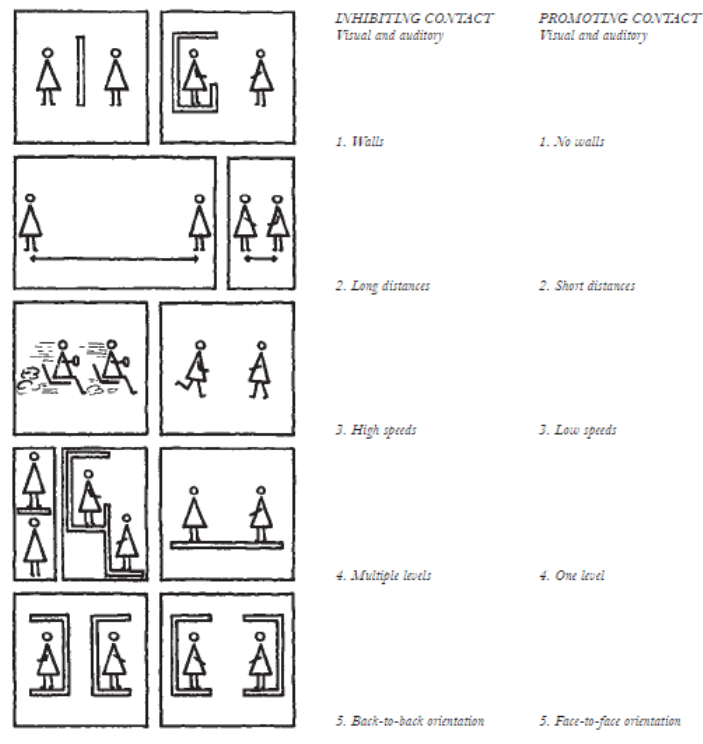
The spatial affordances of transition spaces communicate different meanings to the users based on the theory famously developed by [Norman \(1999\)](#)<sup>16</sup>.

For example, the presence of walls or 'barriers' might afford the user to inhibit social contact (both auditory and visual). Their absence can afford to promote social contact for the user (both auditory and visual). Similarly long distances, high speeds, multiple levels and back-to-back orientations of spatial designs afford the user to inhibit social contact. Short distances, low speeds, single levels and face-to-face orientations of spatial designs can afford to promote social contact for the user. The affordances mentioned here are reported from the classical work of [Gehl \(1987\)](#)<sup>17</sup> in urban design (refer Fig. 2.3).

The role of transition spaces can be Spatial, Utilitarian or Semantic according to [El-Mokadem et.al \(2013\)](#)<sup>18</sup>.

Thus, transition space design must communicate the intent of the design in relation to the context and all the interactions it allows the user. The user can then decide whether to undergo the designed transition experience or not. This decision making process can be inherent or explicit. The nature of this project's context i.e. urban space increases the dependency of the design on aesthetics in influencing the affordance perception and decision making process of the user.





**Fig. 2.3: Courtesy- “Senses and communication”**  
Pg. 65 from Gehl J.’s book ‘Life between buildings’ (1987).



**Fig. 2.4: External courtyard of The Bihar Museum, India designed by architect Fumihiko Maki- an example of a transition space (visited in February 2020).** Users are made to transit between various exhibits by walking along interior corridors flanked by the collonades seen in this photograph. The collonades have been designed around an external courtyard that acts as a genius loci of the experience. It brings in natural light, aids orientation and creates a relational identity for the interior spaces.



**Fig. 2.5: Internal stairwell of The Bihar Museum, India connecting two levels of exhibition spaces (designed by architect Fumihiko Maki; visited in February 2020).**

These two photographs of the same space from two different angles showcase artwork (image on top), a staircase, a colonnade and perforated walls (*jaalis*)- (image on the right) all of which are typical transition spaces.

## 2.3 Designing happy experiences

### 2.3.1 Causes of Happiness in Architecture

According to [Petermans and Nuyts \(2016\)<sup>19</sup>](#) Architecture by itself cannot make a person happy. It is important to design for the appropriate context where the user can perform certain activities that enable a circumstantial factor for a state of happiness to be achieved. Life circumstances combined with circumstantial factors, genetics and activities to engage in, determine happiness in Architecture and Interiors.

[Petermans and Pohlmeier \(2014\)<sup>20</sup>](#) found in their research that designing for Subjective Wellbeing in Architecture and Interiors- which is based on the Positive Design approach [Desmet and Pohlmeier \(2013\)<sup>21</sup>](#) - involves:

1. a dynamic environment,
2. interactive role of inhabitants and
3. enabling higher order needs.

The Positive Design approach can therefore serve as a good guide for this thesis.

### 2.3.2 Products and Positive Emotions

[Desmet \(2012\)<sup>22</sup>](#) identified 25 positive emotions relevant for human-product interactions and also 6 basic sources of those positive emotions. *Fig 2.6* on the next page attempts to explain the sources of positive emotions in human product interactions. It uses an example of a simple Indian earthen oil lamp to explain them.

A similar analogy can be applied to space when it is considered as a product. Users experience different sources of emotions related to the space. From a vice versa perspective, a positive emotion or a set of positive emotions can be chosen as the intention of a design to create happiness (the Design for Emotion method summarized in the *Delft Design Guide* book [van Boeijen et. al \(2020\)<sup>23</sup>](#) )

The positive design approach embodies that intention and is hence a valuable choice for this project. Refer to section “2.4 The Positive Design Approach” for more details. Designing the IDE transition space for users to experience positive emotions in order to reach a happy state is one of the goals and hence this lens was chosen.

[Desmet \(2008\)<sup>24</sup>](#) developed a basic model of product emotion based on appraisal theory. It identifies that when a user is presented with a product (stimulus), they always have an underlying concern. The product is assessed (appraised) for whether it supports that concern or goes against it. This leads to the creation of an emotion while experiencing that product.



The same model can be applied to the design of a transition space where it acts as a product. If the positive emotional intention of the design is known i.e. the desired product emotion, then the transition space (the stimulus) can be designed to match the concern of the users in a particular context. Refer to *Fig. 2.7* and *Fig. 2.8* on the next page for an example.

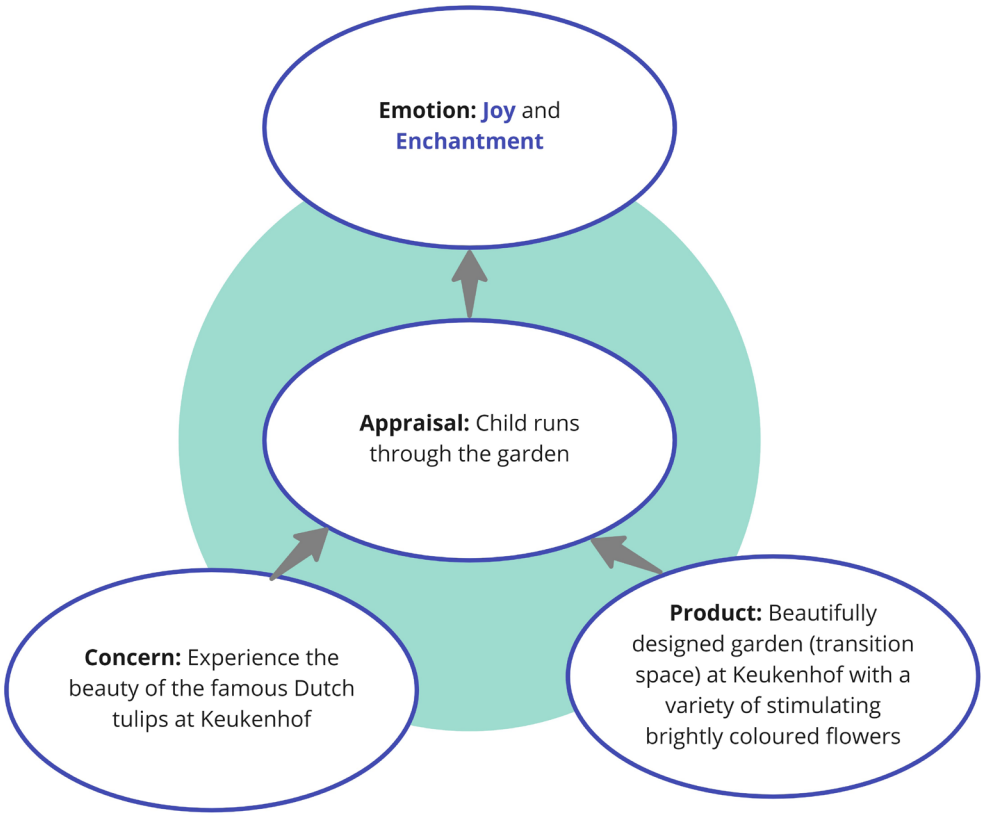


Focus	Source
Object	The organic material of the lamp, its form and its function causes <b>anticipation</b> of it lighting up.
Meaning	The ability of the lamp to light up is a warm feeling and it creates <b>hope</b> in the user for something good to come. It also indicates a spiritual form of hope culturally.
Interaction	The act of lighting a lamp creates <b>joy</b> . The user is responsible for making a tiny ball of light. <b>Satisfaction</b> is also felt for doing it well, for sharing that light with others.
Activity	The warm glow of light that you can create by lighting several such lamps in a dark area creates <b>joy</b> and <b>energises</b> the user.
Self	One feels <b>proud</b> of keeping traditions alive and using an environmentally friendly lamp.
Other	It creates more access to light crackers and sparklers. This <b>energises</b> the user :D

**Fig. 2.6:** Sources of positive emotions in the human-product interaction between a human and an Indian earthen oil lamp.



**Fig. 2.7:** On a visit to Keukenhof in April 2022, this student noticed a small child running around in a naturally beautiful transition space. The presence of multiple stimuli allowed the child to experience joy and enchantment. Touching the flowers lightly with her hands allowed her to interact with the beauty she desired.



**Fig. 2.8:** Using the Basic Model of Product Emotion to study the interaction of a child with the tulips of Keukenhof, a naturally beautiful transition space where every user is happy.



## 2.4 The Positive Design Approach

If the design of a product must evoke happiness, then the intention of the designer must include a positive goal while designing. The Positive Design Approach embodies that intention *Desmet, Pohlmeier and Forlizzi (2013)*<sup>1</sup>. According to it, **experience is followed by function and the means follow the function.**

Hence a user centred design approach must identify beforehand which pleasures, personal goals and virtues are the most important in reaching the goal of the project.

The basic positive design framework is held together by three pillars (Fig. 2.9)-

1. **Design for virtue:** It appeals to the designer to understand the moral and ethical values that drive users within a particular context.
2. **Design for pleasure:** It identifies the three sources of pleasure in human-product interactions, which are ideo-pleasure, physio-pleasure and socio-pleasure.
3. **Design for personal significance:** It indicates that design must be driven by the most significant needs and desires of users in a context.

To aid the design phase of this graduation project, two positive design models have been borrowed from *Jimenez, Pohlmeier and Desmet (2015)*<sup>25</sup>-the Self Determination Theory and the Four Ingredients of Meaningful Activities (Fig.2.9).

When these models are applied to transition space design, the following elements become crucial:

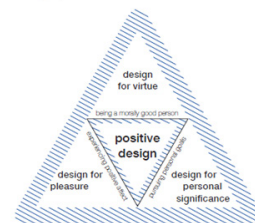
1. Users must be allowed to exercise **autonomy** in the way they interact with the transition space.
2. They must feel connected and **related** to others through some form of compassion and care in the interaction.
3. Users must also feel **comfortable** in the transition space. It is connected to the feeling of **being in control** in the transition space i.e. the **competency** that the interaction with it demands.
4. The design must appeal to the **personal values**

of the user group in the transition space. This is perhaps connected with their profession, their **talents, skills** and what they do inside the connecting built space especially in the context of the IDE transition space.

5. Users must feel like they have **contributed** to their relationship with others and themselves through the transition space interaction.

### 21/ POSITIVE DESIGN FRAMEWORK

Design that stimulates human flourishing combines ingredients of design for pleasure, personal significance, and virtue



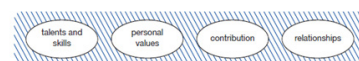
### 09/ SELF-DETERMINATION THEORY

Self-determination theory is concerned with the intrinsic and extrinsic motivations of human beings, and the universal psychological needs associated with these



### 23/ FOUR INGREDIENTS OF MEANINGFUL ACTIVITIES

Key components that turn ordinary activities into meaningful ones



**Fig. 2.9: The positive design approach framework and two relevant models.**

## 2.5 20 Urban Happiness Ingredients

The Urban Happiness Ingredients by *Samavati and Desmet (2021)*<sup>4</sup> is a toolset to design happy urban places. This project's context involves a transition space which is also an urban pocket space within an educational campus. The IDE transition space is an open space with no existing intentionally designed elements for happiness. It allows room to experiment with these ingredients for the most appropriate design recipe. Hence the use of this tool is justified for this project.

However, it is important to assess which of the 20 Urban Happiness Ingredients are relevant for transition space design. It can only be assessed through design and co-creation with users.

Each Urban Happiness Ingredient comes with:

1. a label
2. illustrative examples of existing urban public space designs
3. an explanation of various urban features that contribute to that ingredient
4. tips to measure the presence of the ingredient in existing contexts.

An illustration *Fig. 2.10* on the next page gives a brief overview of the labels and some key features of these 20 ingredients.

The most relevant of these 20 ingredients for transition space design can be found out by mapping the context *Sanders and Stappers (2013)*<sup>6</sup> using generative research and the needs of the users. If the mapping is not done and all the 20 ingredients in the tool set are used, the outcome of this design project will not be specific to the context of this IDE transition space.

Thus this model has been revisited in Chapter 3: The Context and Chapter 4: Ideation to assess which Ingredients are the most relevant.

The Urban Happiness Ingredients are:

1. Connectivity
2. Mixed land use
3. Friendly urban furniture
4. Public art
5. Greenery
6. Interactive and fascinating design
7. Compatibility with needs and desires of users
8. Environmental comfort
9. Aesthetic qualities
10. Multisensory richness experiences
11. Inclusivity and diversity of users and activities
12. Leisure time, recreational places
13. Events and festivals
14. Promoting vibrant and diverse social interactions, meeting places
15. Sense of safety and security
16. Place identity, memorability, identity and city image
17. Foster grassroots projects
18. Promote trust and participation
19. Place attachments (sense of belonging)
20. Adoptability and flexibility





Fig. 2.10: An overview of the 20 Urban Happiness ingredients

# 2.6 Overview

It is a decision of the designer that a positive design approach and the most relevant 20 urban happiness ingredients will be used in the project. The illustration Fig. 2.11 below is an overview of the main findings from literature.

While there are many different types of transition spaces inserted into different contexts, the core essence is their function of being a buffer space between two well defined centroid spaces. The relationship between these two spaces defines the functionality of the transition space as well as the emotional state of the users in it.

In order to create meaning in the IDE transition space and define its role for the user, their needs need to be researched and current interactions need to be mapped.

Only then can the design of this transition take a form. The literature review conducted helped in understanding the wide spectrum of roles that the design of this transition space can play. The next step is to find out which of these roles and approaches are the most relevant for this graduation project.

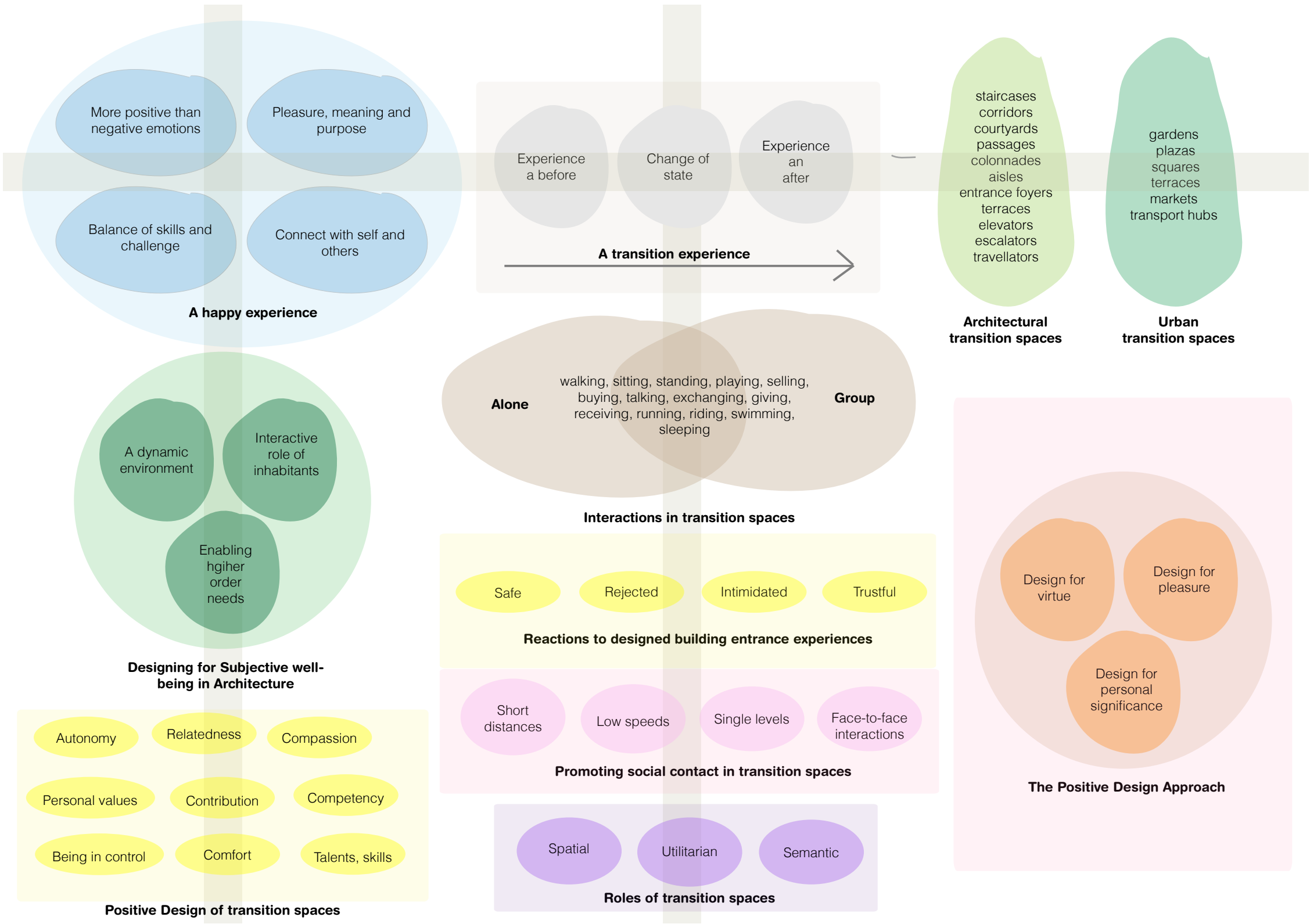


Fig. 2.11: An overview of the literature



2.7 Conclusion

Inquiry

Insights

Implications

HAPPY

How can a state of happiness be created in a transition space?

The users must feel a sense of **purpose** while transiting from point A to point B. They must also associate a **meaning** with the designed solution that helps them achieve their needs while in transition. One of the ways to create a happy transition experience is through pleasure. This **pleasure** may be **ideo-pleasure**, **physio-pleasure** or **socio-pleasure**. The users must experience more **positive emotions** than negative emotions. The design must be **personally significant** to the **users' needs** and they must feel like they have **contributed** to others' happiness, for the design to appeal to their virtue. The designed interaction must **balance** the time available to the user during transition and the level of challenge posed in the interaction. This means that due to the short time required (1-2 minutes) for transition, the design must make the users **pause momentarily** or allow them to **interact while in transition**.

The research phase of the project must identify the **needs** of users while they transit through this IDE transition space. There is also a need to understand the **total time** spent by users in transition and understand any other **activities** that they take part in while present in this space.

For the design phase of the project, **the type of pleasure** must be chosen based on the needs of the user- whether it is ideo-pleasure, physio-pleasure or socio-pleasure. The design must make the user reflect on their contribution to the happiness of others. The design must also balance the time available for transition and the **level of cognitive or physical engagement** that it demands.

TRANSITION

What happens in a transition experience?

The users commute between at least two doorways or rather an **inlet and an outlet** of the transition space. Momentarily, the functional role and aesthetic of the previous space ceases to exist when the user enters a transition space. There is a sudden **freedom to interpret and engage** with the physical elements that are present in a transition space. When they leave the transition space, their **emotional state** will be influenced by the experience inside it.

One must infer through **generative research** the necessary **positive emotion(s)** to design the transition experience for. Clues to identify them will lie in the generative research that finds out **how the users feel** before, during and after transitioning through this space. It is also important to know **what** is causing those emotions currently and how they **want to feel** in the future through the design.

The meaning created by the design will depend on the **qualities** of the interaction in the designed experience. Those qualities will in turn be created by **envisioning the design goal** of this transition experience. The design goal can be formulated after understanding the context and needs of users.

The **intended meaning** will then dictate the forms and functionalities of the elements of the designed transition experience.

What roles can transition spaces play?

A transition space can be designed to enhance the spatial language (form) of the adjacent spaces, meaning that it serves a **Spatial role**. When activities are designed in a transition space, it assumes a **Utilitarian role**. Sometimes transition spaces are purposefully designed as integral elements of the story that all the spaces surrounding them play in. Architects often create pauses and direct functionality using the form of a transition space and its constituent elements. A good example is Daniel Libeskind's Jewish Museum in Berlin where the user is made to feel powerful negative emotions similar to the harrowing experiences of the holocaust as each transition inside the museum is connected to the bigger story. So the **Semantic role** of a transition space is defined by the way each transition space element is designed and what it **affords** the user to do. Thus, each element is a **communicator** of the **intent** behind the design of the transition experience. The elements can for example communicate a welcoming feeling, rejection, safety, trust or intimidation.

EXPERIENCES

What can cause happiness in Architecture?

When the environment surrounding a user, who is present in a designed space, **changes over time** and when the designed space allows interactions that enable users to achieve **higher order needs**, happiness can be created.

While it is important to determine which of the 20 Urban Happiness Ingredients to use in this context, the **degree and extent** to which each of the chosen ingredients will be used can be determined by **researching through design**.

There must be a visual communication of the time and space required to appraise what the designed experience offers and whether the user benefits from it.

The extent to which relatedness, comfort, autonomy and feeling like the user is in control during the whole experience, are relevant needs to be investigated.

How can positive emotions be created in a transition experience?

Based on the Basic Model of Product Emotion, one can start the design of a transition experience by identifying and choosing the **positive emotions** necessary for the context. The designed experience must allow time and space for the appraisal to take place mentally between the user's concerns and what the designed experience offers. There could be various **sources** of these positive emotions in the designed experience such as- the object or the designed transition space element, its interpreted meaning, the interaction with it, the activity that it enables the user to do and its implication for the user (self).

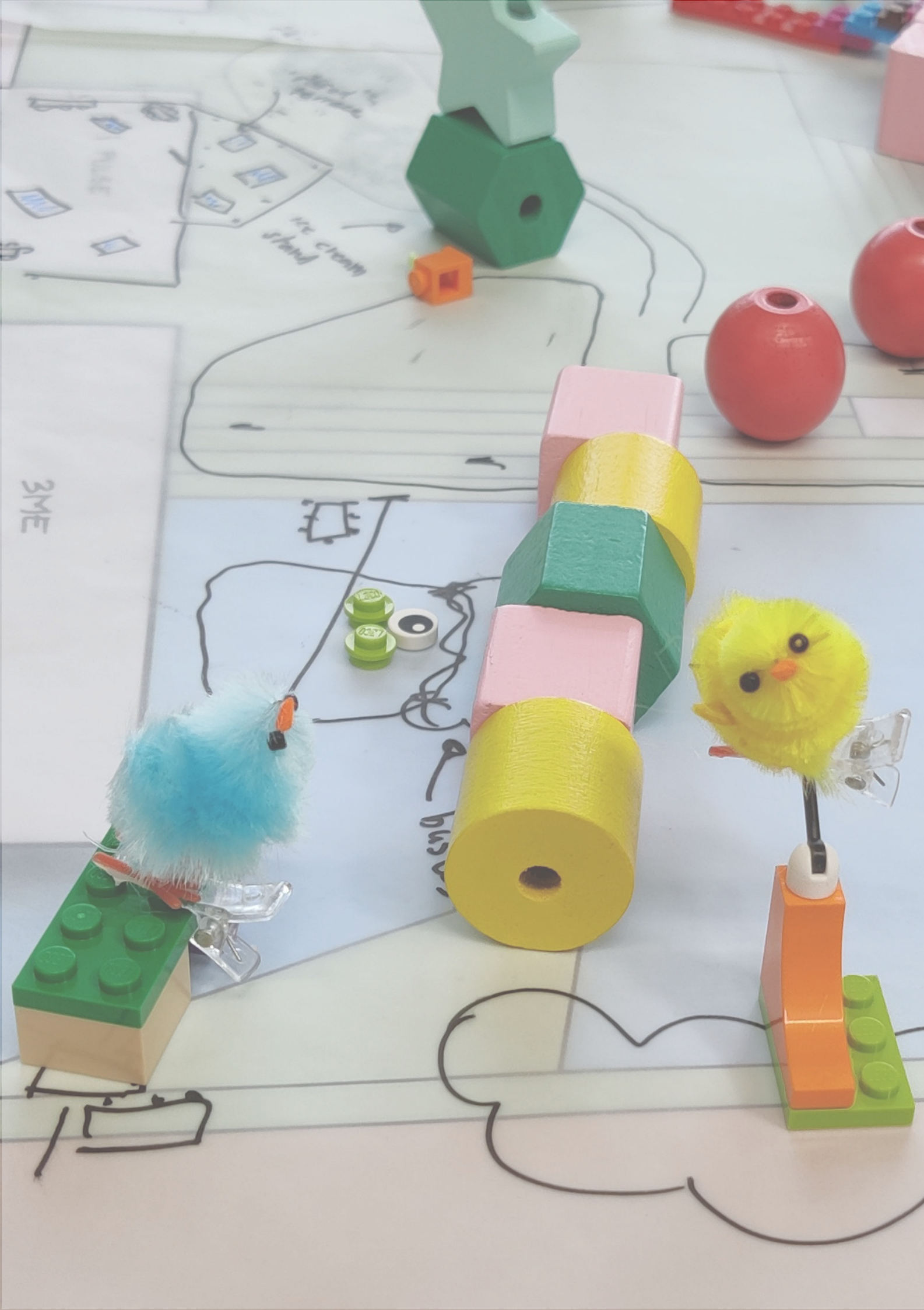
How can the transition experience be made more meaningful using the positive design approach?

While the positive design approach calls for design for virtue, pleasure and personal significance, the first step is to envision the experience the user needs to have. That will help decide the utilitarian role or the function of the transition space. The means to achieve that **function** will be determined by the **form** of this transition experience design. Borrowing from the two positive design approach models- self determination theory and the four ingredients of meaningful activities- users must be allowed to express **autonomy** in the way they interact with the designed elements, they must **relate** to others in the designed experience and feel like they contributed something to them. They can only do all of the above when they feel **comfortable** and **in control** during the whole experience.

How can the relevant Urban Happiness Ingredients be identified?

While the 20 Urban Happiness Ingredients toolset is a repertoire of ingredients that contribute to happiness in the urban scale, **contextmapping** is necessary to link and identify necessary ingredients to the design of transition experiences specifically.

Fig. 2.12: An overview of the inquiry, insights and implications from the Literature Review conducted.



# 03

## The Context

- 3.1 Elements of the IDE Transition Space
- 3.2 What people do there: Observation Study and Theses study
- 3.3 What people feel there: Interviews
- 3.4 What people need there: Generative research with users
- 3.5 Three Scenarios of Use
- 3.6 Three Types of Users
- 3.7 Design Goal and Vision: Iteration 1
- 3.8 Relevant Urban Happiness Ingredients
- 3.9 Design Implications

*This chapter draws insights from the observation study, structured interviews and the generative research conducted with users. This led to the formation of the first iteration of the design goal and interaction vision while the relevant urban happiness ingredients were chosen in parallel.*



### 3.1 Elements of the IDE Transition Space

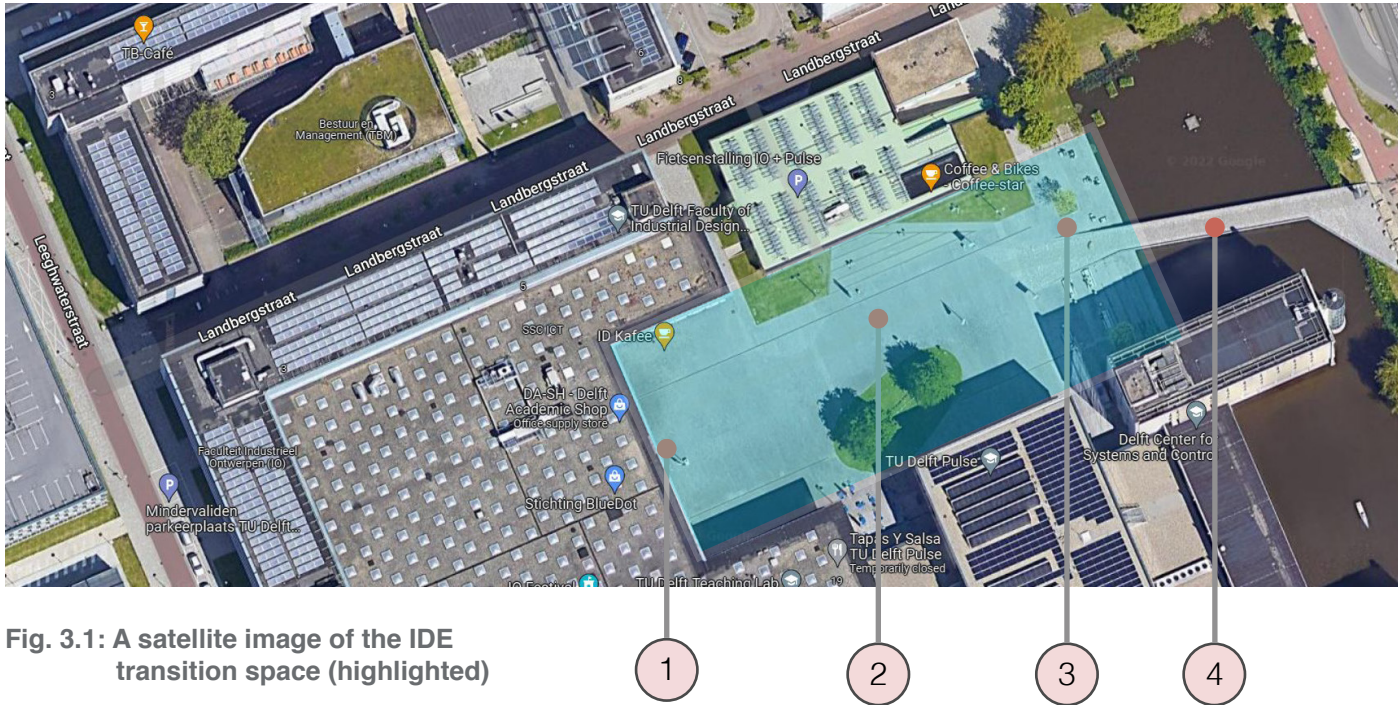


Fig. 3.1: A satellite image of the IDE transition space (highlighted)

The IDE transition space is about **3500 sq. metres** large and the connecting bridge is 210 sq. metres in area. Its dimensions are **82.5 metres x 33 metres** approximately.

Fig. 3.3 on the next page is a collection of different elements in and around the transition space. Typically users enter it through three **pathways**- firstly from the bridge connecting Mekelweg to IDE, secondly from the Pulse building and thirdly from the IDE bike parking. There are smaller pathways that connect to these three main pathways, originating from the entrance doors of the surrounding buildings.

Refer to Fig. 3.2. The **main spine** of traffic is along the longitudinal axis, in continuation with that of the bridge, right up till the IDE entrance. Natural landscaping on either side of this main spine leads to a lot of people sitting down and witnessing the people transiting by on this spine.

Most of the transition space is **hardscape**- made out of grey coloured stone pavers. The only **softscapes**

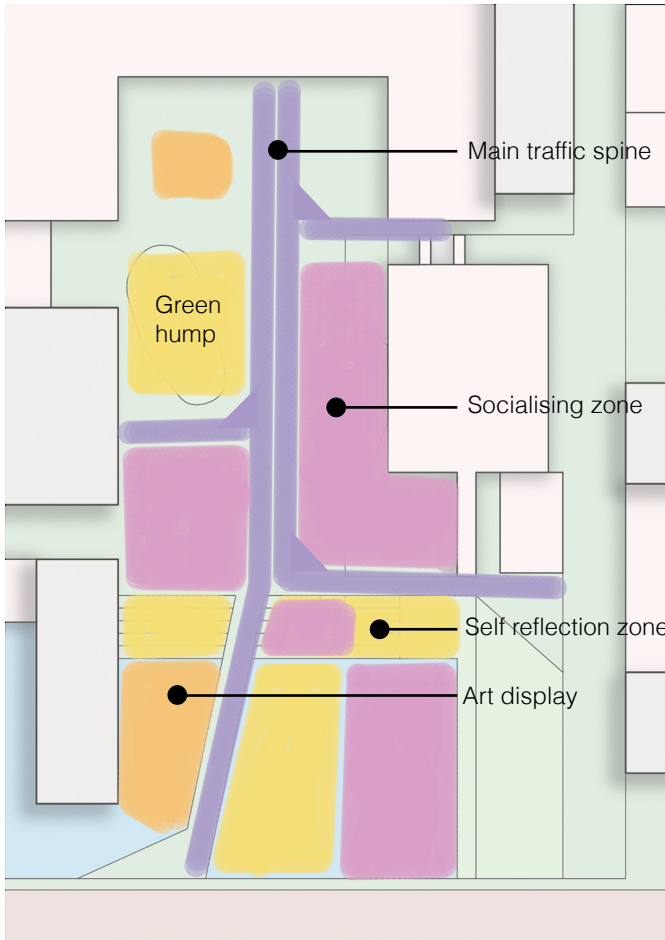


Fig. 3.2: Pathways and zones in the IDE transition space

are the green mounds of grass on either side of the spine and in front of the water body. Two trees on a grass mound in front of Pulse have been retained while designing this urban landscape. It is important to note

that this transition space is used by people mostly to transit in the morning and in the evening as well as to take a break in between the day.



1 (a): IDE building entrance



1 (b): IDE teaching lab



2 (a): ID Kafee



2 (b): Coffee Star



2 (c): Pulse and the green mound of grass



2 (d): Way to bike parking and ESA



3: Landscaped area of the water body



4: Bridge to IDE

Fig. 3.3: Different elements and views of the IDE transition space in reference to Fig 3.1.



## 3.2 What people do there: Observation Study and Theses study

### INQUIRIES OF THE OBSERVATION STUDY:

1. How do the users currently use the transition space?
2. What can be learnt about the physical requirements of the design from this study?

### METHOD:

In order to observe what people do in the transition space, pictures of the transition space were taken. Interaction zones were identified and marked on a scaled urban plan of the transition space and connected urban spaces. Two-three people were interviewed impromptu in an unstructured way to gain more insights on the observation. This led to the following insights:

### INSIGHTS:

Time spent in the transition space while commuting is on an **average 2 minutes**.

- The **weather dictates the time spent** in the transition space since it is unsheltered. In this case the time spent maybe less than 2 minutes.
- Users **stick to a state of companionship**- they either continue walking alone or continue walking in a group (never get separated).
- They are **always in a rush** while in transition which means that the **next activity** on their daily agenda, whether inside the faculty or at home, **is on their minds**.
- **Natural** sounds, textures and lighting conditions appeal to them the most consciously. This is because they enjoy sitting under the trees or on the grass mounds under the sun.
- Users like to **momentarily forget** what is causing

them stress by doing something in the transition space as a break. This is the only other utilitarian role that the IDE transition space plays, where people use it more as a breathing and respite space rather than a place of transition.

- The **large scale** of the transition space makes them feel like gathering in a corner or in a spot to socialise.
- When **alone**, users **seek comfort in engaging with their smart phones**. They may even seek the company of others. This can happen while walking or even while sitting down.
- **Users take routine paths** to enter the IDE building because not much changes in the transition space.
- Fig. 3.2 represents the main pathways that people take while in transition. The design will most likely be effective if it is **placed** in front of the IDE entrance on the main spine of movement where the movement path from the bike parking meets it.
- When they are not in a hurry to go somewhere, the **energy levels** of users are low and they are quite slow paced.
- There clearly are **'before', 'after' and 'present' scenarios** which motivate the user to use the transition space as they desire.
- The **temporary nature of the frequent events** that take place at IDE must be accommodated in the design of this transition space.

On page 46, 47, 48 and 49 photographs clicked over a period of 8 months from October 2021 to May 2022 have been described. They depict how people use different features of the transition space and what interactions take place.

**Fig. 3.4: Image A is a handwritten record of interaction zones identified and Image B is a handwritten record of the experience of entering a building based on the work of Visser (2005)<sup>14</sup> and van Veen (2006)<sup>15</sup>.**

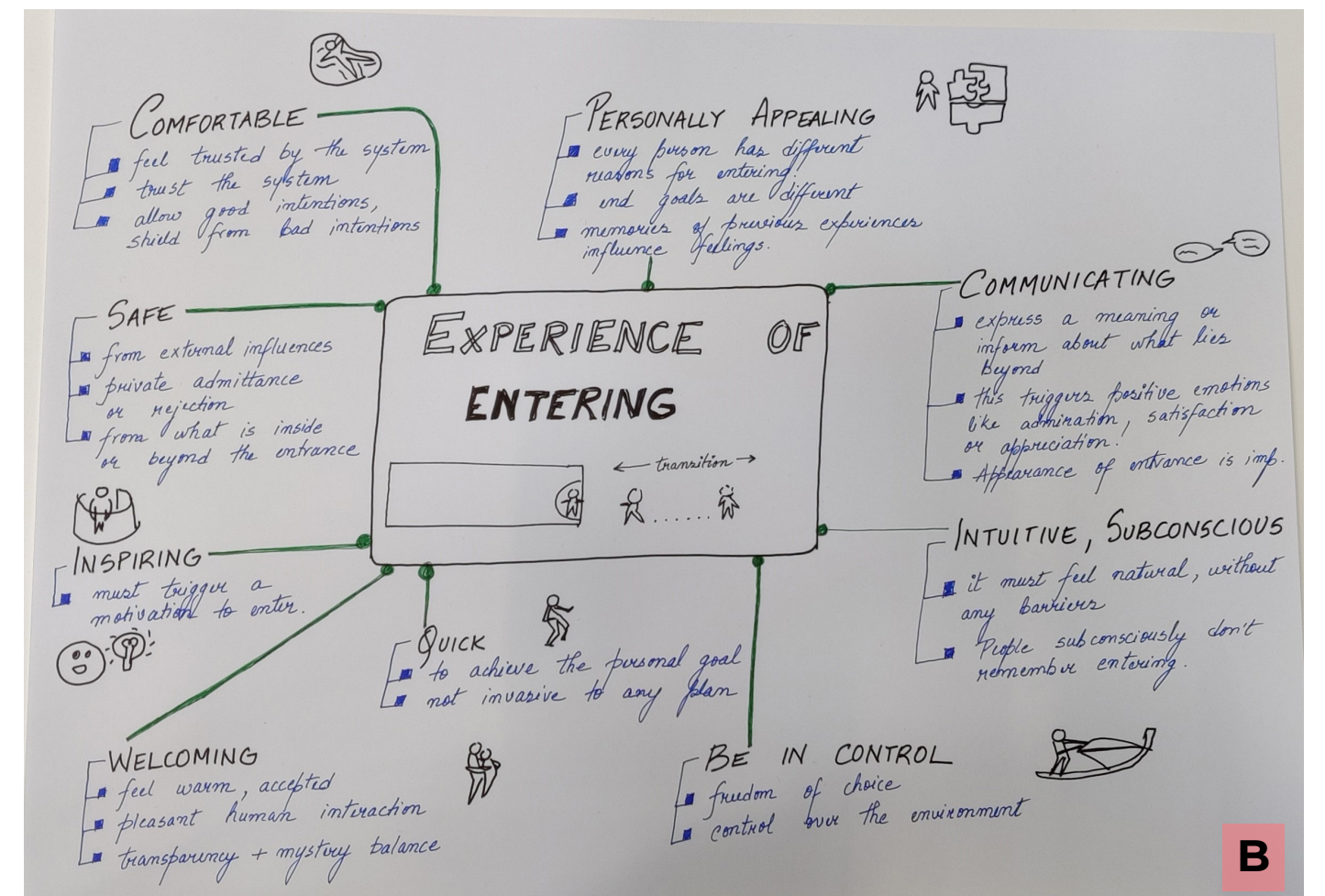
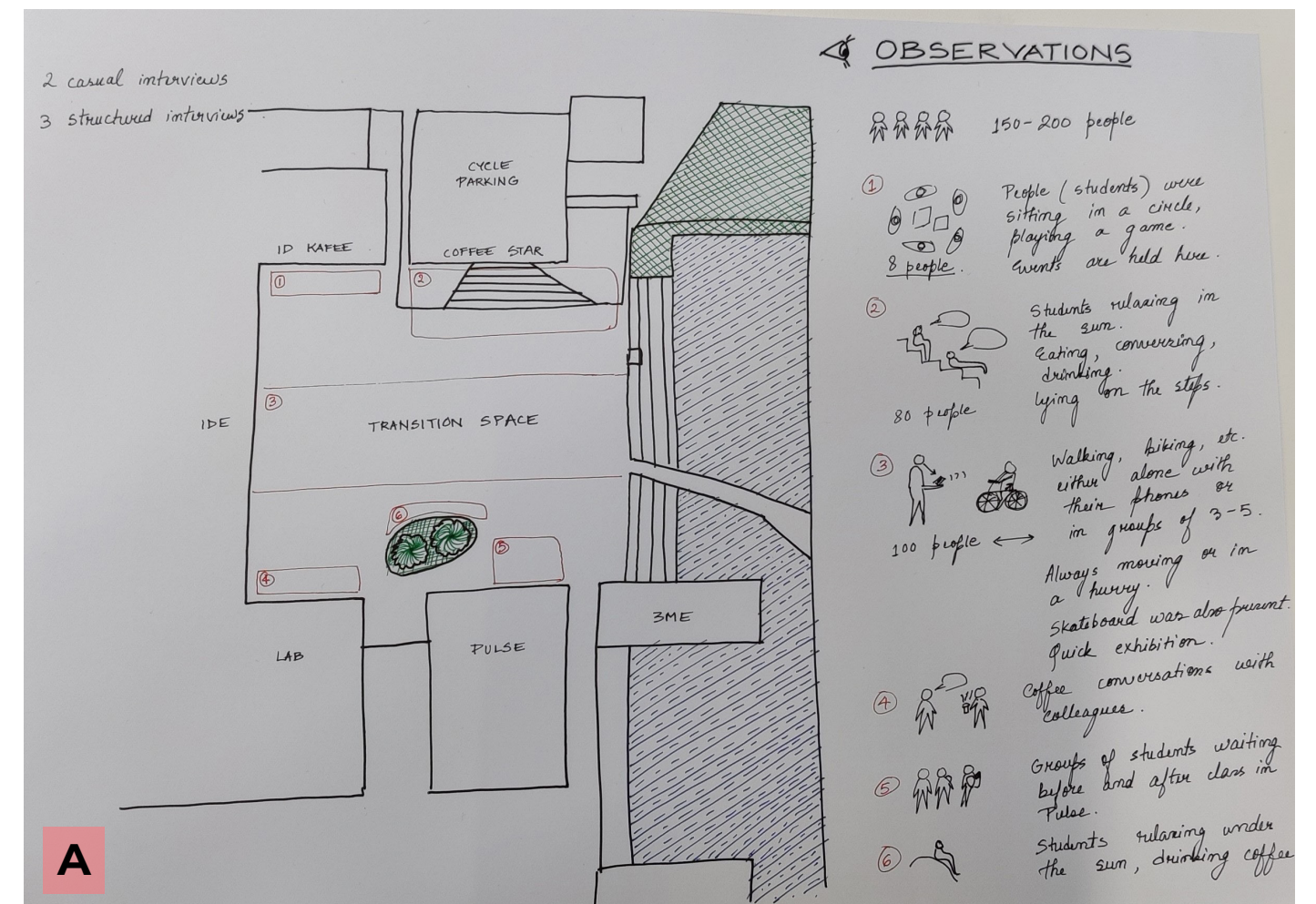






Fig. 3.5: Images 1, 2 and 3 indicate that the weather is a huge factor in bringing out people to use this transition space and even the locations and activities they choose.

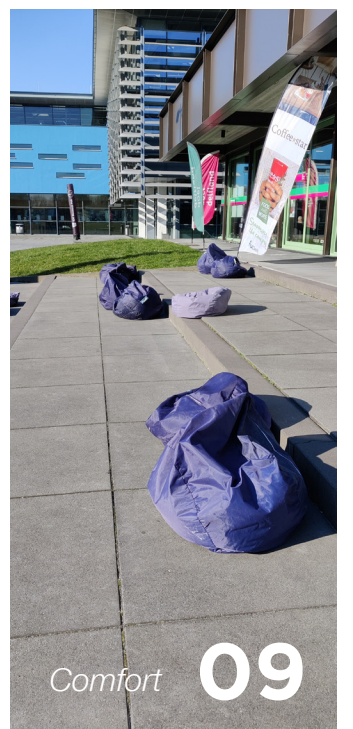
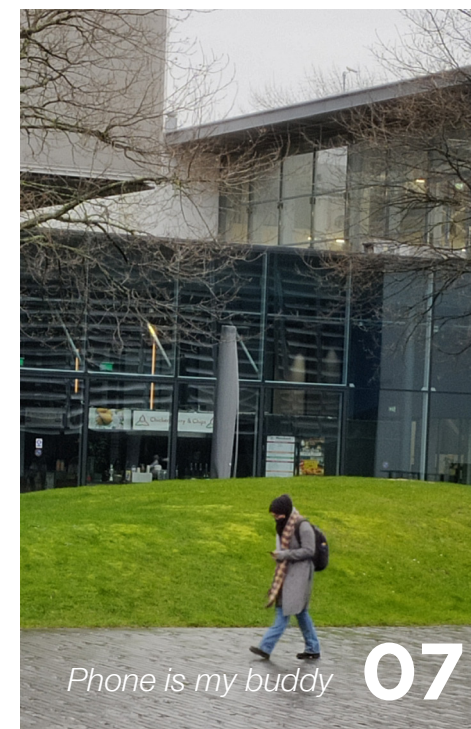
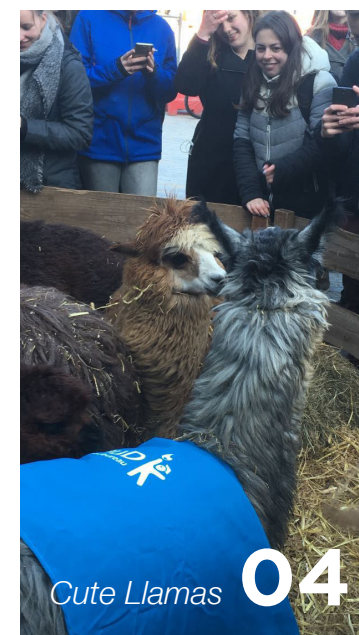


Fig. 3.6: Images 4,5,6,8 and 9 indicate that the transition space acts as a **stage** for showcasing creativity, achievements and sharing moments of joy such as llamas.





Fig. 3.7: Images 10, 11 and 12 indicate that the transition space is accommodative of all the events that are organised quite frequently at IDE.



Fig. 3.8: Images 13, 14 and 15 indicate that the transition space is strongly connected with the brand identity of IDE.



## 3.3 What people feel there: Interviews

### INQUIRIES OF THE INTERVIEWS:

1. What makes the users happy currently and what made them happy previously in the transition space as well as while they were transiting?
2. What do the users think that they want to feel through the transition experience design in the future?

### METHOD:

In order to understand the experiences of users, what makes them happy, what they like/ don't like about the IDE transition space and their motivations to use it, **structured interviews** were conducted. There were 7 participants in total, out of which 5 people worked at IDE and 2 people were visitors. The interviews lasted for 30-45 minutes. The following questions were asked and users were requested to answer briefly:

1. What do you do in this transition square usually?
2. Who do you meet in this space? What do you do together?
3. At what moment during the day or evening do you go to this place?
4. How much time are you currently willing to spend in this transition space?
5. Can you close your eyes and imagine that you are... (an activity they prefer doing in the transition space). Tell me, what do you notice? What do you see, hear, touch?
6. What does it (the experience of an activity of their choice) make you feel?
7. What do you feel when you are in the transition space as compared to what you feel when you are inside IDE?
8. In the morning, when you enter the faculty, what is on your mind?
9. In the evening, when you leave the faculty, what is on

your mind?

10. Any particular memory here that made you happy?
11. Have you ever noticed anything unusual happen in this place?
12. Have you ever exchanged anything with someone in this space?
13. If there was no transition space like this, would you like it? Why/ why not?
14. Sit down in this transition space for 5-10 mins. You don't have your phone with you. What will you do?
15. Supposing your path to the faculty through this transition space changes everyday. How would you feel?
16. Supposing I cover the entire transition space with a roof. Would you like it?
17. Which color stands out the most in this space?
18. Which textures do you enjoy when you are outside?
19. A building or a park or a public space which has made you happy! Describe it.
20. What gives you a sense of purpose when you walk inside IDE?
21. What is your purpose in your mind when you study at IDE?
22. Where do you enjoy interacting with your friends? Is it an open place? What activities do you participate in?
23. What does happiness mean to you?
24. What does happiness mean in your culture?
25. How do you think this area should be designed?

### INSIGHTS:

- Most participants use the IDE transition space only during the **lunch hour** to sit down and relax and they do so only when the **sun is out**.
- Almost all the participants expressed that while walking across it, they **feel anxious** because they think everyone is watching them and judging them.



Fig. 3.9: A Miro board overview of the questions that were asked to the participants.

They don't want to look or do something 'weird' in an open space where everyone can see them.

- **Unusual things** like cute llamas can make their day happy.
- One of the participants said she wished to have a moment in the transition space to **just feel like a human being** and not a designer or an engineer.
- Many participants said that **helping others** is what makes them happy.
- The **buzz** of a lot of people in the transition space can be positively stimulating for some users who desire social connections in the transition space.
- **Random variations** of their routine and meetings with people seemed to delight participants.
- The current seating arrangements are uncomfortable yet people enjoy the feeling of wet grass on their pants, skirts and hands. This is because the shared **embarrassment** they feel helps them **connect with others** and be **amused**.
- **'Connection'** seemed to be repeated by a lot

of interviewees in relation to being connected with **nature** (tress, grass and water) outside as a refreshing break.

- None of them wanted the space to be covered or sheltered entirely. Nor did they like the idea of abrupt road-to-IDE transition instead of the current long walking route. This clearly indicates the need for a transition experience to be designed.
- Half of the participants indicated that **changing their path to IDE periodically** would be an interesting experience. The other half did not like the idea.
- Grey (boring), green (relaxing) and blue (lively) were the most noticed colours in the space. The building entrance seemed to inspire one participant significantly.
- Without their phones, they didn't know what to do in the transition space while alone. So they responded by saying they would drink coffee or hang out with someone else.





Fig. 3.10: A few quotes from the interviews conducted which helped draw important insights discussed on the next page.

### 3.3.1 Implications from the interviews insights

**“The grass is wet you know, everybody then has this thing to talk about, like, everyone gets up and dusts their bottom and goes like, “Oh, my b\*\*\* is wet!” And then everybody laughs and it’s just a classic... the grass is wet and your b\*\*\* is wet, and you’re just uncomfortable. But see, it’s a universal language. Everybody connects on that. It’s nice.” - Z**

The excerpt above indicates that creating childlike moments which everyone can relate to leads to small humorous and joyful moments. Thus at least some aspect of the designed interaction must impart a universal child-like quality - that reminds users of their childhood- to the transition experience.

**“ You get so like tunnel visioned on a project for example and we just forget that this entire outside exists...so I would like to be kind of reminded of it, you know that this is an opportunity and this will make me feel good... So usually I feel a little bit of regret but I also think oh, I’m kind of sad that I was so busy and that I was not able to go and enjoy the moment outside.” - D**

This excerpt indicates that there is a need for the designed experience to snap out the user from tunnel-visioned thoughts that they might have while commuting to the faculty of IDE. This is a case of creating a positive distraction through subtle engagement with the designed transition experience.

**“I think that’s where my motivation sort of stems from. I love to help people. “ - Z**

This excerpt clearly confirms one of the insights from literature which indicated that activities focused on helping and contributing to someone else’s needs

bring happiness to the person who is being kind. Thus one of the features of the designed transition experience must give users the autonomy to choose to contribute to someone else’s happiness through kindness.

**“ Sometimes especially at like children’s parks and stuff like that you have little rubber black tiles. But they feel quite soft and they absorb a lot of heat. So sometimes when it’s summer I really like to sit on those (laughs). Because it is very warm and it’s nice. “ - D**

Multisensory stimulation which reminds users of their childhood could be one of the approaches to create moments of joy.

**“Yeah, petting the llama...It was super random. It was unexpected. And it attracted like, a lot of students who were going to go home, of course. So it’s funny to see that they stayed around and like, made pictures of it, were laughing” - M**

There is a ‘surprise’ value in creating a transition experience whose elements can change randomly. It will make the user naturally curious and make them positively anticipate the reward of a joyful moment.

**“There are still some places here where you can go back to your roots kind of and just ignore all of that and just be a human being and not be a designer or an engineer or whatever. “ - D**

Users feel the need to be reminded of positive aspects that make them human and use that to have a positive mindset to drive their actions during their workday.

**“ The blue is the TU Delft blue, who cares?! Like it’s**

**not interesting. What I miss is some kind of identity which is outside the TU Delft. And outside of these very safe, neutral choices... Not blue, and definitely not grey or white! But definitely like colours” -D**

The design must aesthetically not blend in completely with its surroundings because the users want to feel like they have momentarily left the university (don’t want to get reminded of it). The colors used in the design must be different yet compliment the palette of the surroundings.

**“But I don’t want to look stupid... The first thing they see is you or when they’re exiting the last thing they see is you, so I feel very conscious about it. Like I just want to sit and enjoy the ducks. But yeah.” - Z**

The large scale and visually unobstructed nature of the IDE transition space makes users feel like they are being watched by others and any ‘unusual’ thing that they want to do in that space might draw unwanted attention. This is evidence of the slight anxiety experienced by the users thinking about being watched by others even though it might not be the case.

**“ And all the colors and the smells and the animals that lived there that made me very happy. Because you could see all kinds of dogs and stuff. “ - D**

This is another evidence for the design to include multisensory stimulation and be connected to natural elements that people enjoy.

**“When I walk to the faculty, to ... for my walk I want it to be kind of like playful and explorative you know?... It would give me some to be like just goofy**

**and play around. And I would for sure like to see something interesting every day... And there needs to be a contrast between nothing and something because then the something becomes more important...” -D**

One can infer that the design must be embodied by a form that demarcates a space where there are elements that change with respect to time and that capture the interest of the user momentarily as they transition into or out of IDE. A part of the experience must remind the users of something joyful from their childhood (semantic role). The utilitarian role of the designed experience must accommodate the contrast between the dynamic nature of transition versus the static demarcation or acknowledgment of a (happy) place of transition.

**“ I blankly stare into the water. And my mind goes blank... We are just using our brain cognitively 24/7. It’s nice to have some blank spaces... Okay. ripples in the water, I can say is calming, tranquilizes. It’s just soothing.” - P**

The demand for cognitive engagement with the designed experience must be low and the user must feel free to be lost or let their mind go ‘blank’ for a few moments with the help of a tranquilising multisensory element.

**“ I just want to be able to either create a social hub or to be able to be an observer... I just want to kind of like have a snapshot you know “ - D**

It can be inferred that there is an underlying dilemma between wanting to observe the whole space versus engaging in social interaction, depending on the needs of the user at that moment.



### 3.4 What people need there: generative research with users

#### INQUIRIES OF THE GENERATIVE RESEARCH:

1. What are the underlying fundamental human needs of the users? (Since this will allow the designer to create a condition for happiness to be experienced)
2. How can the users express their needs while they generate ideas with the designer?

#### WHY GENERATIVE RESEARCH?

To understand the latent needs and desires of the users, generative research was conducted. The interviews could only tap into the past experiences of the users in the transition space and the observation study could only capture interactions that were happening over a fixed period of time. These generative sessions in the form of brainstorming sessions helped in understanding the current triggers of negative emotions in the transition space. It allowed the users to fully immerse themselves into the context and imagine their daily routines. It also allowed them to express how they wanted to feel in the future and the activities through which they envisioned doing that i.e. take a deeper dive into their rich experiences. All of the above helped in directly making a connection with what could make them happy.

#### METHOD:

The participants of these generative sessions had to perform two exercises- A and B. There were 6 participants in total- 4 industrial designers and 2 architects.

3. Exercise A asked them to map their transit journey to IDE from their homes, across the transition space. They were provided with sketch pens, paper, 3D blocks and the PrEmo tool.
4. Exercise B was a 3D visualisation brainstorming

exercise using a cartoon which embodied a 'happy experience'. They were provided with cartoon images, abstract 3D shapes, LEGO blocks, coloured sheets, pens and other stationery.

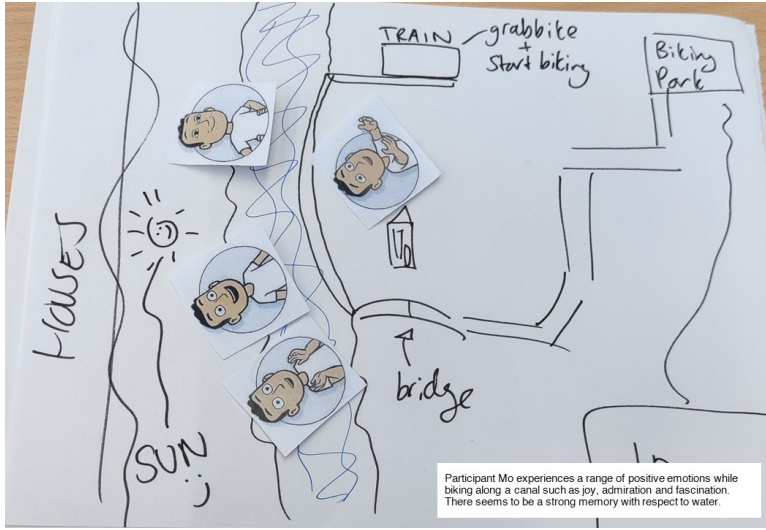
5. The aim was to step into the minds of the users along their transition journeys.
6. They were asked to choose a cartoon character of their choice and then design the transition space in such a way that the cartoon character would be happy.
7. The creative freedom of child-play with a cartoon (a Context Mapping tool) gave them the freedom to express how they would like to feel in the transition space through abstract 3D visualisations using abstract 3D shapes and LEGO blocks.
8. They were able to point out specific things on a map of the transition space. They explained their ideas and complained about things they did not like or did like.
9. The cartoons enabled a metaphoric personification of their latent desires and free creative ideas. Otherwise they would have just stared at a blank space on paper and not been able to create as easily.
10. The IDE transitional space is a three-dimensional space hence the affective desires of users need to be captured through such brainstorming activities.
11. All the participants forgot about the chosen cartoon characters once they began designing. It was a good and useful stepping stone. (Childlike) Context Mapping tools helped the users relax while creating a happy place for the cartoon character.

Fig. 3.11 and Fig. 3.12 on Pg. 53 illustrate the tools given to the participants.



Fig. 3.12: Collage D- Designing a happy place for a cartoon character in the transition space

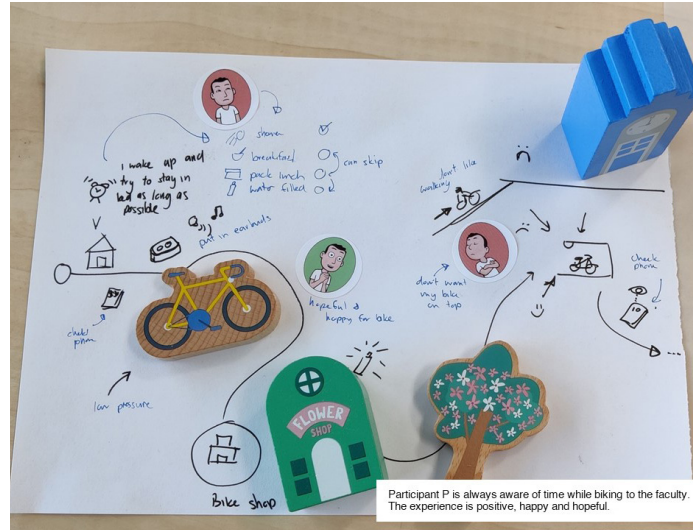




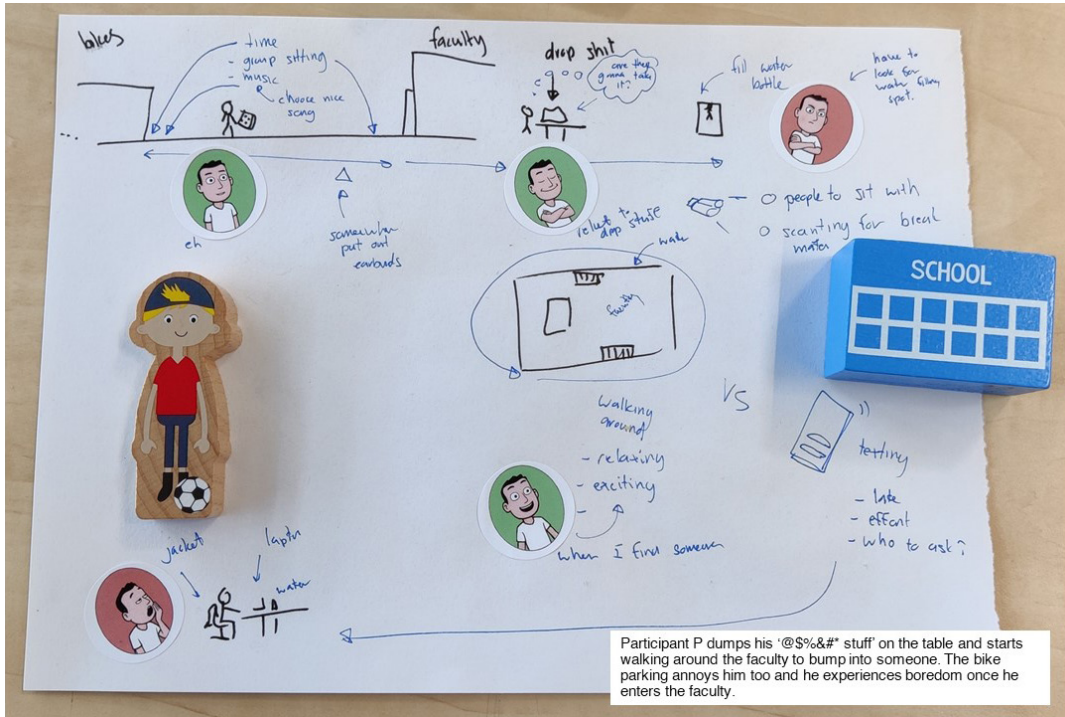
Participant Mo experiences a range of positive emotions while biking along a canal such as joy, admiration and fascination. There seems to be a strong memory with respect to water.



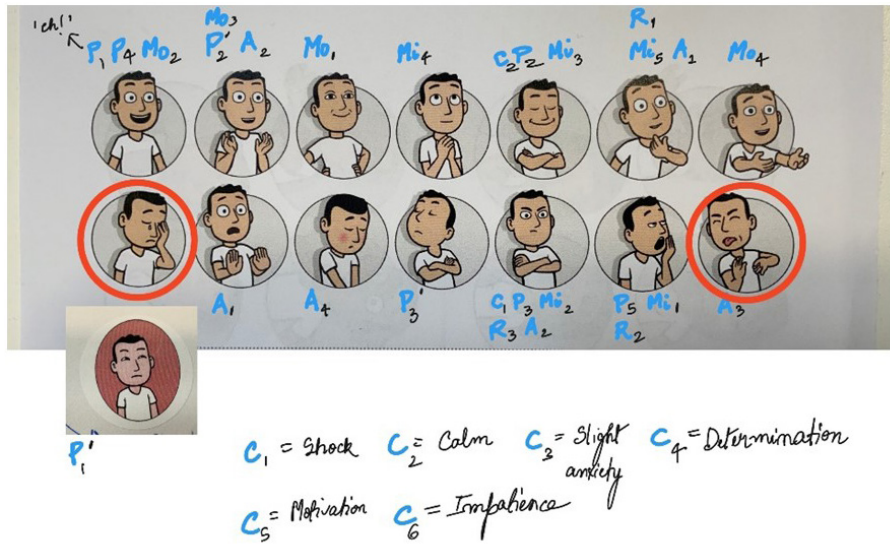
Participant Mi was annoyed with the bike parking. She positively anticipates the day at the entrance and gets distracted by everything inside. But she doesn't like studying at IDE.



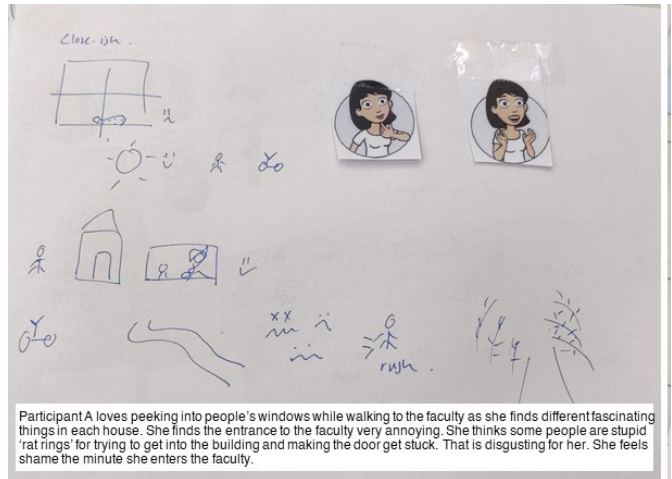
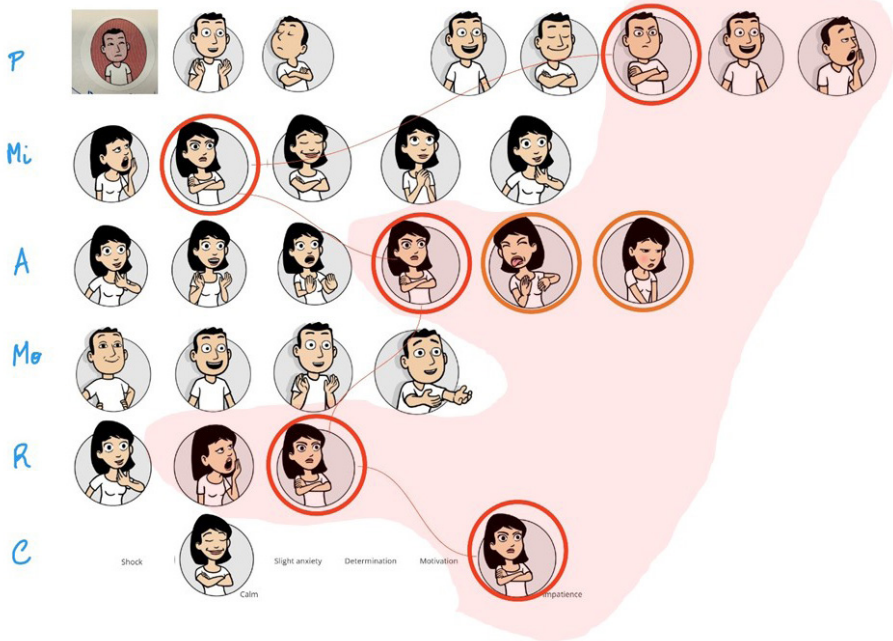
Participant P is always aware of time while biking to the faculty. The experience is positive, happy and hopeful.



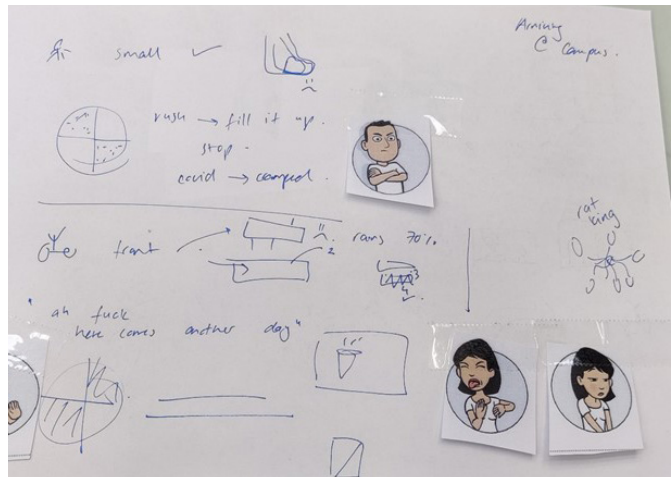
Participant P dumps his '@\$%&#' stuff on the table and starts walking around the faculty to bump into someone. The bike parking annoys him too and he experiences boredom once he enters the faculty.



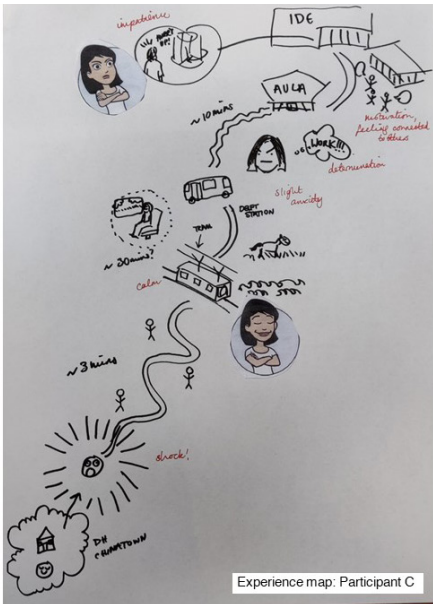
Laurans, G. & Desmet, P.M.A. (2017). Developing 14 animated characters for non-verbal self-report of categorical emotions. *Journal of Design Research*, 15 (3/4), 214–233.



Participant A loves peeking into people's windows while walking to the faculty as she finds different fascinating things in each house. She finds the entrance to the faculty very annoying. She thinks some people are stupid 'rat rings' for trying to get into the building and making the door get stuck. That is disgusting for her. She feels shame the minute she enters the faculty.



- Participant C expressed that she was forced to not think about anything while sitting in the tram. She loves that.
- She is calm throughout the journey but she experiences shock and anxiety whenever she spots a crowd-whether at the market or in the transition space.



Experience map: Participant C

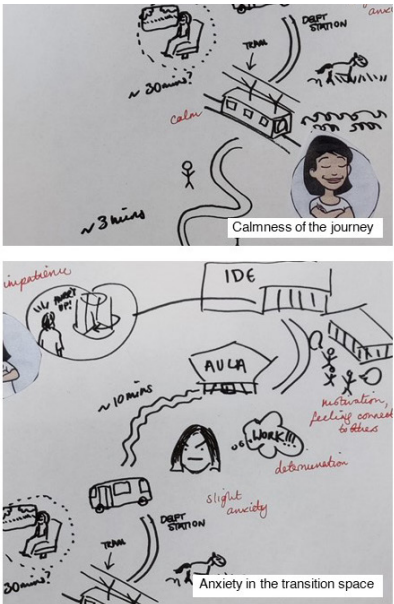
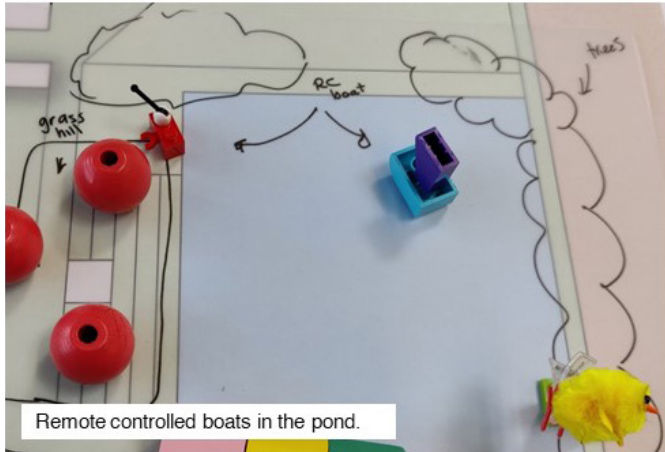


Fig. 3.13: Transit journey mapping and PrEmo analysis of different emotions felt while transiting through the IDE transition space

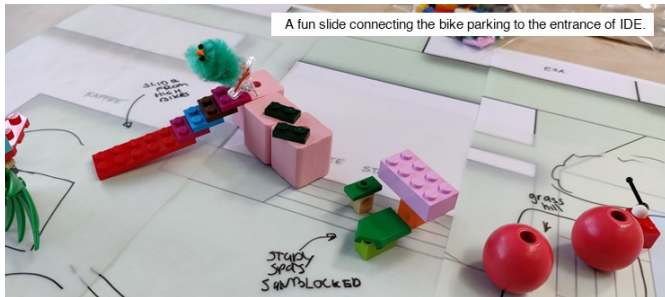




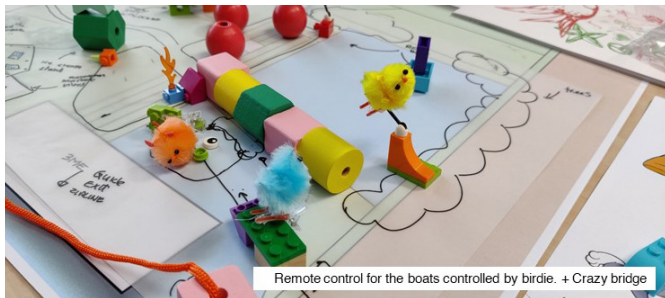
A 'spy glass' to spy on people from a corner.



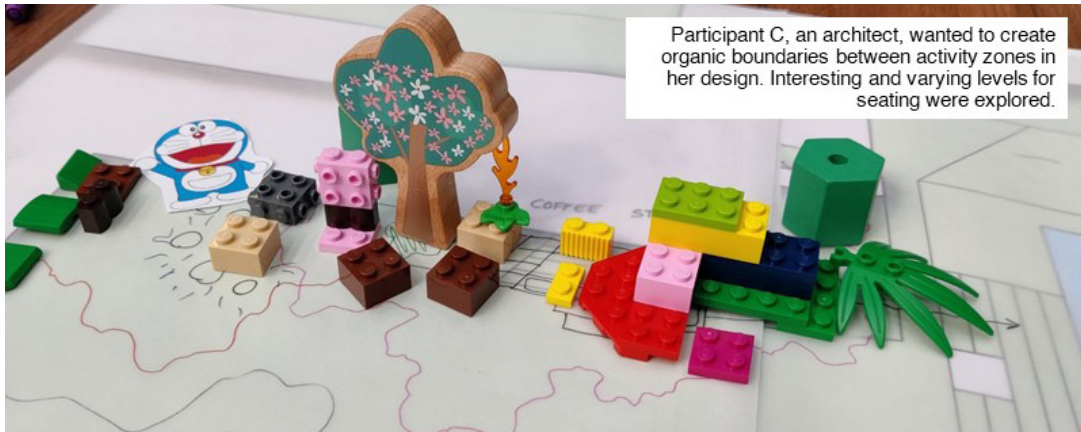
Remote controlled boats in the pond.



A fun slide connecting the bike parking to the entrance of IDE.



Remote control for the boats controlled by birdie. + Crazy bridge



Participant C, an architect, wanted to create organic boundaries between activity zones in her design. Interesting and varying levels for seating were explored.

### 3.4.1 Lessons from the generative sessions

The **spy glass** indicates that there is an inherent conflicting set of needs- the user **wants to be able to see everything** but at the same time **doesn't want to be noticed prominently**.

Even though this idea of **remote controlled boats** in the water body was not specifically meant for the design of a transition experience, it demonstrates that users want to have the **freedom to be in control** of the elements of the experience. It also indicates the need for a part of the experience to remind them of their **childhood**, just like the interviews had previously indicated. It is important to note here that not everything needs to remind the users of childhood because the medium of this generative research was quite playful and had a childlike quality, which may have made the users express themselves primarily along those lines.

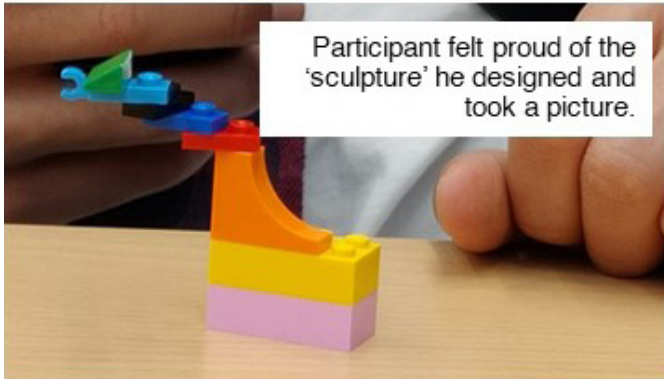
This **fun slide** indicates the need for the design to **quickly engage** the users **along this main spine** of transition, which they clearly think is important to them.

This **crazy coloured bridge** indicates that the users wish to **overcome the monotony** of their daily journey across the transition space.

It can be inferred that the design can include a **variation in the ground levels** by blending it along the direction of the transition experience, to make it an elevating experience physically.



Cable car and slide connections between buildings



Participant felt proud of the 'sculpture' he designed and took a picture.



Bubbles meandering through nice and 'tall' sculptures before entering IDE.

Meandering through tall sculptures indicates the need for **aesthetic** stimulation and a **scale** large enough to mesmerise and not draw attention towards the user.

The **cable car and slide** connections indicate the need to feel connected and gain **quicker access** to all the facilities that surround the transition space. However, this insight does not add to the design of the transition experience but is quite valuable in the public space design of the entire transition space for access, **social interactions** and **seating**.

The **sculpture** indicates the need for the user to be **recognised** and **acknowledged** for their **creative outputs** on a 'stage'- the transition space.



Birdie wants to hide behind the sculptures without meeting anybody.

This indicates the same need as the spy glass.



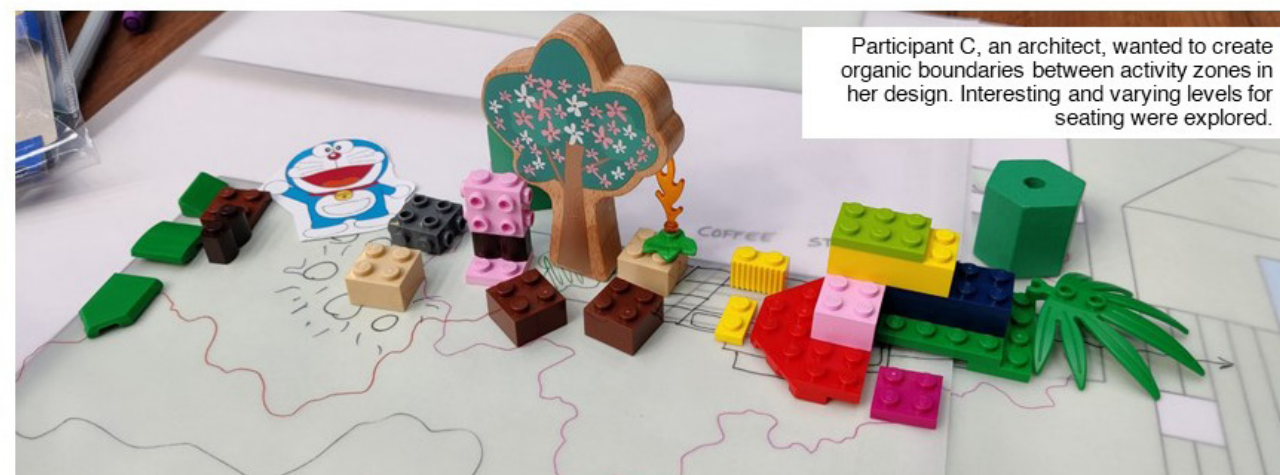
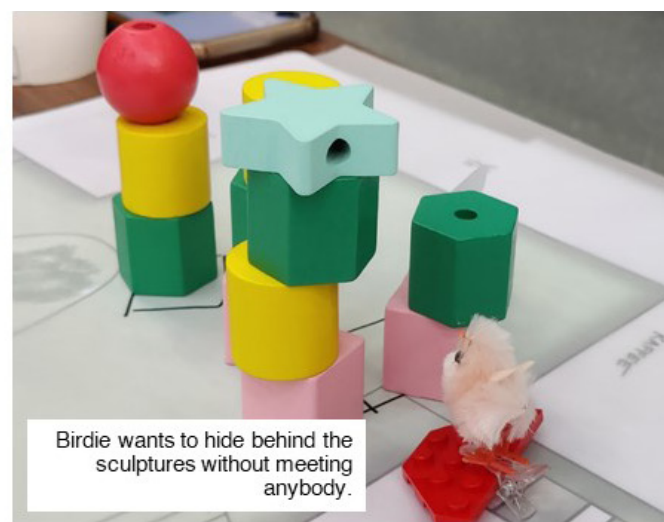
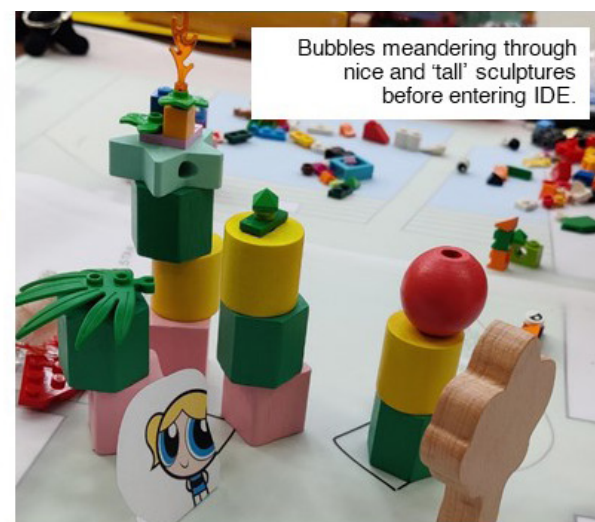
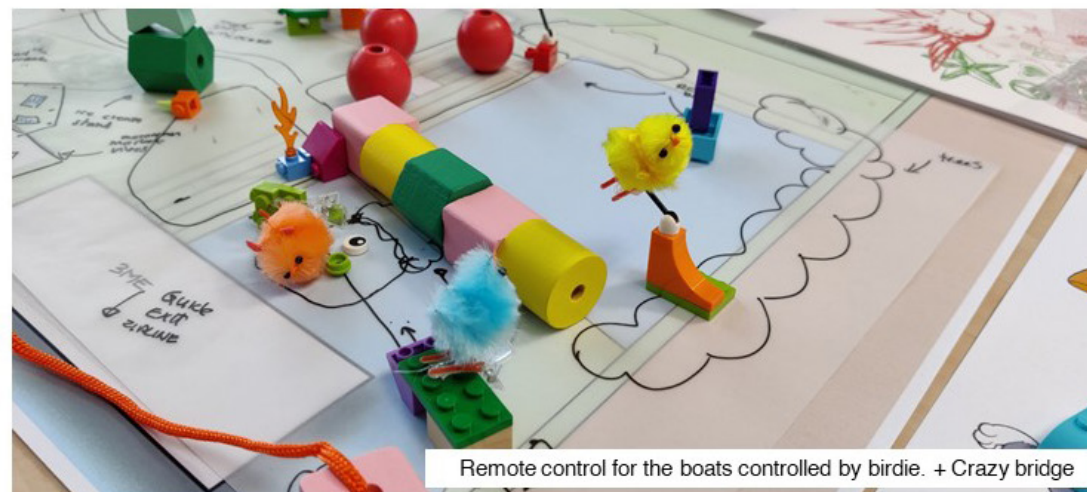
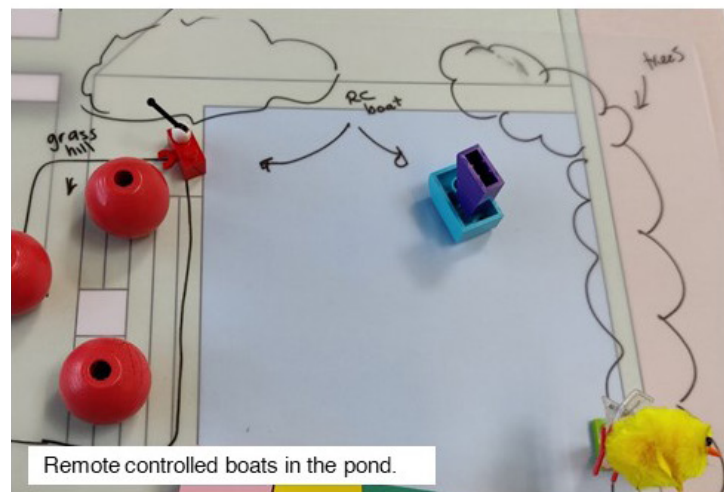
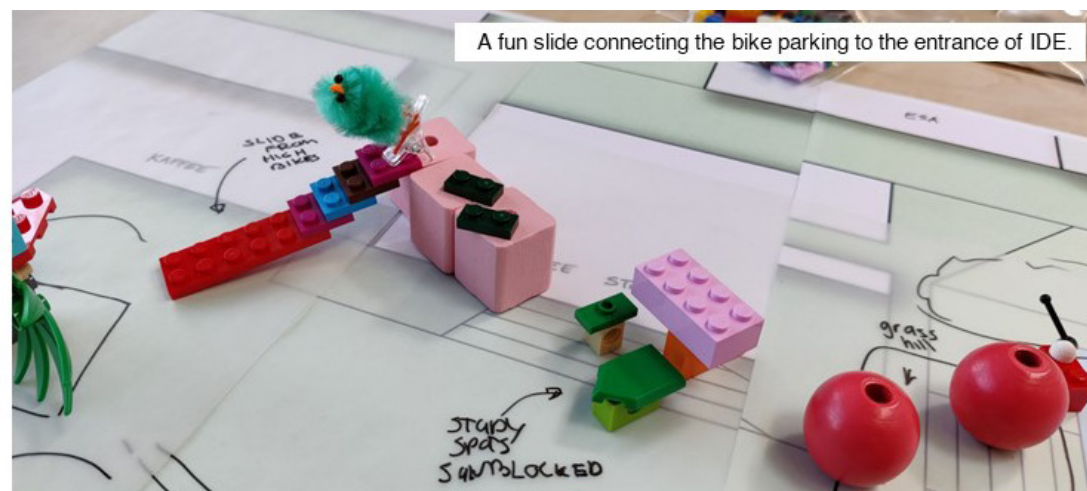
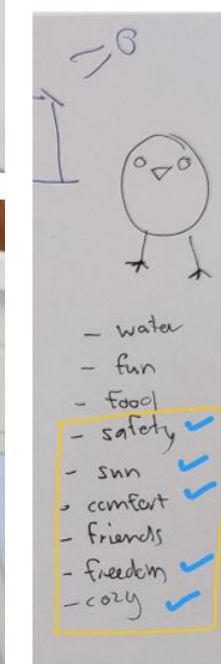


Fig. 3.14: A collage of the insights from the generative research sessions.



## INSIGHTS FROM THE GENERATIVE RESEARCH:

1. People enjoy a slow, long journey to the faculty. Music, nature, water bodies, peek into windows, forced to not do anything (eg. tram journey), peaceful. This route to IDE has to be **a regular and the shortest route**.
2. Currently there is a **'bang' moment** when the faculty confronts the user about their upcoming work day. One participant said he 'dumped his \*@#! stuff on the table the minute he arrived.
3. They **start thinking** about what they have to do that day. They are **mostly late** and **in a hurry**.
4. Everyone expressed **anxiety** while walking across the transition space and feeling like everyone sitting there is watching them.
5. The **IDE entrance door is very slow and annoying**. One participant called it a 'stupid door'. Their flow to enter the faculty and start their day gets interrupted.
6. "Need more **"nature"**: grass, rustling leaves, water bodies, ducks, bees buzzing, cool breeze, warm sunlight, smell of flowers.
7. The current seating in front of Coffee Star is not comfortable. The grey benches are cold and few in number.
8. One participant remarked that she wanted to sit on the stairs next to the water body to feed the ducks but admitted that people would judge her as crazy for not sitting on the benches.
9. Some wanted a **secret 'spying' corner**. DILEMMA: *I want to see everything but do not want to be seen by others.*
10. Slides and rope ways indicate the need for **movement, rhythm** and **childlike play**. It is a direct connection between buildings.
11. Better parking spots for bikes are needed. Most people dislike the current bike parking.
12. Everyone designed an 'island' with the ducks. Remote controlled boats and a crazy coloured bridge indicate the **need for control**.



### 3.5 Three scenarios of use

1

SPACE AS A SANCTUM

*User wishes to be alone*

- It must act as an envelope of safety.
- It must comfort the user.
- It must feel like sitting in a tent wrapped in a blanket while watching the northern lights.**
- It must express warmth, both in appearance and temperature.
- It must feel tranquilising and soothing.
- The interaction must make the user feel self-content.
- User must feel refreshed and reset after the interaction.

2

SPACE AS A CONNECTOR

*User wishes to interact with others*

- It must help people connect with each other spontaneously.
- The interaction must be playful and explorative.
- It must promote vibrant social interaction.
- The interaction must be a 'flow' experience - balance between challenge and skills required.
- The connections made must be unexpected ('random').
- It must be an accommodative social space.
- Engage in meaningful activity that brings joy.
- It must feel like playing with bumper cars at a circus.**

3

SPACE AS A MOTIVATOR

*User wants to start the day positively*

- Space must help the users face the day with motivation and determination.
- It must feel like running a marathon and being cheered by spectators.**
- The interaction must not take longer than a minute.
- The interactive element(s) must be located along transit paths that users usually take.
- It must make the emotional transition of entering the faculty smoother without the user realising it.

At this stage of the project, three scenarios of use and three different types of users of the IDE transition space were identified. **Please note** that this was changed, underwent iteration and improved during the ideation stage.

### 3.6 Three types of users

1

IN TRANSIT

- Needs to know the time.
- Needs to spend as little time in the square as possible (user is usually in a hurry).
- Feels anxious about the day and the people watching them.
- Needs easy to access bike parking. User wants to know if the bike parking on top is full.
- Needs quick route into the faculty.
- Needs a better entrance door.
- Needs to be motivated for the day.
- Needs something to look forward to inside the faculty (positive anticipation) instead of the usual negative or passive anticipation.
- Perhaps the solution could be to feel a sense of pride and have an identity and position in space.

**Face the day with determination and motivation**

2

ON A BREAK

WHILE HAVING COFFEE, LUNCH OR A WALK FOR FRESH AIR:

- Needs sunshine and warmth
- Needs to be in a cozy and sheltered cove.
- Needs a comfortable place to sit.
- Table tops to place food and beverages.
- Comfortable eating position.
- Needs to touch, hear, see and smell nature.

**Escape from the day to refresh and reset.**

3

STATIONARY

WHEN ALONE:

- Dilemma: User wants to be able to see everything, everyone. But does not want to be seen alone.
- Wants to forget momentarily what happened/ will happen during the day.
- Wants to feel safe and cozy.
- A sense of ownership over your 'spot'.
- Must feel connected to nature.

WHEN IN A GROUP:

- Wants to share and exchange things.
- Wants to be comfortable and feel safe.
- Wants to relate to the whole group through mutual activity.
- Wants to feel free.
- Wants to have control over the environment.
- Be recognised by the community and have an identity.

**Feel connected to meaningful activities that bring joy and help forget one's troubles.**

### 3.7 Design Goal and Vision: Iteration 1

The Design Goal formulated at this stage was “... **to create moments of happiness in the transition space through positive design interventions across the transition space.**”

At this stage of the project, it was envisioned that the entire transition space needed to be designed and hence there were three metaphors chosen as the direction of the vision. **Later this approach was discontinued** because it did not embody the positive design approach. The following (incorrect) choices were made:

- For those users who wished to be alone in the transition space and relax, space would be designed as a **sanctum**. The interaction vision was sitting in a warm tent while watching the northern lights.
- For those users who wished to socialise during their breaks, space would be designed as a **connector** of people. The interaction vision was that of a bumper car ride in an amusement park.
- For those users who were walking alone into the IDE building and thinking negative thoughts, space would be designed as a **motivator**. **There was a need for the users to face the day with determination and motivation.** It would be like running a marathon and being cheered by spectators.

The different roles of the transition space which were envisioned, were to be different zones in the transition space. The three types of users which were identified expressed three different needs:

- Face the day with determination and motivation**
- Escape from the day to refresh and reset.**
- Feel connected to meaningful activities that bring joy and help forget one's troubles.**

During the ideation phase, this approach was not continued anymore as it was not an appropriate design direction. More details are in 'Chapter 4: Ideation'.



**Space as a sanctum:** It must feel like sitting in a warm and cozy tent while watching the northern lights.



**Space as a connector:** It must feel like playing with bumper cars at an amusement park.



**Space as a motivator:** It must feel like running a marathon and being cheered on by spectators.

**Fig. 3.15:** Different metaphors used to describe what the intended design would feel like.



### 3.8 Relevant Urban Happiness Ingredients



Fig. 3.16: 17 of the 20 Urban Happiness Ingredients that were found relevant at this stage of the project.

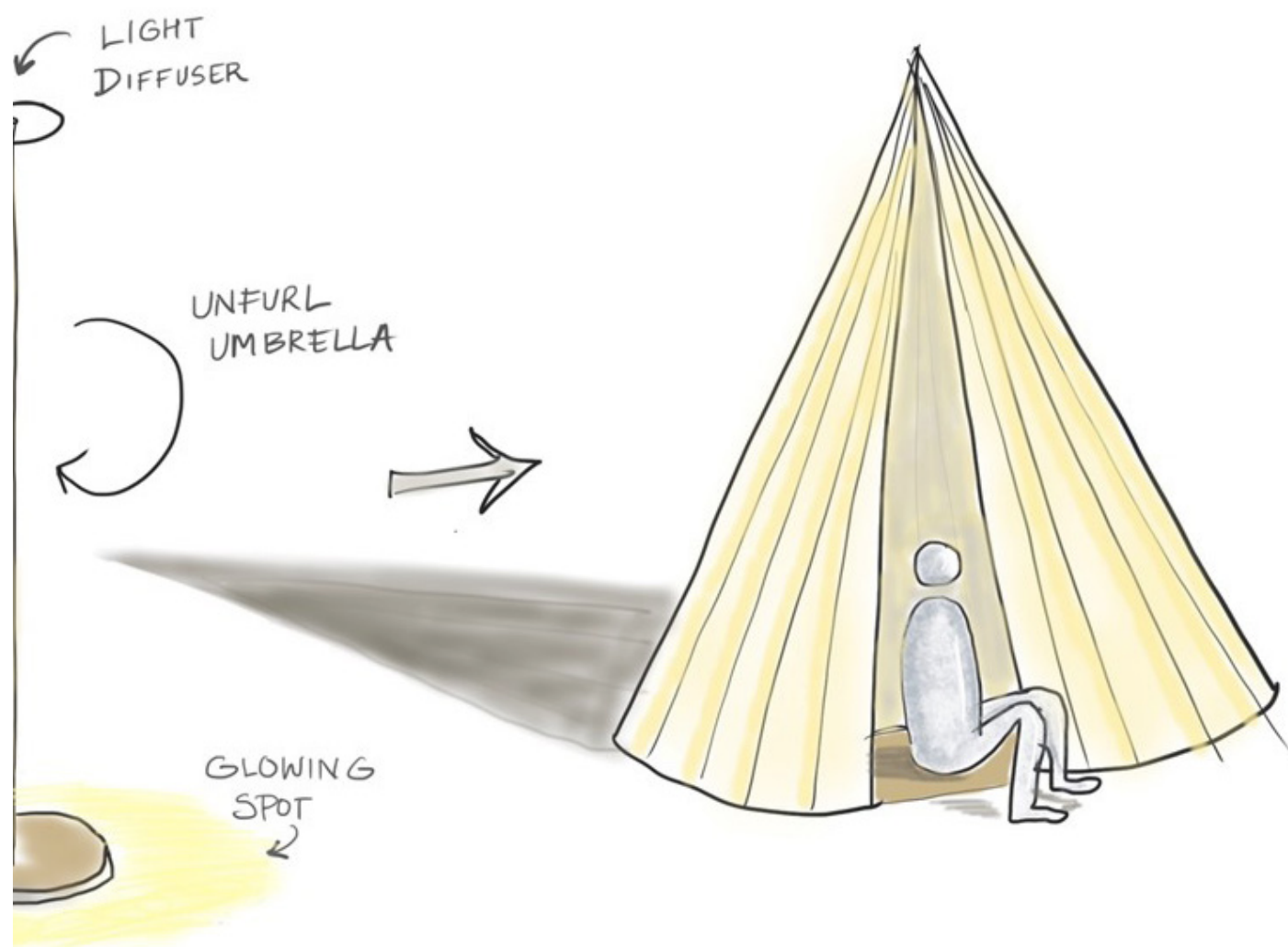
Out of the 20 Urban Happiness Ingredients, 17 were chosen due to their relevance for the three design directions. ‘Promoting trust and participation’, ‘Foster grassroots projects’ and ‘Inclusivity and diversity of users and activities’ were not relevant for the design direction and were hence eliminated from the choice of design ingredients to be used.

These 17 ingredients were then grouped into three categories ‘furniture (place-making)’, ‘interactions’ and ‘environmental affordances’. It is important to note that the 17 ingredients were again reduced in number in the next stage based on the iterated design direction.

### 3.9 Overall Design Implications

1. There is a need for a **gentle and positive push** in the morning while interacting with the transition space. This is because the absence of such an interaction is causing the users to experience mostly negative emotions once they enter IDE due to work related stress.
2. The large scale and emptiness of the transition space seems to intimidate the users. Almost all of them designed a secret spy corner for their cartoon character to hide behind it while transiting. The design must therefore **balance this dilemma** of wanting to see but not wanting to be seen.
3. The regularity of their daily routines is interpreted as a burden to be dispelled throughout the day when starting one’s day. The users need both a **positive orientation** and a **positive distraction** while transiting.
4. The regularity of their schedules also indicates the lack of freedom to choose what they want to do for the day. The design must therefore incorporate this **need for autonomy**- the freedom to choose the positive intent for their day.
5. The design of the transition space must **accommodate free space** for temporary events to take place. This is an important aspect of the IDE identity.
6. The **placement** of the proposed solution must be **where the users are in transition** and not necessarily where they choose to relax or sit down.
7. The scale of the design is driven by the amount of time spent in transition (2 minutes), which means that **the design must create at least a pause in the user’s mind if not an actual physical pause in their journey**.
8. The **weather** in the Netherlands is mostly wet and cold, which needs to be taken into account **while designing a spatial structure** in the transition space.
9. The users did express a need for experiencing

organic boundaries within the transition space with respect to stationary interactions. This matches the Urban Happiness Ingredient - ‘Mixed Land Use’. However, it is a conscious decision of the designer **to choose to design for transition** rather than increasing the comfort of sitting down and relaxing. This is to be within the scope of this thesis.



## 04

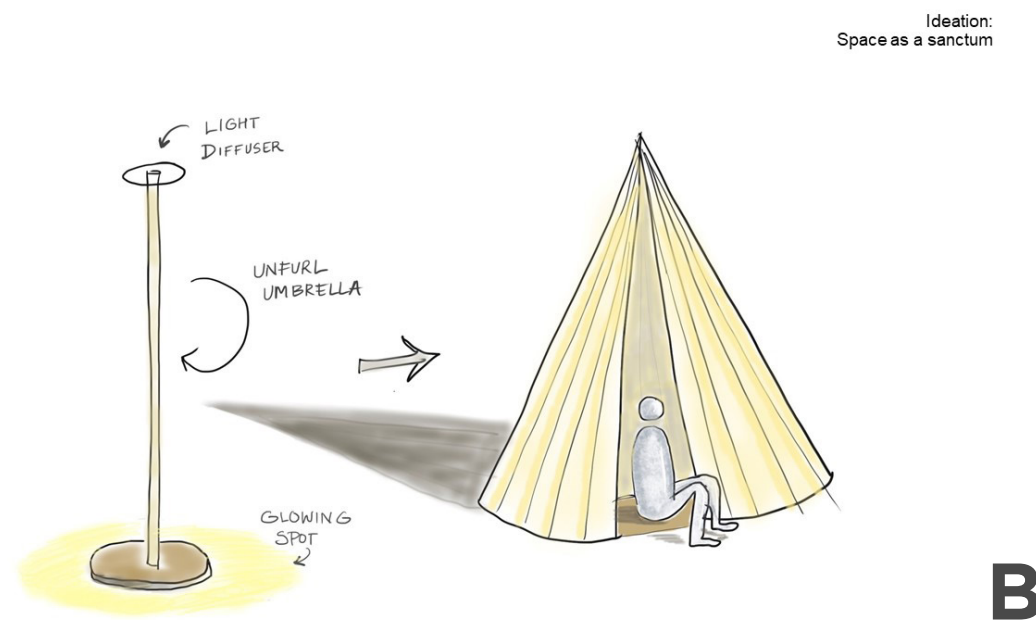
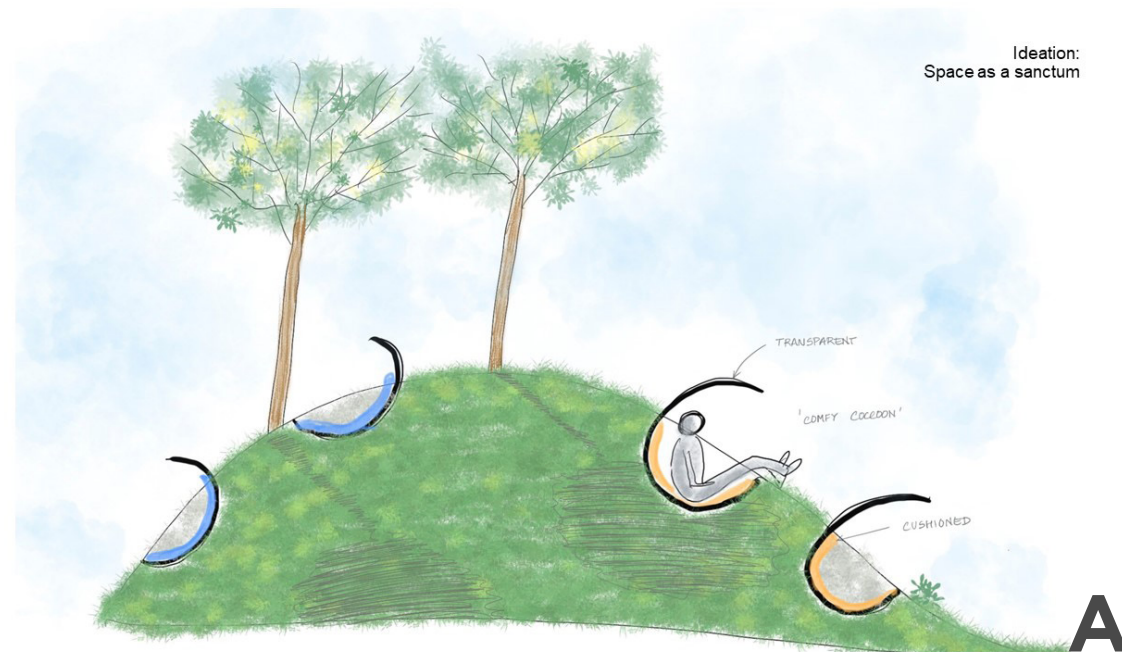
# Ideation

- 4.1 Transition space design: Exploring concepts
- 4.2 Focusing on the transition experience
- 4.3 Designing an Arch
- 4.4 Evaluating the Concepts
- 4.5 Final Iteration: Design Requirements
- 4.6 Final Design Concept: Iteration 1
- 4.7 Reflection on the Design

*This chapter is an exploration of ideas and concepts that led to the final design proposal. It explains the critical self reflection and user testing involved in the design process which led to the final outcome.*



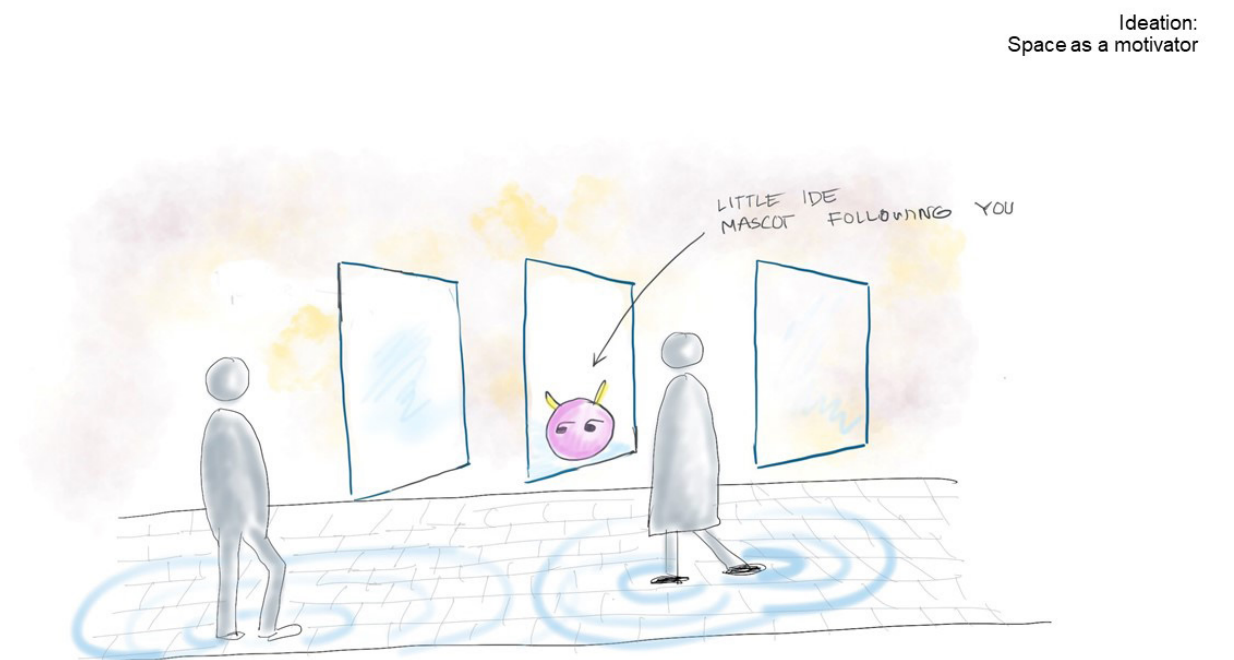
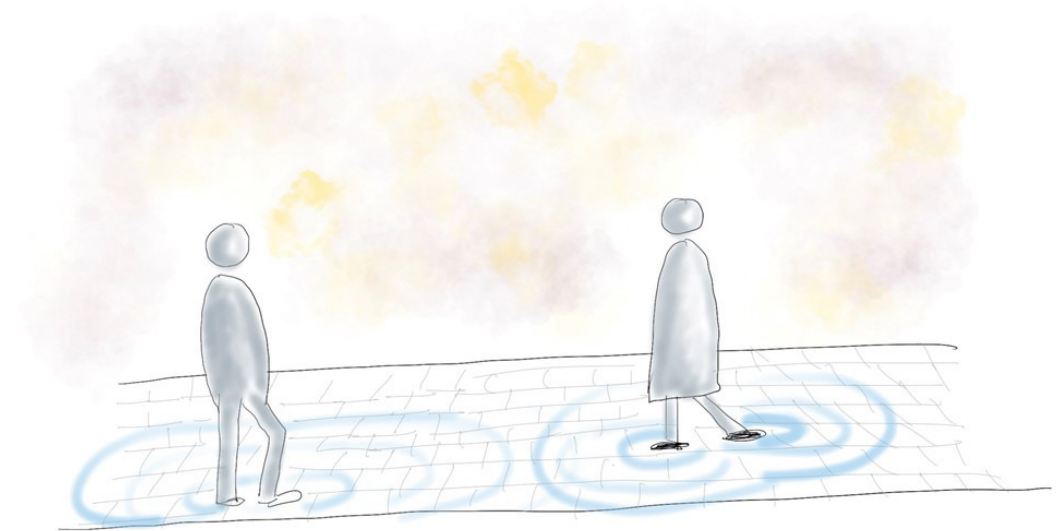
## 4.1 Transition space design: Exploring concepts



This section illustrates the initial concepts that were conceived to design the transition space. Note that at this stage, the focus was not entirely on just the transition experience but the other experiences like social interaction, relaxation, etc. Concepts A and B involved designing for comfortable seating for quiet introspection. This was designed for users that did not wish to socialise but for those users who wished to use the transition space as a sanctum.

**Concept A** was inspired by the shape of a cocoon. Users could sit on soft cushions inside the cocoons which were inserted along the slope of the grass mound in the IDE transition space. A cozy lighting would add to the sanctum ambiance of this concept.

**Concept B** was inspired by the shape of an umbrella and a tent. One could step into it and pull out the cover to surround yourself. Diffused lighting on the pole would create a sanctum ambiance.



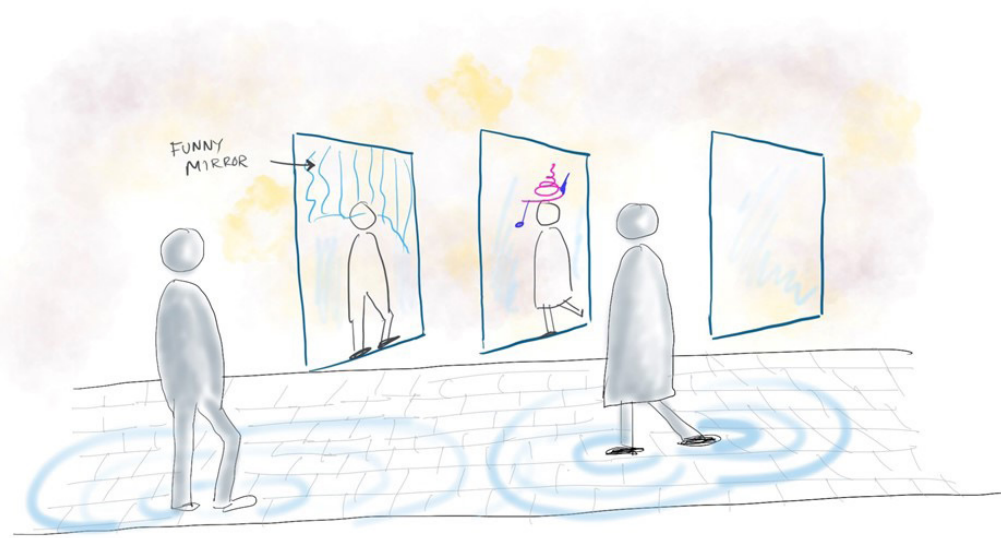
**Concepts C, D, E, F and G** (on the next page) were all inspired by the idea of users mostly paying attention to their phones while walking. This meant that a design element on the floor i.e. the pavement would successfully grab their attention.

**Concept C** tried to achieve that by light projections of water ripples on the pavement. These ripples of water would be produced based on the location of the transit

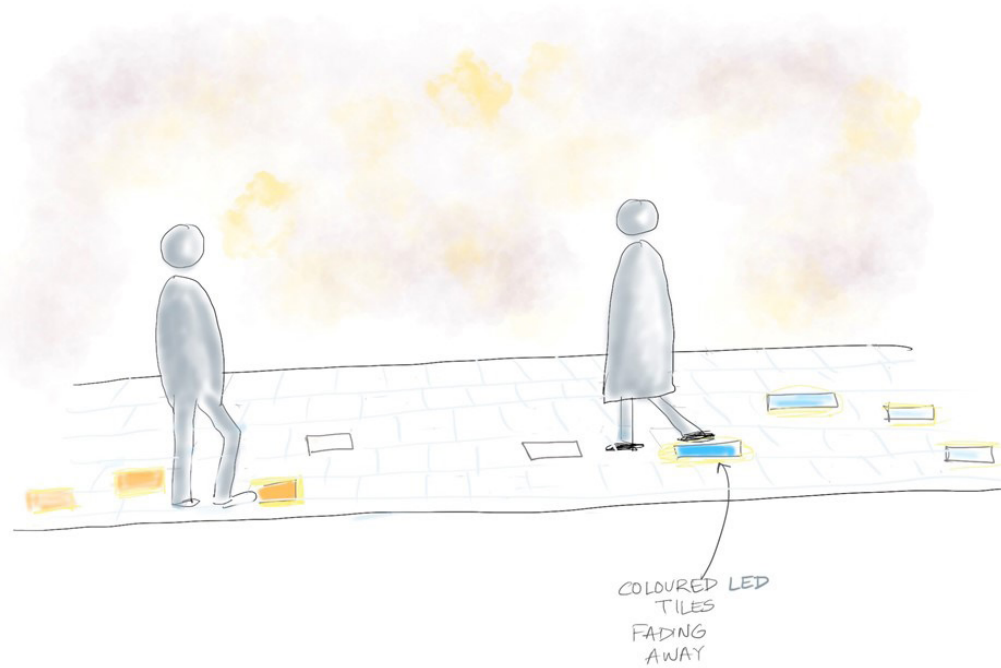
user's footsteps.

**Concept D** was built upon the same idea and suggested that an IDE mascot would follow the user as they walk. This would accompany the water ripple element and make users feel less lonely when they walk.



**E**

Ideation:  
Space as a motivator

**F**

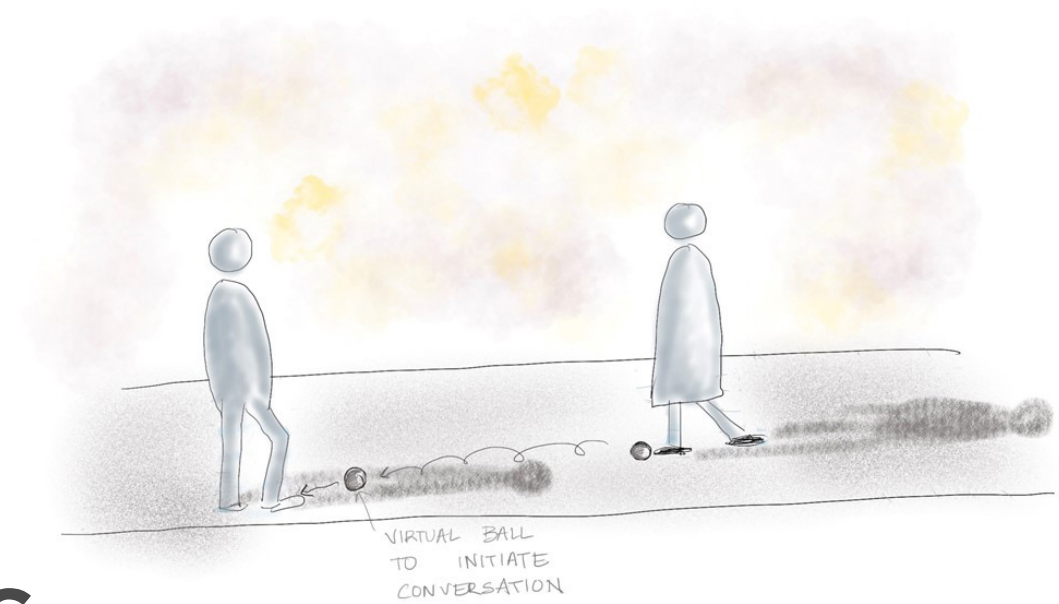
Ideation:  
Space as a motivator

**Concept E** included a funny hat element. Every time a user would pass by this 'mirror', they would see themselves donning a funny looking hat.

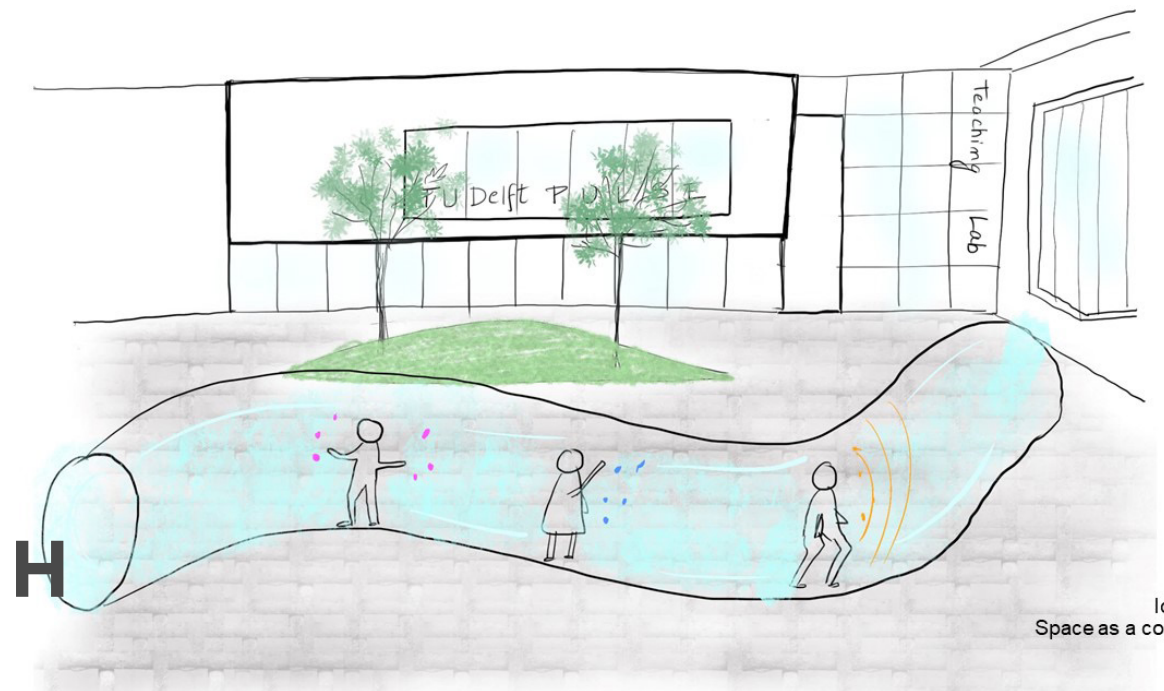
**Humour** was thought to relieve the self consciousness created by the current transition experience. It was hoped that this interaction would motivate the users.

**Concept F** was a simpler version of the same concept (but without the humour) with no mirror but coloured LED tiles on the ground which would glow when people would walk over them.

It was hoped that they would feel recognised and therefore be motivated by these light tiles responding to their steps.

**G**

Ideation:  
Space as a motivator

**H**

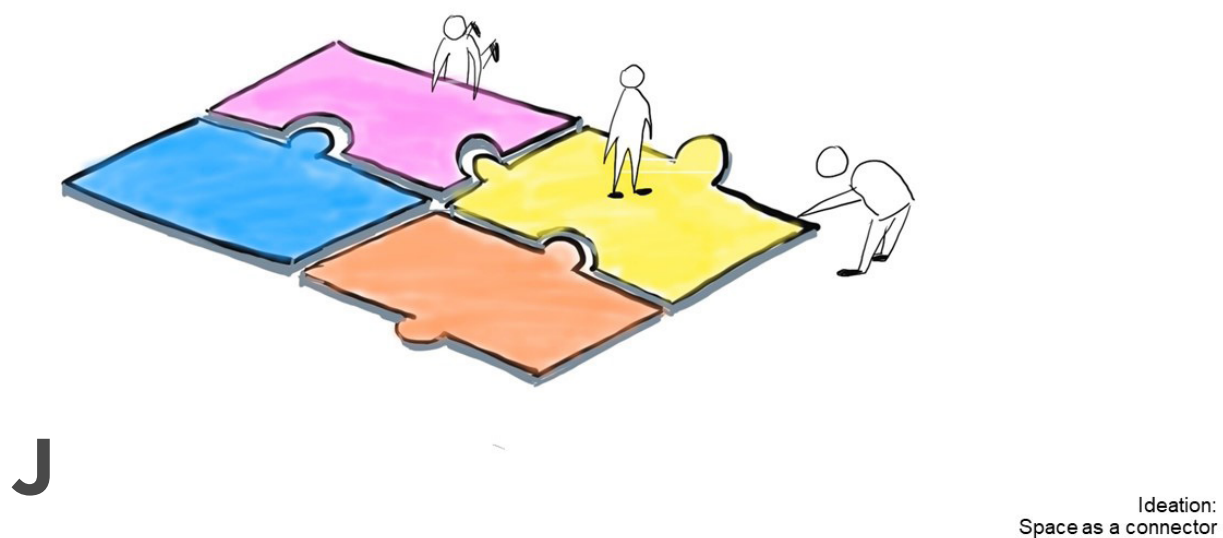
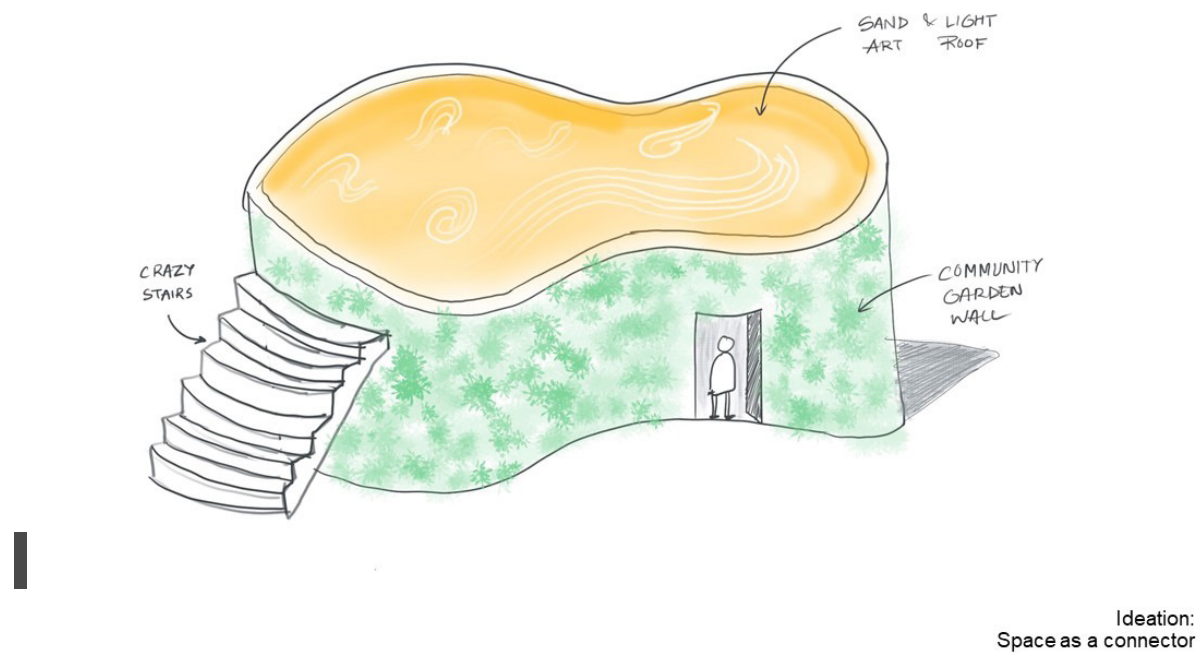
Ideation:  
Space as a connector

**Concept G** involved the same 'following you' concept in the form of a small ball projected on the ground which would follow the user while in transit.

**Concept H** was a long semi-transparent tube which users could touch as they walked through it. The tube would respond by creating colors on the spots they touched.

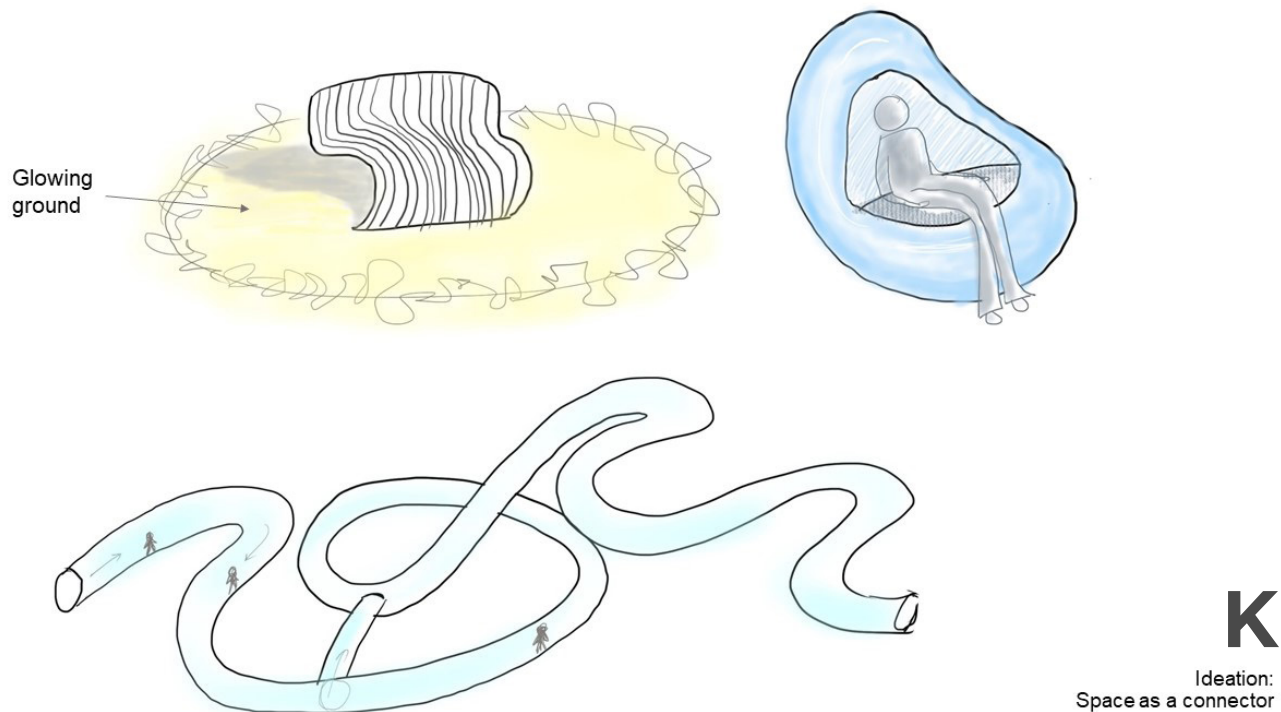
It was hoped that this concept would act as a **connector** between two strangers or friends meeting momentarily in the transition space in the morning.





**Concept I** was a green space placed in the transition space. One could climb onto its roof and play with sand to relax. The same roof would bring in light to the space inside the green structure with beautiful sand patterns created by others. The patterns would be visible due to a semi-transparent roof. The walls of this structure would feature aquaponic plants grown by the IDE community.

**Concept J** was a giant puzzle in the IDE transition space that people could move around to solve. It was hoped that these concepts would encourage socialising i.e. space as a connector of people.



**Concepts K and L** aimed to create an amalgamation of space as both a connector and as a sanctum. The ideas involved creating cozy places to sit and relax—even on the IDE water body while floating. The floating seats would come attached with a tool to catch fish in the water and thereby socialise with someone else doing that.

There was also an idea to add seating areas to the sloped roof of a food stall (image above). A lot of users had indicated the need for more delicious food to make them happy in the transition space.



# 4.2 Focusing on the transition experience

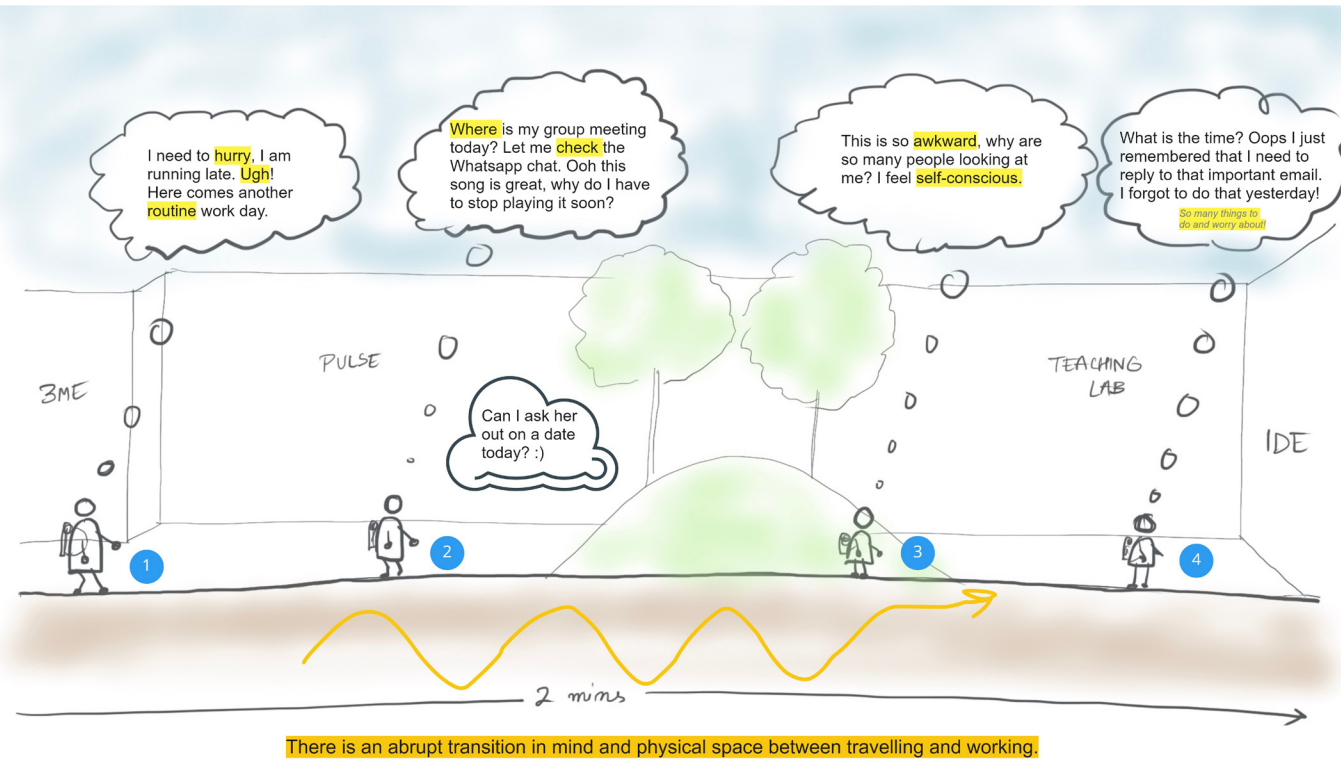


Fig. 4.1: The current transition experience.

After the initial ideation was concluded, more iteration went into understanding the transition experience itself.

Fig. 4.1 is a sketch of the current transition experience based on the conclusions from the generative research conducted.

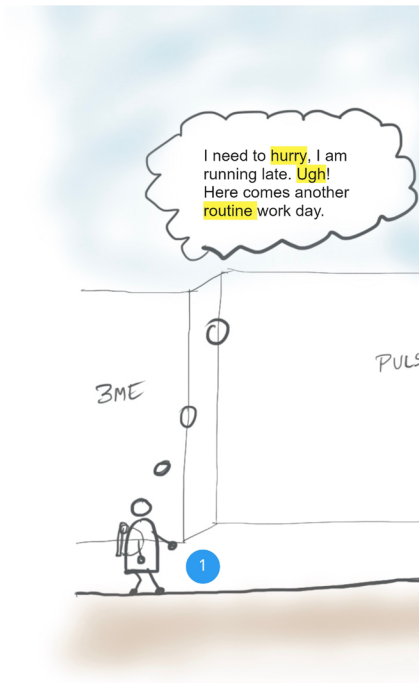
The most notable aspect is the users feeling anxious while crossing the transition space.

There is also a slight increase in negative emotions felt by the user once they enter IDE in negative anticipation of the workday.

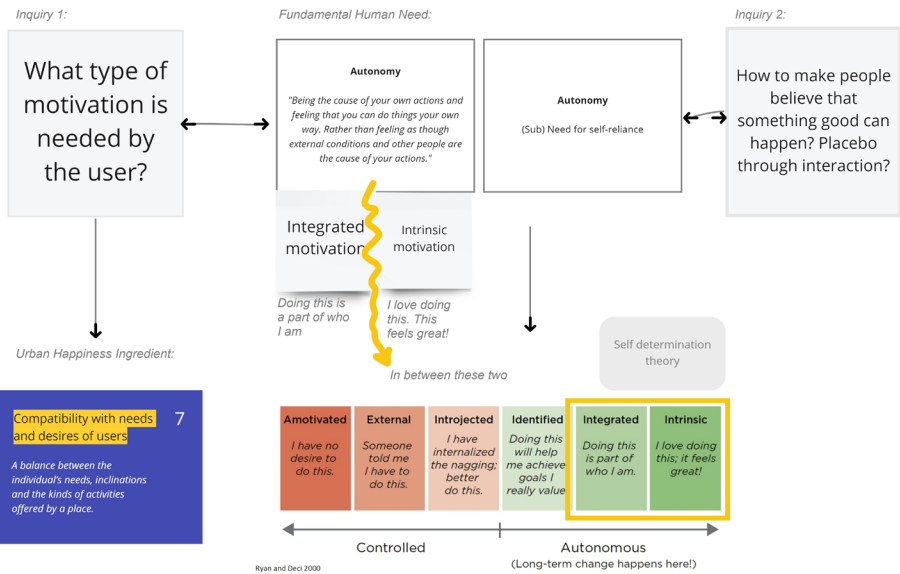
They clearly desire two fundamental things:

1. The need to feel a gentle positive boost of mental energy or a gentle push in the morning.
2. The need to feel safe from being watched by others in the transition space. Note that this occurs in the minds of the users and it need not actually be the case that others are watching you.

'Compatibility with needs and desires of users' and 'Sense of safety and security' are the two most relevant Urban Happiness Ingredients in that case. Refer Fig. 4.2.



## 1. Need to feel a positive boost of energy in the morning



## 2. Need to feel safe

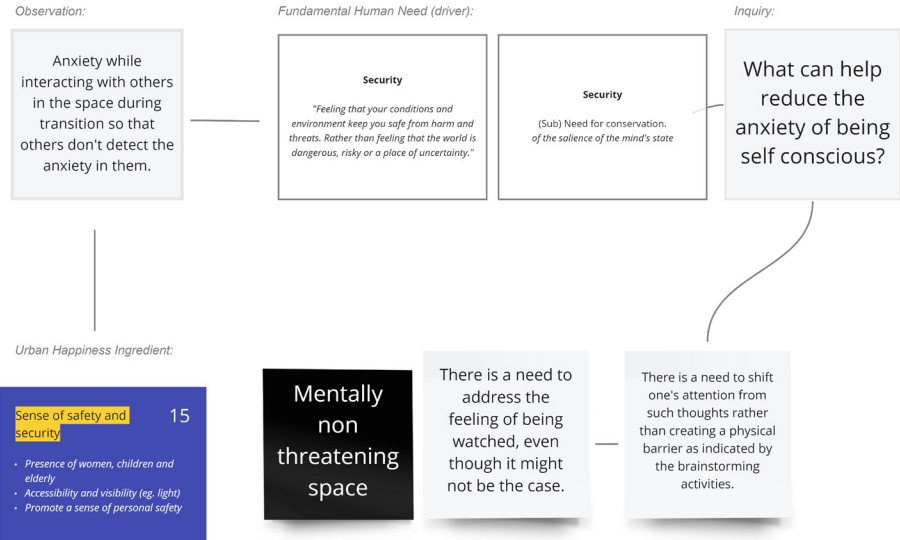


Fig. 4.2: The conditions and ingredients for a mentally non-threatening transition experience.



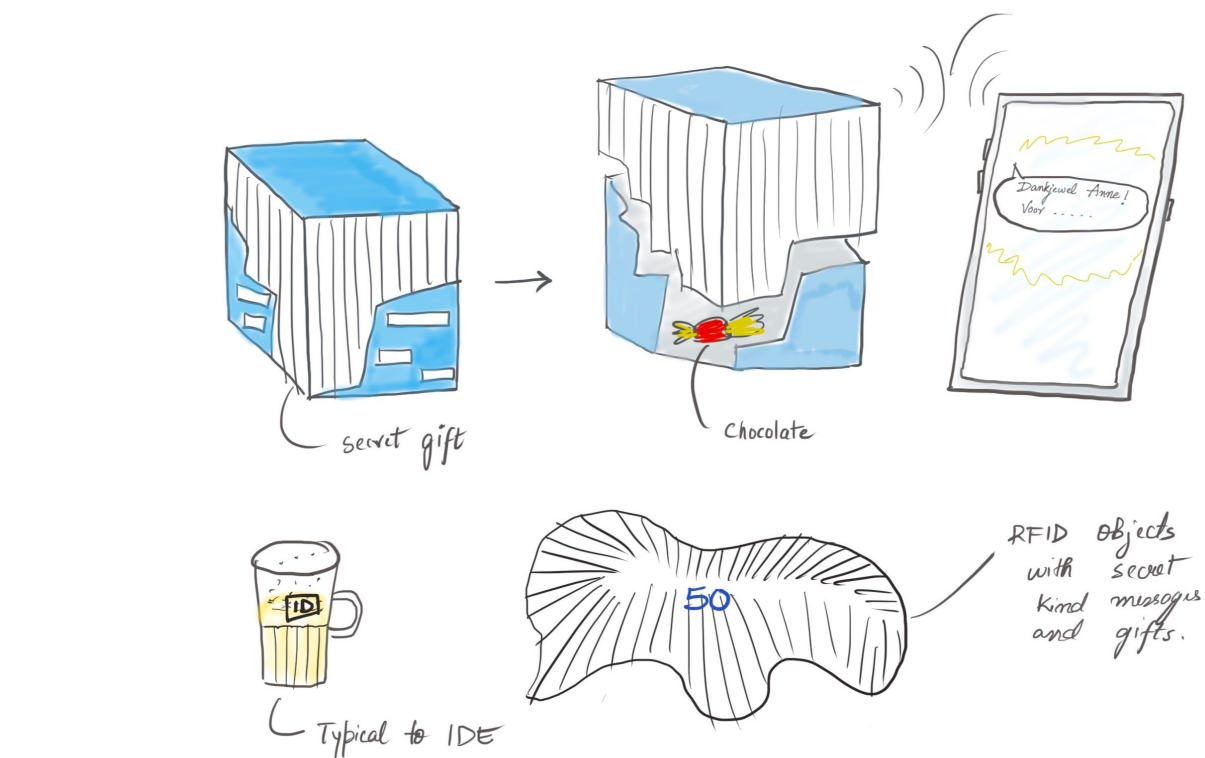
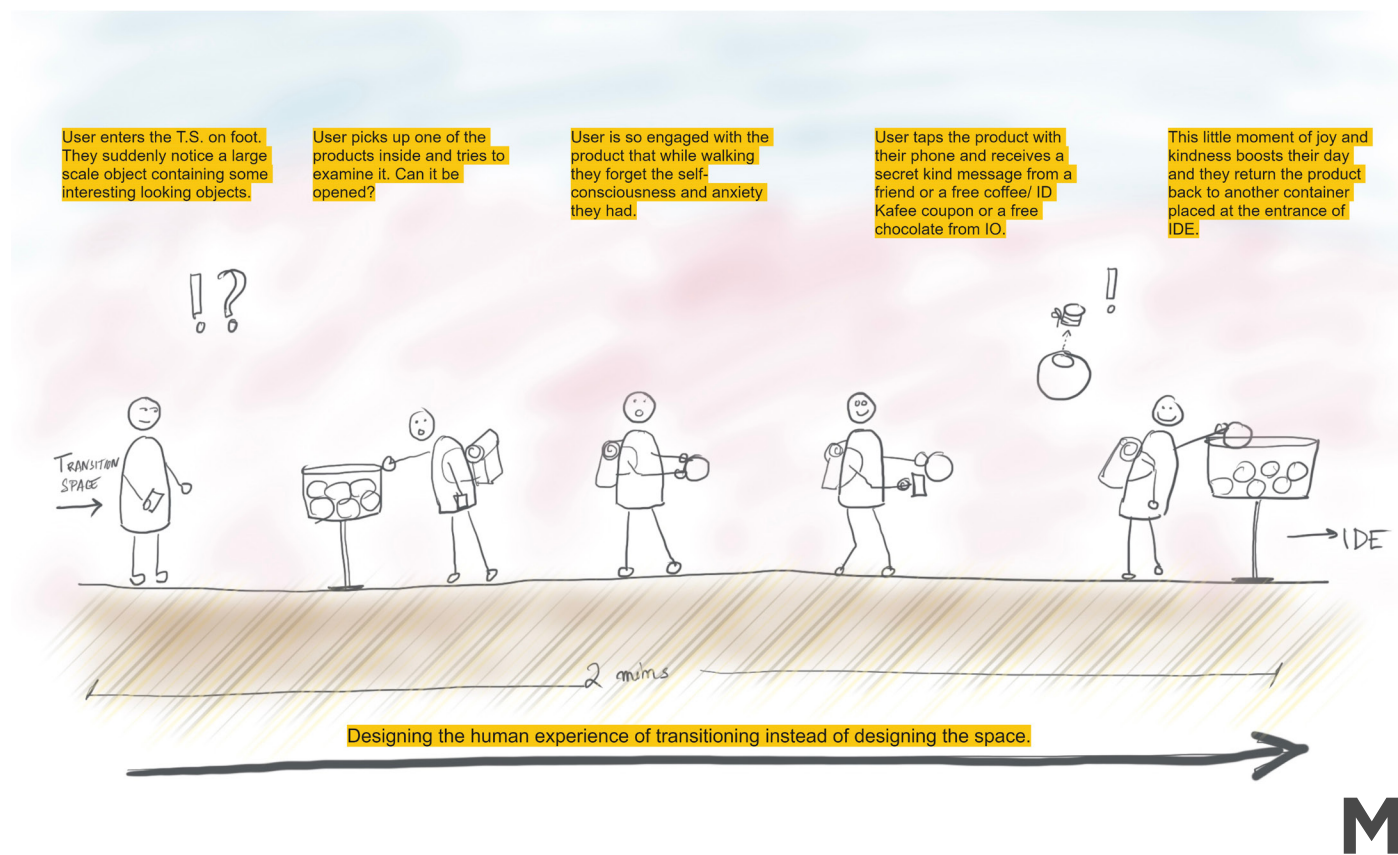


Fig. 4.3: Concept M: Gifts of kindness in transition.

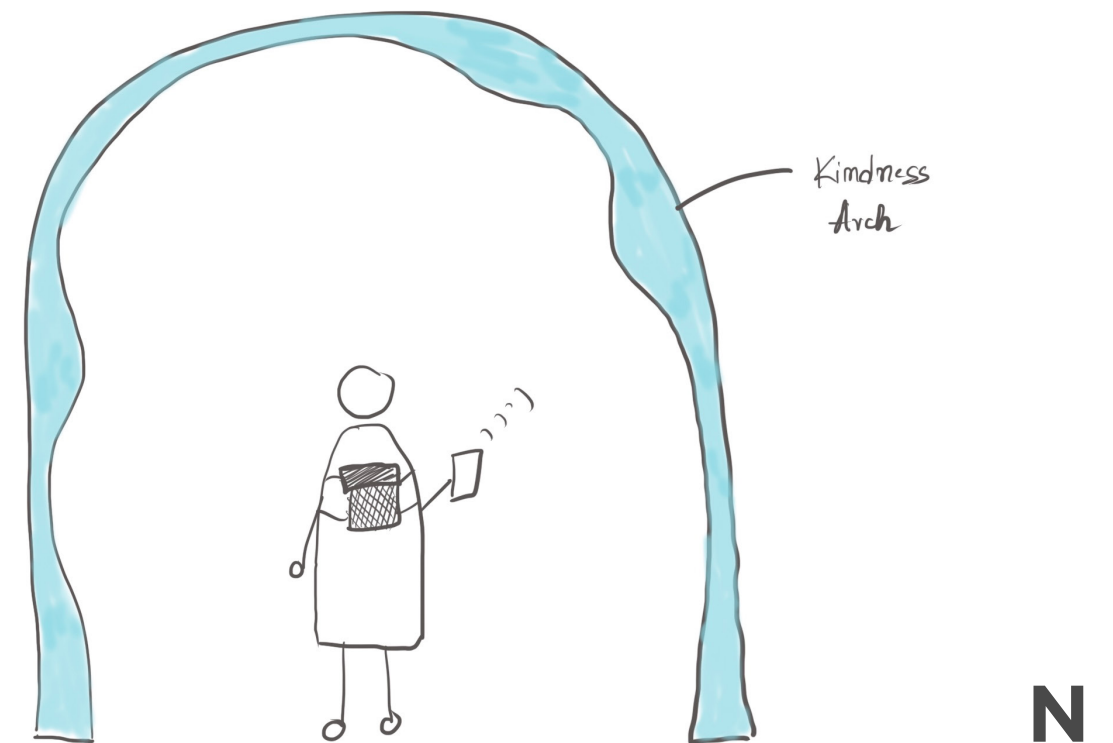


Fig. 4.4: Concept N: The kind arch

The fundamental needs relevant for this design are clearly **security, autonomy and stimulation**.

This inspired the design of Concepts M and N (see Fig. 4.3 and Fig. 4.4).

The design goal was to **'lower anxiety and enhance motivation by creating moments of happiness in the transition space that lead towards a happy beginning and ending of the day.'**

**Concept M:** The user picks up an object from a basket placed at the entrance of the transition space. When you tap the object against your phone, a kind message from a friend or a stranger from IDE pops up. It could also be a gift such as a free coffee coupon. The user can also choose to leave a kind message for a friend in the object or even a small piece of chocolate, before placing it back into another basket placed at the end

of the transition space. The form of these objects is inspired from IDE culture.

**Concept N:** Instead of the baskets, a single arch would act as a token of kindness. Kind messages and gifts would be relayed and sent through the phone, every time someone passes under the arch.

**The arch was chosen as it is a powerful historical metaphor for an entrance in architecture.**



# 4.3 Designing an Arch

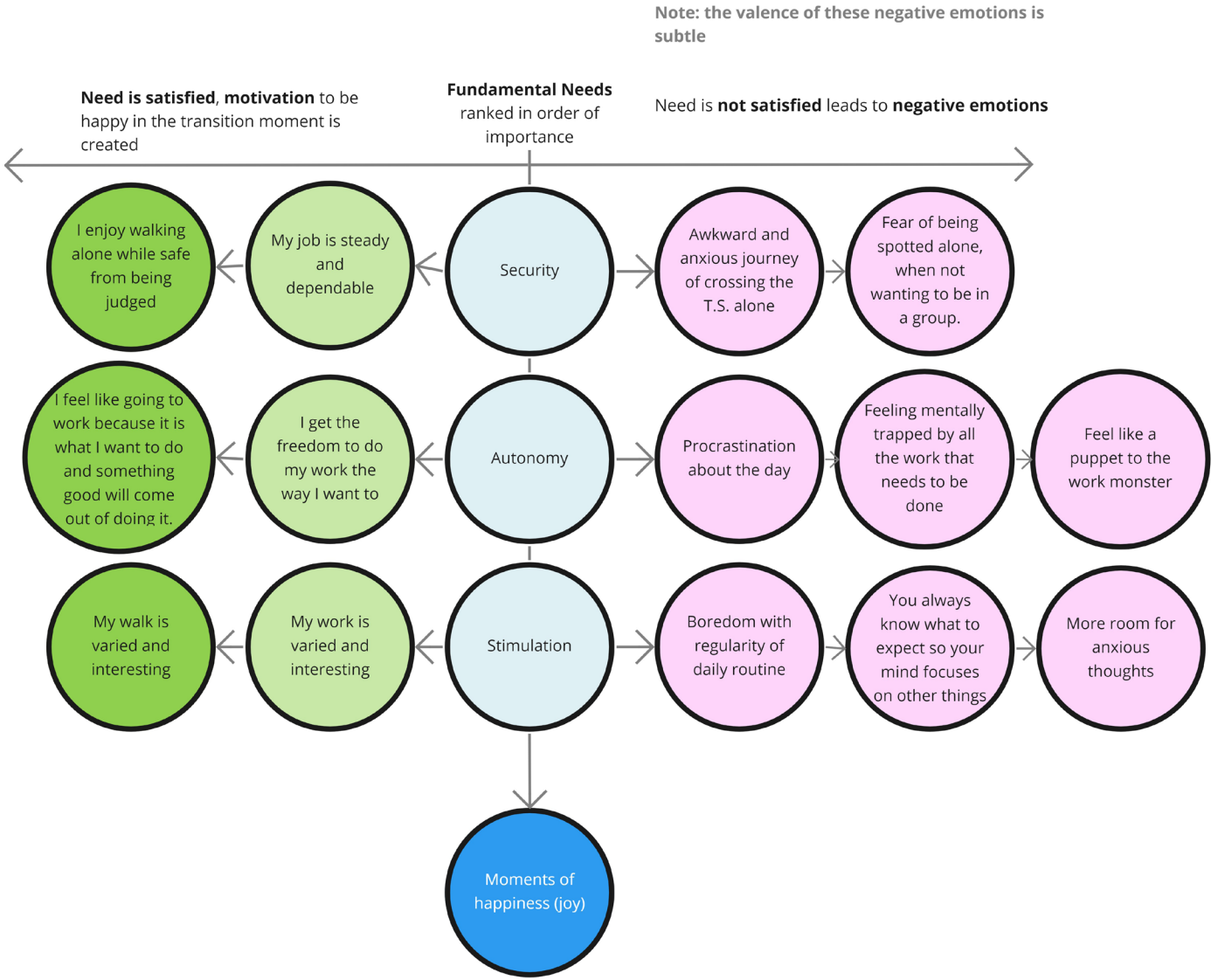
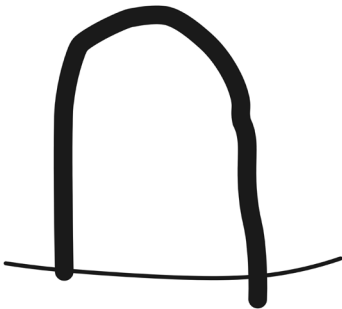


Fig. 4.5: Understanding the negative and positive emotions related to the three fundamental human needs identified.

Fig. 4.6: Understanding the power of an arch in design.



## What does an arch signify?

- Marks an **entry** or an **exit**.
- A **barrier** between two spaces (*Semi Permeable Membrane of a cell :D*)
- **Welcomes** you or bids you **farewell**.
- A powerful **communicator**.
- **Frames** a view
- Temporary shelter for a moment: **Asks you to pause for a moment**.
- Creates **anticipation** about what lies ahead

The refined design goal is **‘to create a transition experience in front of the IDE entrance for the security, autonomy and stimulation of the IDE transition space users.’**

Several concept iterations were made while keeping in mind the three fundamental human needs of the transition space users.

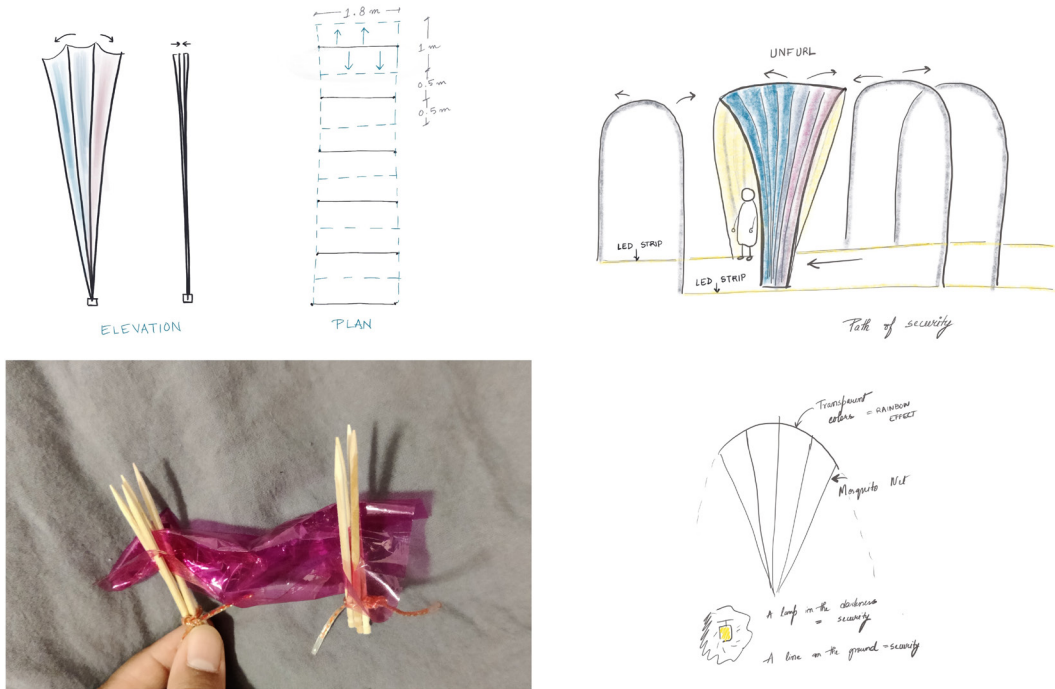


Fig. 4.7: Design of a protective archway that opens up like an umbrella to shelter a user who's walking under the archway.

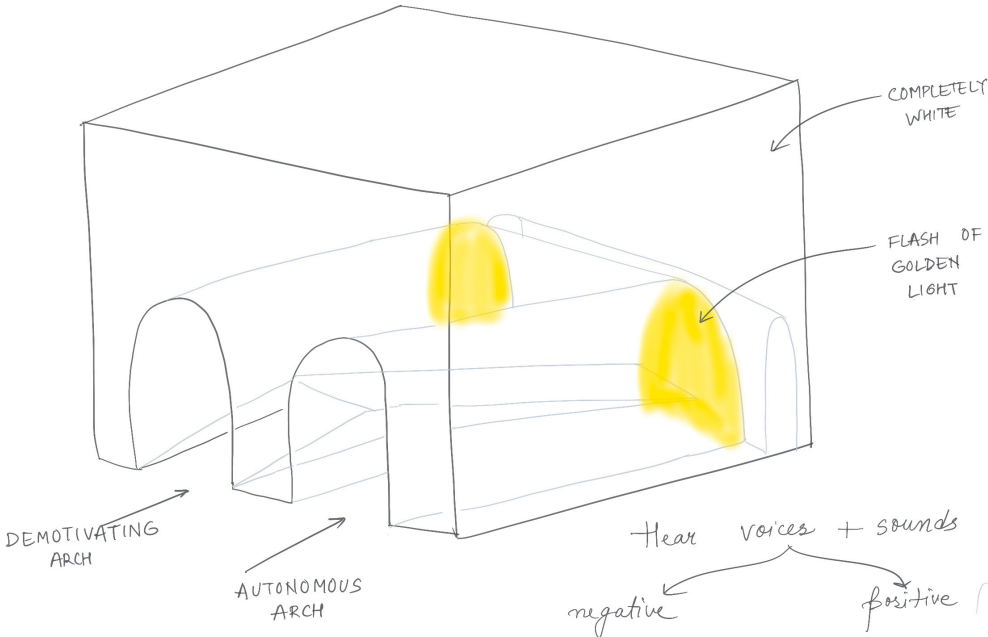
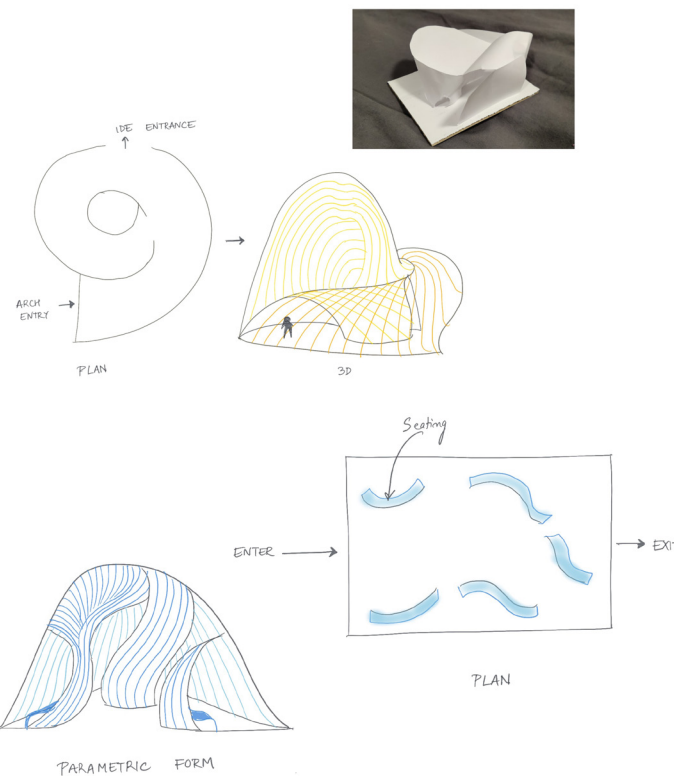
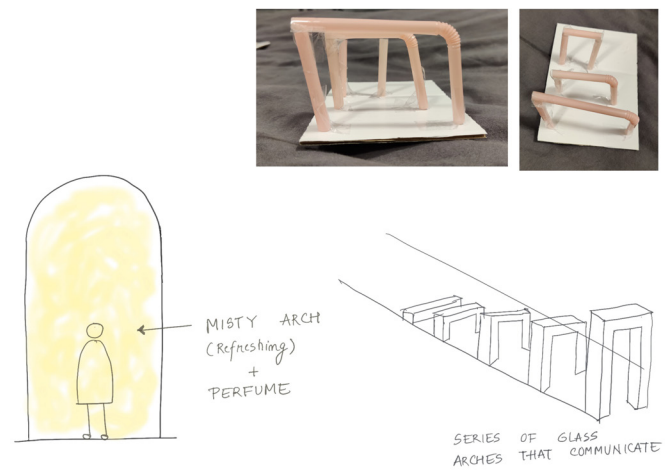


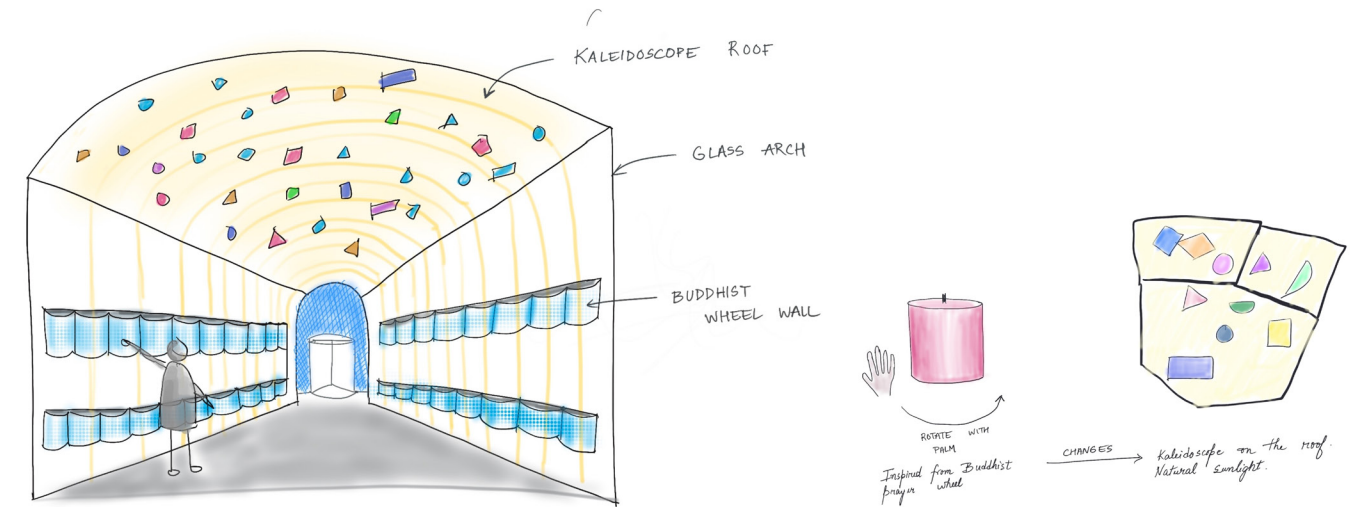
Fig. 4.8: Design of a motivating and demotivating archway that leads to a heavenly light at the end of a tunnel. The experience would be different in each tunnel.





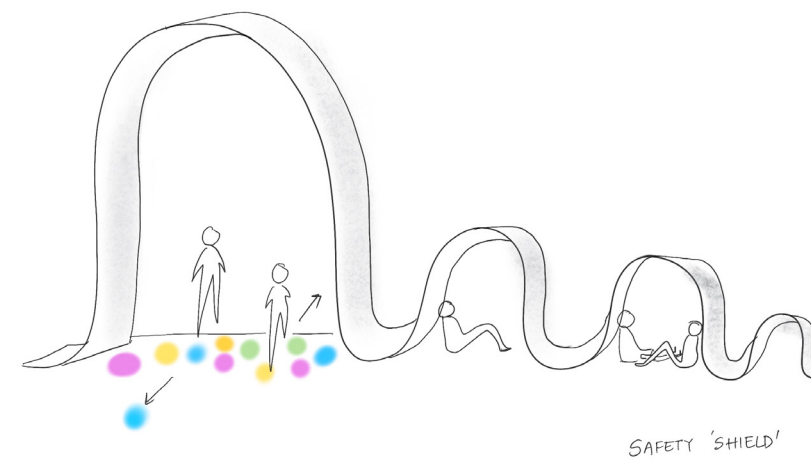
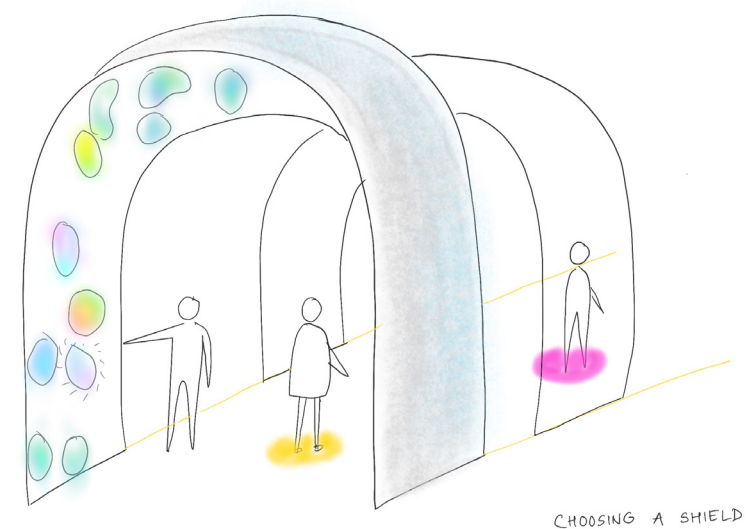
**Fig. 4.9: Design of differently shaped arches** placed linearly to form a semi-open passageway. Each arch would spray mist onto the user traveling through it. This would create a feeling of a freshness in the morning or at the end of the day. It was a metaphor for the release of stress during the day.

**Fig. 4.10: Design of a parametric sea shell shaped space** where all users congregate in an internal centre space. After that they move towards the IDE building entrance. This experience was created to not differentiate between the users who came to IDE alone and those who were already in a group.



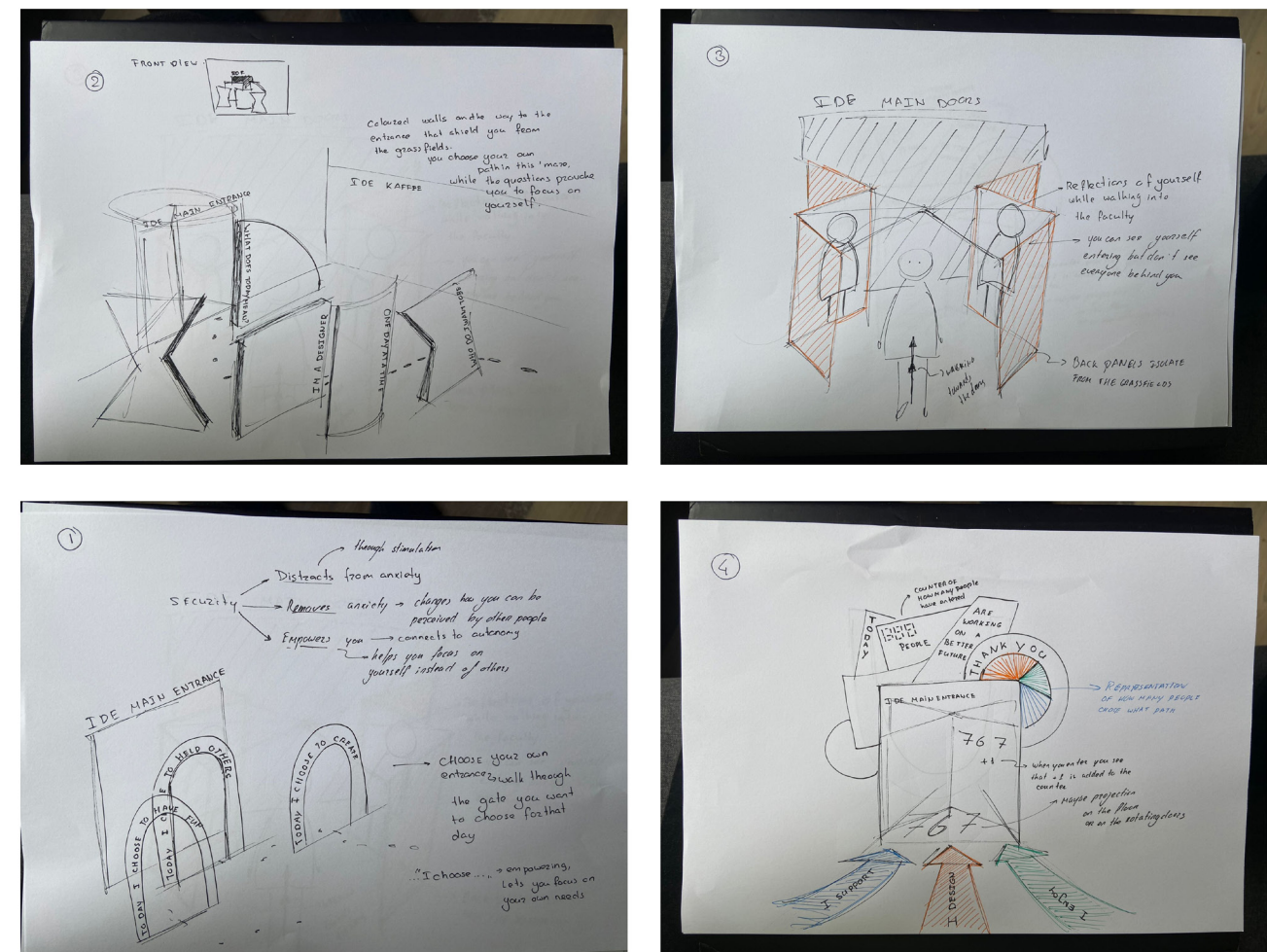
**Fig. 4.11:** Inspired from the wheels on the walls of Buddhist temples, this '**kaleidoscope**' concept was created. As each person walks into the kaleidoscope tunnel, they can run their hands along the wheels

and the elements on the transparent roof would move accordingly, creating beautiful coloured light patterns on the ground. This concept was built upon the idea of creating stimulation.

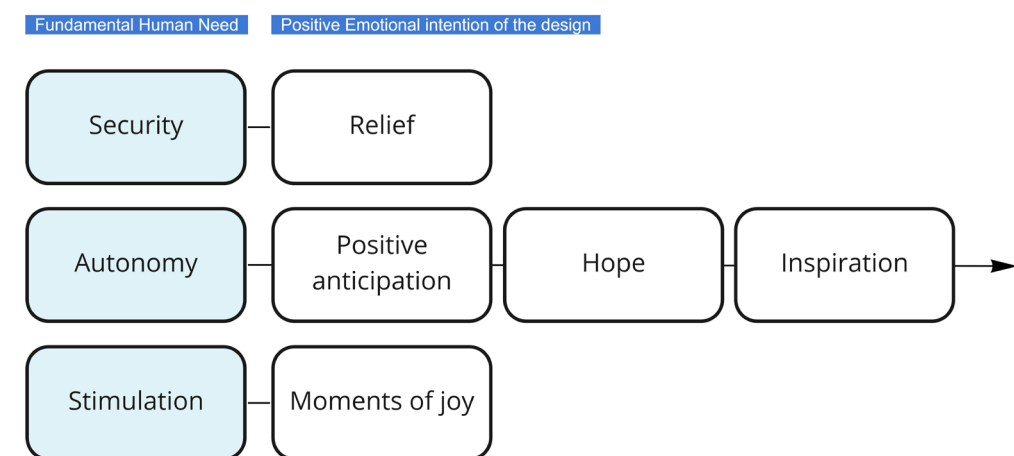


**Fig. 4.12:** Inspired from creating a sense of 'safety', this concept **enabled users to select a colour blob of their choice** from the arch wall using hand gestures. Then the blob would follow their footsteps until the IDE building entrance where other blobs left behind by people form a piece of art on the ground. This is to remind others that they are not alone and that they are 'safe' within these lively colourful boundaries.





**Fig. 4.15: Concepts created in a co-creation session with a participant. The idea of ‘choosing’ an arch with a meaningful message written on it was chosen to be developed further in the concept testing phase.**



**Fig. 4.16: The relation between the identified fundamental human needs and the chosen positive intentions of the final design direction.**

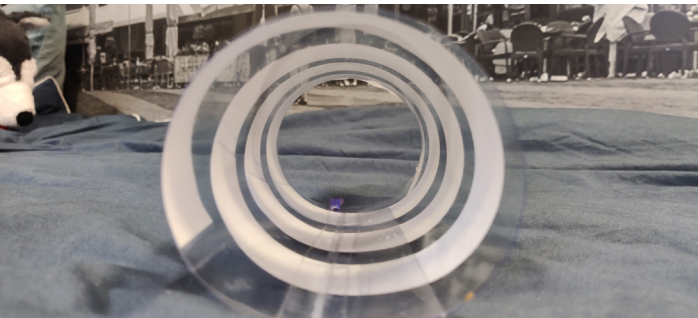
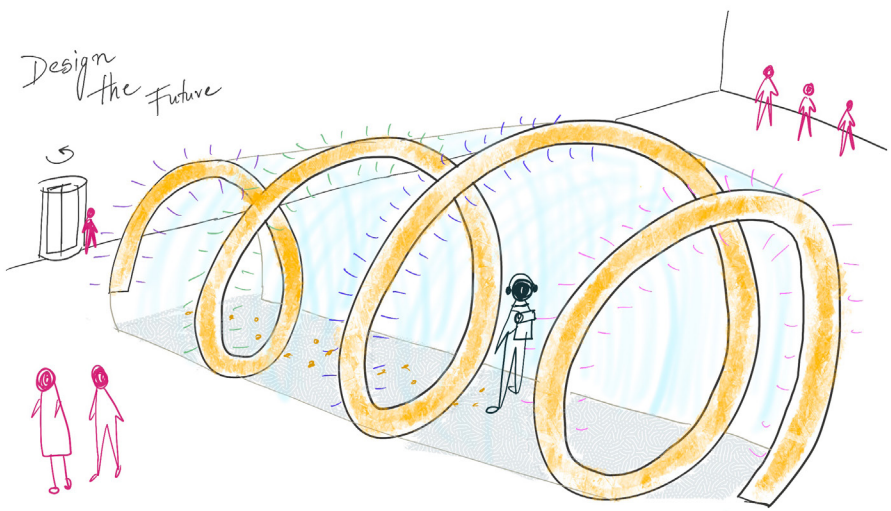


# 4.4 Evaluating the concepts

## Concept 1: The Helix



**Fig. 4.17:** Users were presented with the scenario of entering IDE early in the morning and the awkwardness of feeling like people are watching you.



**Fig. 4.18:** The helix consists of several experiential loops. Users were asked to walk through a door and perfume, bubbles were sprayed on them. They experienced moments of joy. It was explained that these experiences would be sequential in the helix.



## Concept 2: The positive arches

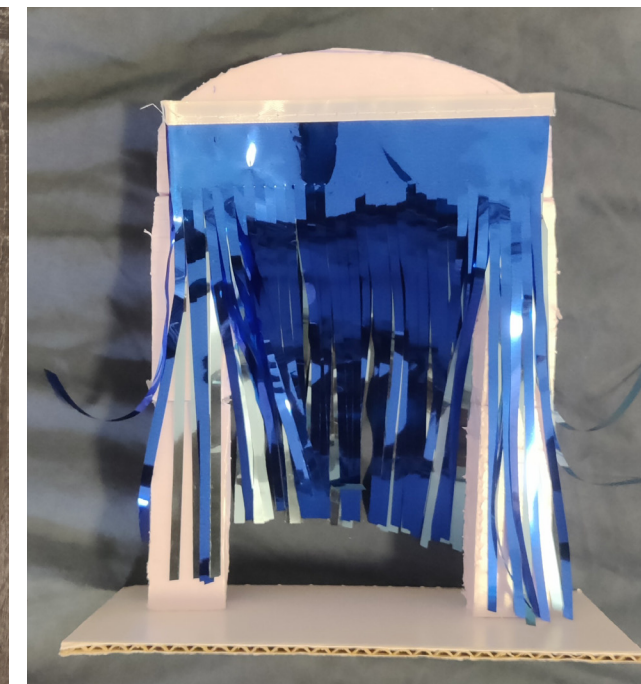
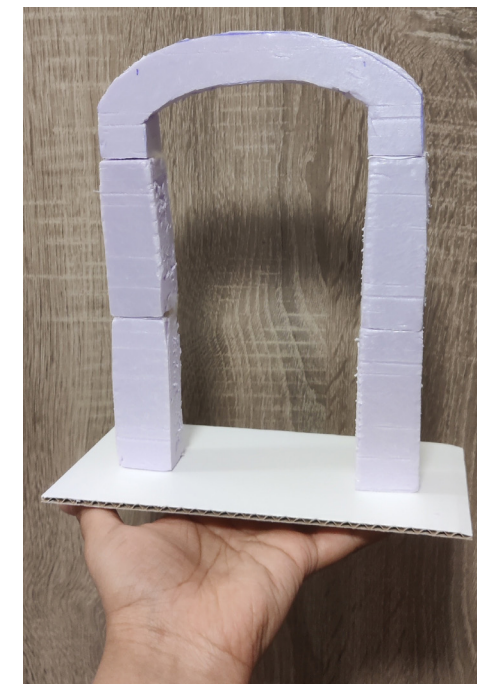
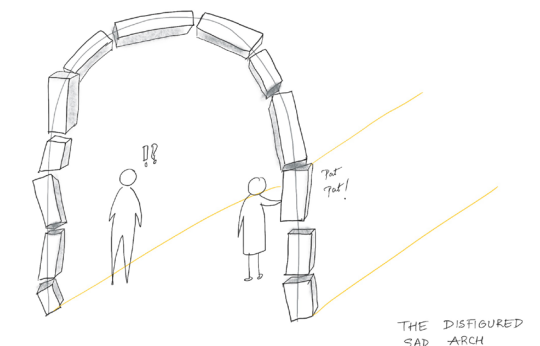
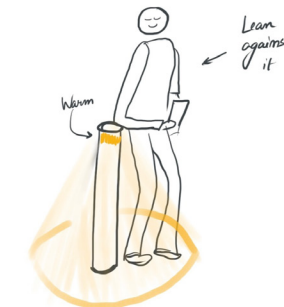
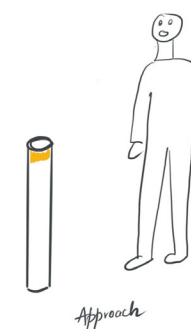


Fig. 4.20: Users were asked to feel a curtain made from soft material attached to the arch makette. This was a part of one of the arches.

'SUPPORTIVE BOLLARD'



## Concept 3: The sad arch

Fig. 4.21: This concept used a misshapen arch as a trigger to 'fix' it. Upon patting it or trying to fix it, the arch would fix itself, glow and spray perfumed mist onto the user. This exercise of control and autonomy leads to the creation of a 'happy' arch. It embodies the act of being kind and caring to a powerful metaphor of transition.

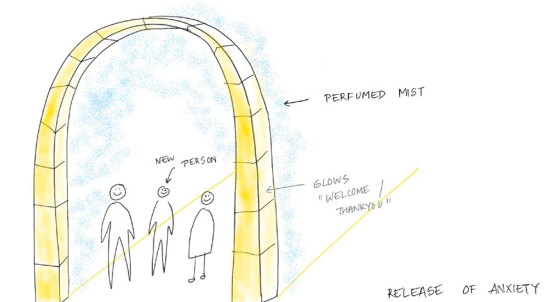


Fig. 4.19: The brightly coloured arches would have sentences displayed on them which trigger a self reflection moment at the beginning of the day. The user chooses to pass under whichever sentence inspires them. Near the entrance, an artwork would display an overview of all the choices made that morning.



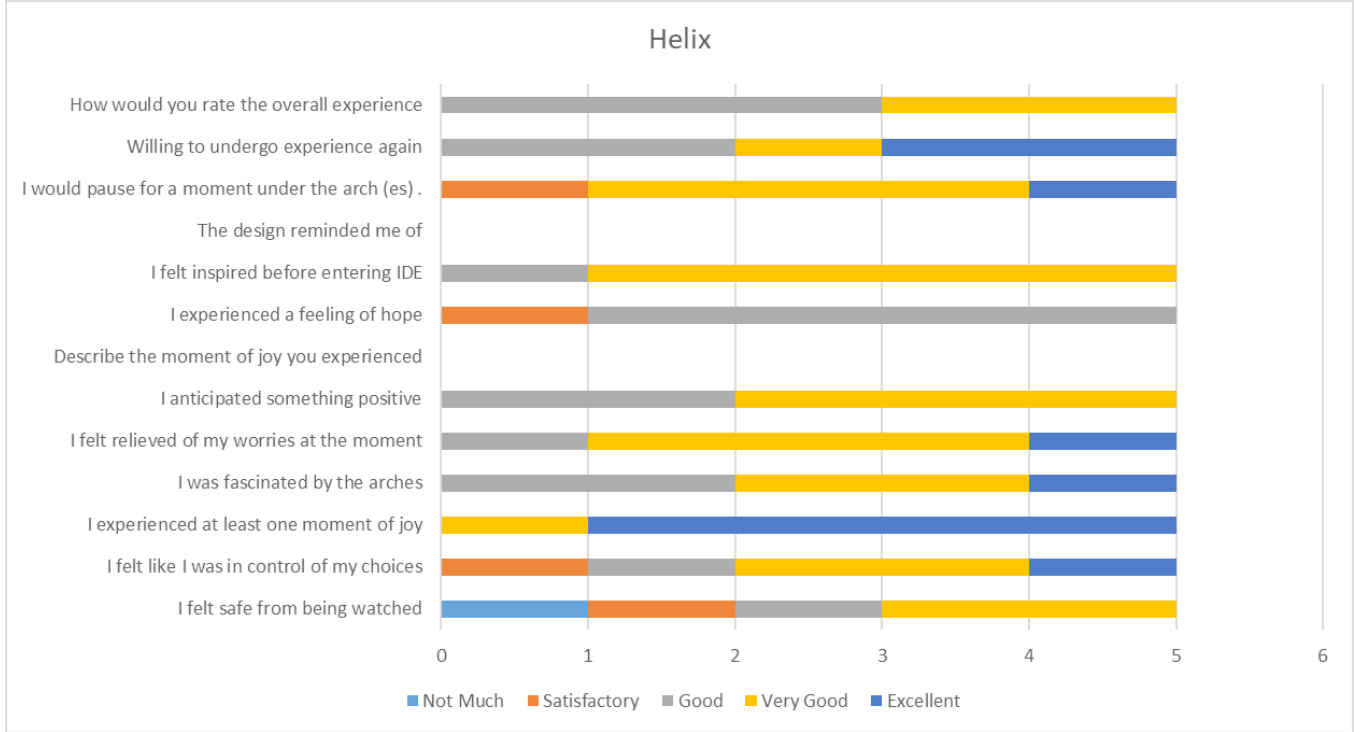


Fig. 4.22: User evaluation results of concept Helix.

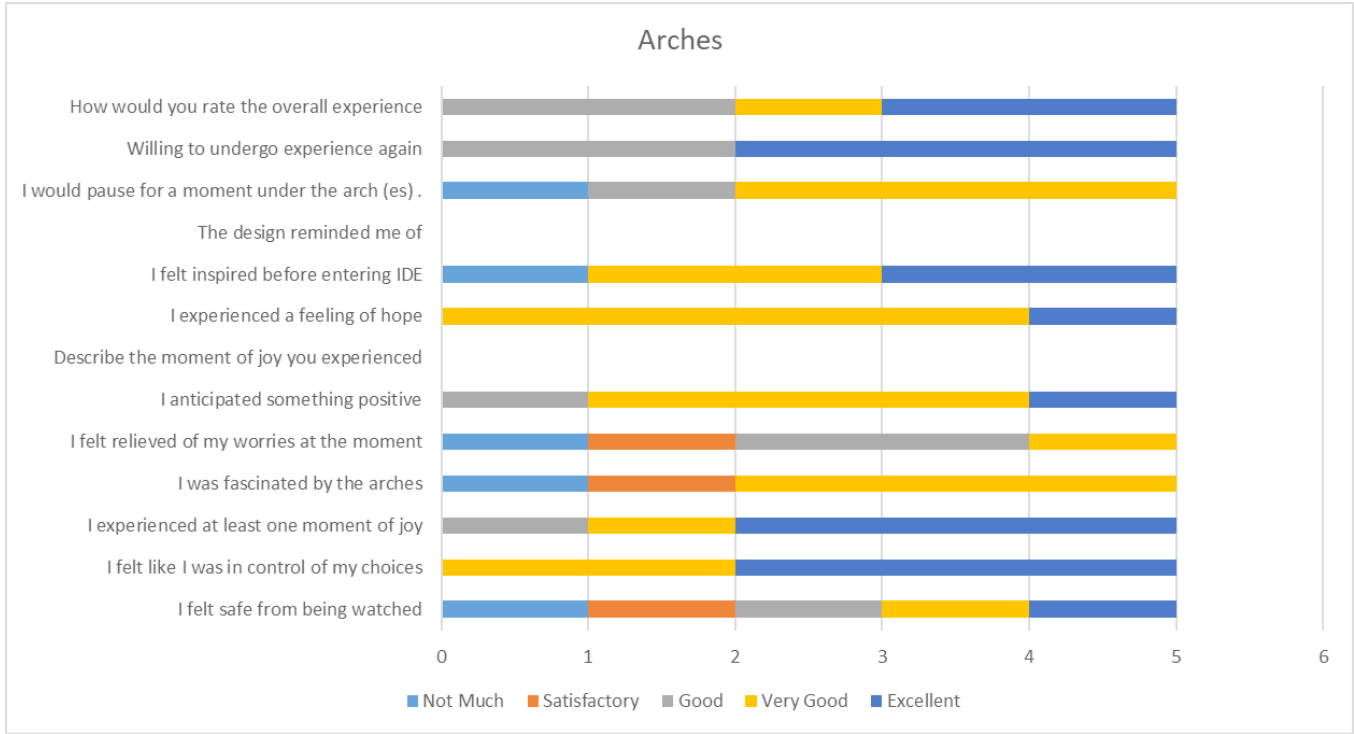


Fig. 4.23: User evaluation results of concept Positive Arches.

INSIGHTS:

Users were asked to respond to some questions based on the design criteria. This helped evaluate the three concepts and choose the final direction.

Five users were asked to evaluate the concepts in total. 3 of them were designers from IDE and 2 of them were visitors to IDE.

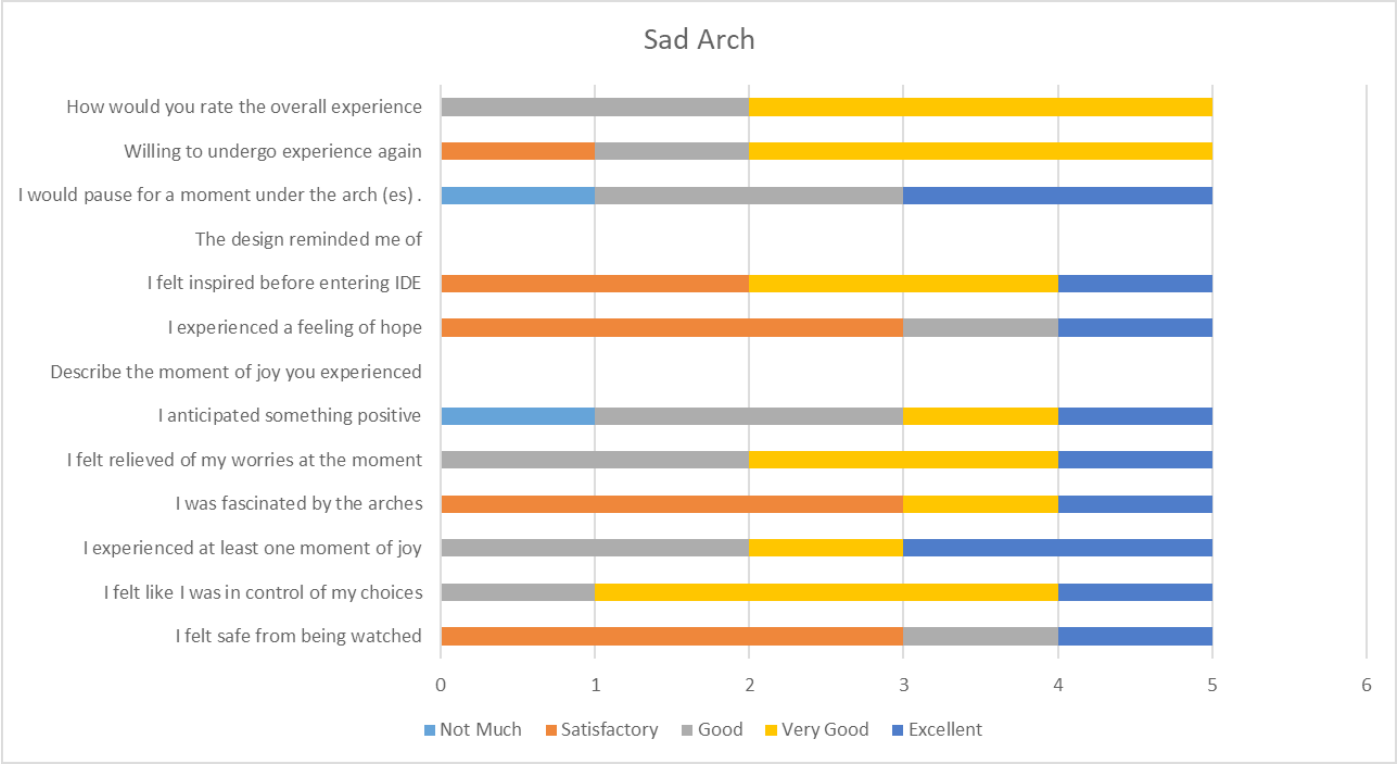


Fig. 4.24: User evaluation results of concept Sad Arch.

- It can be clearly seen from *Fig. 22, 23 and 24* that the **best performer was the positive arches concept**.
- It was because the act of choosing a transition path allowed the users to **express Autonomy**. They also **inspire positivity**.
- **Multisensory stimulation** in the helix concept caused moments of **joy**.
- A few users liked the **sad arch**. One said it was “Similar to petting a dog” and **could relate to its mood**.
- **Forcing** users through a passage or archway like a **Helix** will not work because it goes against their need for autonomy.
- An enclosed space (helix) means users will stand inside and other users **will not want to enter** it then.
- There needs to be a **reward for choosing** the positive arches otherwise the design will loose novelty and users might not feel like doing the same thing every time.
- The positive promises to oneself triggered good **self reflection**.
- One user mentioned that reflecting on similar

positive messages on a bridge in South Korea **helped prevent suicides**.

- The process of transitioning into a building through a space needs to be **eased out in phases or stages or steps** rather than one single instance of choosing or being forced into a passage. Otherwise the design loses novelty over time.
- Another issue with the positive arches is that **not all the messages can be read from a long distance** away in order to appraise and choose (the scale of the space currently is too large for comfortable reading). It is also evident that **users would like to choose the shortest path** to IDE and away from IDE to their destination.
- Stimulation **brought out the child** in users.
- Please note that the final decision was made from qualitative feedback given by the users and not quantitative.
- The experiences within the helix are the most stimulating and hence can be **combined with the positive arches concept**.
- **A combination of the positive arches and the sad arch** might create a reasonably high level of autonomy.



## 4.5 Final Iteration: Design Requirements

### IMPLICATIONS FOR THE FINAL DESIGN

#### DIRECTION:

1. The main idea is for the user to self reflect about their day when they choose a positive thought for the day.
2. This self reflection distracts them from any negative thoughts they might have about their day. Thus it creates a feeling of security.
3. Security through the form of a distraction can also be created with the help of stimulating experiences such as bubbles, mist, perfume, etc.
4. The **goal is for them to pause for a moment**, if not physically then mentally, and reflect.

The refined design goal is hence **'to create a transition experience using an arch for the security, autonomy and stimulation of the transition space users before entering and after leaving IDE.'**

The core guiding **Design Question** was still- **how can an arch support security, autonomy and stimulation?**

**Could it be a combination of arches? If so, how must they be arranged in the transition space? What must happen under each arch?**

### DESIGN REQUIREMENTS:

1. The user must not feel like someone is watching them. One of the goals was for the user to not feel self conscious while interacting with the designed spatial product.
2. The user must feel free from worries in that moment.
3. The user must choose an intention for the day. This can be through simple self reflection.
4. The user must have a stimulating transition experience by undergoing one multisensory stimulation at a time out of their own choice.
5. The aesthetics of the design must be pleasing and modern.
6. The users must experience at least one moment of joy.

### INTERACTION VISION:

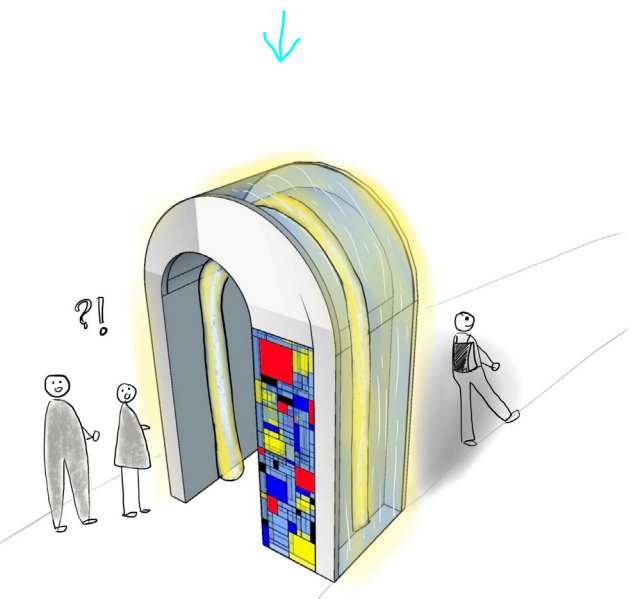
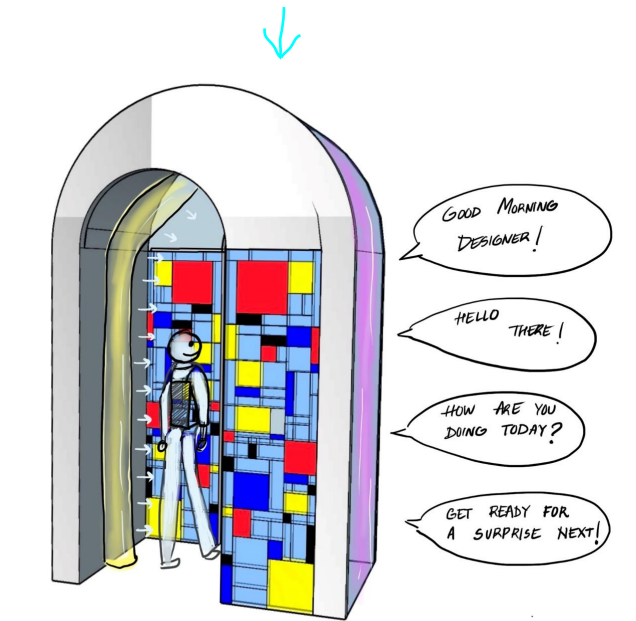
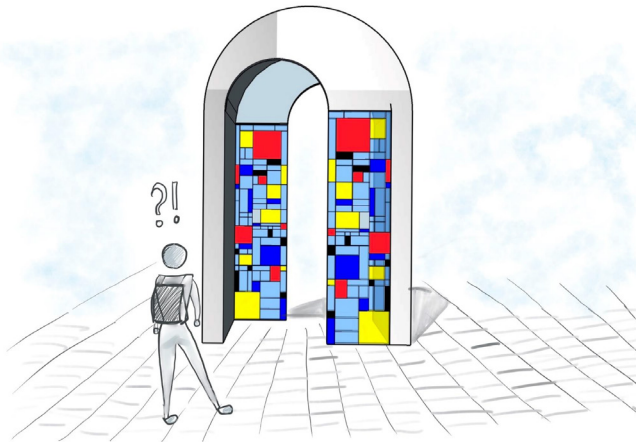
The interaction with the design must feel like a little girl running over a path in the Keukenhof gardens, pausing to study the flowers of her choice that give her pleasure and leaving when she wishes to.



The interaction qualities are **joy, fascination, anticipation, sensory delight, pleasant surprise and relief**. They are also the positive emotional intentions inspired by the positive design approach.

## 4.6 Final Design Concept: Iteration 1

### Arch 1



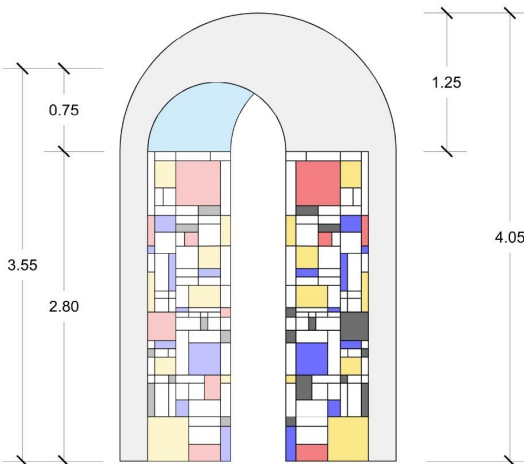
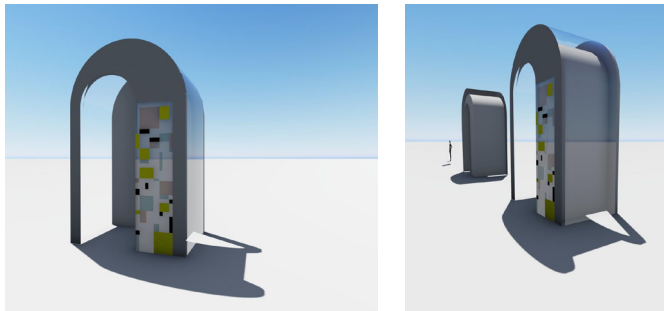
Based on the design requirements, a final concept was conceived but iterated on later one more time.

The user comes across 3 arches placed in parallel, one behind the other in the IDE transition space, along the main spine of pedestrian traffic.

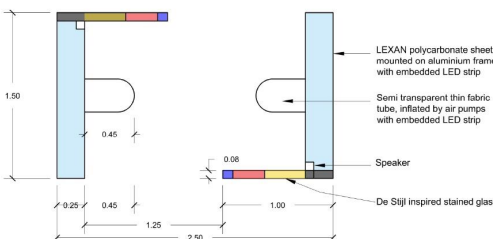
When the user walks in through the first arch, it lights up, a thin tube inside inflates, glows and a voice **greet**s them with the following types of messages- "Good morning!" "Hello there!" "How are you doing today?"

**"Get ready for a surprise next!"**

Other users who notice this happening, may become **curious** and want to undergo the same experience.



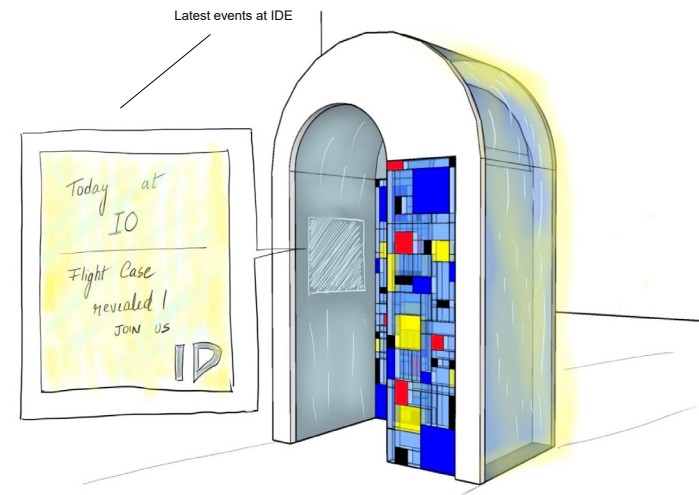
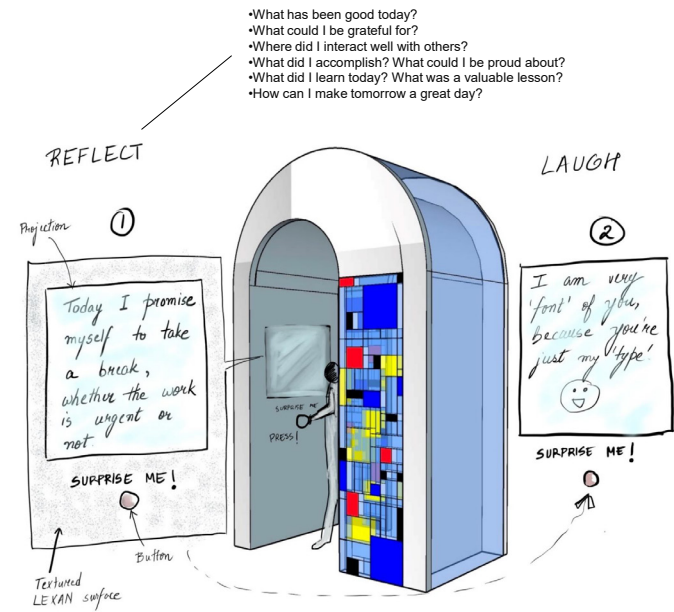
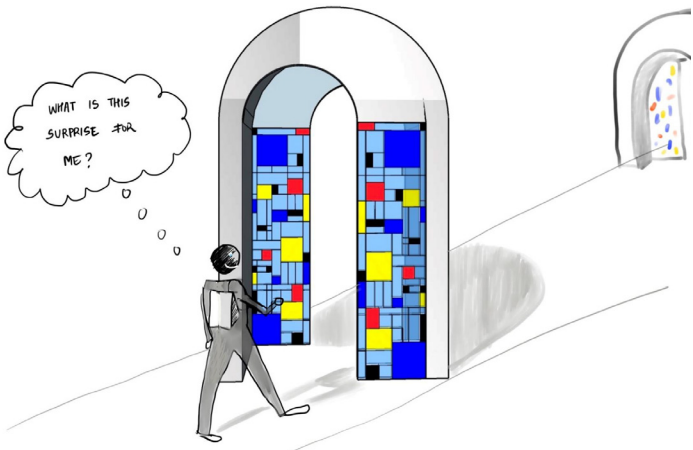
ELEVATION



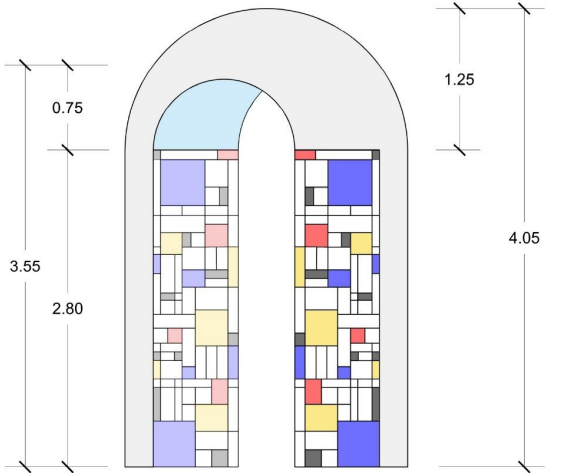
PLAN



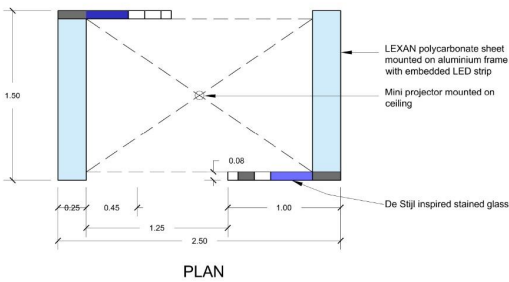
Arch 2



When the user walks into the second arch, they find two **projections** on the walls inside- one on the left and one on the right. The left hand side projection is a positive sentence that communicates something related to **self care**. If the user agrees with it, they can press the **'surprise me!' button** and read a funny **designer-only joke**. The right hand side projection displays upcoming and ongoing **events at IDE**. This arch was meant to be a **space for reflection**. Note that the **aesthetics** of all the three arches were inspired from the **Dutch De Stijl movement**.

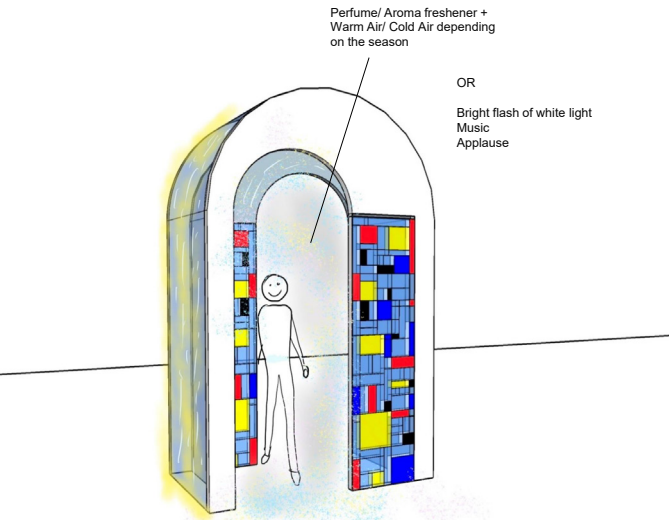
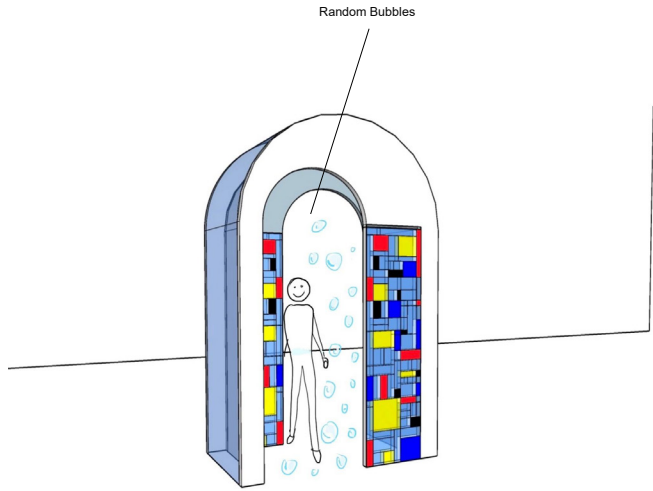


ELEVATION

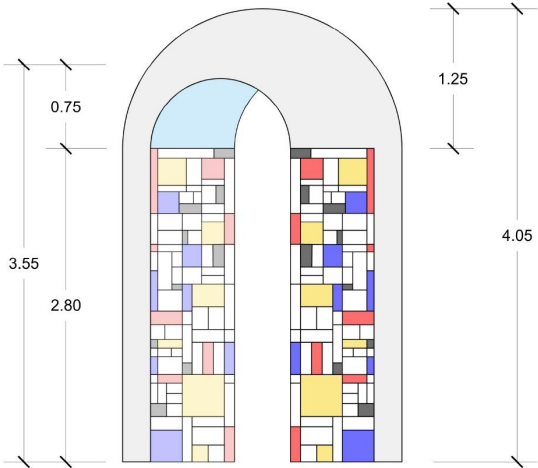


PLAN

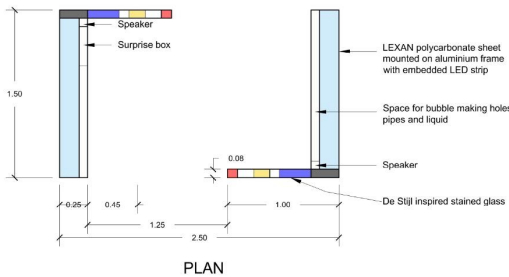
Arch 3



The last arch was designed as a **space for surprise**. The user would not know what to expect- sometimes **bubbles** would be sprayed inside the arch, or **perfumed mist** or **music** would be played or **hot air** and **cold air** would be created inside the arch (depending on the weather). If the user was the **'lucky one'** of the day, they would receive a **small gift** from a hidden **box**- chocolates or coupons or sweet treats. It was hoped that all of this would create **moments of joy** for the user.



ELEVATION



PLAN



# Applied Urban Happiness Ingredients

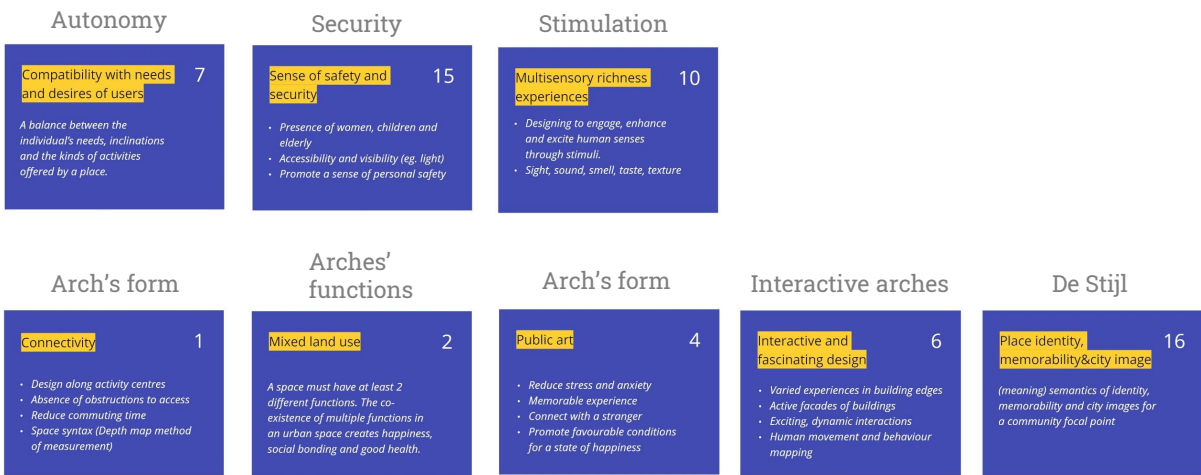


Fig. 4.25: The Urban Happiness Ingredients which were applied.

As seen above, three core Urban Happiness Ingredients were used by the design:

- 1. Compatibility with the needs and desires of users:** All of the research conducted indicated the need for **autonomy, security and stimulation** in the IDE transition space, which this design concept aimed to create.
- 2. Sense of safety and security:** This ingredient was mainly applied psychologically in terms of **not feeling self conscious** in a vast space (even though the ingredient suggests having the presence of women, children and elder people as an indicator of safety to the user). By creating **three places** for transitioning, there was a **mental anchor** for users to rely on as a **shelter** from being noticed prominently especially when compared to a space which is empty.
- 3. Multisensory richness experiences:** This was applied by engaging the eye through **visual media and aesthetics** of the design, engaging touch through **bubbles**, engaging smell through **perfumed mist**, engaging a sense of temperature using **warm/cold air**, auditory engagement through **music** and **surprise gifts**.

The other ingredients which were also used partially are mentioned above. The **form and function** of an arch, the **aesthetic treatment** (de Stijl) and the **interaction** designed for each arch are the key outcomes of all the ingredients which were used. **Connectivity** is applied automatically through the **function of an arch**, the three arches serves as a **Public Art** which bring an **Identity to the Place (IDE)**.

# 4.7 Reflection on the Design

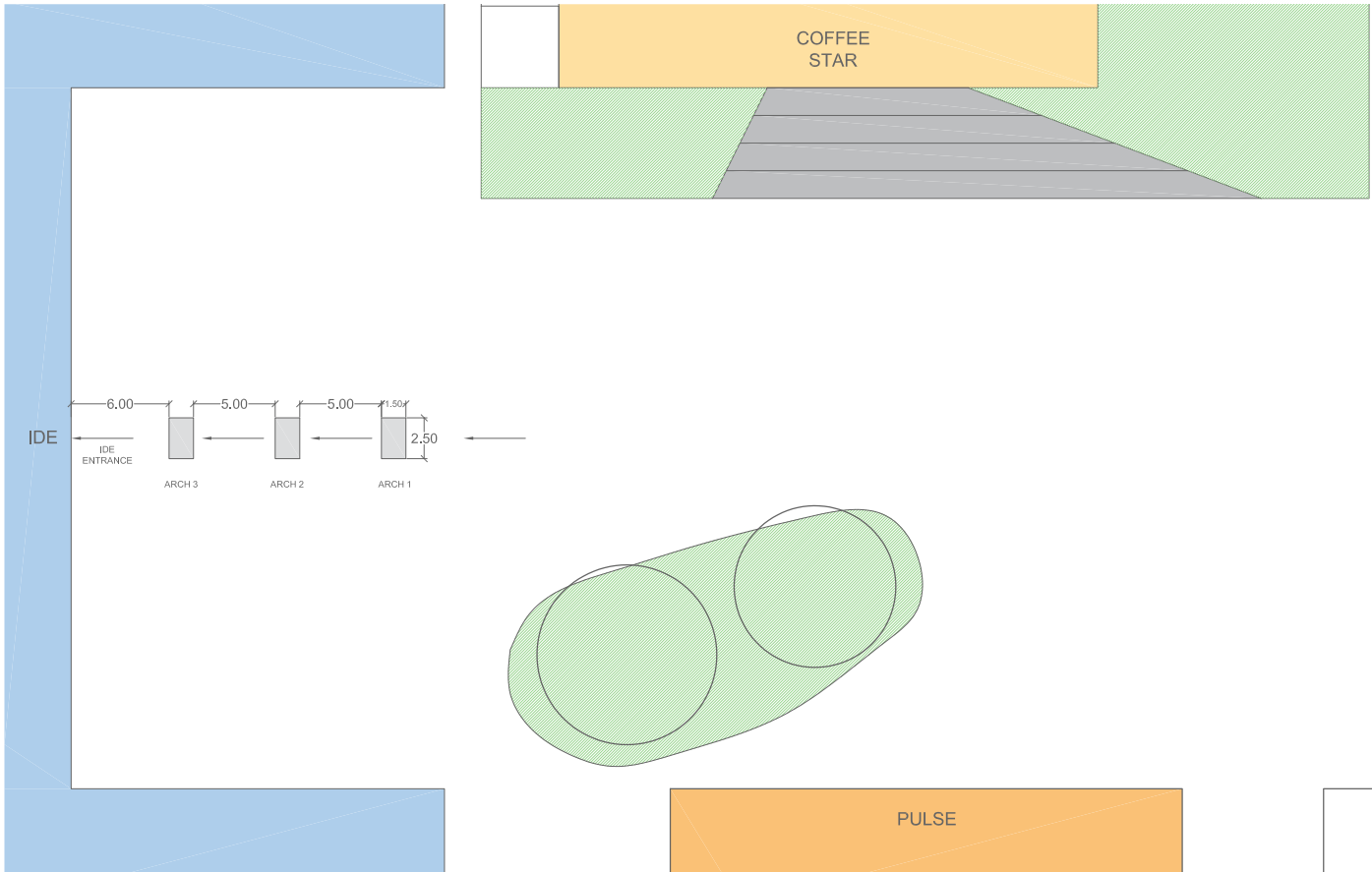


Fig. 4.26: Site Plan of the design interventions- the three arches.

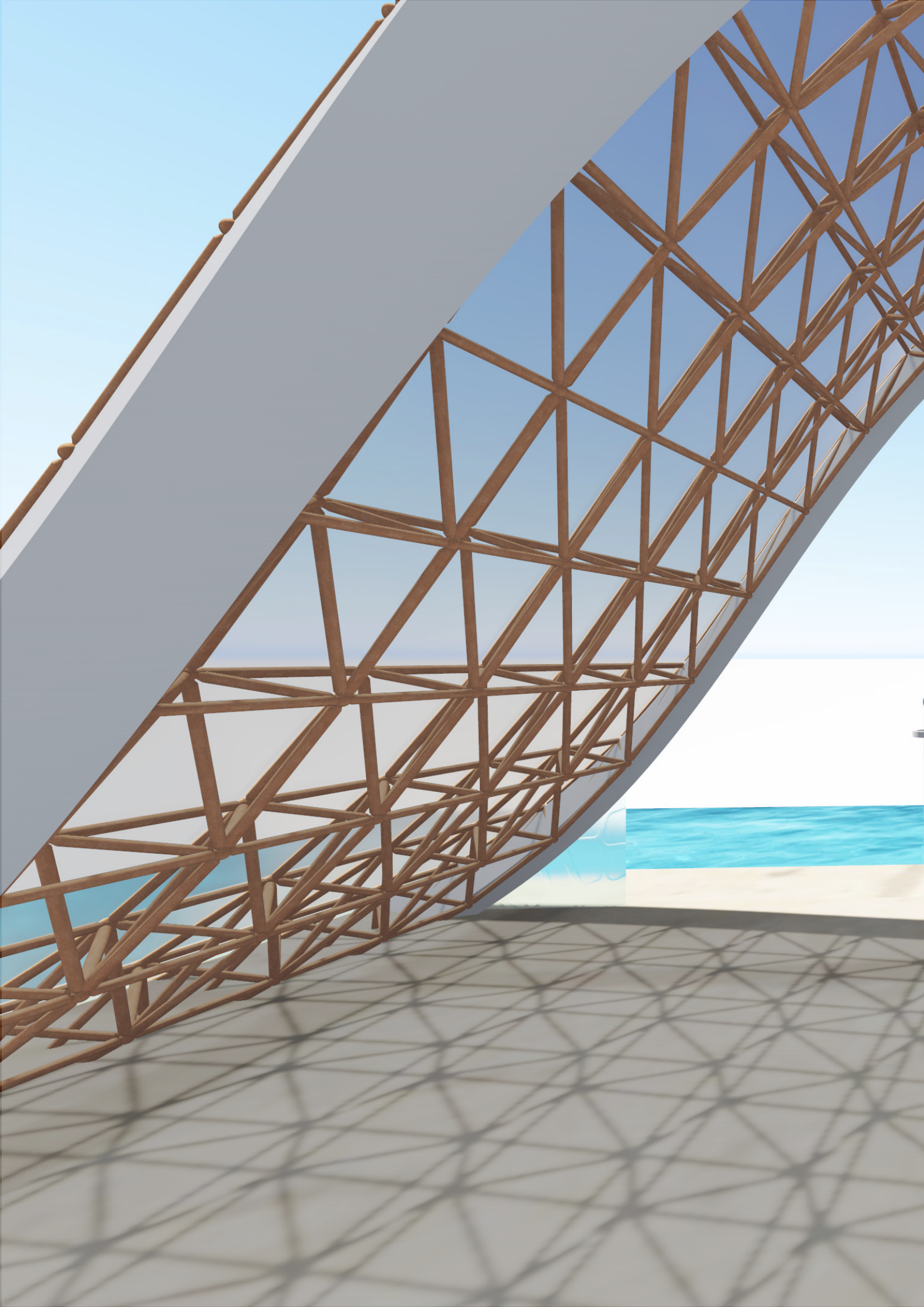
## REFLECTION ON THE DESIGN:

This concept was critically analysed and reflected upon. The following points were noted and served as the guiding point for the final design concept (Iteration 2):

1. There was an **overload of multisensory stimulation**. The core experience was not clear.
2. There was **no differentiation** between the experience of entering IDE and the experience of leaving it.
3. The scale of the design was small compared to the huge volume of people who were going in or out. This would mean that most people would **choose not to go through** these arches to **avoid crowding and delays**. That would imply that those users would not have a positive transition experience, even if they were to see the arches while passing by.

4. The **aesthetics** of the arches could be **elevated more** and be more modern. At this moment, the designer realised that the aesthetics of the arches will have the most impact on the state of mind of the user. One of the suggestions discussed with the experts of the graduation committee was **applying parametric (computational) design** to create a modern aesthetic.
5. Parametric design would also help **support a rich range of interactions under one composite yet simple form**. This would lead to the creation of a **simple spatial design that can support a complex experience while in transition**.
6. The Netherlands experiences a lot of rain and wind throughout the year so the structure must also take **climate comfort** into consideration while trying to create a 'happy place of transition'.





# 05

## The Design

- 5.1 Visualising the Positive Design Approach
- 5.2 Overview of the Final Design Concept
- 5.3 Designing the Interaction
- 5.4 The Design Process
- 5.5 Applying the Urban Happiness Ingredients

*This chapter explains the final positive design intervention proposed by this thesis, the rationale behind the design, the process of designing, the design of interactions and how the relevant Urban Happiness Ingredients were applied in this design.*



# 5.1 Visualising the Positive Design Approach

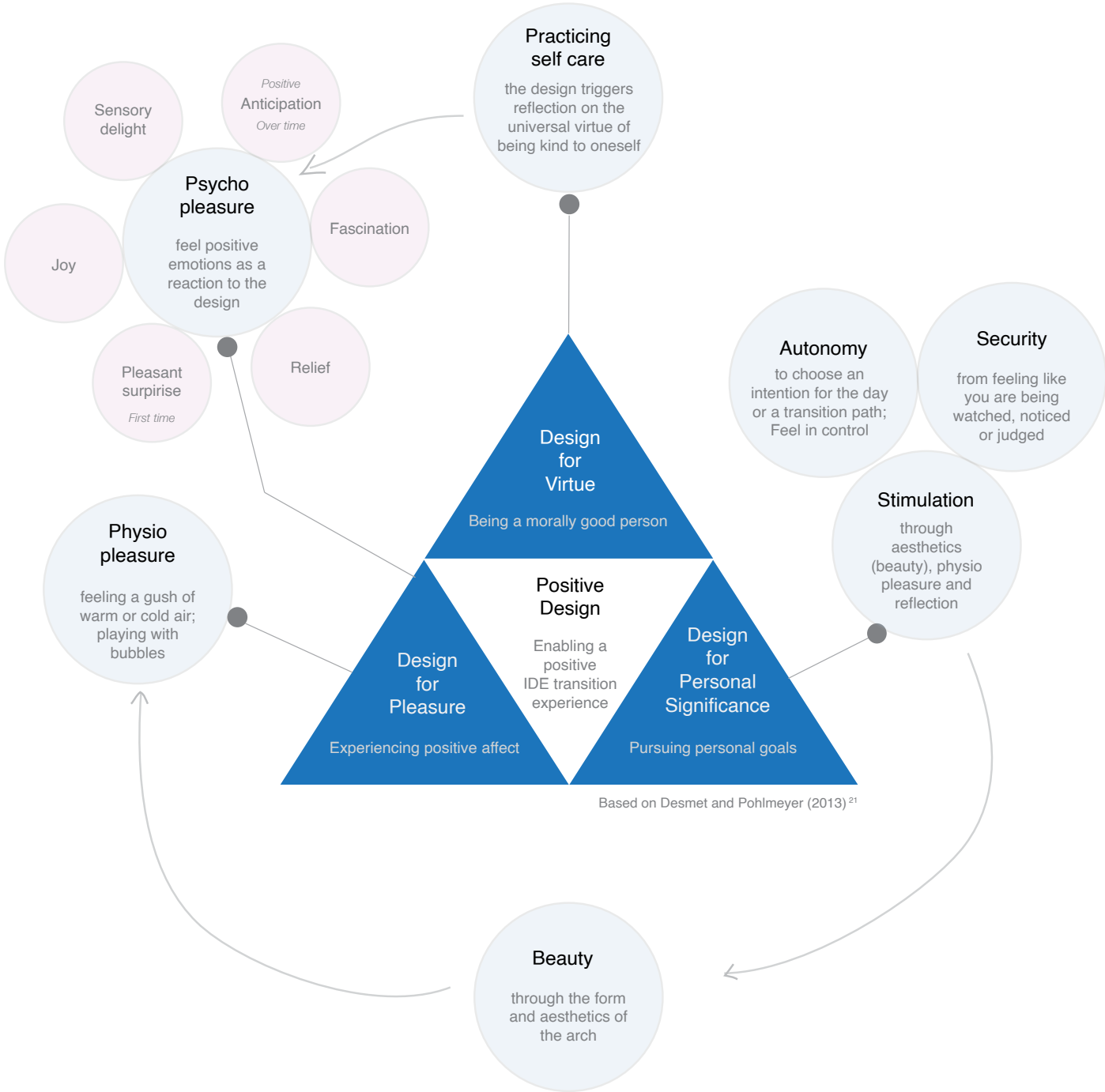


Fig. 5.1: Visualisation of how the design embodies the positive design approach.

The design is built upon the three pillars of positive design. It relies mostly on designing for **pleasure** through **physio-pleasure** (use of bubbles and temperature of wind) and **psycho-pleasure** (positive emotions created). There is an element of the design

(the positive messages) that stems from the **virtue of self-care** through reflection on the positive intent/ approach for the day. The design is **personally appealing** to the user because it satisfies the need for **beauty, autonomy, security** and **stimulation**.

# 5.2 Overview of the Final Design Concept

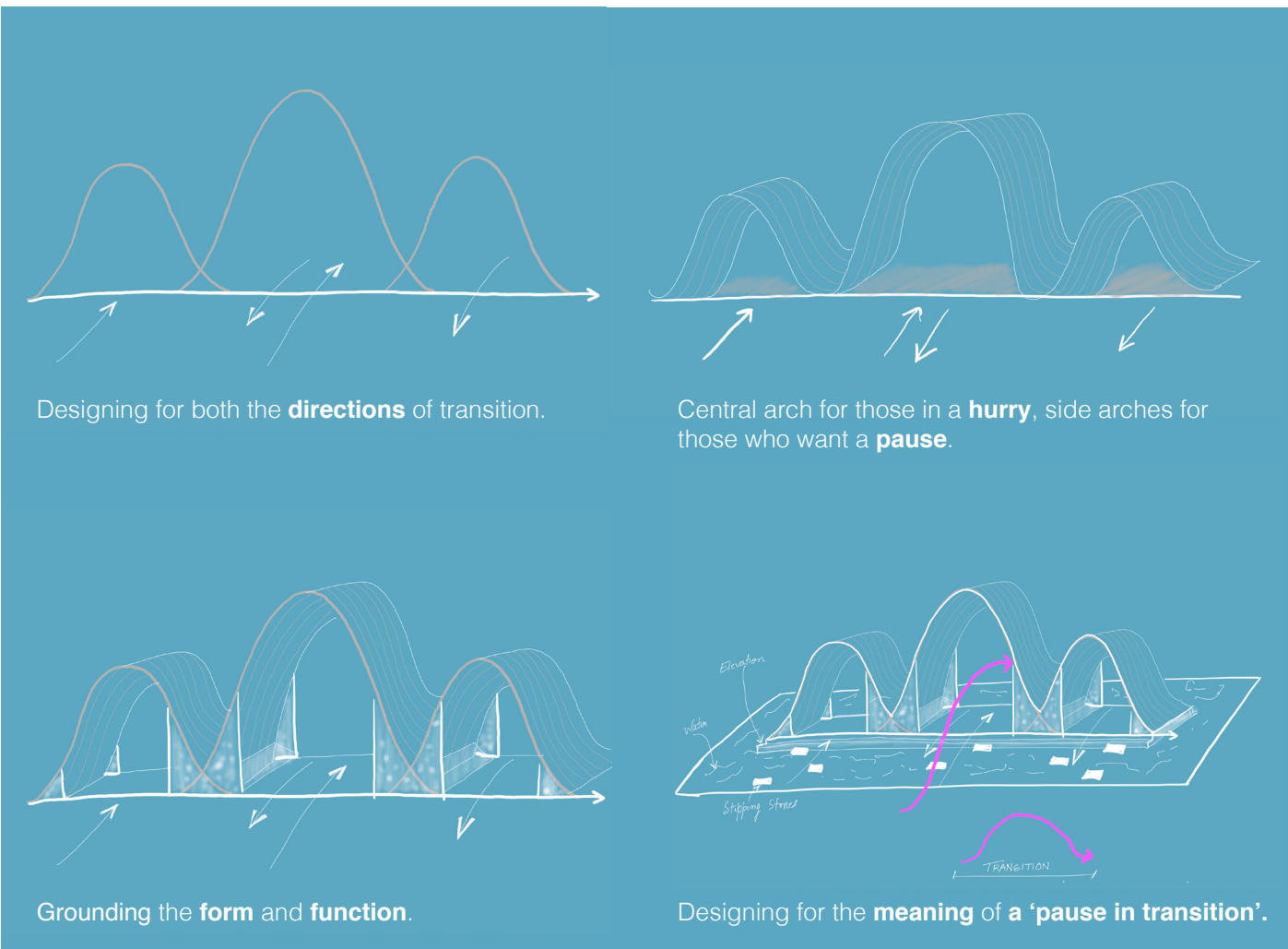


Fig. 5.2: Development of the design- sketches.



Fig. 5.3: Resulted in: The waves of happiness :)



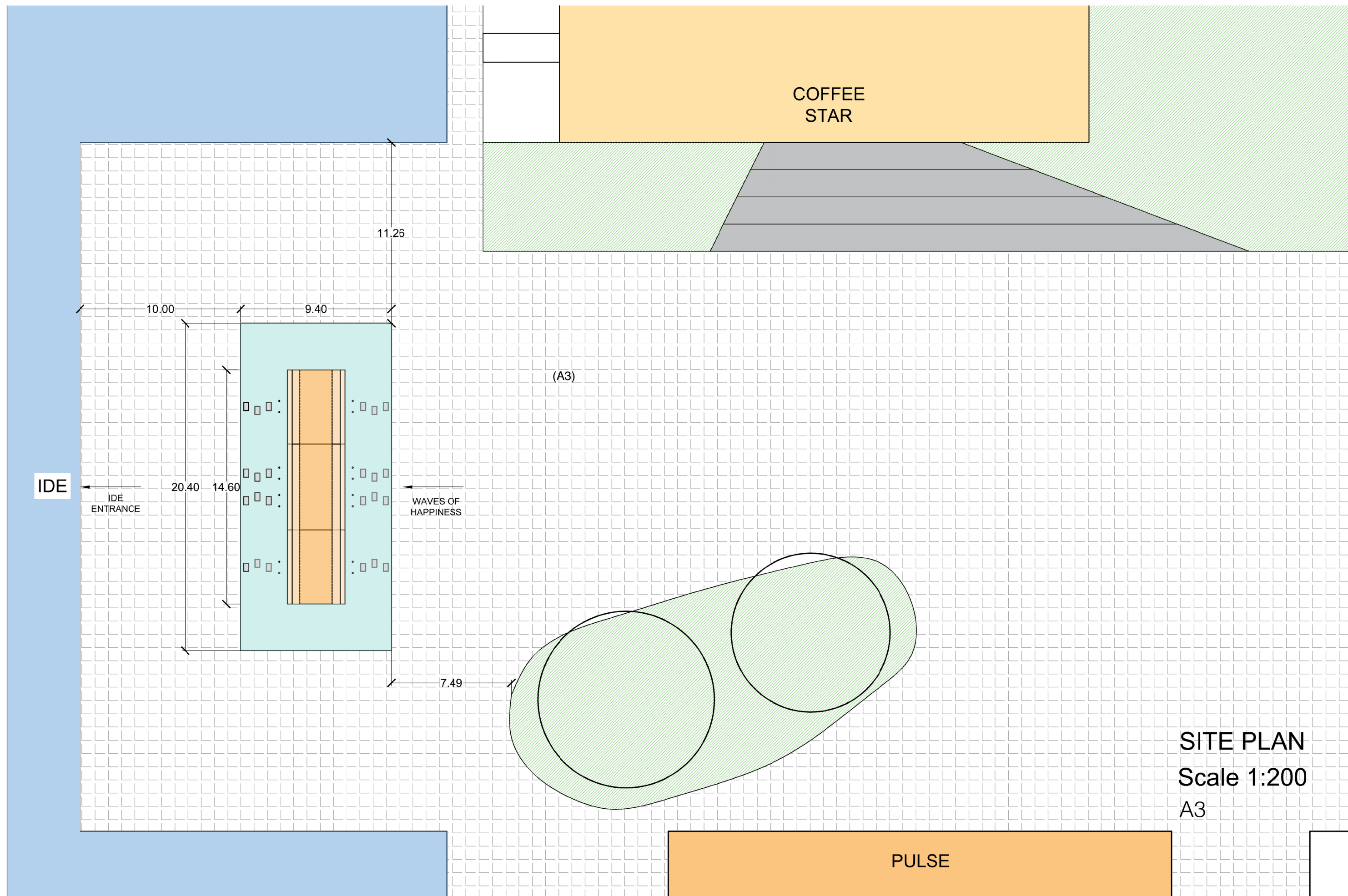


Fig. 5.4: Placement of the Waves of Happiness in the IDE transition space.



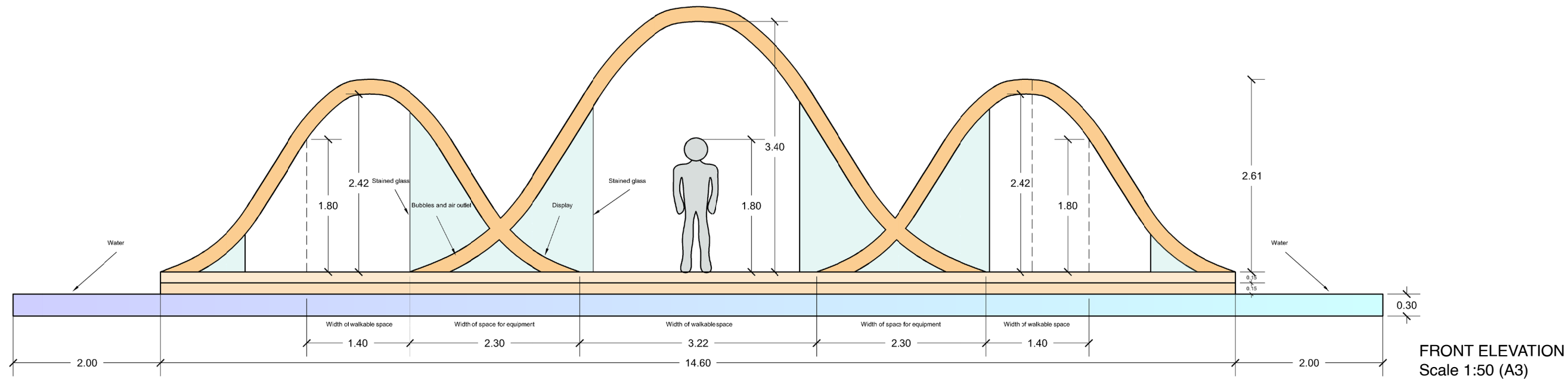
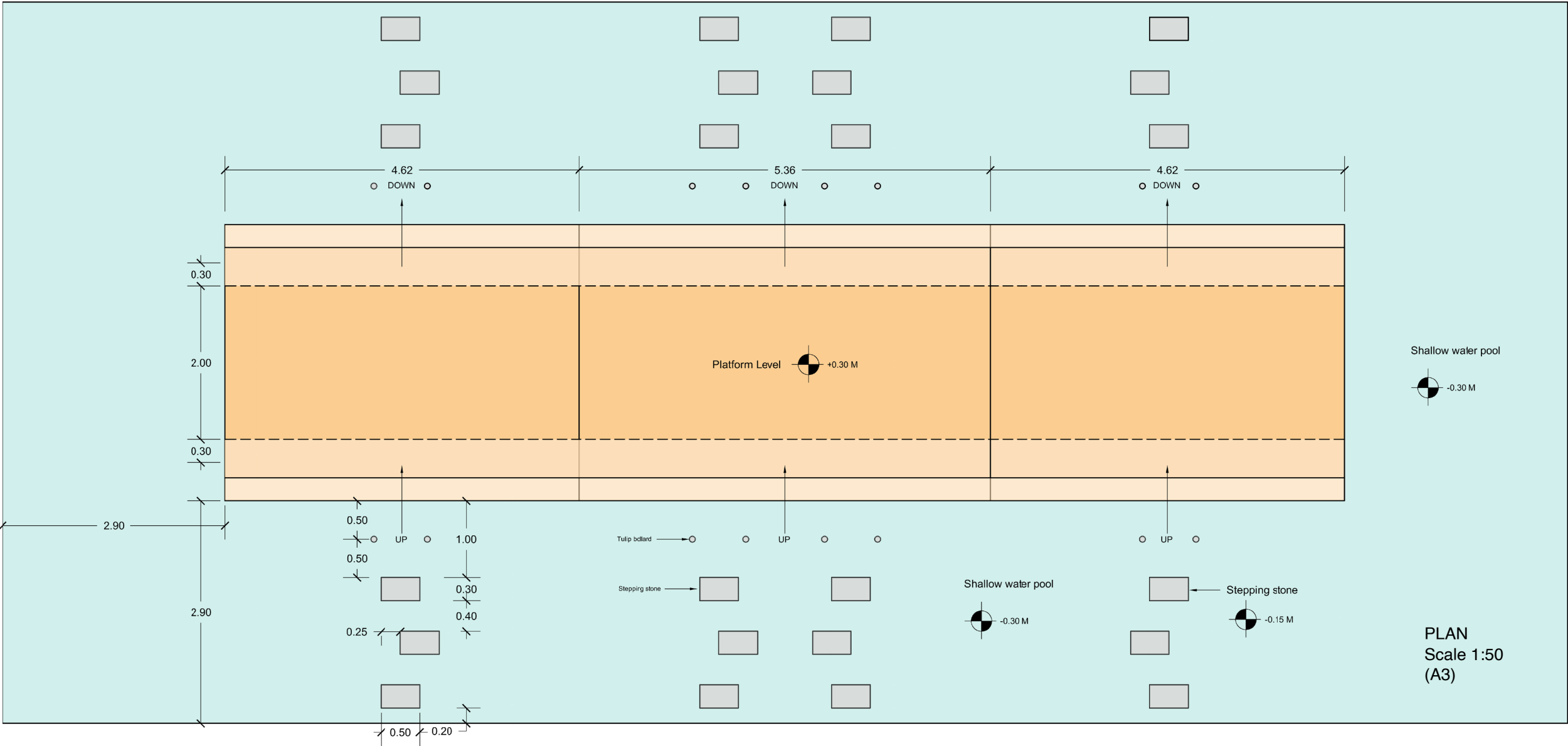


Fig. 5.5: Architectural Plan and Front Elevation of the Waves of Happiness.



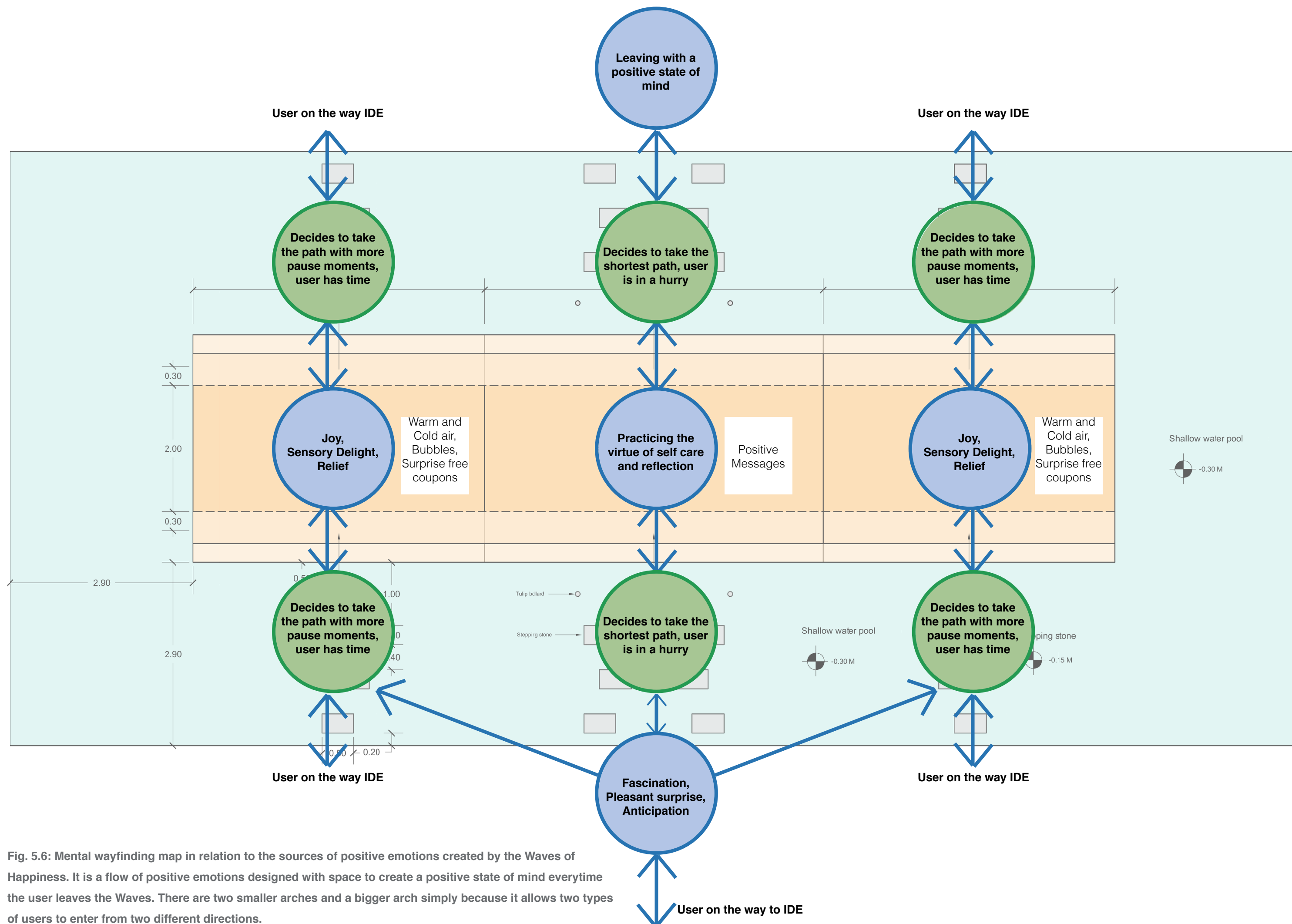


Fig. 5.6: Mental wayfinding map in relation to the sources of positive emotions created by the Waves of Happiness. It is a flow of positive emotions designed with space to create a positive state of mind everytime the user leaves the Waves. There are two smaller arches and a bigger arch simply because it allows two types of users to enter from two different directions.



### 5.3 Designing the Interaction: A Storyboard

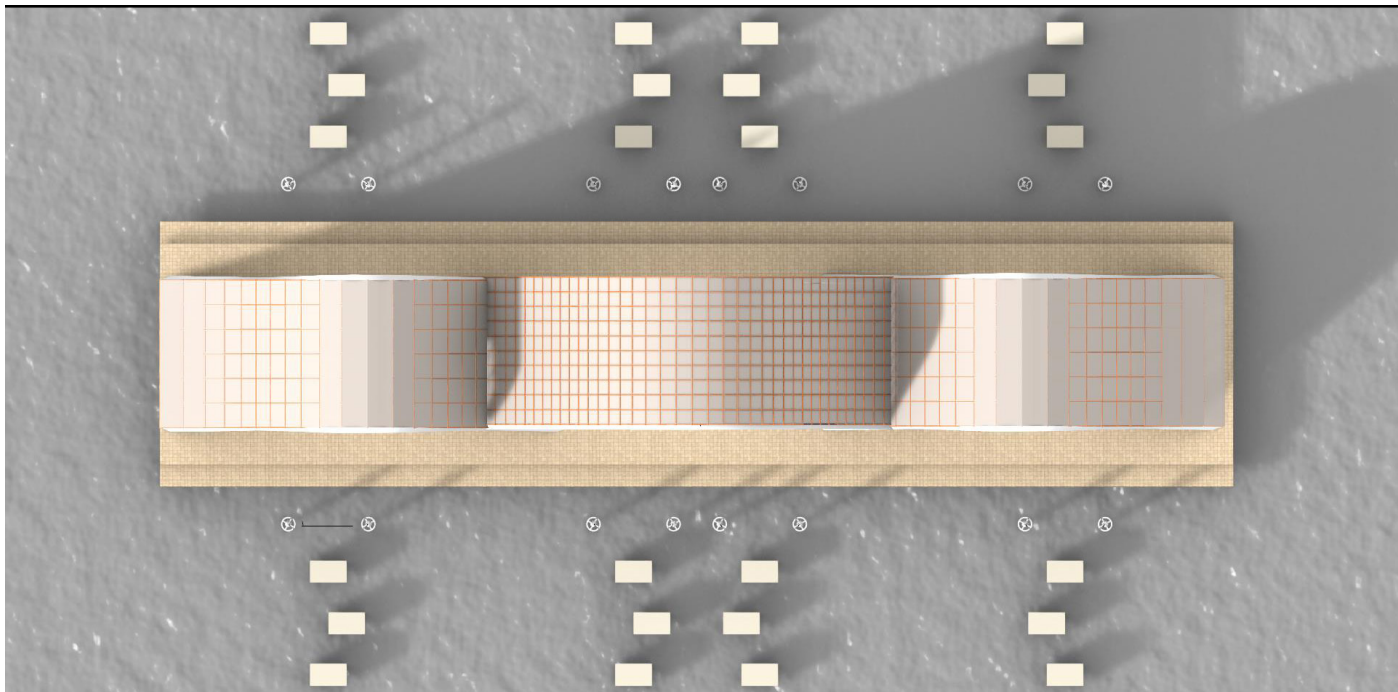


Fig. 5.7: Rooftop profile of the Waves of Happiness.

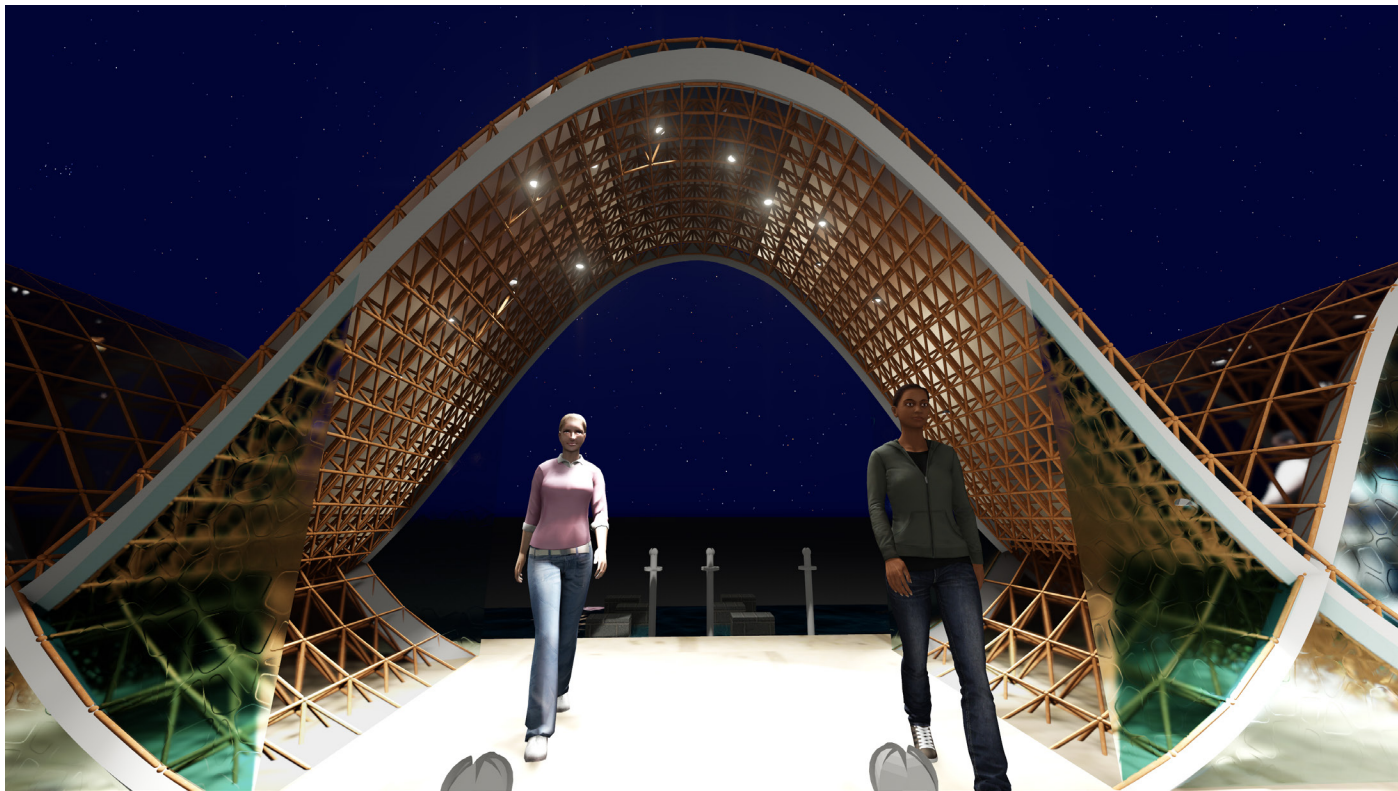


Fig. 5.8: Nighttime render of the central arch. Please note that small LED point lights will be mounted on the balls of the ball-joint structural mesh that forms the arch. This will create a twinkly light effect as hinted in this image. The roof panels are made of a semi transparent material that glows when lit from underneath by such point LED lights.

The inspiration behind this design is the powerful role that **gateways** play in medieval architecture. They **orient** the user towards the **main destination**, they **communicate stories important to the user** and they

always **welcome the user** in a contextually relevant way. For example: The gateway (darwaza) before Taj Mahal.



Fig. 5.9: Thoughts of a user who is beginning his day at IDE and is crossing the bridge to reach the IDE transition space.

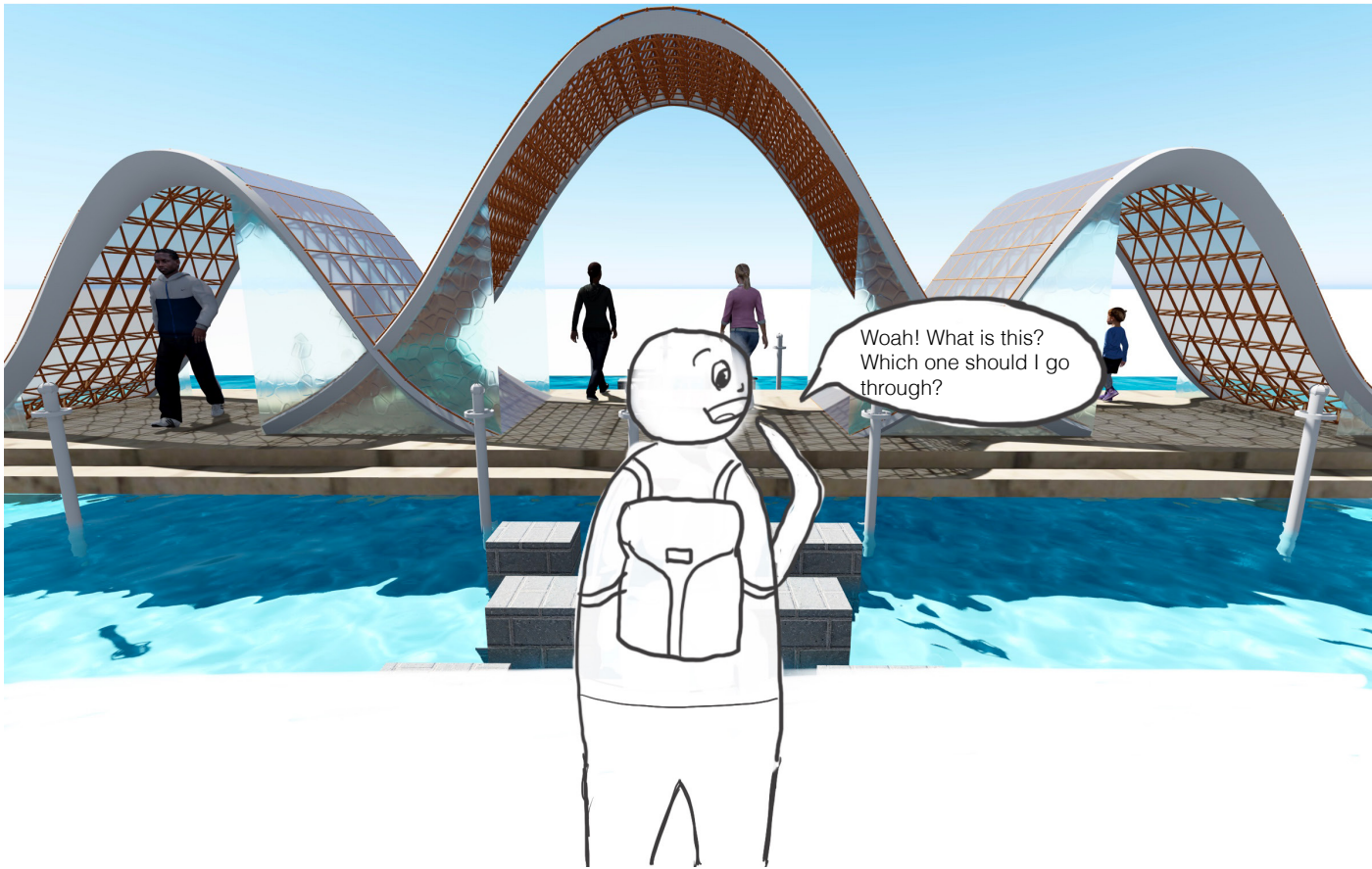


Fig. 5.10: The user appraises the stimulus they are presented with- the Waves of Happiness. The deciding factor will be the time they are willing to spend while on their way to the IDE building entrance.



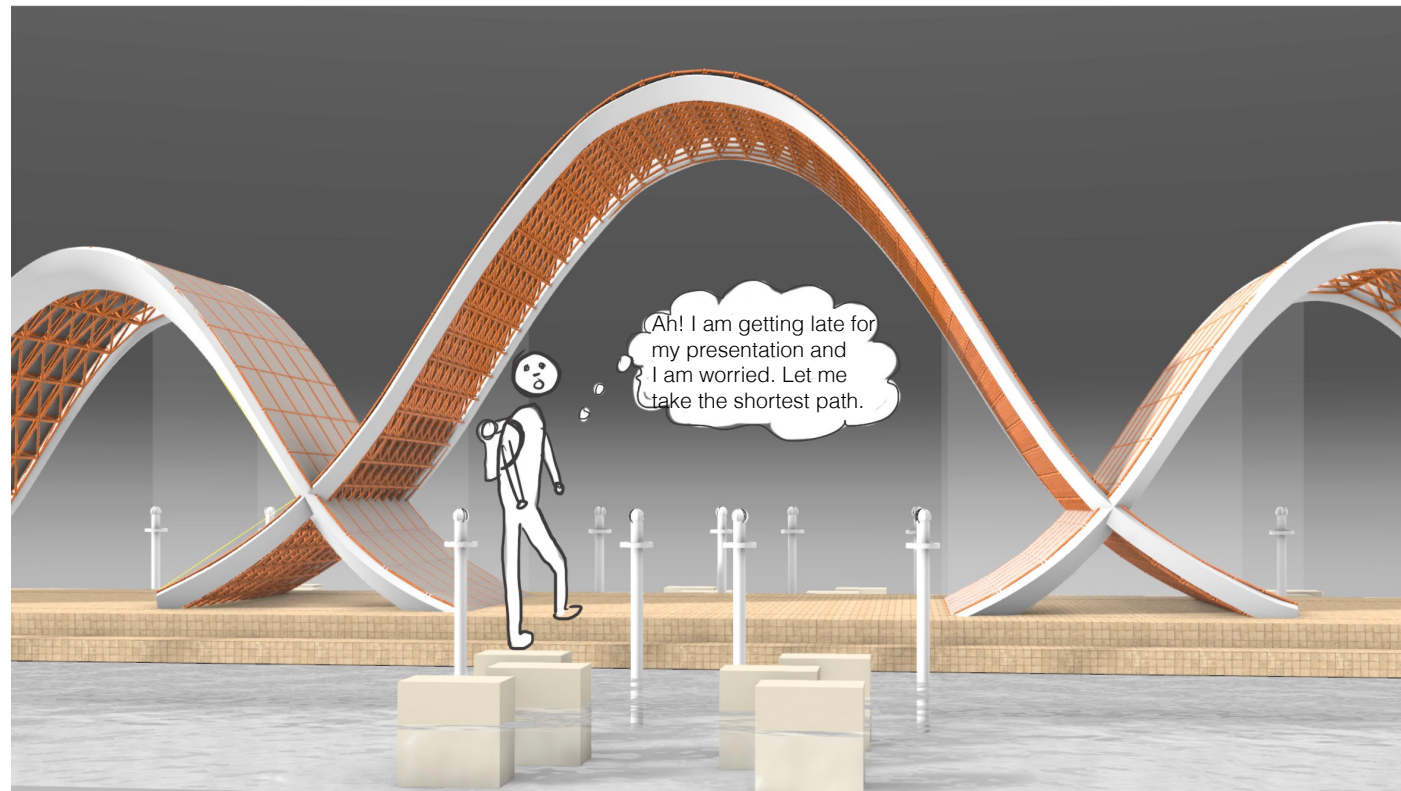


Fig. 5.11: The first scenario is that the user does not have time to explore and experience the other two arches. So the user chooses the shortest path available- through the main arch since it leads straight to IDE. At first glance, the arches seem to be empty but what happens next is:



Fig. 5.12: The user reads the positive, motivating and kind sentences projected onto the curved surface inside the arch. These messages change every 5 minutes and are meant to create reflection in the minds of the user. A selection of typical messages which are to be projected onto the curved surface by ceiling mounted low resolution projectors, are listed in the next section.

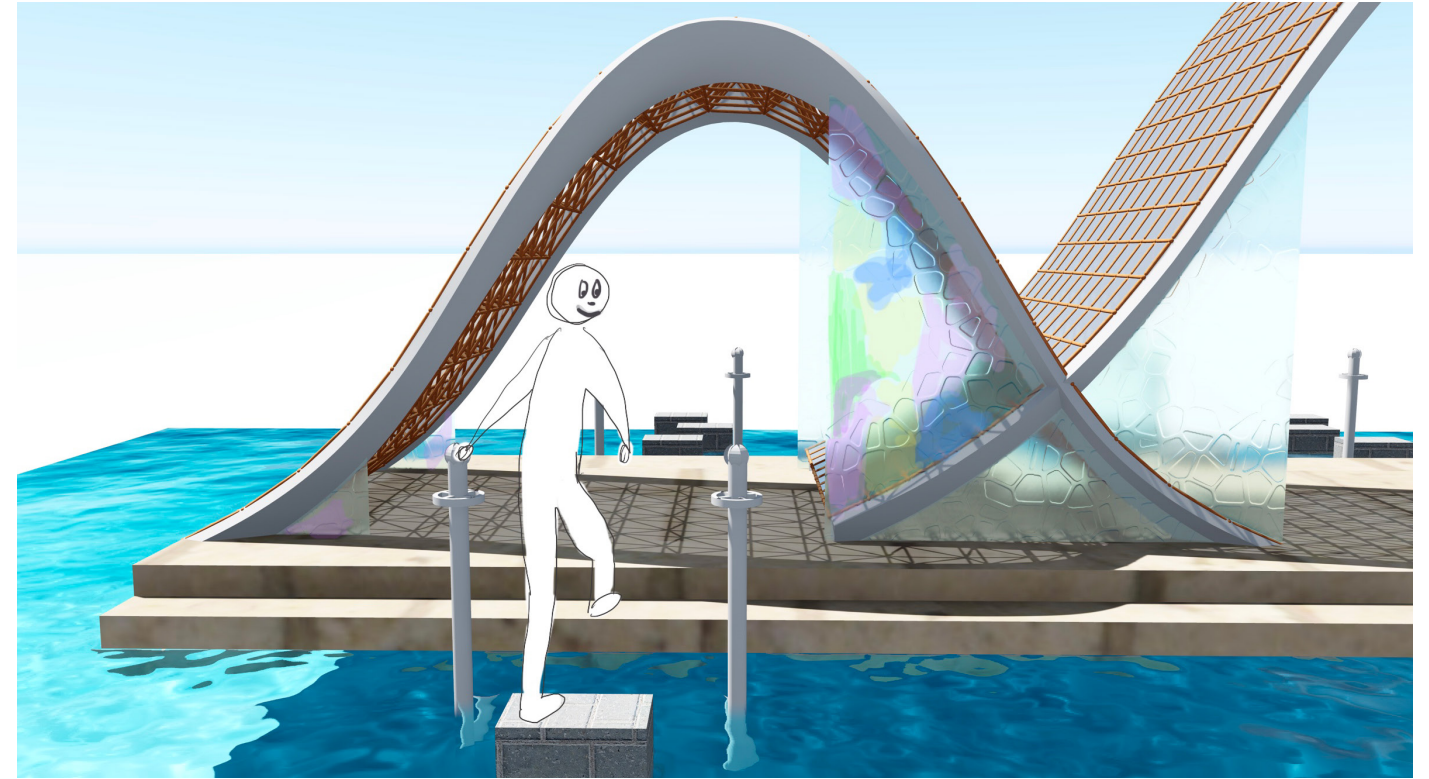


Fig. 5.13: In the scenario where the user has time, they would select the smaller arches and enter it by stepping on the blocks of stone placed in the water. Tulip shaped bollards act as supports in case they are needed. Note that by paying attention to where they are stepping in an adventurous manner, the user is gently made to forget any worrying thoughts that they might have. It creates both a mental and physical 'pause'. This is the core meaning that the waves of happiness intend to create.



Fig. 5.14: As the user steps onto the last stone, they can see a simple message written at the bottom of the pool- "drop your worries". Another reminder to take a pause.



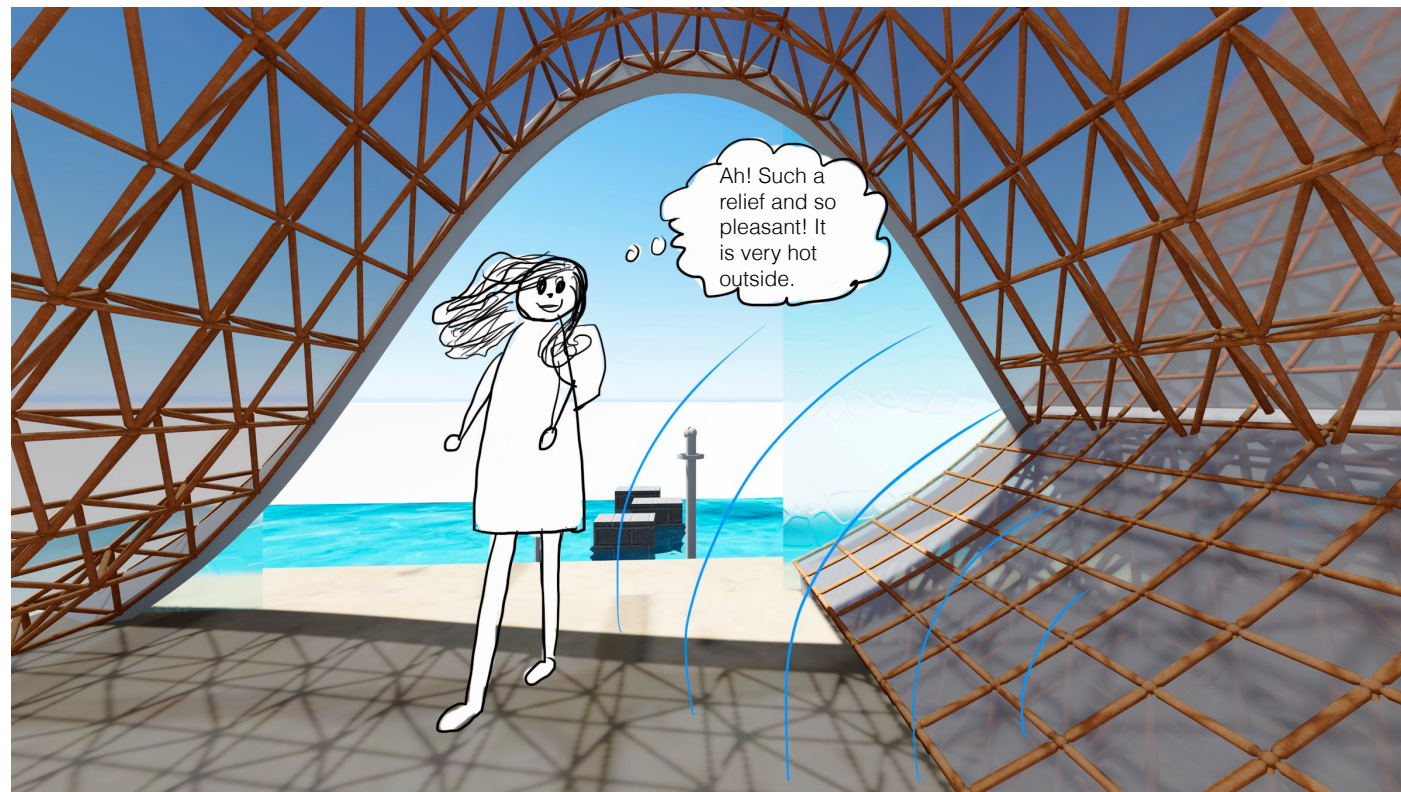


Fig. 5.15: Once the user starts walking inside the smaller arch(es) and if their direction is towards IDE, small fans placed under the curved surface blow cold air (in the summer) or hot air (in the winter). This wind curtain effect aims to create a pleasant surprise, joy, relief from the weather and a feeling of positive anticipation for the day or evening ahead.

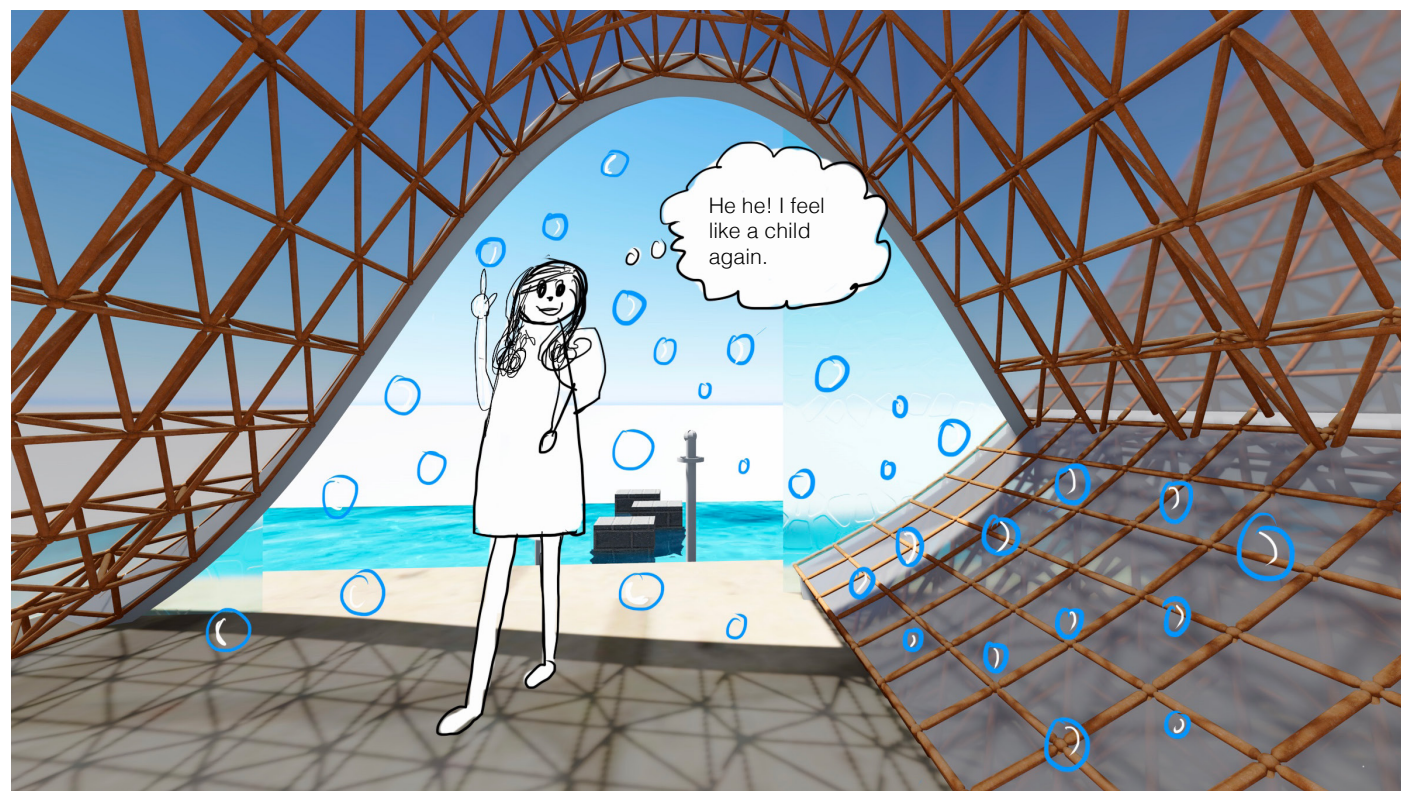


Fig. 5.16: When the user is leaving IDE and passes under the small arch(es), bubbles are released from the tubes of the sloped surface below. It is hoped that users feel joy through this sensory stimulation and take a quick pause in their transition journey. Motion detectors on either end of the small arches detect the direction from which the users are entering, in order to avoid systemic confusion.



Fig. 5.17: Lucky users of the small arches (for eg. 1 out of 500) get to win free coupons for coffee, ID Kafee, IO Festival, etc. It is hoped that this reward will encourage more people to choose the smaller arches and take a tranquilising pause while in transition. Thus this is a modern interpretation of the communicative function of an arch.

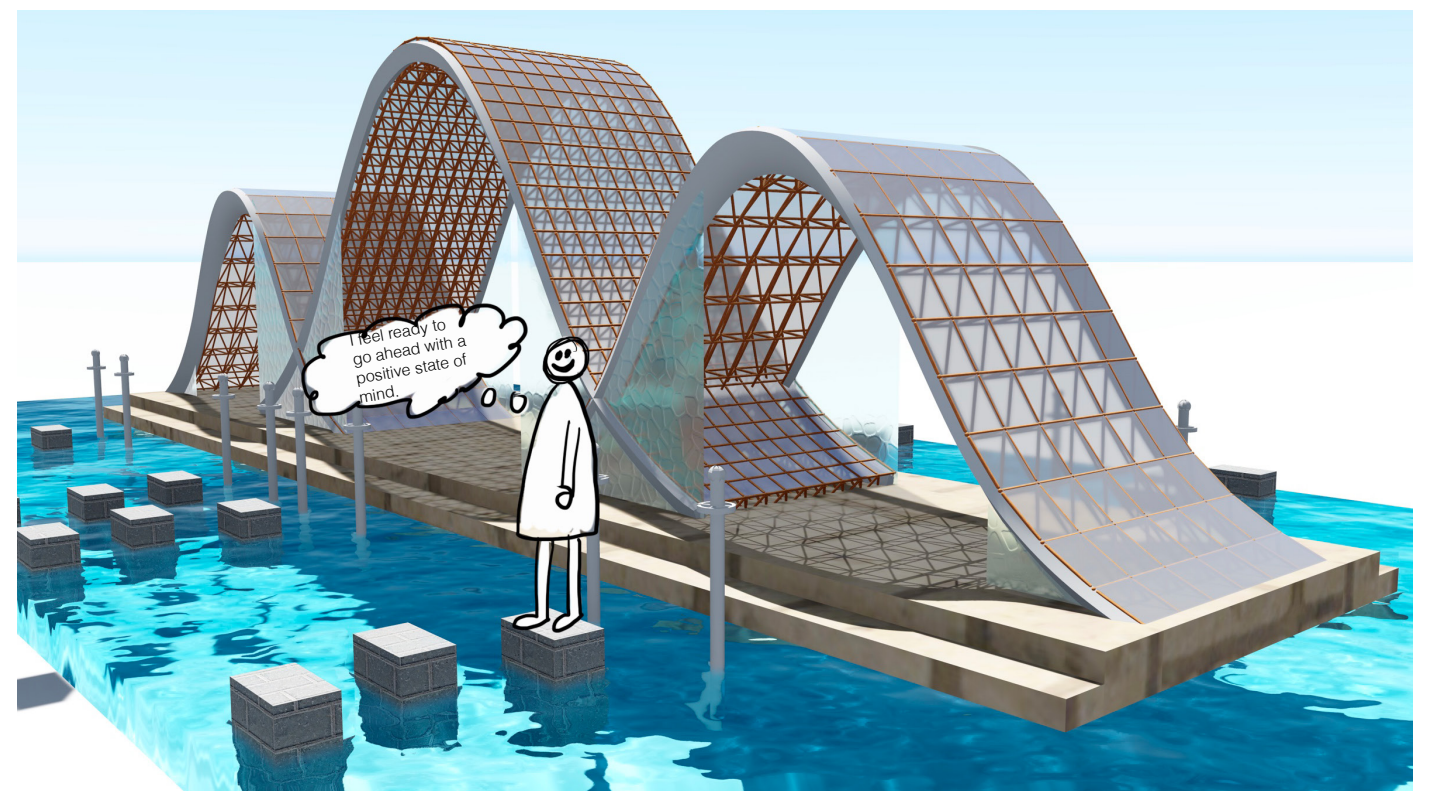


Fig. 5.18: The user thus chooses their own path of transition (autonomy) to experience either self reflection for self-care or sensory stimulation that creates positive emotions. Overall, the user leaves with a positive state of mind, no matter where they are headed- IDE or away from IDE. If one really does not wish to go through these arches, they can walk around these Waves of Happiness and still visually enjoy its beauty.



These is a **selection of positive messages** that can be projected onto the internal curved surface of the central arch: (note that these were tested during the user tests as well):

1. *What am I grateful for today?*
2. *What went well today?*
3. *I am enough.*
4. *I am a survivor.*
5. *I am unique and awesome.*
6. *I am capable of helping other people.*
7. *I promise myself to take a break today no matter how much work I have to finish.*
8. *Today, I choose to be brave.*
9. *I choose to forgive myself.*
10. *Rome was not built in a day.*
11. *Today I choose to help someone in need, even if I don't have time.*
12. *My past does not define my future.*
13. *When one door closes, another one opens.*

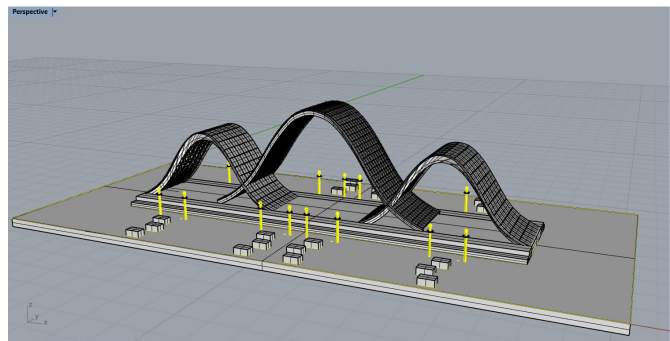
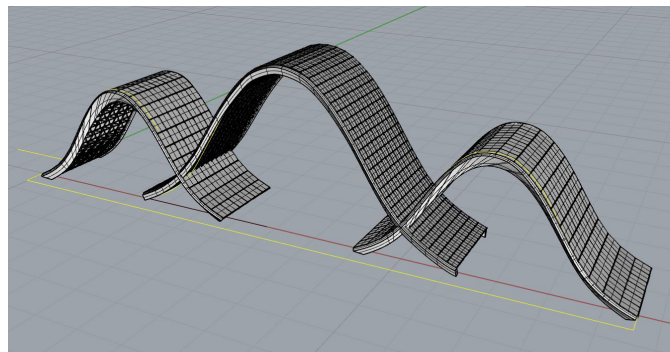
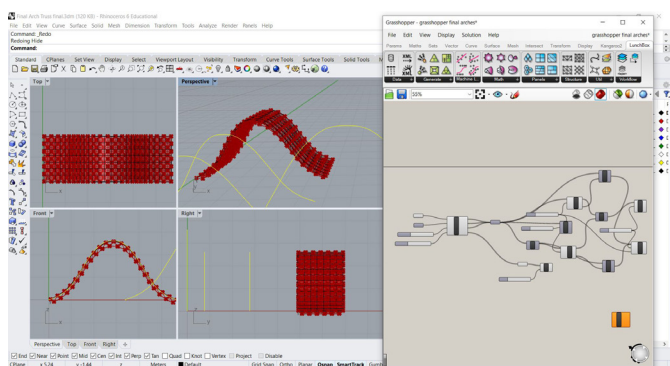
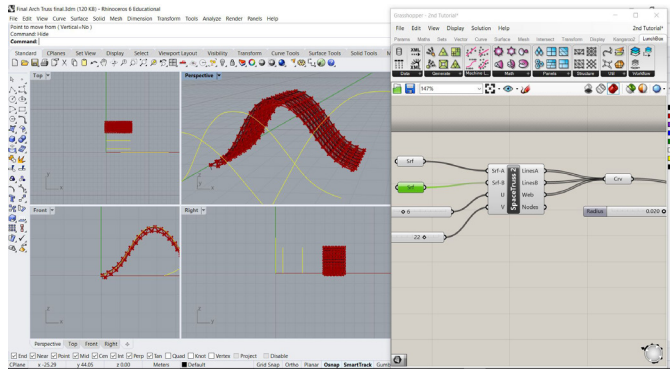
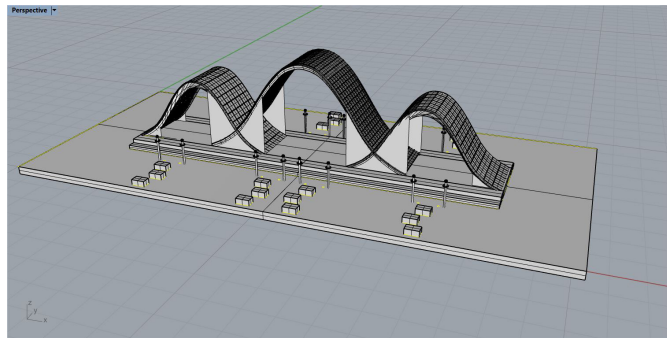
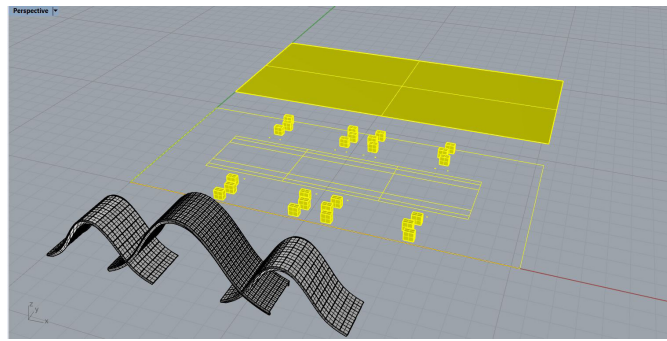
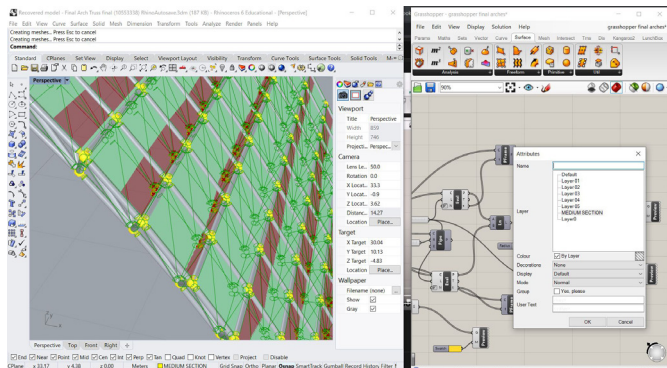
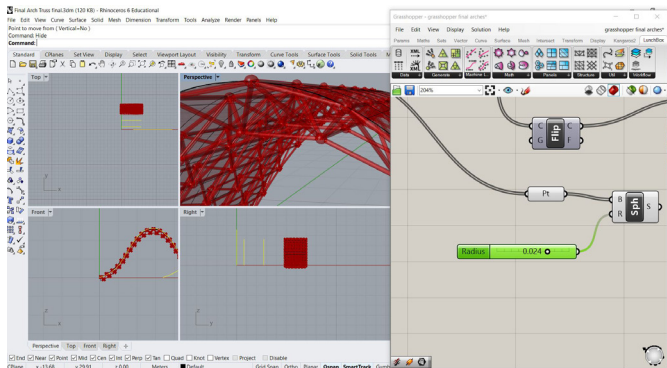
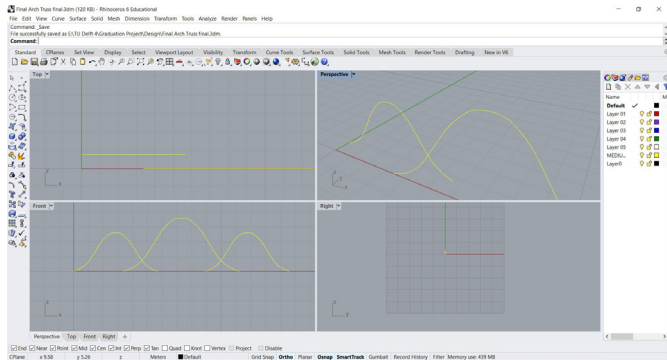
The following **coupon ideas** were also tested:

1. *Congratulations! You won 2 free DE coffees. Claim your code now.*
2. *Congratulations! You won 2 free drinks at Coffee Star. Claim your code now.*
3. *Congratulations! Treat your pals to 10 free beers at ID Kafee. Claim your code now.*
4. *Congratulations! You just won a 1+1 ticket to the IO Festival! Claim your code now.*

**SUMMARY:**

1. The **main arch** is for those users who are in a hurry and only wish to be stimulated visually through messages that call for reflection and self care.
2. There are **two smaller arches** on either side of this central arch and they feature two main stimuli- wind at a seasonal temperature and bubbles. Lucky users might sometimes get free coupons. This reward is meant to encourage the behaviour of taking a pause under these arches.
3. The stone blocks in the water serve as a **tranquillising and adventurous path** for the user. They provide a pause moment to the user, breaking their thoughts.
4. The **blowing air** and **bubbles** help in changing the physiological state of the user.
5. The **surprise gifts** are meant to be a reward to come back to the arches repeatedly for the positive transition experience.
6. The form was conceptualised to **communicate** metaphorically the 'waves of happiness' in a dry transition space surrounded by stiff buildings.
7. The design creates a smaller transition space experience within a larger transition space of IDE. The meaning that it hopes to create is that of taking a **pause**, practicing positive self reflection (self care) and letting troubles go i.e. leaving their problems behind every time the users pass through these waves, from any direction. This **'leaving behind'** effect is taking place subtly through a gentle vertical elevation of the user in the transition space physically and the (stepping stone) nature of the designed path. The arch is a simple metaphor that **creates a happy place** of transition for IDE users. **The design acts a semi-permeable membrane of the cell:** taking in the good and leaving behind the bad, at least for a few moments. The arches also provide security, stimulation and autonomy.
8. The most basic and prominent interaction which takes place during the transition experience is the engagement with the **beauty** of the structure itself, even if a user does not choose to go through the archer everyday. It creates **fascination**.

# 5.4 The Design Process



The designer chose to use **Computational Design** also known as **Parametric Design** popularly as a tool to model the vision. The reason for it is that **computational design is the modern way of building spaces in the contemporary world and it fit with the vision of this project: a modern take on a series of arches.**



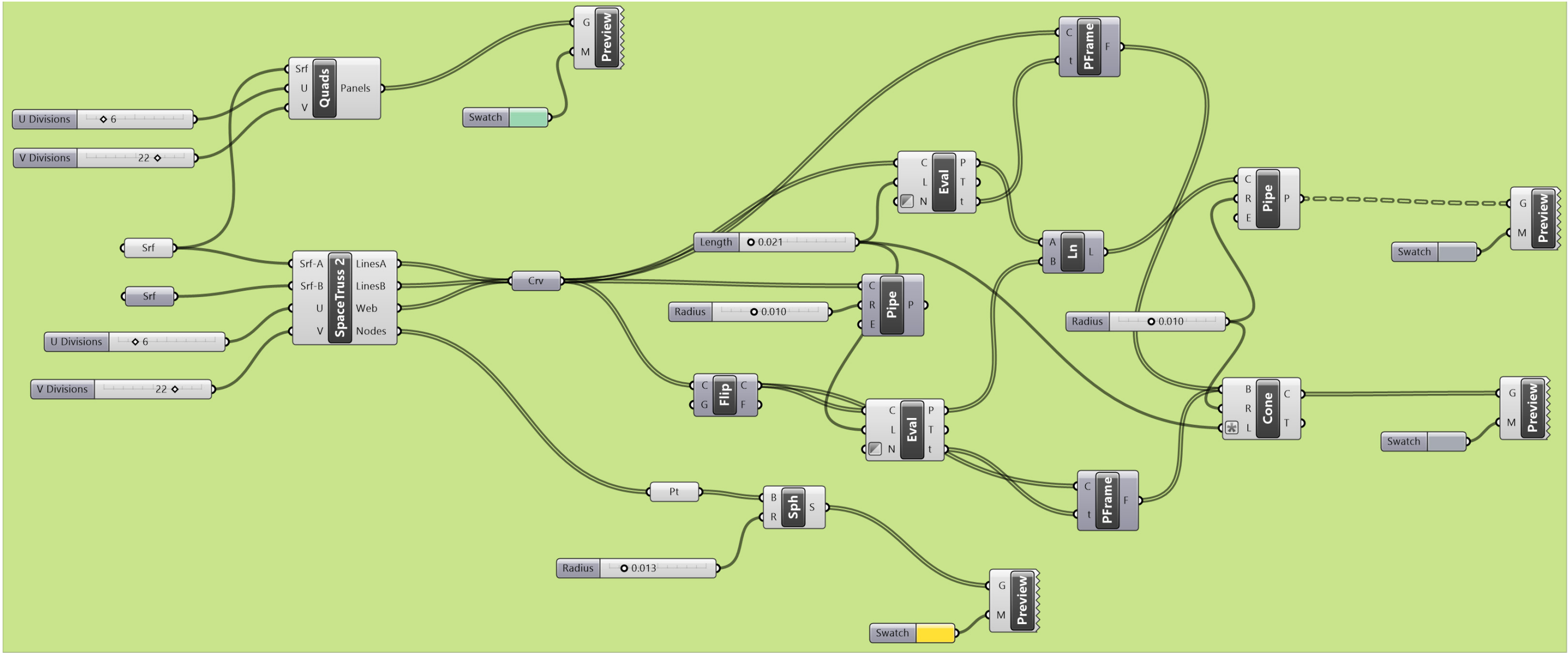


Fig. 5.19: This is the Grasshopper code created by the designer to make a model of the design vision. It was an (enjoyable) learning experience that- creating a computer aided design model of a simple looking organic form is more complicated than it looks. This is the code to create a single small arch. It was applied to the curve of the central arch separately since its scale is larger than the two smaller arches.

1. The curves were first sketched (drafted) in **AutoCAD** based on anthropometric guidelines, then exported to **Rhino**.
2. A **Grasshopper code** was then written for the design of the entire model in Rhino. Grasshopper is a visual coding Rhino plugin for designers.
3. The design of Waves of Happiness' relied mostly on **NURBS** which is an acronym for Non-Uniform Rational B-Splines. It is a fancy term for a spline curve with multiple control points that are in turn controlled by parametric equations.

1. **Computational Design** has **several advantages** such as **the ability to break down organic forms into modular structures that can be easily manufactured**.
2. It enables the designer to **quickly adapt** the design towards contextual and user needs. This is due to the **dynamic** nature of parametric equations that control the form itself.
3. Without this tool, it would not have been possible to make a detailed model and estimate the **feasibility** and **durability** of the design.

**MATERIALS USED IN THE DESIGN:**

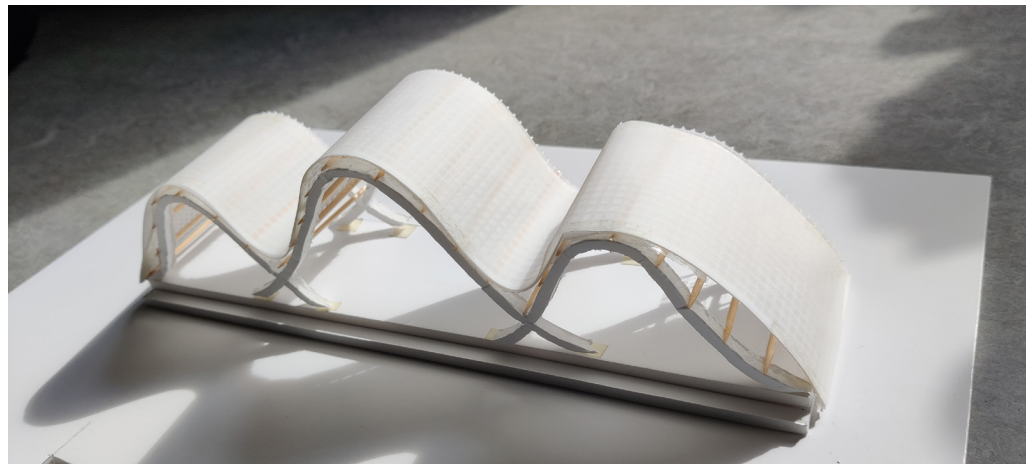
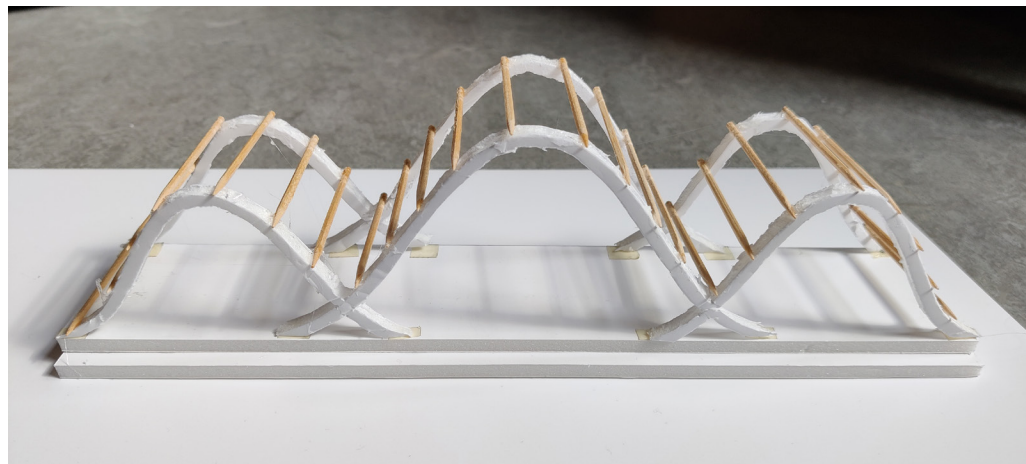
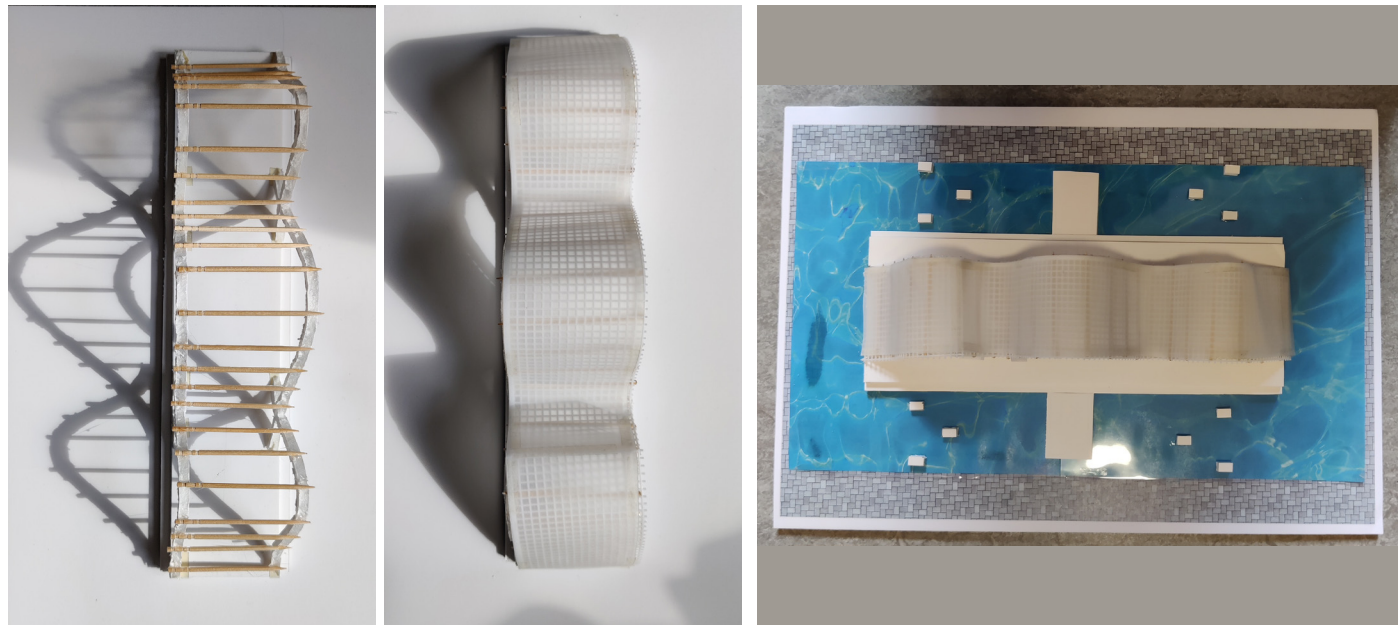
1. The total **thickness of the roof is 6-8 inches**.
2. **Corten steel** has been proposed to create the ball and stick joint structure of the arches, with **point LED lights** attached to the balls.
3. **6 mm thick LEXAN polycarbonate sheet panels** will be rivetted to this corten steel cage. This will create a semi-transparent glow over the entire surface of the waves of happiness due to 100s of these point LED lights. Lighting design concepts

can be explored further for the arch to function as a communicator using light.

The next page showcases **the study model** which was handmade to scale using architectural model making materials.

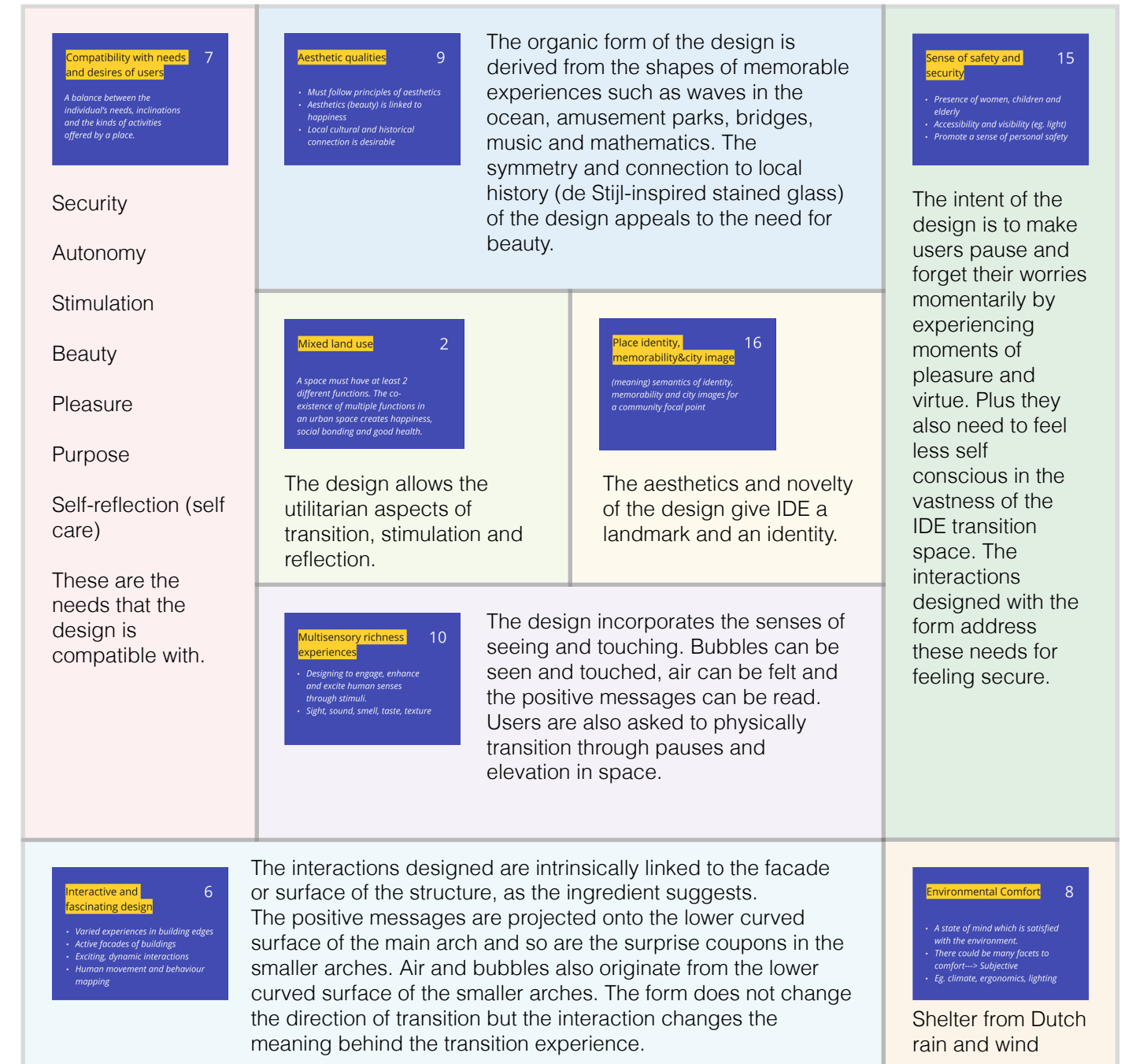
Please note that a ramp appears to connect the central arch to the ground on either side in the model. This is because it is a design iteration that came up once the final concept was tested with users.





**Fig. 5.20: A collage documenting the construction of the study model.**

## 5.5 Applying the Urban Happiness Ingredients



**Fig. 5.21: A visual representation of the degree to which 8 of the Urban Happiness Ingredients were used.**

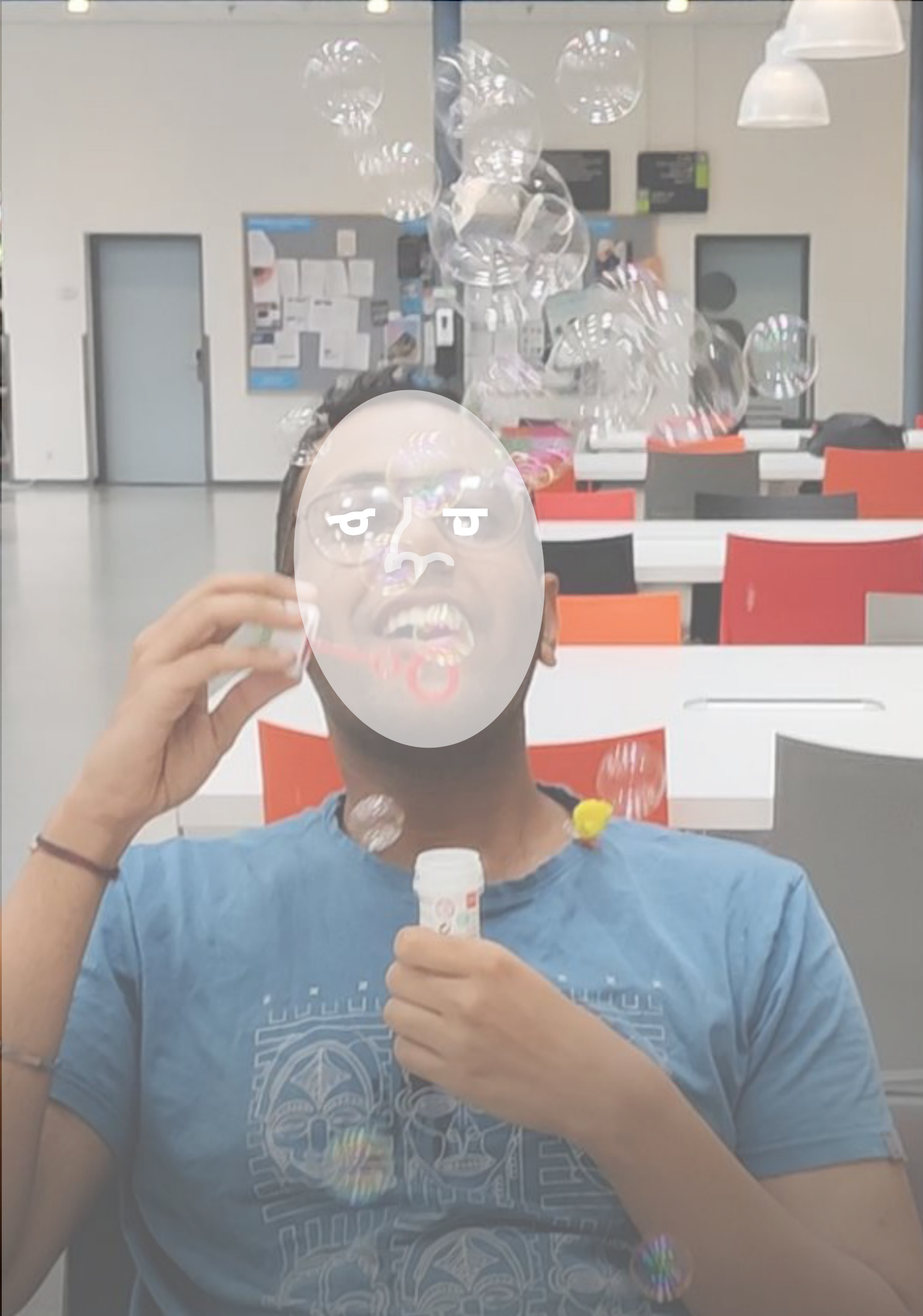
Note that the degree to which each ingredient was

used is represented by the size of the tile.

For more insights on how the Urban Happiness

Ingredients can be applied to Transition Space Design, please refer to Chapter 7.





## 06

# Design Evaluation

- 6.1 User Feedback on the Final Concept
- 6.2 Recommendations

*This chapter discusses the user feedback on the final design concept and the recommendations made to improve the design in the future.*



# 6.1 User Feedback on the Final Concept



Fig. 6.1: User were asked to pretend that pieces of paper were tiles to step on.

Users were shown a walk-through video of the design and they were asked to engage with the interactions as shown above. Note that the selection of positive messages mentioned in the previous chapter were

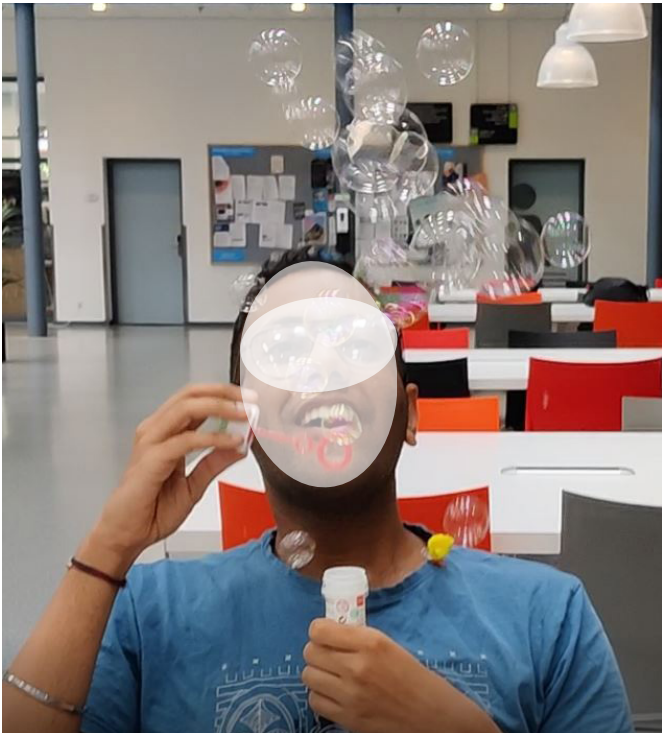


Fig. 6.2: Users were immersed into the experience of bubbles. Air was created using a hair dryer. :)

also shown. 6 users participated in total. Then the users were interviewed for their feedback and then they were asked to fill a survey form. The results from both will be discussed in this chapter.

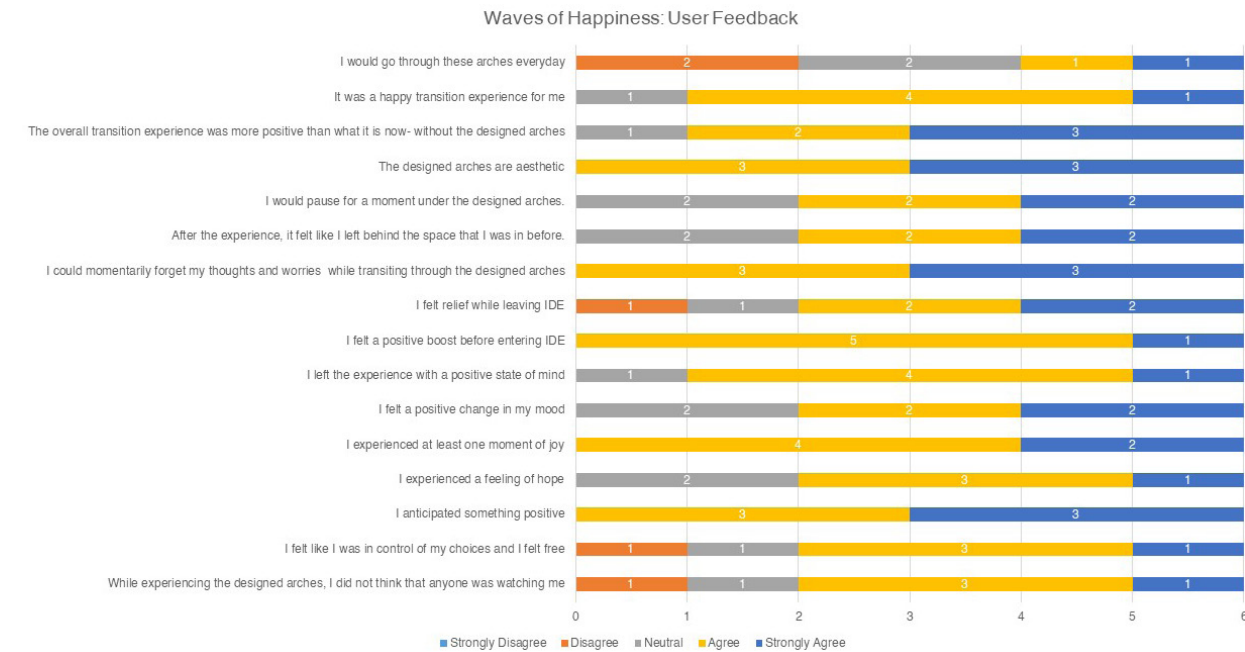


Fig. 6.3: An overview of the quantitative survey taken by the 6 participants during the user feedback session.

## INSIGHTS FROM THE SURVEY:

1. From a qualitative perspective, the results indicate that the **users strongly liked the aesthetics** of the design.
2. They strongly felt that **they experienced at least one moment of joy** in the experience.
3. They **strongly felt that they were able to momentarily forget their thoughts and worries** as they passed through the arches.
4. Most participants agreed that **they felt a positive boost before entering IDE**.
5. The users also **strongly agreed that they anticipated something positive**.
6. Users had **mixed reactions** when asked if they would go through these Waves of Happiness everyday. Reasons for that were discovered in the structured interviews.
7. Users agreed in general that **they felt in control of their choices, felt free**, that **they left the designed experience with a positive state of mind**, that they **had a happy transition experience** and that **they did not feel like anyone was watching them**.
8. They mostly agreed that **they felt like they had 'left behind' the space** they were in before mentally.
9. There were a few agreements made over experiencing hope and relief.
10. In conclusion, most users did feel that **the designed transition experience is more positive than the current transition experience**.
11. Note that users were asked to fill the most prominent emotions they felt using the PrEmo tool. The results indicate that users felt positive emotions only. For more details, please refer to the appendix.

## INSIGHTS FROM INTERVIEWS:

- The following questions were asked:
1. How was your overall experience? Your general impression?
  2. Do you think this design will make the transition experience happy?
  3. How useful is this experience to you?
  4. What more would you add to this experience?
  5. Did you experience any moments of joy? Please describe it.
  6. What else did you feel?
  7. So when you are heading into IDE and heading out from IDE, will this designed experience momentarily pause or arrest your thinking?
  8. What do you think about the form and the aesthetics of this public space installation i.e. the happy gate?
  9. What do the form and the experience remind you of?
  10. Would this design add character to the faculty?
  11. What does this designed experience mean to you?
  12. Did you feel focused entirely on that particular moment of transition and not anything else?
  13. Did you feel like you could just be present in the moment?

**"The experience was quite surprising and nice. It took my mind out of other stuff. A relaxing and random experience where you are not reminded of work or that 'oh, you are going to uni again'." - C**

**"I can imagine when you are coming to uni and leaving from it, this can be quite a nice transition in the mind. It would definitely take my mind off of things and make me feel motivated to get back to work." -C**

**"I think it is a rewiring and stopping moment for the brain when you pass through these arches." - E**

The two quotes above indicate that the experience distracts users from the worries they might have and even helps them relax.



“The jumping feature would encourage me to actually use the two smaller arches.” -C

“I can imagine, walking over water is quite relaxing. I suppose depending on where the sun is, the reflection of the water on to the structure of the ceiling must be quite relaxing as well.” - C

The combination of water and breaking down the pathway of transition into small pavers adds a reflective pause to the users' minds. The users begin to take notice of small things like light shining on the water.

“The jump between paver 2 and 3 was quite large and I was not really sure if I could use the pole. It is quite challenging. Maybe not something I would want to do always when I am in a rush. Maybe if there were other options like a bridge, I would do it.” - C

“I think there are a lot of decision moments- firstly, do I want to go through this installation or go around. Many people would be put off by the jumpy thingy and would walk around it.” -E

This user and many others indicated that the gap between the last paving stone and the first step was too large. The idea of the designer was for the users to jump using the tulip shaped bollard light as a support but instead this created anxiety in users, especially for those with short legs. **This user added a nice suggestion of creating a bridge for the central arch.**

“A few messages sort of really made me think, it was nice- eg. taking a break. It feels really nice to be reassured when you are really busy with deadlines.” -C

“ The meaning to me is very empowering- I think you want to make people feel like they will have a good day and that they are in the best mental shape or mental state possible. It is a very hard thing to do but I think the design

definitely hits the right notes with the form, the text. I also like the fact that you don't only look at the shape but you also incorporated other elements like wind or bubbles which is quite fun.”- AM

“I think its useful as a small reminder to people before they start their day to get a little confidence boost. It is very, very useful. Also, if I don't want to go through the shape, you can walk past it, around it and its your choice, I like it.” -AM

“I do like the tea bag labels when you get a new question or prompt each day. Especially with things like- today I will take a break.” -E

The positive messages which were meant to trigger self reflection on the virtue of self-care were also interpreted as reassuring during stressful days. The meaning of the design was clear to the users and they looked forward to it.

“And who doesn't love freebies? It would be really nice to share those coupons with other people.” -C

“I would even pay to do such things like jumping over a stone in a new environment. If I knew about the vouchers, I would keep circling around the small arches until I got something. :D I know that is not the intention but I can imagine this happening.” - AN

The reward in the design- coupons- were received more positively than it was expected by the designer. Users indicated that they would use the arches over and over again just so that they could get free coupons!

“The bubbles as well- they are playful. You always try to touch a bubble. The air would make me feel welcomed. The hot air stream outside Jumbo is really nice during winters. It warms you up for the day, makes you feel more welcomed.” -C

“Looking at the bubbles, I mean who would think of anything else at that moment? :)” - P

“I wouldn't use the bubbles all the time if I in a rush for eg. But to get a coffee with someone, I would use it with someone else. It is nice for a break with someone to have a conversation.” -C

These indicate that even though the bubbles bring moments of joy, the users wish to share that joyful experience with others. So the urban happiness ingredient of 'Promoting diverse and vibrant social interactions' can be applied to extend the design further.

“I think it is a very inspiring object- it almost seems like an art piece to me-which I like. I think the shape is very beautiful and the meaning is very beautiful.” - AM

“Just looking at it already makes me smile.” -AM

The design satisfies both the human need for beauty and it becomes a part of the meaning that users associate with it.

“I think the character of this design shows that the faculty is thinking about student lives outside of the faculty in an artistic way, I suppose. Yeah so it is quite nice and I think it works.”- C

“It is quite nice also for people who are not so social. It is quite meaningful to get out of that rhythm of working and meeting people.” - C

“Even if I don't go through the arch, seeing other people use it would make me feel happy. I would love the space a little more and be more excited to come to IDE which I currently don't feel very much.” - AN

Unless I see someone being showered with bubbles, I would not bother trying it.” -E

It was quite interesting to note that this design also caters to those who may not want to socialise much and that just seeing other people happy under this structure would make users happy. There is also a deeper approval of the association of this positive design with the faculty. It is almost like the waves of happiness represent the care of the school or employer (IDE) that the user spends 80% of their time with. It appeals to the deeper meaning of being cared for and their feelings being acknowledged.

I think happiness is also getting to choose some actions and this concept has those things.” -M

The user clearly understands the link between autonomy and happiness within the context of the design.

“If I look at this experience as a challenge, then these wins (coupons) add something. If I only look at my transition as going in, then I think the messages are enough.” -E

The design has appropriately separated the behavioral needs of the user depending on whether they have time.

“I also liked the fact that it is open, not closed, a bit in between. I think it is cleverly done. Because it blends well with the facade of the building. It is a nice thing that natural light is coming in - I think light really does a lot to people's minds. If it is not dark and so open, it feels light. I loved the colored glass that you used!” - AM

“The stained glass reminds me of a church- the church glass. It is a very safe place, a church. The round shapes feel like a safe haven, a safe tent, it feels very inviting.” -AM

“I think arches symbolise entering into something so I guess that is a very nice beginning towards



IDE- better than those revolving doors I guess. :D”  
- P

“The design reminds me of those fancy cartoons we used to see as a kid- those ancient cartoons. It reminds me of Frozen (sings do you want to make a snowman) and a castle.” -P

“I think the layering and complexity of the interactions can have people coming back to the structure.”- M

“I think the arches look like sines and cosines (waves) (smiles), kind of like mathematical graphs or sound waves more than water waves. I liked it because it was organic.” - E

These excerpts indicate that the aesthetics of the design remind users of positive memories from their childhood or adult life. Simply because it reminds them of forms that they have a happy meaning connected with.

“The space is like a little enchantment going on in there. Just the sun shining through the glass would be really nice. You don’t really need the lighting then. It all feels a bit like enchanting and marvellous, yeah pleasurable!”- E

The design invokes pleasure through enchantment and marvel. Even though this was not the direct emotional intention of the designer, the memories associated with the form have resulted in stronger feelings than joy such as enchantment and marvel.

## THESE WERE SOME OF THE SUGGESTIONS MADE BY THE USERS TO DEVELOP THE DESIGN FURTHER:

1. “Maybe the bubbles are bigger if there are two people in there. Maybe the coupons are 1+1. Do something with the lights a little bit to make it feel like you are a bit underwater? Walking over water and walking under water maybe. You can explore different ways to light up the arches.” - C
2. “I think the bubbles and air can change over time to something else. That would be nice.” -AN
3. “What if you make the installation a little bit bigger so that it becomes a seating place with people, relax a bit under the shade of the roof.” -AM
4. “Since you used messages as a source of inspiration, maybe you could let people contribute to those messages. I would love to do that.” -AM
5. “Please keep a DJ in the arch cmon! I want music.  
You could play the song by Pharell Williams- Happy! Play that inside the arch.” -P
6. “I think having these experiences with someone else like social interaction - like talk about what you are seeing and experiencing- would definitely be nicer.” - M

## 6.2 Recommendations

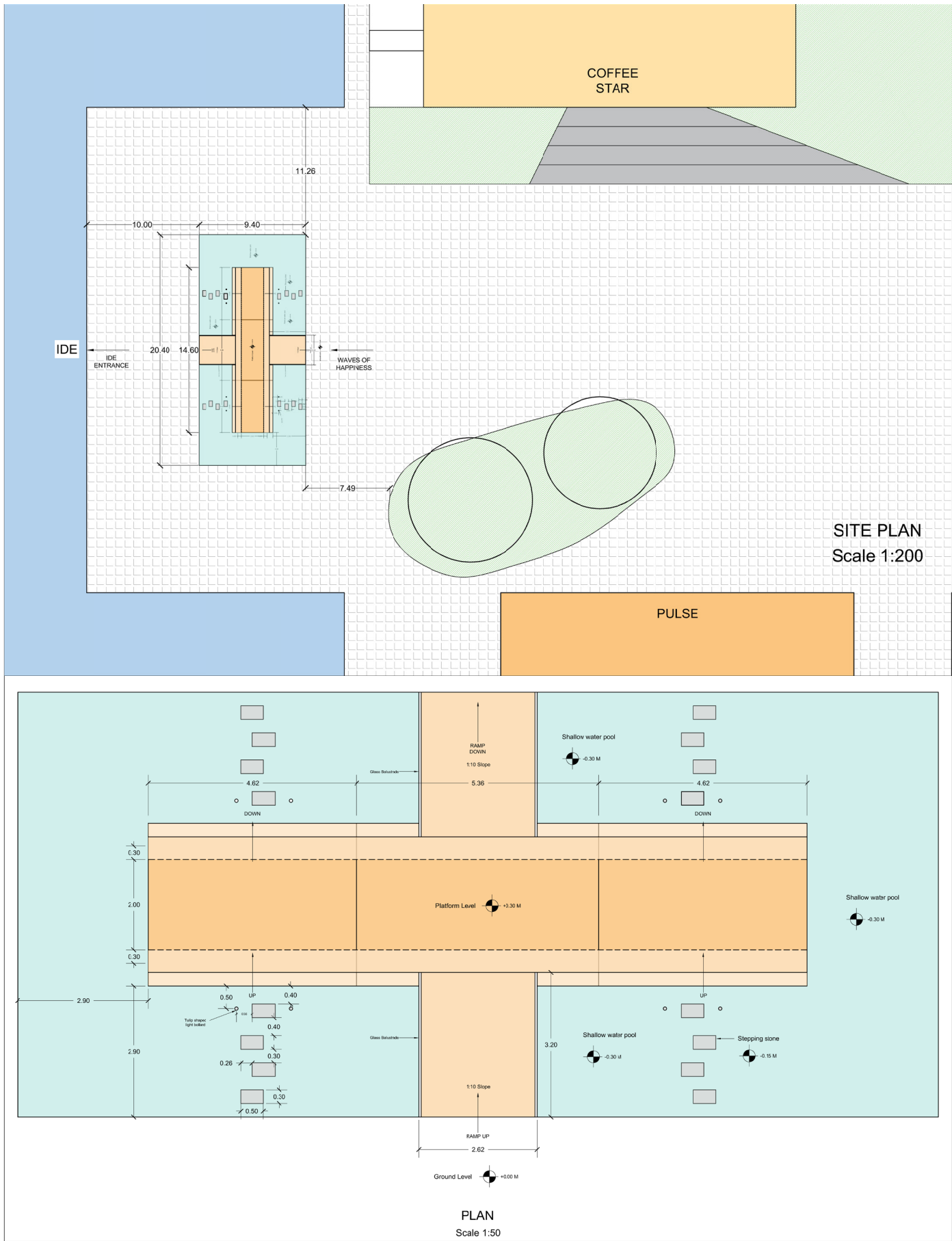


Fig. 6.4: Revised Site Plan and Architectural Plan of the design. Please see the appendix for more details.



THE FOLLOWING RECOMMENDATIONS  
HAVE BEEN PROPOSED TO IMPROVE THE  
DESIGN IN THE FUTURE:

1. As it can be seen from the images above, **two ramps** were added on either side of the central arch. This was to create a shortest path to the IDE entrance door for those users who did not want to spend time slowing down on the stone pavers.
2. The **gap** between the last stone paver and the first step of the platform was **reduced considerably** compared to the previous iteration. This was to enable a better usability.
3. **Railings** were added to the two ramps for extra support and to create **a universally accessible design**. The slope has a very comfortable ratio of **1:10**.
4. One of the next steps would be to work on **creating lighting design concepts** for the structure's roof (it has tiny point lights embedded all along the space truss, thus lighting up the arch from within). It would be interesting to see how colours can be used to **communicate** with users dynamically. For eg. it could be related to upcoming events or just to create a mood that relieves the blues of grey weather days. **Mood regulation using light** during the depressing winter can be a very powerful application of the design to improve the mental health of users.
5. **Over time** users would learn to head inside the arch to get updates from the projected messages once the **colors of the glowing roof** change and try to communicate.
6. More **research** needs to go into **the types of positive messages** that need to be projected. The Faculty of IDE can connect the insights from the **TU Delft WellBeing Survey project** to the messages that are projected. This will ensure the immediate relief of mental health woes that the humans of IDE might have. **The research of this thesis strongly suggests that the design has the power to make users believe that their mental health is valued and acknowledged by IDE.**
7. It is evident that the interactions with the bubbles and warm/cold air might become too predictable for most of the users over time. This calls for **participatory design** with users regularly (perhaps IDE can **hold competitions** on that once every 6 months) to design little interactive elements inside the arch that they want to use! The hidden surfaces under the X part of the Waves of Happiness can easily accommodate any equipment required to create those effects.
8. One of the possibilities is **exploring the use of music** in the arches to create pleasure. This was suggested by more than one user during the feedback session.
9. If possible, the total size of these arches can be increased to **accommodate social interactivity**. One can then **design seating** inside these arches. **This is however out of the scope of this thesis project.** It is important to note that increasing the size automatically reduces the free space available in the transition space to hold events- which is an integral part of the IDE culture and identity. It is a **compromise** that the designer will have to make within the constraints of the context.
10. More research needs to go into **what else can function as a reward** for users. This thesis has proposed the use of free coupons to begin with.
11. **Fabricating** this entire structure must have a **sustainable process**. The use of **recycled materials** especially **metal** for the **space truss** and **polycarbonate** for the roofing panels needs to be researched.
12. Perhaps **a digital service** can be launched by IDE that allows users to **'upload' positive messages** (which are of course moderated) to the arches. These could be messages of **gratitude** and **kindness towards others that can inspire everyone**. There can be competitions held for **jokes** or kind messages to be shared with

everyone. This is to **create user satisfaction with the fact that they have contributed to the happiness of others**, something that is strongly recommended by the literature reviewed as well as the research conducted in this thesis.

13. It is envisioned that these Waves of Happiness serve as a **'stage'** for the entire IDE transition space. It can be used for bands to perform in or it can be used as a gate during the IO festival, etc. **The dream is for this design to be naturally integrated with the dynamic nature of the context.**
14. More research can be conducted to change the design of the experience of entering these Waves **based on the direction of entrance- towards IDE or away from IDE**. This thesis has proposed a simple symmetric solution because it can cognitively insert itself into the daily transition path of the users with as little decision moments as possible.
15. Perhaps all IDE graduates can leave behind their names and key learnings somehow (needs to be researched) on the interior surface of the arches to create a **'Space of Fame and Inspiration'** for those who work inside IDE. It will make the transition experience more meaningful and fill users with pride linked with the anticipation of the future.



# 07

## Discussion

- 7.1 Reflection on the Design Goal**
- 7.2 Contribution to Transition Experience Design**
- 7.3 Applicability of and Contribution to the Urban Happiness Ingredients**
- 7.4 Limitations**

*This chapter discusses the contribution of this thesis towards transition space design and urban happiness design research. It also reflects on the extent to which the goals of this project were satisfied.*



## 7.1 Reflection on the Design Goal

The aim was to create positive design interventions in the IDE transition space that provide moments of happiness and support a positive state of mind during the daily journey of users across the transition space.

The design goal was to create a transition experience using an arch for the security, autonomy and stimulation of the transition space users before entering and after leaving IDE.'

The project aim and design goal were both satisfied to a desirable level which was- a happy user who experienced moments of joy, who was engaged and left the experience with a positive state of mind. All of which is indicated by the feedback received from users. If the three fundamental needs of the user were to be ranked in the degree to which they were satisfied

it would be- stimulation, security and autonomy. Stimulation is mainly through the form of the design and the designed experience. Security is created solely by the form and autonomy is created by the arrangement of these individual arches affording unobstructed movement.

Stimulation was mainly used to create varying moments of pleasure but they are not permanent as users might get bored over time. Participatory design is thus required to renew the sources of pleasure in the experience. Autonomy needs to be improved by asking users how they would like to engage with decision moments better in the transition experience. Stimulation and Autonomy can always be enhanced but the essence is to **balance** Security along with them. Over stimulation and too many choices can cause cognitive overload and thus make the users feel insecure.

## 7.2 Contribution to Transition Experience Design

### PROPOSING A METHOD TO MAKE TRANSITION SPACE DESIGN MORE HUMAN-CENTRED:

**STEP 1:** Observe the transition behaviour of users from Point A to Point B.

**STEP 2:** Ask users what they desire when they are transitioning in the context.

**STEP 3:** Make users express those desires through idea generation with the designer before the design process even begins.

**STEP 4:** Note down the differences between what users create and what they said they wanted. This is where the latent fundamental human needs come out along the Path of Expression.

**STEP 5:** Understand how the personally significant needs of the user are connected to their virtues within the context. There could be dilemmas or an imbalance between the needs and the virtues or an absence of virtue.

**STEP 6:** This dilemma/ imbalance/ absence can be creatively solved by thinking of ways to bring pleasure to the experience.

**STEP 7:** Repeated iteration and user feedback will help form a vision for the transition space design which is in

the sweet spot of the positive design approach. **LEARNING TO IDENTIFY THE NEEDS OF USERS, TRANSLATING THEM INTO POSITIVE EMOTIONAL INTENTIONS AND MAPPING THEM ACROSS THE TRANSITION EXPERIENCE:** **Wayfinding** while in transition is strongly connected to the needs of users along that journey. Hence it is only logical that the positive emotional intentions are felt by the users along this designed path, which has the power to change the state of mind of the person at each **touchpoint**. It is important to note that transition space design is for different and multiple users that use a single spatial product. Hence the positive emotions to be designed for can be decided based on the context and not necessarily entirely based on needs which may be **subjective**. **CREATING A DIALOGUE BETWEEN THE USER AND THE SPATIAL PRODUCT THROUGH INTERACTION WHILE IN TRANSITION.**

Interactions on the **surfaces** of the spatial product and **unobstructed entries and exits**, make room for a time-effective dialogue to emerge between the user and the spatial product. The arch form used is a good example.

## 7.3 Applicability of and Contribution to the Urban Happiness Ingredients



### WHY WERE THESE INGREDIENTS CHOSEN?

Even though 8 ingredients were used in varying proportions, this thesis could at most contribute to the applicability of 5 of the above mentioned ingredients.

1. 'Compatibility with needs and desires of users' (personal significance, virtue), 'Interactive and fascinating design' (pleasure) and 'Aesthetic qualities' (pleasure) are the three minimum ingredients which can be best applied through the positive design approach, which is why they were chosen.
2. Within the context of this thesis, 'Multisensory richness experiences' and 'Place Identity, memorability and city image' helped the design blend in with the character of a pre existing building- IDE. The target group requires a lot of creative stimulation and draws a huge part of their identity from this building, which is also why these particular ingredients were chosen.

### WHAT WAS LEARNT ABOUT THEM THROUGH THIS PROJECT THAT CAN MAKE THEM BETTER?

1. '**Compatibility with needs and desires of users**': There is a **difference** between what users think they want (desire) and what it is they actually need in an urban space. The **controlling points** (i.e. the starting point A and ending point B of the 'threads' of transition pathways i.e. the context) that connect two built spaces across an open transition

space, determine the needs of the user and not actually what users do in the transition space itself. However, the design can touch the user deeply only through the **universal quality** of the positive emotions it creates.

2. '**Interactive and fascinating design**': In the context of transition experience design, this project can contribute that **interactions are best created on surfaces** of the spatial product. The spatial product must also have **clearly marked and unobstructed entry-exit points** because the '**control points**' of transition direct the behaviour of users and not the transition space itself. It was also learnt that to create a positive state of mind while in transition, the spatial product must best be kept **closer** to the entrance of the building which serves the main human traffic corridor of the urban space. Another key learning was that any interaction designed for transition is **limited to the time it takes for the user to transit plus the extra 1-2 minutes they might be willing to spend** with the design. **Visual interactions** can always be created in transition experience design. But **tangible interactions** must be combined with a **reward** as an incentive for the user to spend that extra time engaged with the design.
3. **Multisensory richness experiences**: Users prefer to **engage with one such experience at a time** while in transition. The decision to choose between multiple multisensory experiences is easier until there are 2-3 options only. Otherwise these



experiences may cause cognitive overload in the short time available to a user for interaction while in transition. This decision moment takes place when they **appraise** the spatial design cognitively along the lines of the **basic model of product emotion**.

That means that **visual aesthetics** (another ingredient) must communicate through **semantic** means- the **number** and **some qualities** of the multisensory experiences provided by the design for the user to make quicker decisions.

#### 4. 'Place Identity, memorability and city image' :

The findings from this project indicate that while the form and aesthetics of a spatial product can be inspired from history (for eg. de Stijl) , it can only become memorable and meaningful to **the users when they feel that the spatial product 'cares' for them and their needs**. The design must hence **acknowledge** those needs in order for the users to **accept** a design as a part of their **identity, pride** and **'their city's' image**.

#### 5. 'Aesthetic qualities':

It was learnt that **organic forms remind users of nature** and make them associate the **meaning of being relaxed** in that transition space. Simple surface treatment that is indigenous to the local history of the place (for eg. stained glass panels inspired from churches) has the power to make people **feel safe** and **comfortable** based on the **memories** of some other places that look similar and that made them feel the same. The **Gestalt principles** of **symmetry** and **closure** were applied to the design in this project and they can definitely be used as guides for creating aesthetic qualities.

### A CONCLUDING REFLECTION:

1. **FEASIBILITY:** Yes this design can be implemented using modern fabrication techniques based on computational design. The slightly higher cost of construction does not outweigh the immense mental health improvement capability of the design. Happiness must be an investment made by the Faculty of IDE. It is easier and cheaper to create happiness through a simple installation in urban space than to create new buildings with complicated experiences. Materials can always be chosen based on sustainability and cost effectiveness.
2. **DESIRABILITY:** Yes most of the needs of the users in this context have been satisfied within the scope.
3. **VIABILITY:** The interactive multisensory elements of the design must change over time because people get bored easily. One way to deal with this is creating tangible and non-digital game design in urban space but that is out of the scope of this thesis. The only solution that can help solve this future problem is through participatory design.

### CONTRIBUTION TO DESIGN RESEARCH AND INDUSTRY:

While the freedom of the IDE transition space allowed creative exploration using positive design, the small number of findings from this thesis can contribute greatly to transition space design in healthcare and work environments. Patient healthcare largely has negative transition experiences and the 20 Urban Happiness Ingredients can work to reduce the negative affects when applied to green open spaces that are adjacent to hospitals. Similarly, green happy urban pockets can be integrated into the design of offices in the future. These 'pockets' can be designed using these ingredients and can be integrated into a larger network of office spaces. Positive design can work to reduce the stress created and boost productivity.

This thesis is also an attempt at a more human centred architectural/ urban design process. If developed further, the industry would benefit greatly from it.

## 7.4 Limitations

1. The scale of architectural design and urban design **makes it very challenging to simulate user experiences**. This **increased** the total time taken to iterate and test during this project **by two times than what would normally be the case**.
2. **Social interactions in urban places are known to be one of the core reasons for happiness**. Due to the time limitation of this project, that aspect of the design could not be explored. But this designer believes that transition space design is strongly linked with the accommodation of social interactions. For eg. in this thesis, interactive furniture could have been integrated with the spatial product.
3. There needs to be **a high fidelity conceptualisation tool which allows non-designer users to express their vision of the 3D space design to the designer, during co-creation sessions**. Making models and sketches, while absolutely important, is both time consuming and does not communicate the whole user experience especially when the design experience starts to take shape in the last phase.
4. **The advent of Artificially Intelligent concept generators** based on the 'mood-board words' expressed by users can be used as prompts for the AI to help in possibly solving this high fidelity research tool need. **For eg. Currently designers are very happily exploring the use of DALL-E and Midjourney** in creating concept images/ 3D models that serve as inspiration in mood boards. This designer can see the potential of the opposite usecase when the users come up with their dream concepts using these AI tools.



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136

137



# **DESIGN FOR HAPPINESS IN A TRANSITION SPACE**

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