

# User Experience based Possibility-driven Garden design

The design process of a design framework  
for TIM Exclusive Gardens B.V.  
to design meaningful gardens

## Summary

This master assignment considers the development of an experience-based possibility-driven garden design framework for the garden design agency TIM Exclusive Gardens B.V. The framework is developed through a research through design process in which a reverse research through design analysis and literature research into human centred design methods is combined with trial design processes. The framework aims at gaining a proper understanding of the potential end-users to design gardens that suit their personality. The central part of the framework is the Meaningful Session in which the designer gets an understanding of the client through an in-depth conversation about the past or imaginative future experiences. The session revolves around the keywords meaning, happiness, greatness, and pleasure. The session includes the questions what, why, and how to find design input for respectively the behavioural, reflective, and visceral aspects of the future garden elements. During the experience analysis phase, the locations of the potential future experiences are sketched on the Experience Plan, a Moodboard is created, and the template Total Garden Experiences is substituted. Together with the List of Requirements, this forms the starting point for the iterative possibility-driven concept design. In the tentative design phase, the designer then validates design choices with the Checklist Meaningful Design and presents visuals of the new garden design to the clients to validate and test for experiences.

In the evaluation phase of the graduation project, the entire framework is analysed in light of literature about intersubjectivity, commercial friendships, Method-Content Theory, and the method of Human-Centred Innovation, to find implications and validation for future use potential.

## Acknowledgement

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I wish you all a pleasant and insightful reading experience through this report.

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## Chapter 1 Introduction

This report describes the results of the master assignment within the mastertrack Human-Technology Relations as part of the master Industrial Design Engineering at University of Twente during the academic year 2022-2023. The master assignment is executed in cooperation TIM Exclusive Gardens B.V., a garden design agency active in the upper segment of residential luxurious garden design. Together with this company an agreement is made on directing the master assignment towards the development of a framework that helps to develop the early phases of the design process further, based on scientific literature and design in practice, see for the proposal appendix A.1. More specifically, on a design framework that helps the designer of the company to design gardens based on a proper understanding of the personality and the needs and wishes of the clients and future users. This understanding is a key part in the vision of the company on what they think is good garden design and hence is essential in their brand identity. Their vision statement, 'When luxury becomes meaningful', shows the need for this understanding in the term 'meaningful', which asks in the first place for a proper understanding by the designer about what is meaningful for the client. Secondly, accordingly, the design for this meaning should during and after the design process be perceived by the client as being personally meaningful. And thirdly, consequently, the moment the new garden design is meaningful to the client, the entire design process will also be personally meaningful for the staff of TIM through the feel of gratification. Practice has shown that this reciprocal nature of meaning within the client-company relationship even could lead to strong interpersonal relationships and even friendships.

Since in the current design process the designer used to gain an understanding of the client based on his own intuition and experience, rather than through a structured approach, there is a need for a more structured approach towards this meaning creation. Therefore, this entire project focuses on a search for how the client could be understood, and how this could be implemented in the early phases of the design process. At the start of the project the assumption is made and agreed up on that the best way to implement the obtained approach into the company, is by means of a pragmatic stepwise design framework. Therefore, the following research question has been formulated:

**“How can a design framework be formulated that helps TIM Exclusive Gardens to optimize the initial phases of garden design, via strong client-company relationships, that aims at matching gardens to the personality of the end-users?”**

To answer this main research question, the following sub-questions are formulated which show the approach of the entire project starting from background research, towards framework formulation and theoretical and pragmatic validation. These questions respectively are:

1. How can gardens be defined based on the vision of TIM Exclusive Gardens and scientific literature?
2. How does the current design strategy of TIM Exclusive Gardens influence the relationship between the client and the garden?
3. How can the potential client be understood by the designer?
4. How does the relationship between TIM Exclusive Gardens and the clients influence the outcome of the garden design process?
5. How can a framework be developed based on the gained knowledge?
6. How do Human Centred Design methods influence the relationship between the client and the garden?

Since the user is central in the entire process, the assignment will focus on developing a design framework compatible with the field of human-centred design. Research through design will be used

as an approach to understand the current design process and to validate the outcomes of the design framework development. In this way, design is a tool to experiment and test scientific knowledge to gain new insights into the topic under research. Therefore, this research through design is present throughout the entire assignment. Since gardens and especially luxury gardens are designed to fulfil the needs of specific users. Furthermore, gardens can be seen as products that are designed to live in rather than to live with. In this way, the relations between the users and the gardens are highly valuable in daily life. Consequently, close and personal contact between the designer and the user is needed to gain a proper understanding of the personalities of the users. This report shows that the theories used in the human-centred part of industrial design can seamlessly be implemented in garden design. The added value for design lies in the accessibility of the real-life end-user.

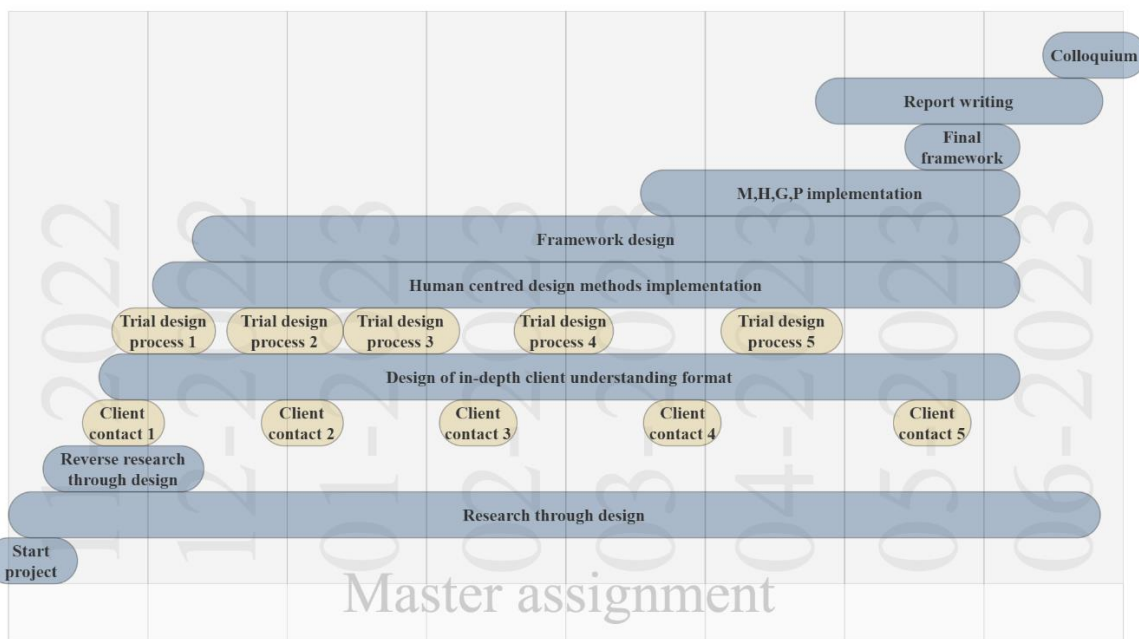


Figure 1 Timeline of the main elements in the master assignment

An overview of the time division within the project can be found in figure 1. The figure shows that the project is entirely a research through design process in which trial design processes are used to gain new insights in how the new design framework for TIM could be developed. During this process there were five times contact moments together with TIM with real clients, utilizing an in-depth conversation in the presentation room. These conversations gave insights into the framework development. Furthermore, the third and fourth client contact moments were used as starting points for trial design processes four and five respectively. During the fifth month of the project, the owner of TIM redesigned the company philosophy into the design of gardens based on meaning (M), happiness (H), greatness (G), and pleasure (P). Consequently, from that point in time onwards the project focused on the implementation of the topics meaning, happiness, greatness, and pleasure in the garden design framework.

All the content of the entire project is discussed within this report by means of nine chapters. In chapter 2 the research context is discussed to show which factors influenced the entire project and for whom the research project is executed. Chapter 3 introduces the overarching method which is used for the entire project, namely research through design and in this chapter the new concept of reverse research through design is introduced. Chapter 4 shows the results of the general literature research which is needed to get a proper understanding of the topic of research. In chapter 5 the application of the new concept of reverse research through design is shown to be the input for the

total research through design project. Chapter 6 discusses the human centred design methods which are implemented within the new design framework. In chapter 7 the four topics which play a central role in the framework, namely meaning, happiness, greatness, and pleasure are introduced, and their applicability is shown. In chapter 8 the development of the final framework is shown, followed by an explanation of the final framework itself. Then, in chapter 9 the results are discussed considering several implications. Finally, in chapter 10 conclusions are drawn as being the answer to the main research question.



## Chapter 2 Research context

The master assignment is executed at TIM Exclusive Garden B.V., fulltime at the office in Doetinchem. This relatively small garden design agency focuses on the top segment of garden design. The garden designs are full of luxury embodied in high-quality materials, and high-end facilities such as swimming pools, pool houses, and jacuzzies. The gardens are designed for budgets that vary from around 200.000 euros up to around five million euros. For this market segment financial constraints are minimal which often means total freedom for the designer. This company is officially founded in the year 2020 by Tim himself.

During the master assignment the total staff consists of three members, namely one designer, one technical and greenery expert, and one interior designer. Tim is the founder, owner, and designer within the company; therefore, he is involved during the entire process from concept design until the garden building process through partners. He is a former gardener and owner of a landscaping agency which is sold in the year 2019, therefore he has a lot of pragmatic knowledge on gardens. Consequently, he is a self-made designer without any specific design lead-up. Based on pragmatic insights and a good eye for aesthetics the designer mostly focuses on the client contact through in-person conversations and translates the obtained information into concept designs. For the designer the creation of 'Meaning' through luxury is central within garden design. Therefore, the slogan of the company is 'When luxury becomes Meaningful'.

Halfway through the master assignment, the company moved to a new office including a presentation room to which clients could be invited. Earlier on, the designer mostly visited clients in their home environment. This presentation room works in favour of a reduction of (travel) time and allows for professionalism during presentations on the large screen within the room. Furthermore, the session consists of a large table with chairs and cabinets full of samples of materials. During conversations with clients within the room, the designer displays samples of materials on the table which might be in line with the preferences of the clients. The room allows the designer to be in control of the context during the process of getting an understanding of the preferences of the clients. Therefore, in line with this approach of TIM, the framework is designed in such a way the client understanding process can take place within this physical context.



Figure 2 Presentation room in office of TIM

The presentation room, see figure 2, as being part of the office of the company, allowed for gaining a proper image of the contact between the staff of TIM and the clients, and specifically between the designer and the client. Almost every week there were some new or existing clients invited. Because the assignment is executed within the company a lot of insights in the entire design process was obtained through unintended information provision, for instance by hearing conversations between staff members, between staff and partners, and between staff and clients. However, the most insights for the client understanding process as part of the framework development, is the attendance at and involvement in conversations between the designer and new clients within the presentation room. This happened five times during the entire project. Also seeing the staff members do their job behind their computers mostly using Vectorworks for technical design and Lumion for visual design, or whilst sketching in 2D on paper, contributed to the overall understanding of the company and their approach. Basically, for the assignment I emerged within the company whilst being treated as a staff member.

Another important consideration is the context of the current design process. The goal of the assignment is not to change the entire company, the aim is to design a design framework which is as much as possible suitable to be implemented within the current design approach. This approach consists of the following steps. Firstly, the designer starts with what I call the 'client understanding process' which consists of the contact form on the website, a phone call by the designer, the completion of the list of requirements which is sent to the client, and a conversation between the designer and the client at the home of the client or at the office of TIM. During this part of the process the client often sends images of the preferred styling or some other inspiration for the designer. At this stage the quotation is sent to the client and after approval the actual design process is started. Then, information regarding the building plot is shared, and the designer or one of his staff visits the building plot and takes images and measurements. Secondly, a map of the building plot is created, is printed, and the designer starts sketching in 2D on the map of the building plot, see figure 7 in section 4.2.2. The final outcome of this process is drawn through Vectorworks (technical modelling software) and some quick 3D sketch images are created through Lumion (rendering software). During an appointment with the client, often via a videocall, the designer presents this concept design to the client. Thirdly, if approved, the contemporary design by means of a CAD model and rendered images are created. During the next meeting with the client these are shared and discussed. Fourthly, after approval of the contemporary design a plan for the lighting and greenery is developed and a cost indication of the building process of the garden is made. During another meeting with the client this cost estimation is presented and discussed and after approval the final phase of the design process is started. Fifthly, the final design consists of improving the contemporary design and the creation of a rendered animation of the garden through Lumion, see figure 3. During a meeting with the client this final design is presented and for the client there are no possibilities for changes anymore. This altogether forms the design phase of the entire project. Sixthly, for the client there are two options, namely, to stop the relationship with TIM and search for companies who can built the garden, or continue the process through the preparatory stage together with TIM. If the latter is the case, all the technical details are developed and partners are approached and asked for quotations, so a final pricing for the building process is made and the best partners are chosen. Seventhly, the moment everything is prepared a building team of partners is created, so all the involved partners get in touch with each other.



Figure 3 Renders of TIM garden designs, source: [tim-exclusivegardens.nl](http://tim-exclusivegardens.nl)

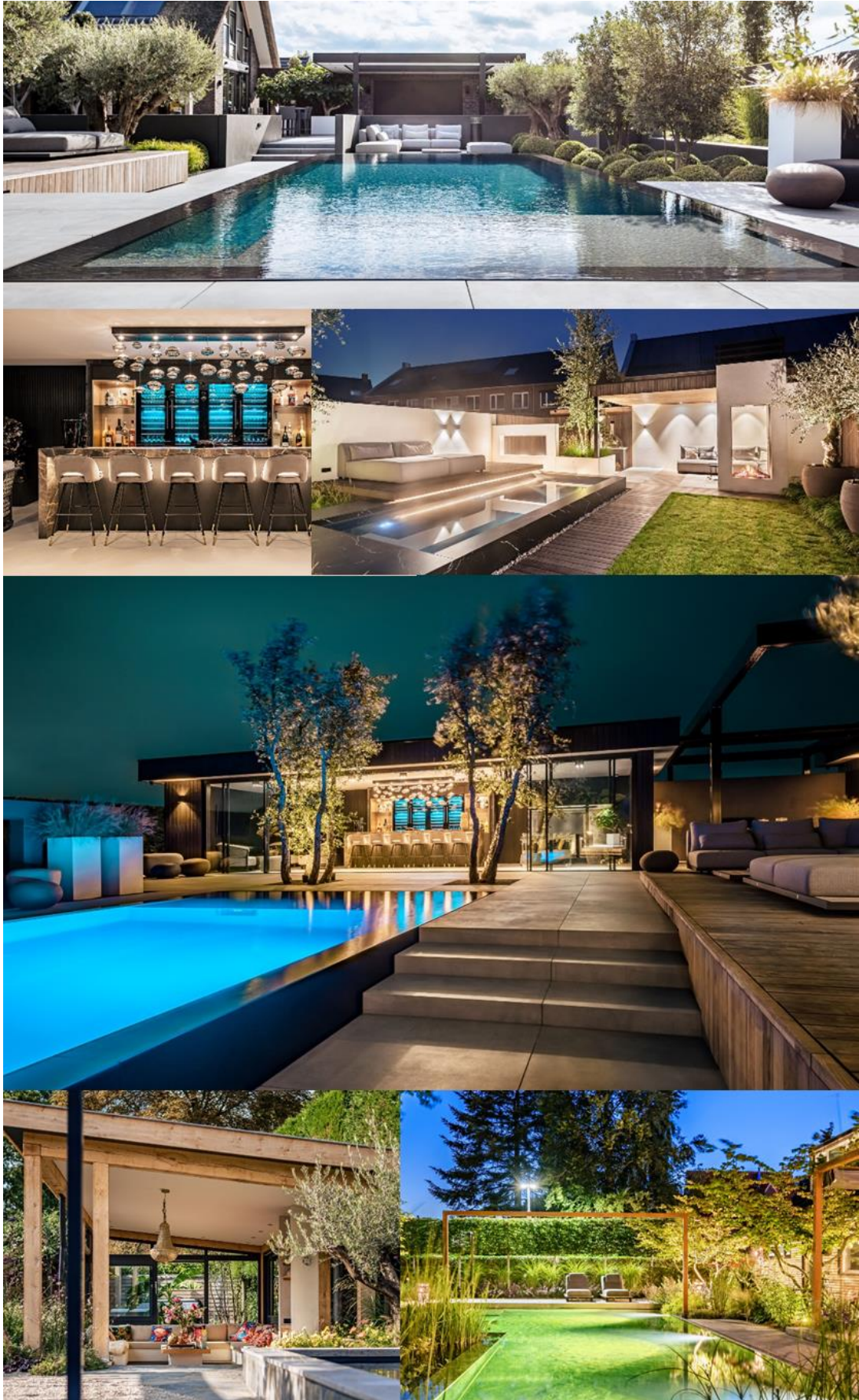


Figure 4 Selection of photos of TIM gardens, source: [tim-exclusivegardens.nl](http://tim-exclusivegardens.nl)

Eighthly, after the building team is launched, the client can ask TIM to chair the building team during meetings and supervise the building process. In this way the responsibility for communication between all the involved parties is taken by the staff of TIM rather than by the client himself. Even more, during the master assignment TIM launched another company which makes it possible to sign a contract between the client and the company for the building process. In this way TIM does not only fulfil a mediating role between the client and the partners but is fully responsible for the entire building process. For a visual representation of the entire process see figure 5 in section. All in all, the design of the new framework for TIM takes place within this entire context of garden design and development. However, the framework itself is aimed at the first in-person meeting between the client and the designer towards and including the concept design phase.

The research context also consists of the portfolio of the company presented on the website and social media, see figure x and y. Clients approach TIM mainly because of his way of styling. Therefore, the research focused on finding possibilities for a new design framework which facilitates garden design in congruence with the TIM styling. However, it should be noted that this style is dynamic and constantly under development since the designer strives for finding the styling which is suitable for the specific client. Suiting the personality of the end-user rather than imposing his own preferred styling. Nevertheless, still, the designer has his own preferred styling. Figure 4 shows a selection of images of built TIM gardens from the website of the company, [tim-exclusivegardens.nl](http://tim-exclusivegardens.nl). Except of the two images at the bottom these mostly represent the preferred styling of the designer. This consist of powerful 'axes of sight' which direct the view of the eye towards an eye-catching element, spaciousness, high quality and luxury materials, and central positions for facilities for social and wellness activities. The two images at the bottom, though, represent the strive for designs which match the personal styling of the end-users, because these are outliers within the portfolio.

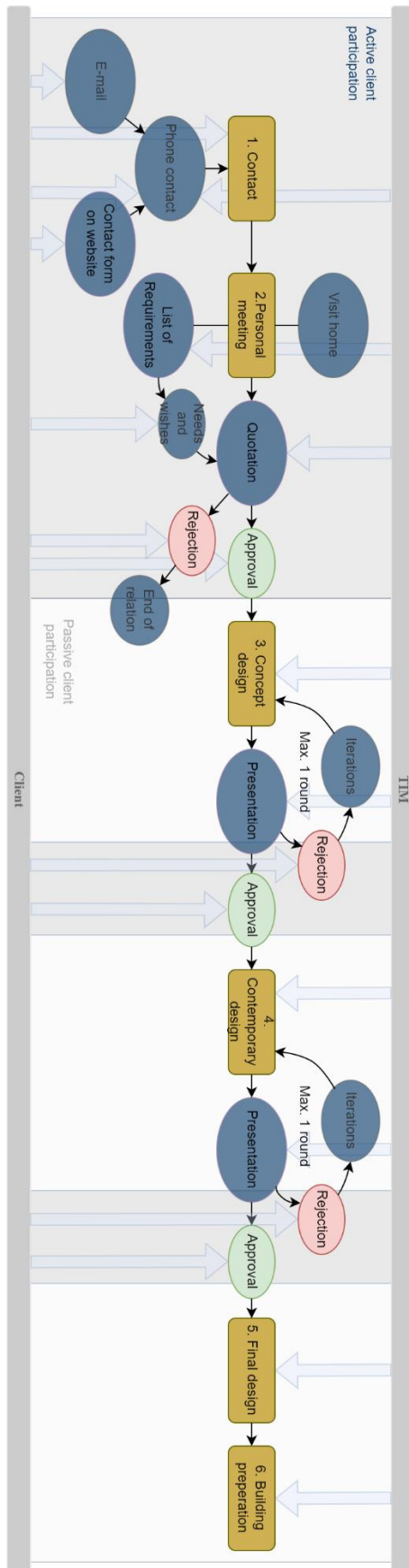
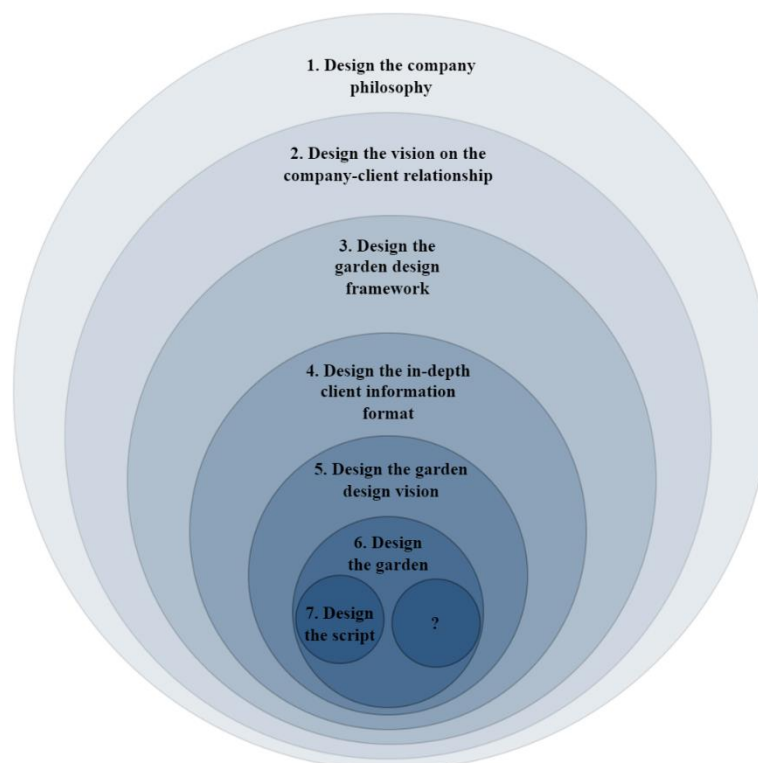


Figure 5 Current company-client relationship evolvement

## Chapter 3 Research through design

Now the most relevant contextual factors are clarified, the approach towards the framework development is discussed in this chapter. An overall strategy for the entire project is needed to develop a scientifically grounded and pragmatic framework for TIM. This structure is found in the process of research through design as being part of design research. In the entire project seven different levels of design could be distinguished as is visualised in figure 6. Research through design could be applied on every level of the process. Within this graduation project the focus lies mainly on the third and the fourth level of design, namely 'framework design' and 'client information format design' respectively. The other levels are mainly used as a starting point to build the new framework on. The new design framework should be in line with the first and second level of design, namely the company philosophy design and the company-client relationship vision design respectively. The content of these two levels is designed by the owner of the company himself. Nevertheless, these levels of design are within a reciprocal relationship with the graduation project. During the project it became clear that the assignment acts as a source of inspiration for the entire company philosophy. The fifth until the seventh level are used to gain new insights into how the second and third level should be executed. However, consequently, insights into what gardens are and how they should be designed in practice are also obtained. The strength of the entire graduation project lies in the congruence between the levels since the levels on their own are of little meaning. During garden design projects in practice, as part of the sixth level, insights are gained into whether the higher levels are still suitable or not. Also, the other way around works the moment the company philosophy is changed the final garden design would change as well.



*Figure 6 Levels of design in the entire project*

In research through design, it is not the goal to prove the truth of theories through design itself. Rather the design processes are used as a means to obtain insights. Gaver (2012 p.937) mentions that through reflection on design outcomes topical, procedural, pragmatic, and conceptual insights are obtained within the research through design process. The design outcomes function as an

embodiment of the vision of the designer on the approach towards the topic under design. The new design framework is created through this learning process in an iterative way in which the insights are implemented constantly. The project is aimed at finding 'how' the framework could be developed to gain insights into the process of framework development related to garden design.

Another important aspect of the research through design approach is that the designer learns new skills during the process as well. If clearly communicated this is personally valuable for the designer of TIM as well. All in all, the research through design project does deliver a validated design framework for TIM. But also, the project shows new insights into research through design itself. Namely, the idea of 'reverse research through design' is introduced. This approach is further introduced and discussed in chapter 5.

### 3.1 Three types of design research

In literature on design research generally three types are distinguished but are differently named by different authors. Frayling (1994) calls these 'research into design', 'research through design', and 'research for design'. The author mentions three different variants of research through design namely materials research, development work, and action research. The report writing as part of the master assignment could be called 'action research' about how the design framework for TIM is designed. This shows that the entire project is a 'research through design' project. In which the new design framework is the embodiment of the insights obtained during the process. Frankel and Racine (2010) show the similarities between clinical research and research for design, applied research and research through design, and basic research and research about design. The research about design is the same as the research into design of Frayling. Clinical research is defined as "Clinical research focuses on design problems that are specific and individual cases requiring information for that unique situation." (Frankel and Racine, 2010 p.3). Applied research is defined as: "Applied research focuses on investigating general classes of design problems or products." (Frankel and Racine, 2010 p.3). Basic research is defined as: "Basic research focuses on empirical examination of fundamental principles that lead to developing theories about design which have far-reaching implications for the discipline (Buchanan, 2001)." (Frankel and Racine, 2010 p.4).



## Chapter 4 Scope of gardens

After the background information regarding the entire project is explored, from this chapter onwards the content of the assignment is discussed regarding the framework development. This chapter shows how the answers towards the following sub research questions are obtained. Firstly, there is searched for an answer towards the question how gardens could be defined, see research question one, to get a general image of the topic of the project, this is done through scientific literature research and research into the website of TIM. Secondly, basic research is done into the relationship between the clients and the company. Therefore, there is searched for an answer to the second and fourth sub research question.

### 4.1 Gardens in scientific literature

In this section general information from literature on gardens is discussed. In the next section this literature is combined with literature on design in general and is used to analyse one of the garden designs of TIM. In general, gardens can be seen as being intriguing products of human intervention with nature. Gardens are basically everywhere in a lot of different variants and are therefore difficult to grasp and define scientifically. In the first place gardens can be part of public space or domestic. In this report only the domestic gardens are under research since TIM Exclusive Gardens BV focuses on luxury private gardens. Gardens can be seen as a piece of ground close to the private home which is part of the private property of humans.

In the field of environmental psychology, a lot of studies focus on gardens and the effect they have on humans. From an Actor-Network Theory perspective users and their gardens form a network that exists because of the relations within the garden-user system (Fariás, 2020). Since literature about gardens is extensive, the information is categorised in the following manner, namely, benefits for the wellbeing, nature, emotions, design, the self, and extended home. The categories are not mutually exclusive but are strongly interrelated and embodied in the user-garden system itself. Therefore, the categories are meant to cover and structure the enormous scope of factors rather than dividing them into strict elements. In the sections below all categories are shortly discussed. A schematic representation of the content of relevant literature can be found in appendix A.2.

Firstly, gardens are viewed as places that positively impact the user's mental and physical health. Because in the first place they provide the user with access to nature, and interaction with nature is found to be beneficial for human health since it helps with stress relief through passive contact and low level physical activities and relaxation (Cooper Marcus, 2000; Gross and Lane, 2007). In this way it can be used in the reduction and treatment of mental illnesses. After spending time in interaction with nature, positive changes in mood are found (Cooper Marcus, 2000; Freeman et al., 2012; Gross and Lane, 2007). Not only direct contact with nature but just spending time outdoors has already a positive impact on humans. Awareness about this positive impact even leads to the fact that some users even see "their own back garden as a healing or sanctuary space" (Cooper Marcus, 2000 p.61). Not only access to nature but also social contact in gardens positively influences human life (Cooper Marcus, 2000). Healing gardens should become part of healthcare because of all the health benefits during interactions between the user and the garden (Cooper Marcus, 2000). Freeman et al. (2012) focus on the health benefits through the act of gardening. Escapism is one of the key phenomena in user-garden interactions through gardening (Freeman et al., 2012). Through escapism stress relief occurs. Part of this escapism is the process of 'getting away' in a different environment which is in contrast with the environment from which the escape should be made. Especially health care gardens function as an escape from the hospital building and are found to be supportive for the wellbeing in this manner (Cooper Marcus, 2000). Not only the mental health but also the physical

health can benefit from interactions in gardens since these provide space for physical activities. These activities in their turn are found to be psychologically beneficial as well (Gross and Lane, 2007). Overall, the closer the garden is to being real nature the more restorative the garden is. However, this depends on whether the user prefers urban or non-urban settings. If a user prefers an urban setting more, the restorative effect of natural and architectural gardens is found to be equal (Twedt et al., 2016). The restorative effect is also dependent on the size of the garden, the larger the garden the more restorative it would be (Twedt et al., 2016).

Secondly, gardens are clearly and strongly connected with nature. Cooper Marcus mentions gardens as being 'nature-oriented' and 'semi-natural' spaces. Gardens are the way to encounter nature (Gross and Lane, 2007). Gardens are of great importance because "humans have an innate attraction towards nature", which is Wilsons biophilia hypothesis (Gross and Lane, 2007 p.226). Special attention goes to the positive effects of interactions with nature on the wellbeing of children (Freeman et al., 2012). According to Freeman et al. (2012) gardens and nature are strongly connected. They see gardens as being "efforts to display the control of nature". Gross and Lane also show the opposing perspective on gardening, namely, to adapt to rather than to control nature (Gross and Lane, 2007). Caring for plants is one of the close interactions with nature. Especially for elderly and children this has even a positive influence on their health (Freeman et al., 2012). Gardens are means of communication to the outside world about showing to which extend affinity with nature is important to the user (Freeman et al., 2012). Gross and Lane (2007) describe the relationship that is built through interactions with nature by means of gardening as a 'reciprocal' relationship. Freeman et al. (2012) call this relationship in particular for urban areas as "mutually reinforcing". They connect gardens strongly to the act of gardening. However, their theory seems to be more broadly applicable for gardens in general. So, also gardens that are owned by the user and maintained by professionals. For instance, the identity creation is also taking shape if the user outsources the design and realisation of the garden to professionals. In their research gardens and objects are mixed with the act of gardening and are described as being indistinguishable. However, the practise from the TIM gardens shows that these can be separated without losing the value of the garden.

Thirdly, emotions play a crucial role within the user-garden system during interactions with the gardens. Especially the act of gardening is seen as an emotive activity because gardens are personal. They also have therapeutic benefits on emotional states because they facilitate interactions with nature (Gross and Lane, 2007). The emotive response to gardens depends on the amount of sentimentality the user owns (Gross and Lane, 2007). Cooper Marcus (2000) mentions the concept of emotional congruence. The research shows a relation between the emotional state of the user and the emotions which are stored in the design itself. The user projects his emotions on elements in his environment. Meaning that the elements that embody the emotion the person is dealing with, are of most interest in such a situation (Cooper Marcus, 2000).

Fourthly, gardens are places that are designed by the user himself or a garden designer. Therefore, the design itself has a strong influence on how the user-garden system evolves. Gardens can be seen as 'paradoxical spaces' in which culture and nature come in close contact with each other (Freeman et al., 2012). This becomes concrete the moment art is installed in a garden for instance. But also, the design as such can be seen as a cultural expression in which nature is used as just an ingredient. A garden is part of a context and therefore designers react to this context through their design. Twedt et al. (2016) mention landforms, geology, climate, and ecosystems to be determinants during the design process. Designers should be aware of the 'micro-locational' elements of the context of gardens with a focus on the difference between the front and the back garden (Freeman et al.,

2012). Garden designers can contribute to the context by making the design in congruence with the environment. But designers can also make 'innovative signature design' to distinguish themselves (Cooper Marcus, 2000). Twedt et al. (2016) distinguish between "formal" and "informal" gardens. This is in line with the cultural and natural side of gardens. In formal gardens the focus is on the cultural through a focus on architectural elements. In the informal gardens the focus is on the merge with nature, often the difference between the designed garden and a natural ecosystem are reduced to a minimum. They even make the relationship between the emotional state of people and these types of gardens, namely fatigued people prefer informal gardens and people with high levels of arousal prefer formal gardens. Overall, a garden is an expression of creativity (Gross and Lane, 2007 p.227).

Fifthly, within the user-garden system the self of the user plays a key role. The relationships within this system are dynamic and evolve during interactions, especially if the owner designs and maintains his own garden and tries to control nature. Therefore, this relationship can be seen as a 'mutually challenging' relationship (Freeman et al., 2012). Just the ownership of a garden as such has already a positive effect on the wellbeing (Freeman et al., 2012; Gross and Lane, 2007). This ownership is strongly connected to identity creation which together occur through the act of gardening (Freeman et al., 2012; Gross and Lane, 2007). Part of the identity is showing through the garden what the personal vision is on nature. But also shows gender, culture, and social class (Freeman et al., 2012). In this way gardens also show personal taste and are even "a form of display" to the outer world e.g. for showing status (Gross and Lane, 2007 p.227). Through the act of gardening the user shows his affinity with nature. (Freeman et al., 2012). This is one of the most important personal values within a variety of personal values that are communicated through gardens and the act of gardening (Freeman et al., 2012; Gross and Lane, 2007). According to Gross and Lane (2007) gardens provide opportunities for self-reflection. Even more, gardens can be seen as an arena for the mediation of conflicts (Gross and Lane, 2007 p.227). A garden can also be seen as a living reminder of the past. These memories add to the meaningfulness of the garden. Special attention goes to these memories that are formed during the childhood within the garden. Empirical research shows that these memories are mostly experienced within social relationships rather than individual (Gross and Lane, 2007).

Sixthly, the user-garden system evolves within the home environment. Gardens are even viewed as "...an external feature of the home. It can be regarded as an element of personal territory." (Gross and Lane, 2007 p.227). Within gardens users feel control, experience privacy, opportunities to make choices and gather for social interactions (Cooper Marcus, 2000). These elements are in the first place mentioned as leading towards health benefits. But are also applicable to the home-feeling in the garden since these are also present in the home itself. Gardens are used to build and maintain social relationships within the family history and are therefore highly valuable for the homemaking (Gross and Lane, 2007). Also, the memories that are built within the garden as a part of the context in which people live, make them the extended home. Gross and Lane (2007) see private and personal memories but also meaning as a characteristic from the garden itself since if people enter the garden, they relocate from a place without these memories and meaning towards the place with the memories and meaning. During gardening the user creates a place to live within the available space of the garden (Freeman et al., 2012). People feel comfortable in gardens if they facilitate privacy, security, control, and freedom of choice (Cooper Marcus, 2000). These elements are found to be influential for the wellbeing of users in healthcare gardens in the first place. But can be seen as being applicable for all gardens in general. Gardens themselves add to the homemaking through facilitating social relationships (Cooper Marcus, 2000).

## 4.2 TIM garden design

### 4.2.1 Vision on garden design

For TIM gardens are places in which the users live, a seamless extension of the home. Therefore, the gardens are designed to reinforce rather than to compete the architecture of the house. Consequently, the architecture in combination with the possibilities of the building plot are used as a starting point for the design process in terms aesthetics. At first glance the focus lies on the visual experience of the user, namely through 'strong axes of sight'. These axes are extensions of the view from the house, and through playing with the perspective the view is directed, often towards an eye-catching element. The axes of sight also influence the perspective of the garden and are therefore often used to create the experience of spaciousness. Furthermore, the axes of sight are the connections between the different spaces within the gardens. Namely, gardens facilitate multiple activities such as wellness activities, lounging and dining. All these spaces should form a unity. The meaningfulness of the garden is often mainly created by interactions between the users through these facilities. This altogether should add to the personal enjoyment of life. In this way all the luxury which is embedded in the facilities and through the configuration of the facilities becomes meaningful for the users. And therefore, the designer experiences his work to be meaningful as well. This becomes clear in the slogan of the company 'When luxury becomes meaningful'.

### 4.2.2 Design process

The design process starts with the client himself, namely the client approaches TIM with the need for a garden design. These clients mostly have a large budget or sometimes even do not communicate a budget at all. This provides a lot of freedom for the designer. Furthermore, these clients have only a basic idea of what they prefer or not. In general, they prefer the TIM style and have an additional theme for the styling of the garden. The information of the client given in the inventory, information from a personal conversation with the client, measurements, observations at the building plot, information from architects of the house, altogether form the starting point for the design process. The inventory or list of requirements is a document with questions regarding the garden, which is sent to the user, then the user is asked to complete the list and sent it back, see figure 6 for the latest version of the list of requirements. The questions are mostly pragmatic from nature such as: 'For how many persons should the dining table provide a seat?', and 'How many cars must be parked on the building plot?' The designer starts designing in 2D on a printed map of the building plot, see figure 8 (for an enlarged version see section 8.4), and the house. The in-person conversation between the designer and the client is an extension of the list of requirements. The designer tries to gain a better understanding of the clients and their needs and wishes, furthermore, the designer explains the entire garden design process. The measurements and observations at the building plot are mostly done by the greenery expert of TIM. He measures through GPS the dimensions and height differences of the building plot and maps all the relevant contextual elements such as trees, the houses of the neighbours, existing garden fences etc. After all the needed information is gathered, the first step of the design process is to determine the axes of sight, as an extension of the view from the house. Also, the basic components which are wished by the clients are added in relation to these axes of sight and natural influences, with a focus on sunlight and shadow, the building plot, and the most pragmatic use. Also, the styling plays a role during this process. Next, the 3D concept is built using Vectorworks and Lumion. In the end the garden is judged based on whether all the elements form a unity. Mostly, in this phase of the process the greenery is added to 'soften' the architecture of the non-living material, and to create the desired atmosphere. During personal contact with the client the designs are presented, and their feedback is used as input for next iterations until the final design.



Figure 7 Quick overview of the list of requirements document

Since the master assignment is executed within the company and at the office of TIM, already from the start design decisions in design processes were shared. The designer explained around three times the entire 2D concept design process during action. Furthermore, during the entire master assignment often concept designs were shown by the designer to ask for an opinion regarding the design decisions. The moment the first 3D renders are finalized often all staff members stand behind the interior designer and give feedback regarding the aesthetics, feasibility in the building process, and pragmatic garden interactions. This altogether gave the insight that the garden design process is straightforward rather than iterative and mostly author driven. The information of the inventory is concrete and quickly implemented in the design. Decisions are made based on pragmatic insights from the designer and imagined causal relationships between components. The designer thinks

mostly in terms of facilities for specific garden interactions which are preferred by the clients. In general, the designer strives for an aesthetic match between the garden elements and between the garden and the context. This mostly aesthetics- and pragmatic-use-driven approach shows a need for more depth in the process in terms of information gathering and translation into materials to come to meaningful design. Since, in the current process users are mostly understood in terms of aesthetic preferences and pragmatic use.

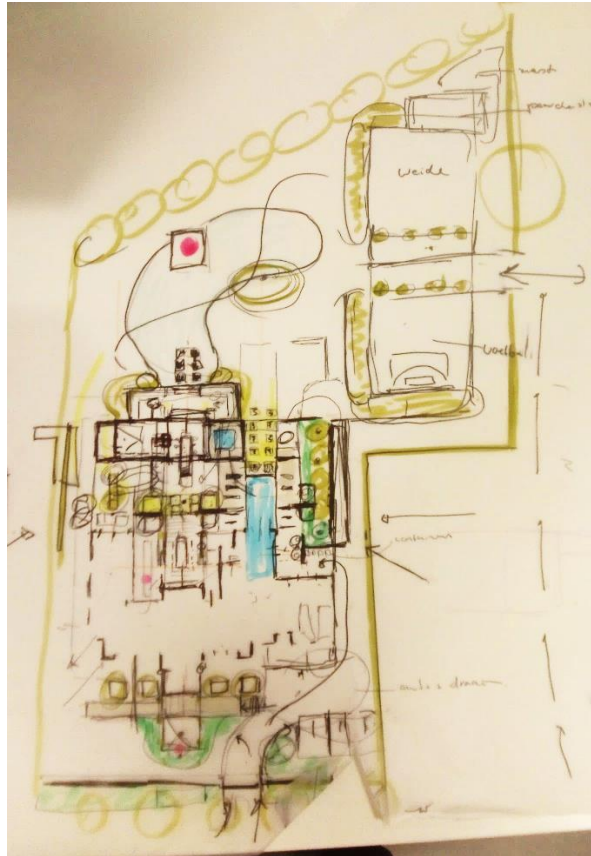


Figure 8 Example of 2D sketch tracing the map of a building plot of ca. 8000m<sup>2</sup>

#### 4.2.3 Information flow through relationships

For the design on the third level, an image of the information flow within the garden design process is needed. Related to the ANT, see section 5.2.5, several human and non-human actors are determined who play a central role in information creation and distribution. In figure 9 the blue elements represent the human actors and the green elements the non-human actors. Central in the information flow is the designer of TIM who mediates the entire process of information collection and new information creation.

Mainly in the early phases of the design process, the designer stays in direct contact with the client. Later, during cost calculations and the actual building process, there is also some direct contact between the client and the other staff members. In this project the focus is on the triangular reciprocal relationship between the designer, client, and garden. During the early phases there is an important information flow between the client and designer to get the project started.

As described above, the information flow within the company-client relationship starts from the initial contact, completion of the list of requirements, in-depth conversation, and design presentations. In this process the strength and depth of the relationship increases. The more personal the information and the more depth within the relationship, the better the quality of the

input for design and the higher the chances for meaningful design. In the end for both the designer and the client the garden functions as a means of communicating their personal visions. This information flow is reciprocal since for the designer the final design is an input for reflection and communicates the personal qualities with respect to garden design. For the client the main information flow from the garden is regarding interactions, the inscribed vision of TIM, and input for self-reflection. The aim of the design on the third level, the garden design, is to provide the designer with a tool to capture high quality information from the client and store it together with new information in the new garden design in such a way it is accessible by the client, see also section 5.2.5 about inscription and de-scription.

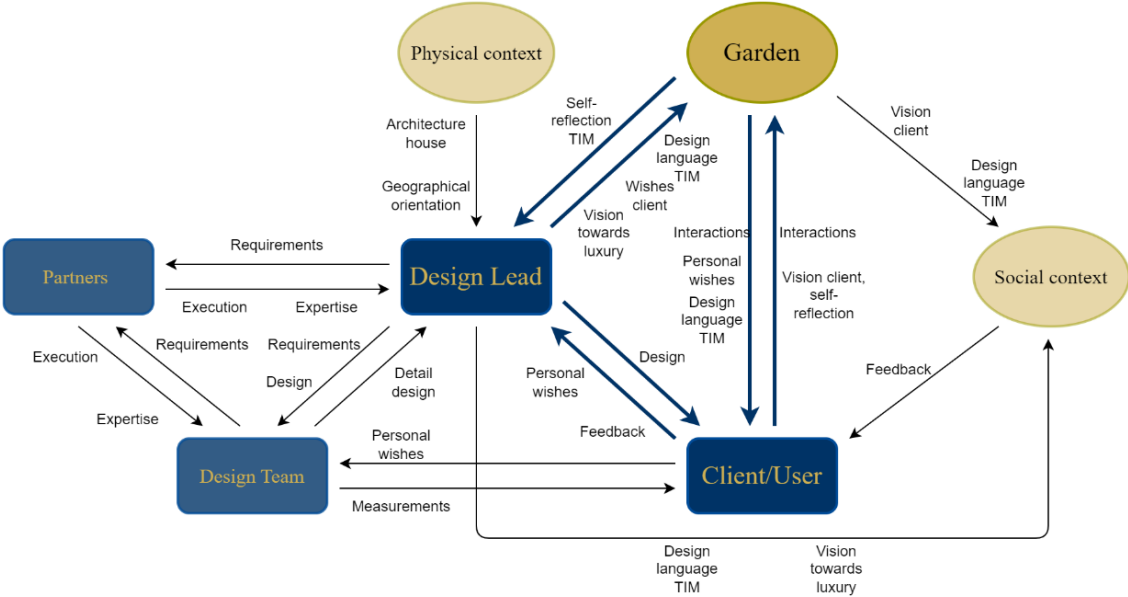


Figure 9 Current company-client relationship evolution

### 4.3 Conclusions

The research outcomes show that within the environmental psychology a lot of information could be obtained regarding the human-garden relationship. This information is summarized into the categories of benefits for the wellbeing, nature, emotions, design, the self, and extended home. These topics show that humans and their gardens are strongly related and therefore these should be considered as being in a relationship rather separately. In the next chapter this perspective is specifically applied in the reverse research through design process. The second part of chapter four shows that in the current TIM garden design process this relationship perspective is suitable as well to analyse the garden and the user. Since, in the design process the client, garden, and the designer form a triangular relationship.

## Chapter 5 Reverse research through design

This chapter shows the process of analysing a relatively small but complex ‘hotel chique’ garden from the website of TIM, see figure 10, through what I call the process of “Reverse research through design”. The aim was to obtain information which answers the question regarding how gardens could be defined, namely the first sub research question. In this chapter the focus is on applying the information from chapter four towards a case from the TIM portfolio to see how the theories are useful for design. Since the relationship perspective is taken, this also is used to get a better understanding of future users. Therefore, this chapter searches also for an answer to sub research question two and three, which asks for an understanding of the client and the influence of company-client relationships on garden design, respectively. More concrete, this chapter searches for the following. Firstly, since there seems to be no relevant scientific literature on residential garden design by architects. Therefore, the analysis is used to find links between existing literature on gardens, mostly regarding analyses from the social sciences, and design literature. Therefore, the analysis should help to scientifically substantiate future garden design decisions. Secondly, the analysis is used to get an idea of the scope of garden design. Especially regarding all the factors which should be considered during design. Thinking about all the possible scenarios of use of the garden under analysis provides insights into different types of use other than might be assumed at first glance. Thirdly, this ‘imagining of future use’ helps to gain an understanding of how the designer translates abstract ideas about use into materials.

### 5.1 Reverse research through design defined

This approach is inspired on reverse engineering in which existing products are analysed to find insights for design and redesign (see for instance Verim and Sen, 2023). As in reverse engineering the proportions of the current product, namely the garden, are measured through observing the design in general. During this process, starting points for the application of existing scientific literature regarding gardens and design in general, are searched for. The design is described in terms of this literature to substantiate the scope of TIM garden design. As in reverse engineering the goal is to get enough insights to be able to design a similar product, in this case for the trial design processes. Similarly, as in reverse engineering the design approach is not known yet, since the designer of TIM does not have awareness of scientific design approaches in general. The approach is based on experience in practice. Through the variety in types of literature, different perspectives are taken towards garden design and the most useful and relevant are selected. The reverse research through design goes beyond reverse engineering because it does not only aim at finding and describing the current embedded design approach, but also forms the starting point for the garden design framework design process. All in all, I want to define reverse research through design as follows:

*“Reverse research through design is a combination of research for and into design to find insights from practice with the aim to perform a research through design process”.*

The question could be asked whether the reverse research through design is not just another term for research into design, research about design or applied research. To some extent it is similar because the approach of a designer is analysed, also with theories from other disciplines for instance the Actor Network Theory. However, in this project the aim of the analysis is not to describe the acts of design as such, but rather to gain an understanding for the design of a new framework within the design discipline itself. Also, the garden analysis could be described in terms of research for design since it functions as background information for the trial design processes. However, the Reverse Research Through Design goes beyond an understanding of the design itself or just the approach, the



aim is to get an understanding of the designer in relation with his applied knowledge embodied in his design approach. The Reverse Research Through Design is in relationship with the Research Through Design Process in the following manner. First, the current insights of the designer are analysed by means of an analysis of design outcomes considering scientific literature and then the insights of this process are used as a starting point for the design of the framework.



Figure 10 Visuals of 'Hotel Chique garden' as garden under analysis

## 5.2 Application of reverse research through design

After the introduction of the new idea of reverse research through design, this section describes the process of the analysis itself. The garden under analysis is selected because it is one of the smaller gardens TIM designed. Therefore, the visuals of this garden allow for a quick overview of the entire garden and therefore clearly show the interrelations between all the garden elements. In larger gardens it is more difficult to have a complete overview solely based on the visuals. Also, this garden includes most of the garden elements which are also integrated in the other TIM designs, therefore it is representative for TIM gardens in general. This implies that the findings of the analysis would be applicable for roughly all the gardens of TIM. Furthermore, the small scale of the garden assumed that the level of complexity of the garden is suitable for the analysis but not too high, so it does not add unnecessary complexity to the analysis.

### 5.2.1 Matches with garden theory

The first part of the reverse research through design is to analysis the garden in terms of the scientific literature on gardens in general. If it is possible to describe elements of the garden in terms of definitions from scientific literature, it is possible to get a proper understanding of what the TIM garden means.

Firstly, Gross and Lane (2007) show that natural environments help users to take rest from their mental activities because nature allows for activities that do not need direct attention but rather indirect. In this way nature is restorative for the users. In gardens there is to some extent nature present and therefore gardens will have this effect as well. The psychological positive effects of gardens are discussed in many places in literature from the environmental psychology. Furthermore, Marcus (2000) argues that the low level physical activities that can be executed in gardens increase mental wellbeing as well. In the garden under analysis this is strongly present in all the different activities that are facilitated by the design. The gardens of TIM are not specifically aimed at stimulating mental wellbeing however they are aimed at facilitating and reinforcing personal enjoyment of life. Therefore, they indirectly facilitate benefits for mental wellbeing. In the TIM garden the positive effects for the mental wellbeing would mostly lie in the activities in the garden. Because in the garden under investigation there is not a lot of space for access to nature since the largest part of the garden is built environment to facilitate specific activities. The complexity of the garden might be in conflict with the low level of physical activity that improves mental wellbeing. Therefore, the garden might to only a minor extent stimulate the mental wellbeing positively. Twedt et al. (2016) argue that in the first place nature is good for wellbeing, but also the built environment can stimulate the wellbeing. However, the restorative effect of gardens seems, according to them, to become less the moment the gardens contain more built aspects. This shows that although the TIM gardens are largely built space, they can still be good for the wellbeing but probably less for restorative purposes what architecture is concerned. Furthermore, in literature the gardens are strongly connected with the process of building own gardens and maintaining them through gardening. The act of gardening itself is seen as beneficial for the mental wellbeing. In the gardens of TIM often professional gardeners do the gardening and therefore this aspect is less relevant. However, the small scale of the garden under analysis might still involve some gardening by the user. Next, Marcus (2000), Freeman et al. (2012) and Gross and Lane (2007), all show that gardens facilitate escapism from the daily routines. The users lose themselves within the garden to reinforce themselves. Namely, gardens have a calming effect and nature is perceived through a combination of all the senses. In the garden under analysis there is not only escapism into nature possible but also by the other facilitated activities namely escapism in the cooking, sun tanning, being in the Jacuzzi, dining, playing, socializing, and lounging. Even the architecture itself might to some extent facilitate escapism. Also, the physical benefits of gardens are facilitated by the room for physical movement

that can be done in the gardens (Marcus, 2000). In the garden under analysis the pavement allows for walking through the garden, and in combination with the lawn for the playing of the children. Because of the limited space there is not a lot of room for physical activity, only for the children it might be to some extent beneficial. The wellness area also aims at physical wellbeing, especially the Jacuzzi facilitates this. Finally, the garden as an outside space for having access to nature is specifically beneficial for children (Freeman et al., 2012; Gross and Lane, 2007). They can have some physical activity but also the exposure to nature leads to benefits for wellbeing. The interactions with the garden also lead to psychological benefits. In the garden under analysis there is room for children to play outside, however there is not a lot of room to be exposed to nature integrated in the design.

Secondly, in the literature analysed, there is no clear definition mentioned about what nature is. However, based on the general use of the word nature in the readings and the analysis of the garden, the following definition of nature could be found, namely: 'Everything living outside, except of humans, in combination with the weather.' In the garden under analysis this becomes apparent through the influence the weather has on the configuration of space, some spaces are or can be protected from the weather influences and others cannot. Furthermore, from the topside the weather and other living beings can freely enter the garden. In the garden all the greenery which is deliberately implemented in the garden is also part of nature. In terms of the relationship between the user and nature, the garden could be considered as being a means of controlling and shaping nature (Freeman et al., 2012), rather than adapting to nature (Gross and Lane, 2007). However, to some extent the user still adapts to nature since the plants are dependent on certain weather influences and therefore, they located in certain fixed locations. Overall, the garden clearly shows that the designer and the client value the built elements and the activities they facilitate higher than nature within the garden. The natural elements mainly function to soften the styling of the garden. Cooper Marcus (2000) find in a study of gardens that there are positive health related effects of between spending time indoors and outdoors. The clear change of atmosphere between inside and outside positively affects the wellbeing of the patients. In the garden under analysis this effect would be less clear since it functions as a continuation of the house. However, except of the residence all facilities in the garden are still outside, so the difference between inside and the being outside in the open air is still present. Another part of nature is the wildlife, Freeman et al. (2012) show the importance of wildlife in domestic gardens. Users facilitate wildlife by the way in which they shape their gardens and by attracting wildlife actively. Next to that, gardens play an important role for wildlife in urban areas. This paper even states that gardens and wildlife are mutually reinforcing each other. In the garden under analysis there are no deliberate facilities to support wildlife. Even more, because of the high amount of pavement and the closed garden fence, wildlife is basically eliminated from the garden. However, the large multiples stemmed meshes provide a place and protection for birds for instance. Because of this, the users have only accidental unintended interactions with wildlife. Next, being outside in a garden stimulates the senses sight, smell, touch, and hearing and has a calming effect. Especially the experience of the mixing of the senses makes the user engage with nature and has positive effects on the health (Cooper Marcus, 2000). In the current garden is mostly designed for the sense of sight, namely the architectural perspective aims at a pleasing visual image of the garden. But, because of nature there might still be natural sounds because of the wind, animals, and water. Finally, there is a lot of literature that focuses on gardening and how it affects people's health. Gardening is seen as an emotive activity (Brook, 2003). Furthermore, during gardening people have a dynamic relationship with nature since through gardening people try to control, commodify, and shape nature (Freeman et al., 2012 p. 136). Through the act of gardening people access nature, which has health benefits as well (Gross and Lane, 2007). The TIM gardens differ what gardening is concerned from the gardens described in gardening literature. Namely, most

of the time the maintenance is done by the professional gardener based on contracts because some of the plants are expensive and need professional care. Furthermore, in gardening the focus is often on gardening as a hobby, so users built their own gardens based on their own vision and preferences. In the garden under investigation these aspects of gardening are less applicable. Although it is not known whether the users of this garden will do the maintenance themselves, this would not be affecting their wellbeing that much because of the small amount of greenery in the garden. There is simply not a lot of space to apply caring for plants and benefit of the positive health effects from it (Freeman et al., 2012). Furthermore, there is no freedom to adapt the garden anymore since the entire space is fully defined by the designer. However, through participation in the design process, the users can still influence the design and create their own garden.

Thirdly, Marcus (2000) shows the concept of emotional congruence in his literature review. This is difficult to grasp in the current design since the end user is not known, since the garden design is made already several months ago. Considering the style of the garden there seems to be not a lot of emotions happening since the design can be perceived as being neutral, it seems there are not clear environmental stimuli that evoke specific emotions. However, this is totally dependent on the perception of the user. Freeman et al. (2012), show the emotions involved in the activity of gardening specifically. Especially, if the garden is made and maintained by the user himself there emerge strong emotional relationships. Gross and Lace (2007) see gardens as an emotive expression of the user and the relation towards the garden can be sentimental. In the TIM gardens in general this is less the case since users do not design and create the gardens themselves, therefore the emotional relationships might be less strong. However, in the design process the users are to some extent involved in decision making and therefore there might still be emotional bonds with the garden.

Fourthly, Gross and Lane (2007) show the perspective on gardens as being an external feature of the home and as a part of the home environment. This is in line with the perspective TIM takes. Often gardens are in the same style as the architecture and the interior of the houses. In the garden under analysis the garden seems to be in contrast with the style of the house because of the neutrality of the style of the house and the complexity of the garden design. In terms of activities, however, the garden is a clear extension of the home. Sitting, socializing, and cooking is done inside and outside the home. Next, Gross and Lane (2007) and Freeman et al. (2012) show the relevance of gardens in facilitating social relationships. Where public gardens are seen as places of social support, namely locations where people can meet, are private gardens places where people meet with friends and relatives. In the garden under analysis, there is a lot of room for meeting up with families because of the three main sitting places; dining, bar table and lounge place. These facilitate different types of social relations. Gardens that have therapeutic benefits should contain according to Marcus (2000, p.64) "Opportunities to make choices, seek privacy and experience a sense of control". These elements are clearly facilitated by the garden under analysis. The large number of different places give the users the freedom to choose their own desired place to experience the garden interactions. Also, these different places provide different levels of privacy. Because of the garden fence (in this case the walls) the entire garden provides privacy within the context of the neighbourhood. The lounge space provides the most privacy because it is indoors and covered by walls. The bar table also provides privacy, but the transparent glass doors facilitate more openness. The dining table, the sun tanning chairs, the quick sitting and the outside cooking space are mostly in the open air and therefore facilitate less privacy. The Jacuzzi also provides some privacy by the half open wall and the large multiple stemmed mesh. Furthermore, there is not a lot of freedom of choice in the walking

routes, because all places are alongside the main route towards the wellness place. However, the users can make the decision to walk across the grass instead of over the pavement.

Fifthly, Freeman et al. (2012) mention a lot of different aspects that are relevant to gardens that are connected to what I call 'the self'. Gardens are related to status, personal taste, creativity, identity, ownership, social class. Gross and Lane (2007) also show the compatibility and self-reflection as part of garden dynamics. Furthermore, they see gardens as a means of maintaining memories. This is quite difficult to find in the garden design, these aspects are less useful to apply in an analysis. However, for design these are relevant to consider. It can be generally stated that the TIM gardens are connected to social status, since the luxury gardens show that the user can have a high income and have a high budget to spend. Furthermore, in the act of creating a garden feelings and personal values of gardens are communicated by the user towards the outer world, in this way gardens have the function of a display (Gross and Lane, 2007). Even more, gardens reflect meaning (Freeman et al., 2012). It is difficult to know the meaning in the garden under analysis since the wishes of the users are not specifically known anymore. However, if gardens are seen as a means of communication, in the current garden it is communicated that dining and cooking are important for the users, also the wellness of the body is important. Finally, there is a lot of places for socializing therefore it becomes clear that the users find social contact important. Furthermore, the garden communicates luxury and outside living which are central in all the designs of TIM.

Sixthly, Twedt et al. (2016) define a spectrum amongst gardens namely between formal and informal or geometric and naturalistic respectively. Designers can determine the location on this spectrum because gardens are built spaces. Freeman et al. (2012) have a vision that adds to this, since they see gardens as 'paradoxical spaces' because in gardens culture and nature meet. Marcus (2000) talks about gardens as being artistic expression and often signature design from the designer's perspective. In the garden under analysis the signature of TIM is visible in the luxury style and the focus on outside living. Furthermore, in literature about gardens in general meaning is a key component (Gross and Lane, 2007); Freeman et al., 2012). This meaning is both for the designer and the user present in the gardens of TIM. For the designer the design language is important and for the user the meaning in life is important. From the garden under analysis, it could be assumed that outside cooking is the most meaningful activity since the outside kitchen is located in a central position within the garden. Furthermore, in the entire garden the facilities for social relationships show that family life is important to the user next to personal wellbeing by means of wellness activities.

In conclusion, from the analysis it becomes clear that most of the aspects found in the TIM garden could be described in terms of garden literature. In literature also the congruence between a garden and the user's personality and identity is discussed thoroughly since in the act of creating and maintaining a garden this is communicated by the user. This is also less, but not entirely, excluded from the garden under analysis. This is only present through the voice the users have in the garden design process. The role of nature is something that is less present. In literature it is not totally clear to what extent the gardens contain nature or are part of nature since the exact garden designs are not visualised or thoroughly described. However, it seems that the authors see gardens to be closely related to nature without a lot of built objects. In the TIM garden there is a less strong focus on nature, but more on activities which are related to the home environment. With regards to health benefits, the garden under analysis can to a large extent be described as having potential for health benefits.

### 5.2.2 Activities

As became clear from the description of the garden in terms of garden literature, the garden design is mostly focused on facilities for activities. The garden includes facilities for roughly six different activities, see figure 11: sitting, cooking, playing, showering, sun tanning and relaxing in a Jacuzzi. The activity of sitting could be divided into six different types of categories. Firstly, sitting for lounging in the protected space, this room can be used during all types of weathers because it is protected from the outside by the fixed walls and the roof. The lounge couches are aimed at sitting comfortably in a relaxed and lazy position. Secondly, sitting at the bar table in the shelter. This type of sitting can be seen as more active because the bar seats ask for an active way of sitting because of the relatively low level of comfort. The bar table is protected from the weather by the roof and the walls of the shelter. At this location there is a more dynamic way of protection because of the glass sliding doors.

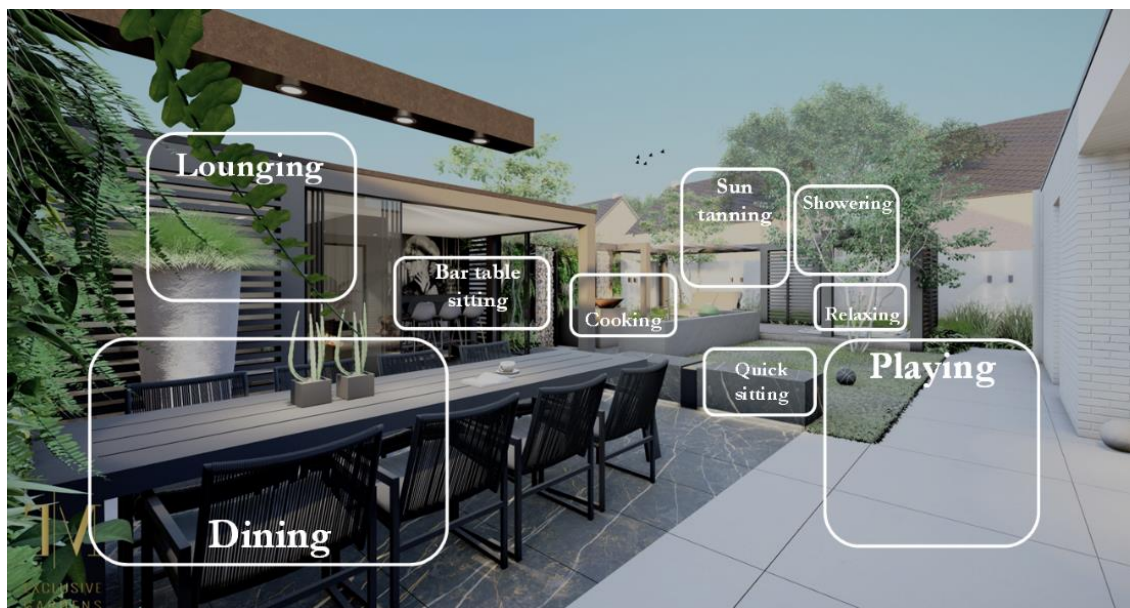


Figure 11 Overview of places for activities

Thirdly, sitting at the dining table. This table is aimed at sitting with groups and dine together. The space for the table is totally outside and does not provide any protection except of the garden fence. Fourthly, in the centre of the garden there are the stone blocks that aim at contemporary sitting because of the lack of back support, in terms of ergonomics. Because of the robustness of the stone the blocks allow for other activities as well, e.g., people can safely stand on them. The blocks are part of the space for playing. They provide space for a few people that can sit next to each other, rather than in a group facing each other as in the previous discussed types of sitting. Fifthly, sitting for sun tanning at the sunbeds. These are in a space that can be protected from the sun by a horizontal sunshade covering the entire space. There is space for two sunbeds, this means a maximum of two persons can enjoy the sun here. Sixthly, sitting in the Jacuzzi. In this space again there is sun protection by a sunshade. Furthermore, there is a half open wall that protects the space as the garden fence does. Secondly, there is a fixed space in the garden that affords the activity of cooking. There is a countertop with integrated sink and fire bowl BBQ to cook meat. Next to that, there is a fireplace with integrated grill. The cooking space is only protected by the garden fence, this means cooking can only be done during 'nice' weather. There is a wood storage place for both pragmatic reasons and aesthetical value. Thirdly, the lawn in combination with the pavement and the quick seating can be used for playing. This open space can facilitate a lot of different plays because there is no clear affordance for a specific type of play. The space is not protected from any types of weather. The boundaries are shown by the square type of set-up with on one side the countertop of the

cooking space. Fourthly, the shower is located in between the Jacuzzi and the sunbeds. The space is protected by the sunshade and a back half open wall. The showing can be done in combination of the sun tanning and relaxing in the Jacuzzi. Fourthly, the lounge is positioned around the fireplace and the TV. In this way the users can, whilst comfortably sitting, watch TV together.

### 5.2.3 Affordances

To facilitate the activities the designer unconsciously designed what could be defined as being facilities for affordances into the garden. These are the 'actionable properties' of the relationship between the user and the technology (Norman, 2004). For this analysis the focus should be on the perceived affordances since this is essential for designers. According to Kannengieser (2012), affordances are the 'action possibilities' of the user, that emerge from the interactions within this case the garden. Therefore, he names in particular the 'perceived affordances' with the activity followed by the '-ability' it affords. To analyse the different artifacts further the author distinguishes between the structure, the behaviour, and the function of the artifact. Furthermore, the affordances themselves can be divided into three groups, namely reflexive, reactive, and reflective affordances.

The affordance types are not mutually exclusive but are part of each other or evolve into each other. These affordances are dynamic and evolve during interaction with the technology. For the analysis the theory of affordances is used to search for the possible affordances in the garden under analysis, to find the materialisation of the affordances and to learn how affordances can be deliberately designed into gardens. However, as the theory says affordances go beyond the intend of the designer and therefore can only be facilitated. In the analysis the affordances can only be searched for through an explorative approach in which use scenarios are imagined. The analysis starts from the artifact's perspective and goes towards the affordances without knowledge about the future user.

The garden under analysis can be divided considering affordances into the pavement, lighting, outside kitchen, playing area, socializing place, wellness place. All can be seen from a multiple affordance perspective for instance the outside kitchen, see figure 12, can afford cookability, performability, deliverability, enjoyability, emergeability, distinguishability and probably even more. For the entire analysis see appendix A.3. When applying the theory of Kannengieser (2012) the outside kitchen can be seen as a countertop with all its facilities and the walls and paving (structure). The kitchen as such does not have any other behaviour than just being a fixed place centrally in the garden (behaviour). It facilitates next to outside cooking also walking from outside residence to the wellness area (Function). This altogether shows the perspective from the artifact. In terms of human interactions with and responses to this element the cookability, distinguishability, enjoyability and emergeability can be seen as reflexive affordances. The interactions (the former two) are obvious and straightforward because the meanings of the components are commonly known. The responses (the latter two) are also reflexive because if the cooking succeeds the user will automatically experience these responses if he likes cooking. Performability and deliverability can be described in terms of reactive affordances since the user has to consciously decide whether he will act accordingly with respect to other users of the garden. The cookability and deliverability can also be analysed in terms of reflective affordances since both are dependent on factors outside control of the user. The former is largely dependent on factors from the context for instance weather influences, the latter has to do with the judgement of the relatives concerning the performance of the cook.



*Figure 12 Visual impression of the outside kitchen within the Hotel Chique garden*

The complexity of this quick analysis of just one of the elements in the garden is illustrative for how complicated garden design is in terms of affordances. In terms of design a quick affordance analysis can give relevant insights into what interactions might be evoked by the design. It should be noted that the large number of affordances in the analysis is mainly caused because there is no concrete information documented about the user for which the garden is designed, if this was the case the analysis could have been more restricted to what kind of interactions were valuable to the user and therefore which type of affordances. During the analysis two types of elements became clear namely buy-parts that are put into particular relationships within the garden and designed parts which mostly are used to structure the garden. In terms of affordances the buy-parts (such as furniture) are mostly commonly known and could therefore quickly result in reflexive affordances whilst designed parts are customised and context dependent and could potentially have more chance to lead to reactive and reflective affordances. However, to underpin this claim also the frequency of use should be taken into account since the user will learn how to interact with the garden and probably find new ways to interact. All in all, the affordances theory can be easily found to be embodied in the garden design, however, to properly distinguish and validate the different types of affordances, knowledge from the user is needed. It shows the limited predictability of affordances during design, especially if unintended use is considered as well. The main insight from the analysis is the broadness of garden design and the large number of possibilities for action which are possible within gardens. Therefore, in-depth insights into the user are needed early in the design process, to find out how users would interact with garden elements.

During attendance of two of the in-person conversations between the designer and new clients, it became quickly clear that clients and the designer think often in terms of standard garden elements such as a swimming pool, Jacuzzi, and a dining table. However, this information reduces garden design just to varying garden element arrangements, and therefore limits the creativity and design



freedom. Therefore, the perception of affordances of clients can be used as a starting point for finding more abstract levels of interactions in gardens. The designer obtains concrete information during the conversation and tries to abstract it in order to find new options for design. This way of abstraction can be found in the research of Eggink (2012). So, for the swimming pool it is relevant for the designer to find out together with the client which ‘-abilities’ are preferred and wished. For instance, the swimability, refreshability, enjoyability and showoffability which are facilitated by the swimming pool. In this way the designer can direct the swimming pool design process towards the most important affordance and might find innovative ways of delivering this affordance with redefining the concept of ‘swimming pool’. Also brainstorming about the ‘-abilities’ has potential in finding unintended use possibilities that should be actively avoided or opposed through design.

#### 5.2.4 Places and spaces

The garden design quickly shows that the designer thinks in terms of activities and the space which are needed for the specific activities. In research about home environments, it became clear that humans tend to divide their environment in which they live into spaces. A space is measurable and therefore objective. Place however is more subjective since it is largely connected to the user’s self and his perception. A place could be seen as the “social organisation of space” (Baillie and Benyon, 2008 p.230). There are lots of different types of spaces distinguished in literature, however for this analysis the focus is mostly on the “pragmatic” and the “perceptual” space (Seamon and Sowers, 2008). In contrast to spaces, places can be described in the following way: “(1) the place’s physical setting; (2) its activities, situations, and events; and (3) the individual and group meanings created through people’s experiences and intentions in regard to that place.” (Seamon and Sowers, 2008 p.4).

The different places in the garden each aim at one main activity and are divided by physical and visual boundaries into spaces. The garden could be divided into four main places. Firstly, the cooking place, this place consists of the dining table, the bar table, and the outside kitchen. Secondly, the socializing place consisting of the bar table, the lounge space, and the dining table. For more in depth conversations the sun beds could be used as well. Thirdly, the space for wellness which is a combination of the sun tanning place, the showering place, and the Jacuzzi. Fourthly, there is the place for playing. The open place in the centre of the garden consists of the quick sitting, the pavement, and the lawn.

In conclusion, during product use the designed spaces become places by the user and his interactions. The grouping of furniture and the boundaries of the spaces make them focus on the interactions facilitated by the places. The garden designer should consider that the spaces become places during the design process already, therefore a clear understanding of the clients, who later become the users, is needed to understand how for them a space becomes a place.

#### 5.2.5 Actor Network Theory

Until now, the garden is analysed for different aspect. Through the application of Actor Network Theory all the different aspects are actors which are bound together by ‘hybrid and shifting’ relations. This allows for a holistic view on the scope of the entire garden. Within such a network there is symmetry between the humans and non-humans. Both need to be defined to create proper designs. These relations are dynamic, and roles of subject and objects are reciprocal (Akrich, 1992). Actors become what they are through the relationship with other actors (Storni, 2015). ANT is applicable to garden design in general since it is useful for ‘thing making’ disciplines and is suitable not only for analysis but also in design (Farías, 2020). In figure 13 the application of ANT to the garden under analysis is visible, for a full scale version see appendix A.4. The scheme shows only the direct relations to reduce complexity. This means for instance the perception of the human actors is

not considered. The quantification only shows the number of relations, it does not always show the importance of the actor since the relevance of the relationships varies. There are a few observations and conclusions to be made based on the framework. Firstly, it becomes immediately clear that the client, the garden, and TIM fulfil the most relationships within the entire human-product space. This is the case because the client and TIM built a relationship because of the garden. The client is also the user and therefore has relations with every component. For TIM this relation is only there during the design process, however in the diagram they seem to be both equal relevant. Secondly, at first glance the relatives of the client do not seem to be that influential in the design process, however as the network shows they are related to almost every actor. Thirdly, the same is true for the partners who must build the garden. Fourthly, almost the entire network is dependent on the weather, therefore there are a lot of relations with this actor. Fifthly, as becomes clear from the visuals of the garden, the pavement fills a lot of space and plays a significant role in the interactions with the garden. The pavement mostly fulfils spatial relations with the other actors and therefore is related to almost all actors. The relation to the architect is also quite important since the pavement and the structure of the building need to cooperate well and therefore the architect will determine mostly the location of the pavement. Sixthly, the architect is really important during the design process of the garden, although there are not a lot of relations. But this is the case since the architect determines the proportions and styling of the house.

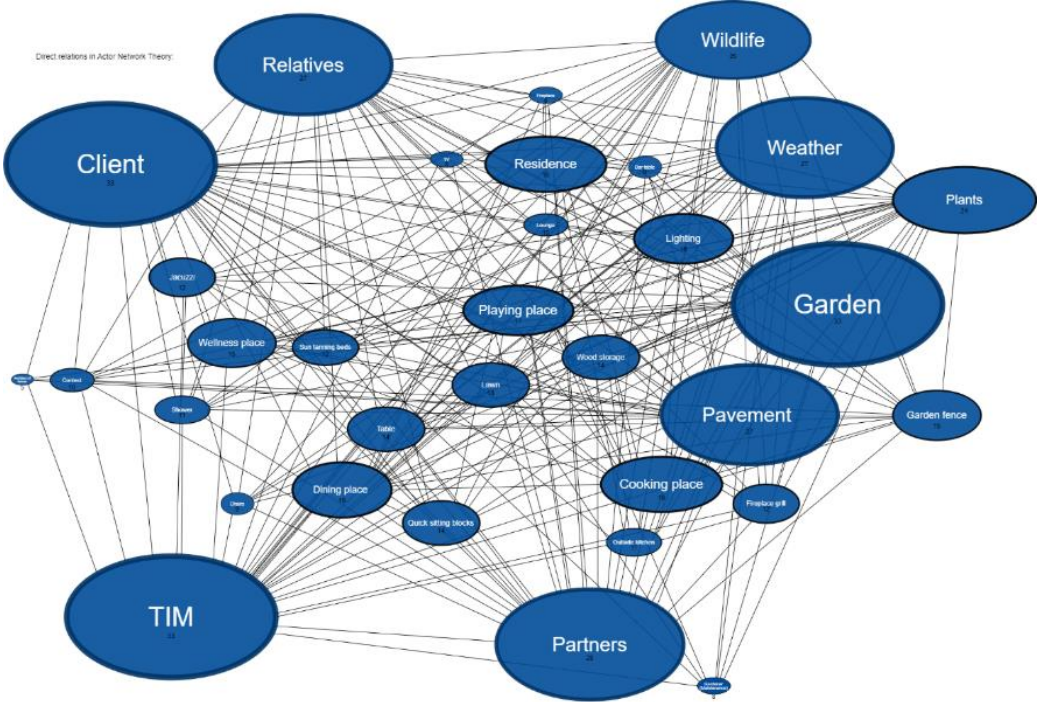


Figure 13 ANT scheme of relations within the garden under analysis

Seventhly, the plants in the garden fulfil only a minor part in the garden with respect to the built components. However, if the relations are visualized it becomes clear that the plants are related to almost all actors in the network. This is because the plants are scattered throughout the entire garden and therefore are spatially related to almost all components. Eightly, the high number of actors shows the complexity of the garden-user network and all the stakeholders involved, this means that it is difficult to take everything into account during the design process. However, as becomes clear from the analysis of the garden, in which ANT is not applied during the design process, all the actors are instinctively considered by the garden designer based on experience. Therefore, it might not be useful to build an actor network for every garden.

Part of ANT is inscription in design. During the garden analysis this theory is applied to see in which way the designer approaches the order of garden interactions. Akrich (1992 p.208), defines inscription as follows: "Thus, like a film script, technical objects define a framework of action together with the actors and the space in which they are supposed to act." Jelsma and Knot (2002) add to this that actions are either forced or constraint by "a non-human material environment". However, as Latour (1992) argues the designer could guide the user but cannot prevent for different de-scriptions by the user. Interestingly, the act of analysing the garden in terms of scripts is de-scription as well. The analysis resulted in four inscriptions, namely the inscription for sitting activities, wellness activities, cooking, and walking. The combination of facilities for activities and the relations within the context mainly shape the script. During the current design process these scripts are mainly based on assumptions of the designer through pragmatic insights and causal relations between garden elements.

#### 5.2.6 Gestalt laws

A major part in garden experiences is based on the visual perception of the users. Therefore, as part of the analysis the garden has been described in terms of possible visual perceptions. Within this visual perception the Gestalt Principles play a significant role. According to Hekkert (2006), describe these rules as being part of the 'aesthetic pleasure'. The rules are generally applicable and have to do with the tendency for ordering of the visual system (Nefs, 2008). The most important principles according to this author are: good continuation, proximity, equality, closure and symmetry. Chang and Nesbitt (2006) mention the following Gestalt principles as being of importance: Similarity (Nefs calls this "Equality"), Proximity, Continuation (Nefs calls this "Good continuation"), Closure, Balance (Nefs calls this "Symmetry") and Figure-Ground. Cziulika and Santos (2011) mention also the Gestalt principle of Pregnancy in addition to the before mentioned principles. "...this law establishes that gestaltic organization produces perception of the simplest and immediate figures, in which the perceptual data can be configured." (Cziulika and Santos, 2011 p.92).

The Gestalt Principles are used to define the garden under analysis and to find out which roles the different design cues play. For instance, the good continuation is visible in the pathway towards the sun tanning space. And the closure is visible the moment the outer contour of the outside kitchen is extended. Although there are height differences the path remains clear whilst the same texture and colour of the mating tiles are used, see figure 14.

#### *Axes of sight*

TIM calls what the Gestalt calls 'good continuation', axes of sight. In the garden under analysis there is one large axis of sight between the lounge space entirely through the width of the garden, through the outside kitchen towards the sunbeds, and the other way around. There is another axis of sight in the longitudinal direction of the dining table towards the multi-stemmed shrub and the Jacuzzi. The sight goes across the quick sitting place. There is an axis of sight seen from the house, following the longitudinal axis of the quick sitting space towards the bar table and the art in the shelter. Finally, seen from the house the attention is grabbed by the central situated fireplace in the middle of the back of the garden surrounded by the wood storage and the outside kitchen. It should be noted that the later axis of sight together with the axis of sight between the lounge and the bar table towards the sunbeds, both put the emphasis on the outside kitchen. Therefore, this might be considered the most prominent place in the garden.

#### *Architecture of the house*

In the design of TIM gardens, the architecture of the house should be reinforced by the garden, in this way the garden is not competing. In this garden this becomes clear using the light colours as in

the house, in combination with dark beams, which are similar as the dark window frames of the house. In terms of Gestalt principles this could be described as a mixture of good continuation and figure ground, in which the lines from of the architecture of the house are extended into the garden and the garden functions as the ground for the figure, namely the house.

In conclusion, the visual Gestalt of humans tries to order the world according to the principles discussed above, this means that designers should be aware of this ordering to understand the preferences of the end-users of the gardens. It should be noted that the brains of the designers themselves also apply the Gestalt principles automatically, therefore if a designer makes beautiful designs, unconsciously the Gestalt principles are already applied. This becomes clear from the analysis, since in the gardens of TIM the principles are not deliberately applied, however the analysis shows the principles are to a large extent present in the analysed garden design.



Figure 14 Gestalt principles in garden under analysis

### 5.2.7 Embodied vision of TIM

Whilst analysing the gardens designed by TIM, the gardens are abstracted to a garden-client system. In this way not only the product itself but also the end-users are considered, together with all the interrelations between these. Analysing the brand TIM and the designs that are described on the website, the following aspects are determined to be related to the garden-client system: Experience, Activities, Relations, and Design. See appendix A.5 for the full overview of keywords related to the TIM styling. In this analysis the embodiment of these factors is searched for, to find the interpretation of the terms by the designer. Firstly, the different places in the garden allow for different experiences. As is general in the TIM gardens there is the experience of the outside home, this becomes clear by the set up of the outside furniture which allow the users to choose their beloved place to sit, this contributes to personal enjoyment of life for all family members. Furthermore, there are options to sit outside and inside, to sit protected or totally unprotected, through the presence or absence of walls and roofs. Especially the lounge resembles the home atmosphere. Because of the different types of protection in combination with the lighting, there are possibilities to enjoy the garden during the entire day and during all types of weather. The high quality, which is one of the main characteristics of TIM gardens, becomes clear from the use of durable materials for the paving, the furniture, and the built structures. Overall, the atmosphere can be seen as luxurious. Especially in the dark the lighting contributes to the cosy atmosphere because it provides warm colours. Secondly, the vision regarding the styling of the garden by the client is based Hotel Chique. Furthermore, one main requirement of the users is a prominent outside kitchen. The remainder is dependent on the interpretation of the designer and his styling. This includes the vision of living together, building relationships, and having freedom to choose from the different places intended or not by the designer. Since the garden can be used during all types of weather, it would become prominent in the life of the users. Thirdly, there is luxury implemented using luxurious materials such as the marble paving and quick seating, the presence of the large variance of high quality outside furniture, the presence of the Jacuzzi and the large and expensive multiple stemmed meshes. The cleanness of the design, by straight lines, high contrasts, and simplistic textures adds to the experience of luxury. Fourthly, in the garden under analysis there are a lot of facilities for building and maintaining relationships. There is the large dining table, the bar table, the lounge, the Jacuzzi, the quick sitting place, sun tanning place and the outside kitchen. At the dining table there is space to socialize whilst enjoying food. Because the seats are situated in rows opposing each other, focus is on the food and the people opposite, allowing for conversations. The same set up is provided by the bar table, however here people might use the table for playing games for instance, the high seats might be associated by a more informal way of sitting together. In the lounge people can easily choose the distance between each other because the continued line of cushions allows for this. Therefore, it can be used for intimate until more distant relationships. The lounge is situated around the low table, the fireplace and television which allows for relaxing together in the shared cosy atmosphere. In the Jacuzzi people can sit together in the warm water facing each other and sharing the same relaxing water experience. There is also some open space to play together. Therefore, the social relationships of children are considered in the design. If they want to rest from playing their games, they can quickly sit on the quick seating block. The sunbeds can be used to enjoy together the sun and direct the vision in the same direction. Since the chairs are designed to facilitate relaxation, the relationship should involve relaxation, two persons are likely to spend a longer period together whilst relaxing. The outside kitchen is most likely to be used by one adult who cooks for the others, in this way the relationships are built through the cooking, someone applies his skills to deliver the food and the experience to the others. The back of the kitchen provides some sense of protection, meaning the cook is in its own space and the people who want food are separated by the kitchen counter, this creates a certain distance in the relationship. However, because the sides of the cooking place are

open, people can watch the cook during his cooking activities. All in all, personal relationships are a key feature of the garden. There are different types of places, so different types of relationships with different intensity can be build. From this respect the garden strongly represents the vision of TIM. However, it is up to the user how the facilities are used.

### 5.3 Conclusions

All in all, it can be concluded that TIM gardens could be defined in terms of literature on gardens in general, activities, affordances, places and spaces, actor network theory, gestalt laws, and in terms of the TIM styling. This altogether led to numerous insights into how the designer of TIM approaches garden design and which consequences this potentially has during garden interactions. Since these insights are similar to reverse engineering and the aim is to apply the obtained insights into the research through design project of this master assignment, the new concept of reverse research through design is introduced as being the embodiment of the garden analysis. Overall, the gardens are found to be extremely complicated and full of relationships within the user-garden system, therefore a structured scientifically design framework is needed in which the analysis could be as a starting point for proper garden design.

## Chapter 6 Human Centred Design

From the reverse research through design it became clear that in the TIM gardens interactions within the gardens stay central. Together with the personal vision of TIM this asks for a human centred approach towards garden design, in which a proper understanding of the end-users is crucial to create meaningful designs. Therefore, this chapter shows how the sixth research question, regarding the company-client relationship through human centred design methods, is answered. Since the user understanding is a central element of these methods, also answers to the third sub research question are obtained, namely regarding the client understanding. Although a broad variety of design methods is considered, only the most relevant methods are described below.

### 6.1 Possibility-driven design

Often in the design discipline problems are taken as a starting point for design processes. Dorst (2011) even calls the core of design thinking to be the dealing with problems. Even more, often design processes lead to a better understanding of the problem space. During reverse research through design and the first trial design process it became already clear that the gardens of TIM are difficult to formulate as being a solution to a specific problem. Also, because of the high budget of the clients, the building plots could rather be seen as places for exploration of possibilities. At the starting point the building plots are basically empty sheets which need within a certain context which could be filled with garden elements in almost an endless number of ways. This reasoning fits seamlessly with the possibility-driven design of Desmet and Hassenzahl (2012). In this way the focus is not on understanding the problem-space but rather on the exploration and magnification of the solution space. Accordingly, the goal of the possibility-driven design is not to search the possibilities as such but to deliver happiness via the possibilities, see figure 15 for a visual representation of this process. Therefore, possibility-driven design is a design approach based on positive psychology in which the focus is on contributing to the subjective well-being of users (Jimenez et al., 2014). This author clearly mentions the relation between the experience of happiness and meaning. If people are happy their lives become more meaningful.

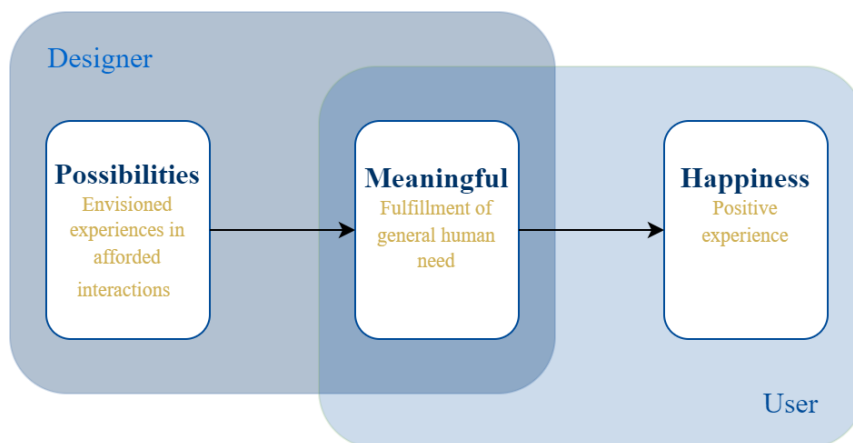


Figure 15 Schematic representation of delivering happiness via possibilities (based on Hassenzahl, 2013)

The happiness could be integrated within the meaningfulness of the company philosophy of TIM, since happiness has positive health effects and therefore the garden becomes a meaningful element in the life of the user. This is according to the authors, all caused by meaningful product experiences. The authors also mention the evocation of pleasure through the possibility-driven design. Namely, products could be solely designed for the experience of pleasure during interaction since the products show new 'possibilities for action'. In this way the user gains awareness of possibilities for becoming happy. Through the possibility-driven design there is an information flow between the

designer and the user. Figure 15 shows the role of the designer and the user and where the two meet each other, namely, in the creation of meaning the designer adapts the explored possibilities to the needs of the user.

## 6.2 Experience-based design

As discussed above the possibility-driven design is part of the experience-based design methods in general. Also, since the reverse research through design process showed that TIM gardens are mainly aimed as being a source for interactions, further research into experiences is discussed in this section. According to Hassenzahl (2013) experiences are a specific moment in time in which the context in which interactions between the user and the context play a crucial role. It can be seen as a 'story' full of subjectivity. Designers can design products which evoke these experiences since through the interactions with the products "...the meaningful, positive moments..." are obtained (Hassenzahl et al., 2013 p.23). In this process both cognition and emotions play a fundamental role. Jiminez et al. (2014) show that designers use 'experiential intentions' as guide during their design processes to design products which evoke experiences by the users. Then, they suggest that designers should formulate 'experiential specifications' in addition to technical specifications. These can be validated through testing prototypes with the users since the experiences are subjective and personal and therefore difficult to validate solely by the designers themselves. In the design process of TIM these prototypes are rendered visuals and animations which are presented to the clients. The reactions and feedback of the clients show whether the designs would be successful. This could be easily extended to asking for experiences whilst watching the visual impressions. Similarly, to the ideas of Jiminez et al., Hassenzahl et al. (2013) show the idea of the 'envisioned experience', which is materialised and inscribed by the designer through designing the experience for the user. This 'deliberately designed experience' can then be chosen to be used by the user. This shows that the user is at least partly in control over his own experiences. All in all, garden design of TIM fits properly with experience-based design because of the aim for designing meaningful gardens. Design for experiences through interactions contributes to meaning creation.

## 6.3 Emotional design

Experiences are strongly connected with emotions and could be even seen as part of experience based design. The link between emotions and experiences is described by Desmet et al (2001) as the 'emotional fit'. Namely, products should be designed in such a way they evoke emotions which fit to the desired experience. The emotions are then related to the meanings which are 'derived' by the user from the product. Mao et al. show in their research how the theory of Don Norman's Emotional Design could be applied product design for evoking emotions in accordance with the desired experiences. They use the visceral, behavioural, and reflective part of emotional design to design the appearance in a simplistic and recognisable manner, the functionality in such a way the intended use is clear, and the abstract meaning and message of the product, respectively. These three components together shape the user experience during product use. Although the approach is quite straightforward and useful, care should be taken that the designer cannot be always sure about the actual achieved emotions and experiences during future product use since these are user dependent. Desmet et al. (2001) mention that it is extremely difficult to link certain design features with emotional responses. However, the moment the user is involved in the design process this difficulty is eliminated to a large extent, because then there are enough insights into the personality of the user to create the emotional fit (Mao et al., 2017). During garden design there is direct contact between the future user and the designer. Therefore, during conversations with the clients there are possibilities to gain a proper understanding in terms of preferred experiences and the emotional



reactions evolved. Also, clients often talk in terms of prior garden experiences. This information can be easily analysed through categorisation in the three elements of emotional design. Therefore, the application of the emotional design by Mao et al. (2017) is a useful method for TIM garden design.

#### 6.4 Scenario-based design

Experience-based and emotional design are not enough to design gardens since these do not cover the relations between the different garden elements. The inscription as part of ANT in the reverse research through design process shows that the order of use is fundamental for the arrangement of garden elements during the design process of TIM. Therefore, the designer should imagine how the user would most likely want to use the garden and in which sequence and at which location interactions take place. In the current design approach, most decisions are made based on pragmatic insights and garden experience of the designer. This altogether shows the suitability of scenario-based design for TIM. Van der Bijl-Brouwer and van der Voort (2013 p.61) define scenarios as being “an explicit description of the hypothetical use of a product or service.” In the TIM design approach, the scenarios are not explicitly described but rather are on top of the head of the designer. In line with the theory of the authors the designer uses the stories of imagined use to explain design decisions during presentations and conversations with clients, supported by the renders of the design. Right before the start of the concept design phase the client must sign the quotation which contains their own requirements and a vision on the project. Therefore, consensus about the garden in outlines is obtained. This approach is in accordance with Carroll et al., (1998) who mention the relevance of a ‘shared understanding’ between the user and the designer through vision description and scenarios. The theory of these authors shows that scenario creation leads to requirements which become ‘statements about situations of use’. All in all, the theory clearly matches with the current approach of TIM and therefore knowledge of the scientific theory can be used to substantiate and improve the current TIM design process.

#### 6.5 Conclusions

All in all, based on the theory of Human Centred Design methods, a mixture of possibility-driven design, experience-based design, emotional design, and scenario-based design is applicable for the new design framework of TIM. This is possible since the different methods are all strongly related. In chapter x, which describes the actual framework development, the role of possibility-driven design and emotional design is further clarified. The experience-based design and scenario-based design are more generally applied, namely, to direct the perspective towards TIM garden design. In short, the entire assignment and the new framework is about reinforcing the experiences within the human-garden relationship. And whilst designing, the designer constantly imagines the scenarios of use and decides accordingly. In this manner the garden is designed through a search for possibilities to evoke experiences and the related emotional responses whilst imagining future scenarios of use. This allows for high chances of strong user-garden relationship building.

## Chapter 7 Meaningful gardens through Happiness, Greatness, and Pleasure

Halfway the assignment the owner and designer of TIM designed a new company philosophy based on the four experiences of meaning, happiness, greatness, and pleasure. Therefore, these topics were explored through a broad literature research to gain a view of the scope of the topics. The aim was to find out whether the clients could be understood in terms of the four topics, therefore the research is used to answer the third research question. Furthermore, the literature research provides the content for the human centred design methods, mainly for the experience-based design approach, therefore it delivered answers to the sixth sub research question as well.

### 7.1 Meaning

The focus of TIM on the question how to make meaningful garden designs fits seamlessly within the trends Jordan (2000) observed over twenty years ago in product use and design. Products are not only seen from their utilitarian value anymore, but probably caused by the feminization within society, products are viewed from the relationship with users. Although Jordan (2000) does not present it in this way, the meaning that is devoted to products might be seen as the next step in this trend, because meaning becomes apparent through relationships with products. According to this author the rise of religions in the world and the connected spirituality leads to the trend of searching meaning within product experience. Jordan (2000, p.2) even calls spirituality a 'post-materialist' trend. The search for meaning is not only regarding the product itself but also the company who supplies the product. This is even translated into the calmness and honesty in design aesthetics. This altogether leads to the need of a holistic and deep understanding of the product users during the design process.

Battista and Almond (1973) define meaning in a person's life as 'positive life regard' which has to do with the positive fulfilment of the lifegoal or his conceptual idea of meaning, from the person. This shows that the authors do not embrace the idea of a true universal meaning. The meaningfulness occurs the moment the person experiences this fulfilment in terms of 'integration, relatedness or significance'. According to Peterson (1999 p.13) meaning can be defined as follows, namely "Meaning means implication for behavioral output" It is the fundamental reason why humans exist, namely to search for meaning. Without meaning the human life is 'mortal limitation' full of suffering and malevolence. People without meaning in life hate themselves. Humans instinctively aim for exploring the unknown. If they succeed in encountering the unknown, they experience meaning. Meaning is fully subjective and instable because it depends on the desires and goals humans have, the emotional impact 'meaningful' things have and in which context they are situated. According to Peterson (1999) not only the present interactions with known things in life are meaningful, but also the unknown things are meaningful because they can result in future impact in a person's life. Therefore, these things are 'loaded' with meaning. Although meaning is highly personal, there are shared meanings because people live in in the same shared conditions. These meanings are communicated through myths in which meanings are attributed to objects. In contemporary society there is a lack of myths in contrast to ancient times. Nowadays humans try to think empirically and therefore the myths are absent resulting in a lack of meaning. People do not know anymore whether their lives are meaningful at all. This leads to the instability of contemporary society (Peterson 2017).

Ludden et al. (2019) show in their paper that designers can aim at 'meaningful sensory experiences' for the humans they design for. Especially the involvement of multiple senses during interactions resulted in the meaningful experiences which are an addition to the basic utilitarian function of the

products. The concepts evoke experiences through material representation of other things in life. (Boess en Kanis, 2008) describe a meaning on the level of product use rather than on the level of product experiences as such. They call this the 'denotative or instrumental' meaning of products during human-product interactions. For them it is the user who creates the meaning rather than the designer. Meaning is created through the 'situatedness' or use context during product use. Next to that, meaning is created through the product semantics which communicates via the product aesthetics information to the user about how the product should be used. This concept differs from affordances which is about the instinctive reaction or 'direct perception' to product aesthetics within the use context. According to this research designers often fail in designing meaning deliberately into products, simply because users do not perceive the message as intended by the designer. To describe meaning in product use the authors launched the term 'usecuse' which show how the user interpretes the product during use based on perception, cognition and action (Boess en Kanis, 2008 p.322).

Kazmierczak (2003) divide meaning in product design in the 'intended, constructed and received meaning' of products. Through the semiotics in the design, the designer can deliver an intended message which can be reconstructed and received by the user. In this way design is defined as an "interface for meaning making" and express 'mental models' which are often perceived in terms of 'methaphors'. The meaning is than the "thought induced by the receiver" (Kazmierczak, 2003 p.47). It thus depends on the user himself whether the design becomes meaningful or not. If this is unsuccessful this can lead to the construction of another meaning than the designer intended. For Hershberger (1970) architecture is not about objects as such but about meanings. The meaning is not part of the architecture itself but becomes apparent through the experiences of the users who judge experiences on their meaningfulness. The meaning through experiences should go hand in hand with the actual functionalities of the building in order to make architecture successful. The author divides meaning into two phases, namely the objective or representational phase and the subjective or responsive phase which both depend on the user himself with respect to the architecture. In which the representational phase has to do with the perception and recognition of the architecture and the responsive phase has to do with the human feelings and emotions in response to the representation. Within architectural meaning the following different levels are distinguished. Firstly, 'Recognition of form' which is about perception, prior experience, and categorisation. Secondly, 'Recognition of status' which is about the relationship between the user and the form. This about the perception of physical characteristics of the form based on prior experiences. Thirdly, 'Recognition of use' which is about forms as being a referent of their use. Fourthly, 'Recognition of human function' which is about the functionalities humans devote to architectural products for instance the place to dine is the dining room. Fifthly, 'Recognition of building function' which is about the primary functions of the components that form together the building, for instance a pillar as a structural elements has the function of holding up the building. It leads to an understanding of how the building is actually a building. Sixthly, 'Recognition of purpose' which is about communicating for which interaction the product is meant to be used. Seventhly, 'Recognition of value' which is about the fact that architecture can symbolise certain values. Eightly, 'Response as meaning' which is not about the architecture itself, the representational, but about the user himself. About the internal response towards the architecture.

## 7.2 Happiness

The relevance of a focus on happiness in design becomes clear from the following positive effects that result from being happy. Namely "Happy people are more social, altruistic, active, like themselves and others more, have strong bodies and immune systems, and better conflict resolution skills." (Desmet and Hassenzahl, 2012 p.9). These authors see happiness as the basis for their

possibility-driven design approach. In which the happiness of the users of the products is the end goal. More precisely that the user has the “experience of joy, contentment, or positive well-being, combined with a sense that one’s life is good, meaningful and worthwhile” (Lyubomirsky, 2007 via Hassenzahl et al., 2013 p.21). Possibility-driven design is not only limited to aiming at the evocation of happiness, but also to make the user aware of new possibilities to become happy. The happiness is not only directly evoked by product interactions, because these are rather pleasure than happiness experiences in the first place, but evokes happiness through fulfilling ‘meaningful life goals’ of the user. This shows that happiness can be defined as the fulfilment of meaningful life goals and therefore needs. Thus, products indirectly cause happiness through the activities which users have with them. Also, happiness can be gained during the experiences that occur during interactions, because the experiences result in responses in terms of affect. This altogether shows that users are to some extent in control over their happiness through deciding on whether to interact or not to interact with their products (Hassenzahl et al., 2013).

Also, Makkar and Yap (2018) view happiness as being the result of the interactions with products rather than through products themselves. In their research they specifically focus on the trend in contemporary western society regarding the consumption of luxury products in an inconspicuous manner. This inconspicuousness leads to the experience of ‘true happiness’ because it shows ‘self-development and growth’ not through overwhelming luxury but through the quality and craftsmanship within the product aesthetics.

Peterson (2017 and 2020) shows the potential dangers involved in the concept of happiness and therefore happiness should not be treated as the “key measure for successful existence.” (Peterson, 2020). Namely, people should not strive solely for happiness because the positive emotions within happiness lead to impulsive people who are prone to making mistakes. Rather, people should aim for the right balance between positive and negative emotions. Happiness should not be the lifegoal since if there occur moments in which humans are not experiencing happiness, their lifegoal is immediately destroyed. This directly implicates that humans are not fully in control over their own happiness, but it just ‘descends’ upon them. However, humans should reflect upon their happiness, find out which elements of life caused the happiness and consequently work on those. These are burdens that are worthwhile in life, happiness occurs through the act of carrying these burdens.

Happiness can occur and be experienced on the long-term, ‘an attitude’ and short-term, ‘the episodes’, in which the ‘collection of episodes’ creates the attitude (Kekes, 1982). Here happiness is defined as the fulfilment of the desires, also called ‘satisfactions’, of the human together with the frequent occurrence of positive experiences. These even become characteristics of the happy person. This perspective shows that humans are to some degree in control of their own happiness, namely through their live plan. Namely, if a person is aware of his wants within the boundaries of the context, and aims at balancing and satisfying these wants, then there is a high chance but no guarantee that he will come to happiness in life. Even more, to come to happiness often choices need to be made between wants, leading to unfulfilled wants. The awareness of happiness is a complex phenomenon which has to do with the individuals own perspective towards happiness and the perspective others take towards the happiness of the person. The author views happiness as being ontologically subjective and epistemologically objective. The former means that the person who experiences being happy, is actually happy because he believes he is happy in his own terms, therefore his perspective regarding happiness is subjective. The later means that an outsider knows rationally whether the person who thinks to experience happiness, actually experiences happiness or not, because the outsider can objectively judge the expressions of happiness of the person under consideration. Consequently, the outsiders can make the person who believes to be happy, aware of

his unhappiness, because they know that he cannot be happy based on how according to the person himself, happiness should be defined. The person should change his life plan, in order to become happy again. Plato, Aristotle, and Christians embrace another perspective, namely that both the ontological and epistemological part of happiness are outside the human who believes to experience happiness. These are both objective since there is a universal happiness defined outside and independent of the person himself.

Similarly, to this perspective on happiness Wilson (1968) embraces the idea that individuals can be wrong in their claim of being happy. The happiness experience is what makes people believe they are happy, it is the 'state of mind' during the experience, and the other way around people might not be aware of their happiness. The long-term version of this state of mind is described by the term 'good fortune', the feeling of being 'pleased with life', and the short-term by 'momentary' happiness, which in its turn is related to joy and pleasure. The long-term feel of happiness is created by the short-term moments of happiness, consequently if someone feels happy, he is happy. This happens, although not only through, satisfaction of wants. Therefore, the human can rationally plan his life in order to aim for happiness. If the happiness is actually achieved, the outside world will observe this through the circumstances around the happy person or the personal expressions of happiness.

The characterion in contemporary society by Nandy (2012) is that people must learn to be happy because humans are able to create and control happiness. However, this cannot be done by normal persons themselves, but they need others, namely professionals or other knowledgeable people. This is strongly connected to welfare, since only if the basic needs of humans are fulfilled, they have the ability to be concerned with subjective concepts such as happiness. Starting in the Enlightenment this perspective is dominant in the western world. In the search for happiness humans eliminate unhappiness more and more to come to a higher state of happiness, this can even be seen as a linear process. Another, more nuanced approach towards happiness is that happiness is reached the moment unhappiness can be carried. This seems to be in line with the idea Peterson (2020) embraces. However, in other cultures and regimes there exist other perspectives regarding happiness. In contrast to the individualistic western approach is happiness in a lot of cultures only possible through intersubjectivity with others. Even more, there exists types of regimes in which people are forced to behave in happy ways, accordingly the unhappiness is eliminated from society. But also, within the western community there are different approaches towards happiness than the solely controllable individualistic type of happiness. Namely, in Protestant ethics happiness is the main goal in life but lies outside human reach and control.

### 7.3 Greatness

One of the pillars of TIM's company philosophy is 'Greatness'. This not only is the fundamental motivation but is also used as one of the perspectives on the user-garden relationship during the meaningful session. In other to show expertise, to understand and reflect upon the client's vision towards greatness background information on how greatness can be defined is needed.

Greatness can be seen as a state of being which is considered repeatedly during history. Greatness is synonymous for excellence and being virtues in the past. In contemporary materialistic society a lot of businessmen try to arouse people by showing their journey to success by means or speeches that should arouse people to view their lives as being full of potential to come to greatness. Swift (2019) argues in his Ted-talk that greatness is intrinsic for humans and can be awakened by being unique. Also Evergroen (2019) shows in such a talk that greatness can only be achieved by not

underestimating yourself. By mastering asking always the five W-questions in the end everybody can come to greatness. Liebenberg (2019) envisions in his talk the road to great leadership and therefore greatness through a 'synthesis of a unity of opposites'. These are the opposites of Koestenbaum (2002) namely reality, courage, vision and ethics. Every human owns these capacities, however the great leader knows how through self-actualisation how to optimally manage and apply these. In this perspective greatness is a continues process in which thought and action go hand in hand. These perspectives all show the process of reaching greatness through personal achievement and career making. This greatness through achievement is not only present in business leaders but also in political leaders. Emrich et al. (2001 p.527) show the definitions of greatness as being 'successful performance' and 'general prestige and reputation'. Furthermore, greatness is strongly related to charisma which is reached through the proper communication of vision for the future and accomplishment. This communication becomes successful if leaders aim at sensual experiences and use imagery. Contrastingly, Cornelius (2019) approaches greatness as dangerous if people become obsessed by it. And obsession with Greatness is the underlying cause for power abuse. 'Spiritual intelligence' is seen as a way to prevent for this obsession with greatness since than leaders accept a greater power outside themselves, reducing their own greatness. Accordingly, healthy greatness lies than in trusting a higher power, valuing others, compassion, honesty, integrity.

Deretić (2010) shows a chronological overview of how excellence is mostly philosophically defined within the Western, Chinese, Indian and Russian history. Knowledge of this history could help in understanding contemporary perspectives towards greatness. This overview does not show greatness as such, however excellence is synonymous for greatness which becomes clear in the following definition: "Human excellences could be defined as those human qualities that make a person outstanding, exceptional, superior, or, in one word, the best of one's kind in any field of human activities." (Deretić, 2010 p.526). The excellence in its turn is discussed as being synonymous for virtue. The overview shows that the perspective towards excellence and virtue are prone to change over time. Which means in the Western history it started with bodily action in the Archaic Greece period and ending nowadays with the body again by improving the human body as become clear through transhumanism. The overview shows that excellence can be human and non-human. In which the human part of excellence is within the individual, community, society and religion. From a religious perspective the non-human part of excellence lies within higher powers. Throughout history excellence can be the end-goal in life itself or it can be a means to reach the ultimate pleasure and happiness. Excellence and virtue are defined continuously throughout history in terms of human capacities. The aim of listing the human capacities, as will follow below, is to give an overview of the broadness of excellence, virtue, and greatness within history. The keywords are not mutually exclusive and even more often contradict each other. Furthermore, behind the keyword there lies extensive philosophical argumentation. According to Deretić (2010) in the Archaic Greece period excellence has to do with courage, strength, competitiveness, cunningness and wisdom. The focus is on gaining happiness through excellence. For the Classical Greece excellence becomes apparent through wisdom and is beneficial for the soul. During the Hellenistic Age excellence is viewed as delivering in the flourishing of life and pleasure. It makes humans independent of outside influences. *For the Romans one of the most important excellences is discipline.* Furthermore, decency, modesty, chastity and shame, loyalty, honesty, confidence, mutual trust, respect, self-control, equity, bravery, good reason, good, hope, patience, tolerance, humbleness, simplicity, knowledge, are crucial to become excellent and gain happiness. The ancient Chinese culture shows that virtues and excellences will lead to a flourishing life and a grounded within family life. Important virtues are: righteousness, wisdom, devotion, faithfulness, filial piety, love, respect, overcoming egoism and self-interest. Within Hinduism virtues and excellence are less important as in the Chinese and Western

history. On the individual level the following virtues are of relevance: purity, righteousness, knowledge, forgiveness, self-control, nonviolence, self-control of the pleasures, compassion, patience and freedom from anger, envy, and avarice. For Buddhists a human becomes excellent through benevolence, compassion, joy, equanimity. For Muslims human excellences should be in accordance with the Koran which describes that Allah is the most excellent and has the following excellences, Allah is the most: beneficent, merciful, protector, provider, all forgiving, just, truth, source of all goodness, patient. Also judgment, consultation, consensus and knowledge are important. For them earthy happiness lies in the virtues health, good fortune, long life, wealth, social position, noble birth. Heavenly happiness is achieved through divine virtues namely: guidance, good counsel, direction and divine support. For Christians the true excellence lies in God. He gives excellence in the soul of humans through mercy. These virtues are faith, hope, love, courage, moderation, justice, wisdom, compassion. For the author Russia is interesting because it shows similarities with the Christian perspective towards excellence. But it is in contrast with the contemporary western self-centered individualism. Within Russia the following virtues are important: self-awareness, embracing others, love, hope, future-orientedness, togetherness. From the Renaissance onwards the perspective towards virtues focuses on personal achievement. Cleverness, usefulness, efficiency, knowledge, care, honesty, nobleness, altruism, justice, courage, moderation, are prominent. In the European 16<sup>th</sup> and 17<sup>th</sup> centuries the virtue is based on the reason. Excellence is achieved through harmony, knowledge, tenacity, generosity, honesty, nobleness, altruism, easy appropriate action, justice, solidarity, morality. During the Enlightenment the value of the traditional virtue is challenged, it has no intrinsic value anymore and has only to do with human achievement. Virtue has to do with: political excellence, obedience, lawfulness, sublime knowledge, socially useful behavior, being social, intellect, morality, benevolence, charity, prudence, good sense, wit, temperance, courage, justice, allegiance, chastity. In the Modern age excellence and virtue are seen as strength of will and will lead to happiness. It becomes apparent in the following: morality, courageousness, great creativity, uniqueness, health, life affirming, self reverence, consciousness of good, honesty, diligence punctuality. Nowadays in western society *the focus lies* mostly on the excellence of the body rather than the soul and the mind, today's heroes are mostly entertainers and athletes because of their good competition. Although excellence leads to human progress they are not valued as such by the majority within society. The contemporary excellences lie in transhumanism in which humans are optimized by technology. It is not clear which ethical and moral excellences and virtues should be embraced with respect to these technological developments.

Mccormick (1953) shows from the perspective of Ralph Waldo Emerson how greatness or genius, hero, great man can be defined. In his early years Emerson views greatness as a gift of God, it connects humans with God. Therefore, great humans are representative, typical, own harmony between particular and general, unselfish, broad in their vision and perspective, self-reflective, self-believing, religious, taking advantage of crisis. Later his view on great people is changed towards humans for whom everything is permitted, there are no laws, challenges the order, there is no room for being criticized, are serving, but need less great people for their self-reliance. Other perspectives towards geniuses are that a true genius has morality, and humbleness. A genius takes advantage of existing elements from the world he lives in like a child. How someone is genius depends on the circumstances in which he lives. But also, great humans are the people who represent the forces present within the time they live.

Kaufman and Kaufman (2007) present the following synonyms for greatness, namely the rise to the very top, elite talent, scholarly productivity, artistry. The view greatness as follows: "greatness is

defined as the point which productivity or quality peaks” Kaufman and Kaufman (2007, p.117). According to them expertise alone is not enough to come to these. The correct balance between ‘key personality, ability and skill factors’ need to be found. Furthermore, *active experimentation and exploration, networking, and to ‘play the game’* are crucial in the growth towards greatness.

Although greatness is viewed as an achievement, for Stanley and Lehman (2015) greatness cannot be planned upfront and therefore humans cannot control greatness. The only thing that can be influenced are the steppingstones which lead to the greatness. However, how these steppingstones lead to greatness will remain unknown. The authors reject the idea that objectives alone lead to greatness, rather they argue that often objectives block the process towards greatness. And are only an illusion of being in control. Even more, giving up objectives will provide space for discovery of possibilities and could result in true happiness. For them greatness can be achieved by giving up the idea of what that greatness should be. The only way to achieve greatness is to search possibilities through interestingness.

#### 7.4 Pleasure

Human feelings play a crucial role during experiences. For hedonists these experiences should all be positive in order to be good and meaningful in life, and therefore affect the wellbeing positively. For them these can be described as pleasures. The opposite are the negative experiences which are the pains. Consequently, valuable experiences can be described in terms of pleasure (Van der Deijl, 2019). However, this author takes another stance towards pleasures, namely pleasures are not the valuable experiences themselves but are a ‘feature of feelings’. This goes together with the idea that feelings are not the only thing that create experiences. The amount of pleasure is a measure for how good a feeling, rather than the entire experience, is. Furthermore, not all valuable experiences contain pleasure, meaning that the good life cannot solely be described in terms of pleasures. Although, pleasure is not the only thing that cause good wellbeing, it still adds to the wellbeing. Interestingly, the author mentions the perspective that the more novel a pleasurable experience is, the more it contributes to the wellbeing of the human, and the other way around a pleasurable experience that does add to the life of the user is of minor influence on the positive wellbeing.

The relation between novelty and pleasurable experiences is also observed by Desmet and Hassenzahl (2012) in the possibility-driven design approach. One of the effects of the approach is that products, designed through this approach, have something extra, namely they show novel ways for action. Which in itself delivers pleasure because it opens future potential in human life.

Peterson (2017) argues against the hedonic perspective towards pleasure. Namely, pleasure does not only determine whether human life is good and meaningful. For him sacrifice is way more valuable than pleasure, since through sacrifice the pleasures of the present are neglected in order to be advantageous in the future. This shows that pleasure is short term and of little meaning in life in contrast to sacrifice, which is about the long term advantages.

According to Jordan (2000 p.12) pleasure with products can be defined as follows: “The emotional, hedonic and practical benefits associated with products”. In which the hedonic aspect is described by ‘self-pampering’. Furthermore, the author applies the four types of pleasures from Tiger (1992) to products, namely ‘Physio-pleasure’; regarding the bodily effects towards an experience, ‘Socio-pleasure’; enjoyment through interactions with others, ‘Psycho-pleasure’; the cognitive and emotional reactions, ‘Ideo-pleasure’; which is about the personal values in relation with the pleasurable experience. All these pleasures can also be divided into ‘need pleasures’ and ‘pleasure of



appreciation'. In which the need pleasure occurs the moment a need is satisfied. The pleasure of appreciation is independent of a specific need but occurs just because a person experiences something as positive and enjoyable in itself. This altogether shows that pleasure is the result of the relationship between the user and a product which is built during interactions, meaning that a broad perspective needs to be taken to determine whether a product is of good quality.

In line with the Physio-pleasure of Jordan (2000) determines Hekkert (2006) one part of pleasure in experiences as 'Aesthetic pleasure'. This type of pleasure is the positive effect of sensory perceptions. This part of the total human experience can be described as being 'pleasurable to the senses'. The research distinguishes four types of principles that result in aesthetic pleasure namely: 'Maximum effect for minimum means'; products that cost less effort to perceive are more pleasurable than those who require more effort, 'Unity in variety'; in order to be pleasurable products need to contain order in chaos which can be perceived by the senses, 'Most advanced, yet acceptable'; products within the optimum between novelty and typicality are perceived to be the most pleasurable, 'Optimal match'; all the senses should perceive the same message in order to cause pleasure and the perceptions should also be appropriate for the functionality of the product. In all these the pleasurable experiences can be described in a direct relation with the senses for instance something is 'pleasurable to the eye'.

In their literature review Dube and Le Bel (2001) show first of all that pleasure is a diverse and complicated subjective experience. When talking about the sensory pleasures as a subcategory of pleasures in general, the affective responses of the person under consideration are based on accomplishment, excitement, and happiness. Nowadays a lot of focus lies on the hedonic (see above) perspective towards pleasure, because the experience of pleasure is for a lot of product consumers the ultimate good goal. Whether or not pleasure is seen as the ultimate good goal, it is to some extent related to the good and desirable in life and the positive human response to it. The experience of pleasure can occur at different levels somewhere on the scale of displeasure towards pleasure. The author mentions the 'circumplex model of affect' of Russel (1980) which shows the relation between pleasure and arousal as components of affective experiences. This seems to be in line with the observation that pleasure determines whether the consumption is worthwhile. Dube and Le Bel (2001) also mention the perspective of Kubovy (1999) on pleasure, namely the distinction between the bodily pleasures and the pleasures of the mind. In which the former is about the sensory perceptions that lead to pleasure and the latter about the 'collection of emotions over time' due to the interactions. The authors themselves propose the following distinction between different types of pleasures, namely sensorial, emotional, social and intellectual pleasure.

### 7.5 Application in TIM garden design

Overall, the literature regarding the topics meaning, happiness, greatness, and pleasure is extensive and broad with a lot of internal overlap. As the literature shows happiness, greatness, and pleasure could be experienced. However, there are no notions in literature that meaning could be experienced. I would argue that the moment someone reflects upon a specific moment in his own life and concludes that the moment is meaningful, he experiences meaning. Or to put it another way, the awareness of the perception of meaning is a meaningful experience. I believe this could also happen during interactions with products which have an emotional meaning, for instance inherited products.

In this section the following remarks about the applicability of the theory for TIM garden design and therefore for the framework design are made. Firstly, the owner of TIM uses meaning, happiness,

greatness, and pleasure as the four pillars of his company philosophy. In this philosophy the meaning is regarding the meaningfulness of the garden and the relationship between the client and the company. The happiness should be the result of the process through meeting personal preferences of the client. The greatness becomes apparent in the greatness of the design project and the greatness of the design itself. These could be both in the extreme luxury, to show off the greatness of the user, or in the greatness of the details in terms of quality. The pleasure is obtained during the moments of contact between the client and the designer and through experiencing the fulfilment of personal needs. Within the design of the new framework, see chapter 8, the four topics are interpreted as being four types of experiences. In this way the topics are interpreted in terms of experience-based design.

Secondly, during the client understanding process the four experiences are used as a frame through which the client-garden relationship is understood. The designer searches for what would potentially make the future garden a meaningful garden for the user. Therefore, the conversation focuses on finding the experiences of meaning, happiness, greatness, and pleasure in general in the life of the client or specifically for past or future imagined garden experiences. Also, the four topics allow the designer to structure and categorises the information of the client and therefore has input for a structured design approach. Every topic allows for a different abstract approach to the garden design. The broadness and the overlap between the four topics allow the designer to gain an as broad and deep understanding of the client as possible.

Thirdly, in design literature the terms meaning, happiness, and pleasure are often used. Their meaning is of most value in terms of interactions between users and products in which the user perceives the meaning of the products or creates his own meaning. Interactions with products could lead to happiness and pleasure experiences. However, there is no literature found regarding the relationship between greatness and design. If design is approached as a means of communication between the designer, the user, and the context (see for instance Kazmierczak (2003) about 'cognitive interfaces'), design for the experience of greatness is possible.

Fourthly, the gardens will be designed based on information from the clients regarding these four topics and therefore there are high chances that these experiences take place during the actual use of the garden in practice. This shows that the experiences provide information of the client which could be used as design input. However, even more, the information is used to design affordances for the experiences. Therefore, I would call this based on the theory regarding affordances, as discussed in section 5.2.3, 'design for experienceability'. In this way the design process is extended beyond the design of affordances for activities, towards the design of the affordances for experiences through interactions with facilities for activities. So, during the design process the designer takes a topic for interactions as a starting point for design, and aims at designing either the meaning experienceability, happiness experienceability, pleasure experienceability, and greatness experienceability for the specific topic.

Fifthly, the wide scope of the four experiences and the overlap between the terms makes it extremely difficult to design specifically for the four experiences. Therefore, the designer should obtain in-depth information from the user to clarify how the different topics are used. During the trial design processes, see section 8.2 the four experiences are mostly interpreted as follows, namely the meaning is as being the most important aspect of the garden, the happiness is regarding long-term positive experiences during garden interactions which also have a long term effect in life, pleasure is about short-term positive interactions which are mainly valuable at the specific moment in interaction, and greatness is regarding the message the owner of the garden would obtain whilst reflection within the garden in combination with the message which is communicated towards the

outer world. However, if the client is a hedonist for him the pleasurable moments would be more valuable than the long term effects of positive interactions leading to happiness. This shows that the definitions should be used in a flexible manner in such a way the client and the designer understand each other.

Sixthly, as the fifth remark shows, there are no clear-cut definitions of the four experiences used during the in-depth conversation with the client. This mainly is caused by the fact that there is no general consensus about the definitions of the topics in literature and because there is lot of overlap and relationships between the topics. The following relations are found, namely, Sameer et al. (2023) see meaning as being part of happiness. The relationship mainly exists through the fact that both terms are strongly related to life satisfaction. Since the term 'meaning' could be approached from different perspective the authors specifically focus on the 'perceived meaning' which is the perception of the meaningfulness of life. Then the meaning goes beyond the life as such. Makkar and Yap (2018) show the relationship between happiness and pleasure. Namely, happiness is obtained through a series of pleasurable experiences. This clearly shows that happiness is a long-term experience and pleasure a short term-experience. The literature review about greatness, shows the clear relationship between happiness and greatness. Through greatness in life people experience happiness. For TIM the focus is on the meaningfulness of the garden, therefore the focus on the experiences of happiness, greatness, and pleasure is a means to create this meaningfulness. Therefore, on the website the four topics are introduced as 'Meaningful gardens with happiness, greatness, and pleasure'.

## 7.6 Conclusions

All in all, the literature review of the four topics which are introduced as the new company philosophy provide a frame for the in-depth client understanding process and structures the design process. The broadness of the definition of the terms and their overlap provides potential to discover the vision of the client on these topics. Since the designer has a broad knowledge regarding the topics, through the literature research, there are high chances of understanding between the client and the designer. Therefore, the literature review and the interpretation of the results provide a validated answer to the third sub research question regarding the understanding of the client. Also, this chapter provides insights into the fifth sub research question, which is about the framework development. Since the analysis shows that the four experiences have potential for an experience-based design framework.

## Chapter 8 Building the design framework

This chapter forms the core of the entire report since all the obtained information which is discussed in the previous chapters is combined and a design framework suitable for TIM is designed. More specifically, the framework design shows the combination of initial research of chapter 4, the insights in the application of scientific literature through the Reverse Research Through Design in chapter 5, how Human Centred design methods are chosen in chapter 6, and how the vision of TIM regarding the four experiences function as a general perspective towards client understanding and garden design in chapter 7. This altogether is part of the entire research through design project which is introduced in chapter 3. Since the framework development is central in this chapter, it shows the answering of the fifth sub research question, namely regarding the question how the framework could be designed. The entire chapter shows design on the third level of design, the framework design, however, also includes the higher numbered levels regarding through the trial design processes. This altogether takes place within the context of the first and second level of design, namely on the level of the company philosophy design and the design of the client-company relationship, which is mainly visible in between the fourth and fifth trial design processes as discussed in section 8.2.

### 8.1 In-depth conversation

The idea for gaining depth in the client understanding process, is by means of an interview. For TIM this depth is needed to come to a proper understanding of the potential user and to find inspiration for the design process. Fontana and Frey (2005) distinguish two types of interviews, namely the structured and unstructured. The former is most suitable to obtain specific information and the latter to understand complex behaviour of potential users. Guion et al. (2011) and Alshenqeeti (2014) mention a third category namely, the semi-structured interviews. This method seems to be suitable because it helps in understanding the feelings and perspectives of a user in an 'discovery-oriented' way (Guion et al., 2011). It is even described as "a personal and intimate encounter" (DiCicco-Bloom and Crabtree, 2006 p.317). This is mainly caused by the open-ended questions and the semi-structured format. Not only the interview format but also the interviewer influences the interview itself. Characteristics of a good interviewer are that he is open-minded, flexible and responsive, patient, observant, a good listener. It is important that the respondent observes the interest, therefore the interviewer should 'display' interest and show active listening (Morris, 2015). According to DiCicco-Bloom and Crabtree (2006) during the evolution of the interview four phases could occur in which the amount of depth in the relationship, or 'rapport' increases respectively through the apprehension, exploration, co-operation, and participation phase. During conversations with clients sometimes this rapport occurs between Tim and the client not specifically about gardens but about the entrepreneurship or the strategy of the company since clients are often a source of inspiration for Tim himself. Although these topics are often off-topic these still provide a proper insight into the personality of the client and seem to add significantly to the relationship building. Also, this information could sometimes be projected onto the garden design by the designer. Concerning garden design in particular, the clients often lack the knowledge and experience to come to this level of rapport, then the co-operation level is the deepest level reached. However, in terms of personal thoughts, reflections, motives, experiences, memories, understandings, interpretations, and perceptions (Morris, 2015 p.2), the potential client is the expert and therefore the in-depth interview of TIM has potential for reaching the deepest level of rapport.

The interview is built up based on the topics found in garden literature and the vision of TIM, namely prior garden experience, luxury, relationships with others, activities, wellbeing, design, garden relations, garden experience, nature. In this way the knowledge of the designer and the information

of the client merge. Following Morris (2015) this approach can be seen in terms of constructivism as a creation of reality about gardens by means of these topics the designer finds important. The topics function as a common ground for the conversation. But also, since the designer has knowledge about the topics, the information of the client is categorized into these understandable categories already during the interview itself. In this way the client knows how the designer would approach the new garden design, which leads to consensus. Every question is introduced with a short remark about the topic and the vision of the designer to introduce the question and to show the intent. It is important that conversation is unstructured enough to allow for depth and a smooth conversation, however still all the topics need to be discussed. Therefore, the document with the questions should not strictly be followed but merely function as a guide. However, in general the conversation should start and end with superficial questions, only in the middle deep questions should be asked the moment enough comfort is created. The moment the conversation stagnates the interviewer can use probes to get the conversation running again (Morris, 2015). Within the interview guide every topic contains sub-questions based on the different categories of Patton (1990), namely questions regarding experience and behaviour, opinion and value, feelings and emotions, knowledge, background, senses and in accordance with Morris (2015) grand tour questions. During the interview the designer must choose which questions are best applicable for the specific user and which has the most potential to deliver the desired information.

All in all, it is important that quickly a positive relationship is created between the designer and the client, because only in this way the proper depth could be reached (DiCicco-Bloom and Crabtree, 2006). This observation shows that interviews are quite suitable for the TIM design approach because relationship building is extremely important personally for the designer to experience meaning. Furthermore, Tim himself likes to share his personal story of life concerning the reason why he founded the company as a validation of the current approach of TIM. According to Morris (2015) this sharing of personal views and feelings or disclosure is currently seen as being characteristic of in-depth interviews. This literature study on in-depth interviews is repeatedly used during the framework development and mostly during the development of the Meaningful-Session.

## 8.2 Trial design processes

As part of design on the third and lower levels of design, namely from the design of the framework towards the garden design, respectively, the five trial design processes are executed. In general, the processes are used for the following reasons. Firstly, to gain experience with TIM garden design in practice. Secondly, to experience how the interactions between the designer and clients take place and how this influences the design process. Thirdly, to pragmatically test the design framework whilst it is being designed. In this manner, the different elements of the framework could be tested and validated. Fourthly, to find new insights for the design framework design process. Namely, during the evolution of the trial design processes insights emerged for the framework design, which cannot be found without design in practice. Basically, every trial design process is a small research through design project. Consequently, each trial design process can be divided into the topic of research, research conditions, design approach, insight results, and conclusions. Firstly, the trial design processes start with a challenge for which insights should be obtained. Secondly, every trial design process takes place within a set of research conditions which influence and contribute to the outcomes, namely, it should be in accordance with all the needs and wishes of the clients and other contextual factors. Thirdly, every trial design process is executed based on human centred design approaches, which potentially could become part of the new design framework. Fourthly, after executing the process the results consist of the garden design and the insights. Sixthly, the insights are analysed and evaluated and conclusions are drawn regarding the next steps which should be taken in the framework design.

### 8.2.1 Trial design process imaginative garden one

#### *Research challenges*

Already early in the process a trial design process is started to, firstly, find out how garden design could be executed. The aim was to see whether a garden could be approached as a product and therefore could be designed through a combination of 2D and 3D sketches rather than solely through 2D sketches. Namely, based on personal experience 3D sketching allows a more extensive and qualitatively better exploration during design. Secondly, the trial design process is aimed at trying out whether and how garden design could be approached from a perspective that focuses on activities rather than on aesthetics and facilities solely. Since the early research through design process has shown that TIM gardens are mostly designed around facilities for activities. The trial design process should provide an answer to whether a focus on activities would lead to higher levels of abstraction, to come loose from garden design as being an act of rearranging standard garden elements. Thirdly, before the trial design process literature research into in-depth information gathering is done, which showed that a semi-structured interview has potential for TIM. Therefore, the trial design process is used to empirically try out this approach for the client understanding process.

#### *Research conditions*

The search for finding an answer the challenge discussed above takes place within a set of boundaries and factors. In this trial design process one of the staff members, namely the greenery and technical expert, who is a man in his forties, is asked to act as being a client. He has quite some knowledge on gardens since he is a former gardener with around twenty years of experience with gardening. During the semi-structured interview his personal opinion and preferences are asked for since in this way the answers are representative for real clients, rather than just making up answers. The interview, see appendix A.6, is executed whilst sitting at the desks in the office of TIM. During the interview the staff member took the mindset that everything is financially possible for the future garden.

#### *Research approach*

Based on the information obtained through the interview, a design vision is formulated which concludes the overall impression gained from the answers, namely: "The garden, being a place for living, is part of nature which could be experienced both individually and together by means of activities which fit the different levels of relationships". Therefore, the main objective for the design process should be the relationships with and within the gardens and the merge with nature.

In accordance with the reverse research through design analysis in which facilities within the garden showed the relevance of interactions and activities within the garden, the starting point for the design process are activities. Therefore, the following activities are distinguished, namely being alone for meditation and deep thinking, making of fire, swimming, sitting together close to the house, sitting far away from the house, and gardening. During the design process the possibilities for the topics are explored. These are related to the following facilities in terms of places, namely a meditation place, fireplace, swimming pool, terrace with dining table, outside residence, and a large flower border to enjoy the gardening, respectively. During the design process only the facilities could be designed rather than the activities themselves. To visualise and summarise the conversation outcomes, a mood board is created, see figure 16. The visualisation of the abstract information in the mood board shows that there is a lot of room for the personal interpretation of the designer.

The design vision and the mood board function as the starting point for the design process. For total design freedom the house of the staff member is imagined to not restrict the design possibilities and to have as much freedom in exploring the activity-driven design approach. See figure 17 for the ideation and concept sketches of the garden.

The client understanding process at this stage in the project consists of an in-depth interview with the new client. The interview format is based on literature on interviews and the content is about the key-topics which are found in garden literature and in accordance with the insights found through the reverse research through design process. As a starting point for the client understanding process the theory about semi-structured interviews is used. In the interview itself the designer tries to get an understanding of the personality of the user, the perspective towards gardens and which garden elements would make the garden a 'dreamgarden'. Accordingly, nine topics are discussed, namely previous garden experiences, luxury, relationships with others, activities, wellbeing, design, relationship between the user and the garden, garden experiences, and nature. Every topic is started with an introductory statement on the topic by the designer so the client understands the vision of TIM on the topic and in which way the topic should be interpreted. Then the client reacts on the topic by showing his perspective towards the topic. In this way the conversation flows naturally without too much questioning and answering. After the short introduction follow-up questions are asked to direct the conversation towards the needed information. The follow-up questions are based on the different types of interview questions, namely questions regarding experiences and behaviour, vision and value, feelings and emotions, knowledge, senses, background, and grand tour. During the interview the designer determines which question is most suitable for which moment. Also, the topics can be flexibly used according to the order of the conversation. As the trial design process showed, the boundaries between the different topics are not clear cut, sometimes one answer for a particular question contains already information regarding a multitude of topics. In the interview guide the questions are formulated quite literally, however this is only meant to provide clarity for the designer between the different types of questions because often the distinction between the different questions is hard to make at first glance. Therefore, the decision is made to formulate the questions quite precisely, directly in line with the garden literature. In this way the content is not diluted too much. So, the questions also function as a summary of the garden literature. During the interview the designer freely reformulated them to make them suitable for the circumstances.



Figure 16 Moodboard of the garden preferences of staff member one



Figure 17 Overview of ideation and conceptualisation sketches of imaginative garden design one

#### Research results

During the in-depth conversation an extensive amount of information is obtained through openness and broadness. During the conversation the order of the topics was easily neglected, and the designer anticipated on the answers given. It became quickly clear that gardens are most easily described in terms of concrete elements rather than in abstract terms. For the experienced gardener it was difficult to think of certain feelings, emotions, and experiences during garden interactions. To explain the deep aspects, concrete elements which should be in the garden are mentioned like having a swimming pond, a fireplace, a lot of greenery etc. This shows that abstract questions can lead to concrete answers since the abstract is embodied in the concrete. Also, some direct abstract elements were mentioned like 'for me the garden is a positive 'must'' and 'being outside is essential in life'. Although some abstract terms were described in concrete terms still this functioned mainly to underpin the story, therefore there is still a lot left to the interpretation of the designer. In the current interview format of TIM depth is gained in an opposing manner, namely concrete questions are asked e.g. 'Do you want a swimming pool?', and then in the conversation follow-up questions are asked to try to gain more depth.

The aim of the trial design process is to gain insights into possibilities for the new design framework. The process resulted in the following different insights. Firstly, the design process showed that garden design is mainly about finding possibilities rather than solving problems. Possibilities for design for activities are searched for during ideation. The empty building plot, within this case gave no context limitations, shows endless possibilities. Therefore, possibility rather than problem-driven design seems to be the most suitable for garden design. Secondly, one of the main limitations of this first trial design processes is that the staff member is not representative for the clients of TIM. Since, he has a lot of knowledge and experience with gardens and gardening, therefore quickly a lot of depth and extensiveness is gained during the conversation. And the staff member is not familiar with luxury, therefore imagining personal interactions within a luxurious garden is difficult. For the staff member luxury should be embedded in a subtle manner through good quality facilities for interactions. Therefore, no budget limits are considered to allow for total freedom in design.



According to the staff member the garden should be part of the environment. Contrastingly, the TIM style shows a focus on architectural elements which are basically an intervention in nature. This observation can be extended towards garden design in general, although not always as extreme as in this trial design process. Gardens are places where nature and the built environment meet. The designer must balance these two aspects constantly. Thirdly, the final concept was rejected by the staff member because there is a lack of aesthetic congruence between the different garden elements. However, most of the individual facilities were perceived as being interesting. This shows that during garden design the unity between the different elements is extremely important. A focus only on the activities is not enough, an overall styling is needed. The initial conversation did not provide information on the styling other than the match between nature and architecture. Consequently, the designer should design the garden based on his own aesthetic experience or a conversation about styling should be added to the design process. For real clients this difficulty is less present since the clients approach TIM because they like the TIM styling in the portfolio. This could be assumed to be the preferred styling. But still visual information on the preferred styling is needed. In this trial design process, the general theme and the TIM styling were even in conflict with each other since the staff member personally does not want to have a garden in the TIM styling because of the little focus on the involvement of nature. In this case the vision of the user is followed the most to make the garden personal. The styling should be used as a general theme in the garden and should be expressed in concrete terms concerning volumes and materials, and their relations. The trial design process showed that an abstract theme, in this case 'merge with nature', is not sufficient. Also, the main activity of 'gardening' is difficult to use as a general theme, since if there is greenery present, gardening is possible. In the current TIM design approach during the conversation with the client concrete information on styling is shared. This altogether shows that the trial design process is too much focused on activities, the focus on activities should be balanced with the styling. Fourthly, during the design process the importance of the context is strongly experienced. For this specific case the environment was assumed to be between the fields in the countryside without any strong contextual influences. Therefore, the dimensions and the shape of the building plot were imagined. During the process this assumption became a difficulty since there were no fixed starting points and boundaries. On the one hand side this provides the designer with total freedom, which is the reason why the plot is imagined namely to be able to focus solely on the input from the conversations, but on the other hand this made design decisions meaningless. Based on the positioning of the entire garden within the context and the different spaces within the context of the building plot meaning is created. Fifthly, the trial design process shows that to a large extent garden design is about the arrangement of standard components. During the conversation the potential user talked in terms of concrete components to explain abstract information. During the design process this abstract information is used in terms of activities and translated into facilities which shape the interactions with and through materials. Although innovation is not the main aim of the garden design process, if there are possibilities to design in an innovative way this would make the designs more exclusive. To be innovative the designer should ideate more to explore possibilities for new materialisations of abstract ideas. Because of the complexity and broad scope of gardens this should be done for a selection of activities rather than for the complete garden since this is too time

### *Conclusions*

Based on the list of challenges for which the design process should provide insights, the following conclusions could be drawn for the framework development. Firstly, the approach of sketching 3D elements for activities during the design process is useful and should therefore be continued during later stages of the framework design. However, care should be taken that the 3D sketches will become part of a larger context. Secondly, the framework should not solely focus on activities but

also finding and guiding in the design for the aesthetics of the garden. Also, the framework should ask for the formulation of a design challenge as being a general theme for design, in this way the chances for unity between the facilities for activities and the general aesthetics is obtained. However, the trial design 58haracts also showed that abstraction of concrete elements leads to finding new possibilities for the design of facilities for activities. Consequently, the framework should aim at finding abstract information of the user and on abstracting concrete information. Thirdly, the client understanding process as part of the framework should be made more less structured and should be reinforced by a visual overview in which the client could have insight in the overview of topics of the interview. In this way the conversation would be less intense and could differ in lengths whilst covering all the topics. There was a need for exploration regarding different formats for the in-depth conversation. Fourthly, during the trial design process the insight emerged that a possibility-driven approach would be more suitable than the standard problem-driven approach in design thinking. Therefore, this possibility-driven approach should be researched through literature and if theoretically suitable integrated in design process.

### 8.2.2 Trial design process imaginative garden two

#### *Research challenges*

The first trial design process showed that garden design is about searching for possibilities rather than finding solutions for problems. Therefore, literature research into possibilities is done and the mindset of the approach is implemented in a first version of a design framework. This means that the second trial design process should, firstly, provide insights into how possibility-driven design could be implemented in garden design. Secondly, since possibility-driven design is strongly connected to contributing to the happiness in life of the user, the second trial design process should focus on designing for happiness. Therefore, the in-depth conversation with the potential user should focus on finding abstract information regarding activities which result in happiness experiences generally in life and more specifically during garden interactions. Thirdly, the first version of a design framework is formulated based on personal design experience. This contains the following steps, namely, information collection and analysis through the first client contact (step 1), the in-depth conversation (step 2), happiness experience identification (step 3) and secondly, the design phases starting with the design challenge (step 4), exploration of boundary conditions (step 5), ideation (step 6), conceptualisation (step 7) and final design (step 8), see appendix A.7. Fourthly, the second trial design process should be focused on a real case in which the design evolves around a real house within a specific context, since the first trial design process showed that total freedom in the design case makes the design process harder rather than easier. Therefore, during the second trial design process a real case should be considered. Fifthly, the design process is aimed at trying the new mind-map style format, see appendix A.8, which is developed after the first trial design process. It should be tried out in terms of pragmatic use and insights into whether this provides enough information to create a proper garden design.

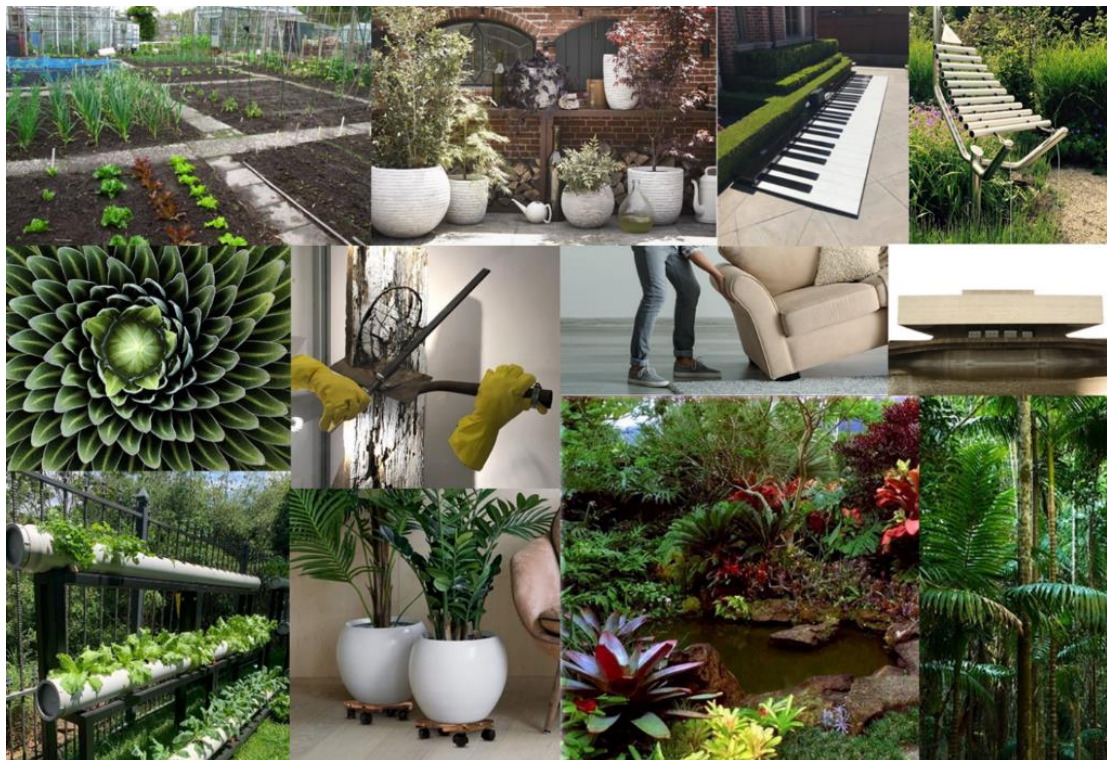
#### *Research conditions*

In this process another staff member of TIM is asked to participate in the process. This man is in his thirties and is lead up as an interior designer. He does not have any specific garden experience other than being in private gardens of family members and friends. Furthermore, he does not have financial possibilities to own a garden which is similar to the designs of TIM. Therefore, the luxury was imagined during the in-depth conversation. Other than in the first trial design process, the session took place in the presentation room of TIM, in which the table provides the option to use a large sheet with the mind-map style format, so keywords were written on the sheet in a visible manner. Furthermore, this set up allowed for comfortable sitting whilst talking together. For the design process itself a house in the style of cubism is found on [funda.nl](http://funda.nl) which is in line with the

preferred styling of the staff member. Also, the dimensions of the building plot is known to be around 450m<sup>2</sup> and the orientation with regard to the view into the countryside through back of the garden is of importance during the design process.

#### *Research approach*

In accordance with the literature on semi-structured interviews questions were asked regarding the vision/opinion on the specific topic, the role in life, value, and experiences in terms of perceptions, emotions, and feelings. In the end of the session the designer asked which topics are the most important to the user to find a central theme for the design process. In terms of pragmatic use the format does not show any order, therefore the conversation shifted constantly between topics. This allowed for finding relations between topics. The conversation is aimed at positive experiences to find input for new possibilities for design for happiness experience.



*Figure 18 Inspiration board about preferences staff member two*

In the end of the session a selection of the most relevant information is made in agreement with the client. After the session the designer selected the topics that inspire the most for possibility-driven design. The client showed that he experiences the most happiness through individual and experimental gardening. Next to that, for the client rest, warmth, stability, luxury in the feeling, visual and honest design is important. From this information the design challenge is formulated as follows: Which possibilities could first and foremost experimental gardening, but also tropical nature, and music in the garden provide for the happiness experience of the client? The information from the in-depth conversation, see appendix A.9, is summarized in a mood board regarding the topics as such, see figure 18.

Also, in contrast to the first trial design process a real house is found online which is preferred by the potential user in terms of architecture. In this the garden design revolves within a specific context. The ideation phase focuses on translating the obtained information into possibilities for garden activities, see figure 19. Experimental gardening is designed in the way of moveable plant pots, which still have a fixed location in the garden, and the plant curtains which can be moved in the desired

position. In this way experimentation can be done with axis of sight. Stability and rest are translated in aesthetical balance and symmetry. Furthermore, the overall styling is based on the them 'tropical' and the architecture of the house. The mostly individual garden experiences are translated in sitting places for a small number of persons. Since the client was quite enthusiastic about music and probably even wants to try to make music, an outside music instrument, consisting of metal pipes that can be hit, is added.

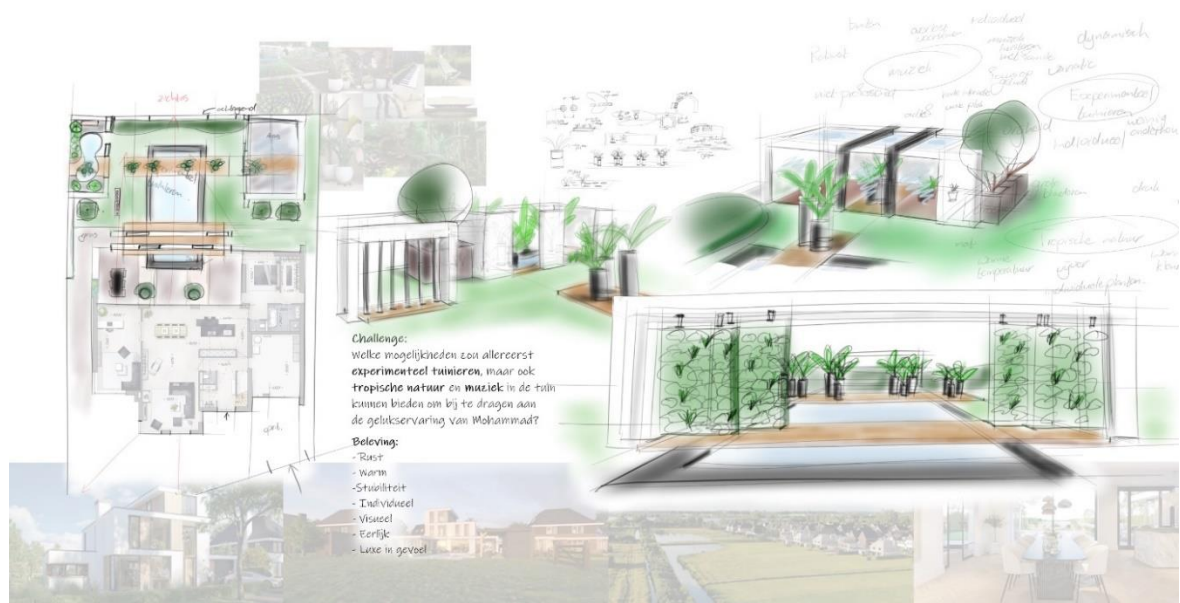


Figure 19 Ideation and concept sketches of initial garden design of imaginative garden two

During concept presentation it became clear that the design does not have potential for happiness experiences of the potential user. The client missed the atmosphere of domesticity. This was a surprising conclusion since this term was not discovered during the mind-map session. Furthermore, the emphasis was too much on the new possibilities for happiness experiences. The client (himself being an interior designer) gave the feedback that the terms discovered in the mind map session are taken too literally. For instance, the love for music is something that is experienced but should not be implemented in the garden design. From a designer's perspective this was seen as a great possibility to design a different and innovative garden, however this did not work out properly. The curtain idea is a nice idea, however, is perceived with only minor enthusiasm within the context of the new garden design. Also, the swimming pool would not be used and is also not asked for. The designer added this element to create a luxury atmosphere. The tropical experience area is perceived as being successfully designed. This is the case because the client has shown an image of a tropical garden to the designer. This shows that communication through the mediation of visual images is crucial for the design process. Based on the individuality in garden experiences minor sitting places are included because these would not be used. However, during feedback it became clear that sitting places for multiple persons are preferred because they add to the domesticity within the garden. This shows a difference in the meaning which is devoted to sitting elements. The designer focused on the pragmatic meaning and the potential user on the abstract meaning of communicating domesticity. All in all, there was a need for redesign which is visible in figure 20. In the redesign the focus is more on the tropical and domestic atmosphere and the possibilities for experimental gardening are integrated in a more subtle manner. The potential user perceived this design as having potential for delivering the happiness experience. The final visual impressions are visible in figure 21.



Figure 20 Ideation and concept sketches of final garden design of imaginative garden two

### Research results

During and after the trial design process different insights are obtained. Firstly, the process showed that the possibility driven approach based on abstract themes regarding experiences opens up a large design space for the designer in which easily innovative garden elements could be designed. However, this innovation should be considered as being a side effect rather than the goal. This is illustrated by the fact that the innovative ideas were not in line with the preferred experiences of the user. The focus was too much on the innovativeness, therefore the innovation should not be the key elements within the garden but should be in line of the general styling and theme of the garden. Secondly, as became clear during the presentation of the design, the client expects the fundamental meaning of a garden to be domestic in atmosphere.

During the in-depth session the relevance of this domesticity was not observed. Viewed from the perspective of the client, the designer redefined a garden as being a place for experiencing domesticity towards a garden as being a place to execute experimental gardening individually. Therefore, the designer should strive to find the basic prerequisites of the client regarding garden design. Even more, it might be that the designer unconsciously focused too much on his own enthusiasm about possibilities for innovation and therefore his own happiness rather than on the happiness experience of the user. This altogether shows that a designer cannot approach a garden to be a blank sheet with endless possibilities, rather the designer should have a proper understanding of how the client defines a garden. Thirdly, the feedback on the design showed that the making of outdoor music did not have potential for the experience of happiness. Here the designer assumed that since the user prefers to listen to and even experiment with music, this could be a source for innovation within the garden. However, for the client the suitability of the activity within the context is more important than the act itself. Therefore, the concept for an outdoor music instrument was rejected. This altogether shows that happiness experience is context dependent and consequently the designer cannot always project general experiences in life onto garden design. Fourthly, as a consequence of the former two insights, the trial design process showed that designers must make a lot of assumptions regarding the preferences and interpretations of the user, being again a substantiation for the need of in-depth conversations. However, the complexity lies in the idea that clients are often not able to talk about an imaginative garden and therefore do not know how the

experiences take place during future interactions. Consequently, the designer needs to make assumptions and should predict whether the new design would lead to new happiness experience other than predicted by the client. Also, the authority of the designer might play a role in the experience creation. Fifthly, the outcome of the design process shows that the design vision within the framework basically functions as an addition to the garden design rather than leading the entire design process. In terms of the garden experience the aesthetical perceived experience through congruence with the architecture of the house and the tropical styling is more important to the client than the activities covered by the design challenge.

This shows that in garden design the aesthetics fulfil a prominent role and therefore the design should come to an agreement with the client about the styling. Therefore, mood boards have potential to be of great importance during the future gardens design processes. Sixthly, on the fifth level of design the trial design process shows that it is possible to translate information about happiness experiences into a design challenge which guides possibility-driven design. How a prerequisite of the possibilities is that they should be personally meaningful for the user.

### *Conclusions*

Based on the insights the following conclusions are drawn for the framework design on the third level of design. Firstly, the possibility-driven design mindset is useful for garden design because it leads to an open minded approach, therefore this should be kept during the following iterations on the framework design. Secondly, also the focus on happiness experience is valuable and therefore should remain part of the design approach. However, more practise is needed to translate the abstract information into a unity of garden elements which together form the total garden design. Also, more exploration is needed on the importance of happiness within the design process. During the in-depth conversation visual information should be shared as well since the overall styling is extremely important to the users. Therefore, the mood board should not only include visual information regarding the abstract terms, but also information regarding the preferred styling. Thirdly, the eight-step framework is useful from a pragmatic point of view and therefore could be optimized in the following iterations. Fourthly, although in this process a real house and building plot are used, still the potential user is played by one of the staff members, especially regarding the luxurious styling a real client should searched for to try out the in-depth conversation format and to design for a real case. Fifthly, the mind map style format is proven to be useful in practice, therefore it should be kept in the framework and further optimized.



*Figure 21 Visual impressions of the final concept*

### 8.2.3 Trial design process for myself

#### *Research challenges*

The second trial design process showed that the framework is useful in practice and that the in-depth session is usable during the client understanding process, however it should all be tested with a real new client of TIM. Unfortunately, at that point in time there were no new requests for garden design which could be used to test the framework. This difficulty is changed into a possibility for experiencing the entire process for myself and my girlfriend, so a garden design for myself is created, in accordance with the research of Eggink (2019) about design for 'Yourself'. Normally, the designer would observe the use of the mind-map style format from the third person perspective therefore it is difficult to get an impression about how the client experiences the in-depth conversation. The third trial design processes therefore firstly are about finding out how the potential client would experience the mind-map session and to optimise it accordingly. Secondly, since a real case is used, my own house and the garden, contextual factors are real and therefore the third trial design process should provide deeper insights into how the contextual factors influence the design decisions. Thirdly, during the in-depth information session the questions are regarding a mixture of past and future happiness experiences. Client needs to switch constantly between these two perspectives. Furthermore, he must think about material garden elements in abstract terms regarding experiences. Insights about this way of thinking during the in-depth session need to be obtained through experiencing the process myself. Fourthly, more literature research into human-centred design methods, see chapter 6, resulted in finding the potentially useful theory of Emotional Design and the three steps it contains of design for the visceral, behavioural, and reflective side of products, for the translation process from abstract information regarding happiness into garden elements. Before the focus was mostly on the behaviour aspect of garden design in terms of activities, therefore, the third trial design process should provide insights in the applicability of this more holistic approach for garden design.

#### *Research conditions*

The process is executed for myself and my girlfriend who are both in their twenties. I am a Msc Industrial Design Engineering student with gardening experience from my side job at a landscaping company, and my girlfriend is a teacher in primary school. Both do not have experience with the amount of luxury which is available in the TIM gardens and do not have owned a garden previously. Furthermore, both do not personally prefer the minimalistic styling of the TIM gardens. In the ideation sketches in figure 23 the building plot is visible. The house is a freestanding house, which is the former house of the grandparents of my girlfriend, on a building plot of roughly 350m<sup>2</sup> from which around 100m<sup>2</sup> is available for the back garden design. The back garden is surrounded by walls of the houses and gardens of the three neighbours. During the in-depth session and the design process no budget is considered.

#### *Research approach*

The process is started with an investigation of the building plot in terms of measurements via Google Maps. Next the mind-map format is substituted to search for happiness experiences. Also, a mood board is created to visually depict the abstract information. Subsequently, the information from the meaningful session is categorized concerning the behaviour, visceral, and reflective aspects of emotional design, see also appendix A.10.





Figure 22 Moodboard showing personal preferences for the garden

To start off the design process a selection of topics is made covering the three categories of emotional design. These are integrated into a design challenge that asks for the possibilities for happiness experiences within the new garden in the following manner “Which possibilities would firstly experience of nature, but also good relationships, family life, tension, rich details and spaciousness in the garden have to contribute to the happiness experience of the clients?”.

During ideation the garden interactions and activities were used as a starting point. Elements for nature experiences are designed, resulting in a central water feature and a background of flowering plants on different levels. The terraces and the other sitting elements are based on interactions with a maximum of around eight people as a sign of good in-depth relationships rather than facilities for a lot of people within superficial relationships. Most interactions within the garden are based on gardening activities and thus connecting with nature. The visceral part of emotional design is integrated in terms of styling. The styling consisting of a mixture of classic and modern elements. The spaciousness is part of the visceral aspect as well. This is designed into the garden by partly blocking the view through the garden by small hedges and walls, the lawn, and the axis of sight into the direction of the flowerpots in the back of the garden. In terms of reflective elements, the grape vine and the classic lamppost are reminders of the previous owners of the house, namely the grandparents of my girlfriend. Also, the styling shows the love of nature and gardening, and complexity which reflects the personality of the potential owners. In this way the garden users could reflect on themselves and would experience happiness.

After the design of the garden, the designer of Tim also designed a garden for the specific case. This could be used to compare the current design approach with the new design approach and see what the added value of the new approach is.



Figure 23 Ideation and concept sketches of the design for the own

### Research results

On the third level of design the process shows that the general approach of emotional design is useful in structuring the design process and breaking down the total complexity of garden design into smaller elements. The design challenge provides a clear guide into what the aim of the design process is and direct the process into the search for possibilities. This allows for free design choices concerning specific garden elements. However, the approach does not provide structure regarding the unity within the total garden, this is mostly based on the design capabilities of the designer.

In terms of the fourth level of design, firstly, the process showed that thinking about happiness experiences regarding the topics on the mind-map sheet has potential for gaining a lot of inputs for design. Since the design process is based on possibilities, everything could be used. The designer needs to search for these keywords that are the most inspiring for designing garden elements. The difficulty lies in the fact that the designer can translate the abstract terms into concrete material elements, however the designer cannot test whether the result evokes the intended experiences by the user. Secondly, the meaningful session allows for concrete thinking as well, easily concrete elements are needed which should become part of the garden. Therefore, the designer should constantly ask why this specific element is meaningful and why it contributes to the overall happiness experience. In this way the designer gets an understanding of the experience on an abstract level and creates more room for exploration and innovation.



Figure 24 Visual impression of the design result of design for the own

The design process on the sixth level of design, firstly, showed that design for happiness experience could only fulfil part of the design process rather than being the entire design process itself. Namely, the boundaries of the context of the building plot and pragmatic dimensions of for instance the paving direct and limit the design process the most. Therefore, the designer must constantly shift between the pragmatic and the experience side of the garden design. Whilst designing these play the most crucial role, however the designer should see them as the boundaries in which the possibilities should be searched rather than hard restrictions. The final concept, see figure 24, is perceived by the staff of Tim as not being in line with the TIM style mainly due to the complexity of the garden. It is rather be seen as a 'showgarden' in which as many as possible different garden elements are integrated. This complexity is the result of the implementation of the maximum number of experiences possible. Next to that, other than in previous design processes the happiness experiences of two persons rather than one person is considered. This increases the number of topics for design drastically, and therefore the complexity.

Secondly, the process shows that also the TIM styling elements should be added on top of the process of emotional design, rather than solely focussing on the experiences of the client. In figure 25 the design of the designer of TIM is depicted for the same case. The design process towards this design is the standard design approach of TIM, there is no focus on happiness experiences specifically. The design is based shows luxury, cleanness, minimalism, clarity, and rest. Furthermore, there is only one strong axis of sight in the longitudinal direction of the garden. During the process the pragmatic experience of the designer became clear, namely certain garden activities are assumed to take place and the needed facilities are designed into the garden. However, the question remains whether in this way the garden becomes the most suitable for the user.

Namely, the entire project is directed to find an approach to make the gardens more suitable for the user through a better understanding of the client. For TIM the bottom line for this type of small gardens is spaciousness through the minimum amount of garden elements. Also, the need for simplicity in maintenance is assumed and designed for. In the trial design process, there is the problem of a lack of congruence between the preferences of the imagined client and the styling of TIM. In practice there is little chance for the occurrence of this problem since normally clients would approach TIM because of the current specific styling, therefore there is automatically congruence in this respect. During the design process the current TIM styling is deliberately neglected because then there is more freedom to experience the meaningful session personally, and to see how the emotional design approach could be implemented in garden design. Basically, only the strong axis of sight towards the plant pots in the back of the garden is inspired on the TIM garden designs. This altogether shows that the emotional design approach should be inferior to the TIM styling to make the design process suitable for the company.

Thirdly, another consequence of the new design approach is that the decisions of the designer are meaningful. The designer can substantiate the design decisions. However, this does not mean that the moment the designer has designed for all the preferred experiences that the garden is aesthetically pleasing to the user. Therefore, either the designer should convince the client of the higher experience value rather than the aesthetical value of the garden in life, or the designer should focus on those experiences that could fit within what is aesthetically acceptable for the client.



Figure 25 Design by designer of TIM through the current design approach

Fourthly, the process shows that all the topics regarding happiness experiences are not mutually exclusive during the in-depth session and the design process. The designer takes the keywords as starting point for the design process, but the design result might cover multiple different keywords at the same time. Also, the design of the specific garden elements for the experiences is not element dependent. For instance, nature experience is a topic which should be covered by the entire garden. This shows that during the entire design process the designer should use the design challenge and the complete overview of the meaningful session in the back of the head. And reflect constantly whether the intended experiences are in line with the general image of the potential user. Consequently, the specific elements for a specific experience are those elements that evoke the experience the most rather than evoking the experience solely.

### *Conclusions*

Based on the insights from the third trial design process the following conclusions are drawn. Firstly, the trial design process confirmed the overall usability of the framework and specifically the process of understanding the client. Reflecting on my own future experiences within the new garden and substituting the mind-map delivered a lot of information and therefore the format should remain part of the framework. However, the information is still quickly quite concrete and therefore during future use the designer should guide the client in the process of going from concrete garden elements towards abstract information, to gain more depth in the understanding process. It also showed that some cognitive afford is needed and therefore it is wise to focus on the most interesting topics rather than covering all the topics equally. Secondly, since the process is based on a real house within a fixed context, the design process showed how important the context is for design decisions. It showed basically that the designer should actively put a lot of effort into finding possibilities for designing for all the preferred experiences. Therefore, in the next iteration of the framework the focus should be on the most important experiences. However, this only requires a change in mindset rather than changing the entire design framework. Thirdly, the process showed the usefulness of the three categories within emotional design for the design of garden elements, because it helps in creating a holistic design in which the relations between the garden elements are meaningful. Therefore, this method should remain part of the framework, only more trial design processes are needed for gaining familiar with the approach and optimizing the process.

### 8.2.4 Trial design process city garden Den Haag

#### *Research challenges*

For the fourth trial design process finally, a new client was available and therefore the framework has been tested for a real case. The focus of the process goes towards, firstly, finding out how the use of the in-depth session evolves at the start of the client-company relationship building process. The session is used to find out whether the clients can think in terms of future garden experiences and how the mind-map style format guides this thinking process. Furthermore, the session is used to find out whether the experience-based approach is suitable for the target group of wealthy people, the question should be answered whether they are prepared to deeply think and share about their private life, or that they just want a standard demand-driven approach.

#### *Research conditions*

As mentioned, this design process focuses on project for client of TIM and therefore the research contains factors from real life. The clients are a man and his girlfriend somewhere within their forties and thirties. The man is a wholesaler and trader in meat for restaurants and hotels. The woman is mostly occupied with her three show dogs, see also the image in figure 26, which are being treated as family members. Their request for a design of TIM covers the design of the back garden of around 120m<sup>2</sup> for their house in Den Haag. The building plot is situated near the city centre and therefore is

surrounded by neighbouring houses and gardens. For the project they have a budget of around 250.000 euros. All this information is obtained through the substituted list of requirements and the in-depth session at the office of TIM.

#### *Research approach*

During the in-depth session a lot of information is gained based on the mind-map style sheet about happiness in the dream garden, see appendix A.11. During and after the session the sheet is substituted to capture as much information as possible. After the session a mood board is created as being a visual conclusion of the session. Then the information is again categorized in terms of behaviour, visceral and reflective relevance. In which the three categories are all being viewed as contributing to the happiness experience.

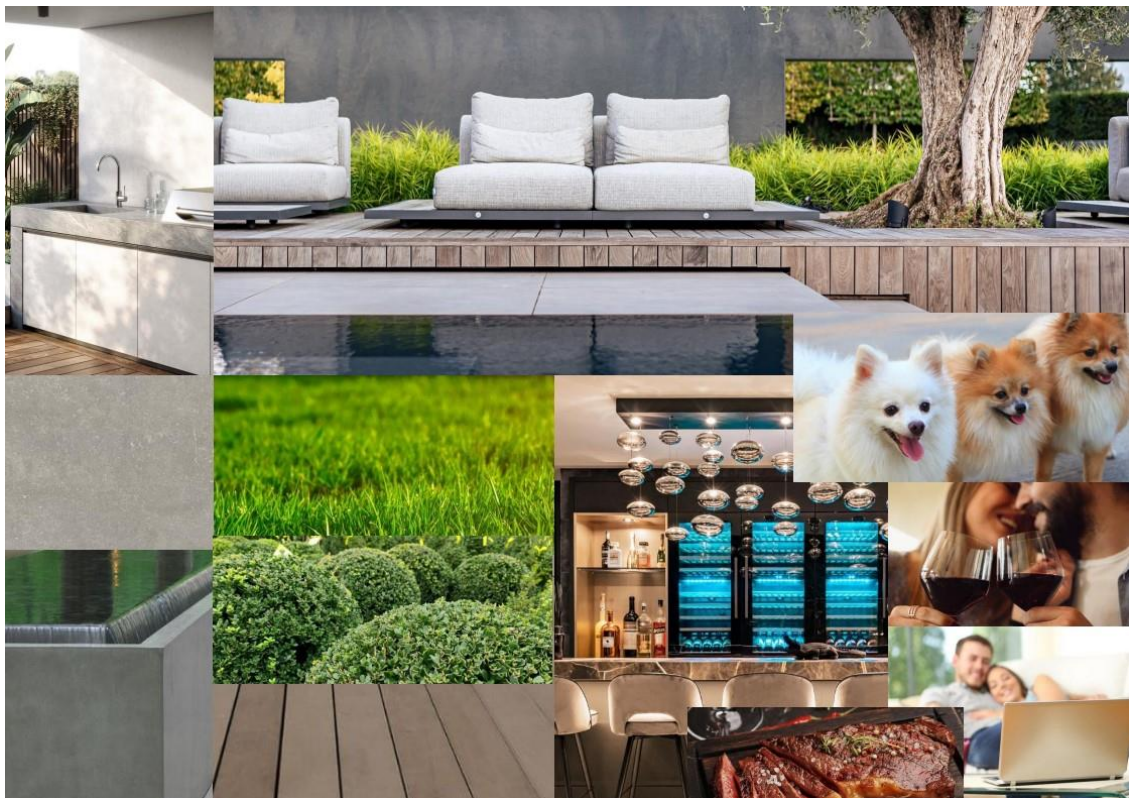


Figure 26 Moodboard for city garden Den Haag

#### *Design process*

During and after this categorisation the designer gained an image of the most relevant and most interesting topics. This resulted in the following design vision, namely: 'Which possibilities does first of all intimate and warm relaxation but also spaciousness, the dogs as family members, simplistic outside cooking provide in the garden to contribute to the happiness experience of the clients.' The design process started with quick brainstorming about these topics in a search for new possibilities. This is followed by a quick ideation in which each topic resulted in a single or a group of elements within the garden. Here the abstract terms were materialised in combination with the envisioned use and interactions. Also, a mood board is created, see figure 26 to capture the preferred styling, the preferred activities and elements for the future garden, as discussed in the in-depth session.

This resulted in the design of a space for warmth and intimate togetherness directly behind the house, see the ideation process in figure 27. This space consists of a two-seater couch and a semi-closed roofing, a wooden element with circular stages on which the dogs could show off. This

element follows the main axis of sight in the garden. In this way the importance of the dogs becomes clear. Also, the lawn functions as a place for the dogs, so they can play freely. But also functions as an element which contributes to the spaciousness within the garden. Semi-open walls add to this spaciousness as well, these separate the visible (known) from the invisible (unknown). In addition to the design challenge there is a dining area, a lounge area, a bar and a water ornament for water experiences. After presenting the design outcomes to the staff of TIM iterations are needed to reduce the complexity, increasing the spaciousness through reducing height differences, and for pragmatic measurements of the outside residence.

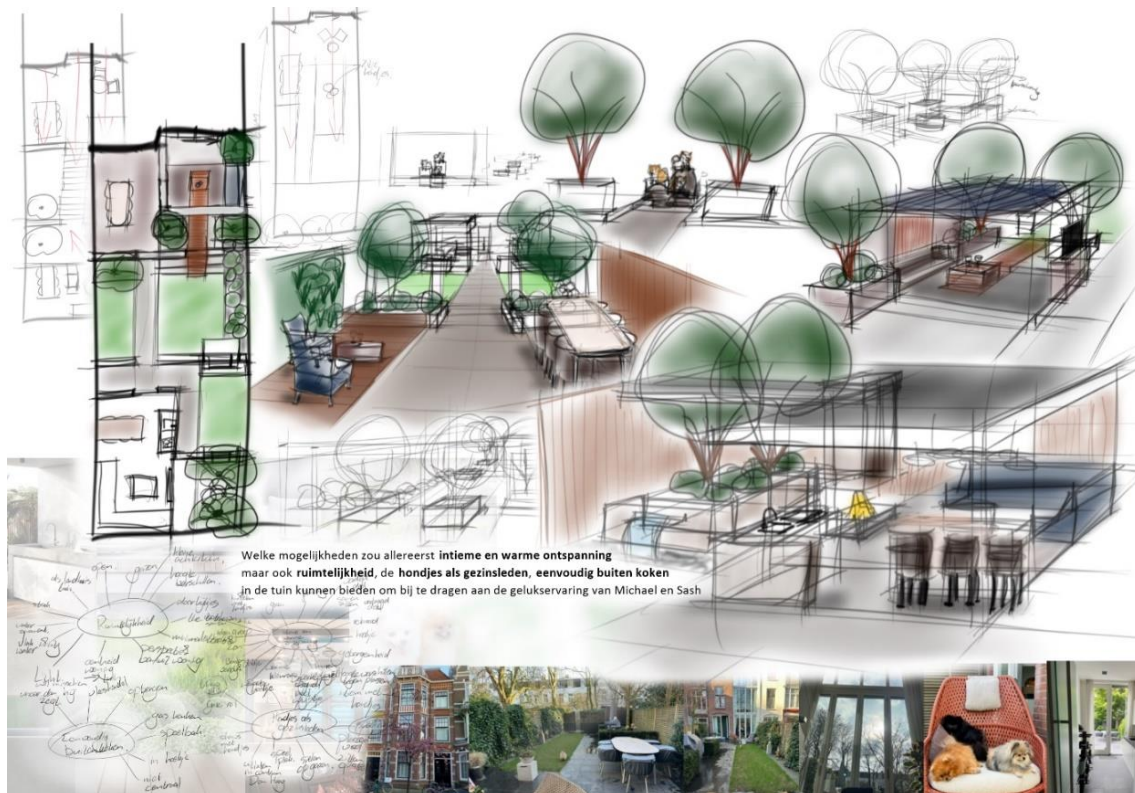


Figure 27 Ideation overview and concept sketches of city garden Den Haag

### Research results

The design process for the city garden in Den Haag gives the following insights into different levels of design. On the third level, namely the framework design, during the analysis phase the mood board is created as being a visual conclusion of the Meaningful session. The mood board functions as a guide, tool for reflection and evaluation during the ideation and conceptualisation phase. Also, between the designers it functions as a common ground for client understanding. Therefore, the mood board is a crucial element within the design framework. On the fourth level of design the analysis phase of the trial design process showed an unstructured Meaningful session in which enough information is obtained to design for. Most information is about the use of the garden, the behavioural aspect of the emotional design. The visceral element is taken to be the overall styling of the garden. The reflective element was not concretely mentioned, however for the designer the reflective element is combined with the behavioural element. Since the facilities for interactions allow for reflection about what is important in the lives of the users as well. For instance, the stages for the dogs allow for certain behaviour and simultaneously show the prominent role of the dogs in the lives of the users. This shows that not always literal information is needed to be able to design for.



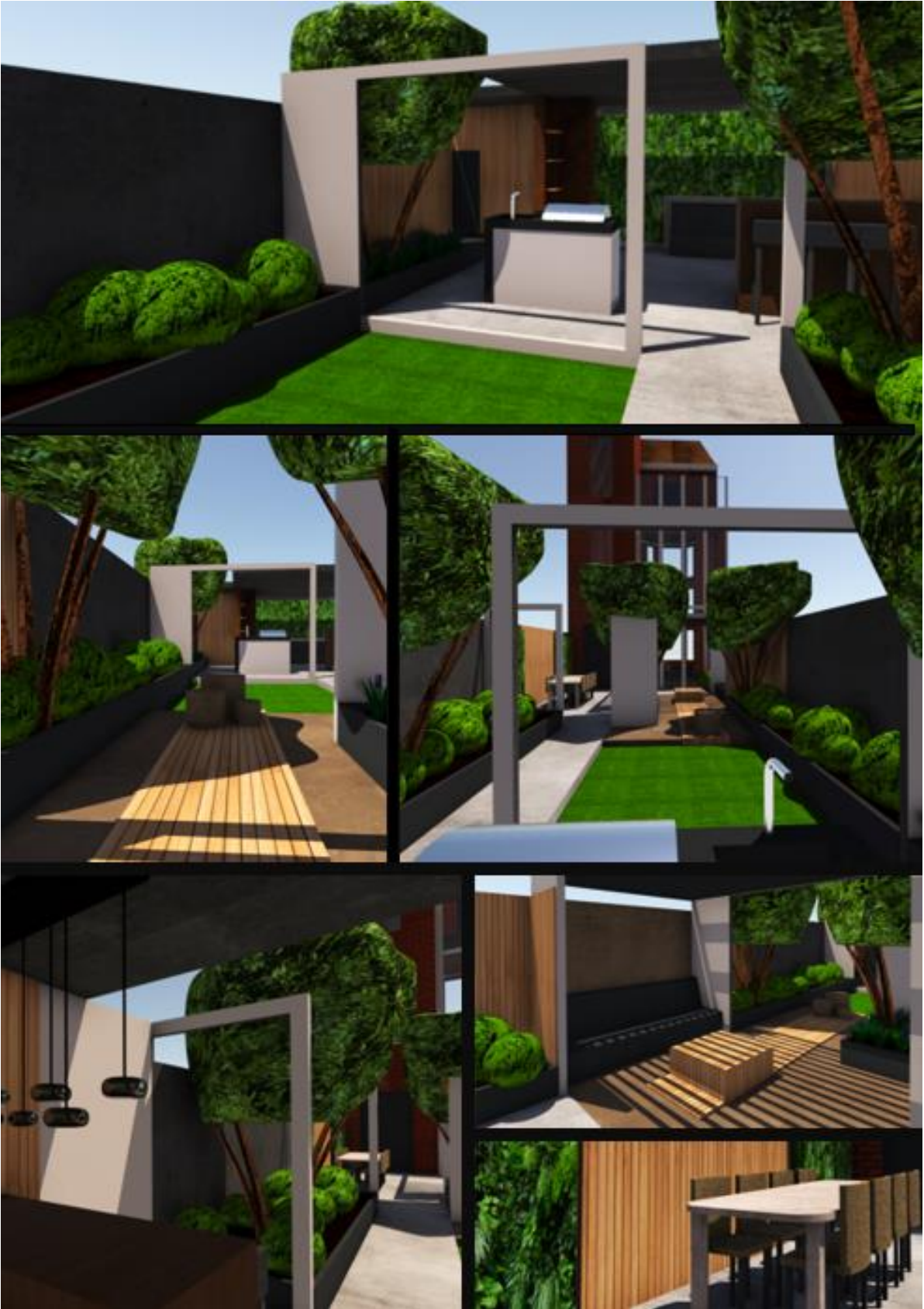


Figure 28 Visual impressions of the final concept for city garden Den Haag

The design of the design challenge is the fifth level of design in the entire project. In this trial design process, it became clear that the design challenge mostly functions as a prioritization of the information of the Meaningful session for the designer. The Meaningful session delivered such a large amount of information that the designer needed to search for the most relevant and interesting elements to design for. Consequently, the designer has the freedom to search for possibilities for innovation through the possibilities. The advice for TIM would be to design at least one innovative element in each garden to differentiate in the market, because the design framework allows for innovation. If not, this would be a missed opportunity. In the current garden design, the set of three round stages central in the garden are the innovative element to provide a stage for the little show dogs of the clients.

On the sixth level of design, firstly, the design process revolved mainly around the behavioural aspect of emotional design. Since the activities are related to facilities which form the core of the garden design. The entire garden basically is the combination and unity of the individual garden elements. Secondly, during ideation conflicts between keywords on the visceral level were discovered, for instance warmth vs. spaciousness. On the one hand, too much spaciousness would lead to a lack of elements which result in the feel of a lack of protection and security. On the other hand, too much warmth would lead to lack of spaciousness since facilities for protection would block sight. Other contradictions which were discovered are spaciousness vs intimacy, complexity vs spaciousness, and complexity vs minimalism. Opposingly, similarly as discovered in the 'trial design process for the own', certain garden elements cover multiple keywords. For instance, the walls contribute to the warmth and intimacy but also add to the spaciousness because they block sight and therefore create the unknown. This directly shows the possibilities for multiple interpretations of components, 'blocking sight' could be simultaneously interpreted as the reduction and increase of spaciousness. The former is true because walls take a certain amount of space and therefore decrease the total amount of available surface area for garden interactions. However, on the contrary they can be seen as blocking sight which creates the unknown, therefore the user cannot estimate the dimensions of the garden in its totality at first glance and therefore the garden is perceived as being larger than Expected. This altogether clearly shows the need for the involvement of the client during decision making by means of the presentations of the design. It also shows the interrelations between the visceral and behavioural aspects of emotional design. Thirdly, the design process again showed the relevance of the context, the architecture of the house, and pragmatic dimensions. The search for possibilities within emotional design revolves within these boundary conditions.

### *Conclusions*

Based on the insights obtained through the design process, the following conclusions are drawn. Firstly, during the in-depth session it was difficult to find depth based on the topics on the mind-map style format. Therefore, during next sessions the designer should take more time for abstracting the information. Secondly, the session showed that the clients prefer a free conversation therefore the mind-map style format is suitable to structure process and keep track of the information which is discussed. Therefore, the format should be further developed and explored more frequently.

### 8.2.5 Trial design process country village Limburg

#### *Research challenges*

After the fourth trial design process a major change in the entire project is made since the designer and owner of TIM designed reflected upon his personal life and how this could be implemented in the company. This took place on the first level of design, namely on the level of the company philosophy. The change is inspired on the master assignment in which meaningful design through happiness is used as a starting point. The new philosophy shows four pillars which will be implemented in all the processes of the company, namely meaning, happiness, greatness, and pleasure. Since these are all related to experiences, these terms are suitable for experience based design. Therefore, a broad literature research is executed to get an understanding of these topics from a scientific perspective, see chapter 7. This altogether made that the in-depth session is changed from being an in-depth session towards a Meaningful Session focussing on the four abstract terms regarding experiences. Therefore, a mind map style format is developed containing the four topics meaning, happiness, greatness, and pleasure, and for each topic the questions what, how, and why are asked. These are the questions which should lead to information regarding the behavioural, visceral, and reflective elements of emotional design, respectively. A schematic is created in which the four experiences with the relating elements of emotional design could be substituted by the designer. Finally, the experience plan is developed, which is used for the location of the experiences. All these elements of the framework are in more depth discussed in. Since this is the last trial design process, and the formats are not adapted anymore, all the formats could be found in section 8.4. This altogether need to be tried out an optimized if needed, therefore the fifth trial design process is used to find out the following. Firstly, whether the perspective of the four elements is a useful approach for understanding the clients. Secondly, are the clients prepared and able to think in these four abstract terms about their gardens. Thirdly, whether the four elements result in a proper foundation for building an in-depth company-client relationship. Fourthly, whether all the tools within the framework form a unity and provide guidance in the process of translating the abstract information into garden design elements. Fifthly, whether the all the documents are of pragmatic use. Sixthly, whether the set of all the documents together with the list of requirements and the mood board are useful for storing the information of the Meaningful Session, so in the future if other designers become part of the TIM team, the information can be quickly used without a need for attending the Meaningful Session in person. Also, should be tried out whether the set of documents function as a common ground for client understanding between the staff.

#### *Research conditions*

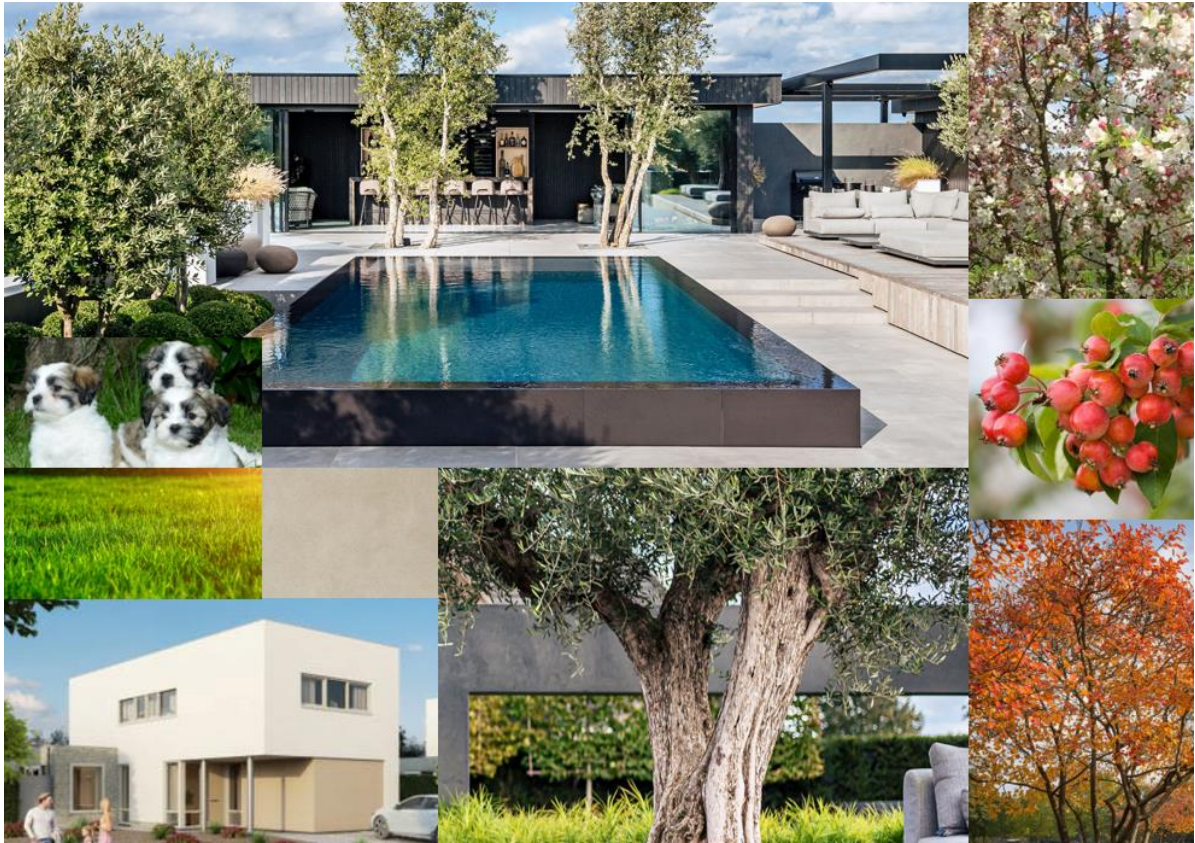
The Meaningful Session is executed with new clients in the presentation room of the office. The clients are a doctor and his assistant who are the man and his girlfriend. Both are within their late thirties and together bought a house in a country village in Limburg. The house has a styling of cubism and, see figure 29, and is situated on a building plot of around 900m<sup>2</sup>. Part of the family a little do which need to be able to play in the garden.

#### *Research approach*

The client understanding process started already the moment the substituted List of Requirements is received from the client. Then, during the Meaningful Session the question Why, What, How are asked for each of the four experiences. This led quickly to only a short moment of depth. Also, still the session was quite unstructured due to the dynamics within the conversation.

Nevertheless, after the session general answers have been interpreted in terms of the four experiences. Namely, after the Meaningful session the scheme of 'Total garden experiences' is filled out by the designer in order to split the garden topics which are discussed during the session, for

each of the four experiences, Each of the mentioned garden elements is divided into the three levels of emotional design. Furthermore, partly during and after the session an 'Experience plan' is created to capture and connect the experience with respect to the context. Finally, also a mood board is created as a visual conclusion of the session. All these documents together form the starting point for the design process.



*Figure 29 Moodboard showing preferences of client in Limburg*

During the Meaningful Session the clients did not distinguish in their wordings of the experiences. The designer specifically asked for the most meaningful aspect within the garden, this was 'to empty the head' and 'congruence between the house and garden'. Furthermore, what was liked the most in gardens was colourful blooming of trees and multiple stemmed meshes. Because this shows transition during the seasons. All in all, there was not a lot of depth in the information and from the minimal information the designer needed to fill in the categories for the experience plan by himself. Based on his interpretation the information was divided over the meaning, happiness, greatness, and pleasure. Especially the greatness was unclear. This shows that during future sessions the questioning should be more precise within terms of the four categories. The most important information was all regarding the greenery within the garden, this made the design process complicated because it did not give a lot of input for meaningful design in terms of architecture. Therefore, the styling of the house in combination with the keywords 'minimalism', 'rest', 'earthtones' (which are also found within the house itself) and 'Mediterranean' are used as the basic abstract terms during the design process.

All the information substituted in the scheme 'Total garden experience' is applied during the ideation process. The experience map is used as a starting point for the location of the focus point of the experiences. The element showing the transition of the seasons is taken as resulting in the strongest happiness experience for the client and therefore gets a prominent place within the garden. To



implemented to test their pragmatic value and see whether they influence the overall design process positively.

Firstly, during the Meaningful session it became again clear that garden experiences are extremely location dependent. Some information regarding locations is found and captured in the Experience Plan. Also, the designer already determined some locations in agreement with the clients. In this case mainly for the pleasure experiences. The design process showed that designing for experiences for a specific location is a structured approach starting from an abstract level. Although standard design processes already show the importance of locations with respect to garden interactions, the Experience Plan provides a clear guide. It basically captures the current approach and abstracts the information. Now the experience is the starting point for the design of a garden element suitable for the specific location within the garden. This approach is the reversal as the current approach in which concrete elements are taken as a starting point. Not only the pragmatic advantages are valuable for the structure of the design process, but this approach opens design space for innovation. Furthermore, it functions as a common ground for discussions between staff members of TIM and allows for information storage.

Secondly, in terms of the value of the Meaningful Session with respect to the entire design framework, the process shows that with little input from the Meaningful Session already design for experiences could take place. This is not only the case because of the creativity of the designer with respect to the interpretation of the general information in terms of experiences. But, without any in-depth information the designer of TIM was already able to create proper garden designs. Accordingly, during the trial design process still most decisions were made based on the boundaries of the building plot, the TIM style and the architecture of the house, herein the mood board played a prominent role. This shows that the design experience of the designer is still of great importance. Therefore, it becomes clear that the quality of the garden design in terms of matching the personality of the end-users is of added value, rather than fundamental for garden design as such. However, fundamental for good garden design in terms of the vision embraced in the entire master assignment.

Thirdly, to get the design decisions as much substantiated as possible, the Checklist for Meaningful design is used as a means for evaluation of the final concept. In this way evaluation of the different experiences could be made in terms of characteristics of the four experiences found in scientific literature. In this way the designer thinks through the design from an evaluation perspective and creates substantiation the explanation of the design during the presentation towards the clients. The checklist is easily useable, however background knowledge from scientific literature on the experiences is still needed. The checklist is the most valuable in terms of the role certain garden elements potentially could fulfil within the garden. And it allows for finding unintended potential experiences. However, in the end the visuals which are presented towards the clients should function as prototypes of the real garden and should provide insights in whether the garden elements provide potential for the four experiences.

In terms of the sixth level of design, in the process of materializing the abstract terms it is difficult to distinguish between the different experiences, also because during the Meaningful Session it is not discussed how the clients distinguish between the different experiences. However, the process shows that the four experiences give a general input for a broad scope for design for garden experiences.



Figure 31 Visual impression of the final concept garden in country village Limburg

### *Conclusions*

The insights are used to draw the following conclusions. Firstly, since the approach of the four experiences is the new company philosophy of TIM it is understandable for the clients why the Meaningful Session revolves around these topics. Therefore, these topics should remain part of the framework and their use should be further explored during future sessions. Further testing is needed also because in the session with the clients only a few minutes were spent on the in-depth conversation itself, the other time is spent on the explanation of the designer regarding the quotation and showcasing other gardens to inspire the clients. Therefore, a proper planning of the session is needed in which the sheet with the topics is the starting point for the entire conversation rather than being introduced halfway the conversation. Secondly, based on the enthusiasm of the clients it could be concluded that for them the four topics are interesting as well to think about. Also, because the four experiences are extremely broad in terms of interpretation possibilities, easily connections between concrete and abstract information could be made during the session. Thirdly, it is still hard to draw a conclusion regarding the relationship development since the final design for the clients is presented outside the timeline of the master assignment, which is the moment when the influence of the Meaningful Session could be discussed, and estimated about the quality of the relationship could be made. However, it could be concluded that the relationship is positive since after the session the clients signed the quotation as the official start of the company-client relationship. All in all, a longer observation of the relationship should be made to see whether the framework is of added value for the company-client relationship. Fourthly, as the trial design process shows in terms of pragmatic the new total framework is of pragmatic use for myself. Future projects should show whether the framework is useful for the designer of TIM and the other staff members as well. However, since the framework is developed within the company and parts of the framework are repeatedly shared with the staff members and based on their feedback, the conclusion could be drawn that the framework has potential to be useful for the entire company.

Furthermore, it could also be concluded that the new framework allows for the implementation of the TIM styling. Also, the framework delivers possibilities for design for innovation because the designer needs to think on an abstract level.

### 8.3 Framework development overview

The different trial design processes gave each insights into the design on the third and higher numbered levels. In this section an overview is given, see figure 32, into the design of the framework by means of the trial design processes and which factors played a prominent role within this design process.

The trial design processes act on the fifth until the seventh level of design. These could be divided into two components namely the client understanding process and the actual design process. Considering Design Research, the former could be called the 'research for design phase'. Both phases encompass the process of constant interrelating experience from practice, scientific literature, and implementation of insights. The insights are mainly obtained during the trial design processes and during reflection on the design outcomes. Therefore, the spaces between the different trial design processes often form the starting point for the implementation of new elements within the framework design. In this way a more or less linear design process on the third level of design including iterations on the fifth until the seventh level led to the final framework.



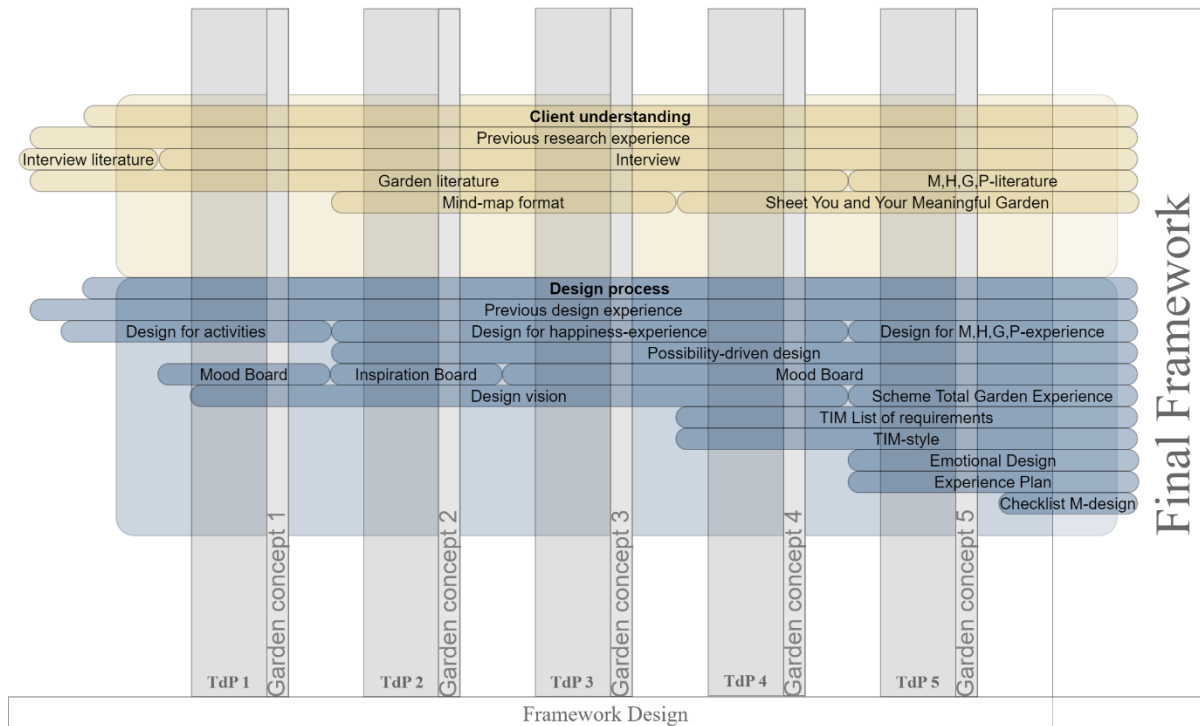


Figure 32 Schematic overview of the framework development throughout the trial design processes

Based on figure 32 several insights could be obtained. Firstly, for both the client understanding process and the design process the complexity increases the further the framework is designed. This is because each trial design process added new insights to the total framework development. Only a few elements are rejected during the process. For the designer this means that the last trial design process requires more design skills and process management than the first trial design process. However, this does not mean that the process is perceived as being more difficult, since during the processes the garden design skills of the designer increase as well. Secondly, the increase in the complexity of the client also asks for more skills by the designer namely at first the designer tried to understand the client through finding potential activities within the future garden, however in the end the designer tries to get an understanding in terms of Meaning, Happiness, Greatness, and Pleasure which includes activities and interactions that evoke the experiences. This altogether implies that there is an increase in the broadness of the client understanding process. However, claims about an increase in depth of understanding are hard to make. Namely, on the one hand side the designer developed skills for client understanding, which suggests an increase of depth. On the other hand, the broadness and openness of the understanding process increases as well within the same effort, this suggests that the depth decreases. Nevertheless, it could be claimed that the later in the framework design process the more abstract the client understanding becomes. At the start the understanding is directly related to garden activities. Contrastingly, in the end the understanding take place from a holistic perspective considering the philosophy of life of the clients as a starting point for design. Thirdly, the increase in the complexity of the framework is related to a growth in understanding about what gardens could be. At the start of the project the gardens were understood as being a location consisting of facilities for activities. In the end the relation between the philosophy of life and gardens is discovered. Therefore, it could be claimed that designs by means of the final framework have more potential to be meaningful than gardens which are designed by use of the initial framework. Also, the outcomes of the trial design processes show that the higher the level of abstraction, the more potential for innovation. This is in accordance with the theory of Eggink (2012). Since more abstractness leads to a larger design space. Fourthly, the increase in complexity in

the client understanding and the design process for a large extent caused by the addition of more and more scientific theories. This leads to an increase in substantiation for design decisions. Consequently, the potential for successful garden design would increase. Since during conversations and presentations regarding the garden under design, the designer has an increased amount of information to substantiate design decisions. Furthermore, the demonstration of knowledge would increase the authority of the designer and helps in convincing the client of the meaningfulness of the new garden design. Considering this observation, the question could be raised what is most important the meaningful experiences through garden interactions or the experience of meaning during the evolvement of the client-company relationship. Observations during Meaningful Sessions with real clients assume the truth of the latter. The former is outside the scope of the project since the results of non of the trial design processes is presented to the clients.

Fifthly, in the first three design processes the focus lies mostly on evaluating the designs solely based on the framework. Therefore, these designs or only for a little amount in congruence with the TIM style. This was also possible because these designs are not created for real clients who are interested in specifically the TIM style. The latter two trial design processes the TIM styling is considered since these are executed for real clients and to see how the styling is influential within the design processes at that point in time. This difference in approach provides the insight that the TIM style is often in conflict within the design process for abstract in-depth information of the client. Therefore, a constant search for the balance between the design for meaning and the TIM style should be searched. Hereby, for the future it should be considered that the TIM style is dynamic rather than static and therefore more extreme garden elements designed to evoke meaningful experiences, would become part of the TIM style. For now, the last two trial design processes are optimized in terms of the TIM style, therefore reducing the influence of the garden elements specifically intended for the experiences. Sixthly, the visual representation depicts the clear distinction between the perspectives towards garden design. In between the third and fourth trial design process the switch is made between an approach of solely applying a combination of garden and design literature, towards an approach based on the personal philosophy of life of the designer and owner of TIM. This switch results in a shift in the role of scientific literature. Mainly the garden literature becomes a source for background information and newly implemented literature on Meaning, Happiness, Greatness, and Pleasure start to play a key role in the client understanding process. In this way the definition of gardens becomes more abstract, and a large design space is opened.

#### 8.4 Final framework

The final product for TIM Exclusive Gardens B.V. is the pragmatic answer to the main research question “How can a design framework be formulated that helps TIM Exclusive Gardens to optimize the initial phases of garden design, via strong client-company relationships, that aims at matching gardens to the personality of the end-users?” and is depicted in figure 33. The framework contains a combination of a description of existing elements from the TIM design approach and the results from the insights obtained through literature research and the trial design processes. Furthermore, it is both influenced by theoretical description and pragmatic use and understandability.

The first step In the framework is the initial contact between the client and the company. This contact is mostly with the designer and owner of TIM via e-mail. Namely, often clients approach the company via the website and substitute the contact form. Other clients directly approach the designer via a phone call. After this first contact the designer sends the List of Requirements document to the user with questions mostly regarding the pragmatic aspects of the future garden, see figures 34-37. This list of requirements is substituted by the client and send back. In this way the client starts to think about their garden already and the designer gets a first impression about the

scope of the project. If the address is shared the designer can also examine the building plot via for instance Google Maps. Furthermore, the list of requirement functions as a source of information for the designer during the remainder of the project as well. Also, during the Meaningful Session, the designer uses the list as a starting point for the in-depth conversation.

After sharing the basic requirements, the designer invites the client to the office to participate in the Meaningful Session. Part of the information invitation is the sheet 'You and your Meaningful Garden', see figure 38. In this way the client gets familiar with the document, has the chance to think about it and prepare for the Meaningful Session. This is also done because some in-depth thinking is needed to be able to think in abstract terms of experiences about the garden, most clients are not familiar with this way of thinking. If the invitation is accepted, the actual Meaningful Session takes place in the presentation room in the office of TIM. During this session the designer lays some samples of materials on the table, shows images of garden designs on the large screen, positions the sheet 'You and your Meaningful Garden' in A4 format on the table, has the prepared Experience Plan' A3 format in front of himself, see figure 39, has a printed version of the List of Requirements, and has some empty paper or an empty Word document on his computer to take notes. This directly shows that only the List of Requirements, the sheet 'You and your Meaningful Garden', and the Experience Plan are shared with the clients, the other documents are for internal use only. Therefore, the layout of the documents also Influences the Image the client develops about the professionalism of the designer. Consequently, the documents are made in congruence with the styling of the brand of TIM.

During the session, see step two in figure 33, the designer welcomes the clients in the office and leads them to the presentation room. After some first greetings, the designer gets coffee for the clients and himself. If the appointment is during lunchtime, they eat together some sandwich. The conversation is slowly started by means of asking about the traveling and some other general remarks. Also, often whilst the designer is getting the coffee, the clients watch the animation of one of the TIM designs on the screen. Therefore, the moment the designer is back with the coffee, the clients often make some remarks about the design. The actual conversation is started by the designer through asking questions for clarification of answers in the List of Requirements, or when everything is clear the list functions as a source of inspiration for the conversations.



# DESIGNPROCESS THROUGH EXPERIENCE POSSIBILITIES

(Experience-based possibility-driven design)

1. **FIRST CLIENT CONTACT**
  - a. Client sends general information through list of requirements questionnaire
  - b. Determine boundaries of possibilities (Budget, building plot, privacy, regulations, architecture, interior design)
2. **MEANINGFUL SESSION**
  - a. Introduce Meaningful garden design through sheet 'You and your Meaningful Garden'
  - b. Search for experiences in terms of Meaning, happiness, greatness, pleasure (verbal + visual)
  - c. Start Experience plan
3. **EXPERIENCE ANALYSIS**
  - a. Create Experience plan
  - b. Create moodboard as a visual conclusion of Meaningful Session
  - c. Fill out scheme 'Total Garden Experience'
    - i. Select interesting experiences which open up possibilities
    - ii. Select most important experience
4. **QUOTATION**
  - a. Vision description
  - b. List of requirements
5. **CONCEPT DESIGN**
  - a. Internal exchange of template Total Garden Experience, Experience plan, Moodboard
  - b. Search possibilities for each element through 2D and 3D design
  - c. Integrate design elements for experiences into total garden design
  - d. Check for experience potential through 'Checklist Meaningful design'.
  - e. Present and motivate experience elements to klant
  - f. Iterate
6. **TENTATIVE DESIGN**
  - a. Create final 3D concept
  - b. Test experiences through visualisations (renders/VR) together with client
  - c. Finetune design
7. **FINAL DESIGN**

## DOCUMENTS:

- a. List of requirements
- b. Sheet 'You and your Meaningful Garden'
- c. Experience plan
- d. Moodboard
- e. Scheme 'Total Garden Experience'
- f. 'Checklist Meaningful design'

Figure 33 Final design process format



## **INVENTARISATIE FORMUIER | PROGRAMMA VAN EISEN (PVE)**

Bedankt voor het vertrouwen wat u in ons heeft. U kunt ervan uitgaan dat wij door het vuur gaan voor u en niet eerder rusten dan dat de champagne open kan! Uw droomtuin is nu écht binnen handbereik.

Wij leren u en uw wensen graag kennen. Om te beginnen is het van belang om een beeld te krijgen van uw wensen en de eisen die u stelt aan het ontwerp. Daarom verzoeken wij u vriendelijk dit formulier in te vullen en te retourneren, deze harde eisen en praktische invullingen zijn ondersteunend aan de sessie 'meaningful' design, die we graag nog met u hebben.

*U krijgt tijdens het inventarisatie gesprek nog alle ruimte om meer te vertellen over uw wensen, u mag het dus kort en bondig houden. Mocht u wel de behoefte hebben om meer te benoemen voelt u zich a.u.b. vrij om dit document uit te breiden met informatie die u van belang acht.*

<b>Naam:</b>
<b>Straat en huisnummer:</b>
<b>Postcode en woonplaats:</b>
<b>Telefoon:</b>
<b>E-mail:</b>
(Overige contactgegevens die van belang kunnen zijn...)
<b>Oppervlakte tuin in m2:</b>
<b>Bestaande woning/nieuwbouw of nog in ontwerp:</b>
Wanneer van toepassing naam Architect of interieurarchitect:
Wanneer van toepassing naam bouwbegeleider:

Figure 34 Page one of List of Requirements



- 1) Om te beginnen vragen wij u vriendelijk om een korte introductie te doen van wie u bent en met wie u leeft. Daarnaast vinden wij het leuk om alvast een inkijkje te krijgen in uw leven, wellicht kunt u hier kort over vertellen.  
*...type hier.....*
  
- 2) Wat wenst u het meest in uw nieuwe tuin?  
*...type hier.....*
  
- 3) Wat wenst u absoluut niet in uw nieuwe tuin?  
*...type hier.....*
  
- 4) Welke stijl spreekt u aan? Strak/modern etc. eventueel referenties of sfeerbeelden mag u altijd meenemen of vooraf mailen  
*...type hier.....*
  
- 5) Heeft u/wat is uw ervaring met tuinen? Zo ja, kunt u uw goede en slechte ervaringen benoemen?  
*...type hier.....*
  
- 6) Gewenst onderhoudsniveau? Iedere tuin vraagt onderhoud, de intensiteit hiervan zal o.a. afhangen van uw wensen en de invulling hiervan.  
*...type hier.....*
  
- 7) Met hoeveel personen wilt u kunnen dineren in de tuin?  
*...type hier.....*
  
- 8) Hoeveel auto's dienen op eigen terrein geparkeerd te kunnen worden?  
*...type hier.....*
  
- 9) Hoeveel waarde hecht u aan privacy in uw tuin?  
*...type hier.....*
  
- 10) In hoeverre moeten wij in het ontwerp rekening houden met veiligheidsmaatregelen? (Camera's, hekwerken, toegangspoorten etc.)  
*...type hier.....*
  
- 11) Heeft u wensen voor Wellness activiteiten in uw tuin? Denkt u aan een zwembad, zwembad, sauna, jacuzzi, buitendouche etc:  
*...type hier.....*

Figure 35 Page two of List of Requirements

- 12) Heeft u wensen voor een buitenverblijf? Denkt u aan een poolhouse, guesthouse, overkapping, buitenverblijf etc. Heeft u ook al nagedacht over functionaliteiten die hierin aanwezig moeten zijn? Vermeld het a.u.b. meteen  
*...type hier.....*
- 13) In het geval dat u kinderen heeft; dienen er speelvoorzieningen in het ontwerp opgenomen te worden en heeft u daar voorkeuren in?  
*...type hier.....*
- 14) Zijn er activiteiten die u wilt doen in uw tuin? Denkt u aan een vorm van sport etc.  
*...type hier.....*
- 15) Wenst u buiten te kunnen koken en heeft u daarin voorkeuren? GreenEgg, gaspit, pizzaoven etc.  
*...type hier.....*
- 16) Zon en schaduw; in hoeverre bent u zon/schaduw liefhebber of wellicht beide. Wij horen graag uw visie op de zon/schaduw beleving in uw tuin  
*...type hier.....*
- 17) Dieren; heeft u huisdieren of wenst u dieren te houden op uw erf?  
*...type hier.....*
- 18) Zijn hoogteverschillen wenselijk in uw tuin? Hoogteverschillen kunnen de beleving enorm versterken. Mocht u of een van uw naasten mobiliteitsproblemen hebben dan houden wij hier uiteraard rekening mee:  
*...type hier.....*
- 19) Verlichting; een belangrijk onderdeel in uw tuin. Heeft u hierin al voorkeuren dan horen wij deze graag. Wij verdelen uw verlichting op in fases (Sfeerverlichting, praktische verlichting en verlichting met oog op veiligheid)  
*...type hier.....*

Figure 36 Page three of List of Requirements

## WHEN LUXURY BECOMES MEANINGFUL

Een luxe- exclusieve tuin krijgt pas écht betekenis wanneer u luxe op een andere, minder tastbare manier voelt en ervaart. Tijdens onze sessie Meaningful Design gaan wij samen met u op onderzoek en houden we uw wensen en behoefte graag tegen het licht.

Wanneer is uw tuin straks **Meaningful** en hoe zorgen wij ervoor dat u straks **Happiness** ervaart? **Greatness**, het vertegenwoordigd voor ons groots dromen en doen, maar op welke manier zorgen wij straks dat u uw Greatness herkent in het design, dit kan klein zijn maar groots voor voelen. **Pleasure**, we willen allemaal genieten en iedereen dit doet op zijn eigen wijze, wij zijn benieuwd hoe u straks volop geniet?

U hoeft hier nu geen antwoorden op te geven, maar we willen u vragen om er eens over na te denken. Wat gaat de tuin straks écht betekenen voor u. Het gaat namelijk bijdragen aan een nog mooier leven, waarin u ook ongetwijfeld herinneringen gaat maken met dierbaren en waarin u hopelijk iedere keer weer een trots en dankbaar gevoel krijgt.

We kijken uit naar een mooie samenwerking en hopen straks met u te proosten op behaalde succes.

**MEANINGFUL DESIGN TROUGH  
HAPPINESS**

*Figure 37 Page four of List of Requirements*



At the start of the conversation some initial thoughts are shared between the designer and the client, the designer takes the lead and introduces his vision on garden design based on his own story of life. Namely, he owned a landscaping company in which gardens were designed and built for the middle segment with a restricted budget. Within this company there was a lack of freedom, therefore he decided to sell the company and started a design agency in the top segment of garden design. Within this company, total design freedom and endless possibilities for creativity fulfil a central role. Next, he shares his vision on life to be Meaningful together with Happiness, Greatness, and Pleasure. Then he points to the sheet 'You and your Meaningful Garden' and explains that he wants the clients to share their personal vision on these topics regarding life in general and garden design. Since only the information of the client could lead to meaningful garden design.

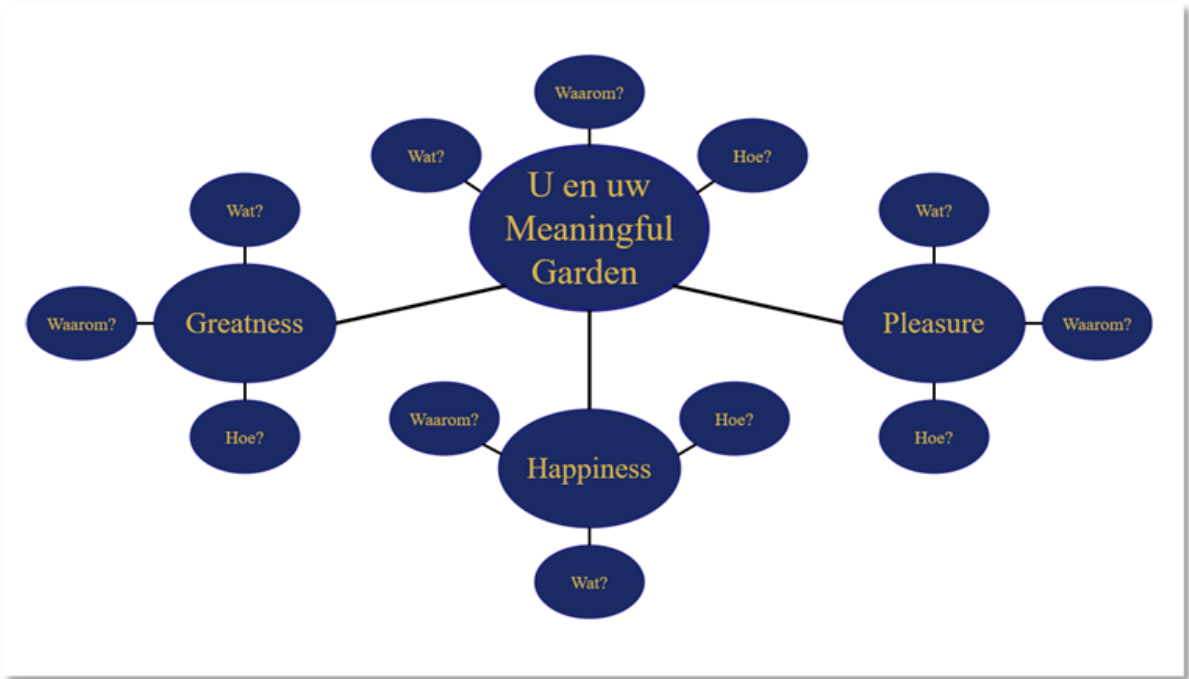


Figure 38 Sheet You and your Meaningful Garden

Overall, during the Meaningful Session, the conversation evolves naturally around the topics which pop up in the minds of the client or the user. However, still the designer needs to take the lead to find the information regarding the four experiences. If the client mentions a certain topic in relation to for one of the experiences, the designer asks for each element the question what, how, and why, to find input for the behavioural, visceral, and reflective elements of emotional design, respectively. The designer also asks or suggests a location for the desired experience on the Experience Map. In section x regarding the use of the framework, the way of asking questions is discussed in more detail. But not only the four experiences are aimed at, also information in terms of aesthetics and the preferred styling is asked for by the designer. If the client mentions some suggestions the designer searches for images on the large screen, to get a proper understanding of the styling the clients have in mind.

The moment the information flow is stopped or the moment the designer or the client must leave, the conversation is finished with discussing the next steps in the company-client relationship. During the entire meeting not only, the Meaningful Session is executed, also information regarding the approach of TIM is discussed, information about the quotation is shared, and any other question of

the client is asked. Until the last Meaningful Session, within the scope of the master assignment, the overall meetings were quite unstructured, this shows that some more practise is needed.

After the session the designer gathers all the information and starts the 'Experience analysis', the third step in the framework. The first part of this analysis is the finalisation of the Experience Plan, see figure 39 and appendix A.12 for a completed version, based on the information from the session. In this process the designer must interpret the information from the user and for the most relevant information decisions regarding the location on the building are made. This process is needed since during the trial design processes it became clear that garden elements are extremely context dependent. On the Experience Map for each category, (M1, M2.; H1, H2...; G1, G2...; P1, P2...) the topic is described in keywords and the abbreviation of the experience is located on the map. For instance, if during the conversation is discovered that the activity of swimming delivers strong and valuable pleasure experiences each time the user dives into the water, the designer could decide, ideally in agreement with the user, to locate a facility for this experience somewhere in a central position in the garden. However, this is not always this straightforward since the facilities for certain activities and the related experiences, are often extremely context dependent, for instance a swimming pool would not be located in a shadow area. Therefore, during this process also the pragmatic insights and experience of the designer play a crucial role.

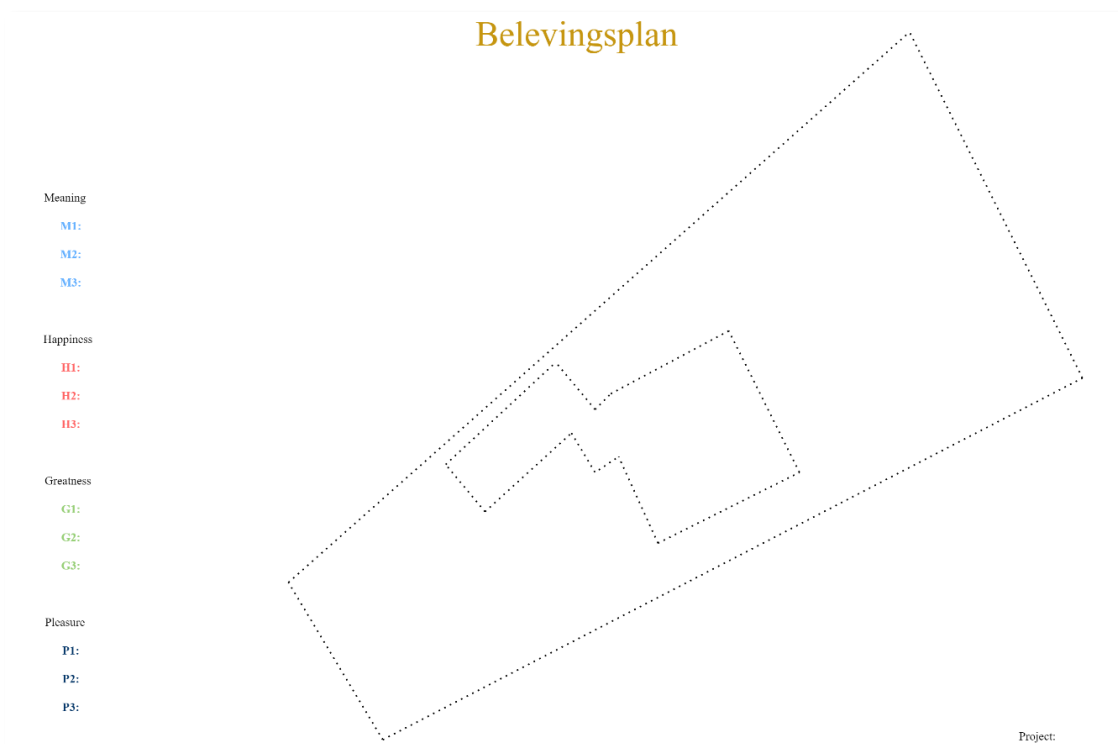


Figure 39 Example Experience Plan

Next, the designer creates a Moodboard, see figure 40, which functions as a visual summary and conclusion of the Meaningful Session. The Moodboard should be made in such a way the preferred user-garden relationship is becomes clear. Part of this preferred relationship is the styling. Since during the Meaningful Sessions the designer shows TIM gardens, the Moodboards would often contain components which show the TIM styling. This allows for a proper understanding of the client, since the designer understands his own styling properly. The Moodboard allows the designer to store

the image he developed about the user during the session, and to have inspiration for the ideation process.

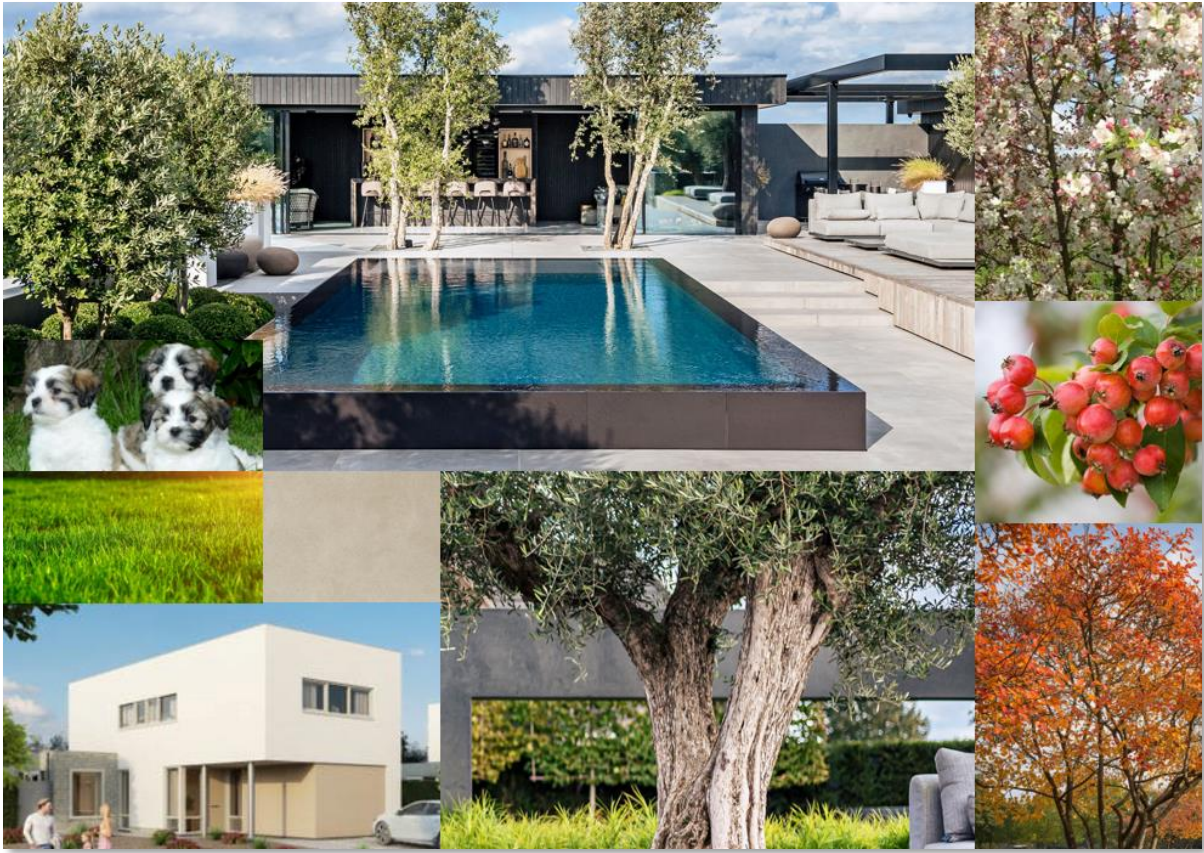


Figure 40 Example Moodboard

The same topics which are used in the Experience Plan are also used during the completion of the scheme Total Garden Experience, see figure 41, therefore the same numbering is used. Whereas in the Experience Plan the location of the experience is of importance, in the scheme the focus is on a further analysis of the topics through the three categories from the emotional design theory, namely each topic is divided into its present or future imagined behavioural, visceral, and reflective component. For instance, if we continue with the example of the pleasurable experiences during swimming, the designer should discover what makes this activity pleasurable. This might be the water experience. Then in the scheme the topic for the pleasure experience, P1, is ‘water experience’. Furthermore, the behavioural aspect of this experience is ‘swimming’. This information is obtained through asking the ‘what’ during the Meaningful Session. For the visceral component of the water experience information regarding the preferred styling together with information about how the activity takes place is needed. During the Meaningful Session this information is obtained through asking for the ‘how’ of the topic. For instance, if the clients prefer a Mediterranean styling, the visceral component of the topic is filled out to be ‘Mediterranean water experience’. Also during the Meaningful Session the designer is asked for the ‘why’ of each relevant topic. This question leads to information in terms of the reflective component in emotional design. This is relevant to know since in case of the swimming pool the designer needs to know why the swimming experience is so important for the user, the designer is interested in knowing why this water experience is so important. A possible reason could be the feeling of ‘freedom’ during the dive into the water. The final step in the completion of the scheme Total Garden Experience, is choosing the most important topic for the user. This could be used as a central theme during design. Furthermore, during the

designer should use broad and abstract keywords, so there occur no specific design decisions yet. Namely, in this way there would be as much freedom as possible to ideate.

Welke mogelijkheden bieden Meaning, Happiness, Greatness en Pleasure-experiences voor...(namen klant)?

Meaningful			
Nummering belevingsplan:	Betekenis: Welke abstracte betekenis speelt een rol tijdens de meaningful experience?	Functie: Welke praktische functie heeft het element dat bijdraagt aan de meaningful experience?	Stijl: Welke stijlelementen zijn cruciaal in de meaningful experience?
M1	<b>Onderwerp:</b> Privacy Betekenis: Belangrijk voor mogelijk zwembad en op de plek waar ze het meeste zitten Functie: Bescherming voor inkijk van burens, gevoel van geborgenheid Stijl: Geïntegreerd in de rust van de tuin, geen specifieke nadruk op privacy in materialen, subtiel		
M2	<b>Onderwerp:</b> Rust, hoofd leeg na drukke werkdag Betekenis: Van groot belang, hebben een drukke baan Functie: Mogelijkheden voor ontspanning Stijl: lichte aardkleuren, rust, minimalistisch, wit		
M3	<b>Onderwerp:</b> Eenheid tussen huis en tuin Betekenis: Van groot belang Functie: Zorgt voor rust in interacties met de hele tuin, met een focus direct rondom het huis Stijl: lichte aardkleuren, rust, minimalistisch, wit		
M4	<b>Onderwerp:</b> Betekenis: Functie: Stijl:		

Happiness			
Nummering belevingsplan:	Functie: Welke praktische functie heeft het element dat bijdraagt aan de happiness experience?	Stijl: Welke stijlelementen zijn cruciaal in de happiness experience?	Betekenis: Welke abstracte betekenis speelt een rol tijdens de happiness experience?
H1	<b>Onderwerp:</b> Seizoensbeleving Betekenis: transitie is belangrijk Functie: beplanting Stijl: Mediteraans, rust, minimalistisch		
H2	<b>Onderwerp:</b> Uitbundige bloei Betekenis: Belangrijk, geeft kick, eyecatcher, solitairen Functie: Boom/meerstammige heester laat transitie zien Stijl: Mediteraans, rust, minimalistisch		
H3	<b>Onderwerp:</b> Schaduwbeleving Betekenis: Van belang in hete zomer Functie: Verkoeling Stijl: lichte aardkleuren, rust, minimalistisch, wit		
H4	<b>Onderwerp:</b> Betekenis: Functie: Stijl:		

Greatness			
Nummering belevingsplan:	Functie: Welke praktische functie heeft het element dat bijdraagt aan de greatness experience?	Stijl: Welke stijlelementen zijn cruciaal in de greatness experience?	Betekenis: Welke abstracte betekenis speelt een rol tijdens de greatness experience?
G1	<b>Onderwerp:</b> Groenbeleving, transitie Betekenis: Van belang in hele tuin Functie: Beplanting Stijl: Mediteraans, rust, minimalistisch		
G2	<b>Onderwerp:</b> Winter en voorjaarsbeleving Betekenis: Van belang voor uitzicht vanuit woning Functie: Beplanting Stijl: Mediteraans, rust, minimalistisch		
G3	<b>Onderwerp:</b> Betekenis: Functie: Stijl:		
G4	<b>Onderwerp:</b> Betekenis: Functie: Stijl:		

Pleasure			
Nummering belevingsplan:	Functie: Welke praktische functie heeft het element dat bijdraagt aan de pleasure experience?	Stijl: Welke stijlelementen zijn cruciaal in de pleasure experience?	Betekenis: Welke abstracte betekenis speelt een rol tijdens de pleasure experience?
P1	<b>Onderwerp:</b> Activiteiten in zomer Betekenis: Wel aanwezig maar niet van groot belang omdat vaak op vakantie wordt gegaan, 'als de faciliteiten er zijn gaan we ze wel gebruiken' Functie: Vermaak, ontspanning Stijl: Rust, minimalistisch, geen extra aandacht nodig in ontwerp, gewoon aanwezig		
P2	<b>Onderwerp:</b> Binnenactiviteiten buiten beleven Betekenis: Van belang gedurende grootste deel van jaar Functie: Buiten zijn in groen en rust beleving Stijl: Rust, minimalistisch, aardkleuren, onderdeel van het totaalplaatje		
P3	<b>Onderwerp:</b> Hondjes spelen Betekenis: Belangrijk voor vrijheid van hondjes Functie: Speelruimte voor hondjes in de vorm van bijv. gazon Stijl: Minimalistisch, onderdeel van de tuin,		
P4	<b>Onderwerp:</b> Betekenis: Functie: Stijl:		

Figure 41 Example of completed scheme 'Total Garden Experience'

As the fourth step of the framework the quotation is made which contains the pricing for the project, a vision on the project from the perspective of the designer, and the most relevant requirements. Since this quotation is a standard component of the TIM process, and it does not specifically influence the design process it is left outside this report. It is worth mentioning that this quotation is an agreement between the user and the designer regarding the scope and content of the project.

The next step is the actual design process in which it is possible that the designer shares the List of Requirements, Experience Plan, the scheme 'Total Garden Experience', and the Mood board with another designer who is part of the TIM team. Or the designer starts designing by himself based on the combination of all the information. For the ideation process the topics from the Experience Plan and the scheme Total Garden Experience are used as starting points. All in all, the design process is a search for new possibilities for garden interactions which potentially deliver the preferred experiences to the client.

During the design process the designer can check for the potential of the design decisions using the Checklist Meaningful Design, see figure 42. This list is general format which contains questions which are based on the literature research into the four experiences. Therefore, this list functions as a quick checklist to see whether the characteristics of the experiences are present in terms of definitions, rather than in terms of the information from the client. For instance, if the designer designed a swimming pool as a facility for pleasurable water experiences, then he takes the checklist, imagines the future use by the client, and answers the list of questions which asks whether the characteristics of pleasure experience in general are likely to be present. The answering of the questions as such deliver insights whether the designer is in his own opinion on the right track during design for pleasure experiences. It is up to the designer how many 'yes' and 'no' answers would lead to the rejection or acceptance of the design element; it totally depends on the reasoning of the designer based on the information of the client. In this way the checklist mainly functions as a way of reflecting on the design and to be able to substantiate design decisions. Also, the designer could check for unintended experience potential by asking the questions of another experience regarding the design element. For instance, if the designer designed a garden element for pleasure experiences, he asks the questions regarding greatness experiences. If then the answers show that there is a lot of potential for perceiving greatness characteristics, it might be that the designer has to conclude that he either interpreted the information of the client incorrectly, or that during the design process the design decisions have led to a totally different garden element than intended. Finally, the checklist could also be used to check the other garden elements in terms of experience potential which are designed into the garden without the specific use of the emotional design process, since the Experience Map and the scheme Total Garden Experience are not useful for covering all the garden elements. Namely, this would make the design process too extensive. This mostly provides insights into the role of the other elements with respect to the other garden elements. For instance, if another element is more eye-catching than the intended element for the greatness experience, this could be interpreted as being an imbalance in the design.

During both the fifth and the sixth step of the framework, the designer meets with the client and explains the design decisions. The structured approach through all the documents allows the designer to have an overview of the decision making and therefore can substantiate the design decisions. The visual impressions of the garden then allow the designer to present the intended experience and based on observations and discussion with the client insights into whether the design meets the preferred experiences should be obtained. Based on the discussion either the design is accepted, or iterations should be made. This leads to the final design.

## Checklist Meaningful design

### Meaning

Leidt het element tot meaning experience voor de gebruiker?

1. Is er een algemene betekenis? (Ja/Nee) Want...
2. Van betekenis in context? (Ja/Nee) Want...
3. Is bedoeld gebruik duidelijk? (Ja/Nee) Want...
4. Leidt het tot actie? (Ja/Nee) Want...
5. Bewuste meaning experience? (Ja/Nee) Want...
6. Onbedoelde betekenis? (Ja/Nee) Want...
7. Emotionele impact? (Ja/Nee) Want...
8. Vervulling van life goal? (Ja/Nee) Want...

Zijn er voldoende kenmerken van meaning experience aanwezig? (Ja/Nee) Want...

### Happiness

Leidt het element tot happiness experience van de gebruiker?

1. Worden wensen vervuld? (Ja/Nee) Want...
2. Positieve emoties? (Ja/Nee) Want...
3. Bewuste experience? (Ja/Nee) Want...
4. Onbewuste experience? (Ja/Nee) Want...
5. Actief gebruik voor experience? (Ja/Nee) Want...
6. Past binnen levensplanning? (Ja/Nee) Want...
7. Uiting van? (Ja/Nee) Want...
8. Helpt in dragen van unhappiness? (Ja/Nee) Want...

Zijn er voldoende kenmerken van happiness experience aanwezig? (Ja/Nee) Want...

### Greatness

Leidt het element tot greatness experience van de gebruiker?

1. Communiqueert het persoonlijke prestatie? (Ja/Nee) Want...
2. Levert het geluk? (Ja/Nee) Want...
3. Stimuleert het actie? (Ja/Nee) Want...
4. Loslaten van huidige greatness idee? (Ja/Nee) Want...
5. Inspirerend? (Ja/Nee) Want...
6. Verwijzing naar externe greatness? (Ja/Nee) Want...

Zijn er voldoende kenmerken van greatness experience aanwezig? (Ja/Nee) Want...

### Pleasure

Leidt het element tot pleasure experience van de gebruiker?

1. Puur om het plezier? (Ja/Nee) Want...
2. Vervuld behoefte? (Ja/Nee) Want...
3. Korter termijn? (Ja/Nee) Want...
4. Gevoelsmatige opwinding? (Ja/Nee) Want...
5. Zintuigelijk voordeel? (Ja/Nee) Want...
6. Emotioneel voordeel? (Ja/Nee) Want...
7. Sociaal voordeel? (Ja/Nee) Want...
8. Intellectueel voordeel? (Ja/Nee) Want...
9. Opent perspectieven? (Ja/Nee) Want...

Zijn er voldoende kenmerken van pleasure experience aanwezig? (Ja/Nee) Want...

*Werkwijze: Analyseer het element dat voor een specifieke experience (Meaning, Happiness, Greatness of Pleasure) ontworpen is om zo te testen of het element meaningful is. Het is aan de designer om te beoordelen wanneer er 'voldoende kenmerken' van de experience aanwezig zijn. De checklist kan zowel gebruikt worden tijdens het designproces op basis van de informatie van de Meaningful sessie om ontwerpkeuzes te checken, als tijdens de presentatie van het ontwerp aan de klant om design keuzes te checken of te kunnen onderbouwen. Het ideale gebruik van de checklist zou zijn om de experiences van de gebruiker te observeren in de gerealiseerde tuin.*

Figure 42 Image of Checklist Meaningful design

## 8.5 Framework use

In the previous section the pragmatic use of all the elements of the framework is discussed. In this section the focus is on the process which takes place through those steps. It shows how the understanding of the client is translated into meaningful design. This is visualised in figure 43.

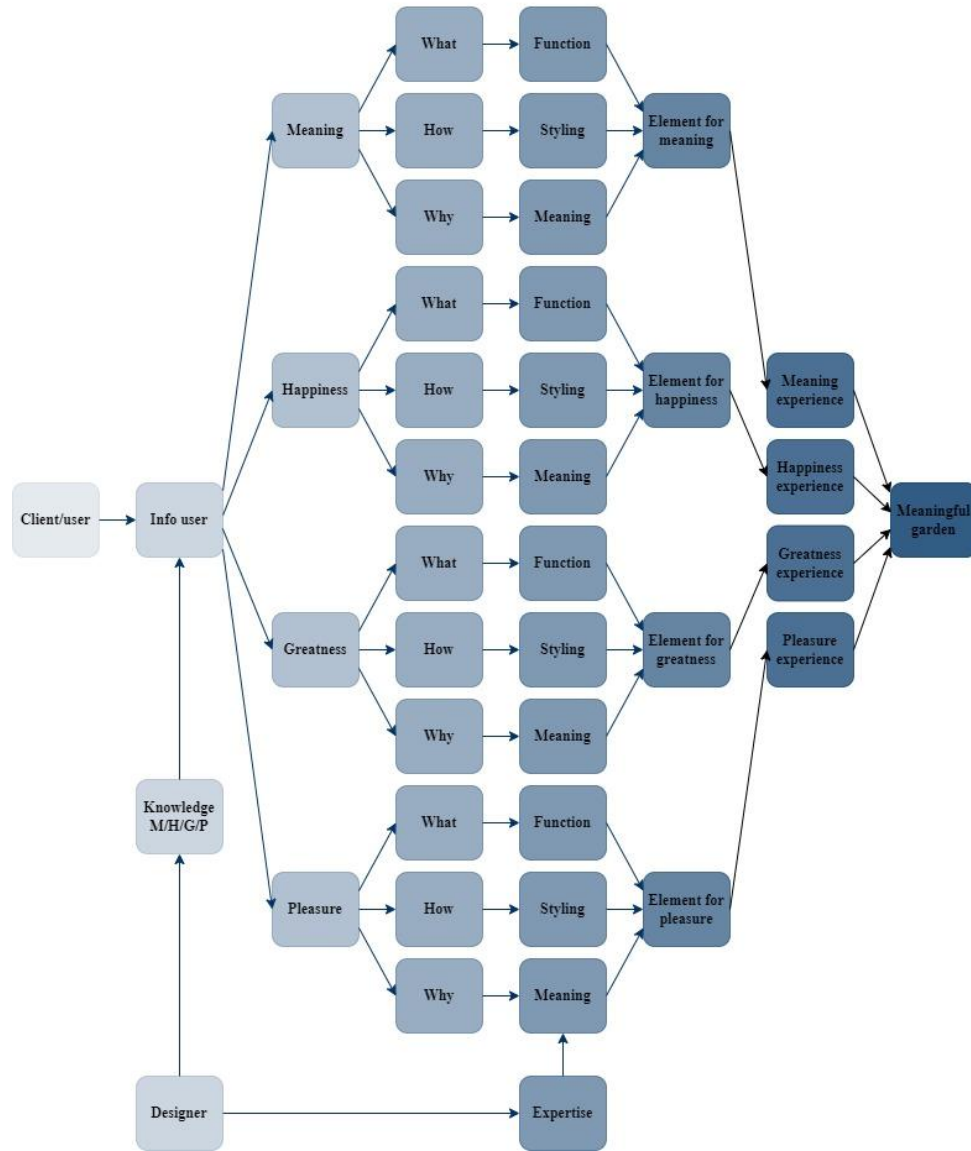


Figure 43 Schematic representation of the design framework

It shows that the client/user provides information that forms the basis of the entire design process. This information is sent to the designer by means of the list of requirements and by other ways of direct contact. But the most information is gained during the Meaningful Session. During this session the designer applies his knowledge about meaning, happiness, greatness and pleasure experiences in order to get an understanding of the client and the future use. The designer searches for the most meaningful, most important happiness, greatness and pleasure experiences. During the session the conversation is led by the designer based on the 'You and your meaningful gardens' sheet. The designer can use this sheet in multiple ways dependent on the course of the conversation. The conversation is namely almost totally open and quite unstructured in order to make the conversation accessible and comfortable. There are a few types of scenarios of use possible during the conversation namely, firstly, the client talks about a concrete element he likes to have in his garden.

The designer should then ask which of the four types of experiences this element would deliver. Then the designer can elaborate on the topic through asking why this is meaningful to the user, how the experience is facilitated by the styling of the product and what functions of the product facilitate the experience. This approach is mainly used to gain insights into which perceivable cues are interpreted by the user. Secondly, the designer can pick one of the four types of experiences and ask what type of imaginative element could deliver this experience, how this element would deliver this and why. Thirdly, again the designer picks one of the four experiences and asks straightforwardly which position this experience takes in the life of the user and more concretely in relation to gardens in general and in their imagined garden. Then the designer asks for the what, how and why of the experience (rather than the element as such) and tries to find concrete elements which can be described in terms of functions, styling and meaning. This scenario might be the most complicated because the user needs to think on a highly abstract level. Fourthly, the designer can start totally in the end and ask in an open manner what makes a meaningful garden for the user. The answers can be both abstract, e.g. 'a garden is meaningful for my if it provides privacy' or in terms of concrete elements, e.g. 'a garden is meaningful for me if it contains wellness facilities'. In either way the designer has to search for how this information can be interpreted in terms of the four experiences. Fifthly, the designer can take a concrete element that appears to be important to the client due to for instance the frequency with which it is mentioned during the session and posits it to belong to one of the experiences. Then the designer observes closely the verbal or emotional response of the client to find out whether his understanding of the way in which experiences evolve personally for the client. The assumption can also be posited deliberately for a 'wrong' experience in order to trigger the conversation. Figure 44 depicts a visual representation of the five scenarios and how which steps need to be taken to find and make the information applicable in the design process.

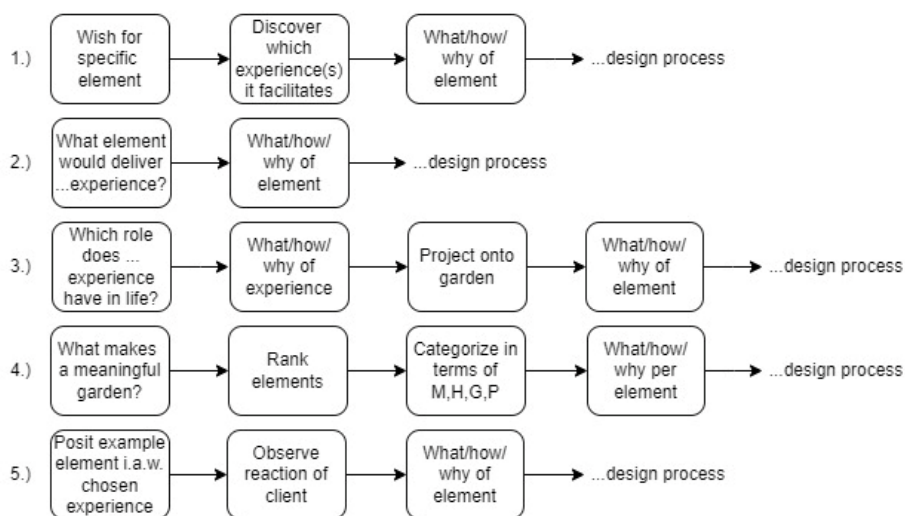


Figure 44 Overview of five different approaches for questioning during the Meaningful Session

The understanding of the client in terms of experiences takes mostly place through the interpretation of keywords. During the in-depth conversation with another new client of TIM this process became clear, namely, the designer looked for words that could indicate certain types of experiences. For instance, if they said 'I would enjoy having this...' this was interpreted to be the experience of pleasure. If they said 'this is really great to have' it was interpreted as greatness. The topic which was mentioned the most, in this case the outside cooking, was interpreted to contribute to the meaningfulness of the garden and to the experience of meaning. This example shows that the Meaningful Session can be called ethnographic (Carroll et al., 1998) since it is based on an in-person conversation, at the office of TIM and observations of the staff of TIM in the context of use. The



analysis is aimed at getting a proper understanding of the personality of the user, the concrete wishes and needs and the context of use. This altogether is what Bijl-Brouwer and van der Voort (2013) call the 'inspiration' for scenario creation within user-centred design. In which the scenario as such is defined as "an explicit description of the hypothetical use of a product or service." (Van der Bijl-Brouwer and van der Voort, 2013 p.61). Right now, for TIM this explicit description takes place mostly verbally during meetings with the clients and is captured in terms of places for the experiences in the Experience Map.

All in all, the Meaningful Session fulfils the most crucial role in the client understanding process. As the different scenarios of use show it is of great importance that the session is open and to a large extend unstructured to obtain the needed information. Therefore, the designer should be experienced in leading the conversation in flexible manner and needs to have awareness at which level the answers take place to either asks for abstraction or concretisation. In this way the emotional design process could take place.

## 8.6 Conclusions

In this chapter the framework development itself is discussed. Through the application of scientific literature, experience from practice, and the trial design processes a pragmatic framework is designed which could be directly implemented in the design process of TIM. This all took place on different levels of design within the overarching research through design project. The trial design processes show how the framework is developed and which factors play an important role in the process. Especially the change in the company philosophy impacted the framework a lot. The final trial design process is the most representative for the potential outcomes of the framework in practice.

## Chapter 9 Discussion and implications

After showing the design of the new design framework and its use in practice there is the need to search for validation of the framework as the main element of the entire project. This chapter shows this validation through a search for finding the extend to which there are positive implications for the design discipline, TIM Exclusive Gardens BV, the client-company relationship, garden design, and the user. This search for implications is done through a discussion containing the application of scientific theories and insights obtained during the entire master assignment.

### 9.1 Implications for the design discipline

#### 9.1.1 Seven levels of design

As introduced in the chapter 3 the entire project could be described in terms of seven levels of design. This model is developed to structure the entire project and to see what the relationships are between the different levels of design. Furthermore, the model allows for evaluation on different levels to find insights for next iterations in the project. Especially, because the entire project consists of research through design in which small design processes are central to the entire research. All in all, the seven levels approach emerged during this project and have shown its usefulness. Therefore, I would recommend this approach of distinguishing different levels of design for other design research projects as well.

If the main research question is considered, the seven level approach could be seen as part of the answer since the questions asked for 'how' a design framework could be formulated. This means that the main insights are the approach towards the framework development rather than the content of the framework itself. Therefore, it is concluded that the distinction of different levels of design is a proper way to design a new design framework. Since it shows the relationships between the new framework and the broader context within the company.

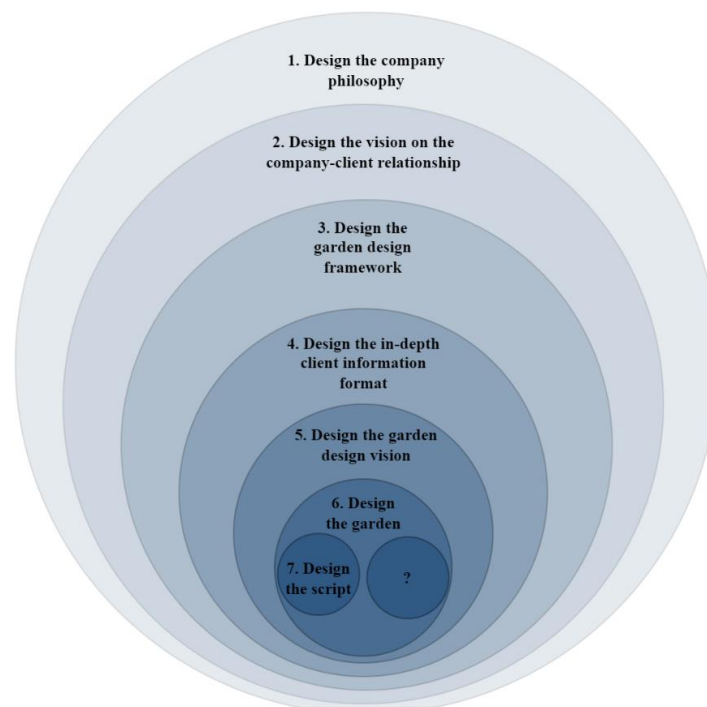


Figure 45 Image of the seven levels of design in the project, see also chapter 3

### 9.1.2 Method content theory

The new design framework can be validated based on the Method Content Theory of Daalhuizen and Cash (2021) in this way potential implications for design literature could be estimated. According to the authors methods function as 'information carriers', in this particular case to show the new design process of TIM. The framework is the result of a number of trial design processes which are based on the garden design approach of TIM. In this case the designer of TIM is the potential user of the new framework. In line with the authors the new framework can be seen as an embodiment of the new design process. There was a need for this framework since the designer wanted to get a better understanding of his clients to create meaningful gardens. The new framework functions as an embodiment of the scientifically substantiated structured approach towards this need. Therefore, the new framework fits the definition of 'method' and can be called the 'Experience-based possibility-driven garden design approach' for TIM Exclusive Gardens B.V.

The authors distinguish two elements which together 'embody' the method, namely the method content and the information artifacts. The former consists of a set of five 'content variables' for methods, namely the Method Goal, Method Procedure, Method Rationale, Method Framing, and Method Mindset (Daalhuizen and Cash, 2021 p.7). 'Good methods' should have content for all these variables. To test whether the new framework has potential to be a 'Good method' all five categories are applied in the following manner. Firstly, the main method goal of the new framework is to get a better understanding of who the client is and how the client would be related to the future garden. Furthermore, the new framework provides a structured design approach, especially in the process of translating the understanding of the client and the related experiences into meaningful garden design through the possibility-driven design approach. Another goal is that more depth in the contact between the client and the designer should result in strong client-company relationships. Also, the new framework should result in meaningful garden design but also in a meaningful garden design process for the designer himself. The framework should be applicable for the staff of TIM too, so if the company grows and contains multiple designers there should be congruence in their designs. Finally, the use of a well substantiated design framework should communicate the expertise of the designer and convince the client to cooperate. Secondly, the method procedure consists of seven steps in which the new method is integrated in the existing TIM design approach. The steps show the entire approach from the initial client contact towards the final design. In the process the steps are described in the imperative notation since than the designer can easily print the format and refer constantly to it during the design process to be guided properly. Therefore, the framework functions as a usable tool. Thirdly, the rationale behind the method is that meaningful garden design only could be created through an in-depth understanding of the future user by the designer. And that the work of the designer only could be meaningful the moment the design is meaningful to the user. In this way value is added to both the life of the client and the designer. In human-centred design in general the vision is embraced that the deeper the understanding of the user by the designer the more potential for qualitative good design. Fourthly, the framing of the method becomes clear in the following. The new framework is most valuable during the initial stages of the process, and in particular in the process of understanding the client. It is mostly used in the context of the TIM company office amongst the staff. However, TIM communicates the key elements to the potential clients by means of the website and socials in order to convince people to become a client. Therefore, the clients are aware of the framework and become users as well. Their use peaks during the Meaningful Session. In general, the designer is in control of the framework. The framework would be used for those clients that are suitable for the use of the method. Not every client would like to share in-depth information with the designer therefore the quality of the application of the framework would differ. However, the framework is unlikely to be not applicable at all since it is

suitable for different levels of depth because of its open-endedness. Only if the clients actively reject the idea of experiences through design the framework seems to be not applicable at all. Furthermore, through the active communication on the website about the approach, the clients who do not agree on the approach are unlikely to contact TIM and search for a different garden architect. This altogether implies that the framework plays a role in the context of the client-company relationship. The Meaningful Session is basically the most important starting point for the relationship building. Currently an in-person conversation between the designer and the client influences the relationship the most. The new framework is designed to fit within the context of this conversation. Therefore, the framework frames the client-company relationship too. The relationship is not only shaped by the entire design process but also through the shared understanding about the four experiences. Fifthly, the designer should be convinced that designs can deliver experiences to users in general. Furthermore, that these experiences could lead to meaningfulness in the life of the user. consequently, the designer should believe that designs could mediate experiences. Also, the designer should embrace the idea that the client-garden relationships can be understood in terms of experiences and especially in terms of the Meaning, Happiness, Greatness, and Pleasure experiences. Tim himself believes in the value of these themes since he posited these themes to be valuable in his personal life in general in therefore also in his job as designer. Specifically for the new TIM approach the designer should also believe that luxury could play a crucial role in the creation of this meaning. TIM embraces the idea that the experience between users in combination with luxury has the most potential to deliver meaning, rather than the luxury elements as such.

The latter part of the method 'embodiment' consists of the information artifacts. In the new design framework this consists of documents which are used during different stages of the entire process. The first document describes the entire approach namely the document called 'Design process through experience possibilities' this provides the designer with a guide during the entire design process. This document mentions two documents that are used together with the client, namely the List of requirements, which is filled out by the client, and the sheet called 'You and your Meaningful Garden' which is used as a guide during the Meaningful Session. Furthermore, the document mentions four information artefacts which are used internally between the staff of TIM. These documents are the Experience plan, Moodboard, scheme 'Total Garden Experience', and 'Checklist for Meaningful design'. Except of the latter, all are used to store and analyse the information obtained during the Meaningful session in order to be applicable during the design process. This information is stored in such a manner that exchange between designers within the company could take place. Therefore, they function as common grounds between the designers. The latter document contains the information about the four experiences based on which the design decisions and outcomes could be checked and validated. The analysis of the information artifacts shows that there are different types of use of the framework which require different levels of understanding of the methods. The client and the staff of TIM (other than the designers) need to have general knowledge about the existence of the method, how it is used in general, and which value it delivers. Therefore, the main steps in the method are formulated in an understandable manner and could even be used for marketing. The designers of TIM need to understand the method in its full depth to be able to apply it in practise and be in control during the encounters between clients and the method. In the Method Content Theory the secondary use by the other staff and the clients is not included, however for a design agency as TIM this is extremely relevant.

This altogether shows that the new design framework for TIM has potential to be a 'good method' since it contains content for all content variable and information artifacts. Through this method embodiment there is high potential for proper usability for designers. This is mainly caused by the

iterative design approach through which the method is developed. During this development trial design processes are used to research the best possibilities for the new method. This process is executed in cooperation with the staff of TIM which helped in making the framework suitable for its potential users.

### 9.1.3 Reverse research through design

During the report writing as part of the action research part of research through design, the idea of reverse research through design is introduced. This can be seen as the 'emergence' of unexpected design results as described by Gaver et al. (2022). Since the aim of the entire project was to develop a new design framework through research through design, but not to search specifically for new insights into this way of research as such. This altogether shows that the entire research through design project could be called an "emergence-friendly" research project.

Reverse research through design is launched because clarification and interpretation are needed about the analysis approach in the early phases of the design process. None of the three types of design research seems suitable to describe this part of the process because it basically forms the interplay between research 'into' and 'for' design since the scientific interpretation of the current design results and the approach is used as a starting point for the research through design process. The designer of TIM implemented a lot of insights from practice into the design strategy without knowing any scientific description of it. The analysis is aimed at finding which design insights the designer mostly unconsciously applies. The insights are described in terms of aspects from existing theories, and therefore could be called embodied theories. As a basis of this approach the assumption is made that learning processes of the designer could be called a process of Research Through Design. Namely, designers constantly search for answers to the question: How could gardens be designed in the best possible manner? Research Through Design is aimed at learning through new knowledge finding, by means of design in practice. Furthermore, based on multiple garden design processes the designer develops knowledge based on action and reflection by finding out what works during the design processes (Frayling, 1994; Frankel and Racine, 2010). In fact, if the analyst searches for the insights of the designer he goes backwards through this Research Through Design process. In the case of TIM this is done through observations and discussions about the current design activities. In terms of insights embedded in the end-result, scientific literature considering gardens and design in general is considered. Interestingly the project is executed in cooperation with the designer of TIM which means that the analysis of the garden design is not solely based on the interpretation of the analyst, but the direct input of the designer is also considered. Frankel and Racine (2010) describe this phenomenon as 'knowing-in-practise' in which the "competent practitioners know more than they can say" (Schön via Frankel and Racine, 2010 p.2). The human centred theories and their described scope then provide insights in the scope of garden design of TIM. Later in the process these insights from the Reverse Research Through Design are used as a starting point for the new design framework. This is done through analysing the existing designs, which research through design insights TIM unconsciously implements in his garden designs. Existing designs are suitable for this type of analysis because they embody information about the issues which are relevant to the designer, and they show what the designer thinks is the best way to solve the issues (Gaver, 2012). These design insights are interpreted in terms of scientific knowledge on design and humans. For instance, when the designs are analysed, quickly the Gestalt-principles become visible although the designer was not aware of it, he just knew that playing with lines and axes of sight in a particular way delivers the most aesthetically pleasing designs in terms of visual perceptions.

Later in the process the insights from the reverse research through design are used to frame the process of understanding the client during the in-depth conversation with the client. The frame functions as background knowledge and a common ground within the designer-client relationship. So the reverse research through design functions on the third and fourth level of design.

Within the framework the process of the reverse research through design functions as research 'for' design concerning the second design level because the outcomes are used as a starting point for the framework development. Frankel and Racine (2010) mention this to be prescriptive research since as in reverse engineering products are analysed in terms of their functionalities. However, the act itself considers the fifth towards the seventh level of design of the entire project.

The Reverse Research Through Design concept is not only used to get an understanding of the used insights of the designer but also into the scope of garden design in general. Gaver (2012) mentions that designs 'embody theory' and based on those theories insights could be gained about the design space of the TIM garden design approach. Furthermore, the implemented design insights could be substantiated by scientific theories. Therefore, the 'cognitive' part rather than the 'expressive part', as described by Frayling (1994) of the garden design process could be reinforced. This provides validation for future design decisions during design and presentations of design towards the client. The new framework is built on prior knowledge and functions in a generative way as a means for new knowledge creation for the designer. And therefore, helps the designer in finding direction to design the right gardens concerning the fifth until seventh design level (Gaver, 2012).

## 9.2 Implications for TIM Exclusive Gardens B.V.

In general, entire project has quite some implications for the design approach of the entire company. In this section these implications are distinguished to see to which extend the implications are present on which level within the company.

Firstly, inspired by the design for happiness approach from literature and the application of it in the second, third and fourth trial design process, the designer and owner of TIM designed a new company philosophy consisting of meaning, happiness, greatness, and pleasure. He introduced these topics since these are extremely important in his personal life. This philosophy is in the first place used for marketing since in this way the company communicates to the clients that they want to make real impact in the lives of the future garden users. Furthermore, the owner sees potential to use these as a means for personal evaluation on the work of the staff itself. The owner has the vision that for himself and the other staff, the work in general should be meaningful, and during work happiness and pleasure should be experienced frequently. Furthermore, the company achievements should lead to the experience of greatness. By taking this perspective, constant reflection and evaluation is possible and optimisation could be done. The change in company philosophy could be considered unintended, namely, the aim of the project was to design a framework and to obtain scientific insights, however in this manner the entire aim of the company is affected.

Secondly, by far the strongest implications of the new design framework are during the design process. Namely, the designer takes a totally new perspective towards the client understanding, and therefore a rich mixture of abstract and concrete information is gathered and functions as the input for the design process. Through the new framework, the designer must think in abstract terms and therefore there is more potential for novel ideas. At the same time the structured approach of the framework guides the designer in translating the abstract information into concrete design elements, through a process of possibility-driven design. Therefore, this new framework has directly high levels of useability.

Thirdly, the impact of the new design framework on the client understanding process format in the in-depth session itself is limited since the framework is designed in such away it suits the current approach of the company. This could be seen as a positive implication since this shows that the new perspective towards the client understanding fits seamlessly within the company structure. Namely the Meaningful Session is basically the same as the conversation the designer led previously. Therefore, it is also decided to not use for instance creative techniques from participatory design. The main difference is that the designer has more guidance in coming to an understanding of the client to such an extent that meaningful design is possible. Also, the framework functions as a means for keeping the conversation flowing, since the You and your meaningful garden sheet could be used for probing to gain depth. All in all, the method is proven to be full of potential for the company, however it should be used multiple times together with new clients to get familiar with it and to use its full potential for making impact on the client-company relationship.

Fourthly, the entire project shows that common sense and experience from practice often suffices already to a large extent. This could result in questioning the added value of the new design framework for the company. The first consequence of the new design framework is that the common sense and the experience of the designer is structured which leads to possibilities for evaluation, validation, reflection, completeness, and stability. By having a concrete framework, the designs can be evaluated in terms of the same criteria. The validation helps to communicate the meaningfulness of the design to the client and for the designer to experience meaningfulness during the design process. The background information on the four experiences function then as criteria on which the design could be tested. The framework also helps to be able to reflect on the quality of the design in terms of the approach. In the end the better the framework is used the more meaningful the design outcome should be. By applying the framework, the scope of the in-depth analysis of the client is always similar. In this way simply forgetting to ask the right questions and search for the wrong information is avoided. Also, the framework guides the designer through its intrinsic stability. The framework asks for a certain amount of depth in the information which means that the designer and the client are urged to have a deep conversation, also if they do not feel the correct mood or emotions to go into depth.

Fifthly, although the staff seems to be not familiar with the new company philosophy yet, the new framework as part of the philosophy, allows for a common ground for internal communication. The templates which are used before and during the design process function to store and share the information from the clients.

### 9.3 Implications for the client-company relationship

The new design framework also plays an important role in the relationship development between the client and the company. This relationship perspective was already predicted to be important at the start of the entire project, which becomes clear from the main research question. Therefore, this section shows how the answer to the second and sixth research questions are obtained throughout the project, regarding the current relationships and the new relationships, respectively. The relationship is shaped through the themes Meaning, Happiness, Greatness, and Pleasure. To draw conclusions about the influence of the framework on the relationships, the framework should be validated through existing models. The fourth research question asks for an interpretation of the relationships. In this section only this first part of this question is addressed, in the next section the influence on the design outcomes is discussed. At the start of the total project this research question was aimed at validating the outcome of the design process in terms of design outcomes. The relationship building was assumed to be the key factor in improving the design process and the design outcomes. Namely, if there is no difference in the design outcomes, the question could be

raised whether the design framework is useful and innovative for TIM. The difficulty with this approach is that the 'difference' cannot be measured in terms of design outcomes because comparisons in terms of design results are hard to make because every design for the specific user is totally different. Therefore, the evaluation should be done on the design approach level, rather than on the end-result level. In terms of relationship building, it is also difficult to validate whether the client-company relationships after the new design framework are more in-depth than the relationships in the old situation. Therefore, the new approach should be validated in terms of how the relationship building takes place. Or at least how the framework guides in the relationship building. In this way insights into the development of the relationships could be gained. This means the empirical testing is less relevant since the approach can be tested through theory. Current empirical information is difficult to interpret since the framework is not implemented in its totality yet by TIM, at least not to such an extent that the implementation of the framework predominates the company-client relationship. During the Meaningful Sessions there is only touched upon the total content of the framework. In the worst case scenario, the framework could never be used in its totality since the future clients could simply disagree with the content. This means only insights into whether the approach is a useful guide during relationship building could be answered. Thus, the question should be answered whether the new framework is a validated and structured alternative for the current approach towards in-depth relationship building.

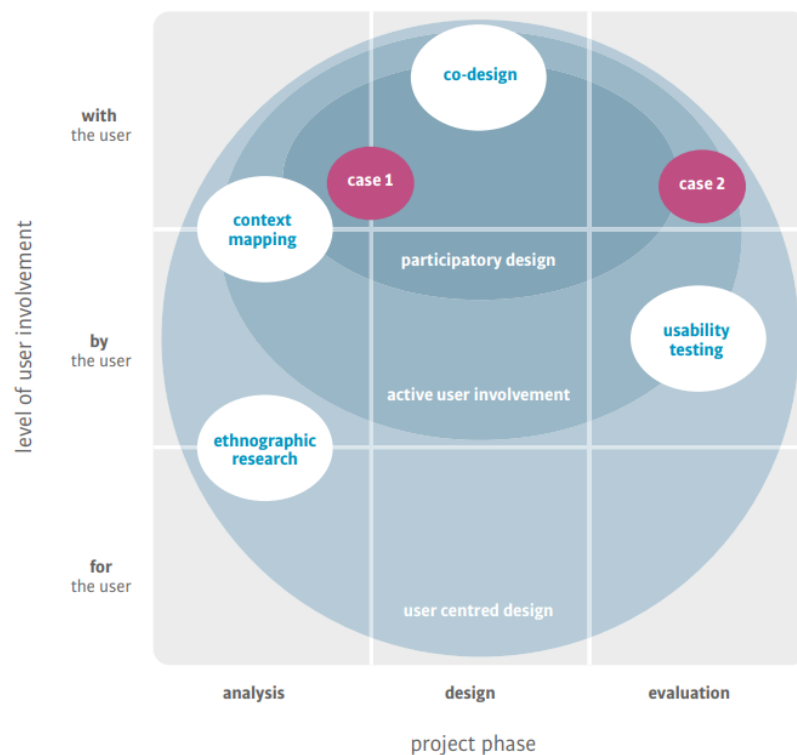


Figure 46 Levels of user involvement in human centred design, source: Thalen and Garde (2013 p.37)

The new design framework can be placed in the 'for the user' section in the diagram of Thalen and Garde, see figure 46 (2013 p.37). The clients hire TIM to design for them since they need the expertise of the company. Therefore, the framework fits within the 'user-centred' methods. The analysis phase consists of the first contact with the client, list of requirements, Meaningful session, measurements, and observations at the building plot. The design process consists of the concept, contemporary design, and the final design. The evaluation takes place after every phase in the process, this takes place through meetings with the clients. More user involvement does not fit the motivation of TIM mostly because the aim of the company is to unburden the clients. Practice shows



that the more user involvement in the design process, the more the process is slowed down. The moment the agreement between the client and TIM is based on hourly payment, there is more room for user involvement, but still this is not the most preferred way of working for TIM.

#### 9.4.1 Four levels of human insights applied

The entire project is focused on the question how the designer of TIM could understand the clients to such an extend meaningful design will be delivered to the client. The aim is to have a framework that guides the designer in finding deeper information than currently is done. Then the question remains at which depth is TIM satisfied, and to which depth does the new framework reach? Van der Bijl Brouwer and Dorst (2014) address a similar question in their research, namely which information is needed from the people who are involved in the design process to be able to innovate. Their framework of 'four levels of human insights' consist of the following four levels which are from the most superficial level towards the deepest level, namely: solutions, scenarios, goals, theme. Which can be found through asking respectively what, how, why, why. The information obtained through this framework is used in designing products through "human-centred innovation" (Van der Bijl Brouwer and Dorst, 2014 p.280).

During the meaningful session of TIM together with the clients the different levels of the framework of the authors is observed continuously, therefore these sessions could be seen as empirical evidence for the theory. For the authors the most superficial level is the 'what' level or the level of the 'solutions'. According to them market research techniques should be used to find this level. During the Meaningful Session, which could be seen as a type of semi-structured interview, the clients often start talking in terms of concrete elements they want in their garden. For instance, they want a swimming pool, jacuzzi and other wellness facilities. Considering the theory these could be categorised as being solutions for certain personal problems. The next step in the framework would be to find these problems to get a deeper understanding of the personal needs. Within the TIM design process, it is more suitable to call these solutions 'possibilities'. Since, the facilities the client prefers opens possibilities for the garden design. Often the facilities are the basis for the remainder of the design.

The next step in the theory is to find the 'how' of the 'solution'. This means it is searched for the experiences during product use. During the Meaningful Session the designer finds these through listening to the user. This often goes automatically because almost all clients have experiences with gardens since they owned already a house in the past, this means they can talk about their prior garden experiences in terms of emotions, feelings, interaction qualities and thoughts at least to some extend. However, for the designer it is the most important to find the answer to how the experience of Meaning, Happiness, Greatness, and Pleasure takes place generally within life and specifically within the gardens. To gain to this level of depth the designer often needs to ask deliberately about these experiences because users often stay on the level of general experiences (often negative) with gardens. But are not aware of the specific relationship between certain aspects within the potential garden and the experiences. More often the clients assume certain 'solutions' to be in line with certain activities which evoke certain experiences. They assume that the designer understand these because they belong to the specific object. However, from the perspective of the designer the same assumptions are made. This shows the need for more depth. The authors call the 'Hows' the 'Scenarios' of the products. During the Meaningful Session the designer should guide the client in imagining future scenarios of use within the garden and then find out which experiences would play a role within these scenarios of use. For TIM this level is interesting to deconstruct the solution into abstract terms of experiences, since there might be other possibilities for 'solutions' that evoke the same experience as the specific solution which is mentioned by the client. The reframing on this level

gives new design possibilities and provides the designer with more design freedom for garden elements than just rearranging existing garden elements. However, if the new design evokes the experiences the design is already meaningful to the designer and the client, according to the company's philosophy.

A deeper level in the theory is the level of the 'Why' which becomes clear through the 'goals' of the user. This question asks for the motivation of use. In trial design process five, see section 8.2.5, it became clear that the most important goal for the future garden would be that it provides possibilities for coming to rest after busy working days. The trial design process showed that such a goal provides a lot of structure for the designer, it functions as general theme during the entire design process.

The deepest level of the theory is again obtained through asking 'Why', but now the answer should contain the 'theme' for which the designer could design. This theme should be constructed of human values and meanings. This is in line with the goal of the Meaningful Session, namely, to find the things which are meaningful to the user, and to gain an understanding of why these things are meaningful. During the Meaningful Session also often a bottom-up approach rather than the top-down approach of the authors is used by directly asking for what is meaningful in the life or in the garden of the user. This question is asked directly whilst guided by the 'U en uw meaningful garden' sheet which lies on the tabletop during the session. One of the examples from practice is the abstract theme of 'privacy'. The task of the designer is then to project this meaningful abstract element on the garden design. Through directly asking for the Meaningfulness the designer directly hits the deepest level of the theory.

In the TIM design process, the 'human-centred innovation' is not the main aim, the aim is to design gardens that fit the personality of the user, which makes the garden meaningful to the user. By taking the abstract and subjective personal information as a starting point for design there is a lot of potential for innovation, as the trial design processes show. This innovation could be relevant for TIM to open space for creativity and to stay competitive in the market. However, this innovation is a side-effect rather than the aim of the design process. For the company the goal is to facilitate the four experiences of Meaning, Happiness, Greatness and Pleasure.

In the meaningful session of TIM the questions what, how and why are also asked to obtain insights in the elements which for the user personally leads to one of the four experiences. This is based on the emotional design perspective of Don Norman described by Mao et al. (2017). During the conversation the questions regarding the what should deliver insights for designing the behavioural part of the design, the how to the visceral part and the why to the reflective part. In this way the connection between the experiences of the potential user and the design is clearly made. In this way the designer gets Insights into the imagined element that delivers the specific element. This is mostly applicable the moment the user thinks in terms of standard elements. So, the designer starts with asking the question (e.g. about greatness): What would make you experience greatness? If the client answers by mentioning a concrete element or an activity (e.g. an outside kitchen) the designer asks how this element or activity delivers this experience. This should result in information regarding the styling of the product in terms of perceptual characteristics.

Van der Bijl Brouwer and Dorst (2014) focus on finding the 'latent needs' of the future users of the products to create innovative solutions that serve those needs. In the new design framework these latent needs also play an important role. During the meaningful session the designer presents gardens to be places full of meaning through experiences. Based on the framework of the four experiences the designer and the user inspire each other through which in-depth information is

gained. There are high chances that the user did not have awareness of the four experiences in garden interactions. This altogether shows the correlation between the published theory and the new design framework concerning the shift from unconsciousness towards consciousness about what makes design personally meaningful.

The publication shows a perspective towards meaning which goes beyond the aim of the new design framework. Namely, the author shows that 'radical innovation' will create new meaning (Van der Bijl Brouwer and Dorst, 2014). Through the framing of the problem the meaning is analysed in terms of needs, however through the reframing by the designer the needs are used to and explored in terms of new potentials for other meanings. The themes are explored outside the problem context, to find new themes to design for. In the new design framework of TIM the possibilities for garden design are searched within what is already meaningful for the user, rather than deliberately outside the existing meaning. Sometimes, there is not a change in meaning but a new application of the meaningfulness in novel ways. This is the case when something is explored which is meaningful to the user in other aspects of the life. The designer can project this meaning onto gardens in order to lead the user towards this particular meaning experience within the new context, namely the context of the garden. For instance, in the garden design of the professional soccer player, Tim added a large flatscreen and a soccer field, so the professional soccer playing can be experienced within the garden. On the element level the framework could lead to new meaning creation beyond the initial or standard meaning of the element. This can be illustrated by the multiple stemmed flowering and leaves loosing meshes which are staged in such a way they are an embodiment of the meaningful theme 'transition'. Since this theme is meaningful specifically for the user this has potential to evoke the experience of happiness most through visual perception. Outside this specific application, the meshes have their standard meaning namely as being part of the greenery within the garden. This shows a shift in meaning and even a potential increase in meaning.

Overall, it can be concluded that the framework and specifically the meaningful session can be analysed considering the framework of Van der Bijl Brouwer and Dorst (2014). Furthermore, the content is to some extent compatible with the theory. Namely, the quest for what is meaningful for the client directly goes towards the deepest level of the described model. Then a bottom up approach is needed to create a meaningful solution. The other way around is more often present in the conversations with the client, than the designer needs to help to go more in depth towards the meaningfulness. The difference between the new design framework and the theory is that the latter takes problems as the starting point (problem-driven design) whereas in the garden design framework a possibility-driven approach is used in which the search for possibilities is central. However, the publication shows some sort of search for possibilities within the problems as well (although not explicitly mentioned) by reframing the problem to open up a larger design space. It could be questioned whether this always leads to solve the initial problem in such a way that the needs of the client are satisfied. The reframing can be seen as the search for possibilities within the problem in order to find innovative solutions. In the model experiences are located in the scenarios level. Consequently, the meaning, happiness, greatness and pleasure experiences are part of the scenarios and do not play a role at the deepest level. To get a deeper understanding the designer can ask about why these experiences are valuable for the user. The question is whether this suits the new design framework since the goal of this framework is to evoke those experiences in order to get meaningful design.

#### 9.4.2 On intersubjectivity

During the Meaningful Session there occurs to some extent intersubjectivity between the designer and the client. Generally speaking intersubjectivity can be defined as "the variety of possible

relations between people's perspectives" (Gillespie and Cornish, 2010 p.19). The moment intersubjectivity occurs people have come to some extent to an agreement between their perspectives. Ho and Lee (2012) apply this perspective towards design in their 'Design through intersubjectivity' in which they present a 'typology' with which the 'designer-user relationship' can be analysed by categorising in the categories: I-it, It-Thou, I-Thou. These respectively mean that the designer has a 'preconceived image' of the user for which he designs a product, the designer tries to understand the user through empathy whilst being open for building relationships, the designer merges within the experience together with the user whilst losing the distinction between designer and user. This empathy is discussed as being a way to "un-learn". For TIM this is important as well to get rid of basic assumptions about garden experiences which might not be generally applicable. In general, the idea of intersubjectivity is based on phenomenology in which human experiences are the key element for analysis. Therefore, intersubjectivity can be used to analyse the experience-based new design framework of TIM.

Thus, the Meaningful session could be analysed in terms of intersubjectivity in order to gain insights into the relationship building during the session. During the trial design processes and by discussing with the designer of TIM it is found that most of the design decisions are made based on personal experience with gardens and assumptions made upon this knowledge. There for the initial approach of TIM is mostly based on the I-it relationship of intersubjectivity. Although, personal contact with the client based on general knowledge of human nature. Part of the clients of TIM might expect this type of relationship to take place because they solely hire TIM for his design experience. Basically, this is the thing why the Meaning, Happiness, Greatness and Pleasure framework is introduced, namely, to avoid this relationship. TIM wants a deeper understanding of the client in order to build strong relationships. In this relation the designer is the I and the user is the It. For TIM practice has proven that most often this approach works out well. This could be to a large extent the case because of the portfolio of TIM. Clients approach TIM because they have seen the portfolio, this means there is to some extent already a match between TIM and the client. However, as the designer introduced Meaning, Happiness, Greatness, and Pleasure in the company's strategy there is a need for more depth in the design process in which assumptions cannot be easily made anymore. Consequently, during the Meaningful Session the designer tries to find more deep information to get a better understanding of the client and to build a sufficiently strong relationship with the client. During the session there should be reciprocal sharing of perspectives to gain the required depth. Tim starts this type of It-Thou relationship through sharing his personal motivation for starting the company to add meaning to people's lives through garden design. Then, the client should react and shares his personal vision. If this does not take place the designer should ask deliberately for personal experiences base on the 'U en uw Meaningful Garden' sheet. The designer should try to gain empathy, so the personal experiences are understood, to come to meaningful design. In practice this takes place quite naturally during the Meaningful Sessions. During this part of the conversation the designer should respect the vision of the user towards the four topics to behave morally correct and aim at relationship building. This is the reason why the designer should have an as broad as possible understanding of the four experiences, so with whatever person takes part in the session the designer can build the It-Thou relationship. Since intersubjectivity is a state of being, there should be a point in the session in which intersubjectivity is reached. Consequently, the session could be considered successful if TIM and the client has reached the state of intersubjectivity. Which is necessary for TIM to be able to start the design process, and for the client to be able to trust TIM and sign the quotation. The last relation which is presented by the theory is the I-Thou relationship in which the difference between the designer and the user disappears. During these moments the client takes over the lead of the conversation. The client and the designer together emerge in the

conversation, experiencing the conversation together. During the Meaningful Session these moments sometimes occur most often when the client starts talking about his own business. For Tim these moments are often inspiring since he is building his own business as well. Although, for the design of the specific garden these moments are less relevant, these moments add significantly to the personal relationship building. Similarly, these moments are described to take place during interviews, namely DiCicco-Bloom and Crabtree (2006) call these the deepest level of rapport.

#### 9.4.3 Commercial friendship

Garden design is a personal activity in close contact with the client who will be the future user. This becomes apparent through the fact that one of the clients of Tim became his friend and is still his friend. This shows that the TIM design approach provides the space for personal contact to such an extent that relationships and even friendships could be developed. The question arises to which extent the new design framework has this potential as well. In marketing these types of relationships between service providers and clients are called 'commercial friendships' (Price and Arnould, 1999). The moment the designer and the client become interdependent and have impact on each other it can be defined as being a relationship. The authors mention friendships in general to be dependent on the quality and quantity of self-disclosure during multiple encounters and interactions. In addition, Busser and Shulga (2019) show the relevance of perception of similarity and social support during the development of the friendship. Through 'friendly exchanges' the friendship could be intensified. For example, one of the clients sent TIM a bottle of wine as a present for the effort they put into the project.

As shown, the current design approach of TIM provides already room for friendship building, mostly through the personal contact and the impact the designer and the client have on each other, namely they need to understand each other to come up with proper designs. The Meaningful Session adds to this personal contact by providing a moment in which the focus lies on gaining more depth in the personal contact through the conversation based on Meaning, Happiness, Greatness, and Pleasure. These experiences occur on the personal level and therefore there is a need for self-disclosure on a very personal and abstract level to understand each other. Similarly, as shown in the theory, this encounter is part of a series of encounters in which the relationship is developed. Therefore, some superficial contact goes before the Meaningful Session, so there is already some basis of a relationship. In this way the session functions as an intensification of the relationship early in the process to form a foundation and starting point for the garden development process. At first glance the Meaningful Session might be perceived as being part of an 'agentic relationship' since TIM forces the client to disclose in the session. However, the session is quite open without predefined questions other than the 'U en uw meaningful garden sheet' which functions solely as a conversation starter and a guide during the conversation, therefore the agency is limited. Also, Tim tries to gain depth in the conversation through self-disclosure by himself about the reason why he started the company and why for him the four experiences are fundamental. In this way also similarity could be reached the moment the client recognizes the relevance of the experiences. Through proper communication about the purpose of the session on beforehand, this becomes likely to occur. The client needs to be aware of the impact the session will have, namely the more the client discloses the more personal the garden design could be made. In this way the client has an impact on the designer. Furthermore, during the Meaningful Sessions in practice, the designer closely observed whether the client remained comfortable by the amount of depth. The moment the client started to be observably uncomfortable with the topic of conversation, the topic was shifted towards a more superficial one. All in all, it could be stated that the Meaningful Session has potential for relationship and commercial friendship development. However, the designer and the client should come to an agreement in terms of the interpretation of the quantity and quality of the disclosure and whether this is enough for the

relationship or friendship. For both the designer and the client the final realized garden is the best measure of whether the relationship was strong enough. If the client experiences the Meaning, Happiness, Greatness, and Pleasure in the garden, this should be realised as being the result of the good relationship with TIM. For TIM the relationship is successful the moment that the client communicates that the realized garden is personally meaningful in terms of the experiences. Because the moment the garden is meaningful to the user, the entire process becomes meaningful for TIM as well.

#### 9.4 Implications for the user

Finally, in this section the implications for the users of the TIM garden are considered. Therefore, the following aspects are discussed.

Firstly, the new company philosophy through meaning, happiness, greatness, and pleasure leads to a specific focus on these topics in the design process. Since the designer believes that these topics are suitable for everyone and therefore these experiences lead to meaningful design. This potentially makes that during garden interactions the clients might be reminded of the application of these experiences. Since during the Meaningful Session and through the quotation the client agrees on this approach, the actual experience is likely to occur in practice. Therefore, the designer has a long term impact on the user. Although this seems to be quite extreme, this is always the case since the user uses the garden elements which are designed by the designer. However, through the new framework the designer more consciously considers the implication of the design on the user, therefore I would say that the new method more is more ethically responsible design than using a design approach which does not consider the impact.

Secondly, the question could be asked whether it is ethically responsible to try to fit users with their garden interactions into a framework of four experiences. In my opinion the entire project shows that the four experiences are basically applicable for every case and therefore are applicable to every person. The only danger is that during the Meaningful Session the design has the lead and therefore he could force unconsciously the user into a desired way of thinking with respect to personal experiences. Therefore, it is important that both the designer talks in terms of the personal vision rather than in terms of solid truths. The open structure of the Meaningful Session allows for this perspective. Another aspect which should be considered to reduce the possible negative impact of the perspective of the four experiences, is the fact that TIM clearly communicates this approach towards the client on the website and during other types of marketing. Therefore, the user could have been aware of this approach, meaning that it is his own choice to cooperate with the company. Then, for the company in its turn, it is important that the approach is clearly communicated to the clients.

Thirdly, one large shortcoming of the entire assignment is that there are no final designs from the trial design processes presented to real clients to see whether they have potential for the delivering the four experiences. And, to see whether the translation from abstract information towards design elements works. Unfortunately, this altogether is since only late in the project there were new clients for whom a design could be made through the new design framework. And although, the fourth and fifth trial design processes are made for real clients, the clients of the fourth trial design process delayed the cooperation with TIM and the clients of the fifth trial design process were planned be met at a moment outside the timeline of the project. Therefore, the designer of TIM must test the framework further during later projects. For now all the applied insights are either based on generally applicable design and design related scientific literature, and the information obtained through the experience from the designer of TIM and through the Meaningful Sessions. However, proper testing of the results of the final framework is lacking.

## Chapter 10 Conclusions

To end the report conclusions are drawn to show how the main research question is answered through the total project. The research question is the following “How can a design framework be formulated that helps TIM Exclusive Gardens to optimize the initial phases of garden design, via strong client-company relationships, that aims at matching gardens to the personality of the end-users?” This question asks for the process in which the framework is developed. Overall, the framework development is executed through a research through design process in which trial design processes are used to design gardens. The five processes provided insights in the applicability and pragmatic usability of the researched scientific literature within the context of TIM Exclusive Gardens BV and their current design process. Therefore, the project shows that research through design is a suitable approach for design framework development, because it allows for exploration through design and delivers new insight for scientific literature. All in all, the approach led to the emergence of the distinction between seven levels of design in the entire project. These levels show the context, in terms of design levels, for the framework design on the third level of design. The design process of the design framework took place within the design of the company philosophy, on the first level of design, and the design of the client-company relationship, on the second level of design. The design on the level of the framework contained the design on the level of the client information format, the fourth level, the design of the garden design vision, the fifth level, the design of the garden, on the sixth level, and the design of the garden elements, on the seventh level. During the project all these design levels influenced each other, namely design choices higher levels (the lower numbers) influenced the lower levels (the high numbers), and insights obtained through design on the lower levels influenced the higher levels. This clearly shows the interrelationships between the different levels and the need for a holistic perspective towards the entire project.

After conclusions are drawn regarding the position of the framework design, conclusions regarding the content of each of the seven levels could be made. The final framework is strongly influenced by the design on the first level of design regarding the four experiences of meaning, happiness, greatness, and pleasure to come to meaningful garden design. This perspective towards the entire company is experience-based and therefore allows for sharing personal visions and is strongly dependent on personal relationships. This directly shows the link between the first and second level of design, since the second level is used to find the suitable company-client relationship. The relationship is mainly built through sharing in-depth information regarding the four experiences in personal life. Furthermore, in terms of practicalities the relationship evolves in the same manner as in the current approach, only the perspective towards differs and more guidance in deepening the relationship is provided by applying the design framework. On the third level of design the final framework shows how the insights from the preliminary literature research into gardens, an analysis of the TIM design process, from reverse research through design could be combined with the human-centred design methods of possibility-driven design, experience-based design, emotional design, and scenario-based design. More specifically, during the entire assignment the experience-based design perspective is taken to allow for sharing personal experiences. Next, the possibility-driven design is taken as a starting point for the garden design process since gardens are not about solving problems but allow for a search for possibilities. The design vision for the garden design, on the fourth level of design, asks for these possibilities. Next, the scenario-based design is superficially used for quick thinking in terms of garden use during the design process. This perspective allows the designer to the overall garden through imagining the relations between the garden elements during use, on the sixth level of design. Finally, the emotional design in its turn is mostly used to design the garden elements, on the seventh level of design, because this method provides pragmatic guidance in the translation of abstract information towards concrete garden elements. The use of the combination of all these

methods show that garden design is about designing interactions and the related experiences for the life of a human in a specific context.

The final conclusion which could be drawn from the project is that there is new potential for the company to develop strong company-client relationships through the application of the new framework. Since the framework provides guidance in sharing in-depth information which allows for the development of intersubjectivity and commercial friendships. Also the professionalism of the designer increases since the content of the entire master assignment could be used to substantiate design decisions.



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## Appendix

### A.1 Proposal of the master assignment

# Proposal Master assignment IDE

By Anthonie Blonk s2156547

Company: TIM exclusive gardens

## Introduction

This proposal is meant as a starting point for the master assignment for the mastertrack Human Technology Relations IDE during the academic year 2022-2023. The master assignment would be executed in cooperation with a garden design agency named TIM Exclusive Gardens B.V. Together with this company I came to an agreement to direct the master assignment towards the development of a framework that helps to develop the early phases of the design process further, based on scientific literature and design in practice. More specifically, on a design framework that helps the company to get a proper understanding of the personality and the needs and wishes of their clients, namely private individuals. For the company, this understanding is key in their vision about what they think is good garden design, hence this would be essential in their brand identity. Consequently, the assignment will focus on implementing methods and techniques from the field of Human-centred design into the garden design process of TIM Exclusive Gardens. Research-through design will be used as an approach to understand the current design process and to validate the outcomes of the design framework development, since the master assignment is a combination of both scientific research and design. In this way design is a tool to experiment and test scientific knowledge to gain new insights about the topic under research. Therefore, this research-through-design is present throughout the entire assignment.

## About the company

TIM Exclusive Gardens B.V. is a garden design agency that aims at designing luxury gardens for the top of the garden design market for private individuals. The gardens designed by the company cost roughly €200.000- €15.000.000 and consist of swimming pools, terrasses, outdoor kitchens etc. The company consists of a staff of two, a designer and a developer.

## Goals for company

- New insights in the design process, with a focus on interactions with clients.
- Have validated framework to do human centred design

## Goals for UT

- Gain new insights in the HTR field by research through design
- Develop new design frameworks
- Evaluate current design methodologies

## Goals for me as a designer

- Gain more insights into applying science in practice
- Do what I like, work with living materials
- Apply the knowledge I have in a different field (experimental)

- Conduct design that adds meaning to the lives of the users in such a way that the intrinsic value of the users is respected

### **Main research question**

(How can a design framework be created that helps TIM Exclusive Gardens to design gardens that suit the personality of the clients?)

(How can the designer of TIM Exclusive Gardens gain a proper understanding of the end-user during the initial phases of the design process?)

**How can a design framework be formulated that helps TIM Exclusive Gardens to optimize the initial phases of garden design, via strong client-company relationships, that aims at matching gardens to the personality of the end-users?**

(How can a design framework help TIM Exclusive Gardens to build stronger relationships with their clients and how does this affect the relationship between the client and the garden?)

### **Approach**

**How can gardens be defined based on the vision of TIM Exclusive Gardens, scientific literature, and the target group?**

- Define gardens based on:
  - o Scientific literature
    - Space/place
    - Part of life
  - o What could a garden mean for the end users in general?
    - Interviews with target group
  - o The context
    - Houses
    - Streets
    - Neighbours
    - Etc.

**How does the current design strategy of TIM Exclusive Gardens influence the relationship between the client and the garden?**

- Get familiar with the current design process
  - o Follow the current design approach of the company
- How can industrial design principles be applied in garden design?
  - o Personal view on gardens

**How does the relationship between TIM Exclusive Gardens and the clients influence the outcome of the garden design process?**

- What is the relationship from a client's perspective?
- What is the relationship from TIM Exclusive Gardens perspective?
- What factors could be optimized to build stronger relationships? (This goes more into branding)
  - o Design a space/environment

**How do Human Centred Design methods influence the relationship between the client and the garden?**

- What human centred methods are applicable in the early design process
  - o Experiment with different Human Centred Design methods based on outcomes

**How can a framework be developed based on the gained knowledge?**

- How can a framework be best formulated?
- What is the scope of the framework?
- What is the role of the designer?
  - o What inputs are objective/subjective?

**Planning**

Week:	Activity:
1	Start project at 14th of November
2-6	Develop the assignment further Get familiar with the company Get familiar with the current design process of gardens Literature research about gardens Literature research about human centred design Start draft report Visit clients
7-13	Develop concept frameworks
14-20	Test concept frameworks through design Choose final framework
21-27	Develop final framework Test final framework through design
28-31	Optimize and finalize framework Finalize report Make presentation Write 4-page paper
32	Presentation + defence
Total: 32 weeks	

**Some further thoughts**

- Embodied interaction in gardens? → See paper “Seven Principles to Design for Embodied Sensemaking” → goes embodied interaction beyond design for human senses? → think also of sensory motor couplings
- Start from the perceptions of the end-user through their modalities
- To what extent is participatory design useful?
- See literature about innovative design and styling
-





## A.3 Affordances

### *Pavement*

#### Artifact:

- Structure: Consists of different types of floor tiles
- Behaviour: The tiles lay at fixed locations on the floor and by its grouping form infrastructure, on their own they cannot facilitate much activity.
- Function: supports humans and infrastructure while standing on it, prevents for weeds, facilitates directions, separates nature from the built environment, facilitates clean walking, facilitates clean playing

Affordance(s): walkability, standability, distinguishability, playability, rollability, cleanability

#### Affordance type:

- Reflexive: The walkability and standability are mostly a reflexive affordance since people use paving automatically, without thinking for these activities. Especially if people get familiar with the routes. The colour and structure of the tiles afford distinguishing between different places. In the design the pavement is in such a harmony with the proportions of the artifacts in the spaces that from the beginning the meaning of the paving is already clear. Rollability is intuitive because of the flat and smooth surfaces of the tiles; therefore, users know automatically that they can roll something over the pavement towards a certain location in the garden for instance the lawnmower. It becomes clear from the smoothness and the hardness of the paving that it can be easily cleaned and that it should be cleaned to keep the garden a nice place to live. The distinguishability of the tiles is due to its contrasting structured shape with respect to nature. Users directly see the difference between the built environment and nature; therefore, they know for example where to walk and sit.
- Reactive: Because of the different places in the garden, the users might need to think about what direction they are going to walk within the garden. Playability is afforded by the paving but is not always intuitive for the children since they must think about where to play, because there are so many places that facilitate playing. Especially, if parents have created rules about where to play or not. The cleaning can also be reactive since the users have to decide what type of cleaning is suitable for the paving and the type of dirt.
- Reflective: The walkability can become reflective as for instance, due to cold weather, the tiles become slippery. Users must reflect whether it was wise to walk on the tiles during this weather. Also, during hot weather, the tiles might become hot and therefore people might regret walking over the tiles and search for alternatives, for instance walking over the lawn.

### *Lighting*

#### Artifact:

- Structure: Downwards lighting above the dining table, lighting fixtures against the garden fence lighting up- and downwards, up wards lighting in front of the wood storages, LED strips under the quick sitting and the outside kitchen, downwards lighting form the ceiling in the outside residence
- Behaviour: The lighting can be totally or partly turned on and off and dimmed, the fixtures are mounted at fixed locations
- Function: The lighting provides a cosy atmosphere during the dark, they are aimed at accentuating the wood storage, the garden plants in front of the garden fence, provide usability of the dining table during, provide guidance for navigation through the garden, because of the LED strips that are mounted at the bottom of the quick seating blocks and the

outside kitchen. In the residence the lighting provides a cosy atmosphere and helps in the usability of the place.

*Affordance(s)*: Usability, distinguishability, navigability, enjoyability, dinability, readability, socializability

*Affordance type*:

- Reflexive: The lighting in the entire garden except of the lighting in the residence and above the dining table are used intuitively for the general usability of the garden. The distinguishability is mostly from an aesthetical point of view and is enjoyed automatically by the user. The navigability is intuitive because of the parallel direction of the LED strips with respect to the pathways in the garden.
- Reactive: The enjoyability, readability, socializability and readability can all be seen as reactive affordances since the lighting in the space can be adjusted by the user to facilitate these activities properly. Also, the decisions need to make about what lighting should be one for what activity.
- Reflective: The enjoyability, readability, socializability and readability can be seen as being reflective as well since if the lighting is used wrongly activities might not be successful at all. The next time user will do it differently.

*Outside kitchen*

*Artifact*:

- Structure: Consists of paving, countertop with integrated sink and green egg BBQ, brick wall partly surrounding the space, wood storage, fireplace at working height with integrated grill, vertical firewood storage, greenery, and lighting.
- Behaviour: The cooking components form together a defined place at the fixed central location in the garden.
- Function: Facilitates outside cooking, facilitates walking looking from the bar table place towards the wellness place and the other way around

*Affordance(s)*: cookability, performability, deliverability, enjoyability, emergeability, distinguishability

*Affordance type*:

- Reflexive: The cookability is reflexive because there is no other option in the garden to cook. Therefore, the user will do the cooking at this location the moment he makes the decision to cook. The distinguishability is intuitive since the shape of the wall around the countertop suggests the closed space. This conflicts with the paving which directs the user either towards the wellness place or the residence. The greenery reinforces the idea of place since its boundaries show the boundaries of the cooking place and therefore affords the distinguishability. During the cooking, if the cook likes the cooking the space affords both enjoyability and emergeability. All the facilities to cook are present and therefore the cook can focus specifically on the cooking. The cook does not have to think at the spot about whether the cooking is actually possible or not. Also, the sink, the BBQ and the fireplace grill are known objects and therefore they are used intuitively during cooking.
- Reactive: Performability is reactive because the user must make conscious decisions about how to perform with respect to his relatives. This affordance becomes clear from the location of the cooking place, namely in the centre of the garden. Also, the wall around the countertop makes the distinction between the in- and outside of the cooking place which increases the feeling of different power relations. However, from the residence and the sun tanning place the cook is clearly visible, this openness of the space could work against the performability since others can look behind the scenes of the cooking. However, it can also

reinforce the performance since the skilfulness of the cook in his actions can be followed carefully. The capacity of the cooking place is that big that it can be used to cook for multiple people. Therefore, it affords deliverability from the cook towards his relatives. The cooking is done in the separate location in the garden from which the cook delivers the food. During this process the cook needs to actively choose whether the relatives need to get the food by themselves, or whether he delivers the food to them. This decision is relevant because of the relatively large distance towards either the dining table or the residence.

- Reflective: If the weather is bad, the cookability might become a concern for the user because the place is not protected for any type of weather. If the performing during cooking failed, the user can focus more on the deliverability and therefore reflection is needed on the way the cooking place is used.

### *Playing place*

#### *Artifact:*

- Structure: This place consists of the lawn, the stone blocks with water ornament, and the pavement
- Behaviour: All the elements are at a fixed location being part of the floor, the lawn is dynamic since it is part of nature and grows, water ornament circulates water, the stone blocks are situated at their fixed location as a pair.
- Function: The lawn can be used to walk on, it provides a fresh feeling during warm weather conditions, it functions as a flat surface to play on. The paving too provides the children with a flat surface to play on. The hard surface is robust and can be used in a rude manner. The stone blocks function as quick seating and the water can be used as refreshment and for play. The blocks also function as a boundary between the dining place and the playing place

*Affordance(s):* playability, walkability, runability, enjoyability, distinguishability, sittability, refreshability, rollability

#### *Affordance type:*

- Reflexive: The distinguishability in the playing space is afforded by the contrast between the built space and the grass from the lawn, therefore the grass becomes a fixed location with boundaries. Also, the quick seating blocks and the wall around the kitchen form clear visual boundaries between the playing place and the surroundings. The flat surface of the lawn provides the affordance for rollability since grass is associated with soccer. The openness and smoothness of the lawn and paving afford free playability, walkability and runability, this will be done instinctively by the children. Also, the enjoyability can be obtained although there are no clear material facilities to afford this, probably the freedom in the open space adds to this affordance.
- Reactive: The stone blocks afford quick seating; however, the user must make the choice to which direction he wants to look since the blocks do not provide any guidance in this decision making. For instance, the user can become part of the dining place or part of the playing place by simply turning around. The playability asks for some conscious decisions since there is a lot of freedom where to play, as discussed before in the pavement section. For playing soccer, the wall of the outside kitchen and the stone blocks provide a background against which a ball can be kicked. Therefore, the walls afford playability. This affordance is reactive since the children must make the decision to use these backgrounds. The affordance of refreshability is reactive since the user needs to make the decision to become refreshed and to use the refreshment at the specific location in the garden.
- Reflective: While kicking the ball in both the directions of the dining place and the cooking place, there is the risk of damage involved. Therefore, children might reconsider the way of

playing. If there is severe damage, the affordance of playability might be reconsidered totally.

### *Socializing place*

#### Artifact:

- Structure: Inside space with lounge couches, tv, fireplace, tables, chairs, bar chairs, relaxed chairs, glass sliding doors, dynamic sun blocking canvas
- Behaviour: The lounge couches are fixed in the residence, together with the table, fixed tv and fireplace it forms a unity that reinforces each other's purpose. The dining table with the chairs form one unity and are at a fixed location standing in the outside are in a visual separated location. If needed the table and the chairs can be moved around. The bar table and the bar chairs form a unity. The table is fixed to the wall inside the residence, the chairs can be moved around freely. However, without the high table, the highchairs lose their purpose. The sunbathing chairs are at the fixed location on the wooden decking in the wellness place. The chairs are loose and can be moved around to some extent e.g., to follow the direction of the sun. However, because of the small space there is not a lot of freedom to move freely around. The glass sliding doors and the sun blocking canvas can be used to adjust the level of protection from the weather.
- Function: The lounge place is set up to create a cosy and relaxing atmosphere which allows for socializing at a certain distance. However, the couches also allow for more intimate sitting. All the tables in the socializing places provide a space to put food, drinks etc. on but also function as a centre piece to locate the seats around. The fireplace provides warmth and atmosphere. The TV has the function of entertaining and informing the users. The central position of it allows the users to watch together. The dining table functions as a place to dine and the bar table as a place to sit together and socialize or play together. Because of the set up the tables direct the face of the user towards each other, stimulating socializing. The sunbathing chairs have the main function of sunbathing, however they also provide a relaxed seat to have conversations together in which the faces of the users are pointing in the same direction. This means there is no direct eye contact, which could allow for deep thinking for instance. The seats are located close to each other which helps maintaining close relationships between the two users who sit close together.

*Affordance(s)*: Socializability, dinability, sittability, enjoyability, relaxability, playability, positionability, shieldability

#### *Affordance type*:

- Reflexive: All the seats in the entire socializing space are intuitively used because of their sittability, since the users will be familiar with the purpose of the seats, namely, to sit on. The same is true for the affordance of the tables, the users know how to use them and what to put on it and what not therefore they show their supportability clearly. The combination of table and chairs shows socializability because they direct the faces of the users towards each other allowing for eye contact and socializing. Users are familiar with this type of set up and therefore use this affordance reflexively. Especially the sunbathing chairs, and the lounge set up show relaxability because of their low seats and the positions of the back supports in combination with the soft cushions.
- Reactive: The reactivity of the socializing places is mostly in the wide variety of options where to sit. If users enter the garden they must think about where to sit based on the activities which are done whilst sitting and the type of relationship with the relatives therefore the socializability and sittability are next to reflexive also reactive. Also, because of the high number of seats there is a lot of freedom to choose where to sit within the

different part of the socializing place. The shieldability lies in the level of shielding the different places can be used for. The users must choose where to sit based on the weather conditions in combination with the purpose of sitting.

- Reflective: The reflectiveness of the affordances in the socializing place are based on the relationships between the users. If a certain place is less successful for certain relationships the users might reconsider sitting in that place the next time, therefore they would use a different place to sit. With certain types of weather different types of sitting places will be used, based on the weather experience users will rethink where to sit the next time. Furthermore, the amount of protection by the glass windows and the sun blocking canvas ask for reflection during interaction, since the user has total freedom to use the freedom in the shieldability of these.

#### *Wellness place*

##### *Artifact:*

- Structure: The place consists of a wooden decking, semi-walls, Jacuzzi, shower, sun tanning chairs, dynamic sun blocking canvas
- Behaviour: Except of the sun tanning chairs all the components are fixed at or in the floor. The floor and the semi-walls are organised in such away they form a space, without each other they don't have this meaning. The Jacuzzi and the shower can be turned on and off. The user can adjust the dynamic sun cover canvas.
- Function: The sun tanning chairs function as relaxing places for sun tanning. The shower aims at refreshing or cleaning the user. The Jacuzzi is used to sit in turbulent water to relax and improve the bodily and mental health of the user. The dynamic sun blocking canvas provides the user with adjustable protection from the sun.

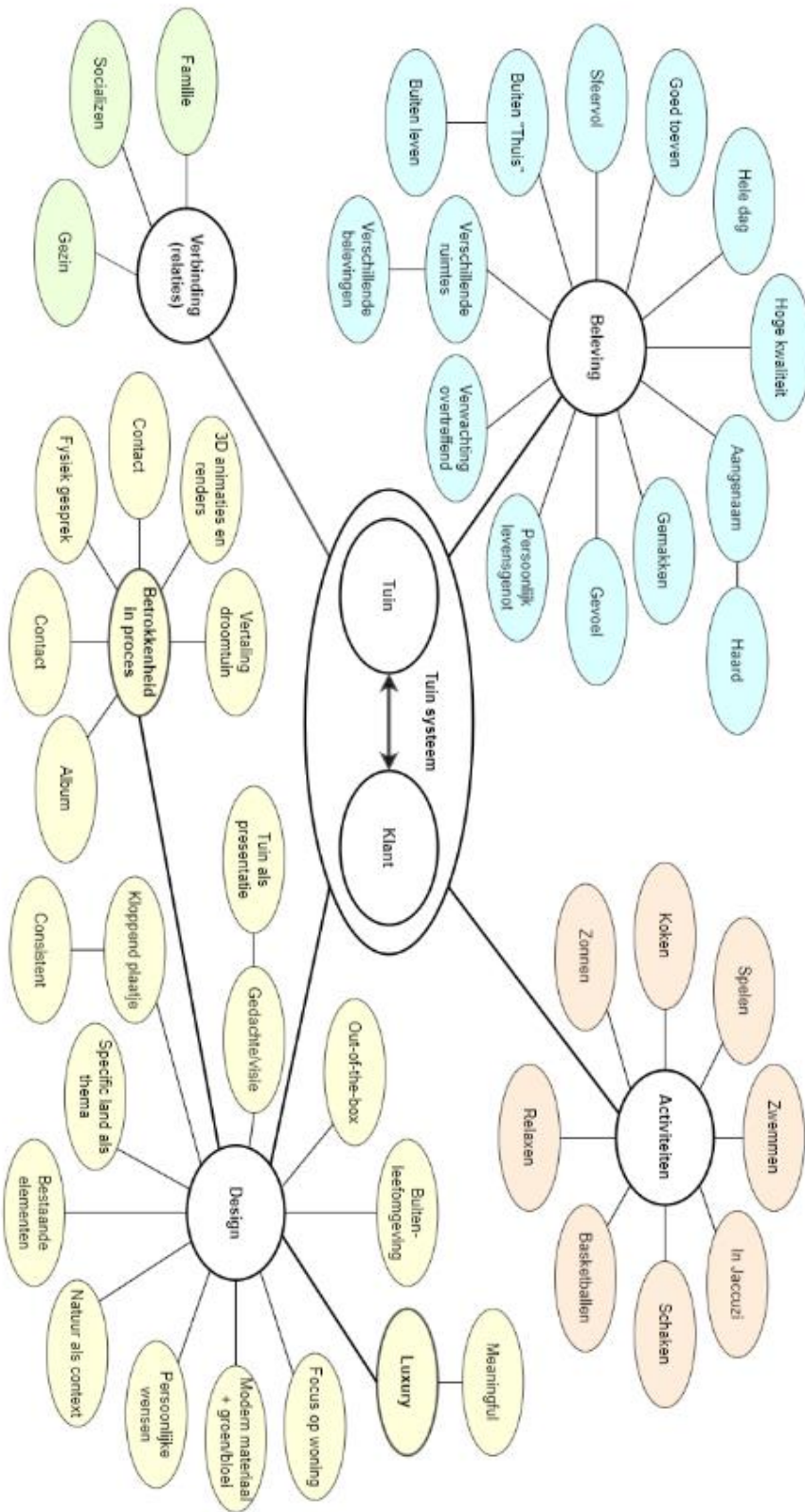
##### *Affordance(s): relaxability, curability, enjoyability, socialisability, cleanability*

##### *Affordance type:*

- Reflexive: Especially the enjoyability and relaxability are reflexive affordances since the feeling of joy and relaxation will arise automatically while using the wellness facilities. For the user these emotions just happen and are difficult to control consciously.
- Reactive: The reactive affordances in the wellness place are the relaxability, curability and cleanability since the user need to decide what part of the wellness area he uses or in what specific sequence. Therefore, some conscious thinking is involved.
- Reflective: Especially the sequence in which the wellness facilities are used should be reflected upon to improve the enjoyability and the curability of the facilities. Also, the weather influences make reflection essential, so the user can adjust the protective canvas to his personal preferences.



## A.5 Overview of keywords related to TIM garden design



# U en uw droomtuin

## Introductie

Wij zijn we op zoek naar exclusiviteit in droomtuinen. Daarom willen we u graag beter leren kennen, zodat de tuin naadloos aansluit bij uw persoonlijke wensen en zo mogelijk zelfs bij uw persoonlijkheid. Onze visie is dat een gebruiker en een tuin niet los van elkaar gezien worden, zij versterken en vormen elkaar. Daarom willen het graag met u hebben over de volgende onderwerpen: uw tuin ervaring, luxe, uw relaties met anderen, activiteiten, design, natuur, u en uw tuin, tuin beleving en welzijn om er zo achter te komen wie u en uw droomtuin zijn. Voelt u zich bij deze onderwerpen comfortabel?

*Onze vraag: "Wie bent u samen met uw droomtuin?"*

## Gespreksvragen

Vertel is iets over uzelf:

## Uw tuin ervaring:

*Introductie:*

Wij hebben natuurlijk veel ervaring met tuinen en kunnen daar uren over praten, maar we zijn eigenlijk wel benieuwd naar uw ervaring met tuinen.

*Vragen:*

- How ervaart u tuinen in het algemeen? (Ervaring/gedrag)
- Wat vindt u belangrijk aan een tuin? (Mening/waarde)
- Welk gevoel heeft u over tuinen in het algemeen? (Gevoel/emotie)
- Wat weet u van tuinen? (Kennis)
- Welke zintuigelijke ervaring heeft u in tuinen? (Zintuigen)
- Welke rol hebben tuinen in uw leven gespeeld? (Achtergrond)
- Neem ons mee in een dag in uw tuin? (Grand tour)

*Antwoorden:*

- Houdt van planten, natuur, buiten leven
- Tuinieren zelf is waardevol
- Tuinen zijn noodzakelijk in het leven van een mens
- De tuin moet aansluiten op de natuur van de omgeving
- Het buiten zijn is belangrijk en waardevol
- Geur, tast en visueel fundamenteel
- Natuur ontdekken

**Luxe:**

*Introductie:*

Onze slogan is 'When luxury becomes meaningful' graag horen we uw mening over luxe.

*Vragen:*

- Hoe ervaart u luxe? (Ervaring/gedrag)
- Op welke manier vindt u luxe waardevol? (Mening/waarde)
- Welke gevoelens roept luxe bij u op? (Gevoel/emotie)
- Hoe definieert u luxe? (Kennis)



- Welke zintuiglijke ervaringen geeft luxe aan u? (Zintuigen)
- Welke rol speelt luxe in uw leven? (Achtergrond)
- Neem ons mee in een luxe dag in uw leven? (Grand tour)

**Antwoorden:**

- Luxe niet alleen in luxe materialen, maar ook in rijke ervaring in tuin
- Rijke, vooral visuele ervaring
- Luxe geeft gemak
- Niet alles om je heen is luxe, en hoeft niet allemaal luxe te zijn

**Uw relaties met anderen:**

*Introductie:* Een tuin is de ideale plek om samen te zijn. Daarom willen we graag uw relaties met anderen beter leren begrijpen.

*Vragen:*

- Hoe ervaart u sociaal contact met uw relaties? (Ervaring/gedrag)
- Wat vindt u waardevol in de omgang met uw relaties? (Mening/waarde)
- Welk gevoel geven uw relaties u? (Gevoel/emotie)
- Hoe zou u relaties definiëren? (Kennis)
- Welke zintuiglijke ervaringen vindt u belangrijk om samen met uw relaties te hebben? (Zintuigen)
- Welke rol spelen relaties in uw leven? (Achtergrond)
- Neem ons mee in uw relaties met anderen? (Grand tour)

*Antwoorden:*

- Samen zijn met gezin is belangrijk
- Verschillende gradaties van interactiemogelijkheden met tuin voor bekenden
- Kinderen mogen niet in bloementuin komen
- Niet iedereen welkom in elk deel van de tuin
- Plek om samen te zitten
- Wandelen met elkaar voor diepgaande gesprekken

**Activiteiten:**

*Introductie:* Naar onze mening is een tuin niet een stuk grond met planten en een bestrating, nee een tuin is een leefomgeving waar activiteiten plaatsvinden.

*Vragen:*

- Hoe zou u de activiteiten in uw leefomgeving willen ervaren? (Ervaring/gedrag)
- Welke rol spelen activiteiten in uw leefomgeving? (Mening/waarde)
- Welk gevoel wilt u dat uw activiteiten u geven? (Gevoel/emotie)
- Hoe zou u activiteiten in uw leefomgeving definiëren? (Kennis)
- Welke zintuiglijke ervaring geven activiteiten u? (Zintuigen)
- Welke activiteiten zijn belangrijk in uw leven? (Achtergrond)
- Neem ons mee in uw activiteiten? (Grand tour)

*Antwoorden:*

- In tuin werken belangrijk
- Kinderen spelen
- Vuur stoken
- Zwemmen in zwembad

**Welzijn:**

*Introductie:* Een tuin is een omgeving die als het goed is bijdraagt aan uw welzijn, zowel mentaal als fysiek door bijvoorbeeld de mogelijkheid om tot rust te komen en te ontspannen in uw tuin.

*Vragen:*

- Hoe ervaart u de invloed van uw tuin op uw welzijn? (Ervaring/gedrag)
- Hoe waardevol is de tuin voor uw welzijn? (Mening/waarde)
- Welk gevoel geeft u het feit dat uw tuin uw welzijn beïnvloedt? (Gevoel/emotie)
- Hoe zou u de relatie tussen uw welzijn en uw tuin willen definiëren? (Kennis)
- Welke zintuigelijke ervaringen beïnvloeden uw welzijn? (Zintuigen)
- Welke rol speelt uw tuin in uw welzijn in uw leven? (Achtergrond)
- Neem ons mee in activiteiten die uw welzijn verbeteren? (Grand tour)

*Antwoorden:*

- Individueel, meditatie hoekje
- Tot rust komen
- Ontspannen
- In vrije tijd in natuur hardlopen, survival, competitief
- Bereid om actief aan gezondheid te doen in tuin

## **Pauze**

### **Design:**

*Introductie:* Wij zien een tuin als een buitenleefomgeving en als verlengstuk van de woning

*Vragen:*

- Wat is uw ervaring met design in het algemeen? (Ervaring/gedrag)
- Welke waarde hecht u aan design? (Mening/waarde)
- Welk gevoel geeft design u? (Gevoel/emotie)
- Hoe zou u goed tuin design willen definiëren? (Kennis)
- Welke zintuigelijke ervaring wilt u graag hebben door design? (Zintuigen)
- Welke rol speelt design in uw leven? (Achtergrond)
- Neem ons mee in uw leven met design? (Grand tour)

*Antwoorden:*

- Tuin niet te luxe
- Veel kleur
- Natuur centraal
- Moet passen bij architectuur woning
- Nadruk op beleving

### **U en uw tuin:**

*Introductie:* De architectuur van uw woning, uw auto, uw kleding en ander producten die u heeft vertellen iets over uw persoonlijkheid en vormen zelfs persoonlijkheid. Zo ook uw tuin.

*Vragen:*

- Hoe wilt u de relatie tussen u persoonlijk en uw tuin graag ervaren? (Ervaring/gedrag)
- Wat is uw mening over de relatie tussen u persoonlijk en uw tuin? (Mening/waarde)
- Welk gevoel vindt u belangrijk om te hebben over uw relatie met uw tuin? (Gevoel/emotie)
- Hoe zou u uw relatie met uw tuin definiëren? (Kennis)
- Welke zintuigelijke ervaring vindt u belangrijk in uw relatie met uw tuin? (Zintuigen)
- Welke rol speelt de relatie tussen u en uw tuin in uw leven? (Achtergrond)
- Neem ons mee in uw persoonlijke relatie met uw tuin? (Grand tour)

*Antwoorden:*

- Eenheid
- Dicht bij natuur
- Geen luxe beeld naar omgeving uitstralen
- Tuin moet positieve ervaring geven
- Verschillende aspecten, ontdekken, spanning, brede interesse

### **Tuin beleving:**

*Introductie:* Voor ons is persoonlijk levensgenot door rijke ervaringen fundamenteel in tuinontwerp.

*Vragen:*

- Hoe ervaart u tuin beleving? (Ervaring/gedrag)
- Wat vindt u belangrijk aan tuinbeleving? (Mening/waarde)
- Welk gevoel geeft tuinbeleving u? (Gevoel/emotie)
- Hoe zou u tuinbeleving willen definiëren? (Kennis)
- Welke zintuigelijke ervaring vindt u belangrijk in uw tuinbeleving? (Zintuigen)
- Welke rol speelt tuinbeleving in uw leven? (Achtergrond)
- Neem ons mee in uw ideale tuin beleving? (Grand tour)

*Antwoorden:*

- Tuin beleving is fundamenteel
- Positief gevoel
- Zintuigelijke ervaring moet bij activiteiten blijven en passen

### **Natuur:**

*Introductie:* Een tuin kan je zien als een plek waar natuur en design samenkomen en een eenheid vormen.

*Vragen:*

- Wat is uw ervaring met natuur? (Ervaring/gedrag)
- Welke waarde hecht u aan natuur? (Mening/waarde)
- Welke gevoel krijgt u van interacties met natuur? (Gevoel/emotie)
- Hoe zou u natuur willen definiëren? (Kennis)
- Welke zintuigelijke ervaring heeft u graag met natuur? (Zintuigen)
- Welke rol speelt natuur in uw leven? (Achtergrond)
- Neem ons mee in interacties tussen u en natuur? (Grand tour)

*Antwoorden:*

- Natuur fundamenteel in tuin

## **Afronding**

Hartelijk dank voor dit gesprek, we hebben elkaar beter leren kennen. We gaan voor u aan de slag. Als u nog aanvullingen/aanpassing hebt aan de hand van dit gesprek, voel u dan vrij om contact met ons op te nemen.

### **Design visie:**

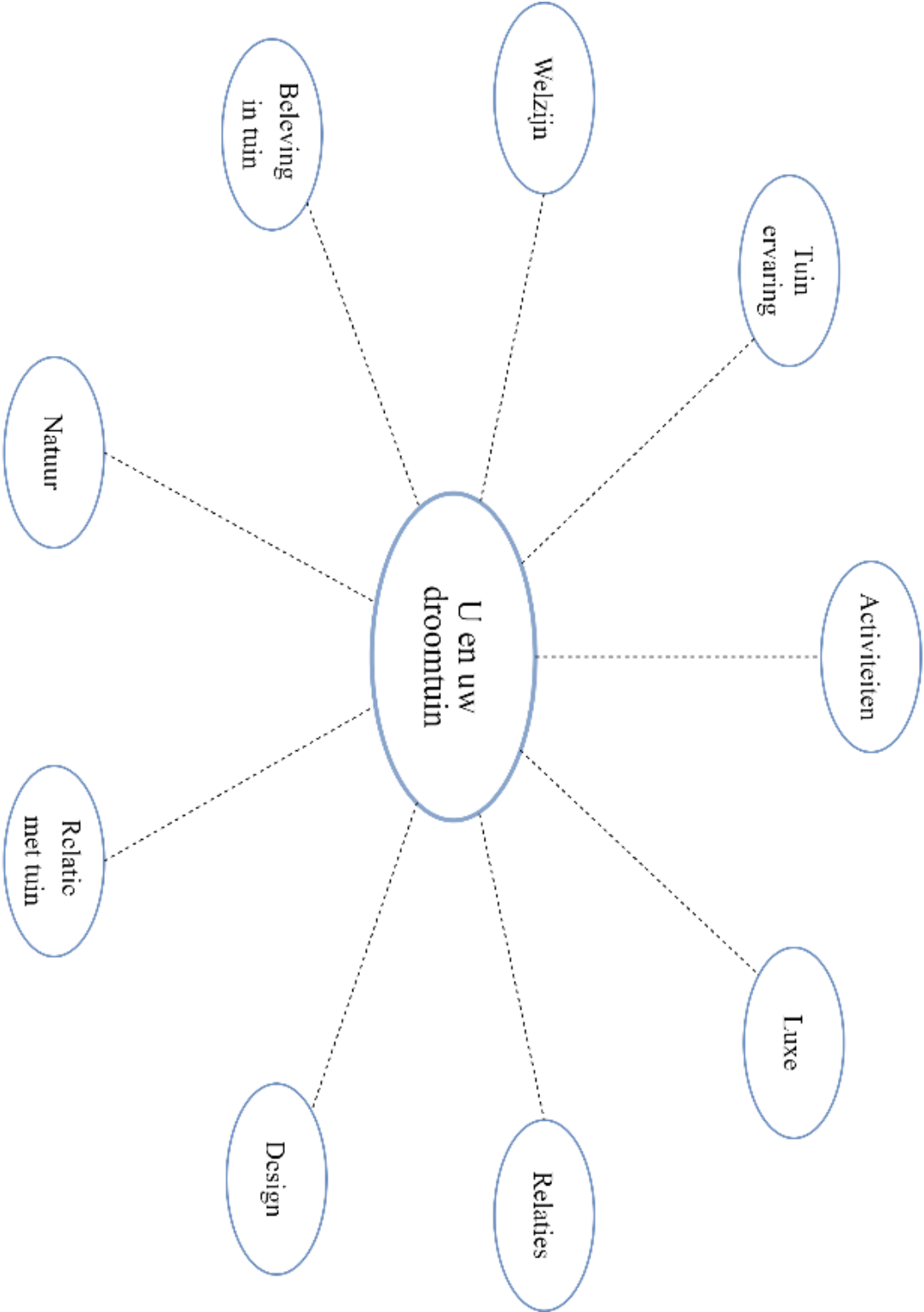
“De tuin is als leefomgeving onderdeel van de natuur die zowel samen als individueel ervaren kan worden doormiddel van activiteiten die aansluiten bij de verschillende relaties”

## Designproces vanuit mogelijkheden

*(Possibility-driven design)*

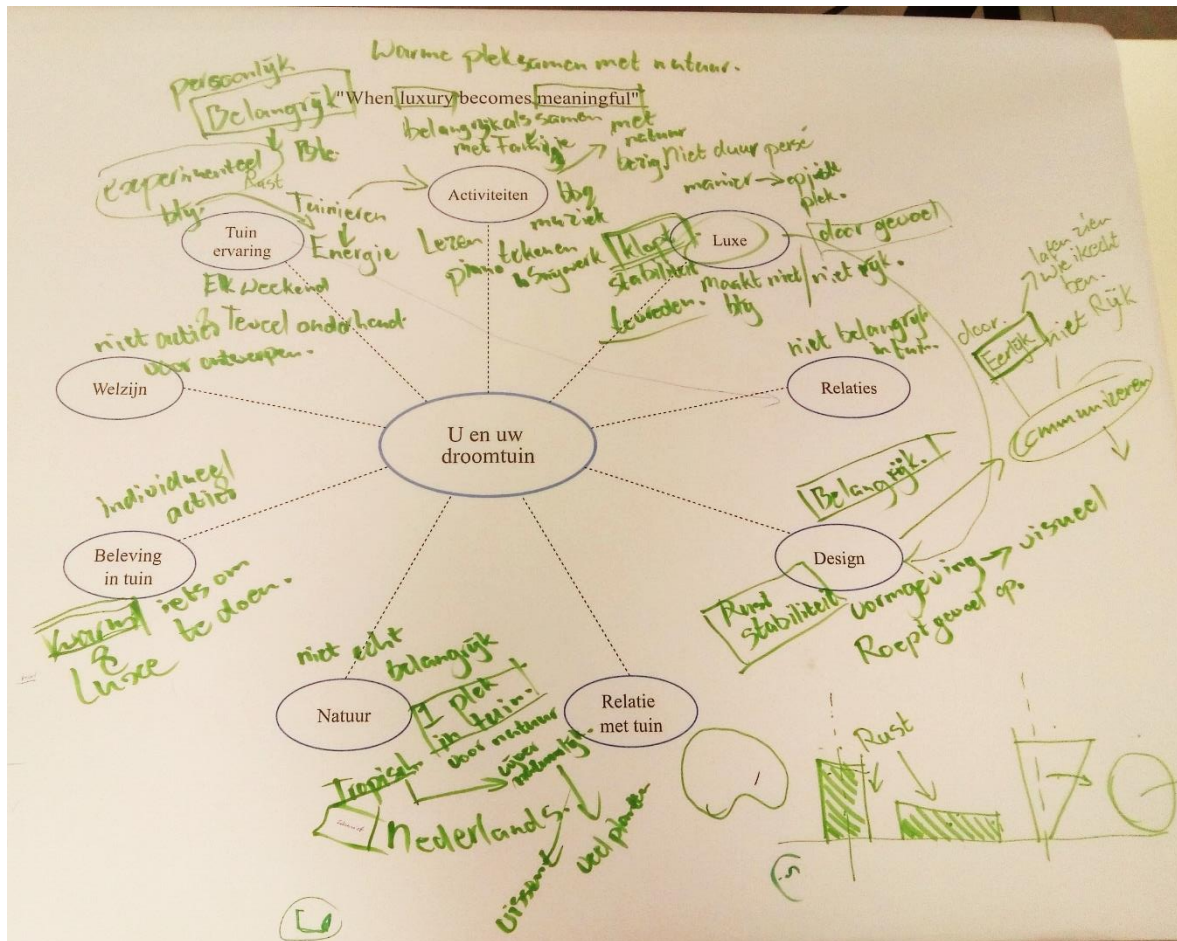
- 1. Eerste klant contact**
  - a. Algemene informatie
- 2. Diepte sessie (mindmap format + visueel)**
  - a. Onderwerpen: Tuin ervaring, activiteiten, wellness (welzijn), luxe, relaties, design, relatie met tuin, natuur, beleving in tuin
  - b. Zoek naar gelukservaringen (woordelijk + visueel):
    - i. In het algemeen
    - ii. Per onderwerp
    - iii. Waardoor wordt het geluk ervaren?
  - c. Creëer een moodboard met klant
- 3. Identificeer de gelukservaringen**
  - a. Omschrijf de gelukservaringen
    - i. ... (Naam klant) wordt gelukkig van... (onderwerp) omdat...
  - b. Omschrijf de belangrijkste gelukservaring
    - i. ... (Naam klant) wordt het meest gelukkig van... (onderwerp) omdat...
- 4. Van gelukservaring naar mogelijkheid**
  - a. Formuleer de belangrijkste mogelijkheid als designchallenge
    - i. Welke mogelijkheden zou...(onderwerp) in de tuin kunnen bieden om bij te dragen aan de gelukservaring van... (naam klant)?
  - b. Formuleer de andere mogelijkheden als sub-designchallenges
    - i. Welke mogelijkheden zou...(onderwerp) in de tuin kunnen bieden om bij te dragen aan de gelukservaring van... (naam klant)?
- 5. Breng de kaders van de mogelijkheden in kaart**
  - a. Gebruik algemene informatie → budget, kavel, privacy, regels etc.
  - b. Architectuur woning, binnenhuisarchitectuur
- 6. Idee generatie**
  - a. Beantwoordt de hoofd designchallenge via een algemene designtaal/centraal element
    - i. Zoek de grenzen van de mogelijkheden
    - ii. Design de gelukservaring volgens: verwachting, gebeurtenis, afkoelen
  - b. Beantwoordt de sub-designchallenges binnen de kaders van de algemene designtaal
    - i. Zoek de grenzen van de mogelijkheden
    - ii. Design de gelukservaring volgens: verwachting, gebeurtenis, afkoelen
  - c. Baseer ideeën op moodboard
- 7. Concept generatie**
  - a. Selecteer en definieer concepten
    - i. Check of de ontwerpen de designchallenges zouden kunnen beantwoorden
    - ii. Check of de ontwerpen in lijn zijn met het moodboard
  - b. Test de gelukservaringen tijdens de presentatie van visualisaties aan de klant
    - i. Controleer of de ontwerpen de designchallenges goed beantwoorden
- 8. Definitief ontwerp**

A.8 In-depth session mindmap format



"When luxury becomes meaningful"

## A.9 Rough data trial design process two



### Titel van de tuin: "Warme plekken samen met natuur"

- Tuin ervaring:
  - o Nieuwe energie door tuinieren maar niet te veel onderhoud, de nieuwe energie komt vooral door het aanwezig zijn en de activiteiten in de tuin, niet door het onderhoud op zich. In het verleden was hij elk weekend bezig met onderhoud
  - o Tuinervaring is belangrijk
  - o Experimenteren is belangrijk voor Mohammad, hij probeert verschillende dingen uit om zo tot zijn droomtuin te komen
- Activiteiten:
  - o Huidige activiteiten in tuin zijn vooral tuinieren en tot rust komen, met natuur bezig zijn
  - o Als samen met familie → bbq'en en muziek luisteren → het is belangrijk als de familie er is om samen actief te zijn
  - o Activiteiten buiten de tuin, in het algemeen: beetje piano spelen, snijwerk, tekenen, lezen
- Luxe:
  - o Luxe is niet perse duur
  - o Het gaat om de manier waarop, alles moet op de juiste plek zijn en een geheel vormen → losse luxe elementen vormen niet samen luxe, het gaat om de onderlinge relaties tussen de elementen
  - o Dure luxe maakt Mohammad niet blij

- Luxe is vooral waardevol door het gevoel dat het geeft
- Luxe komt vooral openbaar in een: kloppend geheel, tevredenheid en stabiliteit
- Relaties:
  - De relaties zijn niet van groot belang voor Mohammad om actief te beoefenen in de tuin, er hoeven dus geen faciliteiten in de tuin te komen om relaties te onderhouden.
- Design:
  - Belangrijk
  - Moet de ervaring van rust en stabiliteit opwekken → het gevoel staat centraal
  - Design als communicatiemiddel:
    - Moet eerlijk de persoonlijkheid van Mohammad uitstralen → laten zien wie ik echt ben
    -
  - In design is de visuele vormgeving fundamenteel voor Mohammad
- Relatie met tuin:
  - zie tuinervaring
- Natuur:
  - Nederlandse natuur niet echt belangrijk in ontwerp
  - 1 specifieke plek in de tuin waar de natuur centraal staat
  - Stukje tropische natuur
    - Veel planten
    - Vissen
    - Vijver
- Beleving in tuin:
  - Focus op individuele beleving door actief te zijn in de natuur
  - Een tuin is de plek die zorgt dat je wat te doen hebt
  - Warme en luxe (zie visie op luxe boven) sfeer
- Welzijn:
  - Niet actief voor ontwerpen

## A.10 Rough data trial design process three

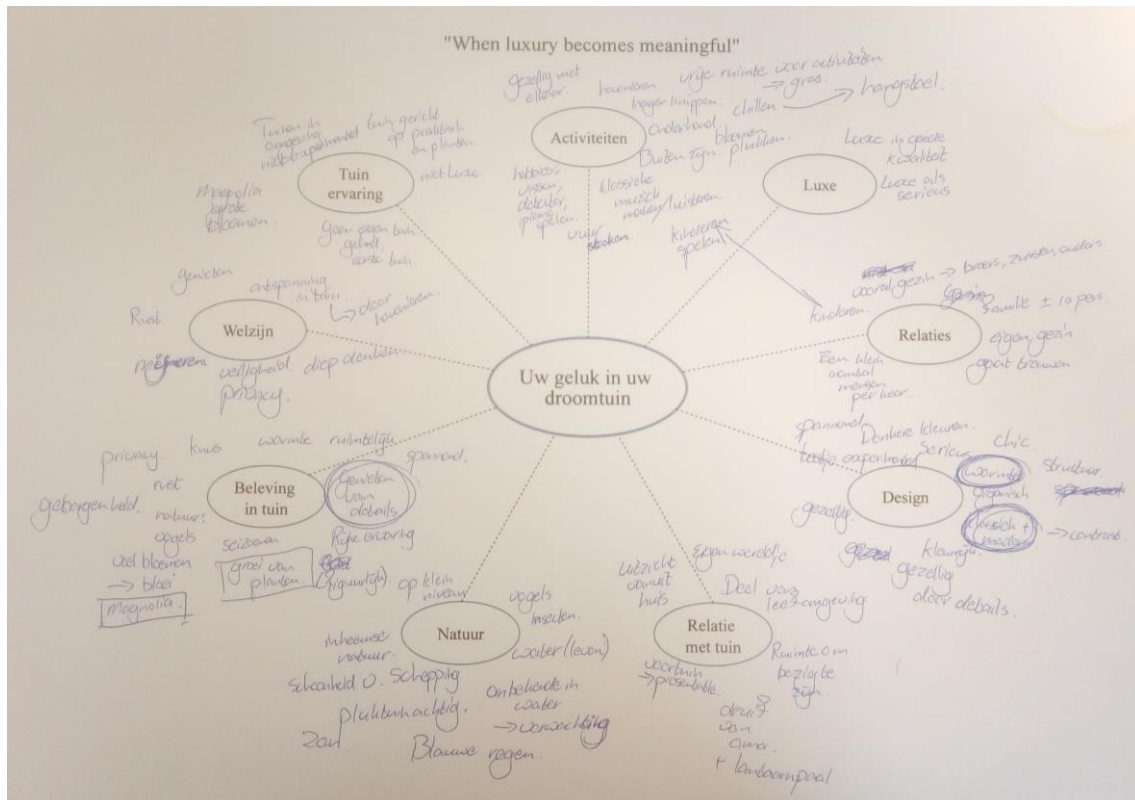


Figure 47 Mind-map format substituted by reflecting on myself and agreed on by my girlfriend for trial design process three

## Design process from based on possibilities

(Possibility-driven design)

Design proces Anthonie en Carine, Rijssen

### 1. Eerste klant contact

#### 1. Algemene informatie

- Anthonie 22 en Carine 23 jaar oud
- Carine juf basisonderwijs en Anthonie Industrial Designer
- Gaan trouwen
- Zouden graag een gezin met kinderen willen
- Eerste huis, van oma geweest
- Rustige buurt
- Uitzicht op kerk, graag zicht wat blokkeren
- 2. Bepaal kaders voor de mogelijkheden (Budget, kavel, privacy, regels, architectuur, binnenhuisarchitectuur)
- Geen maximaal budget
- Kavel van 351m<sup>2</sup>
- Woning 1967
- Inrichting mix van klassiek en modern



- Achtertuin op zuiden
- Voortuin open, achtertuin ingesloten in bebouwing

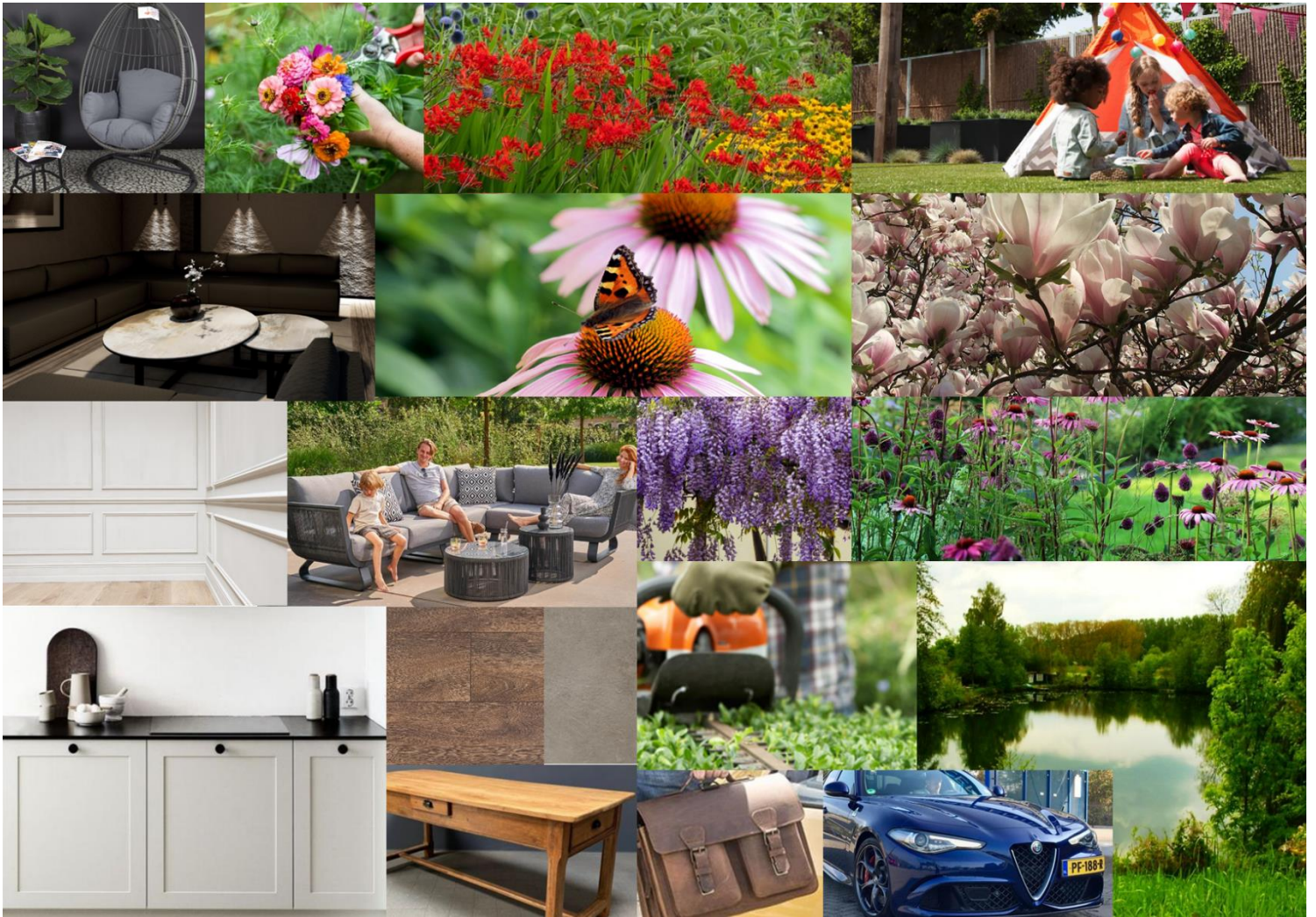




**2. Diepte sessie**

1. Zoek naar gelukservaringen (woordelijk + visueel)

2. Creëer een moodboard met klant/op basis van visuele info klant



### 3. Van gelukservaring naar mogelijkheid

1. Groepeer gelukservaringen in:
  - i. Gedragmatig: (Gebruiker(s))... ervaart geluk als de tuin... faciliteert
  - ii. Gevoelsmatig: (Gebruiker(s))... ervaart geluk als de esthetica van de tuin... laat zien
  - iii. Reflecterend: (Gebruiker(s))... ervaart geluk als de tuin de waarde van... communiceert

<b>Gedragmatig:</b>	<b>Gevoelsmatig:</b>	<b>Reflecterend:</b>
<i>Carine en Anthonie ervaren geluk als de tuin...faciliteert</i>	<i>Carine en Anthonie ervaren geluk als de esthetica van de tuin...laat zien</i>	<i>Carine en Anthonie ervaren geluk als de tuin de waarde van...communiceert</i>
<ul style="list-style-type: none"> <li>- Chillen</li> <li>- Close-up interacties met natuur</li> <li>- Lente beleving</li> <li>- Tuinieren</li> <li>- Waterbeleving</li> <li>- Kinderspel</li> <li>- Ruimte voor vogels en insecten</li> <li>- Vrije ruimte voor activiteiten</li> </ul>	<ul style="list-style-type: none"> <li>- Kleurrijk</li> <li>- Warmte</li> <li>- Spanning</li> <li>- Chic</li> <li>- Gezellig</li> <li>- Ruimtelijkheid</li> <li>- Contrast tussen klassiek en modern</li> <li>- Rijke details</li> <li>- Rust</li> <li>- Contrast</li> <li>- Diepte</li> </ul>	<ul style="list-style-type: none"> <li>- Goede relaties met familie/vrienden (in verleden oma)</li> <li>- Het gezinsleven</li> <li>- Rijke ervaringen</li> <li>- Diep denken</li> <li>- Gezelligheid</li> </ul>

2. Selecteer relevante gelukservaringen
3. Formuleer de designchallenge:
  - i. Welke mogelijkheden zou allereerst...(onderwerp) maar ook... in de tuin kunnen bieden om bij te dragen aan de gelukservaring van... (gebruiker(s))?

“Welke mogelijkheden zou allereerst **natuurbeleving** maar ook **goede relaties, gezinsleven, spanning, rijke details** en **ruimtelijkheid** in de tuin kunnen bieden om bij te dragen aan de gelukservaring van Carine en Anthonie”

#### 4. Idee generatie

1. Beantwoordt de designchallenge
2. Design de gelukservaringen volgens: verwachting, gebeurtenis, afkoelen

#### 5. Concept generatie

1. Creëer en selecteer concepten
2. Test de gelukservaringen tijdens de presentatie van visualisaties aan de klant
  - i. Zoek naar positieve emoties/potentieel geluk

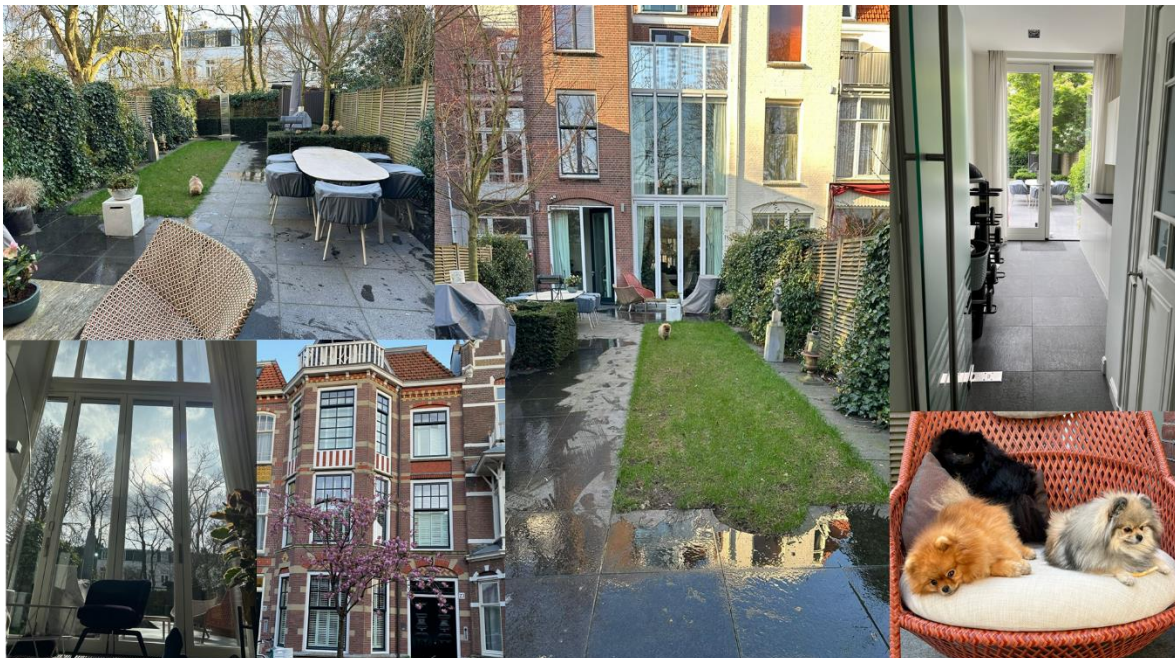
#### 6. Definitief ontwerp

## Designproces vanuit mogelijkheden

*(Possibility-driven design)*

### 1. Eerste klant contact

1. Algemene informatie
  - Achtertuin grachtenpand Den Haag
  - Ca. 7x16m.
  -
2. Bepaal kaders voor de mogelijkheden (Budget, kavel, privacy, regels, architectuur, binnenhuisarchitectuur)



### 2. Diepte sessie

1. Zoek naar gelukservaringen (woordelijk + visueel)

### 3. Van gelukservaring naar mogelijkheid

1. Groepeer gelukservaringen (happiness experience) in:
  - i. Gedragmatig: (Gebruiker(s))... ervaart geluk als de tuin... faciliteert
  - ii. Gevoelsmatig: (Gebruiker(s))... ervaart geluk als de esthetica van de tuin... laat zien
  - iii. Reflecterend: (Gebruiker(s))... ervaart geluk als de tuin de waarde van... communiceert

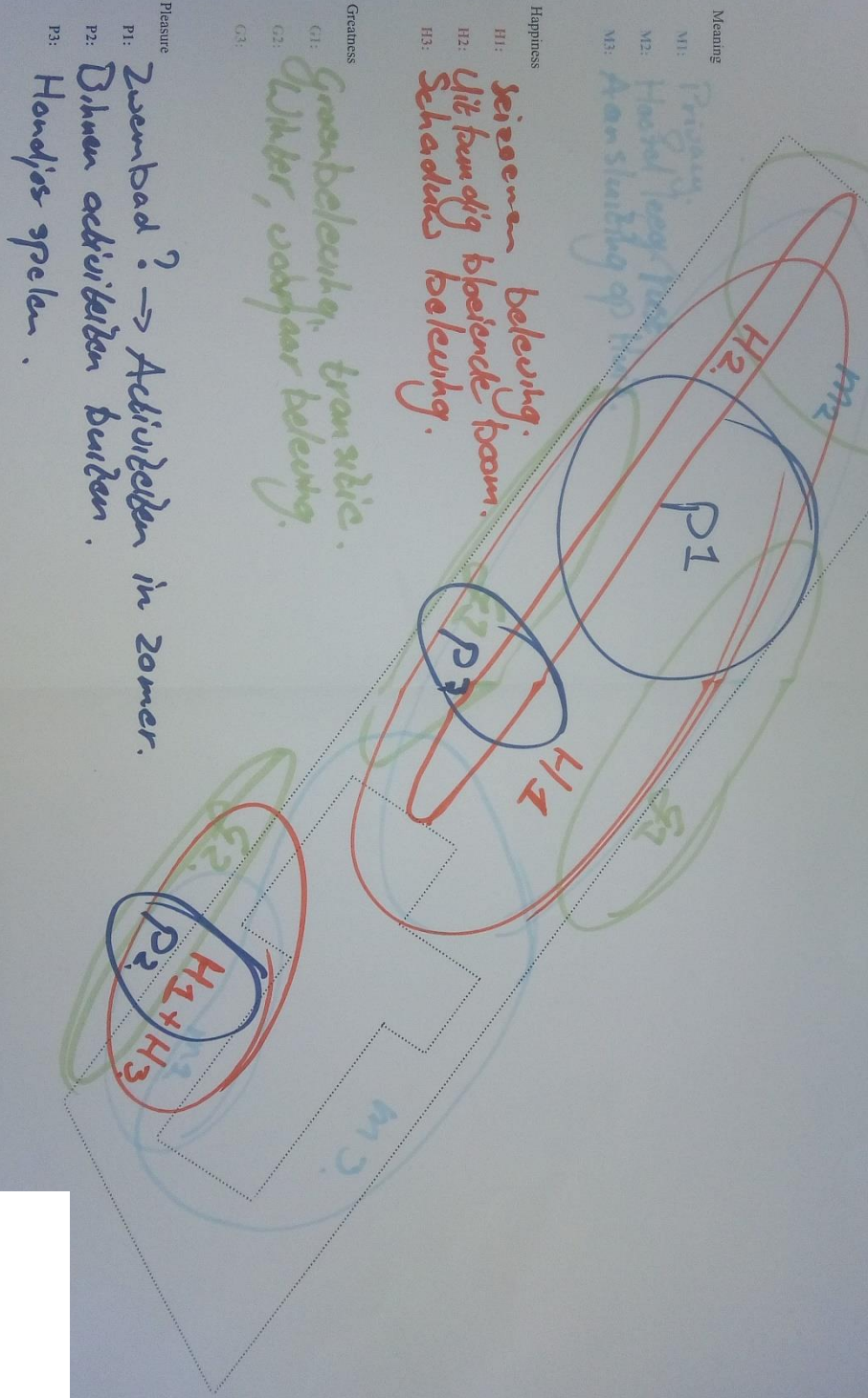
<b>Gedragmatig:</b>	<b>Gevoelsmatig:</b>	<b>Reflecterend:</b>
<i>Michael en Sash ervaren geluk als de tuin...faciliteert</i>	<i>Michael en Sash ervaren geluk als de esthetica van de tuin...laat zien</i>	<i>Michael en Sash ervaren geluk als de tuin de waarde van...communiceert</i>
<ul style="list-style-type: none"> <li>- Gezellig samen zitten</li> <li>- Netflix kijken</li> <li>- Luxe ontspanning</li> <li>- Speelruimte voor de hondjes</li> <li>- Privacy</li> <li>- Warm ontspannen in de avond</li> <li>- 's zomers ontbijten</li> <li>- Eenvoudig buiten koken</li> <li>- Eenvoudig onderhoud</li> <li>- Waterbeleving</li> </ul>	<ul style="list-style-type: none"> <li>- Ruimtelijkheid</li> <li>- Luxe minimalisme</li> <li>- Warmte</li> <li>- Rust</li> <li>- Veiligheid door licht</li> <li>- Verzachting door groen</li> <li>- Huiselijkheid</li> <li>- Intimiteit</li> </ul>	<ul style="list-style-type: none"> <li>- Samen ontspannen</li> <li>- De hondjes als gezinsleden</li> </ul>

2. Selecteer relevante gelukservaringen
3. Formuleer de designchallenge:
4. Welke mogelijkheden zou allereerst **intieme en warme ontspanning** maar ook **ruimtelijkheid, de hondjes als gezinsleden, eenvoudig buiten koken** in de tuin kunnen bieden om bij te dragen aan de gelukservaring van Michael en Sash

A.12 Rough data trial design process five



# Belevingsplan



**Meaning**

- M1: *Pragmatisch*
- M2: *Horizontaal*
- M3: *Aansluiting op...*

**Happiness**

- H1: *seizoenen beleving.*
- H2: *Uitbundig belevende boom.*
- H3: *Schaduw beleving.*

**Greatness**

- G1: *groenbeleving, transitie.*
- G2: *Winter, voorjaar beleving.*
- G3: *...*

**Pleasure**

- P1: *Zwembad? -> Activiteiten in zomer.*
- P2: *Dinamische activiteiten buiten.*
- P3: *Houdijs spelen.*



Welke mogelijkheden bieden Meaning, Happiness, Greatness en Pleasure-experiences voor...(namen klant)?

Meaningful			
Nummering belevingsplan:	Functie: Welke praktische functie heeft het element dat bijdraagt aan de meaningful experience?	Stijl: Welke stijlelementen zijn cruciaal in de meaningful experience?	Betekenis: Welke abstracte betekenis speelt een rol tijdens de meaningful experience?
M1	<b>Onderwerp:</b> Privacy Betekenis: Belangrijk voor mogelijk zwembad en op de plek waar ze het meeste zitten Functie: Bescherming voor inkijk van burens, gevoel van geborgenheid Stijl: Geïntegreerd in de rust van de tuin, geen specifieke nadruk op privacy in materialen, subtiel		
M2	<b>Onderwerp:</b> Rust, hoofd leeg na drukke werkdag Betekenis: Van groot belang, hebben een drukke baan Functie: Mogelijkheden voor ontspanning Stijl: lichte aardkleuren, rust, minimalistisch, wit		
M3	<b>Onderwerp:</b> Eenheid tussen huis en tuin Betekenis: Van groot belang Functie: Zorgt voor rust in interacties met de hele tuin, met een focus direct rondom het huis Stijl: lichte aardkleuren, rust, minimalistisch, wit		
M4	<b>Onderwerp:</b> Betekenis: Functie: Stijl:		

Happiness			
Nummering belevingsplan:	Functie: Welke praktische functie heeft het element dat bijdraagt aan de happiness experience?	Stijl: Welke stijlelementen zijn cruciaal in de happiness experience?	Betekenis: Welke abstracte betekenis speelt een rol tijdens de happiness experience?
H1	<b>Onderwerp:</b> Seizoensbeleving Betekenis: transitie is belangrijk Functie: beplanting Stijl: Mediteraans, rust, minimalistisch		
H2	<b>Onderwerp:</b> Uitbundige bloei Betekenis: Belangrijk, geeft kick, eyecatcher, solitaire Functie: Boom/meerstammige heester laat transitie zien Stijl: Mediteraans, rust, minimalistisch		
H3	<b>Onderwerp:</b> Schaduwbeleving Betekenis: Van belang in hete zomer Functie: Verkoeling Stijl: lichte aardkleuren, rust, minimalistisch, wit		
H4	<b>Onderwerp:</b> Betekenis: Functie: Stijl:		

Greatness			
Nummering belevingsplan:	Functie: Welke praktische functie heeft het element dat bijdraagt aan de greatness experience?	Stijl: Welke stijlelementen zijn cruciaal in de greatness experience?	Betekenis: Welke abstracte betekenis speelt een rol tijdens de greatness experience?
G1	<b>Onderwerp:</b> Groenbeleving, transitie Betekenis: Van belang in hele tuin Functie: Beplanting Stijl: Mediteraans, rust, minimalistisch		
G2	<b>Onderwerp:</b> Winter en voorjaarsbeleving Betekenis: Van belang voor uitzicht vanuit woning Functie: Beplanting Stijl: Mediteraans, rust, minimalistisch		
G3	<b>Onderwerp:</b> Betekenis: Functie: Stijl:		
G4	<b>Onderwerp:</b> Betekenis: Functie: Stijl:		

Pleasure			
Nummering belevingsplan:	Functie: Welke praktische functie heeft het element dat bijdraagt aan de pleasure experience?	Stijl: Welke stijlelementen zijn cruciaal in de pleasure experience?	Betekenis: Welke abstracte betekenis speelt een rol tijdens de pleasure experience?
P1	<b>Onderwerp:</b> Activiteiten in zomer Betekenis: Wel aanwezig maar niet van groot belang omdat vaak op vakantie wordt gegaan, 'als de faciliteiten er zijn gaan we ze wel gebruiken' Functie: Vermaak, ontspanning Stijl: Rust, minimalistisch, geen extra aandacht nodig in ontwerp, gewoon aanwezig		
P2	<b>Onderwerp:</b> Binnenactiviteiten buiten beleven Betekenis: Van belang gedurende grootste deel van jaar Functie: Buiten zijn in groen en rust beleving Stijl: Rust, minimalistisch, aardkleuren, onderdeel van het totaalplaatje		
P3	<b>Onderwerp:</b> Hondjes spelen Betekenis: Belangrijk voor vrijheid van hondjes Functie: Speelruimte voor hondjes in de vorm van bijv. gazon Stijl: Minimalistisch, onderdeel van de tuin,		
P4	<b>Onderwerp:</b> Betekenis: Functie: Stijl:		