GINNASIO

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“Because nonbeing longs for being,
on occasion it creates a stronger sense of being than being itself.”

Kenya Hara

Abstract

This graduation project is a demonstration of the potentialities of a theory-based approach to design for mood regulation, which is based on the belief that design can influence mood by enabling and stimulating people to engage in effective mood-regulating activities.

For this project, the western home bathroom was chosen as a context of research, due to the personal interest of the author in the relaxing properties of bathing, and bathing related activities such as the Finnish sauna, and the Turkish steam bath.

The goal of the project was kept very broad in the beginning and gradually narrowed down during the analysis phase. A significant contribution to the creation of a well-defined design goal was given by the realization that, while relaxing practices are usually well accommodated in the domestic environment, little attention is paid to activities that influence people's mood towards a high energy state such as exercising.

Eventually, the project's objective became to design a piece of furniture, in which physical exercise-supporting features coexist with more relax-oriented attributes. This product would aim to make high energy state inducing activities an integral part of the everyday domestic routine.

Three concepts were generated by following an incremental process in which insights from one idea served as a starting point for the next. The third and last concept was then developed using a broad variety of techniques such as sketching, collage making, digital visualization, prototyping, and testing.

The final result is a piece of furniture to exercise and to relax on, which form stands somewhere in between a bench and a chaise longue. Its name is Ginnasio, a reference to the building that, in Ancient Greece, functioned as a training facility, but also as a place to relax, socialize and engage in philosophical discussion.

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Chapter 1

Project

Introduction

The World Health Organisation defines health not as the absence of ill-health but as a state of complete physical, mental and social well-being (World Health Organization, 1946). Health is no longer merely a question of access to medical treatment, but it is determined by a range of factors related to the quality of our environment. By 2050, almost 70% of people are predicted to be living in urban areas (UN, 2017). “On average, city dwellers are wealthier and receive improved sanitation, nutrition, and healthcare.” (Dye, C., 2008, p. 319). However, research has also linked urban living to increased risk of anxiety (21%) and mood disorders (39%) (Lederbogen et al., 2011). The World Health Organization (2012) has reported that globally, more than 350 million people of all ages suffer from mood disorders, making mood-influenced ill-being the leading cause of disability worldwide.
But what is the role that design can play in this matter? “Design can best influence mood by enabling and stimulating people to engage in a broad range of mood-regulating activities. Given the direct relationship between mood and both well- and ill-being, products, environments, and services that support appropriate moods should be considered a necessity rather than a luxury.” (Desmet, 2015, p. 11) This represents a significant opportunity for design to broaden its scope and contribute to the happiness of people.

The phenomenon of mood has been a source of design inspiration for numerous designers, artists, and architects, that have explored whether design can influence mood states. However, “most of the work that explored the mood-influencing possibilities of design is built on intuitive assumptions about the causes of mood, and therefore only a limited repertoire of strategies to influence mood has been

explored. Moreover, not all of the explored strategies may be effective because many of the underlying intuitive assumptions have been shown to be unreliable." (Desmet, 2015, p.6) Recent developments in the fields of research psychology and applied psychology have shed light on the underlying mechanisms of mood and mood-regulating techniques, and the acquired knowledge has been made available for designers. By harnessing this knowledge, we can decide upfront what kind of products and product qualities can promote happiness or well-being.

For this project, the western domestic bathroom was chosen as a context. The reason to choose this defined space as a context was first, to make the exploration feasible in the timeframe of the graduation project, and second, because of the fundamental dynamic role it plays in the daily routine of most people. It is, in fact, a place of transition between many different mood states. Consider showering as an example of practice in the context of the home bathroom. A shower can be taken to energize when one is sleepy and to relax when restless, to reflect when thoughtful and to procrastinate when listless, to retreat when grumpy and to celebrate when cheerful, and so on. This kaleidoscopic interplay between mood and the home bathroom environment was the foundation of this graduation project.

Problem definition

Many studies in the field of positive psychology confirmed that some everyday activities have particular relevance on how we feel. If these activities were systematically embedded in our daily routines, our subjective well-being would be positively influenced. It is not always easy to make people engage in positive behaviors, as it requires from them a certain degree of receptivity, motivation, and knowledge. Luckily, good design can "enable, support, and inspire people to engage in the activities that have a positive impact on mood." (Desmet, 2015, p. 11) That said, to identify relevant design solutions for a specific context we have first to analyze the current situation.

The home bathroom is the setting for many different activities that, other than serving a hygienic and cosmetic purpose, may provide support for mood regulation. Surprisingly, design solutions for the home bathroom have mostly tried to promote relaxation while ignoring the rest of the spectrum. Moreover, explorations have often been based on implicit or intuitive understandings of the mood phenomenon. Those have relied on environmental stimuli such as color, light conditions, fragrance, and music to try to influence mood (Desmet, 2015). Nevertheless, environmental psychologists have shown that the effect of those stimuli on mood is neither consistent nor predictable (Akers et al., 2012; Küller et al., 2006; Kwallek, 2005; Kwallek et al., 1997).

Design Goal

This graduation project initiated from the will to find a new perspective on the design of everyday products. This perspective was found within the field of design for mood regulation.
To maintain the exploration feasible in the timeframe of the graduation project, a design goal was generated at the end of the divergent analysis phase.

The design goal was:

To encourage people to engage in regular physical activity, by seamlessly integrating exercise-supporting features in the domestic environment.

Approach and methodologies

This project followed a theory-based approach to design for mood regulation. An initial literature review was carried out to create a knowledge base relative to the topics of mood regulation, and the home bathroom environment. A personalized version of Design with Dilemmas by Deger Ozkaramanli (Page 53) was introduced previously to ideation to identify a design space. Then, thanks to new insights generated by a visual exploration, a design goal was created.
After the idea for a product took shape, guidelines from the ZEN design method by Ger Bruens were followed to inform the design. All the different levels of Human-Product interaction were addressed throughout the project, starting from the Meta level (Context), passing by the Macro level (Product and Function), until the Micro level (Form and Property).

The result of this process is a piece of furniture that incorporates features supporting both relaxing and energizing activities. The novelty of this project is the implementation of exercise supporting features like an integrated part of the traditional home furniture, which typically focuses on the relaxing side of the spectrum of possible in-house activities.

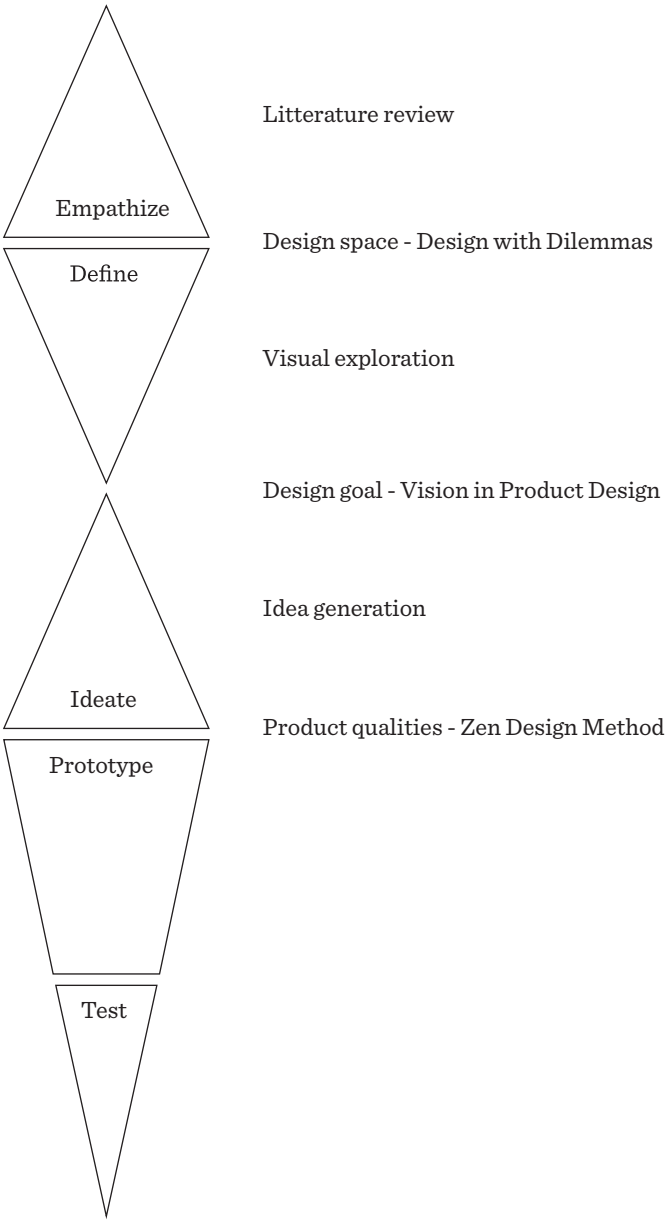

Figure 1. Approach and methodologies.

Chapter 2

Mood

Introduction

This chapter presents a series of notions on the topic of mood that were found to be relevant to the design process. These findings were generated by reviewing state of the art scientific literature relative to the topic of mood regulation. They are presented in the form of five sub-chapters that encompass how mood can be described, the function of mood, its manifestations, how it differs from emotion, and the implications of our current understanding of the mood phenomenon for the practice of design for well-being.

Defining mood

"Mood is defined as a mild, diffuse, pervasive feeling state that is experienced as pleasant or unpleasant, and which has a influence on perceptions, judgment, motivation, and behavior" (Desmet, 2015, p. 2). It operates continuously and "provides the affective background, the emotional color to all that we do" (Davidson, 1994, p. 52). In other words, we are always in some kind of mood, and this influences all the things we do in our everyday life. One day we might be grumpy and try to avoid any social interaction, while the day after we might be cheerful and down for a drink with some friends. But who or what is responsible for our mood? Mood has diffuse or combined causes and only has loose connections to discrete events (Desmet, 2015). As a result, we are usually unable to specify the cause of a particular mood (Ekman, 1994). Moreover, moods build gradually, so that it is difficult to say exactly when they start or stop or peak (Parkinson et al. 1996). Trying to remember when a mood started is like trying to remember the beginning of a dream. Something that we can be sure about though is that moods tend to have a relatively long-term character, they can last for hours, days, or even weeks (Beedie, Terry & Lane, 2005).

In everyday language, we tend to distinguish mood as merely good or bad. Nevertheless, the mood repertoire is far more nuanced than that, and it accounts for more than twenty different moods (Desmet, 2015). These can be condensed using a two-factor model proposed by Watson and Tellegen (1985) which is characterized by two dimensions: valence (pleasure–displeasure; representing the good/bad distinction) and arousal (high energy–low energy). Together, they combine to form four basic mood categories which have been shown to account for roughly one-half to three-quarters of the common variances in mood terms (Watson, 1988). A useful addition to that

is the eight basic mood types set assembled by Desmet, Vastenburg, van Bel, & Romero (2012) (Figure 2), which aims to balance fine-grained distinctions with a more comprehensive overview. “While it does not capture every nuance, the set does embody the general variety of human moods” (Desmet, 2015, p.7). This eight basic mood type has been the primary reference for mood differentiation for this graduation project.

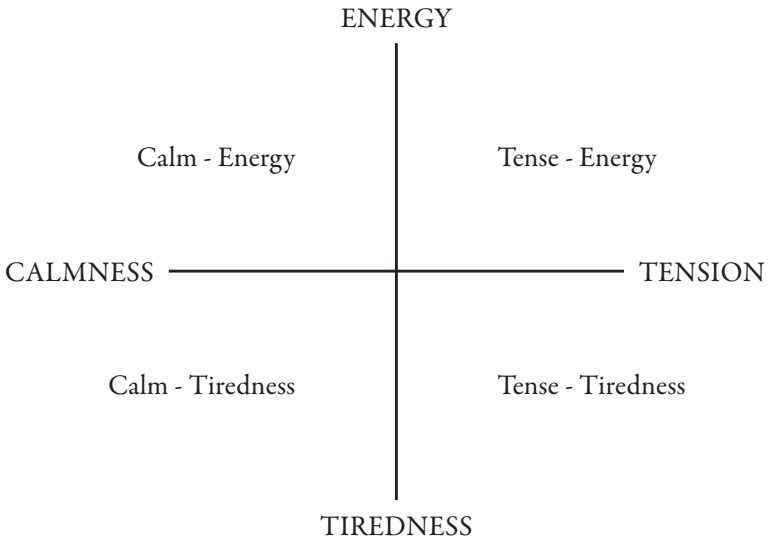

Figure 2. Eight basic mood types (Desmet et al., 2012) in four mood categories (Watson and Tellegen, 1985).

Mood functionality

In the course of this project, we will consider mood from a functional perspective, as it is proposed in evolutionary psychology. Moods are evolved psychological mechanisms that accomplish particular objectives in order to protect and increase our well-being (Buss, 1995). "This system helps us to maintain a homeostatic balance between our perceived resources and environmental demands (which require resource investment), promoting conservation when resources are low and expenditure when they are high"(Desmet, 2015, p. 7). A positive mood signals a surplus of resources that inspires us to seek out new challenges. In a good mood, we are more outgoing, friendly and outward-focused, scanning the environment to identify opportunities (Morris, 1992), we are more creative, better at problem-solving, and make faster decisions (Parkinson et al., 1996). A negative mood, on the other hand, signals a shortage of resources and prompts us to withdraw from challenging situations to conserve and replenish these resources (Desmet, 2015). Negative moods discourage active involvement, nudging us to sit and think, be alone, and take naps (Cunningham, 1988). These resources that we refer to can be of various sort, the most fundamental being physical energy (Thayer, Newman, & McClain, 1994). Other kinds of resources are social, intellectual, material and financial. Similar to our physical energy, these resources are not fixed but influenced by internal and environmental factors (Morris, 1992). "The valence and intensity of our moods are determined by the dynamic disparity between resources and demands (Figure 3), the more significant the disparity, the stronger the mood" (Desmet, 2015, p. 7).

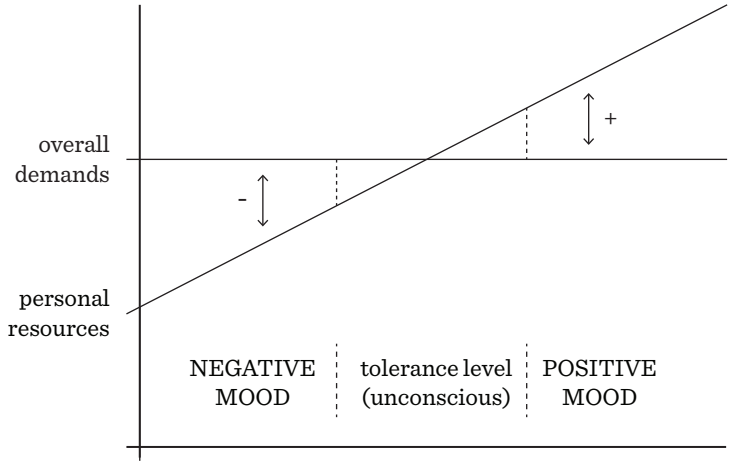

Figure 3. Mood homeostasis (Desmet, 2015).

Difference between moods and emotions

"Mood and emotion are both monitoring systems that serve related (but different) functions" (Desmet, 2015, p. 8). Mood provides information about our internal state of affairs, about the resources we have available to meet environmental threat and challenges. Emotions, on the other hand, have an external focus. They signal what is going wrong or right with the world around us (Morris, 1992), whether what is approaching us or going away from us is a threatening or rewarding object.

Emotion and mood are not two wholly isolated systems with no interference with each other. Emotions can lead to moods and moods can alter the probability that certain emotions will be triggered (Frijda, 1994). In fact, "moods can be generated by high-intensity emotional experiences repeated over and over with no time between each episode. Once an (emotional) threshold is crossed, a mood is created" (Spillers, 2010, 5). This might explain why an environment full of irritant stimuli make us alloyed. These irritants are also called "energy drainers" because they drain our resources. However, it is not yet clear if the opposite case (energy replenishment) also applies (Desmet, 2015).

Ultimately, mood has only loose connections to discrete events, and the influence of stimuli on mood cannot be understood in isolation from the context in which the mood is experienced (Kahneman, Diener, & Schwarz, 1999). A sunny day, for example, does not guarantee a cheerful mood because our mood state depends on many other things. Likewise, a blue office may be soothing on one day, but irritating the next (Küller et al., 2006).

EMOTION

Affective phenomenon that:
Has a short duration (seconds, minutes)
Has a rapid onset and is episodic
Has a strong intensity
Interrupts thought and behaviour
Is specific and targeted
Has a single identifiable cause

External focus: Signals states of the world

Monitors perceived threats and opportunities:
Negative emotions signal threats
Positive emotions signal opportunities

Points of reference are personal goals, needs, motives, norms, and values

Stimulates a focussed adaptive response to the immediate threat or opportunity

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MOOD

Affective phenomenon that:
Has a long duration (hours, days)
Has a gradual onset and is continuous
Has a weak intensity
Influences thought and behaviour
Is global and diffuse
Does not have a single identifiable cause

Internal focus: Signals states of the self

Monitors available personal resources:
Negative moods signal resource shortage
Positive moods signal resource excess

Points of reference are the demands posed by the environment

Increases or decreases one's general willingness to engage (seek out or avoid demanding situations)

Figure 4. Emotion versus mood (Desmet, 2015).

Design for mood regulation

Mood has for a long time been a source of inspiration for design, artistic and architectural explorations. However, these explorations have often been based on intuitive understandings of the mood phenomenon, making use of environmental stimuli to alter mood. (Desmet, 2015). The impact of designed interventions on mood is not as substantial as is sometimes assumed because one's mood is not a direct response to an external stimulus (Desmet, 2015). Whereas emotions are direct responses to external events, mood is a diffuse experience of the balance between an individual's resources and the challenges that require these resources. "Nonetheless, mood can be regulated by engaging in particular activities, and these activities suggest a multitude of design opportunities: design can enable, support, and inspire people to engage in the activities that have a positive impact on mood" (Desmet, 2015, 11).

Technology has also been adopted by scientists and designers to measure, express, and adapt to mood, with the aim to raise mood awareness, enhancing mood expression and more generally influence mood. As the outcome of this project has been an analog product, the topic of technology-aided mood measurements will not be further developed here.

Mood regulation strategies

People often try to modify or maintain their mood states: when in a bad mood, they try to get themselves out of it, and when in a good mood, they try to prolong it (Thayer, Newman, & McClain, 1994). In these attempts, they make use of a wide range of mood regulation strategies (Morris & Reilly, 1987), activities that can be both behavioural or mental (Desmet, 2015). "Some daily activities can have immediate consequences for mood (e.g., a brisk walk, socializing, downing a double expresso), other daily activities (e.g., working) can have delayed hedonic consequences. Nevertheless, the one underlying assumption is that much of what people do each day is tied to the basic motive to feel more pleasant than unpleasant affect, either in the short or the long term" (Larsen, 2000, p. 131).

The range of mood-regulating strategies covers a great variety of activities going from drinking alcohol to asking for help and practicing mindful meditation. These have been organized by Desmet et al. into a list of 83 activities (Figure 5), divided into three categories, each of which represent a specific mood-regulating focus: finding relief, restoring balance, and building resilience. This list was fundamental to define the design space of this project.
Strategies with a relief-focus aim to mitigate the undesired feeling related to a bad mood. These strategies offer a quick fix without really addressing the cause of the problem. A clear example of such an approach is alcohol consumption, which has an immediate impact on one's mood without acting upon the cause of it. Same is for exercising or taking a shower.
Strategies with a balance-focus aim to reestablish the balance between one's available resources and the perceived level of external demands. These strategies aim to fix the lousy mood by reducing the

energy demand or restoring the available resources. One might, for example, decide to stay home and sleep early instead to go out after a particularly stressful day at work. Last but not least, strategies with a resilience-focus take advantage of the bad mood as a way for personal growth, transforming the bad mood into a constructive experience. An example of such strategies is to practice mindful meditation (Desmet, 2015).

Mood-regulating activities don't always work in isolation but can function on different levels. An example opf such multilayered acitivities is yoga: engaging in yoga exercises can help individuals to relax and alleviate bad feelings, restore their resource-demand balance, stimulate mood awareness and build mood resilience (Hartfiel, Havenhand, Khalsa, Clarke, & Krayer, 2011).

Figure 5. Twenty activity-based mood regulation strategies in three categories. (Desmet, 2015).

FOCUS	STRATEGY	EXAMPLE ACTIVITIES
Seek RELIEF	Seek distraction	Concentrate on other things (like work or chores); daydream: TV.
	Self-reward	Engage in any pleasurable activity.
	Vent	Let off steam; express the feeling.
	Repress	Supress the feeling; use tranquillizers, alcohol, or drugs; act happy.
	Think positively	Think about happy things; look on the bright side.
	Trivialize	Play down the bad feeling; use humor.
	Seek relaxation	Use stress management activities; stretch; breath control exercises.
	Seek refreshment	Take shower; get some fresh air.
Restore BALANCE	Reduce demands	Reduce workload; lower aspiration levels.
	Avoid new demands	Avoid demanding situations, responsibilities or activities;
	Withdraw	Try to be alone; stay home.
	Eliminate energy drainers	Eliminate stimuli that cost energy, such as noises, bad smells, etc.
	Rest	Take a break; close eyes; nap; go to bed early.
	Energise	Exercise; eat something; drink coffee.
	Seek social support	Look for advice or guidance.
Build RESILIENCE	Rationalize	Put feelings in perspective; try to understand the feeling.
	Analyse	Analyse situation to determine mood causes; keep a diary.
	Transform Creatively	Using the mood as the basis for creative expression.
	Embrace	Accept or appreciate the mood.
	Detach	Engage in mindfulness; engage in spiritual or religious activity.

Key insights

Mood and emotion are psychological mechanisms evolved to make us feel good, either in the short or in the long term. Emotion signal what is going wrong or right with the world around us, while mood monitors the availability of our (physical, social, intellectual, material and financial) resources and compares it to the perceived environmental demands.

Contrary to emotion, mood only has loose connections to individual events. Therefore, external stimuli such as sound, smell, and light, are not reliable means for mood regulation.

Mood can be regulated by engaging in particular activities that fall into three categories: finding relief, restoring balance, and building resilience. People make constant use of such activities with the more or less conscious aim to change or maintain a particular mood.

Design can enable, support, and inspire people to engage in the activities that have a positive impact on mood.

Mood states can be categorized into four primary categories: calm-energy, calm-tiredness, tense-energy, tense-tiredness. In general, we can say that calm-energy and calm-tiredness are considered as positive states, while tense-energy and tense-tiredness as negative.

Certain activities have an impact on mood and mood, in turn, impacts the type of activities people engage with. Paradoxically, some of the activities that have the most significant effect on mood such as exercising are the less likely to be performed in a bad mood.

Chapter 3

Bathroom

Introduction

In this chapter, key facts about the physical and psychological function of the bathroom are presented, together with notions about the history, design and lifestyle trends related to this environment. The research aimed to better understand the role that the bathroom plays in people's everyday life and to identify possibilities for the future development of such a facility.

Ever-changing attitudes

In the course of history, attitudes towards bathing have undergone significant changes from period to period and society to society, influenced by religious and cultural beliefs on body, health, hygiene, and sexuality, without ever finding a stable point (Withers, 1999). As Alexander Kira noted in his 1974 publication *The bathroom*: "what is so unfortunate about western attitudes, is the endless extreme swings from puritanism to licentiousness. We seem never to be able to come to grips with the human body and human sexuality as a neutral fact of human existence" (Kira, 1974, p. 171) This tendency influenced how bathing and the bathroom has been conceived through time. The way we went from huge communal bathhouses in Roman times to the utilitarian home bathroom of the 20th century is a long and fascinating story that would require more argumentation that will occur here. However, it is important to put things a little bit in perspective.

If we look at the West in the twentieth century, the flourishing of a bathing culture has been restrained by the 19th-century moral backlash and by the early modern cult of physical and mental hygiene at the expense of sensuality and pleasure. While there have been exceptional private bathrooms, bathing has been mostly reduced to little more than a hygienic duty and the home bathroom has evolved into a space more accustomed to clinical correctness than pleasure (Withers, 1999). In 1974, Alexander Kira published a book called *The bathroom*, an extensive analysis of the ergonomics of bathing. This influential publication, which at first sight may seem to reduce bathing to a mechanical process, actually supported the transition to a more humane view on the environment by also raising the attention on the psychological needs of bathroom users.

More than 40 years have passed from the first publication of *The bathroom* and now, "what was once considered a forbidden space by many, is taking on new importance and being integrated into the house in surprising ways. This shift has little to do with technological progress, as very little has changed in the last century compared to other areas of the house, but much more to do with how we use and prioritize domestic space, and the importance that we attach to the rituals of body care" (Withers, 1999, 9)

Attitudes aside, the bathroom is, from an objective perspective, one of the most important rooms of the house. It is the room where we have the most intimate bodily contacts and the facility in the house that everyone of us uses every day of our lives. It is the first room we use in the morning and the last one we use before to go to sleep at night. An agreeable or disagreeable experience there can set the tone for the day or for the night (Kira, 1974).

Different views

Most people have more or less the same basic needs concerning personal hygiene facilities. However, the look and distribution of these facilities can vary and depends on numerous factors, both functional and psychological. Size, house composition, family dynamics, status, personal values, attitudes, privacy requirements, and so on; all can influence the design of the bathroom environment. Nevertheless, attitudes towards bodily functions and consequent levels of privacy are the primary determinant of the kind and extent of our hygiene facilities. Our response to these functions, which go from disgust and the desire to have as little to do with the bathroom as possible to the enjoyment of the body in its various dimensions with the desire for facilities that can be enjoyed dictates the way the bathroom is designed and used. This diversity of views is not likely to be unified soon. Persons who for example see the bathroom as a positive place, and who want to exercise or relax in the bathroom are going to make different demands than those who are repulsed by the idea of spending more time in the bathroom than it is strictly necessary for the execution of essential hygienic activities (Kira, 1976). However, "in many instances, the bathroom is emerging as a positive rather than negative environment oriented towards health, exercise, relaxation, and the enjoyment of physical rejuvenation...Although we generally tend to think of large multipurpose bathrooms as master bathrooms, as they most often are, in some instances they are also conceived as family rooms. The living bathroom is conceived as a space to be shared with the family or friends as a natural part of daily living, a concept similar to the Scandinavian sauna and the Japanese bath" (Kira, 1976, p. 171, 172).

Figure 6. Living bathroom of Villa Savoye by Le Corbusier.

Bathroom activities

While the design of the bathroom and its equipment must be based in the first place on the demands of the major personal hygiene activities, solutions should also take into consideration the wide variety of other activities which are commonly performed in the bathroom environment. Some of these activities, such as grooming, strictly relate to and are often performed together with the main hygiene activities. While others, such as exercising and sunbathing, are subject to personal preference. In any case, there is a big range of activities that have nothing to do with personal hygiene that often takes place in the bathroom, due to the opportunities that this environment offers. If the bathroom has been adopted for such activities, that does not mean that they should all be encouraged, but they should be at least acknowledged as an integral part of everyday life and somehow accommodated in the broader context of the home environment. All the activities that are somehow related to body caring have similar requirements for privacy and make use of equipment such as sources of water, storage space, means of waste disposal, mirrored surfaces and a place to sit or lay. Even though these requirements are not as strict as they are for the primary activities (elimination and body washing), they also come with their minor issues that must receive attention. (Kira, 1976)

The concept of body caring involves a great variety of activities that have been growing in popularity in the last decades due to the rise of the so-called *Healthstyle*. Some of these activities, such as exercising and stretching, have been at the center of the attention of the fitness movement for many years, while other practices like Yoga and mindful meditation are now gaining in popularity in the West. These can be seen as taking part in the development of a more holistic view of

wellbeing that considers the mind as much as the body. These body care activities may relate to the bathroom environment only through the presence of a body scale, or by the use of the shower after training. However, the bathroom environment may in some instances include exercise equipment, a sauna, a steam bath, and so on. In the latter situation, a more significant amount of space is required compared to what is usually considered as a normal bathroom.

LIST OF BATHROOM ACTIVITIES

Due to the combination of features that the home bathroom offers (quiet, privacy, sources of water, waterproofness, means of disposing of waste), it is often used for many different activities, some of which do not strictly ralate to body cleansing.
The following list has been drawn from the work on the bathroom by Alexander Kira (1976), with a few additions made by the author. The list is by no means complete nor are the categories absolute, but it does suggest the range of common activities needing various kinds of accommodation.

ELIMINATION
Defecation
Urination

BODY CLEANSING
Showering
Bathing
Washing hair
Washing face
Washing hands
Washing armpit
Washing feet
Cleaning ears
Cleaning nose

ORAL HYGIENE
Brushing teeth
Rising mouth
Gargling
Using water-pick or dental floss
Expectoration

GROOMING
Applying and removing makeup
Applying powders, creams, lotions, etc.
Shaving face
Shaving legs, underarms, pubes, etc.
Cutting hair
Coloring, tinting, tipping
Combing and brushing
Applying hair tonics, lotions, sprays, etc.
Trimming nails, cuticles
Applying polish, false nails, etc.

QUASI-MEDICAL ACTIVITIES
Washing wounds
Treating skin
Soaking limbs or other body parts
Applying bandages
Applying medications
Taking medicine
Inhaling steam
Applying contraceptive devices
Cleaning and inserting contact lenses

OTHER ACTIVITIES
Soaking limbs or other parts (warm or cold water)
Exercising
Practicing Yoga
Meditating

Reading
Sleeping
Talking
Playing
Listening to music
Using smartphone
Smoking
Eating
Drinking
Crying
Various sexual activities
House chores

Healthstyle rise

According to the United Nations, today 54 percent of the world's population lives in urban areas, and projections forecast an increase to 66 percent by 2050 (UN, 2017). Life in the city is notoriously very demanding due to its fast pace, increased competition and a high concentration of stressors. A reaction to this hectic life might be the recent rise of the concept of Healthstyle. Body and mind are increasingly seen as an interconnected system that requires care, and activities such as exercising, stretching, mindful meditation and eating healthy are therefore on the rise. This trend is being accentuated by the widespread availability of information on the topic of health.

The importance of a daily dose of exercise has been known for decades. This notion has permeated popular culture since the 70's fitness craze. However, mind-oriented disciplines like mindful meditation have only been recently added to the western agenda and are rapidly gaining in popularity. This thanks to the proliferation of apps that lower the threshold, Headspace being the most popular with more than one million subscribers, and to the ever-increasing body of knowledge about the positive impact of mindfulness on wellbeing and performance. Scientific studies have in fact linked mindful meditation to reduced stress, improved sleep quality, increase in focus and subjective quality of relationships (Economides, M., Martman, J., Bell, M.J. et al.)

Figure 7. Healthstyle related practices.

Spa culture

In the recent years, what could be addressed as *Spa culture* has gradually regained popularity in continental Europe. This trend has been promoted by the opening of physical and virtual frontiers that allows ideas to spread quickly, and by the work of architects such as Peter Zumthor, that with his Therme of Vals (Figure 8) has brought communal baths to the attention of the general public.
Spa culture has become essential to the idea of Healthstyle, and it has now started to make its way into the domestic space, influencing the configuration and look of the home bathroom.

Current trends in bathroom designs signify a desire to share the act of bathing with other areas of the house and make it a central part of the domestic life. This living bathroom concept is influenced by the contemporary fascination with traditional bathing traditions, such as the Roman bath, the Turkish hammam, the Finnish sauna, and the Japanese onsen, with their focus on bathing as a process of physical rejuvenation and contemplation.

Figure 8. Thermae Vals by Peter Zumthor.

Shifting boundaries

The current reevaluation of the bathroom is part of a shift in the use of domestic spaces, which connects to a generalized interest in a balanced, healthy way of life. Like the kitchen which has been transformed from a plain functional room into the core of today's sociable, open living room, the bathroom is going through a similar reinvention that brings physical rejuvenation, sensory pleasure, and informal social practices at the center of the scene.

Probably the most experimental approach to bathing today has nothing to do with the way bathing is performed, but rather with the introduction of new ideas about spatial configuration. By reconsidering and repositioning the different elements that compose the typical western bathroom, water is now being integrated into the domestic life in surprising ways. The most common concept is the union of bathroom and bedroom. Here, bathing takes the benefits of a bigger room which is usually well provided with natural light and also becomes a more sociable activity (Withers, 1999).

In the project for a country house outside Paris, Japanese architect Masakazu Bokura positions bed and bath in one room (Figure 9). Bokura uses a stand-alone shelving unit on wheels, which is covered on one side with transparent corrugated plastic, to define the different areas without physically dividing the room. Like a screen, it can be moved around to create a sense of privacy. This modern take on the traditional foldable screen suggests intimacy without creating formal barriers, allowing the relationship of the parts to be altered at will and establishing a sense of ambiguity between the two areas. Such an arrangement reflects an increasingly relaxed approach to bathing, balancing spontaneity and openness with intimacy and relaxation.

There are historical precedents for this shifting of boundaries. “Before the advent of fixed plumbing, for example, a portable tub might have been carried to the bedroom or to the kitchen, where water was heated up for the weekly wash. Now, although plumbing fixes the tub and sink, they are not necessarily placed in the bathroom” (Withers, 1999, 91). This example does prove the will of some people to experiment with the spaces to better fit personal preferences and lifestyle. After all, if people are different, then why houses should be all the same?

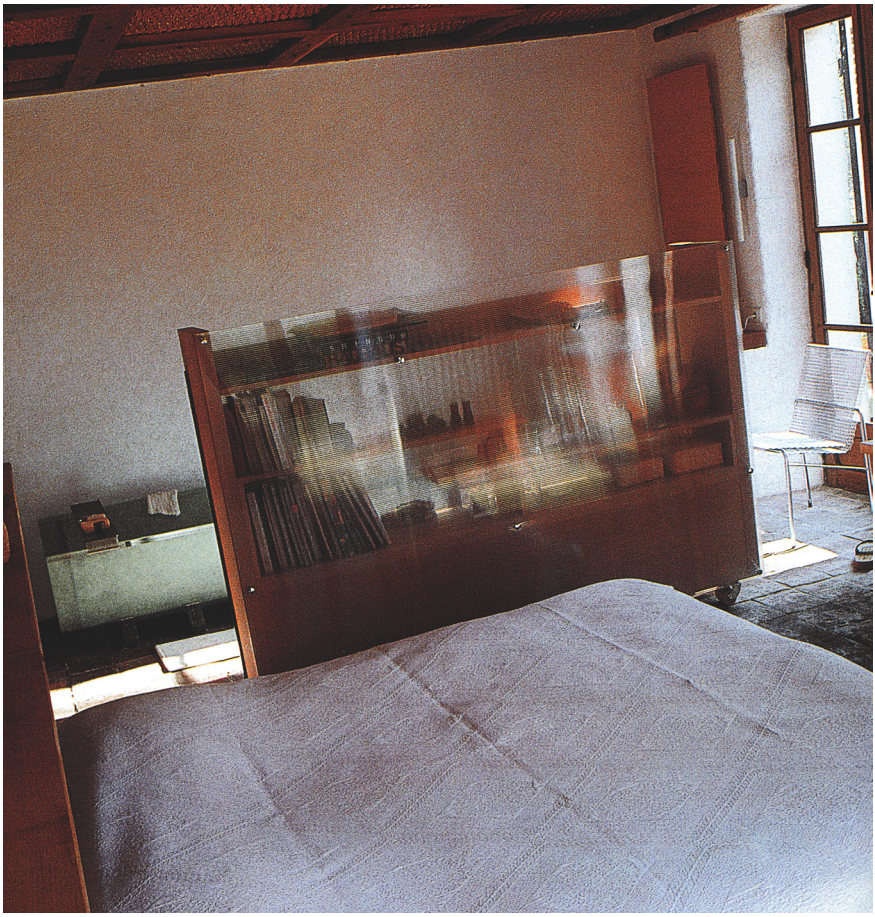


Figure 9. Open bathroom by Masakazu Bokura.

Open space

The bathroom is not the first part of the house to overcome a shift of boundaries. In residential architecture, the open plan concept, characterized by the absence of fixed walls, initiated from the kitchen area. The advent of powerful and affordable extractor hood technology, at the beginning of the 1980's, opened the possibility to integrate kitchen functions with those of the living room, by preventing unwanted odors from spreading in the rest of the room. Before that, only a few experimental homes, had open kitchens. The architect Frank Lloyd Wright was one of the notorious early adaptors of this idea. We can see examples of this in Wright's House Willey (1934) (Figure 10) and House Jacobs (1936). Wright's plans were based on a centralized kitchen openly connected to other areas of the house. The main advantage of removing interior walls was the overall increase in the amount of sunlight that filtered through the rooms of the house or apartment. Moreover, the combination of kitchen and living room helped to promote a new sense of cooking, perceived more as a creative and sometimes social act than of work.
Inspired by this new living kitchen concept, products such as the kitchen island and the peninsula were designed and rapidly gained in popularity. Taking advantage of the different spatial configuration, they moved away from the standard linear arrangement and developed in three dimensions. These offered more surface for collective family cooking and created a space for quick meals and casual social interactions, other than becoming in many instances a matter of status motivated display.

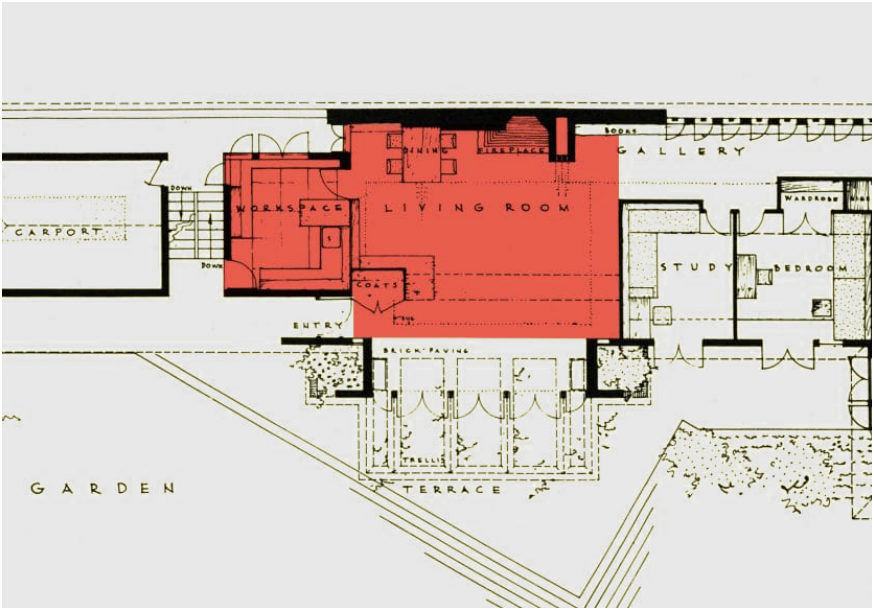


Figure 10 (above). Open space plan by F.L.Wright. Figure 11 (below). Kitchen island.

Key insights

In the course of history, attitudes towards bathing have undergone significant changes, influenced by religious and cultural beliefs on body, health, hygiene, and sexuality.

Recently, the bathroom is emerging as a positive space that supports health, relaxation, and exercise, and it is taking on new importance by being integrated into the house in surprising ways. The most common example is the integration of shower or bathtub in the bedroom area. This shift has little to do with technological progress, but much more to do with the importance that we attach to the rituals of body care and the contemporary fascination with traditional bathing traditions.

The concept of body care also involves a great variety of other activities that have been growing in popularity in the last decades such as exercising, meditating, and healthy eating.

The bathroom is not the first part of the house to overcome a shift of boundaries. In residential architecture, the open plan concept, characterized by the absence of fixed walls, initiated from the kitchen area in the 1930's and became popular in the 1980's.

The shifts or removal of boundaries in the house often create an opportunity for the development of new products. For instance, the living kitchen configuration created the conditions for the design of the kitchen island and the peninsula, which moved away from the standard linear arrangement and developed in three dimensions. These offered more surface for collective family cooking and created a space for quick meals and casual social interactions, other than becoming in many instances a matter of status motivated display.

Chapter 4

Bridging

Mood regulating bathroom activities

After building a knowledge base about the practice of design for mood regulation and gathering insights regarding the chosen context, relevant pieces of information were combined to find overlaps that could inform the ideation. This process started by filtering the bathroom activities found in the literature (Page 33, 34, 35) through mood regulation categories scheme by Desmet et al. (2015) (Page 21). The result of such a process is a list of mood influencing bathroom activities (Figure 12). Finally, out of this list, a few key activities were selected by the author due to the relevance to the topic of mood regulation. These activities are:

Bathing
Showering
Exercising
Stretching
Meditating
Socializing
Listening to music
Reading

The reason why these activities were considered relevant to the project is that they are among the most effective mood-regulating actions known.
Optimal mood states are assumed to be associated with reduced tension and higher energy (calm energy), while the most negative mood states are supposed to involve a combination of relatively lower energy and higher tension (tense-tiredness). However, preferred levels of energy and tension might be higher under certain conditions (e.g., required physical activity or active social interactions) and lower

FOCUS	STRATEGY	EXAMPLE ACTIVITIES
Seek RELIEF	Seek distraction	Bathing, showering, exercising, stretching, meditating, reading, talking, listening to music, using smartphone, smoking, eating, drinking, having sex, house chores
	Self-reward	Bathing, showering, reading, listening to music, using smartphone, smoking, eating, drinking, having sex
	Seek relaxation	Bathing, showering, soaking limbs, exercising, stretching, meditating, reading, sleeping, listening to music, smoking, drinking, having sex
	Seek refreshment	Body cleansing, grooming, soaking limbs, drinking
Restore BALANCE	Withdraw	Bathing, showering
	Rest	Bathing, meditating, sleeping
	Rest	Bathing, meditating, sleeping
	Energise	Showering, exercising, stretching, listening to music, eating, drinking
	Seek social support	Talking, using smartphone
Build RESILIENCE	Embrace	Meditating, crying
	Detach	Meditating

Figure 12. Bathroom activities ordered for mood regulation categories.

under other circumstances (preparing for sleep). Rest, or activities such as splashing water on one's face or taking fresh air are commonly used for subsequent energy enhancement, whereas relaxation techniques and stress management are often used for tension reduction. Of all the separate behavioral categories, a case can be made that exercise is the most effective at regulating mood, probably because its primary mood effect is enhanced energy, but a secondary effect is reduced tension. Other successful behavioral categories used for reducing tension are listening to music and engaging in social interaction (Thayler et al., 1994).

Design space

The selected mood-regulating bathroom activities (bathing, showering, exercising, stretching, meditating, socializing, listening to music, reading) could be divided into two basic categories based on their effect on mood (Figure 13): energizing (raising energy) and relaxing (reducing tension), with some of these fittings in both groups. This distinction, which at first glance could appear contrasting, was, in fact, the starting point for the conception of one coherent design solution. The ideation process implied the use of a design method called *Design with Dilemmas* by Deger Ozkaramanli (Figure 14). "The dilemma-driven design is an approach that considers emotional dilemmas as fruitful starting points for user-centered design activities" (Ozkaramanli, 2018). Here, the approach was used in an unconventional manner, applied to the design process itself to speculate about a design solution able to support different activities with opposite effects on mood.

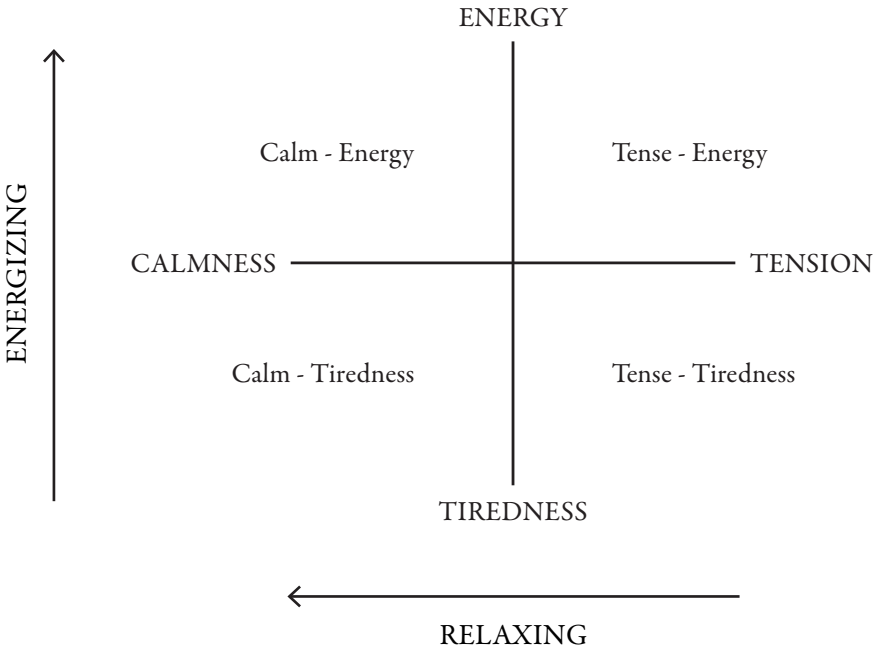


Figure 13. Effect of selected activities on mood.

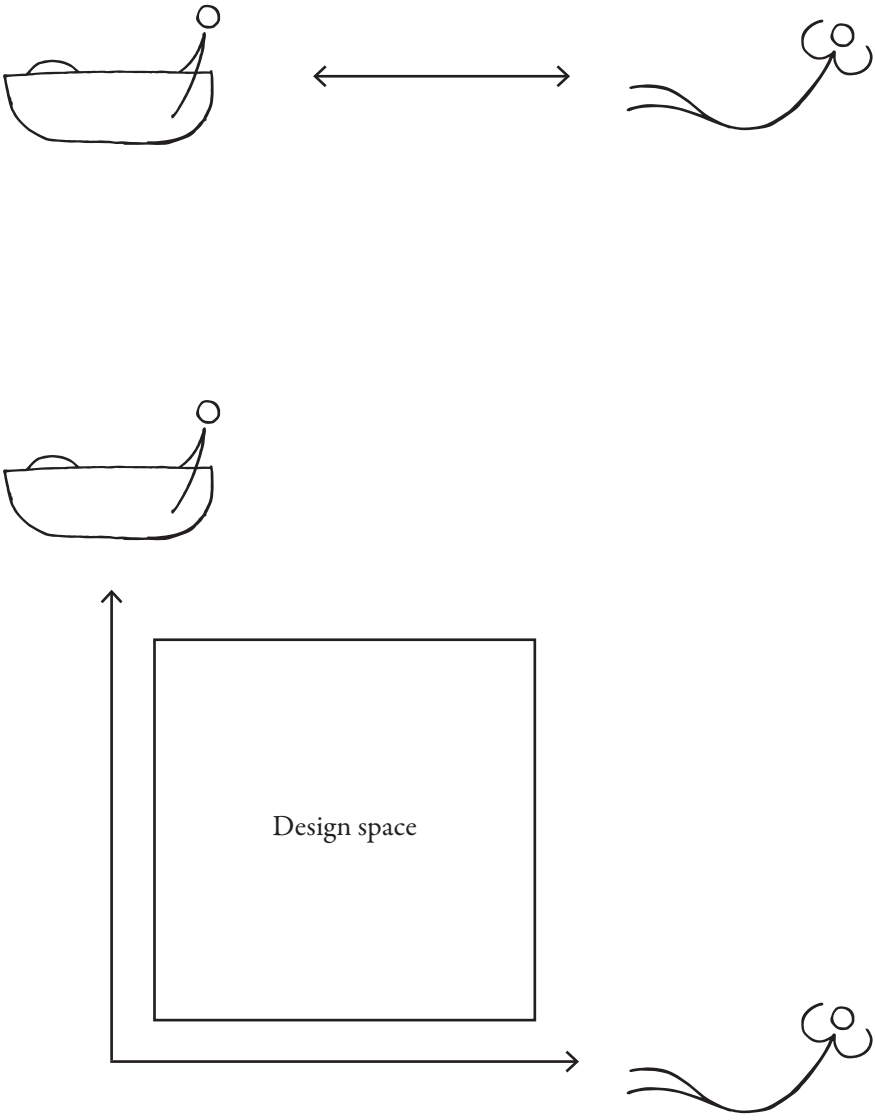


Figure 14. Design space generated with Design with Dilemmas by Deger Ozkaramanli.

Historical precedents

It is interesting to notice that the association between relaxing and energizing activities has some major historical precedents, which demonstrate that a holistic view on physical and mental wellbeing is not only a modern trend. Unfortunately, in the course of western civilization, this link has sometimes being forgotten.
In ancient Greece for example, the *Gymnasium* was a building mainly conceived for physical exercise, but also a place where people could study and engage in philosophical discussion. In the Hellenistic Period, gymnasia became so popular, to be present in most Greek cities. This model was later adopted and modified by Romans, that turned it into what is known as the Roman baths, a multi purpose complex to bathe, exercise and study (Figure 15). These public baths became central points of the city life, where citizens could benefit from warm and cold water pools, exercising yards, study rooms, and decorative art.

Figure 15. Reconstruction of Baths of Trajan in the Ancient Rome.

Chapter 5

Visual exploration

Introduction

After having speculated about the possibility of a design solution for the home environment that would incorporate two distinct characters, one relax oriented, and the other energize oriented, a phase of visual exploration began.

The research was carried out by examining pictures depicting the home environment with a focus on the bathroom area and exercising environments including gyms, homes, and public spaces. The aim of the visual research was to find comunalities between different activities, environments, and products that could serve as a starting point for the design process.
The following pages show a selection of key examples.

Bathroom

Figure 16. Tono bathtub by Porcelanosa, design Foster + Partners.

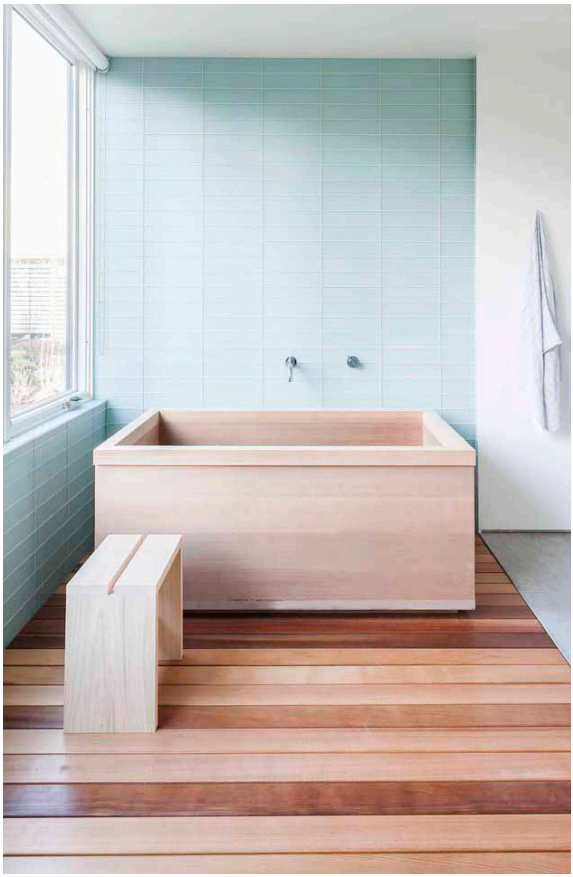


Figure 17. Cedar Japanese tub and stool by Dovetail.

Figure 18. Bathroom design by Kengo Kuma.

Figure 19. Bathroom design by Todd Saunders.

Spa

Figure 20. Linen tiles by Brix, design Naoto Fukasawa.

Figure 21. Hinoki bathtub.

Figure 22. Finnish sauna by Avanto Architects.

Figure 23. Relaxing family time.

Exercise - Gym

Figure 24. Power Personal by Technogym, design Antonio Citterio.

Figure 25. Cross Personal by Technogym, design Antonio Citterio.

Exercise - Outdoor

Figure 26. Outdoor stretching, Allison Stokke for Nike Women.

Figure 27. Park bench aerobic workout.

Exercise - Home

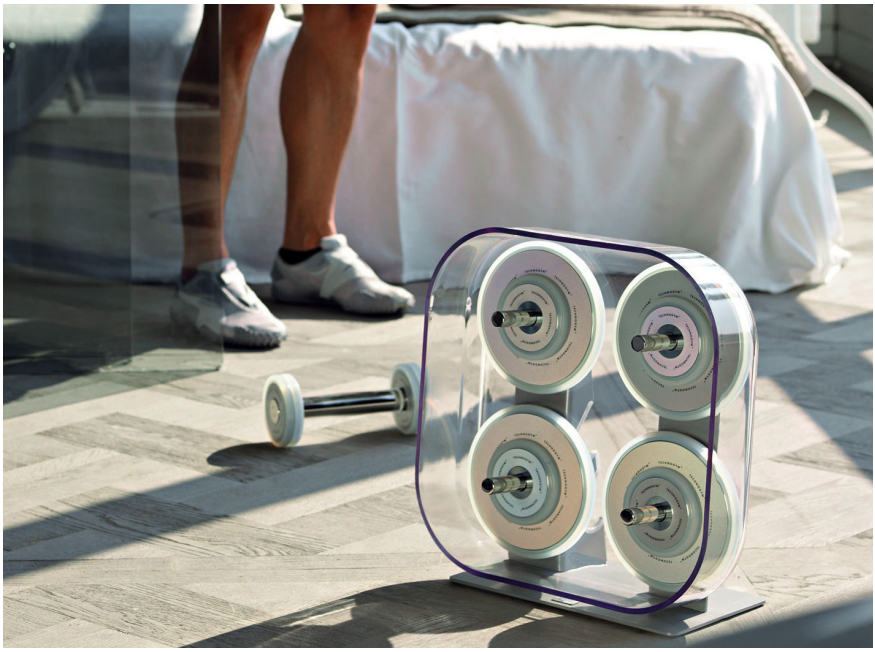


Figure 28. Wellness rack by Technogym.

Figure 29. Home workout, advertising by Bang & Olufsen.

Relax

Figure 30. Mindful meditation.

Figure 31. Slow chair by Vitra, design Ronan and Erwan Bouroullec.

Figure 32. Hair drying scene, advertising by Muji.

Figure 33. Beolab 18 speaker by Bang & Olufsen.

Reflections

By looking at the domestic environment and the kind of activities that there takes place, one might become aware of the fact that in most houses there is barely anything that supports exercising or sport related activities. Only a tiny percentage of the population can afford to dedicate a room of the house to physical activity. The rest of the people that still want to incorporate exercising in their daily home routine are left with the choice to buy products that, from an aesthetic point of view, better fit a gym environment rather than a home one. It is true that, at least in the western world, people living in cities have easy access to training facilities. However, time or other personal reasons might prevent them from benefitting from such facilities. Moreover, the same could be said of cinemas, but most people still own a TV.

Considering that the importance of a daily dose of moderate exercise has been known for decades, why is our living environment not adapted to such need? Why is physical activity not being supported in the same way than for instance watching television is? How can we seamlessly integrate exercising supporting feature in the home environment?

This thought process also generated awareness of how, contrary to home, in the outdoor city environment furniture is often used as an exercise aid. A common practice is, for example, the use of a public bench not only for its primary function which is sitting but to assist with aerobic exercise, anaerobic exercise, and stretching. The question arose naturally, would it be possible to design home furniture that is perceived and works similarly?

Design goal

The process of reflection led to the formulation of a design goal, which clarifies the objective of this project:

To encourage people to engage in regular physical activity, by seamlessly integrating exercise-supporting features in the domestic environment.

Chapter 6

Ideation

The idea

The visual exploration (Page 60-77) also provided a concrete starting point for the design. It is not uncommon to see a wooden bench in a domestic bathroom environment (Page 61, 62, 63), as a place for body care or to sit while engaging in conversation or meditating.
In the outdoor city environment though, the same product takes a different dimension. Public benches are used for various activities that do not always relate to the act of sitting to rest, such as exercising and stretching (Page 70, 71). Most public benches are not designed to work out, but they usually possess qualities such as sturdiness and height that turn it into an excellent exercise aid.

So the idea of the bench as an exercising aid is already present in the mind of most people, and at the same time, it is also a product familiar to the home environment. This partial overlap gave birth to the idea of a piece of furniture formally related to the archetype of the wooden bench, functionally capable of supporting both relaxing and energizing type of activities, and aesthetically fitting a domestic bathroom environment.

Product qualities

Every product comes with a set of qualitative characteristics (product qualities) that influence the user-product interaction. The desired qualities of the product have an impact on the choice of shape, dimension, weight, materials, sound, color, and texture. By purposely selecting these qualities we can increase the chances that the user of the product will perceive and use the product as envisioned. The qualities of the product should be dictated by its function and by the context in which this operates.

In this project, the design of the shape and the choice of the materials were guided by initial considerations relative to the two different characters that the product should accommodate, one energize oriented, and the other relax oriented. One of the main challenges of this project was to harmonize the parts while maintaining their distinct meanings. It was established that the product should be robust and durable, and at the same time inviting and soothing.

Program of functional requirements

By analyzing the actions that the object would support (Figure 34) through observations and user testings, and by looking at how it would fit into a room, a series of functional requirements was generated.

The product must have:
- One sitting surface, slightly concave for enhanced comfort, and with a gap in between to favorite water drainage. Dimensions being approximate: L 1800 mm; W 455; H 400
- One backrest support on one of the short sides at 110° angle, ideal for reading.
- A 5 mm gap under the backrest support under which lock the feet to perform abs crunch.
- One horizontal support approximately 750 mm above the ground for stretching.
- Enough weight and friction on the ground to remain steady with someone leaning against it.
- Enough strength to sustain a person jumping on it.

Possibilities and constraints regarding the positioning of the different parts of the product were better understood with the help of three dimensional paper and metal wire models (Figure 37).

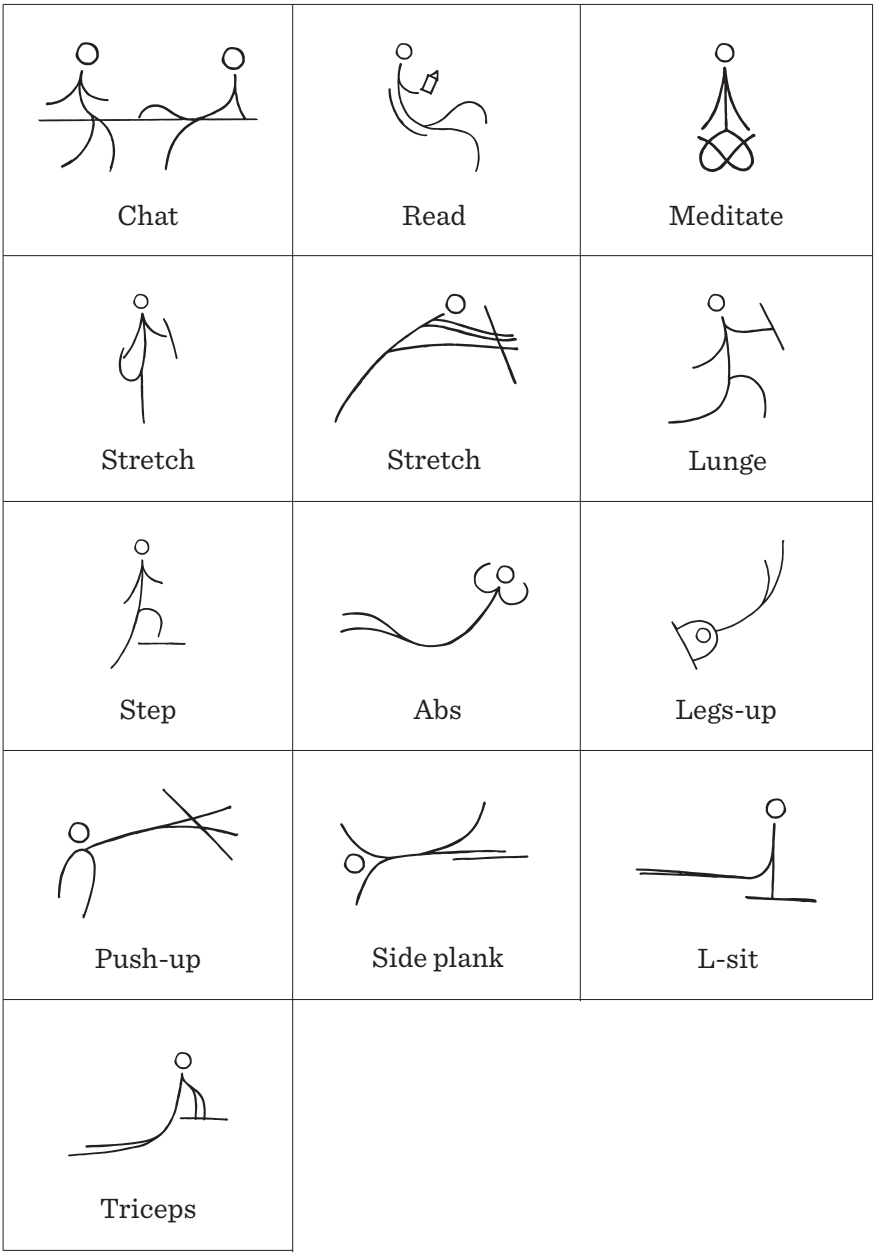


Figure 34. Supported actions.

Ergonomic test: backrest support

A deckchair was used for a preliminary evaluation of the backrest angle suitable for reading (Figure 35).
The followings are the results from the test. The numbers mentioned indicate the angles that have been found comfortable by the users.
Participant 1: in between position one (120°) and position two (102°)
Participant 2: position one (120°) with neck support
Participant 3: in between position one (120°) and position two (102°)
Participant 4: in between position one (120°) and position two (102°)
Participant 5: in between position one (120°) and position two (102°), best with neck support/position two (102°) best without neck support / Armrests provide extra comfort in all positions.

Conclusion: the average angle of 110° was chosen for the design of the backrest element of the product.

Note: it is interesting to notice that the position chosen as a favorite by most users was NOT in the range of options of the deckchair used for the test.

Figure 35. Backrest ergonomic test.

Ergonomic test: foot stopper

A setup was created using a Yoga mat and some scrap material to test the hight for the foot stopper (Figure 36). The rudimental construction allows placing the horizontal foot stopper at different heights by sliding it on two inclined foam blocks.
The followings are the results from the test. The numbers mentioned indicate the heights that have been found comfortable by the users.
Participant 1: 25 mm / 50 mm
Participant 2: 30 mm / 55 mm
Participant 3: 45 mm
Participant 4: 50 mm
Participant 5: 25 mm / 50 mm

Conclusion: the average height of 50mm was chosen for the positioning of the foot stopper.

Figure 36. Foot stopper ergonomic test.

Figure 37. Understanding constraints with metal wire models.

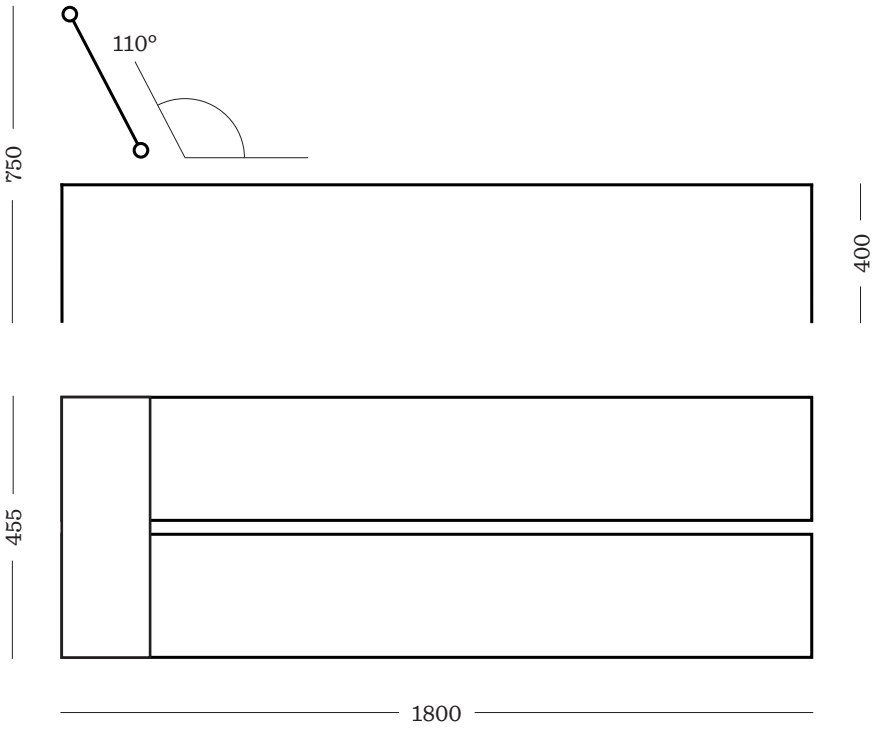


Figure 38. Product basic architecture based on functional requirements.

Aesthetic references

Part of the ZEN design method, which this project makes use of, is to create a selection of “minimalistic” aesthetic references to use as an inspiration during the design phase.

The products that are here presented were selected among many others due to their relevant role in the creation of the final design. They helped to create a coherent and simple aesthetic for a product that is new, yet familiar. Various desired product qualities (Page 83) guided the research for aesthetic references.

Figure 39. CPH 10 desk by HAY, design Ronan and Erwan Bouroullec.

Figure 40 (left). LCW by Vitra, design Charles and Ray Eames.
Figure 41 (right). CH07 chair by Carl Hansen & Son, design Hans J. Wegner.

Figure 42 (left). T chair by Maruni, design Jasper Morrison.
Figure 43 (right). Paimio chair by Artek, design Alvar Aalto.

Figure 44 (left). Su stool by Emeco, design Nendo.
Figure 45 (right). Cyl system by Vitra, design Ronan and Erwan Bouroullec.

Figure 46 (left). Roller blinds by Kvadrat, design Ronan and Erwan Bouroullec.
Figure 47 (right). RGS 1 door handle by FSB, design Dieter Rams.

Chapter 7

Design

Introduction

After having determined the context of use and the qualities of the desired product, the design phase began. This phase was characterized by an iterative process in which three main concepts were created. These ideas did not generate all at once but were more the fruit of an incremental process in which insights from one concept served as a starting point for the next.

A broad variety of techniques were adopted in the design process, from sketching, collage making and digital visualization to physical prototyping and testing. This series of activities led to one final design that was developed to the point that we could categorize as an *advanced concept*, that is a stage where all the ideas about the context of use, functionality, and overall look of the product have been established. However, a series of prototyping cycles and testing would still be required to bring the product to its final configuration.

First concept

The first concept (Figure 48) was characterized by a stark visual contrast between the geometric metal legs and the organic wooden sitting element. This contrast generated from the idea of exasperating the materials as means of communication, with the geometric aluminum frame giving a sense of reliability, and the sinuous plywood element creating a gentle impression, consequently making the product more inviting.
From a purely functional point of view, the tubular metal structure would sustain most of the stress implied by physical exercises and provide a high horizontal element to assist with stretching. The bent plywood part, on the other hand, would serve diverse functions, among which are sitting, foot locking for exercising and providing a surface to temporary store small items.

After having familiarized with the shape through sketching, it was decided to prototype some ideas to understand the object in three dimensions better. To this aim, a digital 3D modeling program was also employed. Looking at the real-life prototypes, it became soon apparent that this particular design was not satisfactory due to a series of reasons. The contrast between the metal and the wooden parts was so extreme to create a sense of detachment between the two. Moreover, the use of aluminum tube in the upper segment reminded of a hospital bed, an analogy that the author was determined to avoid. Last, but not least, the overall design appeared lacking character, almost dull.

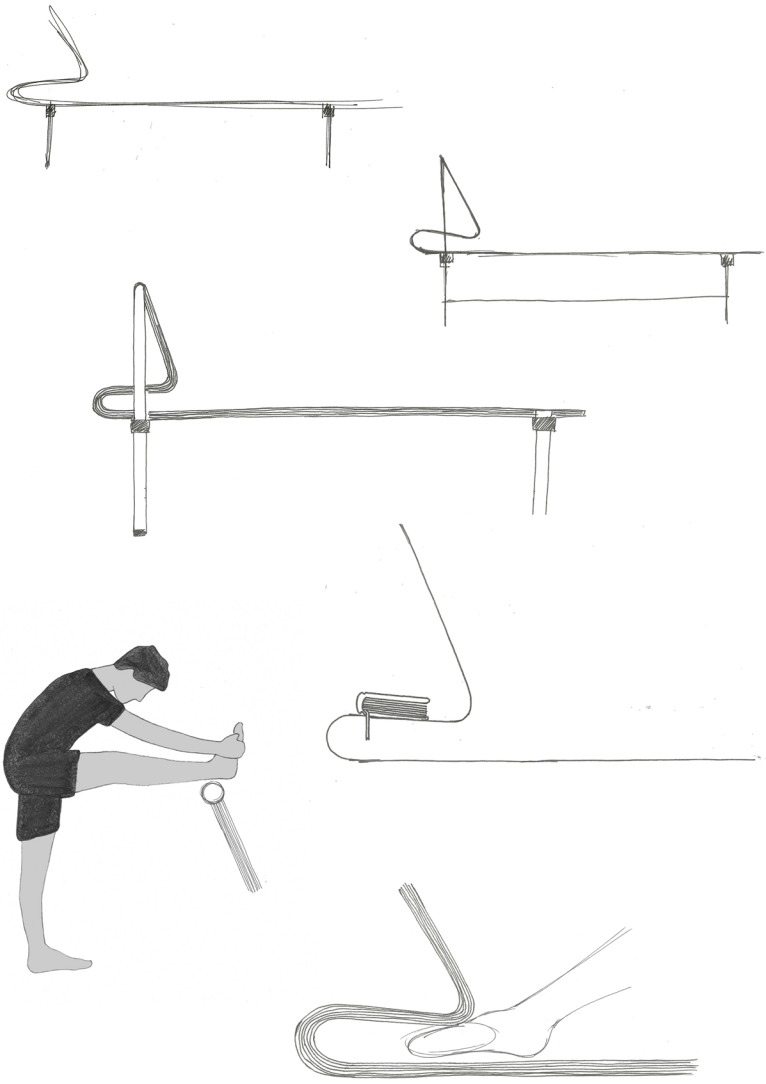
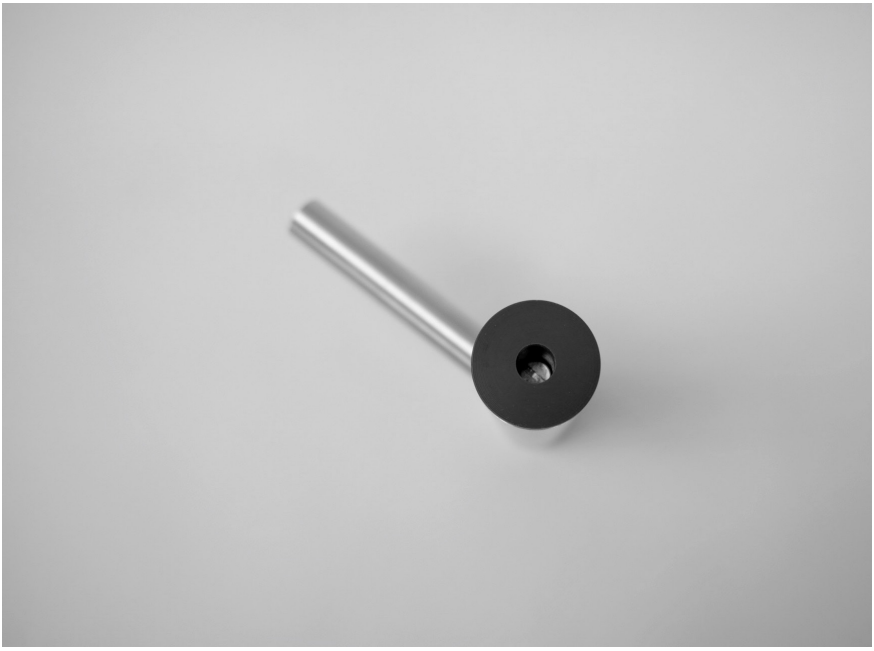


Figure 48. First concept.

Figure 49, 50. Backrest mokeup.

Figure 51, 52. Seamless aluminum tube connection.



Second concept

The second concept (Figure 53) took a big step away from the first one, while still being somehow connected to it. The aluminum tube structure was replaced with an all wood one to remove the analogy with the hospital bed frame. The shape of this wooden structure was inspired by the curvy plywood element of the previous concept, but it got here translated into a wooden slots array configuration. The use of solid wood improved the overall rigidity of the backrest areas and allowed for a cantilever construction which completely lost every unwanted reference. Aluminum elements would still be used to connect the wooden slots and also as signifiers. In this design, all the desired affordances were implemented, but with a much more coherent and interesting aesthetic compared to the previous one.

On paper, this design had all the desired qualities. However, when the idea got translated into a three-dimensional digital model, it appeared unexpectedly heavy to the eye. On top of that, it was realized in conversation with a user that this design carried the risk of being formally so detached from the world of fitness, not to be used for that purpose at all. This combination of factors made the concept unsuitable for the project.

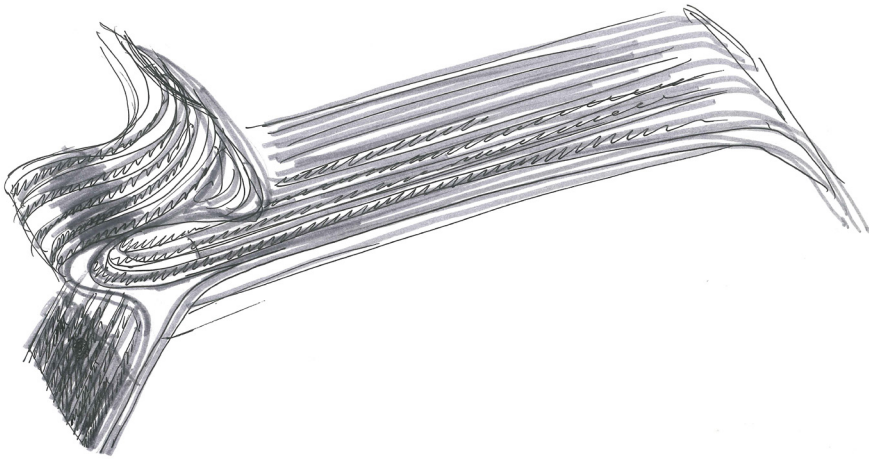


Figure 53. Second concept.

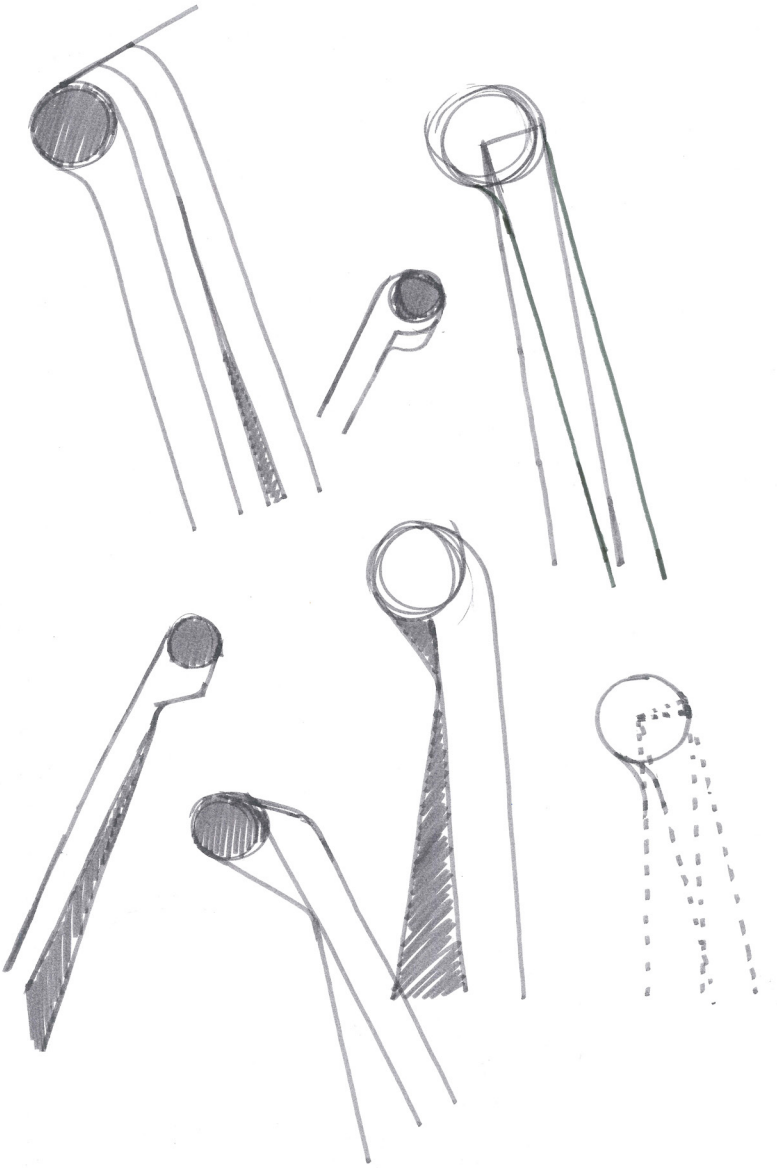


Figure 54. Backrest shape investigation.

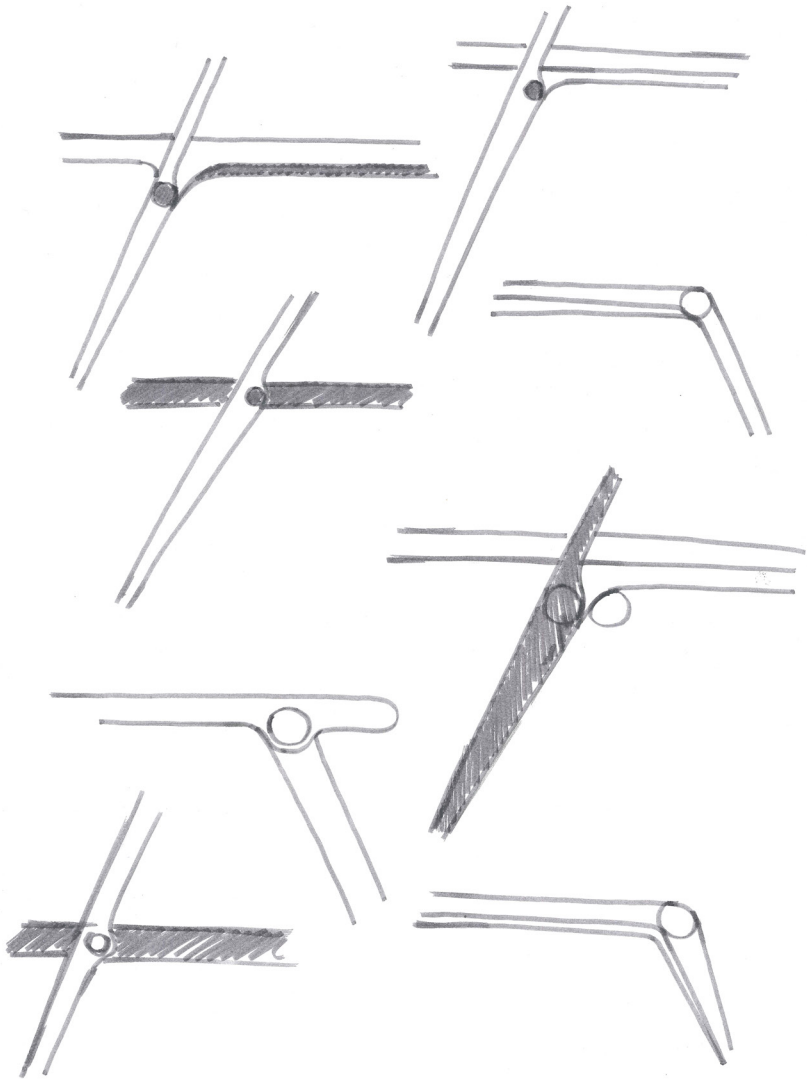


Figure 55. Legs shape investigation.

Third concept

The third and final concept (Figure 56) incorporates all the learnings generated by the previous ones. The design takes a step back in terms of overall configuration, by reintroducing the use of metal in the legs, though this time in a much more graceful way. Contrary to the first concept, here shapes and materials work together enhancing instead of contrasting one another.

The idea for this design generated by a sketch of the front side view in which the two legs appear clipping together two wooden wings. Simple, coherent and elegant, the idea seemed to be promising, so it was decided to develop it further.

Figure 56. Third concept.

Third concept - Development

The development of the final design started with the horizontal body and the four legs.

It was decided to make the horizontal body out of two separate parts, with a gap in between and a concave surface (Figure 57).
This configuration ensures water drainage and improves comfort.
Initially, the construction had to be made with two wings of bent plywood, but these made the water drainage gap too wide, so in practice, a solid wood sections solution was adopted.
The two specular parts are joined together mechanically, and a gap is created with the use of spacers, in their turn shaped for water drainage.

Six wooden ribs are glued in pairs along the underside of the wooden wings to increase solidity.

Figure 57. Front view.

One critical point in the design process was how to connect the vertical backrest element to the horizontal body in a visually light but physically solid way.
This was done through the use of a single flat metal element passing through the central gap, formally reminiscent of the metal legs.

The only problem with positioning the connection element right in the middle is the risk of collision with the lower part of the user's back. This problem was solved by giving to the component a P-like shape (Figure 59).

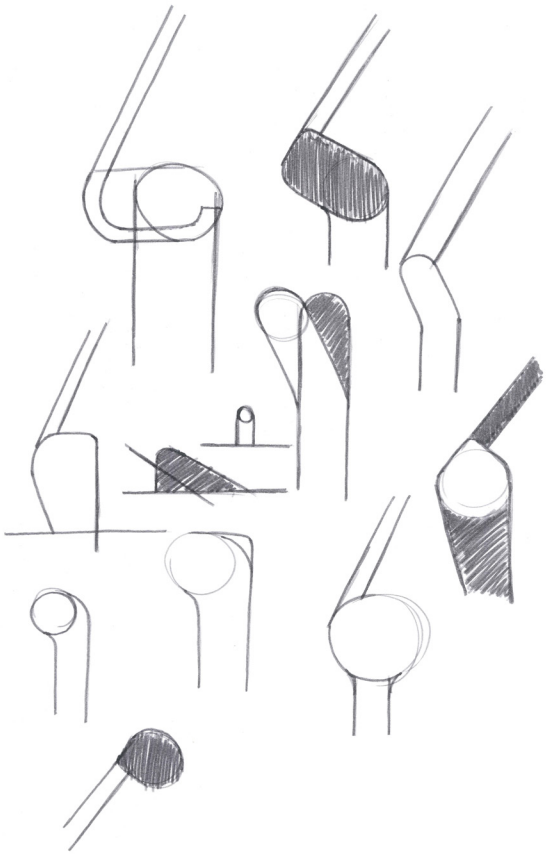


Figure 58. Backrest connection shape investigation.

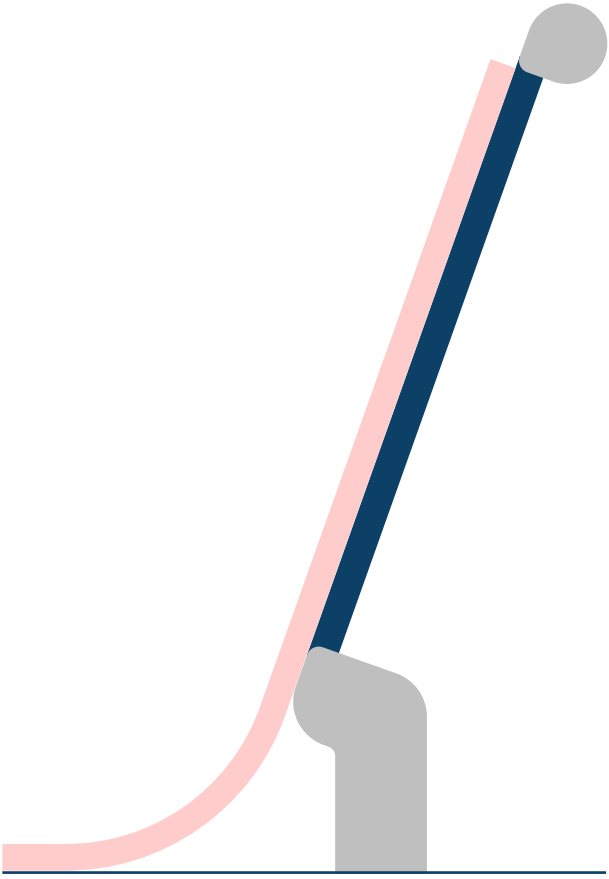


Figure 59. P-like shaped backrest connection.

The vertical backrest element was designed following a sandwich type of construction where two plywood boards and four aluminum profiles meet. The aluminum extrusions provide rigidity, while comfort is ensured by the plywood strategically bent around the metal in points of contact with the skin (Figure 61). The various parts are kept together by four elegantly shaped aluminum pieces clamping from the side.

One central gap running along the surface of the board was designed to ensure visual continuity with the horizontal body and to make the presence of the vertical backrest element lighter to the eye.

Figure 60. Backrest shape investigation.

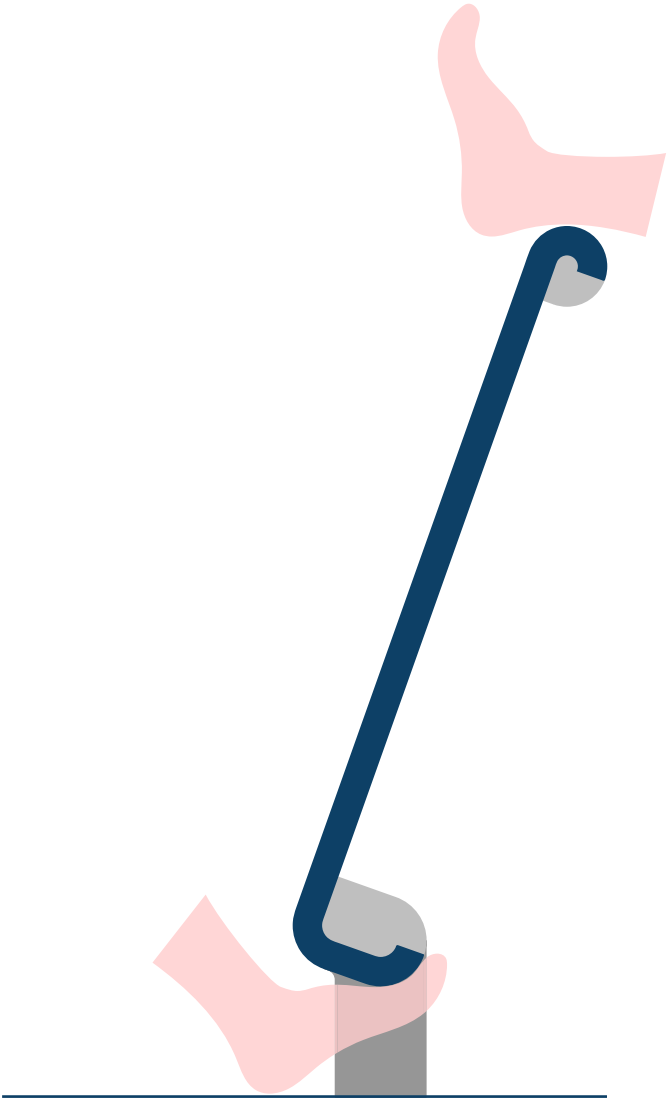


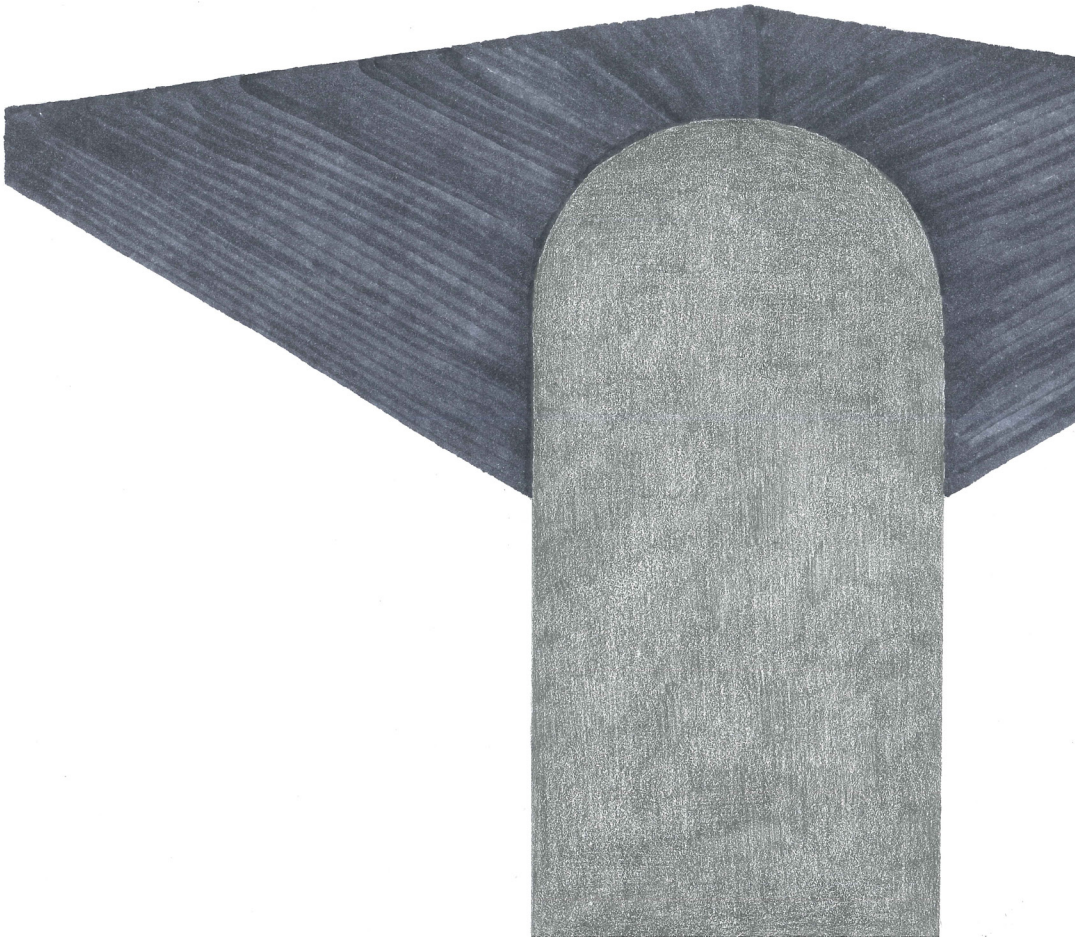
Figure 61. Bent plywood solution .

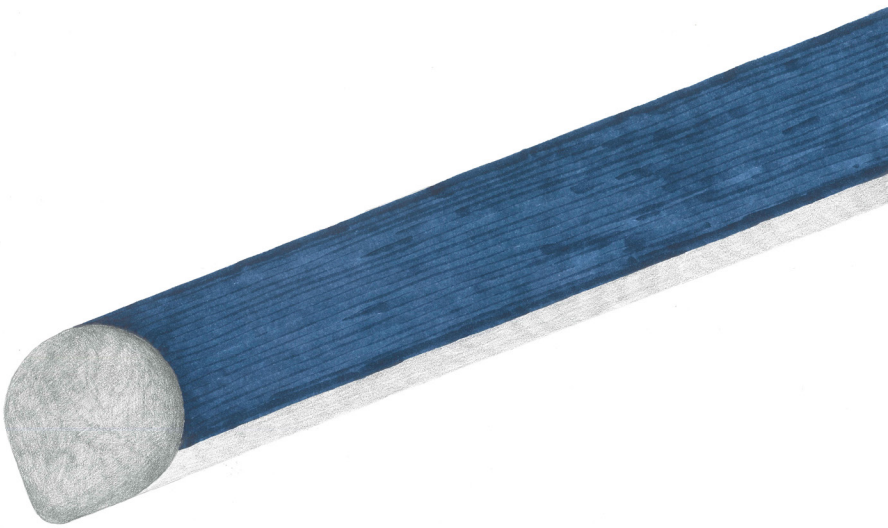
The use of color played an essential role in the development of the idea. One of the remarks made to the product was that it looked too austere due to the simple shape in combination with the natural color of the wood. This issue was obviated by staining the wood with a midnight blue pigment which colors the wood while maintaining its natural veins visible. This simple tweak gave a much more elegant feel to the product and created a pleasant interplay with the light gray metal parts.

Figure 62. Color selection.

Familiarize with shapes

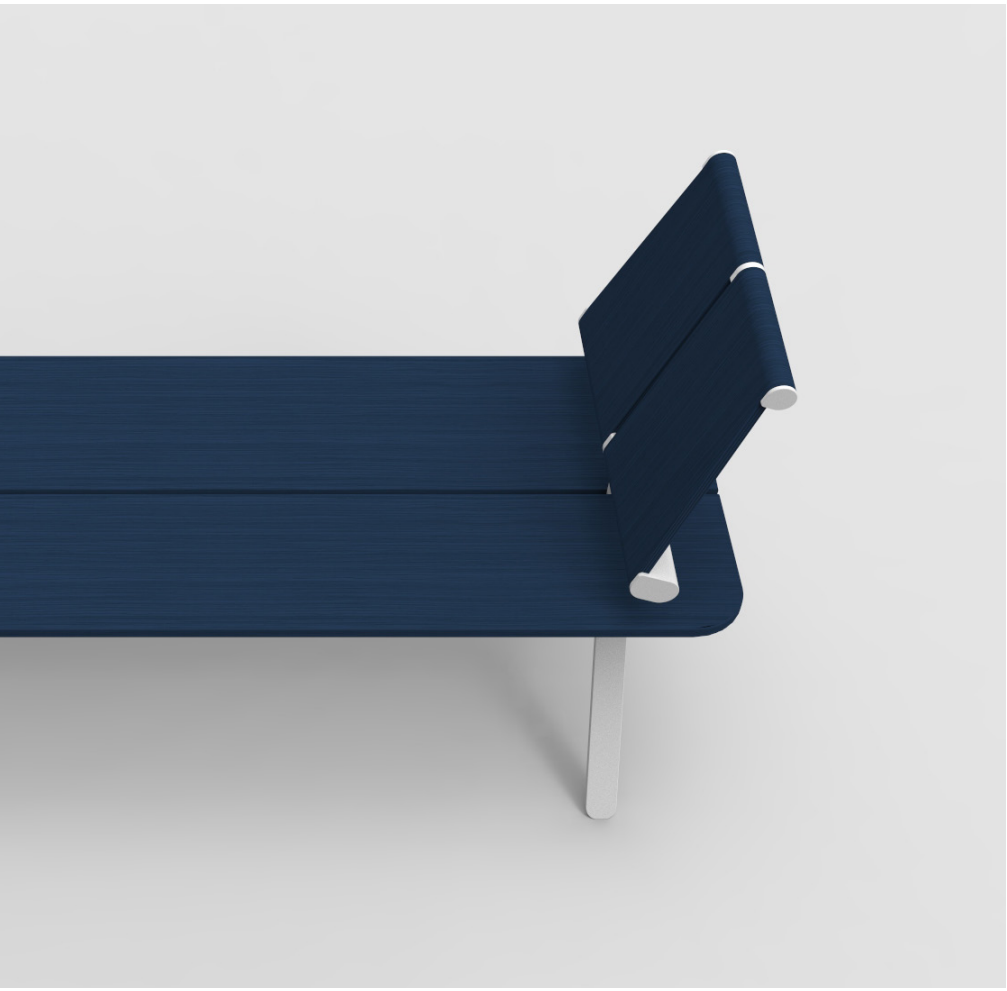
Hand drawing is as significant, if not more significant than the computer in the design process. When you draw, you can think freely and experience the shape with multiple senses simultaneously. This process increases sensitivity and helps to understand better what works and what does not work from an aesthetic perspective.

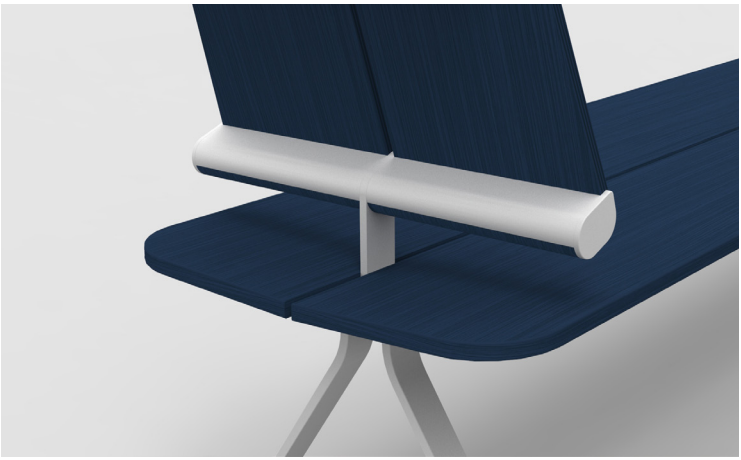


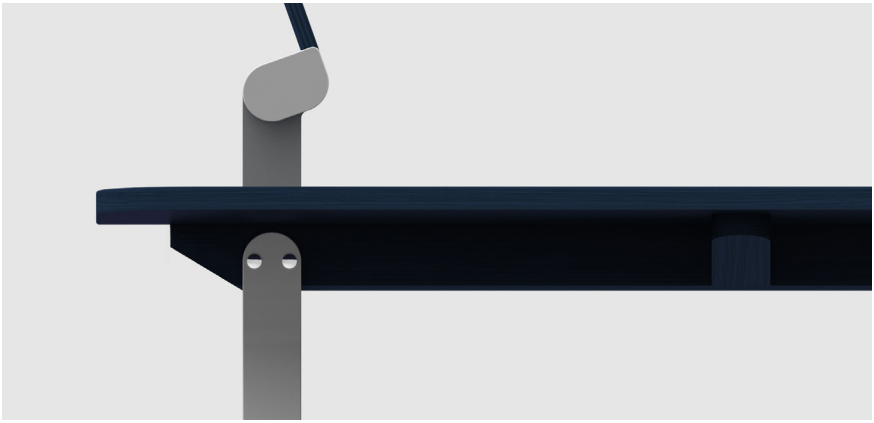


Final design

The final design is the result of a process of subtraction, in which what does not matter has been eliminated. It is a robust, yet elegant piece of furniture with an ambiguous shape, somewhere in between a bench and a chaise longue. It looks new, yet familiar. An honest product with good manners, which does not hide its origins, but it adapts to the new environment. Its name is Ginnasio, a reference to the building that, in Ancient Greece, served as a training facility, but also as a place to relax, socialize and engage in philosophical discussion.







Product in use

Chapter 8

Conclusion

Reccomendations

The end of the report does not correspond to the end of the project. The report begins by introducing an investigation into the topic of mood-regulating activity based design and ends with the conceptualization and design of one product that aims to make a some of these strategies a more integral part of people's everyday lives. Nonetheless, the development of this object is still in its infancy. Much more dedication will be required to bring it from the world of theory to the world of practice, and to hopefully turn it into a durable, long-living product.
What follows is the author's proposal for a future course of action:

First, explore the possibilities and limitations of the chosen materials, together with the pros and cons of possible material variations. Particular attention must be paid to the behavior of metal and wood in humid environments.

Second, design a removable soft element to improve the comfort for specific activities.

Third, build a full-scale mockup for ergonomics fine tuning.

Fourth, build a full-scale prototype.

Fifth, user test in the designated context to validate the hypothesis made about the potentialities of the product as mood-regulation support.

Notes from the author

I would like to conclude the report with a few personal notes about the project and my experience as a Delft Master's student.

It never comes a day that I regret the choice I made to become a designer. When I first moved to Milano to study product design I had no idea what I was getting myself into. But there I grew familiar with a profession that gives, as much as takes. And I learned to appreciate the work of the great masters of the past and the present. However, after moving to Delft, I became utterly confused about what my future as a designer would be. The fact of choosing the DfI Master seemed to have taken away some of the professional duties that I liked. All the emphasis was on generating and testing ideas, without any attention to how these ideas were presented. This last part of the process was often labeled as unnecessary by my colleagues, and phrases like "there is not time for that" were typical.
Now, after two years of pondering, I can say with conviction that this type of statements do not always correspond to the reality, but are often used as an excuse to justify a lack of will and, in my opinion, of understanding of the subject. I firmly believe that to design a good product, nothing about how we perceive, understand, use, experience, or make the product should be purposely ignored.

In my carrier as a design student, I had the privilege to experience four different schools in three different countries. Each one of these with a different approach to the discipline of design. I believe this gave me the possibility to develop my way to design, by selecting what works best for me among all the different methods, methodologies and styles. This project was, more than everything, a testing ground for this way of designing.

Chapter 9

References

Reference list

1. World Health Organizaion (1946). Preamble to the construction of the World Health Organization. International lealth Conference, New York.

2. United Nations (2017). World population prospect. Retrieved from https://esa.un.org/unpd/wpp/publications/files/wpp2017_keyfindings.pdf.

3. Dye, C (2008). Health and urban living. Science 319, 766–769.

4. Lederbogen, F. et al. (2011) City living and urban upbringing affect neural social stress processing in humans. Nature 501.

5. Peen J et al. (2010). The current status of urban-rural differences in psychiatric disorders.

6. Desmet, P. M. A. (2015). Design for mood: Twenty activity-based opportunities to design for mood regulation. International Journal of Design, 9(2), 1-19.

7. Akers, A., Barton, J., Cossey, R., Gainsford, P., Griffin, M., & Micklewright, D. (2012). Visual color perception in green exercise: Positive effects on mood and perceived exertion. Environmental Science & Technology, 46(16), 8661-8666.

8. Küller, R., Ballal, S., Laike, T., Mikellides, B., & Tonello, G. (2006). The impact of light and colour on psychological mood: A cross-cultural study of indoor work environments. Ergonomics, 49(14), 1496-1507.

9. Kwallek, N. (2005). Color in office environments. Implications, 5(1),1-6.

10. Kwallek, N., Woodson, H., Lewis, C. M., & Sales, C. (1997). Impact of three interior color schemes on worker mood and performance relative to individual environmental sensitivity. Color Research & Application, 22(2), 121-132.

11. Davidson, R. J. (1994). On emotion, mood, and related affective constructs. In P. Ekman & R. J. Davidson (Eds.), The nature of emotion, fundamental questions (pp. 51-55). Oxford, UK: Oxford University Press.

12. Parkinson, B., Totterdell, P., Briner, R. B., & Reynolds, S. (1996). Changing moods: The psychology of moods and mood regulation. Essex, England: Addison-Wesley.

13. Beedie, C. J., Terry, P. C., & Lane, A. M. (2005). Distinctions between emotion and mood. Cognition and Emotion, 119(6), 847-878.

14. Watson, D., & Tellegen, A. (1985). Towards a consensual structure of mood. Psychological Bulletin, 98(2), 219-235.

15. Buss, D. M. (1995). Evolutionary psychology: A new paradigm for psychological science. Psychological Inquiry, 6(1), 1-30.

16. Morris, W. N. (1992). A functional analysis of the role of mood in affective systems. In M. S. Clark (Ed.), Review of personality and social psychology (Vol. 13, pp. 256-293). Newbury Park, CA: Sage.

17. Cunningham, M. R. (1988). What do you do when you're happy or blue? Mood, expectancies, and behavioral interest. Motivation and Emotion, 12(4), 309-331.

18. Thayer, R. E., Newman, J. R., & McClain, T. M. (1994). Self-regulation of mood: Strategies for changing a bad mood, raising energy, and reducing tension. Journal of Personality and Social Psychology, 67(5), 910-925.

19. Frijda, N. (1994). Varieties of Affect: Emotions and Episodes, Moods , and Sentiments. In: P. Ekman, R. Davidson (Eds.), The Nature of Emotion (pp.59-67). New York: Oxford University Press.

20. Spillers, Frank (2010) in Hekkert, P.M. et. al. in the Proceedings of the Seventh Biannual Conference on Design and Emotion. Chicago, IL USA.

21. American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (DSM-5). Arlington, TX: American Psychitric Association.

22. Watson, D. (1988). The vicissitudes of mood measurement: Effects of varying descriptors, time frames, and response formats on measures of positive and negative affect. Journal of Personality and Social Psychology, 55(1), 128-141.

23. Randy J. Larsen (2000). Toward a Science of Mood Regulation. Psychological Inquiry, Vol. 11, No. 3 (2000), pp. 129-141.

24. Hartfiel, N., Havenhand, J., Khalsa, S. B., Clarke, G., & Krayer, A. (2011). The effectiveness of yoga for the improvement of well-being and resilience to stress in the workplace. Scandinavian Journal of Work, Environment & Health, 37(1), 70-76.

25. Economides, M., Martman, J., Bell, M.J. et al. (2018). Improvements in Stress, Affect, and Irritability Following Brief Use of a Mindfulness-based Smartphone App: A Randomized Controlled Trial. Retrieved from https://doi.org/10.1007/s12671-018-0905-4.

26. Kira, A. (1976) The Bathroom. New York, New York: Vicking Press.

27. Withers, J. (1999) Hot Water. Great britain: Quadrille Publishing Limited.

28. Ozkaramanli, D. (2018). Design With Dilemmas. Retrieved from http://designwithdilemmas.com.

List of figures

1. Approach and methodologies.

2. Eight basic mood types (Desmet et al., 2012) in four mood categories (Watson and Tellegen, 1985).

3. Mood homeostasis (Desmet, 2015).

4. Emotion versus mood (Desmet, 2015).

5. Twenty activity-based mood regulation strategies in three categories. (Desmet, 2015).

6. Bougot M. Living bathroom of Villa Savoye by Le Corbusier. Retrieved August 17, 2018 from from http://www.manuelbougot.com/works/interiors/villa-savoye.

7.1. Breakfast. Retrieved August 17, 2018 from https://www.self.com/story/how-big-should-your-breakfast-be.

7.2 Stretching outdoor.

7.3. Mindful meditation. Retrieved August 17, 2018 from https://classpass.com/blog/2018/05/01/how-to-hit-all-5-senses-during-meditation/.

8. Guerra F. (2016). Thermae Vals. Retrieved August 17, 2018 from https://www.dezeen.com/2016/09/25/peter-zumthor-therme-vals-spa-baths-photography-fernando-guerra/.

9. Kicherer C. (1999). Retrieved August 17, 2018 from Hot Water. Great britain: Quadrille Publishing Limited.

10. Wright F.L. (1934). Open space plan. Retrieved August 17, 2018 from https://franklloydwright.org/willey-house-stories-part-7-step-right-up/.

11. Kitchen island. Retrieved August 17, 2018 from http://www.conte131.com/page/article/vola-1960.

12. Bathroom activities ordered for mood regulation categories.

13. Effects of selected activities on mood.

14. Design space generated with Design with Dilemmas by Deger Ozkaramanli.

15. Reconstruction of Baths of Trajan in the Ancient Rome. Retrieved August 17, 2018 from https://voxcalantisindeserto.blogspot.com/2014/06/le-terme-nellantica-roma.html.

16. Tono bathtub by Porcelanosa, design Fostern + Partners. Retrieved August 17, 2018 from http://www.krion.com/it/notizie/slim-quando-la-vasca-da-bagno-si-converte-in-un-oggetto-decorativo.

17. Hardy J. Cedar Japanese tub and stool by Dovetail. Retrieved August 17, 2018 from https://www.dwell.com/browse/photos/6133590507785052160?filter=6268417501073629185.

18. Elle Deco. Bathroom design by Kengo Kuma. Retrieved August 17, 2018 from http://fashion.sohu.com/20180416/n534959562.shtml.

19. Mogensen M. (2015). Bathroom design by Todd Saunders. Retrieved August 17, 2018 from https://bobedre.dk/boliger/huse/ogstedet-hedder-paradis.

20. Linen tiles by Brix, design Naoto Fukasawa.Retrieved August 17, 2018 from https://i.pinimg.com/originals/b5/69/a3/b569a30349680db5a9954dc41b18c0f3.jpg.

21. Hinoki bathtub.Retrieved August 17, 2018 from https://fi.pinterest.com/pin/147000375307295762/.

22. Finnish sauna by Avanto Architects. Retrieved August 17, 2018 from https://www.archute.com/2016/09/30/loyly-avanto-architects-attempts-bring-back-finnish-public-saunas/.

23. Relaxing family time. Retrieved August 17, 2018 from https://www.alpenhof.org/bilder/thumbs/spa-hotel-famiglie-alpenhof-maranza.jpg?ts=1463064898&w=1920.

24. Power Personal by Technogym, design Antonio Citterio. Retrieved August 17, 2018 from https://www.technogym.com/wpress/wp-content/uploads/2016/04/Technogym-Power-Personal-1_man3.jpg.

25. Cross Personal by Technogym, design Antonio Citterio. Retrieved August 17, 2018 from http://www.athletica-design.com/img/equipement4.jpg.

26. Outdoor stretching, Allison Stokke for Nike Womens. Retrieved August 17, 2018 from https://hannahandfitness.com/wp-content/uploads/2016/05/new-workout-plan.jpg.

27. Park bench aerobic workout. Retrieved August 17, 2018 from https://www.isabelsmithnutrition.com/fitness/park-bench-workout/.

28. Wellness rack by Technogym. Retrieved August 17, 2018 from http://img.archiexpo.it/images_ae/photo-g/5169-9359524.jpg.

29. Home workout, advertising by Bang & Olufsen. Retrieved August 17, 2018 from http://www.techfieber.de/wp-content/uploads/2017/11/beoplay-m3-musik-lautsprecher-design-2.jpg.

30. Mindful meditation. Retrieved August 17, 2018 from https://classpass.com/blog/2018/05/01/how-to-hit-all-5-senses-during-meditation/.

31. Slow chair by Vitra, design Ronan and Erwan Bouroullec. Retrieved August 17, 2018 from https://i.pinimg.com/736x/d6/93/80/d69380cc27d800b96fc5a12160f64d03--bouroullec-brothers-modern-armchair.jpg.

32. Hair drying scene. Retrieved August 17, 2018 from http://www.muji.com/ca/feature/cotton2016aw/.

33. Beolab 18 speaker by Bang & Olufsen. Retrieved August 17, 2018 from https://www.bang-olufsen.com/en/collection/speakers.

34. Supported actions.

35. Backrest ergonomic test.

36. Foot stopper ergonomic test.

37. Understanding constrains with metal wire models.

38. Product basic architecture based on functional requirements.

39. CPH 10 desk by HAY, design Ronan and Erwan Bouroullec. Retrieved August 17, 2018 from https://hay.dk/pl/hay/furniture/tables-5f607efa/desk/cph-10-desk.

40. LCW by Vitra, design Charles and Ray Eames. Retrieved August 17, 2018 from https://www.wright20.com/items/index/2000/287_2_design_december_2017_charles_and_ray_eames_early_lcw__wright_auction.jpg?t=1510595995.

41. CH07 chair by Carl Hansen & Son, design Hans J. Wegner. Retrieved August 17, 2018 from https://78.media.tumblr.com/3b5c616a9e6d1b308f4519a75df9b3e9/tumblr_nox7ggk2kF1qidj37o1_1280.jpg.

42. T chair by Maruni, design Jasper Morrison. Retrieved August 17, 2018 from https://www.maruni.com/en/topics/2018/04/18/maruni-wood-industry-90th-anniversary-models/.

43. Paimio chair by Artek, design Alvar Aalto. Retrieved August 17, 2018 from http://www.horrorvacuistudio.com/horror-vacui/.

44. Su stool by Emeco, design Nendo. Retrieved August 17, 2018 from https://www.designonlinemeubels.nl/emeco-emeco-su-by-nendo-kruk.html.

45. Cyl system by Vitra, design Ronan and Erwan Bouroullec. Retrieved August 17, 2018 from https://www.designboom.com/design/ronan-erwan-bouroullec-cyl-office-system-vitra-orgatec-10-25-2016/.

46. Roller blinds by Kvadrat, design Ronan and Erwan Bouroullec. Retrieved August 17, 2018 from https://www.detail-online.com/fileadmin/uploads/01-Themen/Architonic-Textile-Brands-Kvadrat-02.jpg.

47. RGS 1 door handle by FSB, design Dieter Rams. Retrieved August 17, 2018 from https://www.flickr.com/photos/dasprogramm/12432482274/.

48. First concept.

49, 50. Backrest mokeup.

51, 52. Seamless aluminum tube connection.

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