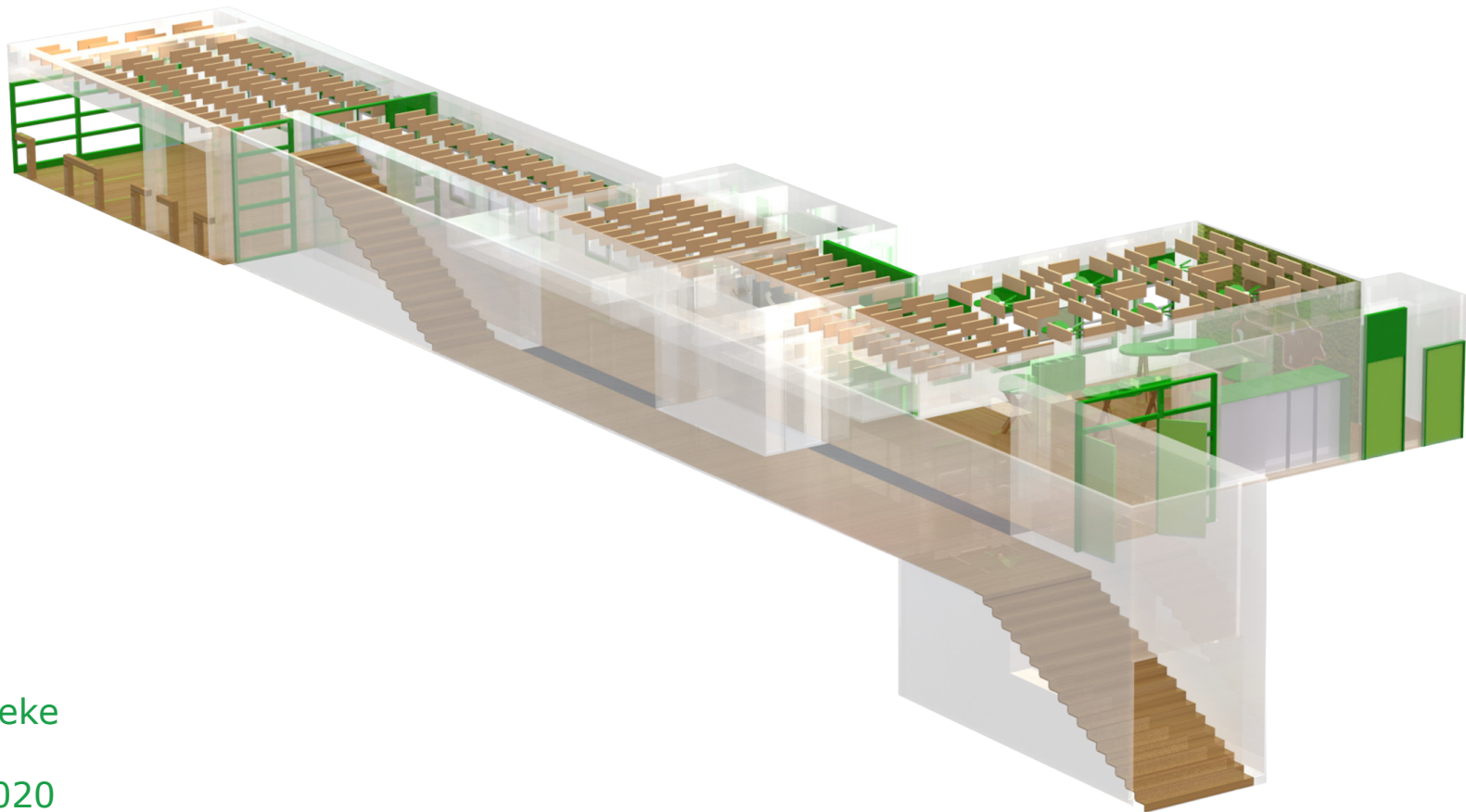


A redesign for the hallway and coffee corner of the University of Twente Library.

A design that improves the well-being of the users and attracts users to the library.



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19 February 2020
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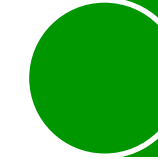
A redesign for the hallway and coffee corner of the University of Twente Library.
A design that improves the well-being of the users and attracts users to the library.

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Preface

You will soon start reading this report about the redesign that is made for the coffee corner and hallway of the library of the University of Twente. The report describes the whole design process from analysis till the execution plan of the final concept and everything in between. The assignment is done commissioned by LISA, the umbrella organization of the library. This report is written as bachelors assignment for Industrial Design Engineering at the University of Twente. With this report the bachelor will be completed.

For me it was hard to write the report due to concentration issues. Nevertheless, I am proud of the work that is done and the report I could present to you. My writing skills improves a lot by writing this report. Besides, it was nice to work together with the different stakeholders and create a concept that brings all the criteria together. It is satisfying that it will be executed. Although, this will be done with a different concept, I was involved in the final decision making, which I appreciated.

I would like to thank Luuk van Ewijk and Maaïke Mulder-Nijkamp for the supervision they give during this bachelors assignment. Besides, I would like to thank Olga Steen and Marijke Broekhuis from the library and Andries Klijnstra and Stef Michgelbrink from Campus and Facility Management for all the input they gave. At last, I would like to say thanks to my friends and family who supported me when it was hard to find motivation and concentration for executing the assignment.

I hope you will enjoy reading this report.

Lieven Jan Westerbeke

Enschede, 19 February 2020

Table of Contents

Summary	6	7.2. Concept Nature	27
1. Introduction	8	8. Concepts test	29
2. Analysis	10	8.1. Concept Vrijhof	29
2.1. Stakeholder Analysis	10	8.2. Concept Nature	29
2.1.1. Library	10	8.3. General	30
2.1.2. Campus & Facility Management	11	9. Final Concept	31
2.1.3. Users	11	9.1. Design	31
2.2. Situation Analysis	12	9.2. Well-being integration	33
2.2.1. Design Observations	12	10. Execution	35
2.2.2. User Observations	14	10.1 Cost Estimation	35
2.3. Conclusion	14	10.2 Execution plan	36
3. Ideation	15	11. Final Test	37
3.1. University of Twente	15	12. Conclusion and Recommendations	39
3.2. Nature	16	12.1. Conclusion	39
3.3. Coffee Corner	17	12.2. Recommendations	41
3.4. Library & Vrijhof	18	Reference list	43
4. Co-Creation	19	Appendices	44
4.1. Set-up	19		
4.2. Results	20		
4.3. Conclusion	21		
5. Vision	22		
6. Classification of Influence	23		
7. Concepts	24		
7.1. Concept Vrijhof	24		

Summary



The objective of this research was to create a new design for the coffee corner and hallway of the library of the University of Twente. This should be done since the current design is outdated and not attractive. It is a dark and worn out area which is not a calling card for the library.

To change this situation, a new concept should be designed. This new design should inspire people to study and give them an attractive place to relax. To come to a new design, research is done, and a design process has been completed.

The report started with setting up the research question and sub questions. The research question is *‘How can the entrance, including the coffee corner, of the University of Twente Library be changed into an area that meets the criteria of the Library, Campus & Facility Management and the users?’*.

The first step of the research is the analysis. The analysis is divided in two parts. First, a stakeholder analysis is held to get the different criteria clear. Thereafter, a situation analysis is done to get a clear overview of the current situation. From this analysis follows four themes that are used for the ideation which is the second step. The themes are University of Twente, Nature, Coffee Corner and Library & Vrijhof. University of Twente was chosen, because that is where the library is located, and the library wants a connection with the High Tech Human Touch appearance of the university. The nature is used as a theme, because there is a lot of green in the environment and nature has a positive influence on the well-being of students. The third theme is Coffee Corner which is based on the use of the area and it has a trendy look which could make the area attractive. The last theme is Library & Vrijhof to create recognition between those and the new design and to make sure that the new design fits in the environment.

The results of the ideation are presented to the different stakeholder groups during a co-creation session. In this co-creation session, the stakeholders express their preference for the themes Nature and Library & Vrijhof. With input from the co-creation session and with information from the analysis, a design vision is set up. This vision is as follows: *A design for the hallway and coffee corner which improves the well-being of the students and which is a calling card for the library.*

This vision leads to a research how the design could improve the well-being of the users. This research is done with the classification of influence of Tromp, Hekkert, and Verbeek. Thereafter, the concept phase starts wherein two concepts are developed. One concept is based on the Vrijhof and consists mainly brown wooden elements. The other concept is based on nature and consists more green elements.

The two concepts are tested with staff members of the library and CFM with walkthrough simulations. This test leads to the final concept which is based on the nature theme but combined with the wooden elements of the Vrijhof. Some special features of the concept are the canvas acoustic green walls, the walking map, the tree based tables and the phone cells.

In the report is also described how the design contributes to the well-being of the students. This well-being aspect is integrated in three ways, namely nature, seducing to go outside and comfort. Furthermore, a cost estimation is made for the final concept together with an execution plan. The concept will be executed in several steps to keep it affordable.

The research finishes with a final test. This test is held among users. The test compares the current situation with the new situation and the new situation scores better on all aspects. Examples of the aspects are attractiveness and well-being. The report ends with the conclusion and recommendations. In conclusion, it can be said that the design meets the criteria. It improves the well-being of students with the nature elements and it is more attractive. However, there is more research and improvements possible. Among others, how well the intention of the design to improves the well-being really works out on the students when the design is realised.

Introduction

1

When you walk to the library, you climb up the wooden stairs and then, you enter a non-attractive grey hallway to the library, you pass two old-fashioned locker units and then by entering the library you have to pass the ugly gates. You start studying and after a while you want to have a break, you go to the coffee corner, a dark and grey space with a bad atmosphere. These are the two main user scenarios for the area that is redesigned.

The described area is shown in green in Figure 1. It is called ‘Area X’ in this report. Area X is located in the Vrijhof, which is the culture building of the University of Twente. The area that is redesigned consists of a hallway (striped) to the library and a coffee corner (checked) for the users of the library. The goal of this redesign is to make people feel more comfortable, to make the area more attractive and to give the library a calling card with the redesigned hallway and coffee corner. All things considered, the redesign should satisfy the criteria of the stakeholders.

According to above, the objective of the assignment is to create a new design that meets the criteria of the different stakeholders. Therefore, the following research question is set:

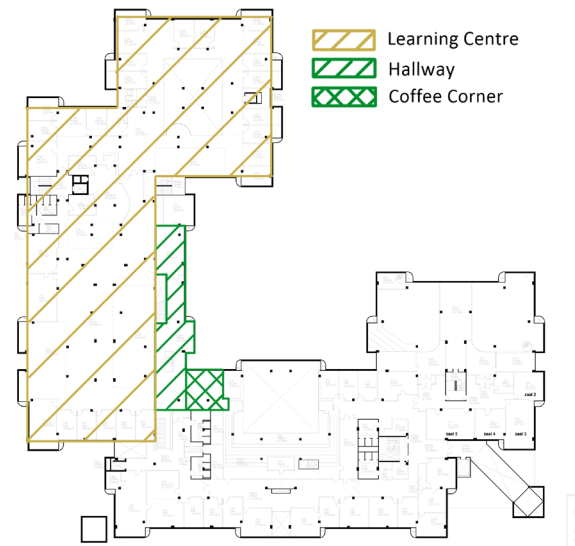


Figure 1. Area to be redesigned

How can the entrance, including the coffee corner, of the University of Twente Library be changed into an area that meets the criteria of the Library, Campus & Facility Management and the users?

This research question is worked out in three phases: the analysis phase, the design phase and the test phase. Each phase contains several sub questions which are described below.

In the first phase an analysis on the different stakeholders, on the users and on the current design is made. The users and the current design are observed, and different stakeholders are interviewed to hear their wishes and their criteria. A result of these interviews was that the different stakeholders do not share the same vision for the future of Area X. This all is described in chapter 2. The following sub questions are used in this phase:

- What are the criteria of the Library?
- What are the criteria of Campus & Facility Management?
- What are the criteria of the users?

The next phase is the design phase. It starts with the ideation in chapter 3. The sub question that is used in this phase is: How will the criteria of the stakeholders be implemented in the design? This phase started with choosing four different themes. These themes were based on the analysis and are used as a basis for the ideation. After the ideation a Co-Creation session was held with the different stakeholder groups. The session was held due to the different visions among stakeholders as described in chapter 2 and to keep the stakeholders involved in the design process. The session was based around the ideation sheets. The set-up and results of this Co-Creation session are described in chapter 4.

The vision that is created is written down in chapter 5. This vision is the foundation for the further design process. The vision is mainly focussed on improving the well-being of students. One way to improve their well-being is by sending them outside. The way this is implemented in the design, is described in chapter 6. From these two chapters, two concepts followed. These are called ‘Nature’ and ‘Vrijhof’. All the design features of these concepts are described in chapter 7. These concepts lead to a final design which is shown in chapter 9. The integration of well-being is described in this chapter as well. Chapter 10 is about the realisation of the design with an execution plan and a cost estimation.

The last phase of the report is the test phase. This phase consists of two parts, the first part is described in chapter 8 and the second part is described in chapter 11. In these chapters, two questions are answered. These are: ‘How will the concept(s) be tested?’ and ‘How will the test results be implemented in the design?’. The first question is about the test of the concepts in chapter 7. These were shown to the staff members of the library and CFM with a walkthrough presentation. With the feedback of this presentation, the final concept is created which is a combination of both concepts. This final concept is tested with an online survey in which the new and current situation were compared. The test and results are written down in chapter 11.

These three phases combined, lead to the conclusions and recommendations which can be found in chapter 12.

Analysis

2

The research started with an analysis to get the problem clear and to research the possibilities for the design. This analysis contains two parts, the stakeholder analysis and the situation analysis. First the stakeholder analysis was held with three different stakeholder groups. Thereafter when the problem became clearer, a situation analysis was held to get a the description of the problem complete. This full analysis is described below.

2.1. Stakeholder Analysis

The stakeholder analysis was made at the start of the research to get an understanding of the problems in the current situation and to hear the criteria and vision for the new situation. This was done with separate meetings with the three different stakeholder groups. The first meeting was with staff members of the library since they are the clients and because they have raised the problem. Secondly, there was a meeting with staff members of Campus and Facility Management to hear about the technical issues and their criteria for this space, they are the owners and executors. At last, interviews with students were held to hear their opinion about the space, since they are the main users of the library and therefore the target group of this project.

2.1.1. Library

As told, the first meeting was with staff members of the library. The responsible is Olga Steen, her function is Head of Operational Information and Learning Services. She works for LISA, the umbrella organization of the library. During this meeting, it has been found that the library wants a more attractive entrance and coffee corner. They would like this entrance and coffee corner to be connected in one design. The entrance which starts with the coffee corner should attract and guide people to the library. Therefore, the design should become their calling card. In the other way, the design should guide the students to the coffee corner to

take their time to socialize and relax. The coffee corner itself, should be a place which inspires people to study. This may seem contradicting, since the coffee corner should also be a place to relax. The challenge is to find an optimum between relaxing and stimulating people to study again.

A practical criterion from the library is sound reduction. They had a lot of troubles with surrounding staff about the level of noise from the coffee corner. Therefore, this is an important requirement.

On a more abstract level, the Library wants to change their identity. In the past they were a library where one could borrow books and other study materials. However, nowadays they want to be a learning environment in which information is digitally available. The redesign is an opportunity to contribute to this change and to show the new atmosphere of the library. This could be achieved by integrating the High Tech Human Touch identity of the University of Twente in the design.

All things considered, this analysis gives the following requirements and wishes for the design:

- More attractive entrance and coffee corner
- The design should become their calling card
- The design should guide people to the library
- The design should guide people to the coffee corner
- The coffee corner should be a place for the users to relax
- The coffee corner should inspire people to study
- The sound reduction in the coffee corner and hallway should be high enough
- The design should contribute to the digital identity of the library

The owner of this area and the executor of the new design is Campus and Facility Management. To hear their vision on this space, to see which plans are realistic and what is possible on a practical level, a meeting with them was held. This is described in the following passage.

2.1.2. Campus & Facility Management

Campus & Facility Management is concerned in this research for several reasons. Firstly, it is the owner of the building and therefore it is responsible for Area X as well. Secondly, they are responsible for the execution of the new design. Since, they own the building and they do the execution, they have knowledge about the practical criteria for this space as well. For these reasons, a meeting was held with the building manager (Andries Klijnstra) and the project leader (Stef Migchelbrink) to hear their vision on this space, to see which plans are realistic and what is possible on a practical level. In the report Campus & Facility Management is often abbreviated to CFM. Their vision and main criteria are shown below.

In the vision of CFM, the area should stay neutral in accordance with the Vrijhof, since it is not owned by the Library. In the future it might be used for another purpose. Therefore, it is not desirable to connect the design fully to the library. Furthermore, it is a traffic area, this means that people should not stay there for a long time. They can use it as a walkway to the library or as a place to take their break, but they can definitely not use it to study. Therefore, it is not allowed to place seats in there, because then people can use it as a study place. Besides, when there are seats, people will stay there longer during their breaks as well.

The main criteria are about safety, rules and material use. For safety reasons, there should be a free passage as wide as the doors. This means that from the library through the hallway a two-meter-wide escape route should be free. At the coffee corner a one-meter-wide escape route from the Agora should be free at all times. These escape routes are visible in Figure 2.

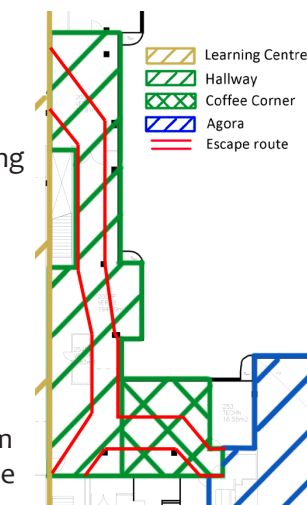


Figure 2. Escape routes

For the material usage, there are criteria as well. First of all, the materials should be easy to clean. For example, a porous floor or carpet would not be appropriate. Furthermore, the materials should be sustainable so that they can last for a long time since they will be used intensively. At last, the sound reduction is an important criterion for CFM as well. That should be considered by choosing proper materials and objects.

CFM will not limit the design process by setting a budget. They want to have fresh input and then they can decide if it is worthwhile to realise. As a reasonable advice, the costs of the realisation should be between 40.000 and 100.000 euros.

From this vision and criteria, the following requirements are determined:

- The design should be neutral in accordance with the Vrijhof
- People should not stay there for a long time
- Seats are not allowed
- The design should have an escape route as wide as the doors
- The materials should be easy cleanable
- The materials should be sustainable
- The sound reduction in the coffee corner and hallway should be high enough
- The costs of the realisation should be between 40.000 and 100.000 euros

2.1.3. Users

After analyzing the two business stakeholders, the target group of the design is analyzed. In the end, they will use it the most and therefore it is important to hear their opinion and wishes for the new design. The target group consists mostly of students who are studying in the library. They were interviewed with qualitative questions. It was asked what they thought of the current situation, what they would like to change and if they have specific wishes for the new situation.

The students do not want seats, because they are sitting all day when they are studying in the library. Therefore, they are glad that they can stand during their break. Besides that, when there are possibilities to sit down, they will probably use them. Subsequently, their breaks will take

longer and their study time will be wasted, which is something they don't want. Standing tables instead of seats are also more space effective. As a remark, they comment that during lunch and coffee times, there is not enough space at the standing tables, so more standing tables would be desirable. Another remark about the standing tables is that the threshold to join someone who is already using a standing table is high.

The current coffee corner is ugly, dark and has not a good atmosphere in the opinion of the students. There is not much light getting in there. Consequently, that makes it a depressing spot and definitely not attractive. Moreover, the lockers in front of the coffee corner narrow the space and create a claustrophobic feeling in the coffee corner. On the other hand, the new design should not be too fancy according to the students, because it should stay a quiet environment and when it is too fancy, people will probably stay there for too much time.

Some other remarks were given. First of all, it would be nice to have something to read when you are alone. Secondly, the coffee vending machines are often out of order. At last, the snack vending machine is not used a lot.

From these interviews, the following requirements are determined:

- No seats in the coffee corner
- More space at standing tables
- More light in the coffee corner
- The lockers should be removed
- It should stay a quiet environment
- Something to read would be nice
- People only want to spend a short time in the area

After this stakeholder analysis, it can be concluded that the entrance and coffee corner should become more attractive. However, people should not stay there too long. Therefore, the area should not be too fancy. An important criterion is the sound reduction, which should be high enough. A contradiction in the visions of the library and CFM is about the theme of the design. The library wants a connection with the library itself, while CFM wants a neutral area that is in line with the design of the Vrijhof. These two parties should be brought together.

2.2. Situation Analysis

After the stakeholder analysis, a situation analysis was needed to get a complete understanding of the problem. For example, the stakeholders spoke about the bad lighting. This is subsequently proved in the situation analysis. This is proved in the design observations with pictures of the current situation. Besides that, user observations are done to see what the actual use of this space is and how long people stay there. The different areas are visible in Figure 3.

2.2.1. Design Observations

The problems of the coffee corner and hallway were already indicated by the staff members of the library and the users. To see if their explanation was right and if there are more aspects that should be taken into account. After the coffee corner and the hallway, the design of the library is analysed to see which characteristics it has and if it is possible to connect this to the new design.

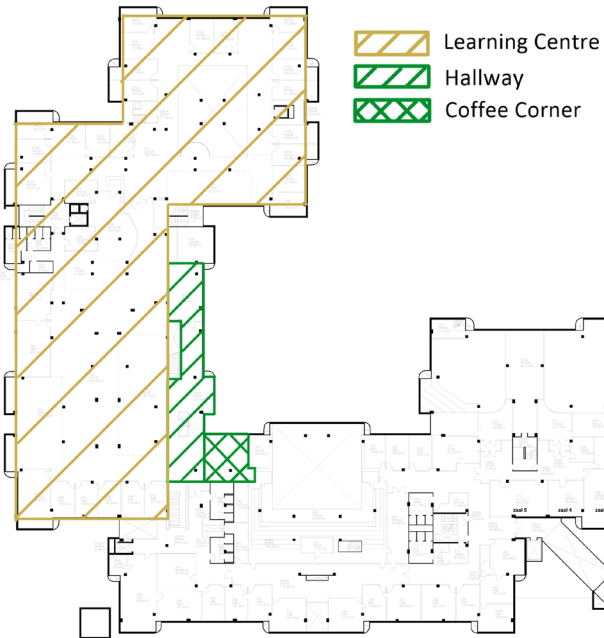


Figure 3. Situation Analysis Area



Figure 4. Hallway floor

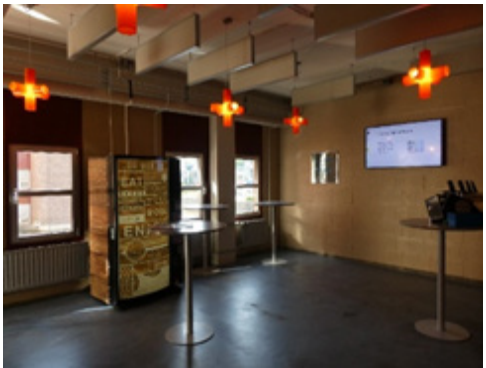


Figure 5. Coffee corner



Figure 6. Vrijhof doors and frames

Coffee corner

A few things are recognizable for the current situation in the coffee corner and the hallway. The current floor in the hallway is red (Figure 4) and in the coffee corner it is blue (Figure 5). The window and door frames are dark brown, the doors itself are blue, this combination is recognizable for the Vrijhof (Figure 6). The rest of the area has a concrete look with grey and white painted bricks (Figure 5). The area is quite dark, the current lighting is too soft and the lamps do not match with the environment. Through the whole area, baffles are hanging at the ceiling for sound reduction. However, the library and CFM are not satisfied with the appearance of these baffles. In the coffee corner and in the hallway, screens are hanging which are used for narrow-casting. Furthermore, a lot of tubes, electricity wires and other materials are hanging around which give the area a messy look.

In the area, there are two locker units placed (Figure 7). These were used in the past when it was not allowed to take your bags and jackets into the library. Nowadays, they are rarely used and one of them is already out of

order. The locker unit in front of the coffee corner is blocking the entrance to the coffee corner, which gives a narrow feeling in the coffee corner.

Library

When you look at the library itself, the concrete look is dominating as in Figure 8, but this image is changing. In the last year, plants were added and the flooring was replaced. The floor that connects the library to the hallway has a copper appearance. Furthermore, wooden elements are recognizable. These wooden elements which are visible in Figure 9 match with the stairs and a part of the hallway that has already been refurbished. The refurbished area in the hallway, is completely covered with wood (the floor, the walls and the ceilings). The last recognizable element is the purple color that is integrated in several furniture. Overall the library has a sleek appearance with angular furniture and everything is placed coherently.



Figure 7. Locker unit

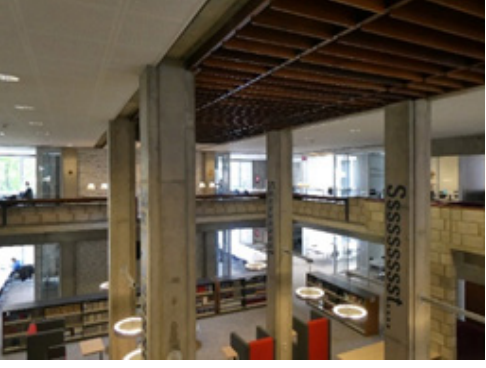


Figure 8. Concrete look library



Figure 9. Wooden elements

2.2.2. User Observations

The users are the target group of this design. Therefore, it is important for the design to meet the needs of the users. To see what the main activities of the users are in the hallway and coffee corner, an observation was made. From this observation, it follows that there are two hallway user types. These two types of hallway users are: walkers and callers. Furthermore, there are three coffee corner user types. These three types of coffee corner users are: vending machine users, people who take a break and cleaning staff.

People use the hallway as entrance or exit to the library. So, they are just walking there while looking on their phone, chatting with others or looking around. Besides, people use the hallway as a place to call. It is not desirable to call in the library, so they walk to the hallway and have a call. Usually, they stand mainly around the locker unit in the hallway and between that locker unit and the doors to the library. Most of the times, at least one person is having a phone call there. This was mentioned in a future study of the library by van Dijk, Nusselder, Tooren, Verhaak, and Weghorst (2017) as well and they supposed to create a quiet spot for calling or phone cells.

The coffee corner is mainly used by library users who are taking break there. A lunch break or a coffee break. They walk first to a table to place their food on and then they walk to the vending machines to get a drink. While standing at a table, they chat with friends, look on their phone, read a newspaper from the library or they have a phone call with someone. Other users just take something from the vending machine and then walk away to another place in the building or go outside. The last type of users are the cleaning staff who have their storage in the back of the coffee corner. It is important that they have enough space to take their carts from there.

From the observations, the following requirements are determined:

- Users should have a place to take a call
- Leave space in the coffee corner for the cleaning staff

2.3. Conclusion

Concluding this analysis, we can say that the library wants a attractive design that will be their calling card and which satisfies the students needs. The coffee corner should be a relaxing and inspiring place. CFM does not totally agree with this since they think it should stay a neutral area. It is a challenge for the design to satisfy both criteria. A co-creation session can help with this, this is described in chapter 4. Furthermore, there are different users in the area, not only students who take a break in the coffee corner, but for example also cleaning staff. All the different users should be taken into account for the design. Sound reduction is another aspect that should be taken into account for the design. The last challenge for the design is to create an atmosphere where people can relax, but where they will not stay too long. All these design requirements, which are written down below the sub-chapters will lead to the final design. This design phase starts with ideation which is shown in the next chapter.

3

Ideation

After the analysis a lot of directions for ideation were possible. To keep it structured and to have inspiration for the sketches, four themes were chosen for the ideation. These themes point in different directions, while being connected to the analysis. The themes are: University of Twente, Nature, Coffee Corner and Library & Vrijhof. For each theme, first a collage is created and therefrom several sketch sheets follow with tables, floors, walls and ceilings. All the collages and sketches are visible in Appendix I.

3.1. University of Twente

The library is part of the University of Twente. To emphasize this, it is important that the library is in line with the identity of the university. The University is well-known for its campus. The campus consists of university buildings, student accommodations, culture and sport facilities and a lot of nature (Krijnsen, Booijink, & Janssen, 2011). Another aspect of the university is its motto: “High Tech Human Touch”. High tech engineering combined with a human touch. This is expressed visually in the corporate identity created by Studio Dumbar (StudioDumbar, 2019). It was a wish of the library as well to implement the identity of the university in the design.

In the collage (Figure 10) you see some pictures from the campus and some pictures that represents HTHT where it is used in other buildings on the campus like the VR-Lab and the Design Lab. At the bottom you see the icons which are part of the corporate identity of the university. This all together creates an image of the university and is used for the ideation of this theme.

In the ideation, you see the floors which are based on the HTHT icons. The yellow and the cube table as well. The green and brown signs were inspired by a design in the DesignLab and the light brown table as well. The two brown tables are linked to the high-tech appearance of the VRLab and the letter tables link to the big letters of the university. These letters

could be used as barrier as well. The scenario on the top is sketched in the HTHT appearance.

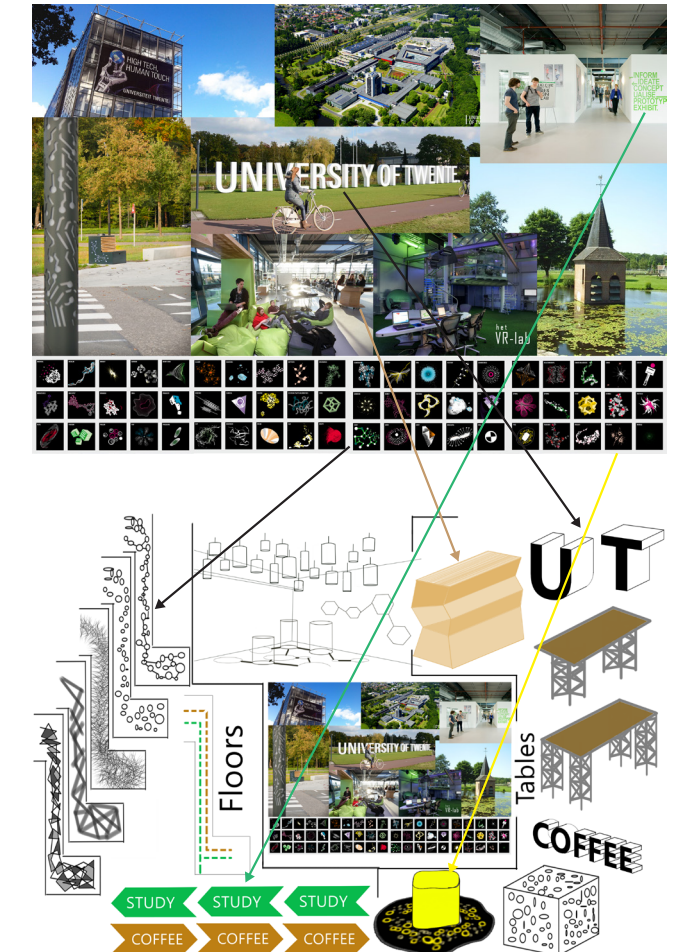


Figure 10. Collage and ideation University of Twente

3.2. Nature

The theme Nature arises from the future vision of the library and the researches of Elizabeth Nelson which are described in the analysis. Both researches tell about the positive impact of green objects in a learning environment. Moreover, the campus and the region are covered with trees, as described in subchapter 3.1. Therefore, there is also a connection with nature.

In the collage (Figure 11), different kinds of nature are showed. The brain tree in the middle is linked to the high-tech appearance of the university and there are also two pictures of the campus added. The middle left picture is used as inspiration for the bottom ideation.

In the top ideation you can see the two walls which are the brain tree with spread roots on the floor and an abstract display of wood with grass on the floor. The ceilings in both ideations are created to bring nature into the coffee corner, as suggested by van Dijk and Nelson in the analysis. The floors are sketched to guide people from the learning centre to the coffee corner and the vending machines. The tables are in different levels of abstraction based on trees. By the ideation of this theme, the idea came up to not only bring the nature inside, but to stimulate people to go outside to the real nature, to increase their well-being even more. One of the ideas to stimulate people is by adding a map to the design. This map shows walking routes on the campus and should inspire people to go outside. This map could be placed on the floor, on the wall or on a tabletop as can be seen in the top ideation.

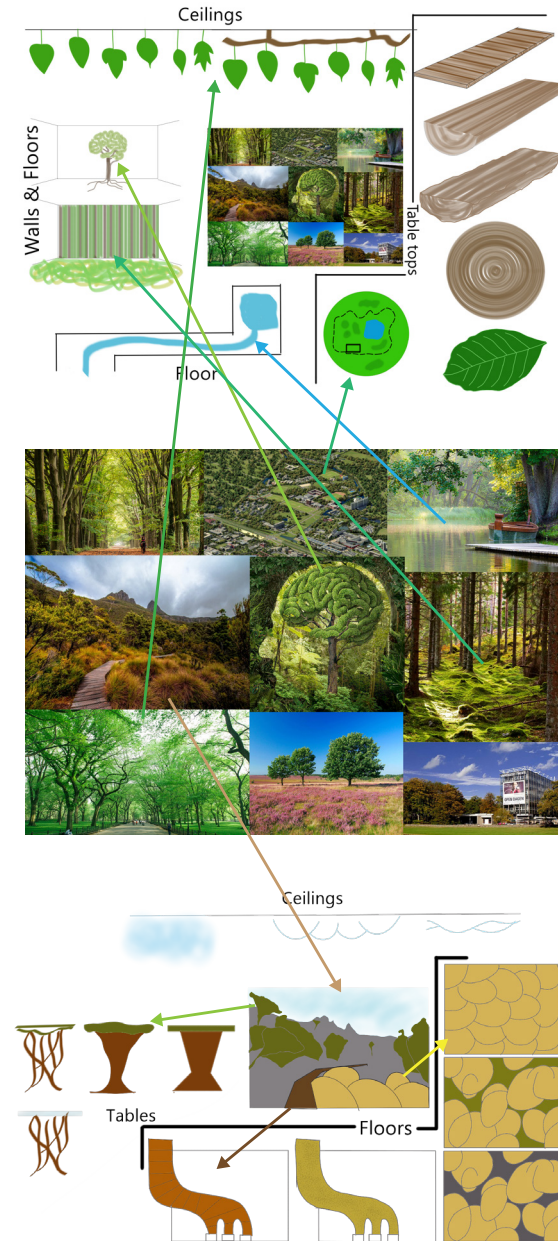


Figure 11. Collage and ideations Nature

3.3. Coffee Corner

The Coffee Corner theme is based on the main activity of the area, namely drinking coffee. In the last years, the amount of trendy coffee corners has been increasing. From this it follows that coffee corners are a place where people like to stay and it could create an association with coffee when they see the same style in this area (Sterk, 2015).

Several coffee corners are shown in the collage which can be seen in Figure 12. In the middle you see what it is all about, namely coffee. The brown and mocha colours are clearly present, which create a living room atmosphere. Besides, you can also see a lot of different shapes.

The bottom ideation in Figure 12 is based on two particular shapes with a triangular sleek design. This design is used as a style icon. It is commonly found in coffee corners. Another example is the hanging mugs. These triangular shapes look like the HTHT appearan top ideation is mainly focused on the shapes of the tables. The floor was a small joke that it looks like the coffee is leaking out of the vending machines. For the ceilings, the hanging cups were translated to the library with hanging books.

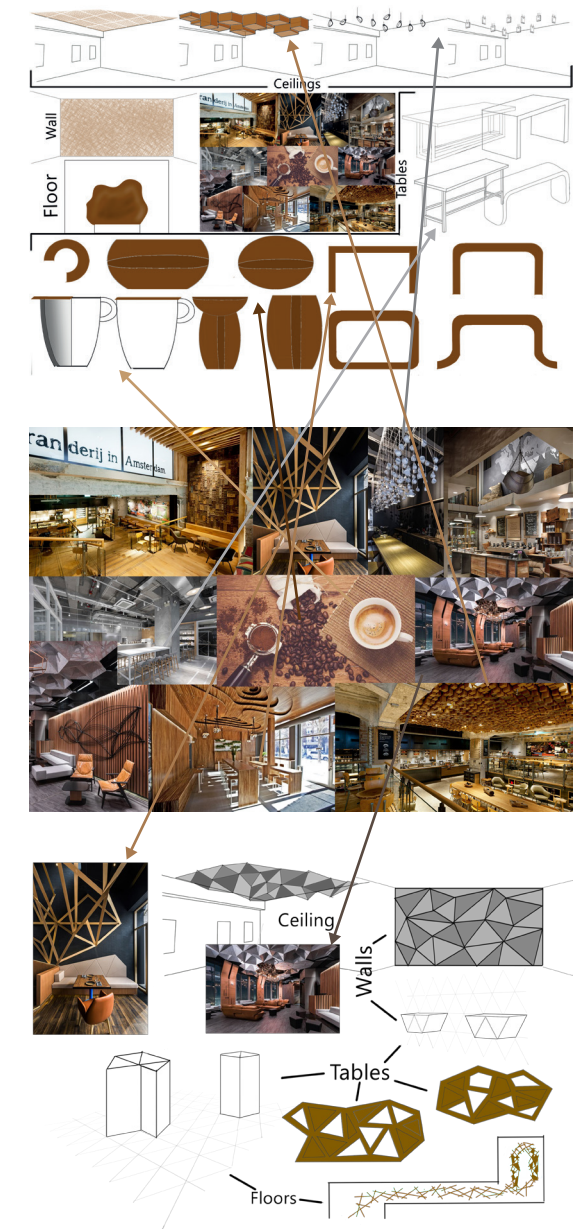


Figure 12. Collage and ideations Coffee

3.4. Library & Vrijhof

The coffee corner and the hallway are mainly used by library visitors. Therefore, there is a direct link between them. The library wishes to match the style of the Learning Centre and the new design and it is a wish of CFM that the new design fits in the style of the Vrijhof. Therefore, this theme is about the physical and visual elements of the current Learning Centre and the Vrijhof.

In the collage of Figure 13 all the different aspects of these two are taken in account. The inside and outside of the Vrijhof, different elements from the learning centre and the current design of the hallway and the coffee corner. The red floors stand out but those will be replaced soon. Besides, the building has a concrete and angular look and the light wooden elements are visible.

For the tables in the bottom ideation, you see the link to the blue doors of the Vrijhof and the purple coating of Learning Centre furniture. The wooden walls are the same as the current walls in the refurbished part. However, something could be milled into it. For example, the map of the nature theme could be milled into it. The floors are based on current floors as well. The granite floor is based on the two granite strokes in the hallway. The tile floor is a combination of the new floors in the library centre and the nature theme.

In this chapter, the four themes with their collages and sketches were presented. A wide variance of styles and objects showed up. These things can be connected in the further design process and some things are already combined. Think of the map of theme nature which is repeated in the walls of theme Library & Vrijhof. To see what would work for the design and to see what would not be useable, the ideation phase was presented to the stakeholders. This was done during the co-creation session which is described in the following chapter.

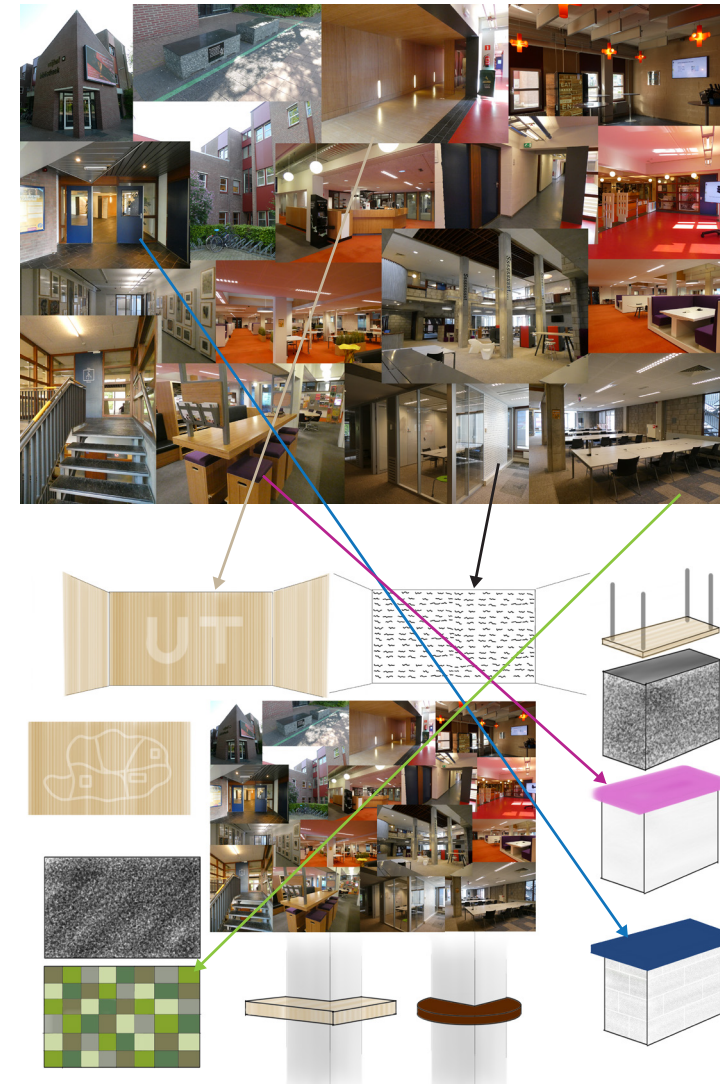


Figure 13. Collage and ideation Library & Vrijhof

4

Co-Creation

4.1. Set-up

The schematic set-up of the co-creation session can be found in Appendix II.

The co-creation session was held with three groups of stakeholders and Luuk van Ewijk as supervisor. The stakeholder groups were the Library staff, CFM and students. Each stakeholder group was represented by two persons. It was decided that all groups should consist of two persons because all groups would then be represented equally. More participants make a discussion more complex and results in more different opinions being expressed. Therefore, it was chosen to not have more participants.



Figure 14. Co-Creation Session

The co-creation session was set up with three goals in mind. The first goal was to get a common vision. As described in the stakeholder analysis, the different stakeholders had conflicting opinions about the use and the design of the area. Among others, LISA wanted the design to be a calling card for the library whereas CFM said that it should stay neutral in line with the Vrijhof. Furthermore, LISA wants seats, but the students and CFM did not want seats. Therefore, it was important to find a vision that is in line with the criteria for all the stakeholders. During the co-creation session the stakeholders could discuss with each other and we could find solutions which everyone could agree with.

The second goal was to get feedback on the ideation phase. It was early in the design phase, so they could have influence on the direction of the concept phase. For example, which ideas are most likely to realise and which ideas fit the best for this problem in their vision. Besides, the stakeholders would look at the ideation sheets without pre-knowledge and from their own perspective. These fresh views could lead to new ideas that could improve the design vision and that is the third goal of the session, to get new ideas. This could happen by inspiration that the stakeholders got from the ideation sheets I presented. It could also happen that they combine different ideas into new ideas.

These three goals together should improve the design phase and should lead to a design that fits all the stakeholders.

This group of stakeholders was also meant to test the final design with Virtual Reality.

The session took one hour and started with only a short introduction on the work done so far. This was done to prevent biasing, so they could give their feedback blank on the ideation. During this feedback session the different stakeholder groups got different colored post-its to see which group gave which feedback. This feedback session gave insights for the second and third goal of the session, because the ideas were reviewed and already came up. Afterwards, an explanation of the different themes and the created ideas was given. Thereafter, the discussion started to fulfill the first goal of the session and to get more feedback and ideas for the second and third goal. The results of the feedback and the discussion are elaborated in the following paragraph.

4.2. Results

The results of the co-creation session are first described per theme. These results are associated to goal two and three. Thereafter, the general results are described. These are associated to goal one and two.

University of Twente

The first view on the University of Twente ideation was not so positive for several reasons. In this ideation the floors are too busy. They should stay more quiet and neutral. Besides, the chilly colours are not suitable for a cosy coffee corner. However, in combination with the wood it could be a good setting. Furthermore, the ‘High Tech Human Touch’ appearance does not really connect to the appearance of the learning centre.

On a practical level, CFM was not positive about the standing tables. The massive tables are not well designed considering ergonomics. You cannot place your feet below the table, so there will be a distance between your body and the table. This is not desirable, because people have to bow their backs to reach the table. The metal frame tables are not well designed for cleaning. There are too many places where dust or other filth could stay. So, the standing tables should have a design that is well cleanable and that fits to the ergonomics of the users.

Nature

The feedback on the nature theme was mainly positive. Particularly about the green colours of the sketches. They give a natural and fresh look. There were suggestions to combine it with the wooden elements of the Vrijhof ideation or with the colours of the Coffee ideation. Another suggestion was to combine it with a technological look to represent HTHT. The library staff members like the clouds as well because it brings the nature into the building and creates a lighter environment. Furthermore, they were positive about the creative ideas for the paths on the floors. Nevertheless, CFM told that this will be outdated soon since the university is developing a maze mapping system.

Again, the open legs for the standing tables could create troubles for cleaning. Therefore, it is not desirable. Furthermore, a wooden floor is not desirable since it creates a lot of noise when people walk on it. This

contributes to the noise nuisance that is already there. To lower noise levels, a carpet would be a better option but that is not suitable for cleaning. At last, the yellow colours that are used in the ideation for the floors are not very appealing and not directly relatable to nature.

Coffee

The opinions about the Coffee ideation were moderate. The wooden appearance does connect to the environment and the learning centre. However, the brown colour is too dark for the coffee corner. It gives a sleek appearance, but a lighter variant would fit better to space since it is already a dark area. Besides, lighter colours give a feeling of more space as well. For example, with the jute wall and ceiling. Furthermore, they like the idea of hanging wall tables, but not particular these ones, so other variants may be desirable.

This ideation contains too much coffee content for the area. Drinking coffee is one of the uses. Nevertheless, it should not be emphasized too much. For the abstract sketches, CFM likes the designs. However, there is no connection with the building and it is probably too busy for a relaxing area.

Library & Vrijhof

The first view on this theme was directly positive. They recognized the wooden stripe walls and they liked it. However, there should not be too much of this. The colour scheme is good since it is important that the area becomes better illuminated. This theme with its colour scheme contributes to a better illuminated area. Moreover, the floors in this ideation do not fit in the area since they are too dark.

The students like the tables around the pillars. CFM however, is not positive. CFM does not like it because you cannot see each other well. Furthermore, CFM thinks that the text wall is too busy for the coffee corner. The standing tables of this ideation look massive and heavy. This could be inconvenient when they have to be moved and they could give an obstructing appearance which could fill the space in an optical way.

At last, the purple colour that is used in the library will no longer be used

for new furniture, so it is not usable for the coffee corner. The blue colour in the Vrijhof is a bit outdated. Maybe, it will not be there for a long time anymore. Therefore, it is not a good idea to use these colours in the further design process.

4.3 Conclusion

They like the Nature and the Library & Vrijhof themes the most. They like them because of the colours that gives a bright, sleek and fresh look. Furthermore, these themes connect most to the environment and create recognition. The stakeholders would like to see a quiet and simple combination of those two themes in the concepts. Although, they do not really like the University of Twente and the Coffee theme, some elements and aspects of these themes could be used in the further design process.

As a remark, not all the things they do not like should not be used, because when it is placed in another environment it could look different or it could be integrated differently. Furthermore, the wrong tints in the sketches could create wrong associations, but when it is sketched in another tint or colour it could be better.

All the stakeholders really like the idea of a walking map where one can see how long a certain walk on the campus takes. It should motivate people to go outside, to breathe the fresh air and to experience nature. The second and third goal were achieved since they gave a lot of feedback on the ideation sheets and they create new ideas by combining different elements. The first goal was not really achieved. It was hard to create a common vision. Fortunately, their opinions came closer together and there is enough information now to create a design that fits to the different views.

Resulting from the session, the following requirements are determined:

- Standing tables should fit to the ergonomics of the users.
- Standing tables should be easy cleanable.
- The floors should not contribute to the noise nuisance.
- Light and fresh colours should be used in the design.
- Keeps the designs of the standing tables open.

Vision

5

After the analysis, ideation, and co-creation session, it was time to create a vision for the further design process. This design vision is based on the analysis and the co-creation session and the requirements which follows from these two. Most of the requirements for the design are physical requirements. The vision is more focused on the abstract side of the design.

During the analysis, it turned out that nature has a positive influence on the well-being of students. Further, there are requirements from the library as well that the students should relax and be inspired to study during the breaks. In addition, the library wanted a more attractive area what should work as a calling card. In the co-creation session, it became clear that the most attractive design will be a combination of the themes Nature and Vrijhof & Library. They really liked the idea of a map to seduce people to go outside into the nature. This all combined resulted in the following vision:

A design for the hallway and coffee corner which improves the well-being of the students and which is a calling card for the library.

Every day, there are students studying hard in the library which is located in the Vrijhof. This building is made of grey concrete and dark brown wood and has bad lighting, this makes it a depressing environment. Nowadays, students experience pressure to achieve their goals and end up having psychological complaints (van Vreden & Thijssen, 2019). A depressing environment does not increase their well-being but make it even worse. Besides, the students are sitting all day. They only take a few breaks to drink a cup of coffee, to eat something or to go to the toilet. According to Huysmans, van der Ploeg, Proper, Speklé, and van der Beek (2015) sitting is bad for your well-being which influences your health.

Furthermore, it was intended by van Dijk et al. (2017) that the well-being of the students should increase. Studying take a lot of concentration. Consequently, students get exhausted. Hence, they need breaks to recover. Therefore, the design should support the students to take breaks and give them opportunities to recover.

As you can read above, there are several reasons to take well-being as a baseline value for the design of the coffee corner. Mainly because of the depressing environment, but also because sitting is bad for the health of the students and because students get exhausted when they concentrate on studying. How this well-being aspect is integrated, is explained in chapter 7: Final Design.

Besides this well-being aspect of the vision, there is the calling card aspect as well. The library wants to attract new students to their library. However, the current hallway which leads to the library is not attractive and will therefore not lead students to the library. With the new design, this should be changed into a concept that lures students to study in the library.

This vision is the basis for the further design process. But before the design process goes on, the integration of the well-being aspect will be worked out more in chapter 6.

6

Classification of Influence

From the vision, it follows that the design of the coffee corner should improve the well-being of students. The length of the breaks and the place where the students take their break influence their well-being. The optimal duration for a break is fifteen minutes (Vozza, 2017). In chapter 5 it is described that students should go outside during their break. The design should help students to take a break around 15 minutes and to go outside. This could be done in several ways, both positive and negative. These options are placed in the classification of influence model which is created by Tromp, Hekkert, and Verbeek (2011).

The classification of the influence model (Figure 15) is based on two different dimensions: force and salience. These two dimensions are placed on the x and y axis in the chart. For force, it is from strong to weak and for salience, it is from hidden to apparent. This division leads to four types of influence. These types of influence are: decisive, coercive, seductive and persuasive. Decisive influence is strong but not visible. People will not directly recognize that someone tries to regulate their actions. For coercive influence on the other hand, people can experience that there is external influence, but it is still strong. The persuasive influence is visible, but it does not have strong results. At last the seductive design, this is not strong and not visible and therefore people think that their actions are internally motivated.

Several options to reach the goals of the design as stated in the beginning of this chapter are described below. There are negative and positive options.

1. The first idea is about seducing the students to go outside. This can be done by integrating a map of the campus with different walking routes in the coffee corner. These walking routes, which have the needed time shown, should encourage people to go outside.
2. A more indirect way to seduce them to go outside is by creating a

natural feeling in the coffee corner, so people can have the association with nature which could seduce them to go outside.

3. The third option for sending people outside is by placing quotes in the area which motivate them to go outside. There are two options, using negative quotes about staying inside or using positive quotes about going outside.
4. To make sure that people will not take long breaks it is an option to make the area uncomfortable. When it is uncomfortable, people will not stay there too long. This can be done by leaving seats in the area. They therefore have to stand. Subsequently, they will not do that for a long time.
5. Another possibility is to make it really uncomfortable by for example placing peaks on tables or even the floor. This will ensure that people do not stay there for a long time.
6. To do it in a more friendly way, you could show them how much time they have left before the fifteen minutes are over. This could be done in different ways, for example with a circle around the person on the floor which narrows while the time passes or by showing meaningful colours.
7. The last option is to show just the time in an attentive way. Then, the users could be aware how much time they spent there and how much time they have left. It should also be clear for them that the optimal break length is fifteen minutes.

These seven options are placed in the model of Tromp et al. (2011) to see how they influence the behaviour of the users. Afterwards, some of the options are chosen. These choices are supported with arguments in chapter 9.

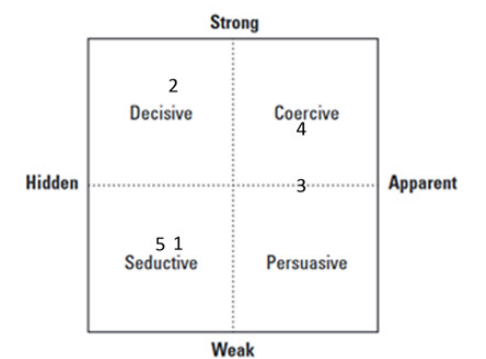


Figure 15. Influence classification

Concepts

7

After the ideation, the creation of a vision and the influence classification, it was time for the concept phase. In this concept phase, all the collected knowledge of the steps before was taken in mind during designing. From the co-creation session, it followed that the stakeholders would like to see a combination of the themes Library & Vrijhof and Nature. Therefore, both concepts are based on this combination. The first concept is mainly based on the Library & Vrijhof theme with Nature elements and the second concept is mainly based on the theme Nature with Library & Vrijhof elements. In these concepts, the Library & Vrijhof theme creates recognition of the building and the learning centre and makes sure that it fits in the environment. The Nature theme takes care for the well-being part of the design. The combination of this should create the calling card for the library.

The concept phase stated with modelling the current situation in SolidWorks, a program to model 3D drawings. This was done to see what was possible and to use it as a starting base for the concepts. Furthermore, you can easily make quick changes in the designs in SolidWorks and exchange the furniture to see what fits and what does not. The final goal was to use the SolidWorks 3D model for testing the design with virtual reality.

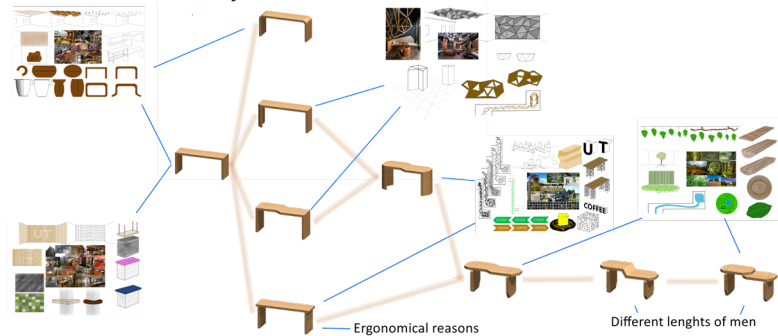


Figure 16. Table evolution

7.1. Concept Vrijhof

This concept is mainly based on the appearance of the Library & Vrijhof. Besides, elements and aspects of the Nature theme are integrated as well. As told in the introduction about the Library & Vrijhof theme, this concept is focused on the recognition part of the design. The full design is visible below in Figure 17

It started with designing tables, the iteration on this object is visually shown in Figure 16. The brown lines show the evolution of the table and the blue lines show where the ideas came from. As you can see, all the four ideation themes are combined in this table.

The final table is used in the concept. It is in line with the trendy coffee style. The material relates to the Vrijhof, the organic shape follows from nature and the construction relates to the University. A clear overview of all the designed tables is visible in Appendix III.

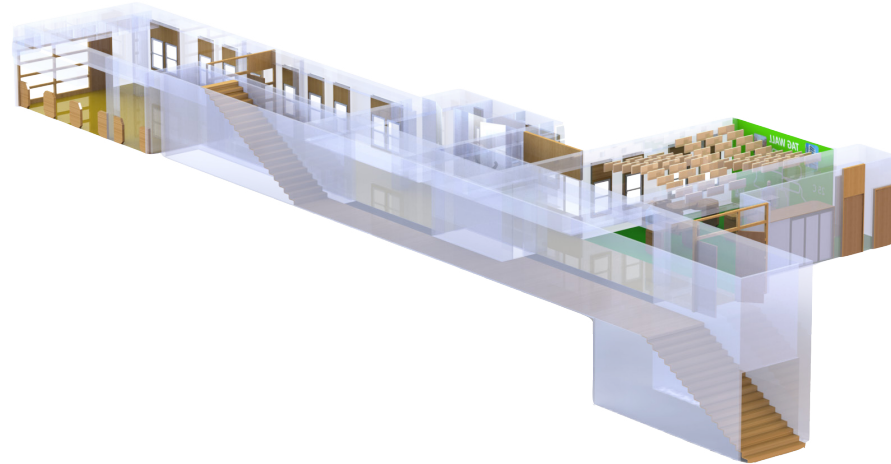


Figure 17. Concept Vrijhof

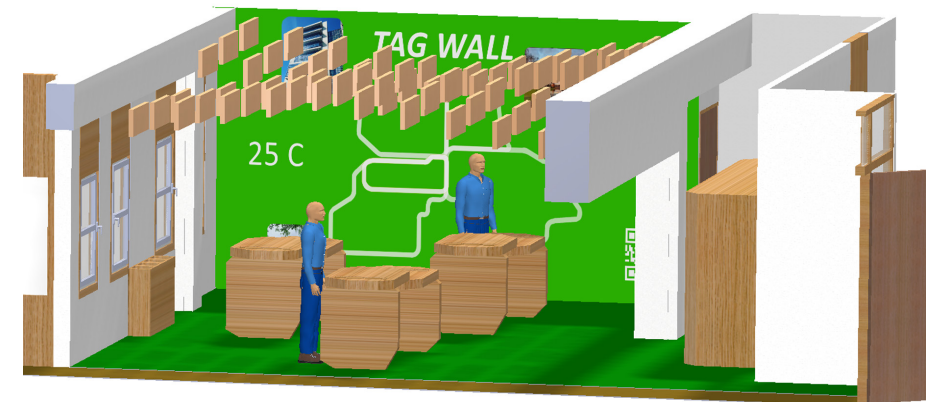


Figure 18. Coffee corner Vrijhof



Figure 19. Phone cells Vrijhof

To make it more coherent, all the wooden elements are coloured in the same colour. This colour is the light brown colour of the stairs of the Vrijhof and the service desk in the learning centre. It creates a connection to the rest of the building. You can see this colour in the Figures 18, 19 & 22. Besides, the vending machine casing, which you see at the right in

Figure 18, is made of the same wood and has a cut corner that matches with the design of the tables. At last, the baffles for sound reduction that are hanging on the ceiling are coloured in the same colour and they are hanging in a wave shape to make it more playful.

Several aspects of nature are also included. It is integrated in the floor in the coffee corner which is green and in the green tag wall in the back (Figure 20). The tag wall is an interactive map which should seduce people to go outside. The lines form a map with walking routes around the Vrijhof. People can take pictures along the route, upload it via the QR-code and then it can be projected on the wall. Other people can see this and could be inspired to go outside as well. Furthermore, other information like the temperature, activities on campus or quotes to go outside can be projected on this wall. As a bonus, this wall could contribute to the new digital identity that the library wants to have.

If you walk from the coffee corner to the library through the hallway you will pass the phone cells (Figure 19). These phone cells are placed on the spot where in the current situation the lockers are standing. It is not suitable to use to this area as part of the coffee corner because the distance between the areas is too large. Besides, students are already having phone calls on this spot. Therefore, it would be a good spot to create the phone cells. There is enough space for three phone cells. These



Figure 20. Tag wall Vrijhof

phone cells are separated by walls and the fronts are made of glass to prevent it from being too claustrophobic. Half of the fronts is frosted glass to create a bit of privacy. On the doors, a phone icon is placed to make clear what the use of the cells should be.

Further along the hallway (Figure 21) going to the Learning Centre, another projecting wall is placed. This one is meant to welcome people to the library and it can be used for narrow-casting as well. There is enough space to announce events, new materials or something else. This wall and the floor of the hallway have a copper appearance which matches with the new floor in the learning centre.

At last, you enter the gates to the entrance of the learning centre (Figure 22). The choice for gates is made, to create a border between the hallway and the library. Now you can see, the library starts here. This means that people must be quiet here. It is not really closed, because the entrance should invite people to enter the library. The gates in this concept are the same as the supports of the tables in the coffee corner to create unity in the design and to have a connection between the coffee corner and the Learning Centre.



Figure 21. Hallway Vrijhof

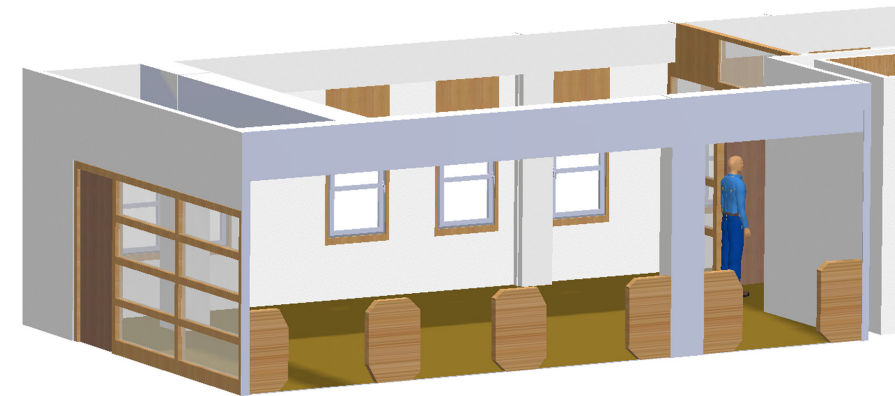


Figure 22. Learning Centre entrance Vrijhof

7.2. Concept Nature

This concept is mainly based on the theme Nature. However, the connection to the Library & Vrijhof is clearly present. Since this concept is mainly based on Nature, this concept is more focused on the well-being of the students. The full design is visible below in Figure 23.

The concept design started again with designing tables. From organically shaped tables to the sleek tables that are visible in Figure 24. Those tables are an abstraction of trees and found their origin in the tables of Figure 11. The other designed tables are visible in Appendix IV. Besides, the casing of the vending machines and the waste bin are designed in the same style as the tabletops. All the wooden elements in this concept are coloured in this green colour as well. Except for the doors. Those have a lighter green colour, which gives the design a fresh appearance.

The floor is the same as the floor in the already refurbished part of the hallway. In the coffee corner this floor is turned 90 degrees to create a clear difference between the hallway and the coffee corner as you can see in Figure 24. Furthermore, the baffles which are hanging on the ceiling are in the same colour as the floor. These baffles are placed around the lamps. The lamps look like plants with a flower in the middle.

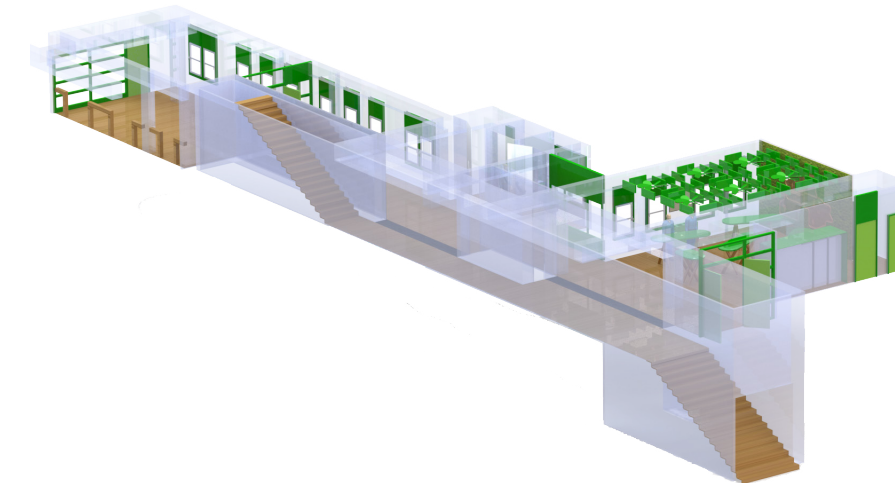


Figure 23. Concept Nature



Figure 24. Coffee corner Nature



Figure 25. Phone cells Nature

To bring the real nature inside, the wall in the back of the coffee corner and the concrete structure are covered with moss. Moreover, moss works as a sound reducer. It is placed on the concrete structure as well to create a natural feeling for the users. On the moss wall, a wooden map with walking routes is placed.

In the hallway, the same phone cells are placed as in Concept Vrijhof (Figure 25). However, this time the walls are green. The walls of the outer wall in this concept are covered with beige painted wallpaper as you can see in figure 25. The wall in figure 26 is covered with moss as well and wooden letters are placed on it, again to welcome people to the Learning Centre.

The gates to the Learning Centre are made of the same wood as the floor (Figure 27). Therefore, it looks like they are erected from the ground. They are open to prevent forming a closed area but show that this is the entrance to the library. The style of the gates is similar to the angular furniture of the Learning Centre. A lot of other gates were designed which are visible in Appendix V.

All things considered, it worked out to make two different concepts that are both based on the combination of Library & Vrijhof and Nature. Still, the concepts are both quite different and enough information should be gathered to create a final concept. To make sure that the final concept fits as perfect as possible to the stakeholders, these concepts were presented to them. They could give feedback and share their wishes and requirements for a last time. This is described in the following chapter.



Figure 26. Hallway Nature

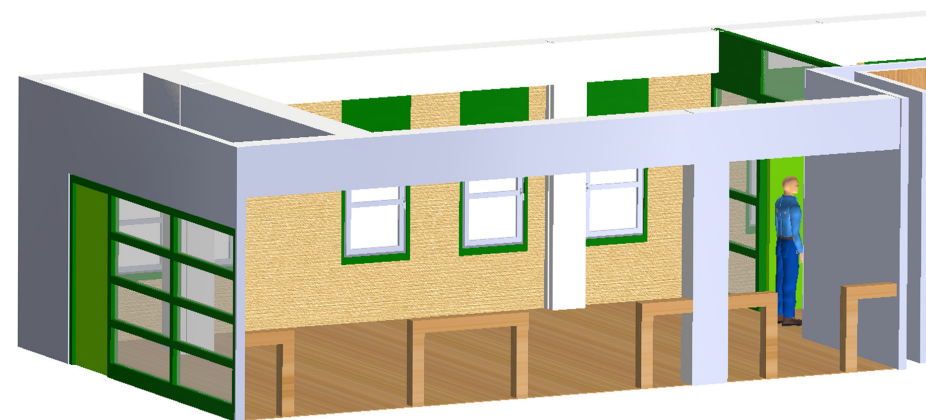


Figure 27. Learning Centre entrance Nature

These concepts that are described before were presented to the staff of LISA and CFM. At first, the idea was to present the concepts in virtual reality to get a full experience of the concepts. Unfortunately, it did not work out to create a virtual reality model with the available software. Therefore, the two concepts were shown with a walk-through and explanation about the elements. The audience was enthusiastic about the concepts and about the way of presenting. During this walkthrough they could ask questions and give feedback on the designed material. This feedback is described below. At the end of the session they could give their preference for one of the concepts or a combination.

8.1. Concept Vrijhof

When the Concept Vrijhof was shown, they directly comment on the standing tables. In their opinion, they were experienced as too massive, therefore they give an obstructing appearance when you enter the coffee corner. Besides, the blades of the tables were too thick in their opinion. Thinner blades would be better. On the other hand, they like the difference in height in the table blades. This makes the tables more playful than in Concept Nature. Furthermore, they think the gates of the entrance are too obstructing as well.

They had some questions about the interactive walls as well. What if the beamer does not work, than there will just be a blank wall. In addition, you need someone to manage the beamer to regulate what will be projected on the wall. Besides, at least two beamers are needed for the wall in the hallway. This will be expensive. Moreover, it is questionable if you would get the projection clear on the wall, due to the incoming light through the windows. At last, a white wall is not desirable, because it will get smudged.

8.2. Concept Nature

The members of the session directly recognize the theme nature in this concept when it was shown. However, they think it is too much nature. It gives the feeling that you are walking through a jungle instead of entering a library. Their suggested solution was to use the baffles of Concept Vrijhof. These baffles are more neutral and they match with the wooden elements of this concept.

They liked the idea of a wall of moss because it is a good solution for sound reduction. It is sustainable and it looks good. However, it could wear too fast and students might want to touch it, consciously or unconsciously. Furthermore, they might put their shewing gum or other trash in it. Therefore it could get ugly. For these reasons it is unfortunately not an option to use the wall of moss in the final concept. A compromise would be to place the moss on the sides of the concrete beams. In that situation it is not possible to touch it, but you still have the nature effect.

As mentioned before in the co-creation session, the wooden floor could make too much noise when people are walking on it. A good alternative for the floor could be PVC, this is wear-resistant, easy to place and looks almost similar.

Compared to the Vrijhof concept, the standing tables in this concept were seen as more open. However, they are a bit too boring. To make them more playful, they could be combined with the construction of the tables of Concept Vrijhof or use the height difference of Concept Vrijhof. At last, there are no narrow-casting possibilities in this concept. For the library, this is an important way of communication with their users. Therefore, it should be integrated somewhere. For example, there is space above the waste bin to place something.

8.3. General

Some of the comments were comments in general and did apply to both concepts, these comments are described below.

At first, they had some comments on the phone cells. Overall, they are all positive about the introduction of the cells. They think those would be used a lot since there are a lot of people calling around the library. Some people asked the following question: 'What if someone is calling there for a long time and the others are not available?'. The experience of the library staff is that the students do not bother about such problems and they can still call in the hallway like now if the cells are used. Another comment was about the privacy of the phone cells. When you create phone cells like this, you give the users a feeling of privacy, but do they really have privacy, it is a good to think about this issue.

Furthermore, the currently designed phone icon on the doors is not clearly visible. They solved this problem in the library by using cut-out icons in a frosted layer on the doors of glass. When this is done for the phone cells, it would be better visible. Moreover, a coherent styling is created when the doors in the hallway and in the library have the same design. At last, the frosted layer on the doors gives more privacy for the users.

The library staff noticed that they get a lot of questions from students where they can skype. This could be combined with the phone cells, so than you need something to place your laptop, phone or tablet on. However, this should be designed in such a way, that it is not possible to place your cup on there since this could create dirtiness. It is also not desirable to put plugs in the phone cells, because than people could use it as a study place.

There were some last questions about the concepts. In the current situation, the waste-bin is often overfull. The question was whether it would be possible to have more waste-bins in the coffee corner. On the other hand, waste-bins are often considered unappealing to look at. Therefore, it could also be an option to empty them more often. Furthermore, they were asking if the gates for the entrance of the learning centre are really needed. They think it could also be an option to create

a barrier in another way. Some examples were to use the black granite stroke as in the current situation, something hanging from the ceiling or quotes on the pillars.

In the end, the Library Staff members and CFM recommended Concept Nature with some modifications. In the final concept, less green should be used and a substitution for the moss walls should be found. Furthermore, the tables should become more playful and a solution should be found for the missing narrow-casting. At last, it was recommended to integrate the improvements of the phone cells in the final concept. This final concept is described in the following chapter.

9.1. Design

If you have a look at the final concept (Figure 28), you see that there is less green in this concept compared to the Nature concept in the concept phase. This is achieved by leaving out moss and the colour of the baffles is changed. The removal of the moss is for two reasons, it would wear too much and get dirty and the nature effect was too big in the concept phase. On the concrete it is just replaced by blank paint, but in the back, it is replaced by an acoustic canvas wall. This wall still gives the implication of a moss wall, but it is more sustainable and it is sound reducing as well. The colour of the baffles changed to lower the nature effect as well. The baffle colour from Concept Vrijhof is used because it is more neutral. It fits in the colour palette and increases the association with the learning centre.

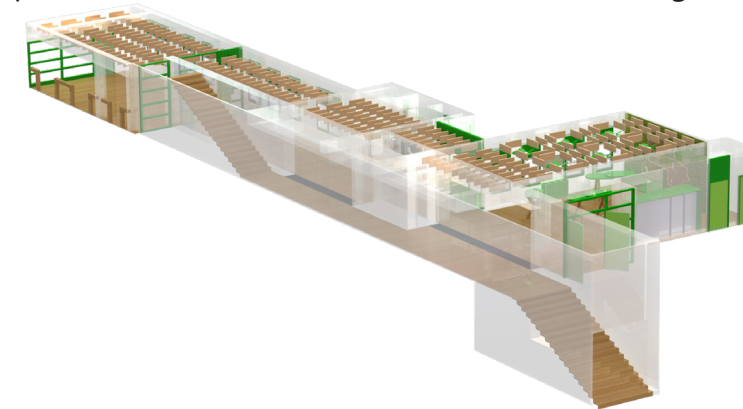


Figure 28. Final Concept

9 Final Concept

Resulting from the new insights gained during the concepts test, a final concept can be created. In this final concept, most features originate from Concept Nature. Nevertheless, some elements of Concept Vrijhof were added as well. Furthermore, some things are changed or added according to the feedback that was given during the presentation. In this chapter, the final concept is presented and the adjustments are described.

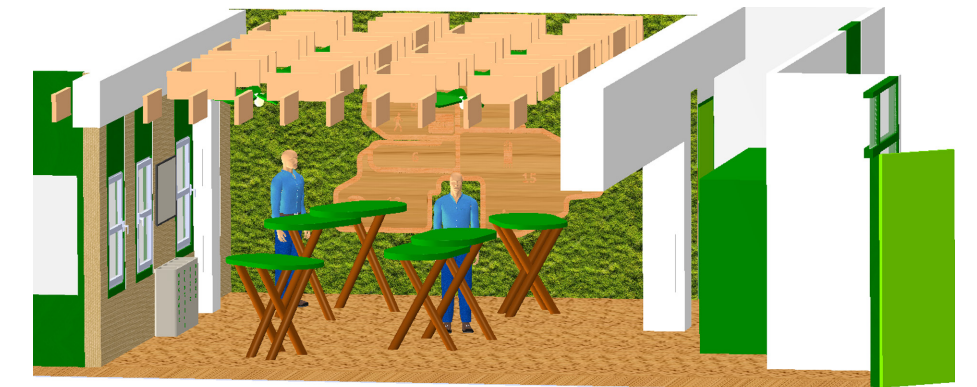


Figure 29. Coffee Corner Final Concept

The map on the wall got more icons to improve the comprehensibility of the map (Figure 32). Another adaptation is done for the tables as you can see in Figure 30. The two-layered blades of the Concept Vrijhof are integrated in the Nature tables. This is done to make it more playful and to improve the ergonomics for students of different lengths. Furthermore, the waste bin is changed into a general waste bin with green stickers instead of a designer waster bin. This is done because of the high costs of a designer waste bin. With the green stickers on it, the waste bin still fits in the design. Above the waste bin, a screen is located. This screen will be used for narrow-casting. At last, the lamps in the coffee corner are lowered for better visibility, the design of the lamp is visible in Figure 31.



Figure 30. Standing table

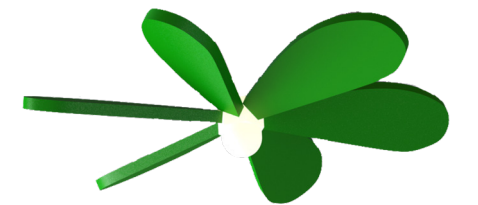


Figure 31. Lamp

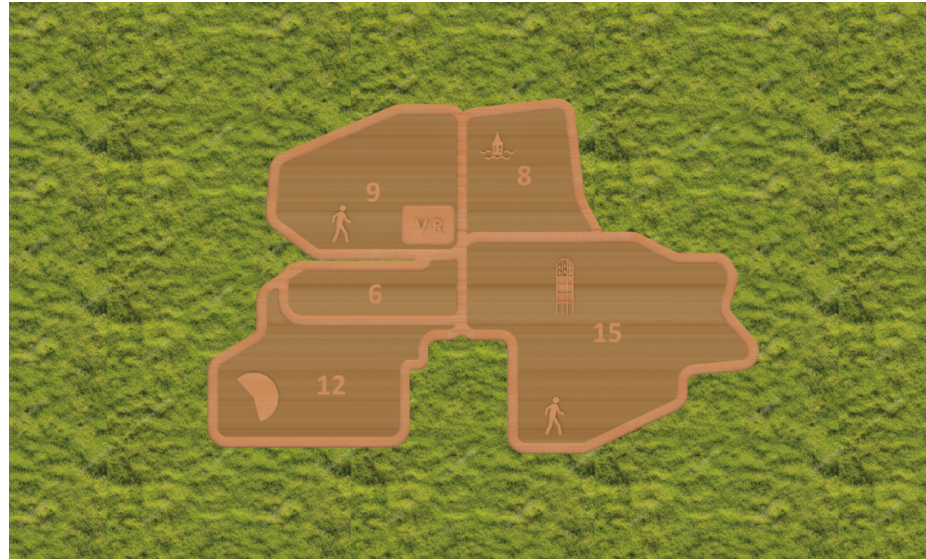


Figure 32. Canvas acoustic wall with map

In the hallway, baffles are added, as can be seen in Figure 35. The design features more baffles than the current number of baffles. This is done to create an optic ceiling. Therefore, the messy ceiling is hidden above the baffles and the baffles are not seen as sound reducers but as a design ceiling. Furthermore, the moss wall in the hallway is replaced by an acoustic canvas as well for the same reasons as described above.

At last, there are a few adaptations for the phone cells (Figure 35). The doors in the phone cells have a frosted layer on it with a phone icon cut out. This is done to improve the visibility of the icon. Moreover, this style of communication is used in the Learning Centre as well. This results in more cohesion between the Learning Centre and Area X. Furthermore, two accessories are added to the phone cells. At first, lounge bars are added to improve the comfort in the phone cells (Figure 34). People can lean against these bars as on train stations or bus stops. The second accessory is a gadget holder where people can place their phone, tablet or laptop on for video calling (Figure 33). These are designed in such a way that it is not possible to put your coffee on. If that would have been possible, people would take their cups in the cells, which could lead to dirt.



Figure 33. Gadget holder



Figure 34. Loungebar

For the total design, the wooden floors are replaced by PVC. This is done for several reasons. First of all, PVC looks like wood but unlike wood, it contributes less to the noise nuisance. Furthermore, it is sustainable, well cleanable and easy to place.

All the adaptations lead to this final concept. First, it is tested with students to see if it fits to the vision. Besides, an execution plan and cost estimation are made for this concept. This is described in the following chapters. But first, the integration of the well-being aspect in this concept are discussed.

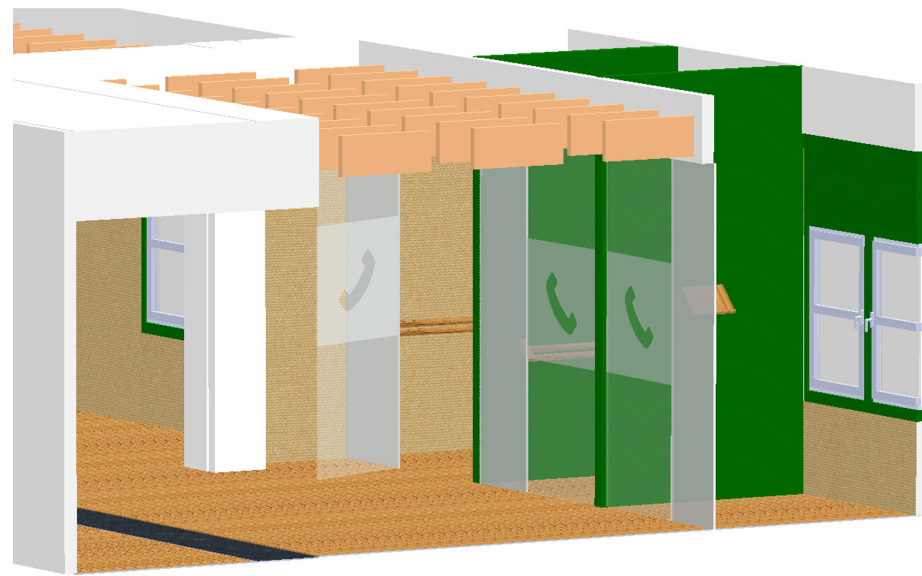


Figure 35. Phone cells Final Concept

9.2 Well-being integration

In the design vision is described that the design should be focused on the well-being of students. In chapter 8 the final concept is presented. In this chapter, an elaboration is given on how well-being is integrated in this final concept.

The value of well-being is integrated in three different aspects. These aspects are: comfort, nature, and seducing people to go outside. These three are related to each other as you can see in the scheme in Figure 36. The nature aspect is on top because that is the main aspect of this design. Comfort is part of this nature aspect but there is more comfort than only the nature aspect. The seducing aspect leads to students going into nature. This nature aspect contributes to the comfort of students. Part of the comfort is the attractiveness of the coffee corner. This attractiveness is accomplished with the addition of the nature elements and the map which seduces students to go outside. How this is integrated in the design per aspect, is elaborated below.

Nature

According to Felsten (2009), a view to nature helps students with their recovering of mental efforts. Nature helps students to relax which increases their well-being. The colour green is associated with relaxation, calming and hope (Eger, Bonnema, Lutters, & Voort, 2012). There is no real nature in the design but the whole design is focused on imitating nature. For example, the tables are inspired by trees, the lamps look like flowers and there are walls with moss print on it. In other elements of the design, the colour green is used as well. Another important aspect of the nature is to seduce people to go outside and experience the real nature for themselves. This is described below.

Seducing

Another aspect of well-being integration is how the design seduces people to go outside. There are two reasons for seducing people to go outside. The first reason is linked to the aspect above. The campus around the library consists of a lot of nature. These green spaces have a positive influence on the quality of life of the students (McFarland, Waliczek, & Zajicek, 2008). So, in this case they do not only have the association with

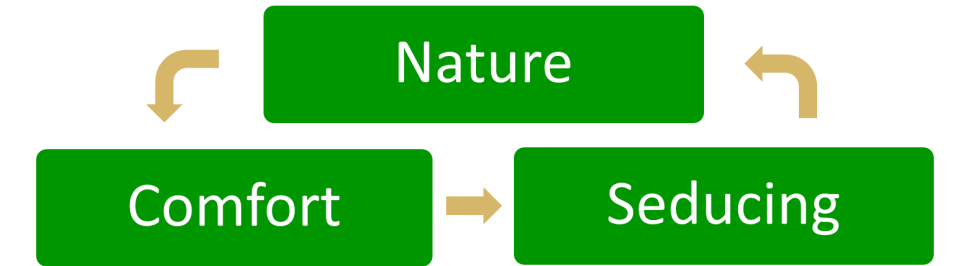


Figure 36. Nature-Comfort-Seducing Scheme

nature but the experience of real nature as well. The second reason is about physical activity. As stated by Sharma-Brymer and Bland (2016), physical activities increase the well-being of people as well.

To seduce people to go outside, several design elements are integrated. These elements follows form the classification of influence which is described in chapter 6. In chapter 6, seven options are given that could help to improve the well-being of the students. Two of these options are used in the final concept to seduce people to go outside. It are the options one and two from chapter 6. Option one was a map of possible walking routes, including their duration, around the library through the green spaces. This map is stated on a wall. Besides, option 2 is integrated since the theme of the design is nature, this should give them an association with real nature and a motivation to experience the real nature. Furthermore, the fact of bringing nature inside, which is described before, leads to physical activity which can be done outside (Sharma-Brymer & Bland, 2016). These things should contribute to the act of students of going outside to relax and calm in real nature and have physical activity between studying. This should increase their well-being.

Comfort

The last aspect is Comfort. This aspect is accomplished by making the coffee corner and the hallway more attractive. In the design, several measures are taken to make this area more attractive. At first, the floor is replaced by light brown wood. The walls are painted beige which is a calming and neutral colour (van Luyt, 2007). The dark brown wooden elements are painted in a brighter tint than before. More sound reduction elements are placed, which makes conversations easier. New tables are

placed which are in the same theme as the environment. The vending machines got a casing which makes them more attractive. At last, the lighting is improved which improves the atmosphere. All these elements create a more attractive area, in which people would like to take a break and recover. This subsequently increases their well-being. Moreover, a lot of nature elements are integrated in the design as mentioned before. This contributes to the comfort as well. On the other hand, it should not be too comfortable, since people should not have a break which takes too much time, as described in chapter 6.

As described before, in chapter 6 is elaborated on the ideal break time. Some options how to achieve this ideal break time with the design were given as well. From these options, option four is chosen. This means that there are no seats in the coffee corner. Therefore, people must stand and so their breaks will not take too much time. The other options were not user friendly or did not fit in the design. The design should appear as a relaxing environment. Quotes and time related features will not contribute to this so therefore they are left out.

Furthermore, as described before, people are sitting all day. For that reason, when you take a break it is good to stand. Therefore, only standing tables are placed as well. This reduces the sitting time and as a result also reduces the physical complaints. Less physical complaints leads to an improved well-being (Huysmans et al., 2015). Additionally, these standing tables have different height levels. Hence, more students can use a table on their height which is more comfortable.

At last, when more people go outside as initiated with this concept, less people would use the coffee corner. For this reason, it would be quieter in there. This Consequently contributes to the comfort as well since there are more places to stand. When there are less people, the users receive less stimulus which increases the quality of their relaxation time.

All things considered, it can be seen that the three aspects are strongly engaged with each other. The main theme of the design is nature, which leads to comfort and the seducing of people to go outside. Since nature is a part of the comfort aspect, it contributes to seducing as well. On the other hand, the seducing leads to more comfort as there are less people standing in the coffee corner. Overall, the well-being aspect is intertwined in this concept by the three aspects nature, comfort and seducing.

Now that the final design is concluded, a cost estimation and an execution plan are needed to execute the concept. These are described below. They are based on the design of the final concept.

10.1. Cost Estimation

The cost estimation is made together with CFM. They have the knowledge about all the costs that you must consider for the realisation of such a project. The cost estimation is visible in Figure 37. A description of the cost estimation is elaborated below.

In the cost estimation, first the costs of the elements of the new concept are calculated. These are the prices per piece or per square meter. Then, the general costs that you must take are calculated. These include carpentry and demolition work, the clearing of the work area and the extra amount of electricity that is needed. At last, some factors need to be added to the cost price. These are for unforeseen costs, indirect costs like transport, general costs like the costs for office people and at last the profit and risks factor. These percentages were set by CFM.

This led to a total cost price of 76.716 euros for the realisation of this concept. These costs should be shared by LISA and CFM. Moreover, CFM is responsible for the fixed elements as the floors, ceilings and walls. LISA is responsible for the furniture like the tables and the gates. Furthermore, some elements are variable. For example, the lighting is variable. CFM can place basic lighting but in this case, it involves designer lamps to make it more attractive. In this case, the costs are for LISA, because it is not the basic lighting.

	Price per m² (€)	Area in m²	Price per amount (€)	Amount	Total costs (€)
Floor	52,50	185			9.712,50
Walls painting	46,00	52			2.392,00
Wood painting			10.000,00	1	10.000,00
Beam painting	18,00	90			1.620,00
Baffles			55,00	207	11.385,00
Acoustic canvas	125,00	40			5.000,00
Map and letters			300,00	1	300,00
Lamps			300,00	6	1.800,00
Tables			600,00	4	2.400,00
Phone cells					7.125,00
Walls	75,00				825,00
Doors	300,00	15			4.500,00
Accessories			300,00	6	1.800,00
Vendingmachines casing			3.000,00	1	3.000,00
Wastebin sticker			200,00	1	200,00
Gates			450,00	6	2.700,00
Various carpentry and demolition work			5.000,00	1	
Clear work area			1.000,00	1	
Electricity			2.500,00	1	
Total production costs					66.134,50
Unforeseen				2%	1.322,69
Indirect costs				2%	1.322,69
General costs				8%	5.290,76
Profit and risks				4%	2.645,38
Total other costs					10.581,52
Total costs					76.716,02

Figure 37. Cost estimation

10.2. Execution plan

The cost price, which is calculated above is too high to realise the concept at once. Therefore, an execution plan is needed to set in which order the different parts of the concept could be realised. For determining the order, several aspects are analysed. The first aspect is the urgency to replace or to add an element. The second aspect is the cost of the step that should be taken. The last aspect is how the step would contribute to the goal of the concept, namely the well-being of the students. These three aspects are considered for the sequence that is described below.

The first step would be to renew the floor in the coffee corner. The current floor is totally worn out due to water leakage, therefore it should be renewed. This only applies to the floor in the coffee corner, since the floor in the hallway is not worn out enough to be urgent for replacement. The stone walls should be painted in this step as well. Since this is not a big cost item, because it matches with the floor and because it improves the illumination of the area.

The standing tables are worn out as well. Therefore, the second step is to replace those. Besides, this contributes to the attractiveness of the coffee corner and to rolling out the nature theme. To roll out this theme, the waste bin sticker can be replaced as well, since this is only a small amount of money. Furthermore, the lamps can be replaced in this step. It is not a too big cost item and it makes the area less dark which is a major problem right now.

The next step in rolling out the nature theme is achieved by placing the acoustic canvas walls. The sound reduction is a problem. Therefore this is the third step. With the placement of the canvas walls, the wooden map and letters should be placed as well. Together this has a considerable contribution to the calling card effect of the design.

Afterwards the phone cells should be made, because there are often people calling in the hallway. For them this is a solution. Besides, the locker unit which is located in that space now will be removed soon. When that happens, an open ugly area is left behind which is not desirable for the attractiveness of the concept.

The elements that are left over are: the baffles, the gates, the wood painting and the vending machine casing. These are all not urgent but would contribute to a better experience in the coffee corner. The advice is to do first the wood painting, since this covers a big area, which would lift the appearance of Area X. Then, the gates can be replaced. These stand out a bit less but would still contribute to a better appearance. The gates and the vending machine casing can be done last to make the whole design complete.

The cost estimation and the execution plan would together be the base for the realisation of this concept. However, this cost estimation and execution plan are quite rough. Therefore, when the realisation actually starts, a more detailed execution plan and cost estimation will be needed.

After finishing the final concept, it was tested to see what the students think about this design and if the idea behind it works out. This test was done by showing the current design and the new design. The designs were showed with a walkthrough video wherein all the elements were clearly visible. First, the current design was shown with some questions. Only this design was shown to prevent influence of the new design on the answers for the current design. Afterwards, the new design was shown with the same questions so that the results could be compared to determine how much the area has improved. A few extra questions were asked based on the new design. These were open questions about the theme and about the intentions of the new design. The goal was to research if they could see it without pre-knowledge. At last, a few more specific questions about the intentions of the new design were asked. For these questions, more information was given to see if they could recognize it. For the closed questions, they could be answered by giving a grade from 1 to 5.

The test had 22 respondents. A summary of the results is visible in Figure 38, the full test and results are visible in Appendix VI.

	Current Design	New Design
Attractiveness	2.0	3.9
Comfortability	1.8	3.4
Break time	7.9	12.4
Well-being	2.6	3.7
Calling card	1.5	4.1
Comfortability for calling	2.3	4.0
Nature recognition	-	4.9
Map recognition	-	2.4
Seducing to go outside	-	3.2

Figure 38. Summary of Final Test results

Final Test

The first questions were about the attractiveness and comfortability of the design. The new design clearly scored better than the current design, so that is a positive thing. The break time of the new design is 12.4 minutes. Compared to the current design, this is 4,5 minutes closer to the perfect break time which is 15 minutes, but it is still a few minutes less than the perfect break time. Nevertheless, the new design has a positive influence on the length of breaks. The well-being of the students will increase with the new design according to these results. This is hard to test in a questionnaire since some of the aspects for well-being would not directly be noticed by the students.

The calling card effect of Area X for the library is significantly increased with the new design. This could contribute to a better appearance for the library since the users could be attracted to it by seeing the hallway. Furthermore, the respondents do appreciate the phone cells for calling compared to the current situation according to the results of the questionnaire.

To test the theme and goal recognition, at first a few open questions were asked and thereafter closed question were asked where the theme and goal were given. On the open questions, 18 people gave an answer related to nature for the question about the theme, answers like forest, garden and natural were included. This shows that the theme is clear displayed in the design. This conclusion is supported by the result of the open question where almost everyone gave 5 points for the nature recognition. For the goal of the design, 5 people gave an answer about going outside on the question where the design seduces to. According to this result, there should be more in the design that seduce people to go outside. An option is to make the use of the map clearer, since people gave this an insufficient result. When it was given that the design should lead to going outside, the respondents said that it is recognizable but not good. This shows that if

the aim of the map is clearer, the design will probably work.

At last, there was an option for the respondents to give other notes or questions. Some interesting points that came up are described here. One person noticed that it matches with the study area in the Bastille. Other people said that the map should become clearer by adding more icons, adding footsteps and adding the wind directions. A last remark was that it could be cool when the nature changes together with the seasons.

All thing considered, it can be said that the design worked out well, but there is still space for improvement. Firstly, for a perfect break, the design should invite more to stay there a few minutes more. Secondly, the well-being factor is not at a high level. However, it could be that the respondents do not recognise all the well-being effects since some of them are unconscious as said above. Lastly, the seducing effect of the design should be improved a lot, this could be done by making the goal of the map clearer.

12 Conclusion & Recommendations

After all the steps that are taken to create the final design, it is time to make a conclusion. This is done by first reflecting on the research question. Thereafter, the design is reflected on the hand of the requirements and the vision. At last, recommendations are written down about aspects that need further research and aspects of the design that could be improved.

12.1. Conclusion

The research question that was stated in the beginning of the research was: How can the entrance, including the coffee corner, of the University of Twente Library be changed into an area that meets the criteria of the Library, Campus & Facility Management and the users?

To answer this research question an analysis of the current situation was needed. During this analysis the first three sub-questions about the criteria of the stakeholders were answered. The main criteria were that Area X should become an attractive area and a place for the students to relax and recover. This could be done by bringing nature inside, since this will help the students to recover.

After the analysis, the ideation was done. The ideation was based on four themes that followed from the analysis, these themes were University of Twente, Nature, Coffee and Library & Vrijhof. This ideation was presented to the stakeholders during a co-creation session. During this co-creation session, it became clear that the stakeholders were enthusiastic about two themes. They liked the nature which could improve the well-being of students and which connects with the appearance of the campus. Besides, they liked the Library & Vrijhof theme, because it connects to the environment and gives a modern and fresh look.

During the analysis and co-creation session a design vision came up. This

vision was: A design for the hallway and coffee corner which improves the well-being of the students and which is a calling card for the library. This vision was actually an answer on the research question. Therefore, the vision was more leading in the further design process compared to the research question.

So, the research question is answered by designing a new area that improves the well-being of the students and which is a calling card for the library. In practice, this led to a design in the theme nature with wooden elements. This design has the intention that the nature part of the design should lead to an increase of the well-being of the students. Besides, the wooden elements should create recognition with the library and the wooden elements together with the nature should lead to an attractive whole.

This final design followed from two concepts. One concept was based on the library and one concept was based on nature. These concepts were presented to staff members of the library and CFM. During this presentation, they could give their feedback on the concepts. In the end, this led to a final concept which was set up together, so it satisfies the criteria of the library and CFM.

To check if the final concept meets the user's criteria as well and to see if the intention of the design works out, a final test was done. This test was hold among the users of the library. On every aspect, the new design scored higher than the current design. Especially, the calling card factor of the new design, scored way higher. This was an important criterion of the library which is met. Besides, the attractiveness and comfortability are increased as well. At last, the well-being and break time which has a positive influence on the well-being are increased. This shows that the intention of the design worked out.

Not all the criteria were questioned in the test, below other criteria will be treated per stakeholder group. Not all the requirements are described in this chapter, but they are all listed in Appendix VII , where the bold requirements has been met.

One of the requirements of the library was that the design should inspire people. However, the design does not really focus on inspiring people but it instead it does focus on the improvement of well-being. Furthermore, in the future vision of the library was described that phone cells were desirable. These are introduced in the concept and the comfortability for calling is increased. Therefore, this requirement is fulfilled.

The requirements of CFM focusses more on the execution of the design. The execution of the plan is set up together with CFM, so it fits their criteria. For example, the materials are sustainable and the furniture is easily cleanable. Another criterion was that the design stays neutral, according to the style of the Vrijhof. This requirement limited the process and therefore it is not held. However, there are elements of the Vrijhof present in the design, but the concept is mainly based on nature. During the co-creation session, they agreed with it and they will see later if it can be executed and how it can be implemented in the Vrijhof. Their last criterion was about the cost price of the concept. It was hinted that the total price should be between 40.000 euros and 100.000 euros. The total price of the final concept would be about 76.500 euros, so this concept meets this norm.

For the users, which are mainly students, the integration of the well-being part is the most relevant. They did not ask for the improvement of well-being during the interviews, but it came up during the analysis and design process. Since a lot of students have psychological complaints, it was good to integrate this in the design. The students will probably not notice that the design focusses on the improvement of well-being, but the nature elements would help them. Furthermore, the users wanted more space at the standing tables and that is realised in the new design. Besides, the area becomes better illuminated and is more attractive for them as described before. At last, the demand for a place to call is answered whit the phone cells in the new design.

In conclusion can be said that the research question is answered and the design vision is followed with the designed concept. The stakeholders are satisfied about the ideas which become clear with the renovation of the coffee corner that will start soon. However, not the final concept of this report will be executed since the budget was lowered. Therefore, a new concept is made by an external company. Nevertheless, this new concept is based on this report. The new design is still a combination of nature and wooden elements which shows that the stakeholders are satisfied about that idea. Besides, some other aspects as the green acoustic wall and the oblong standing tables are used as well in the new design.

12.2. Recommendations

Although the conclusion is written, this research is not finished. Several aspects where not researched in this assignment, because they did not fit in the scope of this research or they came up at the end of the research. Besides, the design could still be improved on some points. At last, the result of the design on the users should be researched if the intention works out as intended. These aspects are all written down below.

Firstly about the result of the design. This design is focused on the improvement of well-being for the students. In the test it showed up that this design succeed in doing so. However, the test was only done with a small group of users. Besides, people only spend a small part of their day in the redesigned area. The rest of the day is still spent in the grey learning centre. It could be that this is just a positive change during their breaks which helps them, but there is no evidence. Therefore, it should be researched how significant the improvement of the well-being due to this design would be.

Besides, it should be researched for how long this design will be relevant. How fast will the environment change or will the students get bored of the design. Maybe, new interior trends come up and will this design than still be attractive. These kind of questions should be researched together with researching how the design could stay up to date, for example by making it interactive or modular.

The key point of the final concept is the nature, but there is no real nature in the concept, Besides, it is only in the hallway and in the coffee corner and not in the library itself. Therefore, it should be researched if some real nature could be brought inside. For example, plants in the hallway or a small tree in the coffee corner. The different stakeholders should be asked about this plan and the possibilities should be researched. It could increase the impact of the design. Furthermore, it should be researched if the library itself could become more green. Fortunately, they already have some plants, but they are artificial.

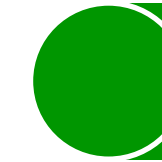
Furthermore, the library wants to change their identity from a boring old-fashioned place where people used to borrow books, into a digital

environment where people can study. Therefore, it is a possibility to change the name library into Learning Centre. This name is already used for internal communication, but for external communication, they still use Library. The name Learning Centre covers the use of the area better. Moreover, it sounds more attractive and is not directly associated with leaning books, but it is still possible to do. On the other hand, among students the name Library is nowadays most of the time related to a place where one can study.

On a practical point of the design, baffles are used for sound reduction and to create an optical ceiling to improve the appearance. This will cost more than 11.000 euros. Another possibility is to hide all the tubes and paint the ceiling, to improve its appearance. It is not calculated how much this costs but it could be that this is a cheaper solution. Therefore, it should be researched what the best option is. It should be taken in mind that a few baffles for sound reduction are always needed.

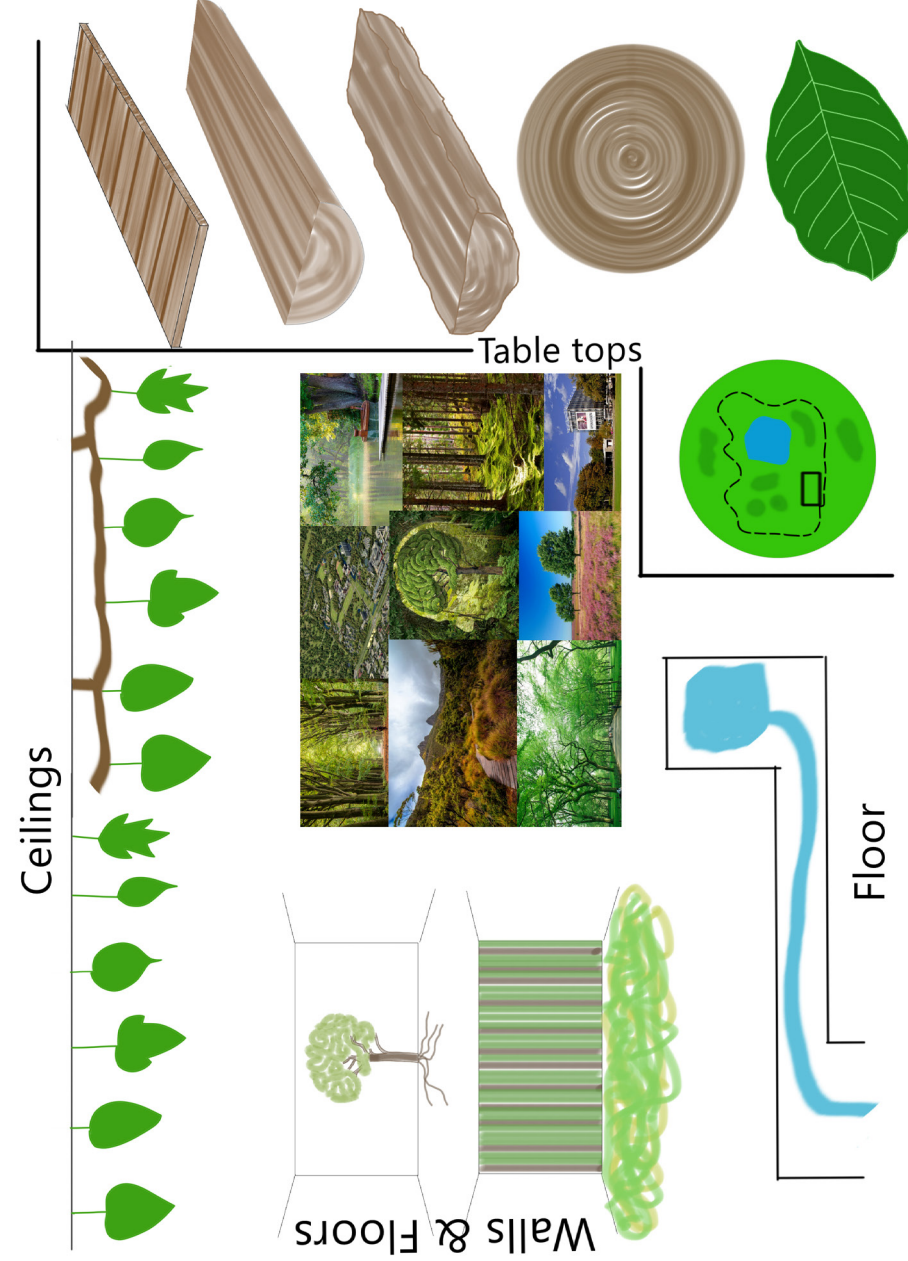
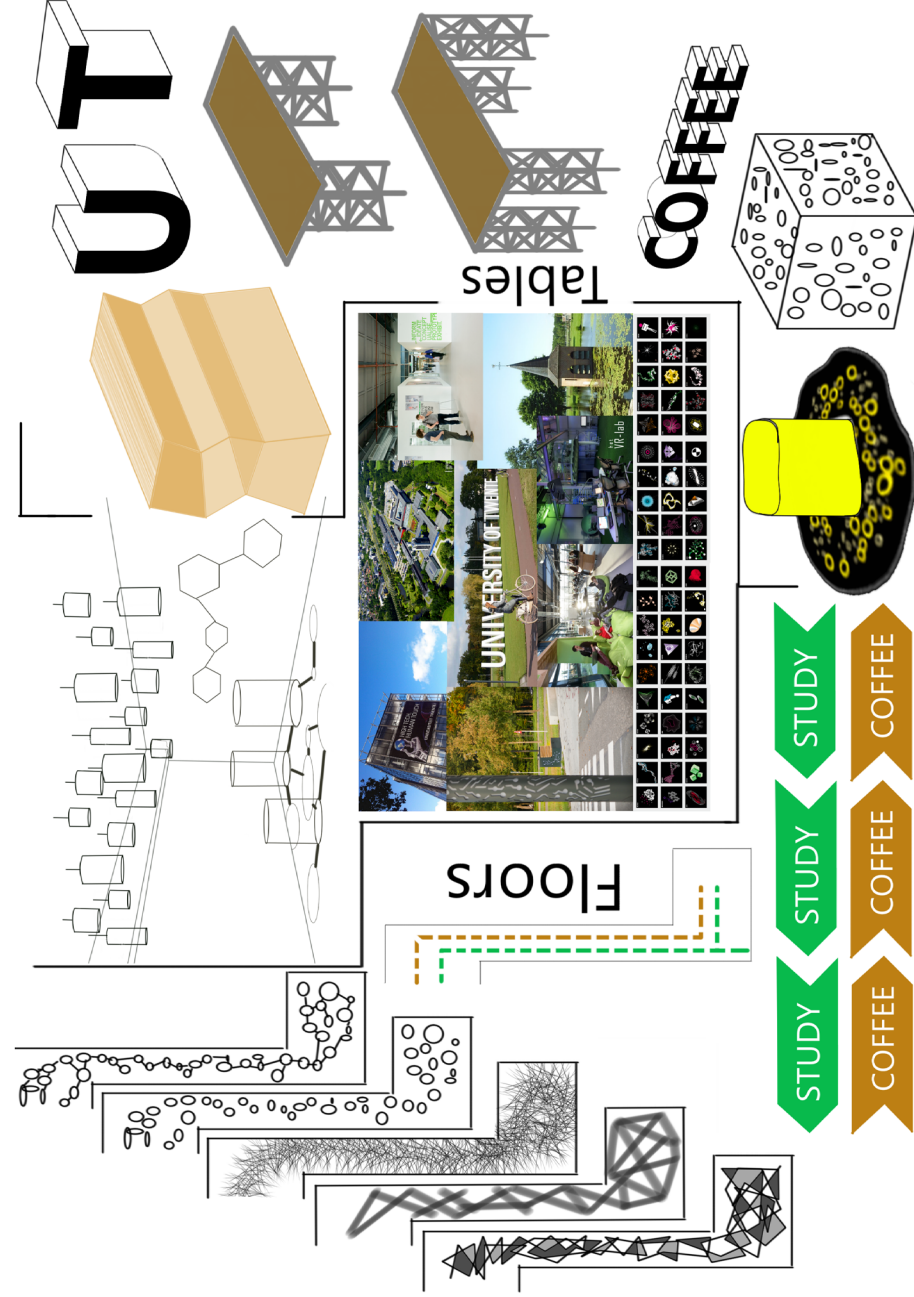
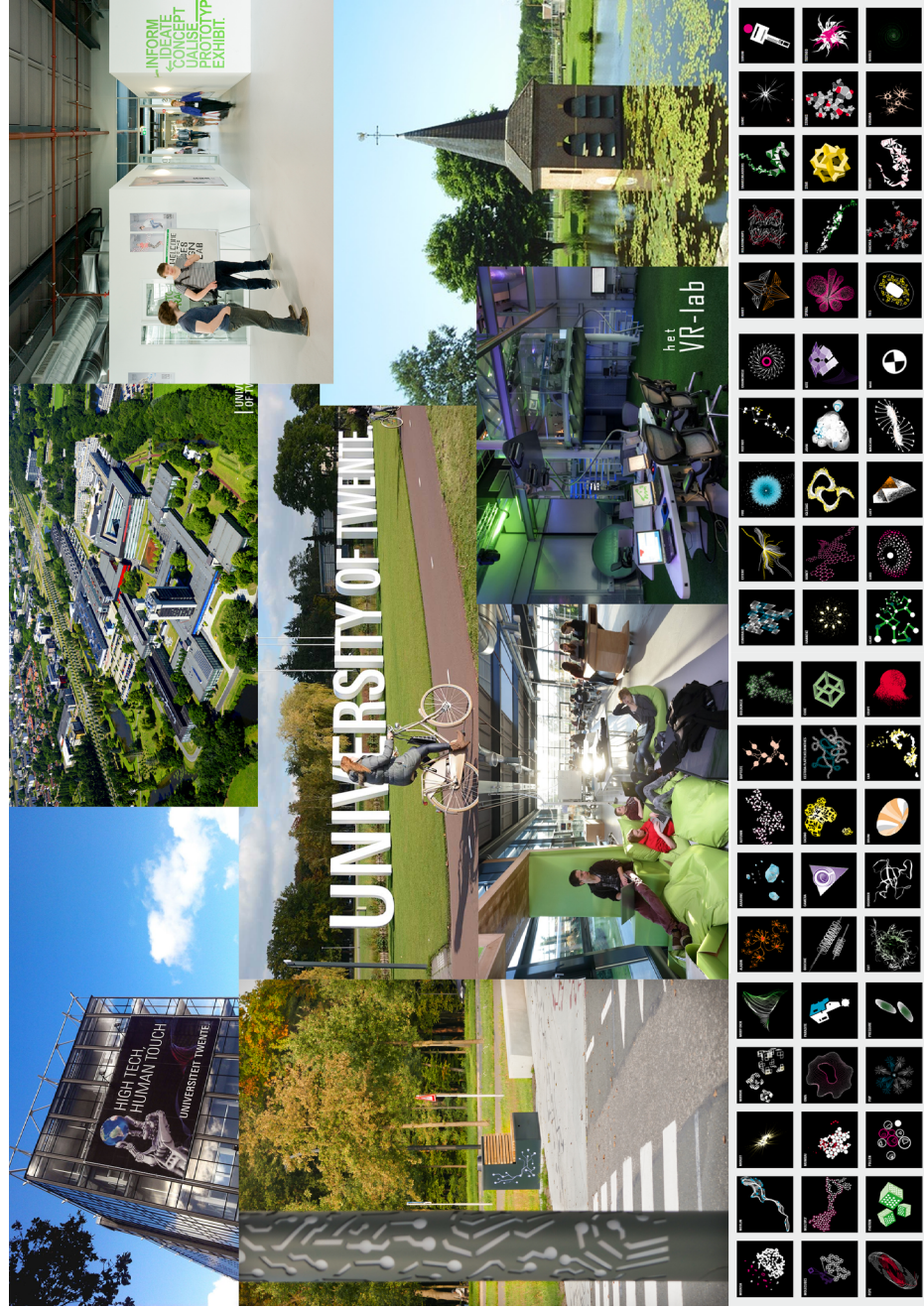
The last recommendation is about the quality of the coffee. Several times during the research, the quality of the coffee in the vending machines was discussed. It is not researched in this assignment, since the main focus was on the design. However, it could be researched in the future how much students want to pay for better coffee and if there is enough demand for better coffee. Besides, it could also be researched whether the students want more equipment in the coffee corner or hallway, for example microwaves to heat up their meals.

With these recommendations the research comes to an end. As you can read, still a lot of improvement and further research is possible.

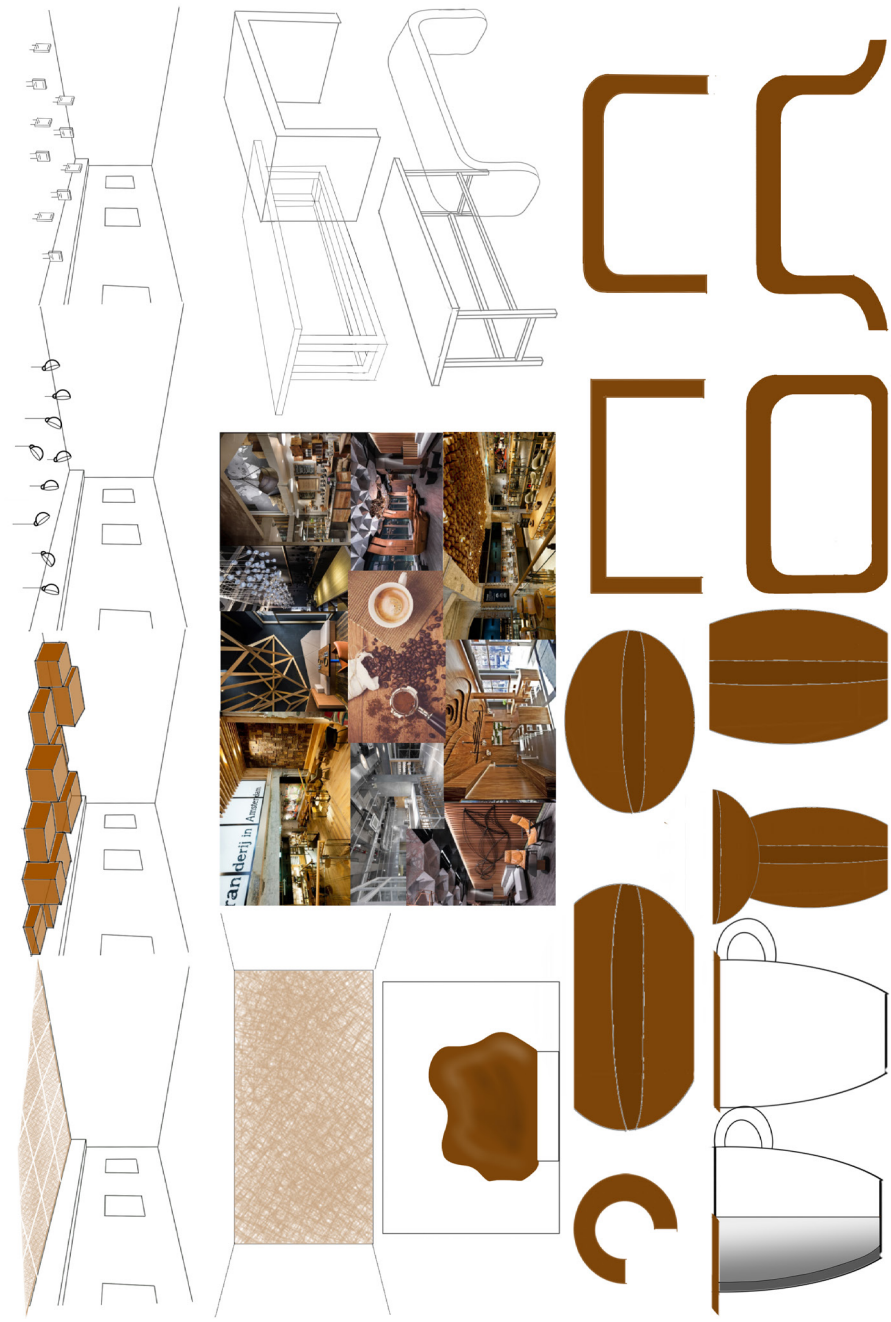
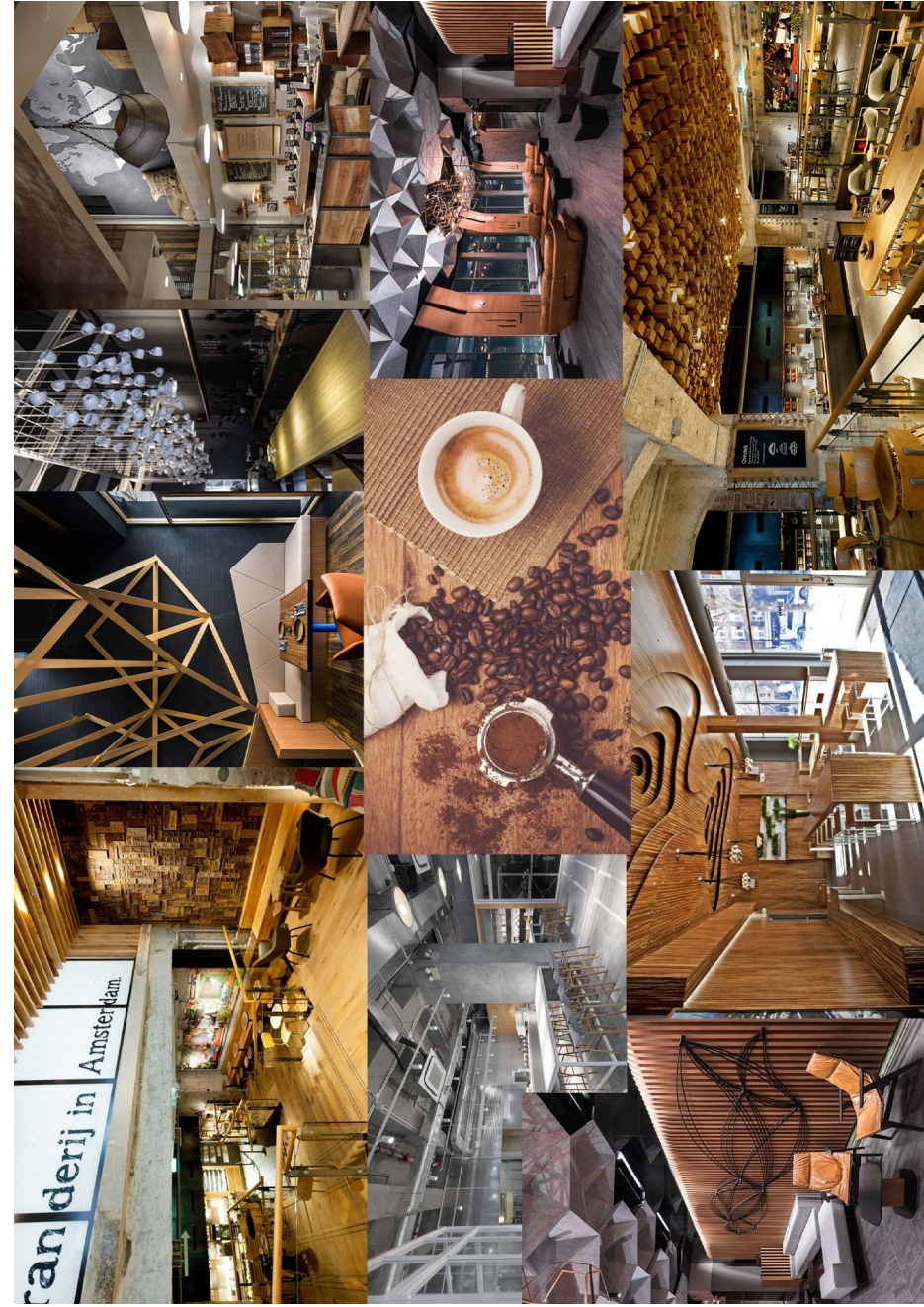
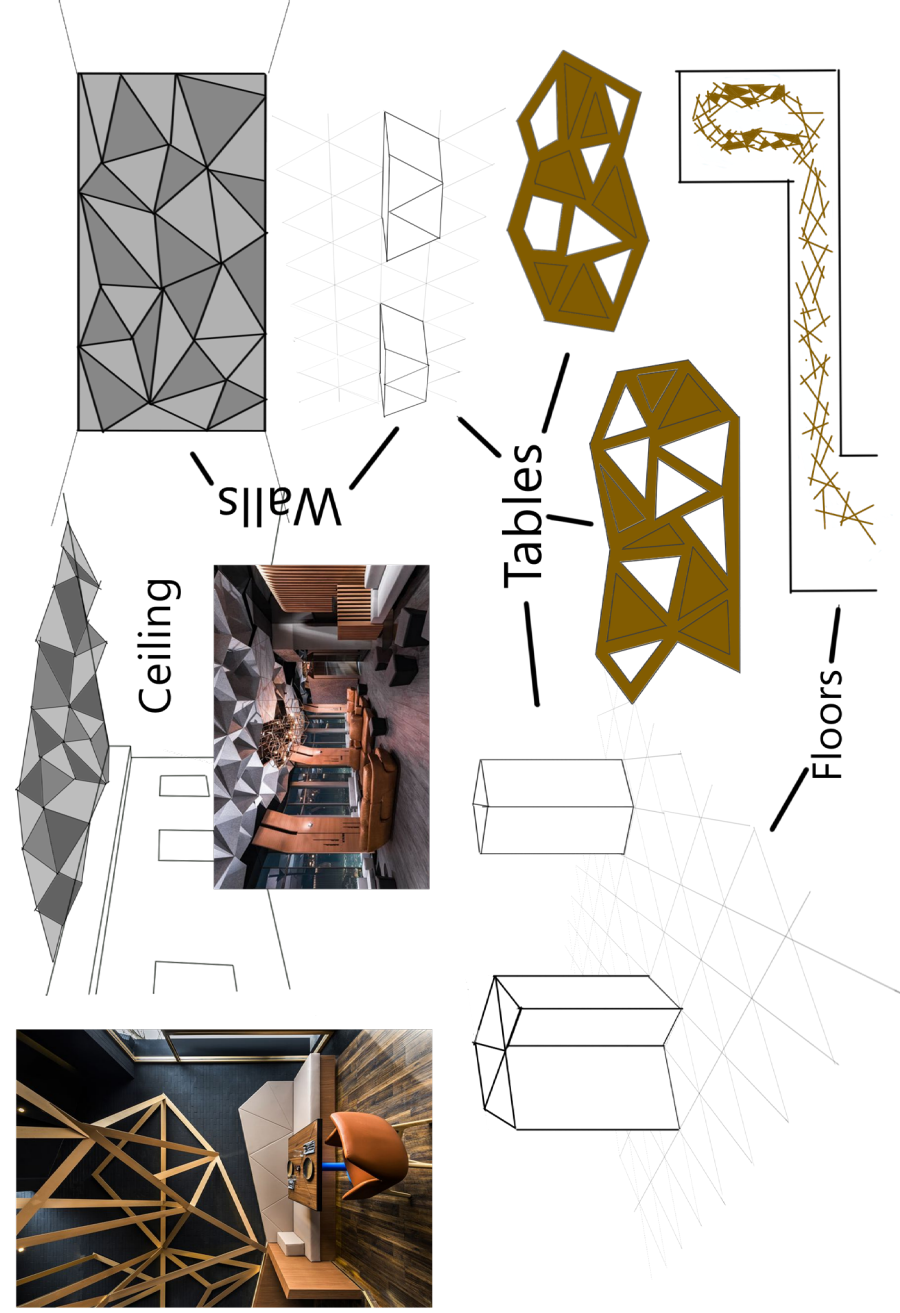
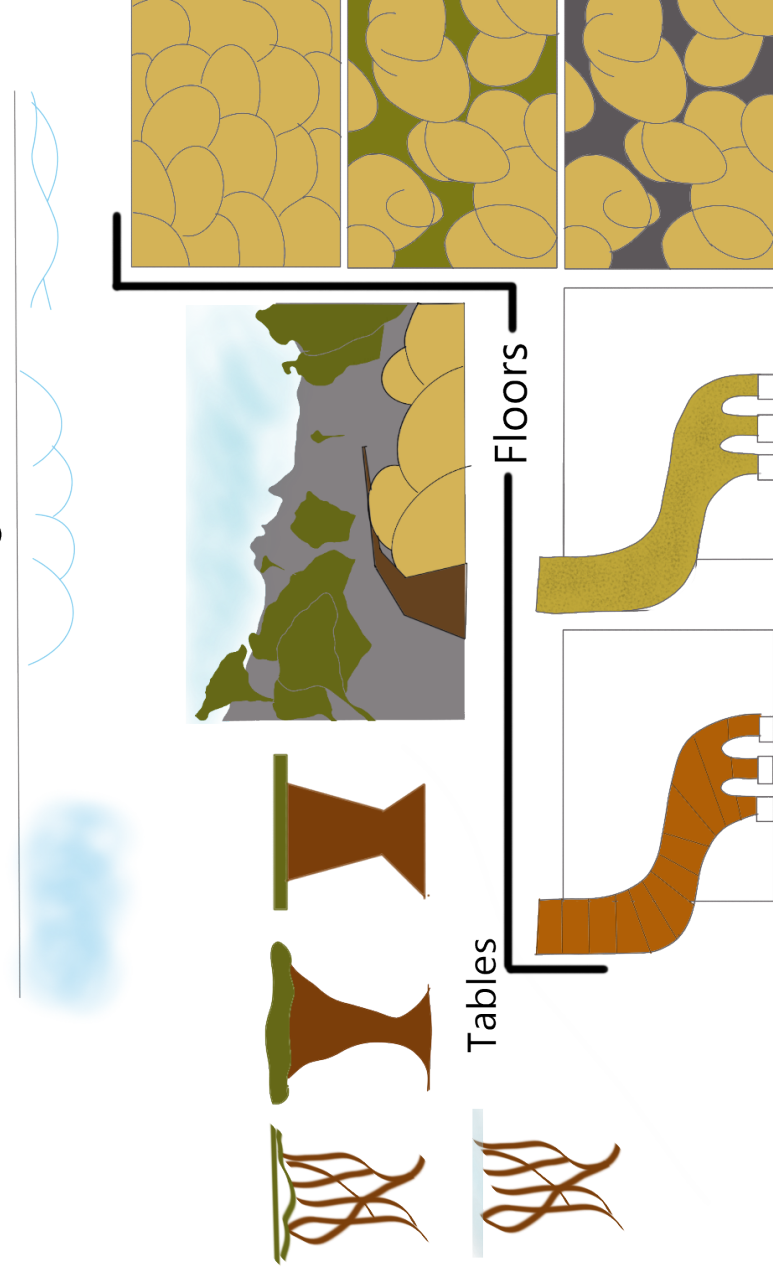


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Ceilings





Appendix II: Co-creation set-up

Date & Time: 15th of May 2019, 14:30-15:30h

Location: Vrijhof 354

Participants:

- Olga Steen and Marijke Broekhuis on behalf of LISA.
- Andries Klijnstra and Stef Michgelbrink on behalf of CFM.
- Derko Budding and Samuël Wieles on behalf of students.
- Luuk van Ewijk as supervisor.
- Lieven Jan Westerbeke as presenter.

Planning:

14:30: Short introduction on the work done so far and which themes are chosen.

14:35: Giving feedback with post-its on the ideation sheets.

- Pink post-its for LISA
- Blue post-its for CFM
- Yellow post-its for students

14:55: Explanation why these themes are chosen

15:00: Discussion about the given feedback and the different opinions and creating a vision for the design of the concepts.

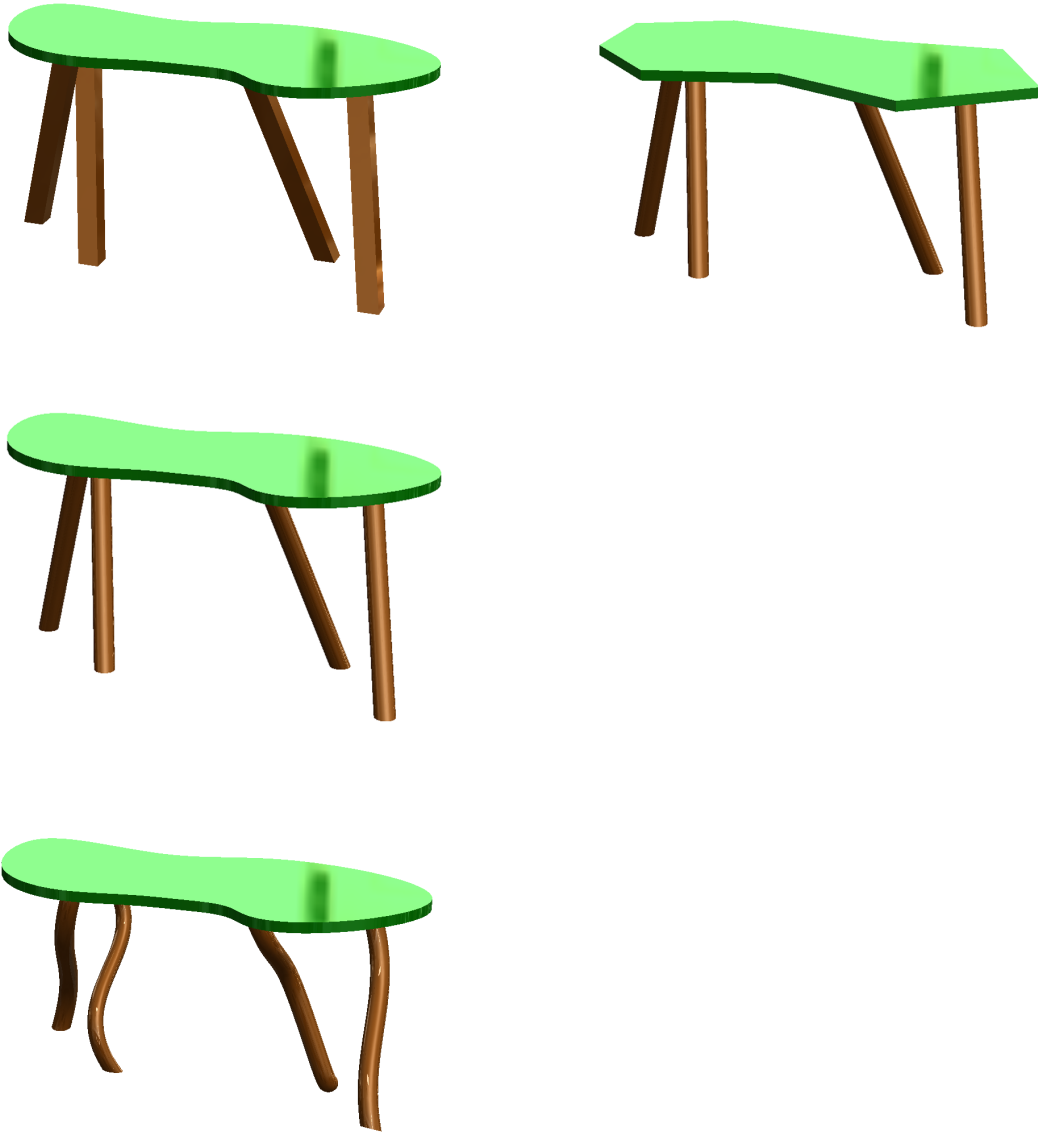
Necessities:

- Collages and ideation sheets
- Post-its
- Pens

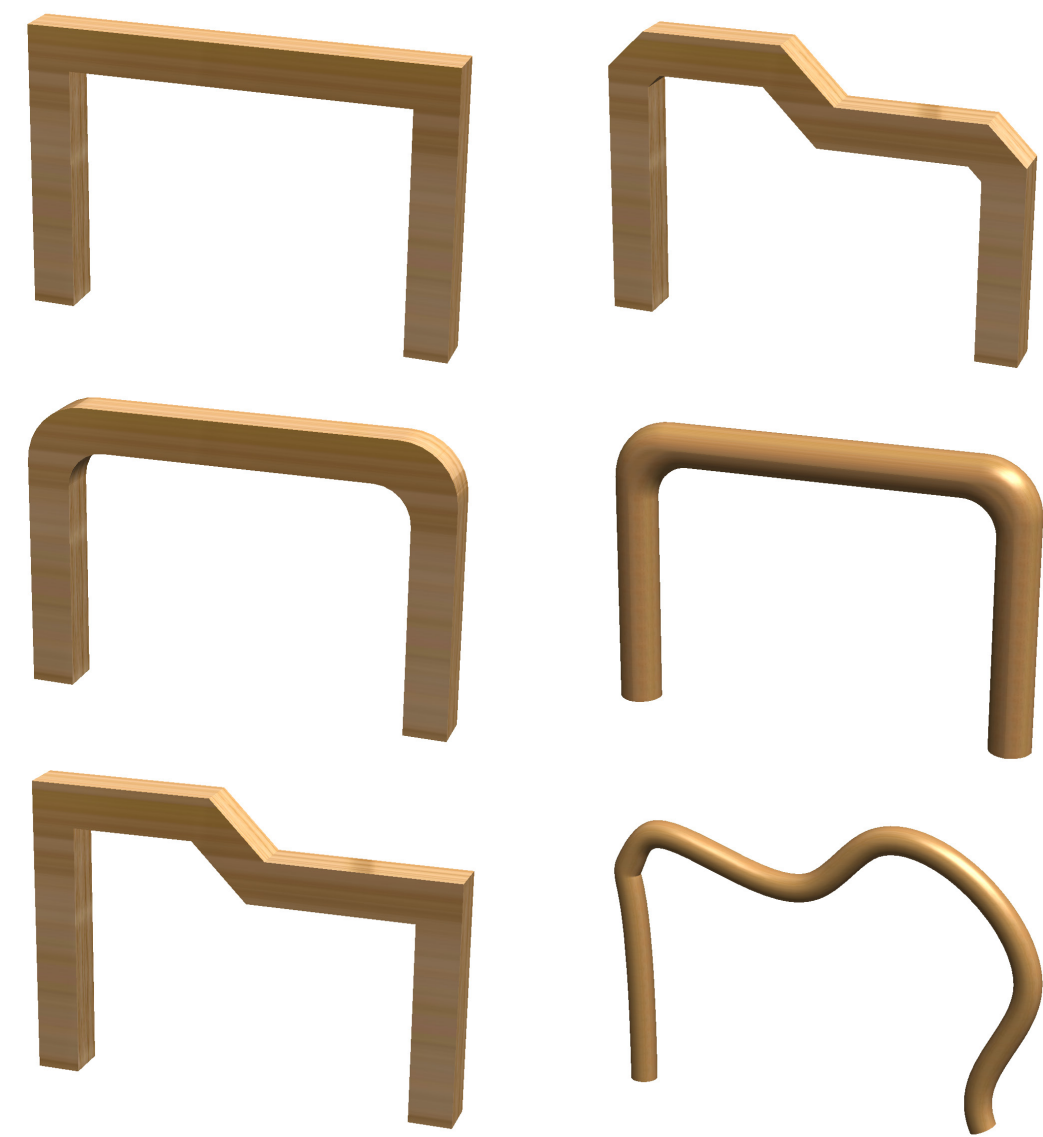
Appendix III: Tables Concept Vrijhof



Appendix IV: Tables Concept Nature



Appendix V: Gates Concept Nature



Appendix VI: Final Test Results

Timestamp	Current design						New design											
	How attractive is this design?	How comfortable does this design look?	How many minutes will you take a break in this coffee corner?	Will this design improve your well-being? Think about relaxation, recovering etc.	Is this design a calling card for the library?	How comfortable will making a phone call in the hallway feel?	How attractive is this design?	How comfortable does this design look?	How many minutes will you take a break in this coffee corner?	Will this design improve your well-being? Think about relaxation, recovering etc.	Is this design a calling card for the library?	What is the theme of this design you think?	Where will this design seduce you to?	How comfortable will making a call in the phone cells feel?	When I say that the theme of the design is nature, do you recognize it?	When you see this picture, is it clear that it is a map with walking routes around the Vrijhof?	The combination of the walking map and the theme nature of the design, will this seduce you to take a walk outside?	
7-11-2019 13:38:57	3	2	10	3	2	3	4	4	15	4	5	Nature/green	Relaxation, and a chill break	4	5	2	3	
7-11-2019 13:50:46	2	2	5	3	1	1	4	4	10	4	5	Green	Going out for a walk	4	5	2	4	
7-11-2019 13:54:53	3	2	5	3	2	4	5	4	15	4	5	Green, natural	Going outside	5	5	3	5	
7-11-2019 13:57:28	3	3	10	3	2	1	4	3	15	4	4	Nature	To go out in nature	2	5	2	5	
7-11-2019 13:58:28	2	2	10	3	1	3	5	4	15	3	5	Oase	Te lange pauzes	5	5	2	2	
7-11-2019 13:58:36	1	1	10	1	1	1	4	2	20	3	4	Jungle	Drink a lot of coffee	5	5	2	1	
7-11-2019 13:59:08	1	1	10	2	1	2	3	3	15	4	4	Natuur	Om pauze te nemen	5	5	2	2	
7-11-2019 14:00:09	3	2	10	3	2	2	4	4	10	3	4	Forest	Talking	4	5	3	4	
7-11-2019 14:00:40	1	3	5	4	2	4	5	3	10	4	5	Nature, HTHT	Smoking	4	5	1	2	
7-11-2019 14:06:57	2	2	5	2	2	3	4	5	10	4	4	It looks natural	Relaxing	3	5	2	3	
7-11-2019 14:09:22	2	1	10	2	3	4	4	3	15	4	4	Green	Not standing on the black lines	4	5	5	4	
7-11-2019 14:18:22	2	2	5	2	1	3	3	3	5	3	4	outdoor/natural/s pring	go outside, if the weather is nice (take a break)	4	5	3	3	
7-11-2019 14:23:03	3	2	10	3	1	2	4	3	10	3	3	nature relaxation	talk with friends and have a drink. But then go back to study	4	5	3	4	
7-11-2019 14:33:39	2	1	5	1	1	3	3	3	5	3	2	Green / nature	-	3	5	3	3	
7-11-2019 14:39:33	1	3	5	4	1	1	4	5	15	5	5	Garden/Spring	Talk to one another	3	5	3	2	
7-11-2019 14:44:22	1	1	10	4	2	1	3	2	10	4	3	Nature	Go outside	4	5	1	4	
7-11-2019 14:58:40	2	1	5	3	2	4	3	1	5	3	2	Nature	?	3	5	4	2	
7-11-2019 15:05:41	2	2	5	2	2	1	3	3	5	3	3	Green	Puking	1	4	3	2	
7-11-2019 15:28:03	2	2	5	3	3	4	3	2	5	3	3	Green/forest	Not sure?	2	4	3	2	
7-11-2019 15:54:16	3	3	10	3	1	4	4	3	10	3	4	Nature	Nothing? Drink my coffee and go? Maybe talk with collegas	5	5	1	1	
7-11-2019 17:27:10	3	2	20	3	1	4	4	2	25	3	2	Forest	Relax	4	5	2	3	
7-18-2019 21:50:36	2	2	5	3	2	2	3	2	5	3	2	Forest	Nothing specific	4	4	2	2	
	2,1	1,9	8,0	2,7	1,6	2,5	3,8	3,1	11,5	3,5	3,7			3,8	4,9	2,4	3,2	

Questions and notes

- It matches the study hall in the Bastille, so that’s nice.
- I don’t like walking
- There are now only standing tables, would an actual couch also be nice? Then you can sit down
- How many tables will there be? Since people do not want to stand at the same table as strangers.
- Do the vans at the ceiling make noise?
- maybe add more iconic structures on the map, to make it more recognizable. Add footsteps on the route to indicate walking route
- Maybe think of a way to change the theme per season, keeps it fresh
- It looks nicer, so aesthetics are better but the comfort level seems the similar to the old design.
- I just want to drink coffee and go back to work. It does probably make sure people relax a bit more because of the feeling of having the outside in the inside.
- I cant see where north is on the map. So orientation is hard. The characteristic point on the map are not that clear to me as well .
- I think you have a nice but difficult assignment and you put in a lot of work. Yet, I wanted to be honest in my answers.

Appendix VII: List of Requirements

- **More attractive entrance and coffee corner**
- **The design should become their calling card**
- The design should guide people to the library
- The design should guide people to the coffee corner
- **The coffee corner should be a place for the users to relax**
- The coffee corner should inspire people to study
- **The sound reduction in the coffee corner and hallway should be high enough**
- The design should contribute to the digital identity of the library
- **The design should be neutral in accordance with the Vrijhof**
- **People should not stay there for a long time**
- **Seats are not allowed**
- **The design should have an escape route as wide as the doors**
- **The materials should be easy cleanable**
- **The materials should be sustainable**
- **The costs of the realisation should be between 40.000 and 100.000 euros**
- **More space at standing tables**
- **More light in the coffee corner**
- **The lockers should be removed**
- **It should stay a quiet environment**
- Something to read would be nice
- **People only want to spend a short time in the area**
- **Users should have a place to take a call**
- **Leave space in the coffee corner for the cleaning staff**
- **Standing tables should fit to the ergonomics of the users**
- **Standing tables should be easy cleanable**
- **The floors should not contribute to the noise nuisance**
- **Light and fresh colours should be used in the design**
- **Keeps the designs of the standing tables open**

Bold: Requirement has been met

