

## MASTER

### Stationsplein Eindhoven designing public space to meet human demands

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# STATIONSPLEIN EINDHOVEN

Designing public space to  
meet human demands



Urban Design and Planning  
Graduation project 'Heart of the City'



# Preface

This thesis is made as a completion of the graduation studio 'Heart of the City' as part of the master track Urban Design and Planning of the University of Technology in Eindhoven. This is the end product of the graduation project and this document endeavors to explain the process in a clear, but concise way.

Multiple people have contributed with support to this master thesis. Therefore, I would like to thank my tutors Johan van Zoest, Marcel Musch and Pieter van Wesemael for all the ideas and comments provided during the project.

Also, I would like to thanks my family and friends for being supportive and helpful during my study period at the University of Technology in Eindhoven.

Joris Gerrits  
Eindhoven, 20-06-2016

# Résumé

The city of Eindhoven has a long history as an industrial town and partly due to the success of Philips, Eindhoven expanded to a fully grown city. Now that major parts of the Philips company moved out of the city, there is a shift going on in Eindhoven. The municipality is now striving to be a creative and high-tech center of the Netherlands and within the European region. This change of the city is being strengthened by for example the High Tech Campus, the University of Technology and Strijp-s. Of course, this is associated with a shift within the population. Where in the past the majority of the inhabitants of Eindhoven was related to this industrial work environment, now and in the nearby future more creative people will settle in Eindhoven.

For this relatively new kind of people, should there also be a change in the urban structure or in public spaces? As creative people may have other preferences of their living and working environment than industrial workers do.

This project will introduce a method that focuses on improving public spaces independently from the various type of people. The most sustainable and future-

oriented way to create an attractive urban environment is to make it suitable for any type of human being. Therefore, fundamental human needs should be applied, as these go back to the roots of people.

The five main public spaces of Eindhoven have been analyzed out of which one area showed the weakest current situation and the highest priority for improvements. The Stationsplein is now an undefined and chaotic place that is crowded every day due to the central station and not many visitors have positive associations with it.

To improve this public space a new approach is needed, where the standard procedure for a similar public space was to create a huge master plan and to build this project in one go, causing many years of inconvenience. During these difficult economic times, often these large projects will face problems or delay during the process. Therefore, on this location, another approach will be applied, using small investments and small steps that will have significant outcomes. In phasing, these steps can, in the end, lead to a large plan, but provide a certain flexibility and tolerance in the building process. The

different steps within this phasing can be seen as independent from each other, and will show that with small interventions a big impact can be achieved.

The Stationsplein has been extensively studied and analyzed using among other observations and interviews. Out of these analyses, an image of the current situation is created that mostly shows negative opinions and unattractive features.

Using literature concentrated on the fundamental human needs, this area can be improved by using small interventions. This leads to a short-term plan that can be realized within a short period and provides the visitors of the public space with a pleasant environment. The plan has been synchronized with the theory studied as much as possible, to create an attractive area without big investments.

Also, a long-term plan is made, in case that the short-term plan is experienced as successful. Then, after a few years, the plan can be extended over a larger area that is now covered by a parking lot and taxi spaces. This long-term plan requires some larger interventions, where the short-term plan

will be the main goal within the strategy. Both master plans fulfill the wishes of the visitors of the Stationsplein and match the literature, making it a realistic solution to transform the now undefined space into an attractive square where people like to stay.

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# Introduction

Eindhoven is a city that is widely known for its industrial character. The company Philips was well connected with the city and this is still visible in the exterior and architecture of the city. While this industrial foundation caused the growth from a small village to a mature city, in the past years there is a shift ongoing towards a more creative city. This shift is partially due to the ambition of the municipality of Eindhoven, which endeavors to create a Brainport region with a high tech, creative and smart character. More and more creative industries and creative people are already settling in the Eindhoven area and in this way, the city wants to become an important Brainport link in the international network of smart cities.

The region of Eindhoven is now developing itself as an important southern cluster of the Netherlands, and also throughout Europe. To have the best future possibilities there was a MIRT research Brainport Avenue 2020-2040 created for Eindhoven in collaboration with the government, the province Noord-Brabant, the region, the municipality of Eindhoven, Brainport Industries, and Eindhoven Airport. The document functions

as a dot on the horizon, on which Eindhoven can compete with other European knowledge and innovation regions (BVR Brainport Gebiedsvisie).

The Brainport City vision is the result of this research and is also the starting point for this graduation project 'Heart of the City'.

With this shift towards a creative society, a 'new' kind of people will be attracted to Eindhoven that will have other preferences than the existing inhabitants do. Do these new people also need a new infrastructure and an adjusted environment to feel happy?

Not necessary; the urban environment needs to be designed for all kinds of people, for every generation, for every origin or characteristic. The fundamental human demands will be suitable for every situation, also when in the future the creative class will change or leave the city for other types of people. To meet this fundamental human demands, knowledge is needed in the psychosocial urban section, to figure out what the fundamental wishes and demands are to create a high-quality urban environment for the people. This urban environment needs to be attractive for all people and can be places where a mix of people can meet up or exchange their thoughts in a relaxing atmosphere.

## Assignment

This thesis is focused on public spaces in Eindhoven, where these will be put to the test to figure out whether the human demands are well represented in the city.

The aim of this graduation project is to give public space of Eindhoven a boost and by meeting these fundamental human demands an attractive place can be created.

The main question that the thesis will focus on is:

- What does Eindhoven as changing city needs in their public spaces, what does it has to offer now and what should be done to improve it?

In the next chapter the location will be introduced, including maps and analyses of the area, where after the theory will be given about how the public space can be improved. After that, the program and concept will be explained, and this will lead to the final design both on short term and long term. After the results will be discussed and linked back to the theory, the conclusion will end this thesis.



# Location

The origin of Eindhoven has a lot to do with the family company Philips. This manufacturer of incandescent light bulbs marked the start of the existence of Eindhoven. In 1891 this company started and already within a few years Philips & Co sold over one million light bulbs. They quickly became the number one employer of the Eindhoven region with at the end of 1899 over 1,000 industrial employees (Philips Museum, 2013). Especially for the workers of this company, Philips built whole neighborhoods to offer them a place to stay. Especially in the period of the post-war reconstruction Philips developed itself into a very successful company and Eindhoven moved along with this success and grew fast. Although in 1997 when the headquarters of Philips moved out of the city to Amsterdam, Eindhoven is still connected to the company. The business divisions Philips Lighting and Philips Research stayed in Eindhoven and the local football club is still named after Philips (PSV) which shows that Philips is still wrapped up in the roots of Eindhoven.

Nowadays it is a city with over 220.000 inhabitants and not dependent on the company Philips anymore. Although the city still has many views and buildings that refer to the industrial city, Eindhoven now wants to be more like a Brainport city. They want to adjust the image of the city and change it into this modern high tech and creative city. With popular events (Dutch Design Week) and prosperous areas in the city (Strijp-s, High Tech Campus), a good start has been made on which they want to continue growing in the near future.

A key point of the Brainport City vision is the increase in regionally and internationally connectivity of Eindhoven, which will contribute in competing with other worldwide metropolises. Logically the public transport network is an important factor in this connectivity, and when Eindhoven develops itself towards this dot on the horizon the city will grow in scale. To make this growth possible, the public spaces should have enough potency and opportunities to accommodate the growing amount of visitors.

## Analyses of main public spaces

This study is focused on the public spaces within the city center of Eindhoven. For these key places is not looked into any buildings or streets but in public spaces and squares that are dedicated to pedestrian visitors. In this center, there are five main squares located which will be analyzed using a SWOT analysis (Strengths, Weaknesses, Opportunities, Threats). Out of the analyses, specific spots will be revealed that have the highest priority for a transformation. The five public spaces that have been looked into are: 'De Markt', '18-Septemberplein', 'Stationsplein', 'Catharinaplein' and the 'Stadhuisplein'.

The SWOT-analyses are conducted in an extensive way, that will represent the visitors of the different places. Both from urban designer view and from pedestrian visitor view opinions have been collected to have a clear overview of how the current spaces are experienced. To make sure that this SWOT-analysis is complete and covers different opinions and approaches, an average of fifteen people have been asked to sum up their comments about a space. The outcomes are combined in the next few schemes.

To start with, the 18-Septemberplein is the public square in front of the Bijenkorf at the start of the main shopping street. This square is enclosed by two car routes and has been renovated in 2009 when an underground bicycle storage was created. With two entrances at both sides of the square, the center is now completely focused

on pedestrians. This area is often crowded and every week the market takes place here. Most people are quite positive towards this space, but some call it big and empty with no green at all.

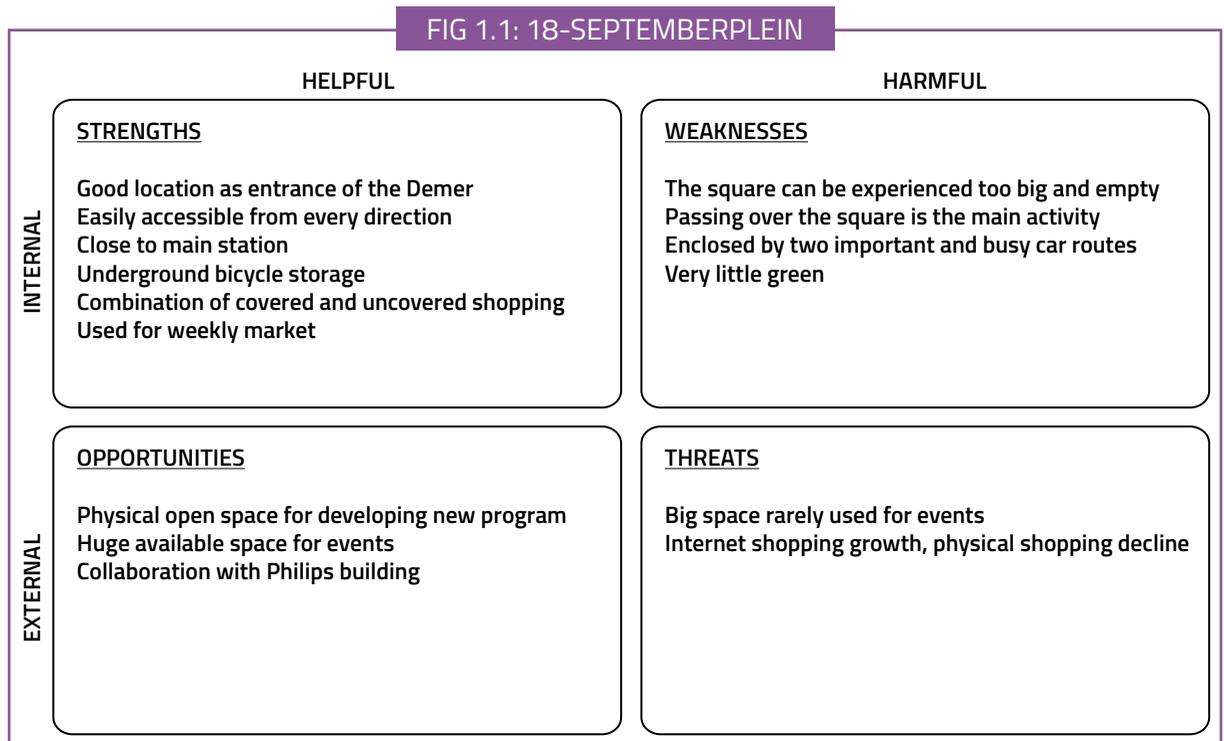
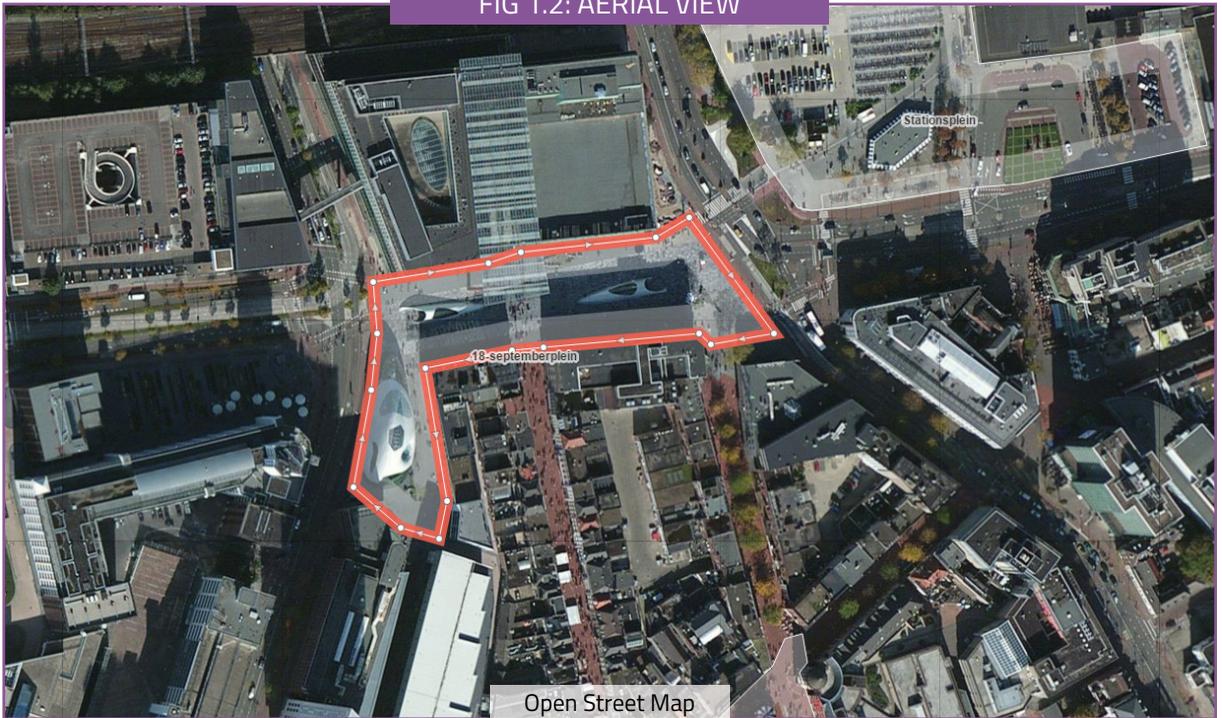


FIG 1.2: AERIAL VIEW



At the end of the main shopping street, there is the Catharinaplein which is the small square in front of the Catharina church. This square has a good location in the inner city, just in between the shopping area and the bar street 'Stratumseind'. Many people know this area because of they pass over it, by foot or by bicycle. Because of this the

main activity of the square was passing by, but since Happy Italy was established in one of the buildings, the terrace was expanded and popular seating became more dominant within this Catharinaplein.

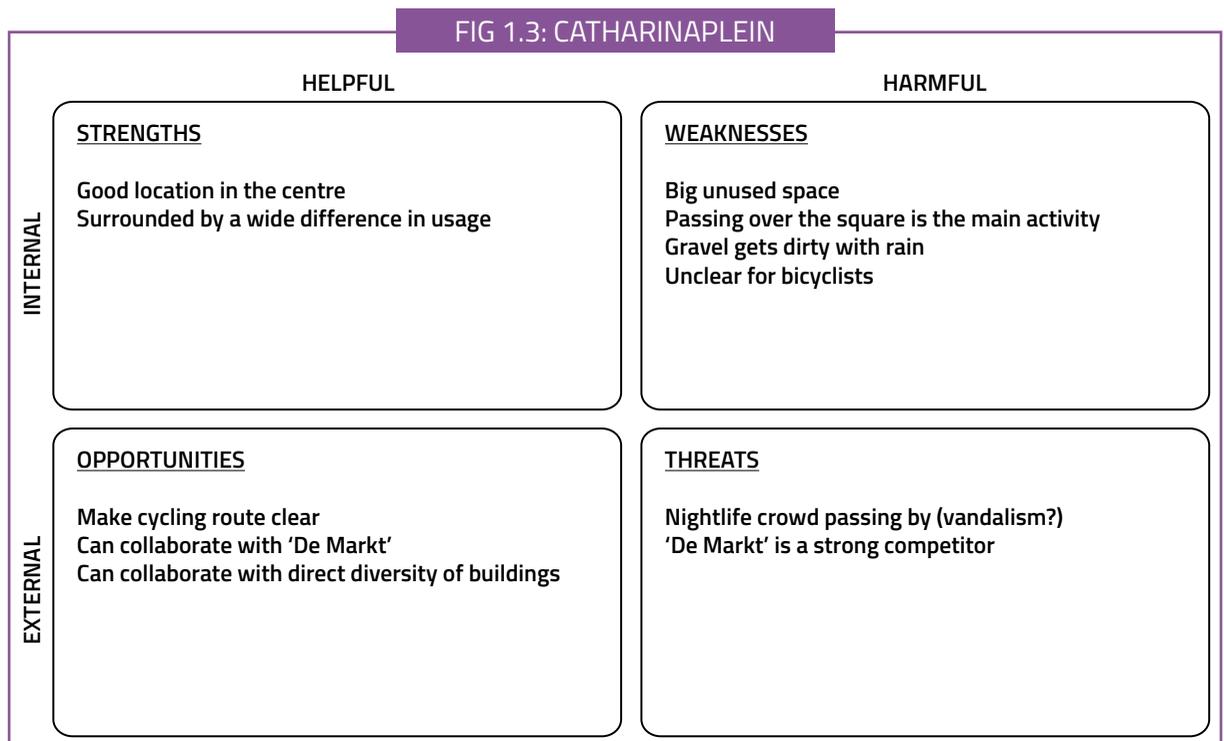
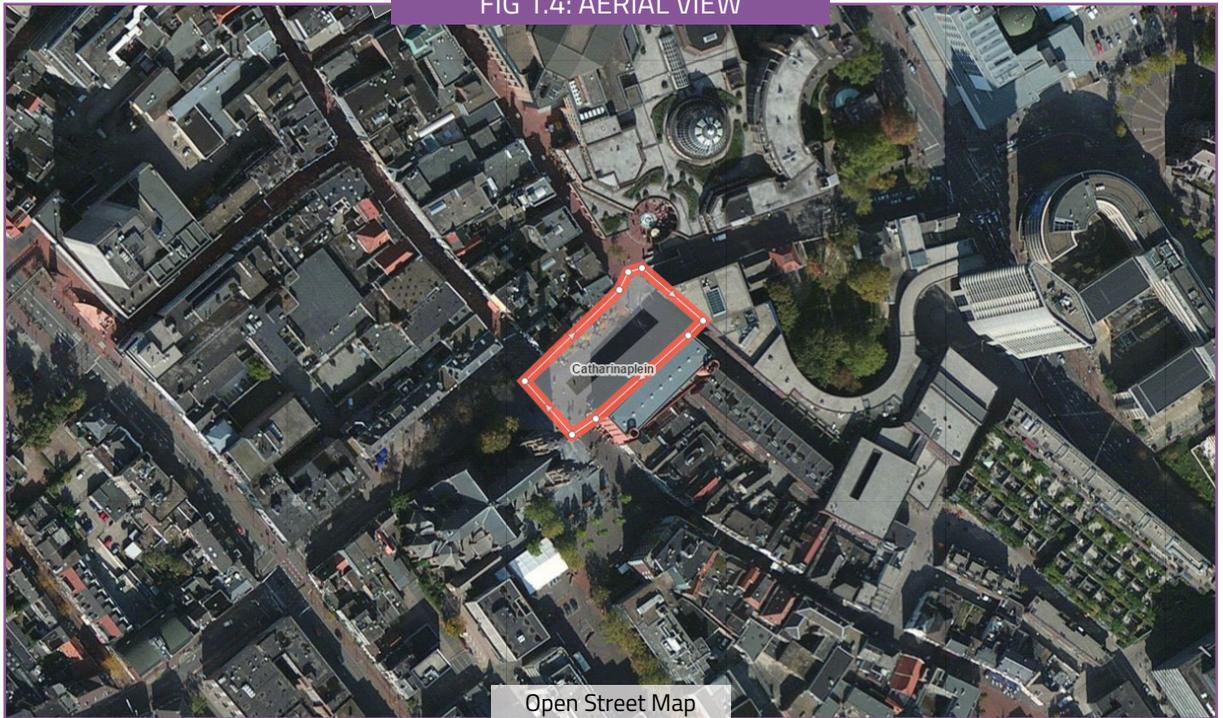


FIG 1.4: AERIAL VIEW



Open Street Map

De Markt is by far the most popular place for people to go for a drink. This square has many small cafés and restaurants with terraces. It is located next to or even part of the shopping district and also the central station is nearby. When the weather is good, for sure the area is completely full of people enjoying their drinks. Related to this is the

fact that when it is cold or rainy outside, there is not much going on.

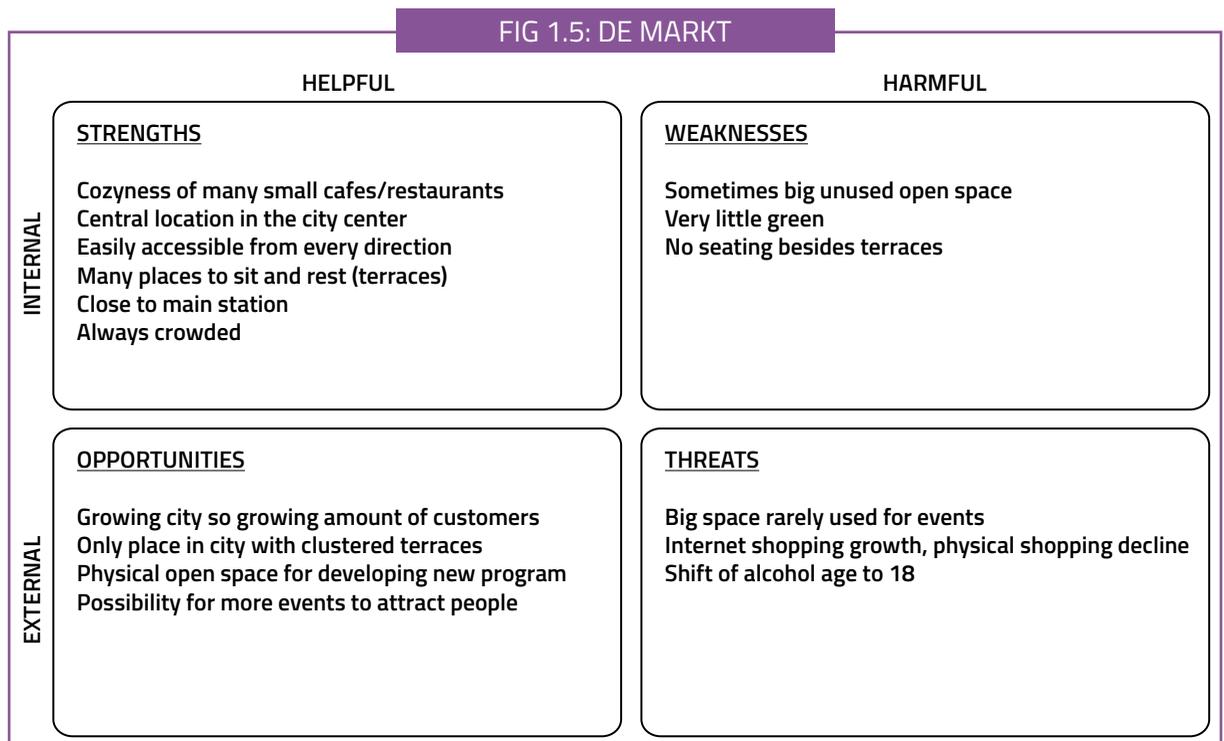
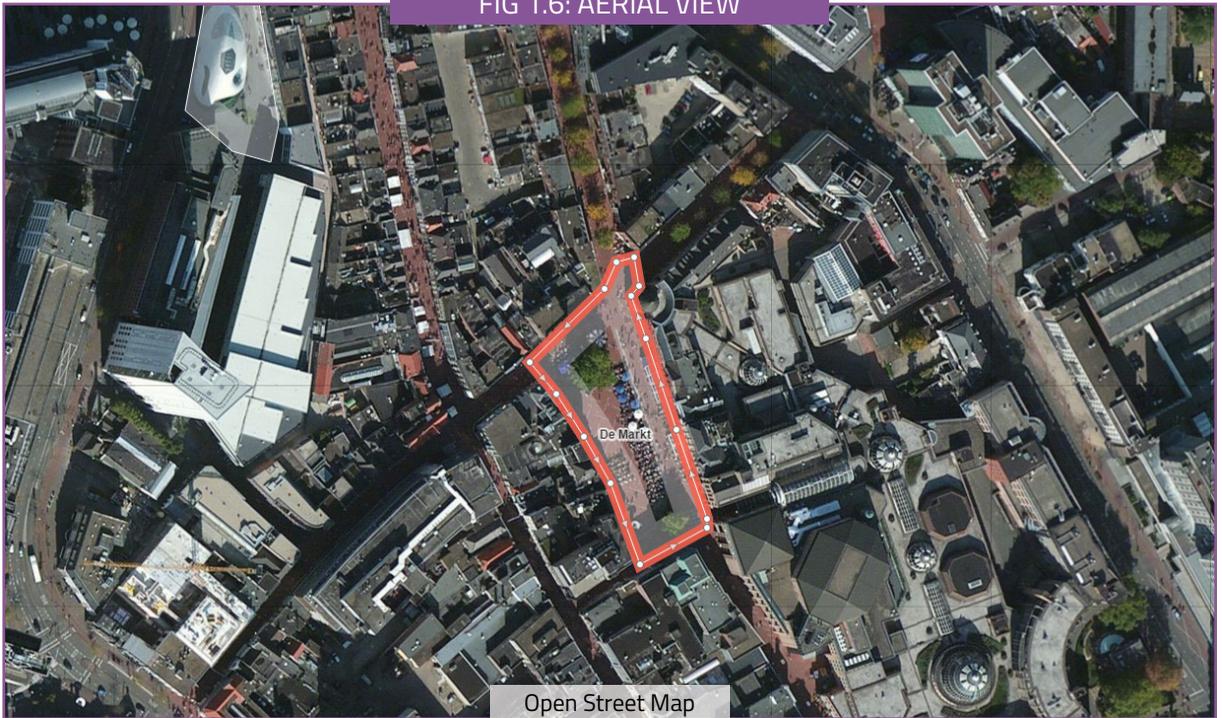


FIG 1.6: AERIAL VIEW



The Stadhuisplein is the huge square in front of the municipality office. This space is, in fact, empty with the exception of a few skate ramps. Events are held here, for example music festivals or celebration of a championship for a local sports club. Besides these events or festivals, there is nothing going on. Occasionally a few skaters and

some people that walk over the square as they just parked the car in the underground parking lot. There are no cafés or shops located in the surrounding buildings, and without mixed-use, it will stay mostly empty.

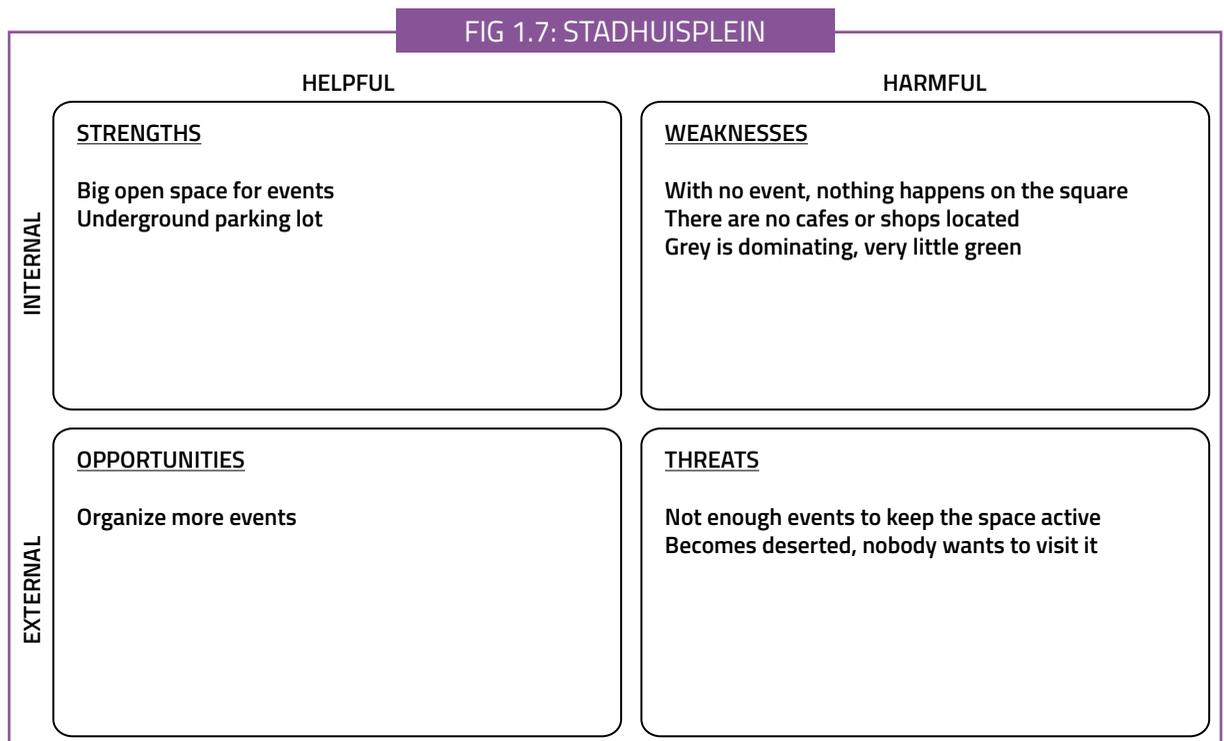
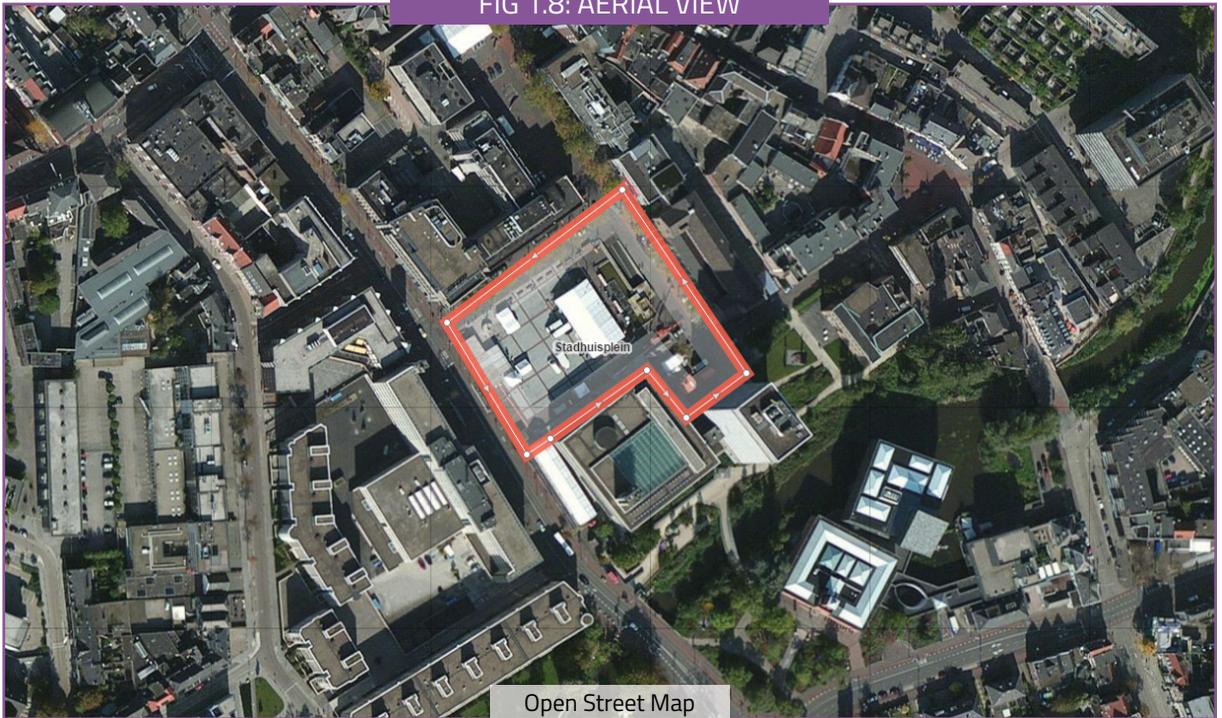


FIG 1.8: AERIAL VIEW



The Stationsplein is the small square south of the central station. This is the area people pass through as they walk towards the inner city. Here they can also get a taxi or park their car or bike, but the main function is the connection with the rest of the center. Because of this location in front of the station, it is always crowded with people.

These people unanimously are negative towards this space, as they find it messy and boring. The cars are now dominating large parts of the area and some pedestrians even feel left out.

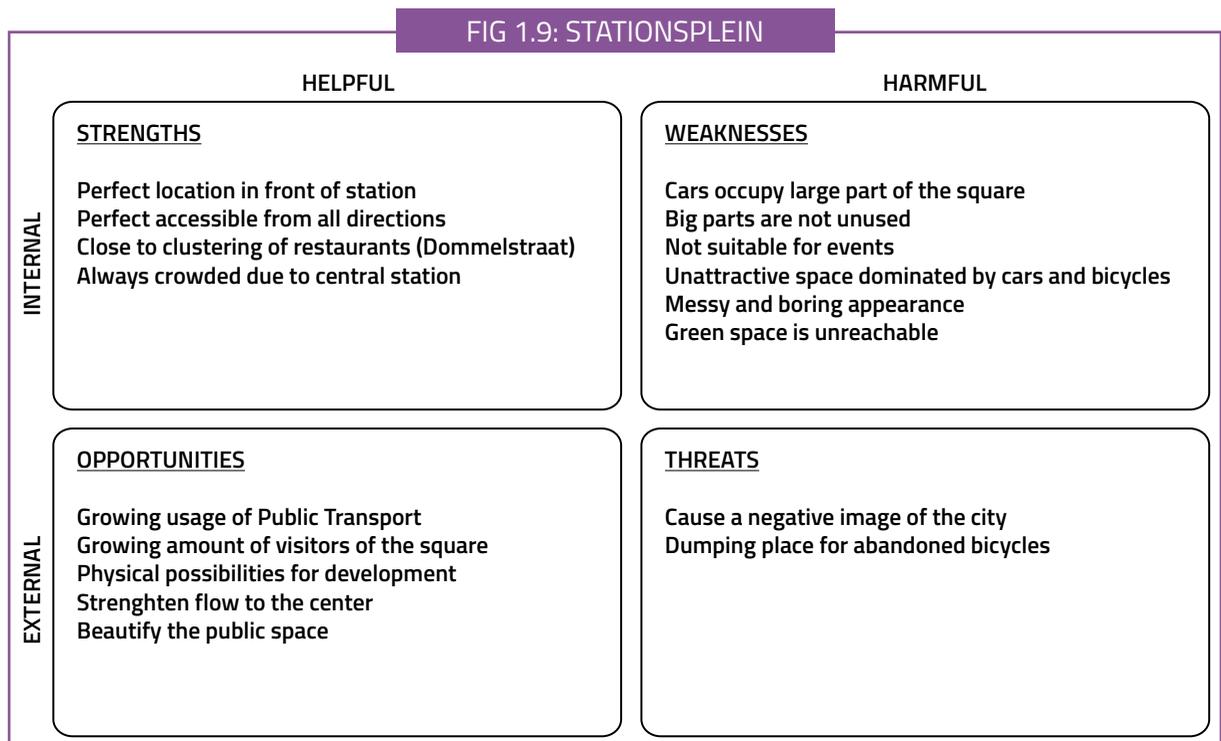
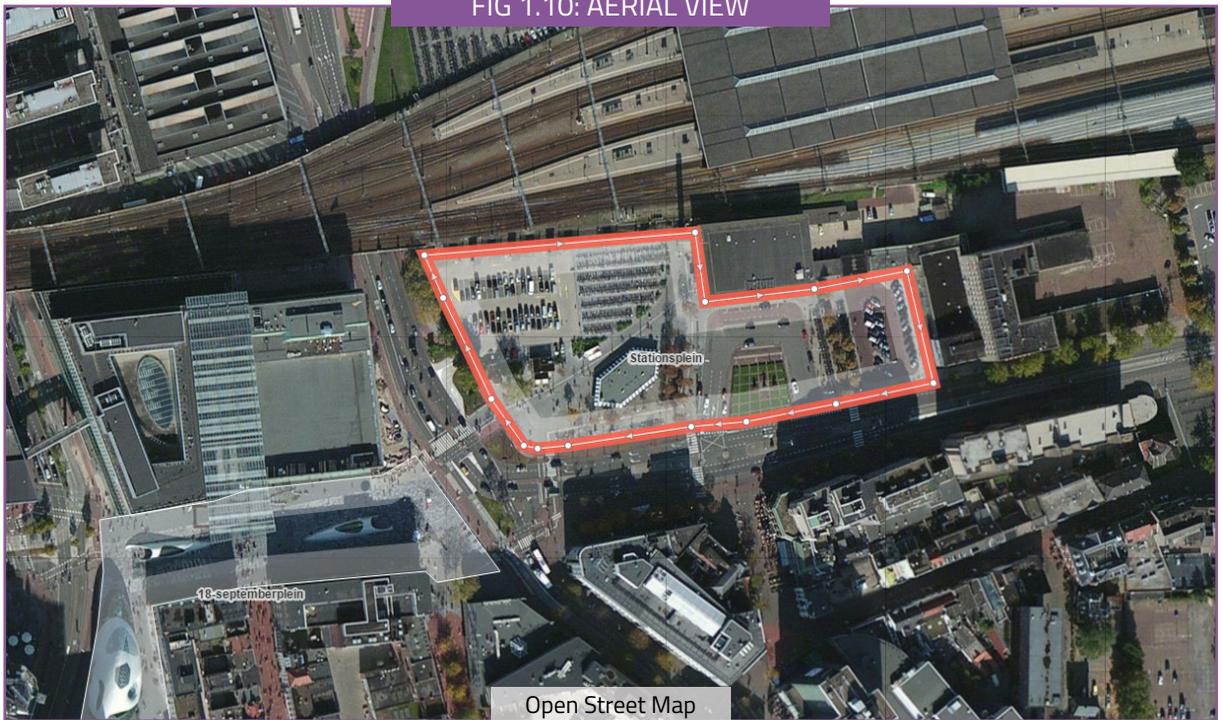


FIG 1.10: AERIAL VIEW



## Focus area

All five key places have been carefully analyzed using SWOT-analyses. These analyses cover all important features that make the public space successful or fail. By far the most positive feedback relates to De Markt and 18-Septemberplein, which is renovated a few years ago. The analysis of the Stadhuisplein stands out for the very few features mentioned, and the analysis of the Stationsplein is definitely the area where the most weaknesses and opportunities are located. Given that this area is also probably the most crowded place of the five key places, the Stationsplein or 'station area' has the highest priority for improvements and thus this place will be the primary location for this graduation studio.

FIG 1.11: EINDHOVEN REGION

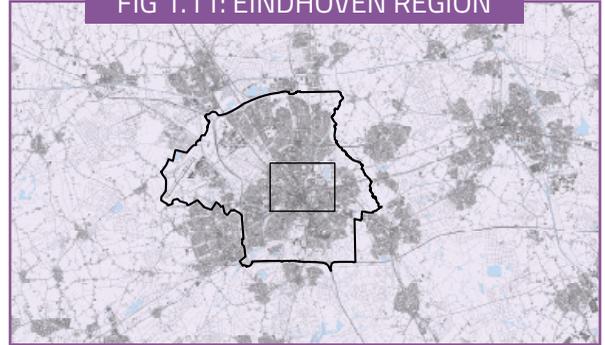


FIG 1.12: EINDHOVEN CENTER



FIG 1.13: STATIONSPLEIN



In the future, the central station will be elevated to an international hub with high frequency and fast connections with for example the Randstad, Düsseldorf, Brussels, and Aachen. In this way, the station will be one of the main entrances on which people enter the city of Eindhoven.

The first impression that they will experience can be crucial for the image of Eindhoven, so an attractive entrance is needed to support this Brainport City vision. The public space in the station area or 'Stationsplein' is at the moment a repellent and chaotic area, where people do not feel welcome. The area is dominated by parked bicycles and cars, and people are pushed through.

On a certain moment in the future, this Stationsplein will experience a huge transformation, including the moving of parking lots and taxi stands, but the municipality is not able to finance this transformation within likely the next ten years. For that reason, this graduation project will be initially focused on a short-term application that directly can be applied, using only small investments. With small interventions, a big impact can be achieved to provide an attractive entrance of the city within the short-term future.

When this short-term solution is applied and shows positive results, the concept can be expanded to the rest of the square. In this way, the whole area can be transformed over a long-term period. The master plan and phasing for this expansion are included in this thesis.

## Challenge

As that the Stationsplein is the target location for this project, it is very important to figure out how this area should be transformed. As a station area, there are three main tasks that have to be met. First is the connection between the station and the city center, this is in many cases the main function of a station area. This connection should be a clear one for visitors of the city so that they can easily find their way to the city center. The second one is to deal with the complexity of different logistics and mobility modes coming together on this station node. And the last but not less important task of the station area is to provide the public with a mixed program. The visiting people will be more satisfied when there are different things to see and do in the station area, so this mixed program and opportunities to stay for a while will contribute to an attractive place.

FIG 1.14: THREE TASKS OF STATION AREA



Connection between station and center



Node of complex logistics and mobility



Attract people with mixed program

When similar stations and their corresponding public space are developed around the country, it is usual to do this with large master plans that will transform the complete area in one go. This standard method requires major investments and always need a significant number of years to complete the plan. But especially after the big economic crisis that recently hit the building market, there are often recurring troubles during these big projects. This can lead to years of delay and this will cause dissatisfaction and complaining visitors. Besides this, when a project is dealing with years of delay the demands can be shifted which means that the master plan as designed years ago is now outdated. For example, another city in the province of Noord-Brabant is Tilburg, whose central station is still under construction. Travelers and visitors of that city experience now years of nuisance and inconvenience.

FIG 1.15: STANDARD METHOD



Large master plans with major investments  
Planned for years ahead



Recurring troubles during big projects cause delay  
Delay leads to dissatisfaction and outdated plans



Tilburg Station  
Travelers experience: years of nuisance

That is why a new approach will be applied to the Stationsplein in Eindhoven. It deals with the struggles that 'normal' large plans have with finance and other building problems. This new approach will be based on small improvements that in the end have a big impact on the space. Small steps will be made that only requires low investments and these steps can all be seen independently. In a worst case scenario when the municipality is coping with finance issues, the Stationsplein will not be the victim of being under construction for years and years. Every step that is taken adds more quality to the area and these steps are not necessarily connected to other steps. The method starts to deal with the existing buildings and to create a better place just by improving the public space with small interventions. When the first steps are completed successfully, the next phase can be entered and in this way after a few years, the built structure can slowly change. In contradiction to the standard method, the municipality can always decide which steps will be executed or after which steps they are satisfied with the given result.

FIG 1.16: NEW APPROACH



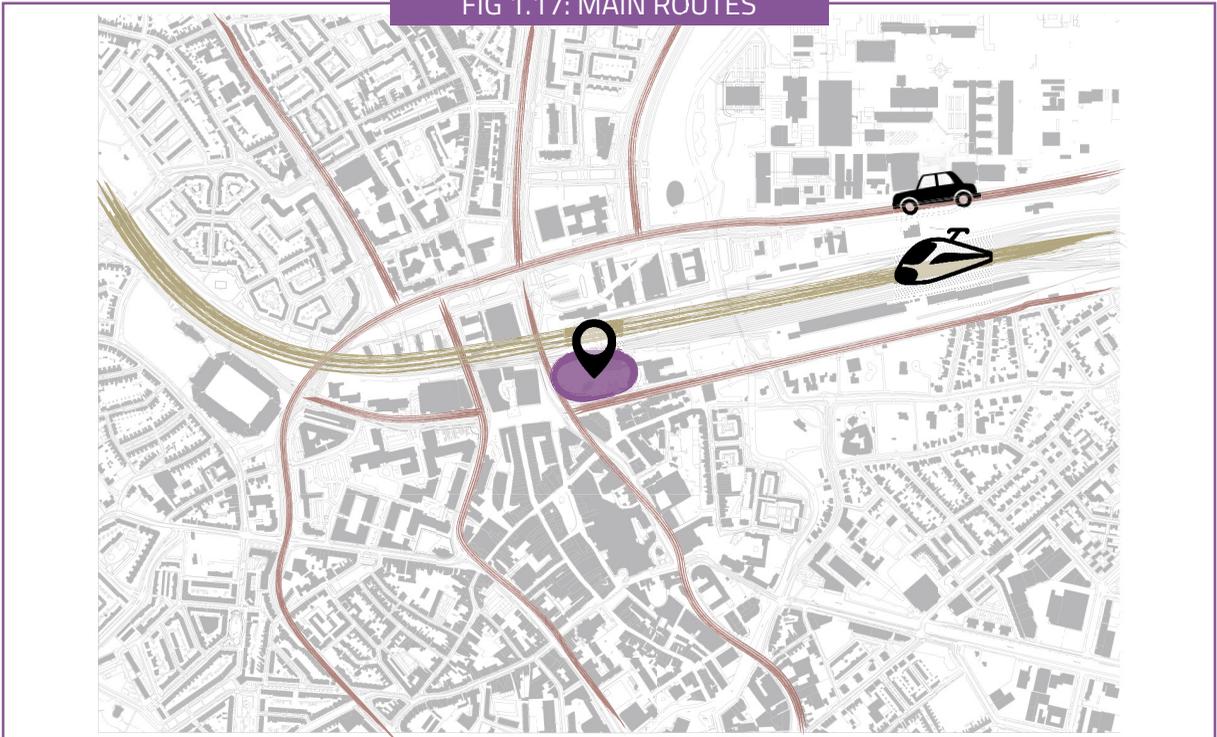
Via small improvements towards  
big impact  
Small steps requires low investments  
Work with existing buildings  
After few years, structure slowly  
changes

## Location analysis

To start with the analysis of the area, the urban context should be illustrated. As shown in figures 1.11-1.13 the location of the Stationsplein within Eindhoven is clear. But how is this area connected in the city itself? In figure 1.17 the main routes of Eindhoven center are shown, where the Stationsplein, of course, is located next to the

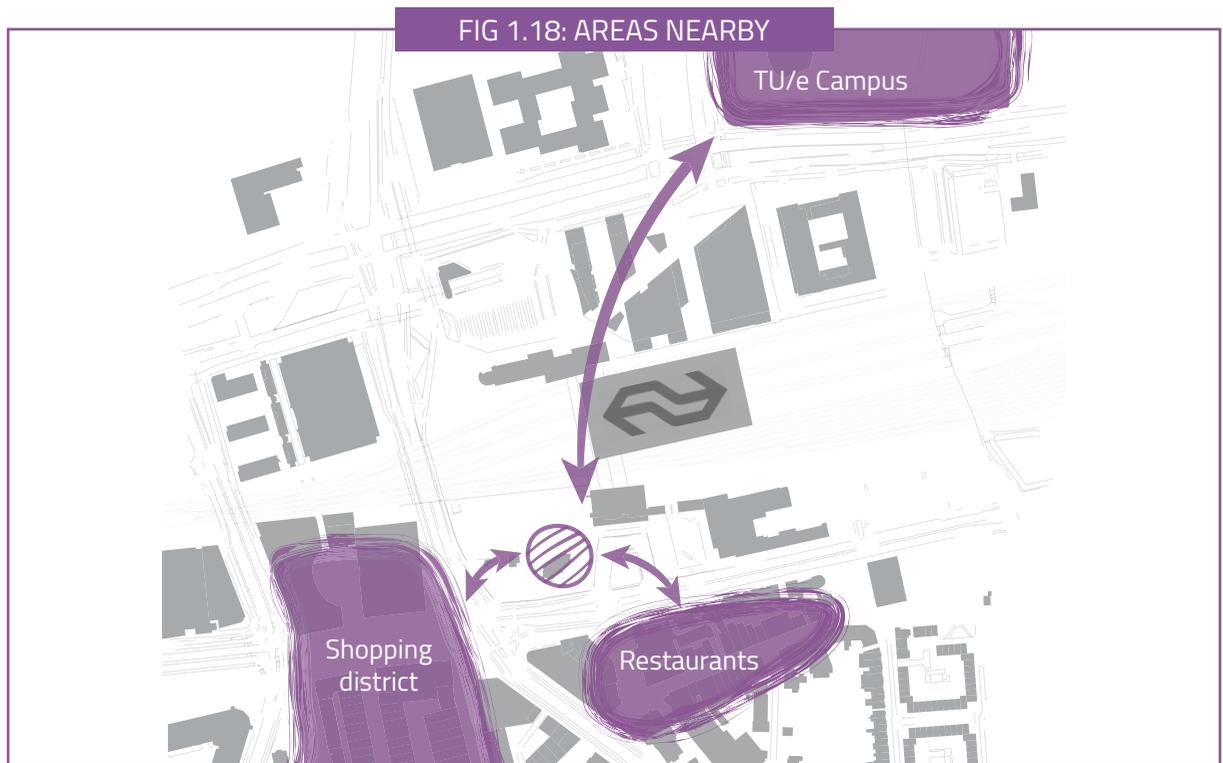
railway. The location of the main car routes causes that the Stationsplein is enclosed by traffic routes on three sides. At the north side the railway will form a barrier, and at the west and south side, the road separates the square from the inner city.

FIG 1.17: MAIN ROUTES



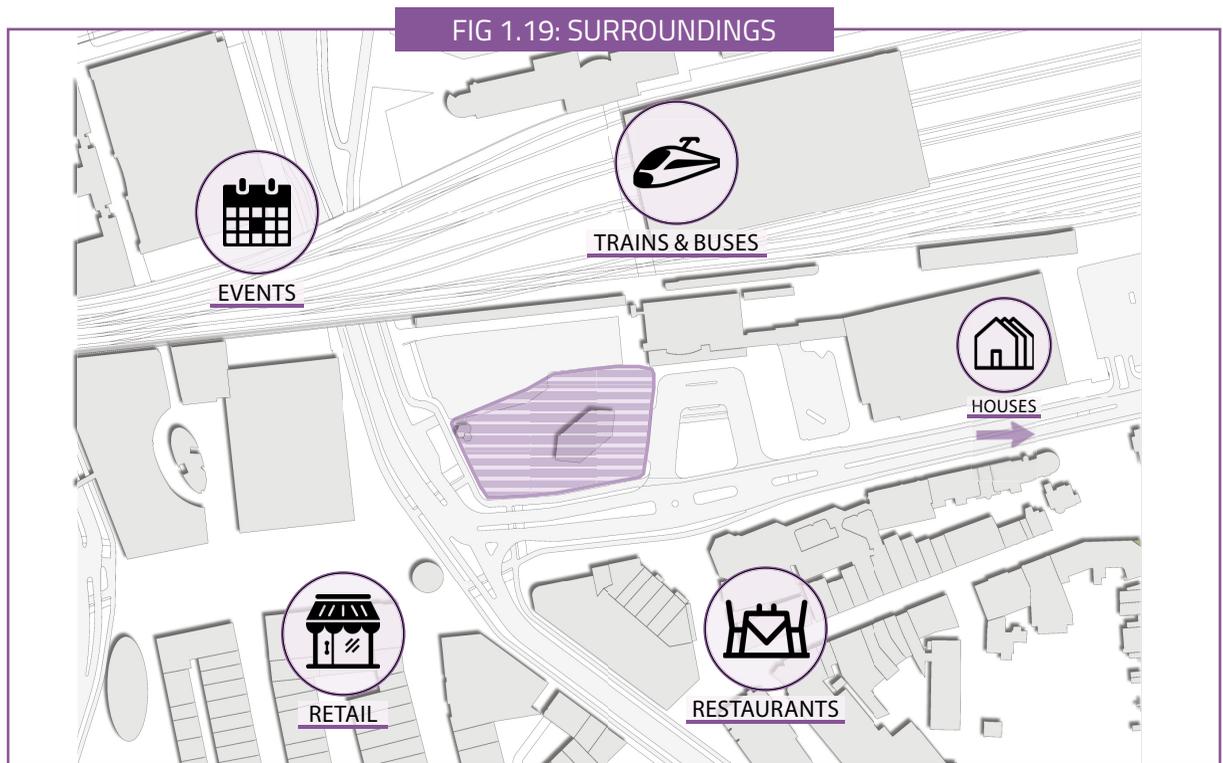
When this image is zoomed in the three main areas nearby are visible, that will have a connection with the Stationsplein. The shopping district and the restaurant area south of the railway have the strongest connection with the square, and the university campus in the north to a lesser degree. To get to one of these three zones,

in every case a barrier have to be crossed. Where in the south and west the road is the barrier, towards the TU/e campus in the north the railway is considered as a large barrier.

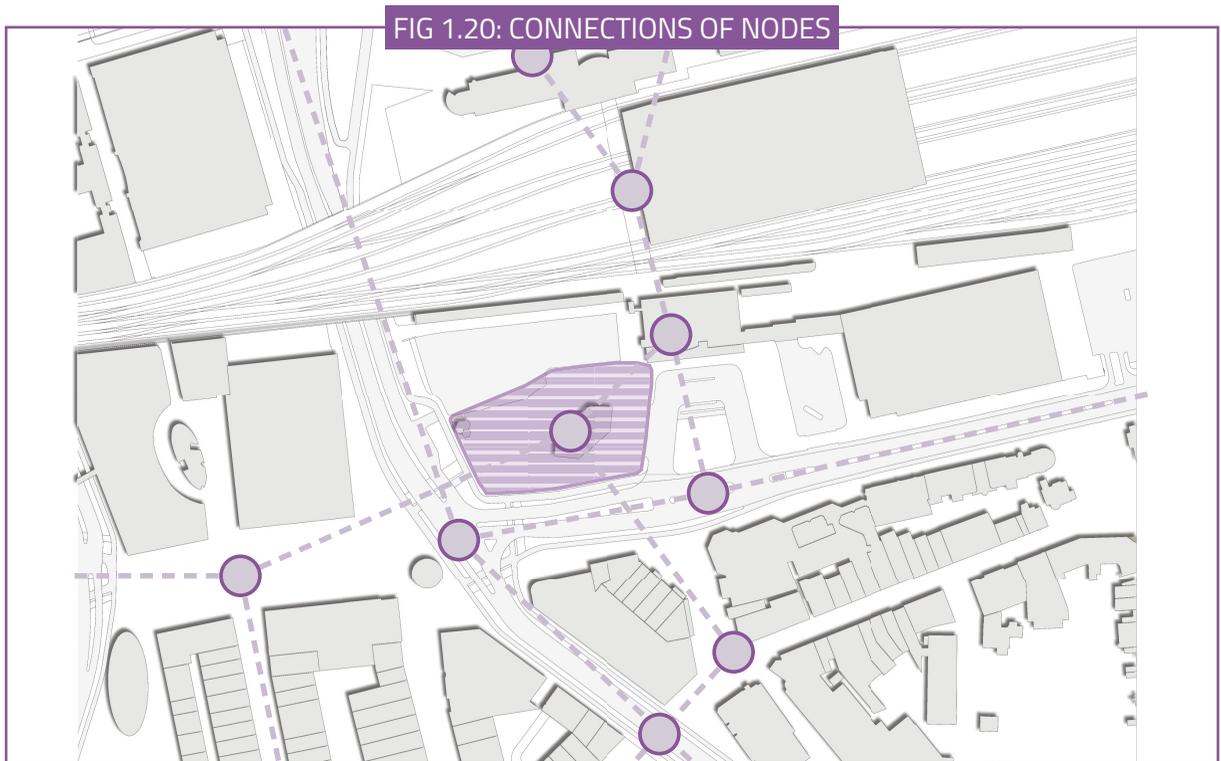


On a smaller level, the surroundings of the Stationsplein includes more diverse functions. Besides these retail shops and restaurants, there is in the northwest corner the presence of the Beursgebouw, a large hall where events are held. In the east a housing district is located a little further away, that is the start of a large housing district. Of

course, the station itself is very close related to the Stationsplein and with the trains and buses is this the most important surrounding element.



In figure 1.20 the important nodes are shown, in which paths of people or cars intersect with each other. For the cars, there is a simple routing that goes underneath the railway, branching in a south and east direction. The places where pedestrians have to cross this road is also considered as a significant node, as also the places where



As mentioned before, the square is mainly enclosed by busy routes but towards the north side, the railway is experienced as a physical fence. The railway itself is a few meters higher than ground level and because of this height difference, this is literally a wall seen from the Stationsplein. Therefore, the main viewpoints are not in north directions

but in all other, despite the car routes over which people can see. The visual connection with the surroundings is still intact and sight lines do cross the road.

FIG 1.21: DIRECTIONS OF SIGHT



FIG 1.22: PHOTOS TAKEN



When having a closer look at the area, the chaotic appearance of the square becomes visible. Figure 1.22 shows recently taken pictures that illustrate the current situation. To clarify the camera positions, the overview map sets the positions at which the photos have been made. In these few photos, the major problems are shown, firstly the disorganized routing and chaotic image of the square. Besides that the bicycle and car parking is dominating the square and lastly people are now pushed through a narrow passage towards the inner city.

These observations have been made on location, where the public space has been experienced in different angles. By visiting the space and entering it multiple times from different directions, insight is gathered about how people experience the space. This is followed by observations about how people behave on the square, how they move along the space, what routes they take and how they arrived in the area. In this way, weak or empty spots are easily recognized as spots that people avoids. Other interesting observations are the places where people are waiting or gathering

and no seats are available in that spot. These observations took place at different times and on different days, to create an image that is representative for the square including potential differences within a time of the day.

Figures 1.23 show the main outcomes of these observations, and the three main pedestrian routes are obvious. By far most of the people use the route over the middle of the square towards the start of the shopping district. Besides this crowded route, there are two other important walkways. One is a branch of the first one, that goes over the

square but heads towards the restaurant district. And the other one is going straight out the station building towards this restaurant area. This last route is also used by people that are waiting for someone to pick them up for example, as it flows just next to the car loop that is used for taxis and drop on drop off cars.

FIG 1.23: WALKING ROUTES



Figure 1.24 shows all the seats that are currently placed on the square. These seats include benches, chairs or other seating options. Thanks to the coffee shop that is located in the central kiosk there are at least a few seating possibilities. This coffee shop and the corresponding seats are working good and are quite often occupied. Besides

that it is very poor, the seating on rest of the square is very scarce.

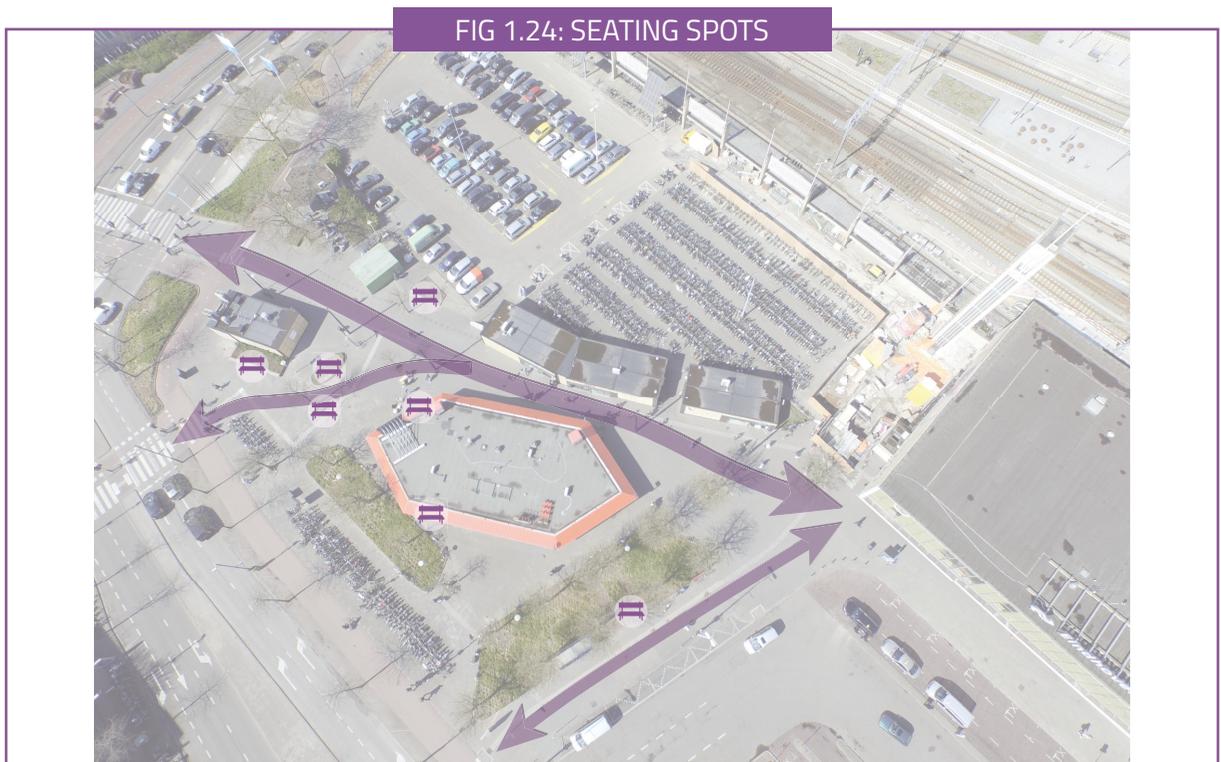
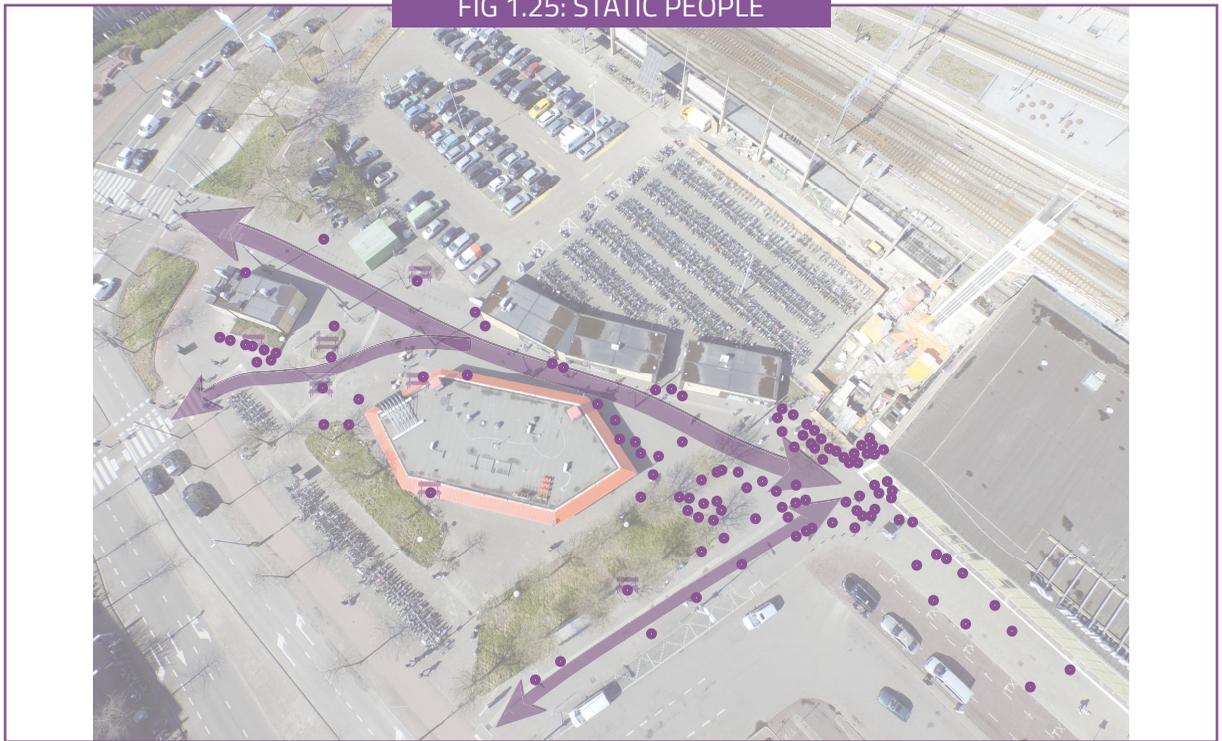


FIG 1.24: SEATING SPOTS

When combining this information with the observation of where people are standing or waiting, the conclusion can be drawn that these few benches are also not ideally located. The majority of the static people are standing at the beginning of the square, near the station building. The striking fact is that this location has no available seating at all.

People are forced to stand while they wait for their friends to arrive. Also notable is the fact that most people are standing just on the sidelines of these pedestrian flows. While they wait they want to see what is happening and who are passing them, so most of them stay near the pedestrian route.

FIG 1.25: STATIC PEOPLE



The observations do show that people are mainly moving along the three main pedestrian routes, and very few of them want to stay here for a while. The coffee bar is the bright spot of the square and the rest of the square is often empty.

Besides observing, many people have been interviewed on the Stationsplein, to gather information about how people's image or first impression of the space is. People also have been asked what their experience with the public space is, what they think that good and bad features of the space are, and what they think that is lacking. The conclusions of

FIG 1.26: OUTCOME OF OBSERVATIONS

*Three main pedestrian routes*

*Rest of the square is quiet and empty*

*About 1/20 has a destination on the square*

## **OBSERVATIONS**

*No opportunities to enjoy the greenery*

*People concentrated around the pedestrian flow*

*Where people wait is no seating available*

these interviews as quotes that are the most mentioned are shown in figure 1.27 Some people were surprised when they were asked about their opinion of this square, simple because of the fact that they do not experience the place as a square. People explain that they are only using the square as a connection with the inner city, and do

not want to stay longer than necessary. And some of them responded with “why should I stay here?”, as they feel unwanted there. When they hear about this graduation project and the aim to create an attractive urban space, the most common respond is “Good luck my friend, there is a lot of work to be done here”.

FIG 1.27: OUTCOME OF INTERVIEWS

*“Hard to define as a square”*

*“I am just walking to the inner city”*

*“Just go with the pedestrian flow”*

## INTERVIEWS

*“Unpleasant to stay here”*

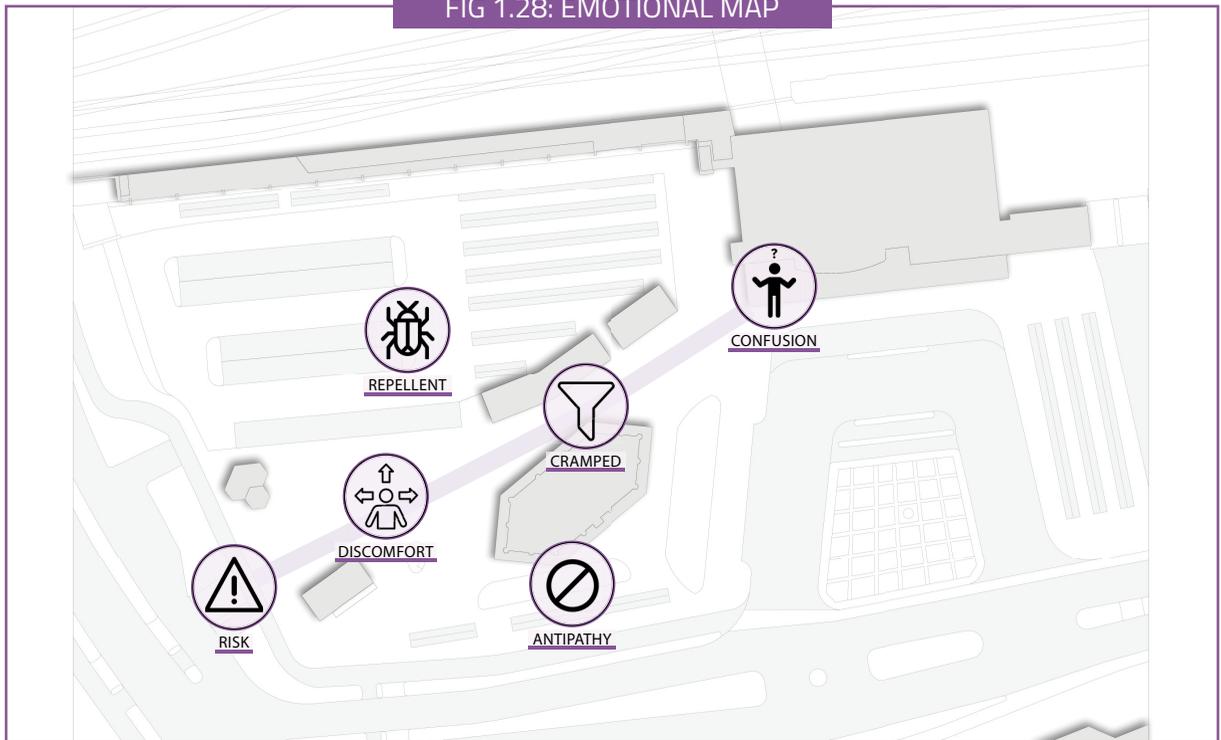
*“Doesn’t feel as a square”*

*“Very little seating, so you have to walk through”*

To map these quotes and opinions of the visitors, people were asked about their feelings on different places within the Stationsplein. They had to describe in just one word what they thought of a specific place and the outcomes are combined into an emotional map. When people are visiting Eindhoven by train for their first time they

feel confused when they come out of the station building. The first thing they see is cars and taxis that are located in front of the building entrance. People look around to figure out where they should go, and when they see the crowded pedestrian flow they assume the city center is that way. When following these people they feel pushed

FIG 1.28: EMOTIONAL MAP



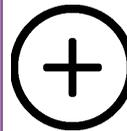
through in between these small buildings. "It is like I go through a funnel", one of the visitors said. Then they will go through an undefined space, which evokes discomfort, and then leave the square by crossing the Vestdijk, one of the main car routes in the city center. The north side of this diagonal pedestrian route is dominated with parking. Both car parking and bicycle parking is filling this space and due to the high visibility people call it repellent. At the south is the Stationsweg located and just next to it is a long row of bicycle racks located. This causes antipathy according to some visitors, and they do not have many positive reactions to it.

## Conclusion

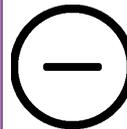
The outcomes these analyses are showing what the current image of the Stationsplein is, which is not quite positive.

Some pros are for example the excellent location within Eindhoven, the fact that the area is highly accessible for all kind of people and the crowdedness. But the downsides of the current situation outweighs the pros, with a messy appearance, lack of seating and the presence of little green. It only functions as passing through and is experienced as a weak city entrance despite the ambition of the municipality. Visitors are at the moment also not very positive when asked about the square and define it as an undefined space with a lack of opportunities to stay for a while. It is clear that improvements to this area are much needed, to transform the Stationsplein in a square where people are attracted to.

FIG 1.29: PROS AND CONS



Excellent location  
Highly accessible  
Always crowded



Messy appearance  
Lack of seating  
Only passing through  
Little green  
Weak city entrance

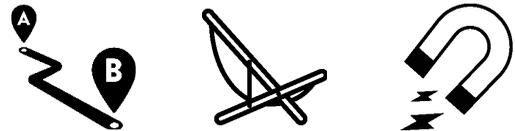
Improvements should be made to create a better place, and matching boundary conditions have to be set.

As mentioned before, the method will be focused on small interventions that will have a significant change. In this way, only low investments are needed, and it can be directly applicable without a long process of planning and financing. This can come in handy for the municipality when they are coping with financial limits. By dealing with the current situation and structure, this plan will be realistic and can be executed without investors. Therefore, the short-term plan can be realized within a short period and provide the visitors of Eindhoven with a renovated public space on a short-term.

The main task of this project will be to transform the currently undefined space in a place that attracts people to stay. A pleasant space where people would like to come to is needed, and this should be combined with a clear routing that goes over the space. A balance has to be found within these two improvements, to create a successful place.

FIG 1.30: IMPROVEMENTS NEEDED

Create clear routing  
Create attractive staying area



An important condition for the plan is that it is expandable, the concept should have the possibility to spread out in the future. When a short-term plan turns out to be successful, a long-term plan shows an opportunity to expand the plan to a wider location. If the municipality decides in the future to create an underground parking lot or move the taxi loop, then the area of Stationsplein will extend and the plan should be able to do so as well. Therefore, a short-term and a long-term plan have to be made. Also, this short-term plan should be a solution that can last for a minimum of 10 years, after which the long-term plan can be applied or a new program can be set.

FIG 1.31: BOUNDARY CONDITIONS

Solution for minimum of 10 years  
Directly applicable  
Low investments  
Expandable  
Small interventions



# Fundamental human needs

To figure out about how this area can be improved and how this undefined space can be transformed into an attractive place to be, literature can be used to gain insight about this topic.

As discussed earlier Eindhoven is changing towards a creative and high-tech environment, which attract creative and smart people to the region. These people can have other preferences than the industrial inhabitants that Eindhoven used to have, but the key is to not just design places targeting these new people.

Good public spaces can be created by focusing on the universal demands of people, disregarding their educational or knowledge background. There are certain qualities and features that underline these fundamental human needs, and can be applied to all kind of people. Also, the fundamental needs are independent of the presence of the creative class. In case that they may leave the city in the future, the basic human needs will remain the same for other people. These fundamental aspects are crucial for designing the urban environment, and when making good use it will result in public spaces where all people can meet each other, where

interaction takes place and where people feel invited to visit the space. Successful public spaces can be seen as 'living room' of the city, where all people feel welcome to build on their social relationships. These public spaces can contribute to our public lives when worked out well. But by far not all public spaces succeed and there are in fact a lot of examples that fail.

For this assignment extensive theory has been studied that is summarized in this chapter, with the following question in mind:

- What do we know about the fundamental human needs of people to design public spaces and how can the user experience be improved by using these human demands?

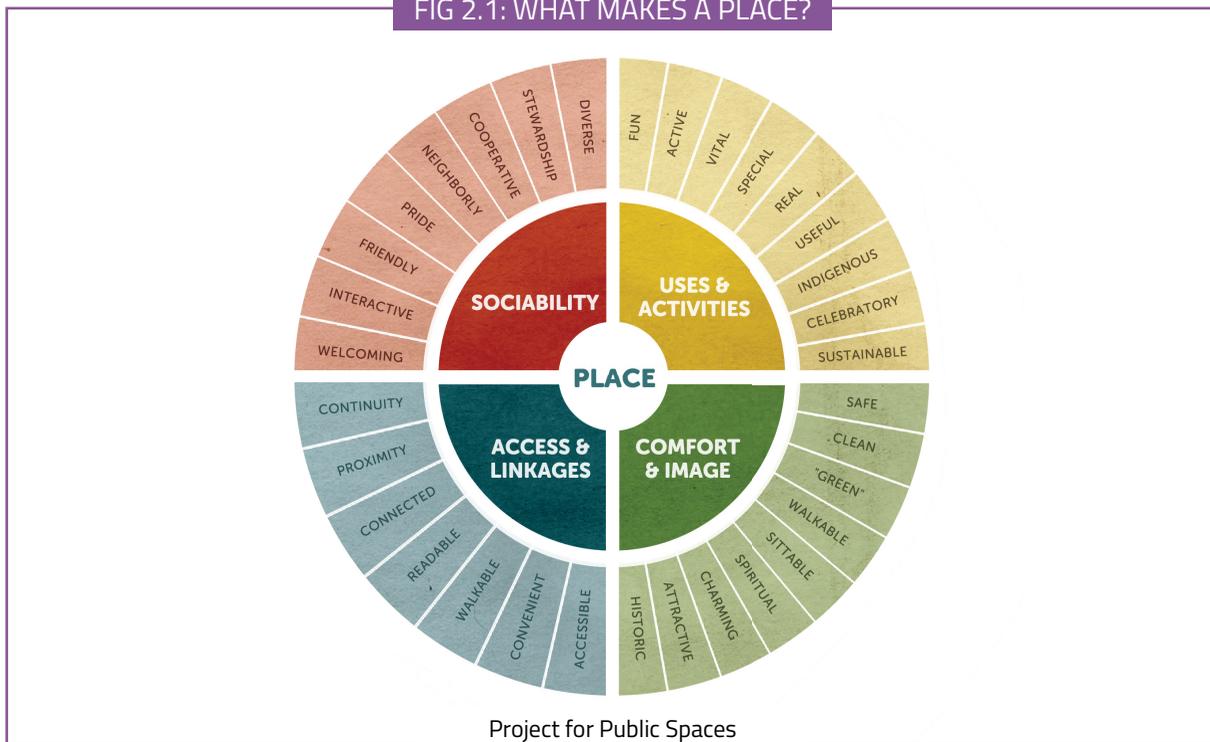
The fundamental human needs are divided into three sections: spatial qualities, design features and linking values, and these will be described in the next few paragraphs.

# Spatial qualities

The differences between successful spaces and spaces that fail were investigated by the Project for Public Spaces (Project for Public Spaces, sd) and the outcome showed four fundamental qualities that are needed in order to create a successful public space. These spaces should be accessible, there should be enough mix in uses and activities,

it should be comfortable with a good image, and it should be a sociable space. Each public space can be evaluated using these four qualities (sociability, uses and activity, access and linkages, comfort and image) and in figure 2.1 the ring of Project for Public Spaces also shows some aspects that are linked to these four main fundamental

FIG 2.1: WHAT MAKES A PLACE?



qualities. The four qualities will be shortly described in the next few paragraphs.

### *Uses and activity*

For most people activities are one of the main reasons to come and later return to public spaces. That is why these activities and uses are very important for a successful space. A public space where nothing happens will easily get bored and empty, while when providing people with activities and other things to do they will be attracted to the area. A public space with physical activity going on will certainly boost the quality and experience of the space. Also, these activities can be held throughout the whole day and focus both males and females of different ages, to keep the public space lively and crowded at every moment. Mixing different types of use and letting people participate in events will keep the public space active and vital.

### *Comfort and image*

The first impression of a place is what people will often memorize. This image is very important and can be strengthened by a charming and attractive presentation of the

public space. The comfort is related to this impression of a public space. People want to have places to sit and rest, and prefer to have a choice to sit in the sun or in the shade. The public space should meet these requirements with well-placed benches. Another important thing is the cleanness of the space, to see if there is litter on the ground or that the public space well is maintained. When people feel safe, they automatically feel more comfortable. Thus keeping the space clear will contribute to this level of comfort.

### *Access and linkages*

A good accessible public space should be well connected and linked with the surroundings. A blank wall is not so interesting and well connected then a row of shops or restaurants. The area should be readable both from long and small distances and it is important to have the space easily walkable to and through. It should be reachable by pedestrians without zigzagging between cars or other obstacles. Also, people should have the opportunity to reach the space with different transport modes such as a bicycle, public transport, and a car.

### *Sociability*

This quality is quite hard to achieve in a physical way, there are a lot of public spaces in our environment which are carefully designed but where not enough people come to. The challenge is to create a place where people feel welcome and easily get interacted with other people. It should be a meeting place where friends gather and where street life flourishes. Social networks can be expanded and on these public spaces should be strived for a diverse population, where all kinds of people are attracted to the place and feel part of the community.

### *Other spatial qualities*

Many space qualities are already mentioned in the division explained above. These four categories are functioning as an umbrella for a lot of smaller qualities that fit in these four fundamental categories. Outside of these categories also a few extra qualities can be thought of, for example, a combination of public and private on the public space can keep the area diverse and active and the application of nature and green in the public space can contribute to the feeling of health and happiness. Also, people are more

attracted to inviting places, where they feel more welcome and with all the mentioned qualities above a good character can be created in the public space where people will be pleased to stay.

## Design features

These spatial qualities, mentioned above, serve as an umbrella for the 'smaller' features, which can be seen as tools. Research is needed and information should be gathered about the application of different types of features, to achieve the spatial qualities in a public space. There will be direct relations between features and the matching spatial qualities, and combining these features as good as possible will lead to a public space where the fundamental human qualities can cause a successful public space. These features for public spaces can be divided into a few different classes, which will be discussed next.

### *Seating*

One of the basics for public spaces is sitting places. People need seats for resting, relaxing or waiting and for these purposes, the majority of people prefer to sit instead of staying. It can be difficult to assign perfect locations for seats, but the most common point according to William H. Whyte is: "People tend to sit most where there are places to sit." (Whyte, 2001). This means that it is hard to find out where people want to sit if there are no sitting places available.

People automatically tend to move to other places where better seating is available. So it can be a disadvantage of a public space when having a lack of seating, this will likely cause a decrease in visitors.

The location of seating in combination with the sun can be an important factor. Often people will prefer a sitting place in the sun, then a place in the shadow. The route of the sun over the public space should be taken into account, for carefully placing the seats. Thereby people will appreciate it if their sitting place is located to an object or place that they can look at. For example, they are attracted to a fountain or art sculpture but also seats on edges are very popular so that people can look into the public space where people pass and things will happen. Another pattern that has been found by William H. Whyte in his book *The Social Life of Small Urban Spaces* is the fact that people most likely will sit on the spots where pedestrian flows bisect a sittable place, they often choose for being a part of congestion of a place.

Another aspect of seating is the level of comfort, which can indicate to physical

comfort and also social comfort. Physical comfort addresses for example benches with backrests or chairs that are well designed for human contours. Benches can also be designed to be unattractive for hobo's to spend the night on (figure 2.2), but often these benches are then also experienced as unattractive by 'normal' people that visit

the space by daylight. Therefore, the best advice is not trying to repulse the so-called "undesirables", but to make a place attractive for everyone else. The undesirables prefer quiet and uncrowded places, so by making a place attractive and lively the problem of undesirables will be reduced to a minimum (Whyte, 2001).

FIG 2.2: BENCH DESIGN EINDHOVEN STATION



Social comfort is even more important, which gives people choices to their seating. People often like to sit on the edges and in the sun, but others maybe prefer sitting up front, in the back or in the shade. And there are also different preferences for people that want to sit in groups or off alone. Creating enough sitting space is a matter of social comfort, where people have more room to sort themselves out, and have more perception of their choices. Giving all these people opportunities to sit in their favorite environment can boost the public space, and different seating dimensions or movable chairs, for example, can give choices for groups or people that want to sit on their own. With straight benches or circular benches, people can regulate their natural spacing between other people and maintain their privacy (Marcus & Francis, 1998).

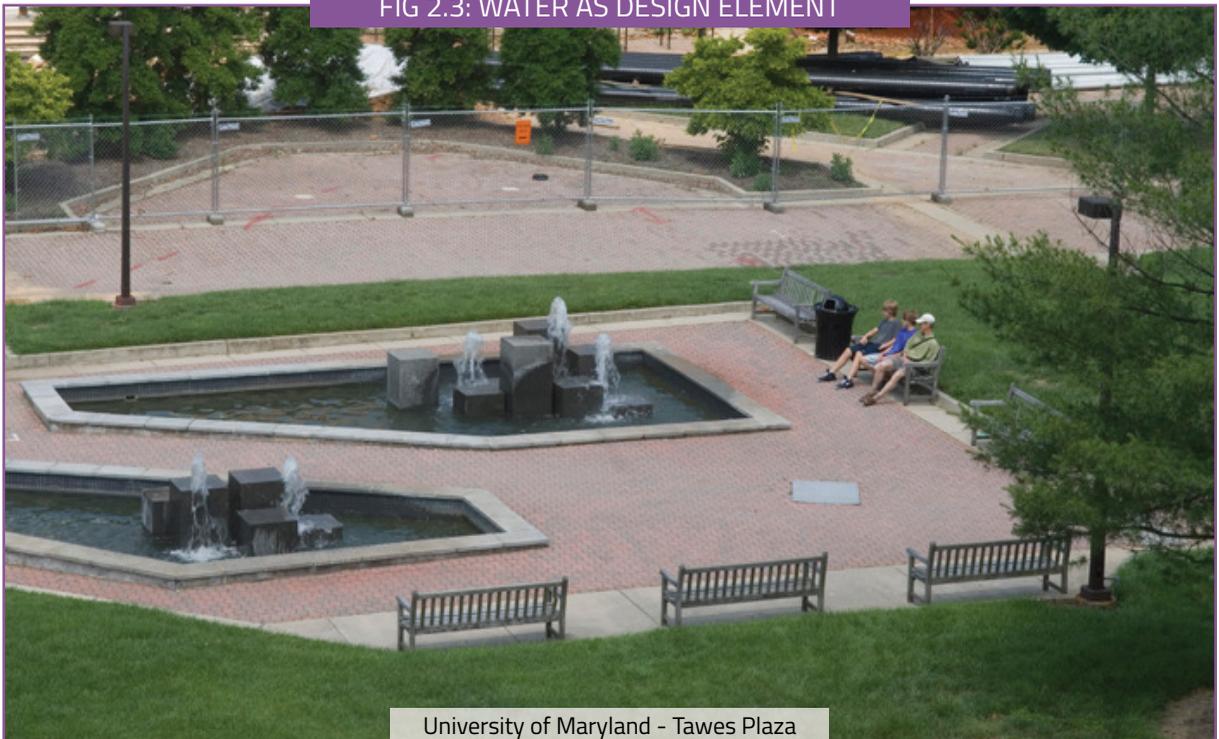
These benches and chairs are the primary seating of a public space, but the secondary seating is just as important. Low walls, steps or ledges are often popular sitting places, but not all ledges are sittable. Some places deliberately made their ledges unsittable, by adding railings or tilting the surfaces. But the simpler and easier the ledges, steps, and walls are created, the more often people use them for sitting, eating or sunbathing. A key principle for this secondary seating is to value simplicity, by not using any shrubbery, railings or unnecessary changes in elevation on the ledges (Whyte, 2001). Ledges should be suitable for seating people and designed in this way.

### *Planting and water*

The presence of greenery can contribute to the attractiveness of a public space. People tend to visit diverse and mixed places with trees, plants, and other greenery more than a gray and boring place. The application of nature in a public space will provide a more healthy image and people like to be around

trees and other greenery. They can experience it as a calm resting place in contrast with the gray city, where they can relax and escape for a moment to eat their lunch for example. Therefore, trees can ideally be combined with sitting places, where people find themselves in a healthy environment. Also, the variety of colors and smells can add life to the public

FIG 2.3: WATER AS DESIGN ELEMENT



University of Maryland - Tawes Plaza

space, where many city dwellers live in their apartments without a garden. Providing public spaces with a pleasant environment with public gardens, flower beds and grass can give these people places to visit when they want to come out to get some fresh air. (Marcus & Francis, 1998)

Besides greenery, water can also form part of an attractive and healthy environment. People enjoy watching water flow and splash, and public spaces can be equipped with all kinds of water like fountains and small tranquil pools. The sight and sound of this water are by most people experienced as pleasant, peaceful and relaxing and they would like to have this in their environment. Of course, not all sorts of water are an advantage for the public space, for example when badly maintained the water becomes green, unhealthy and unattractive. This will repel visitors instead of attracting them. Another example is when water is protected from the people by an electric fence, this is not inviting and water should be made accessible, touchable and splashable instead (Whyte, 2001).

### *Food*

Another feature that will win visitors is to offer food in a public space. This will cause more activity in the place and will be an added value to the social life. As mentioned before, often people go out to public spaces to sit, relax and have a lunch or snack during their break. Not every employee will bring their own food to their work, and many of them are daily buying their food at a restaurant or another lunch facility. The availability of outdoor vendors with small food facilities (and the attraction of delicious smell of food) will bring new people to the area. Food attracts people who attract more people (Whyte, 2001).

In many cities, it is illegal to sell food without a license, but in fact, it is a smart thing to cancel these rules. The vendors should be seen as the outdoor caterers which boost the life on the city streets. They stimulate people to leave their buildings for a while and get some fresh air outside. And the easy thing is that vendors do not have to be assigned to a particular spot, they follow the people. Where people are the vendor will set up his food cart, and where this food cart is more people will gather. This will encourage

the outdoor life in the public space.

### *Vending*

Just like food, there are other products that can be sold on handcarts or kiosks to increase the livability of a public space. Think of products that are normally not offered in downtown stores, like fruit, flowers or crafts.

Providing these vendors with items that are not sold in downtown stores also prevents a conflict between retailers and vendors.

One type that is becoming more and more popular is the farmers' market (Marcus & Francis, 1998). This fits the growing consciousness of customers for the health benefits of fresh products. Farmers can

FIG 2.4: FOOD TRUCKS ATTRACT PEOPLE



Food truck festival TREK - Eindhoven

expose their fresh vegetables and fruit in these stalls and the people visiting the public space will appreciate the chance to buy fresh products. This is kind of comparable to the weekly markets that most cities and villages have, where lots of people come to. It is an interesting experience for many to walk along these stalls, even when they don't plan to buy stuff. Offering vending stalls on a public space will increase the attractiveness of that space without a doubt.

#### *Program and events*

There are also a few features that can contribute to the public life on the streets, that are hard to predict and design. And after the final construction the design process has not necessarily ended (Marcus & Francis, 1998). To keep the liveliness in a public space, a crucial element is the level of programs and events that are thrown. By having events in the public space, more people get familiar with the area and more likely return someday. This program can vary from concerts to street performers, but all can attract people to the public space and make them conscious of the place.

There are some examples where throwing events is one of the main purposes of the public space, and then a performance stage can be included in the design. But most of the time, when designing a public space can be thought of matching events with sometimes the possibility to build up a temporary stage. Of course, for smaller events and stuff like street performers no special design is needed and they usually, can fit in every place where people are. Just like other design features: Events attracts people who attract more people.

#### *Subspaces or level changes*

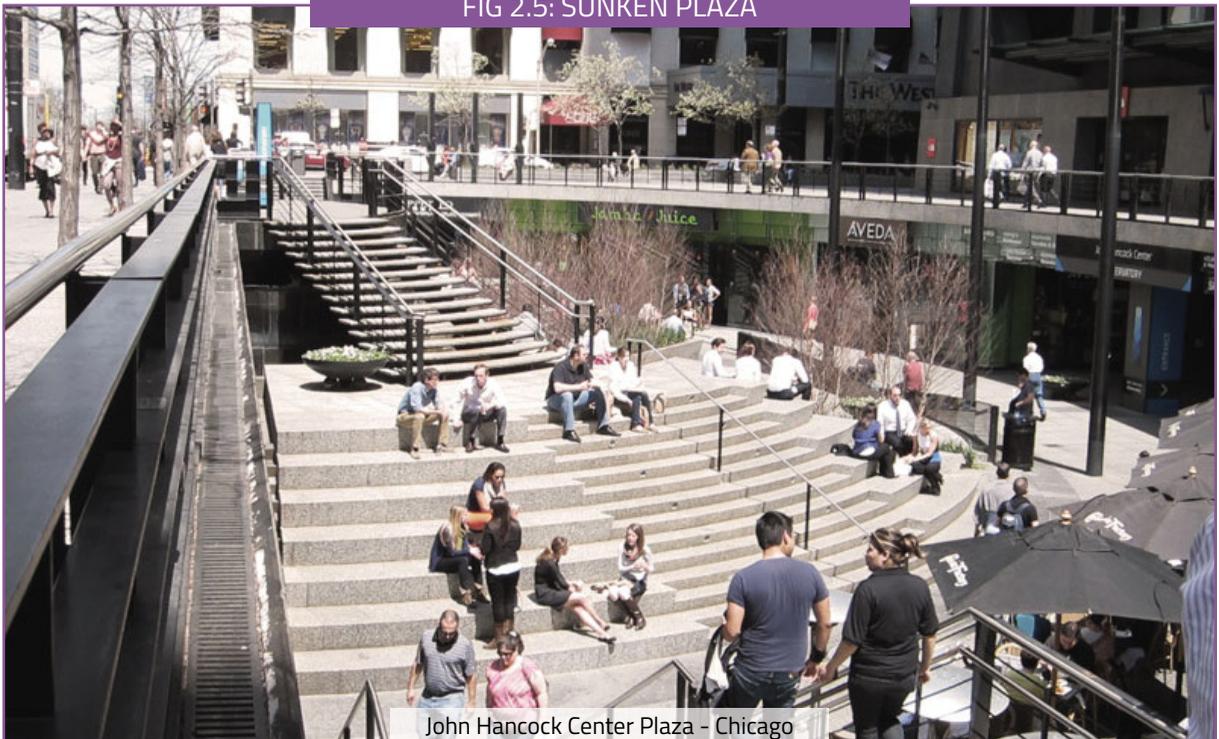
When designing subspaces or level changes in a public space, the designer should be very careful. Applying these features can divide the space into smaller ones. Sometimes it can be positive and comfortable when people can withdraw themselves a little from the crowded space, but when the subdivision is not done subtle enough people can feel segregated (Marcus & Francis, 1998).

These subspaces should not be too small so that people feel like entering a private room or crossing the privacy of someone who is in there. But a subspace too big can have

negative effects as well. Designing level change in a public space can have the same consequences when parts are sunken too low or risen too high people feel excluded or unattainable. When applying subtle changes in level, it can have positive psychological effects but at all times, there should be maintained a visual connection

between all levels. This can enhance a specific experience if carefully handled.

FIG 2.5: SUNKEN PLAZA



John Hancock Center Plaza - Chicago

## Linking values

Apart from the spatial qualities and the design features that can improve the image of a public space, also some other aspects, here called linking values, have to be considered. These aspects can be crucial for linking the public space to the surrounding urban network, which will provide a successful connection with the rest of the city.

### *Navigation and wayfinding*

Partly, this topic was mentioned in the paragraph of space qualities. In a way it is connected with the category 'Access and linkage' of a public space, what means that a good public space needs a good connection with its surroundings. The area should be easily accessible for all people, including old or disabled, and these people can arrive from all sorts of transport. The car is still the main transport of most people, but this public space should also be compatible with other ways of transport such as buses, trains, bicycles or pedestrians. Expectations for the near future will show us that the usage of cars will decrease while more people will use the public transport and bicycles (MON, 2007). Also, there are a few developments going on, which can lead to new modes of transport.

The electrical bicycle is already very popular, sales of e-bikes show an ongoing growth, the usage will keep on expanding, and other companies such as Google are developing self-driven cars or small electrical cars. A good and modern public space should take these developments into account in order to keep the space accessible over time. Also, in order to attract people, it is important to apply wayfinding in the right way so that people easily can find the public space. In the case of Eindhoven, a public space should fit in the spatial network of the Brainport and should be easily reachable within this Brainport. When entering the city from different directions, it should be simple to get to this public space. Within the public space, navigation can also be crucial when it is connecting different areas of the city. Sometimes navigation over the space is needed and this ensures that it is clear for people where they are and how they can continue their journey.

### *Place making*

Place making is the concept that is focusing on creating lively neighborhoods and inviting and attractive public spaces. Public spaces should be the center of the communities and should contribute to people's health, happiness and well-being. Although this topic has its own concept of Place making, which originated from thinking by William H. Whyte and Jane Jacobs, it is closely related to the fundamental human needs discussed earlier in this essay and especially to the spatial qualities of a public space. Therefore, the concept of place making will probably be covered by these human qualities, but also the relations between place making in the surrounding environment can be important. During the process, place making can be used to check and criticize the steps taken.

### *Branding*

Eindhoven was earlier an industrial town and today still has many connections with it. But Eindhoven wants to change their image to a new one. Eindhoven365 (started as Stichting Eindhoven Marketing) already started with creating a brand and they are working since 2011 to put Eindhoven with its new brand

on the map. When making branding also visible on public spaces, people can easier relate to the brand of the city which will strengthen the image. In this way, the public space, when designed and handled carefully, can contribute to the success of Eindhoven.

FIG 2.6: LOGO EINDHOVEN

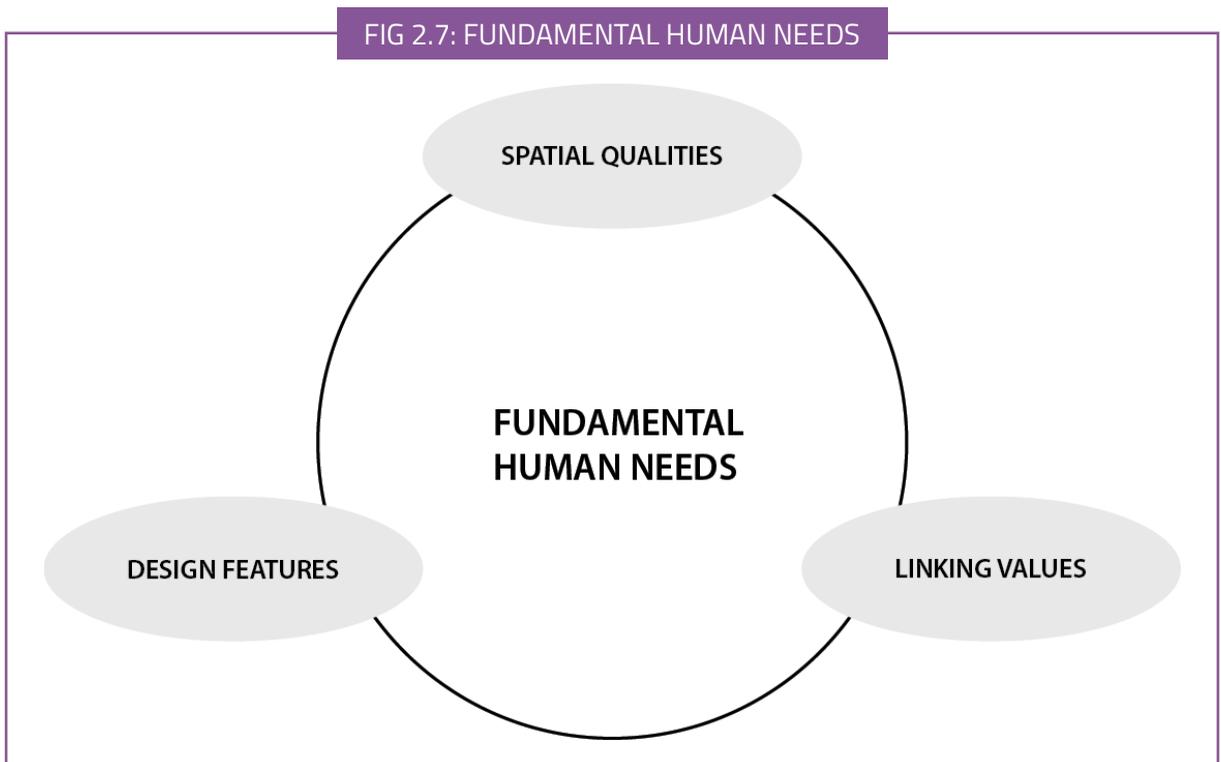


Three waves as brand of Eindhoven

## Conclusion

The researched literature gives information about which aspects should be included in a successful public space. The three different categories of fundamental human needs are closely related to each other and all can add their value to a place. The spatial qualities function on a higher, abstract level than the 'smaller' design features, that can

function as tools to achieve these qualities. Together with the linking values it can lead to an attractive public space that is perfectly integrated into the urban system of the city. In this project, these psychological roots of people will be applied to the focus area in Eindhoven, and in the end, they will be combined in a few spatial proposals which



show examples and solutions to change the focus area in a successful public space. It is important to keep switching back and forward between the literature and research, to achieve an optimal result with the best fundamental basics.

With this theoretical background in mind, the previously stated question is answered.

- What do we know about the fundamental human needs of people to design public spaces and how can the user experience be improved by using these human demands?

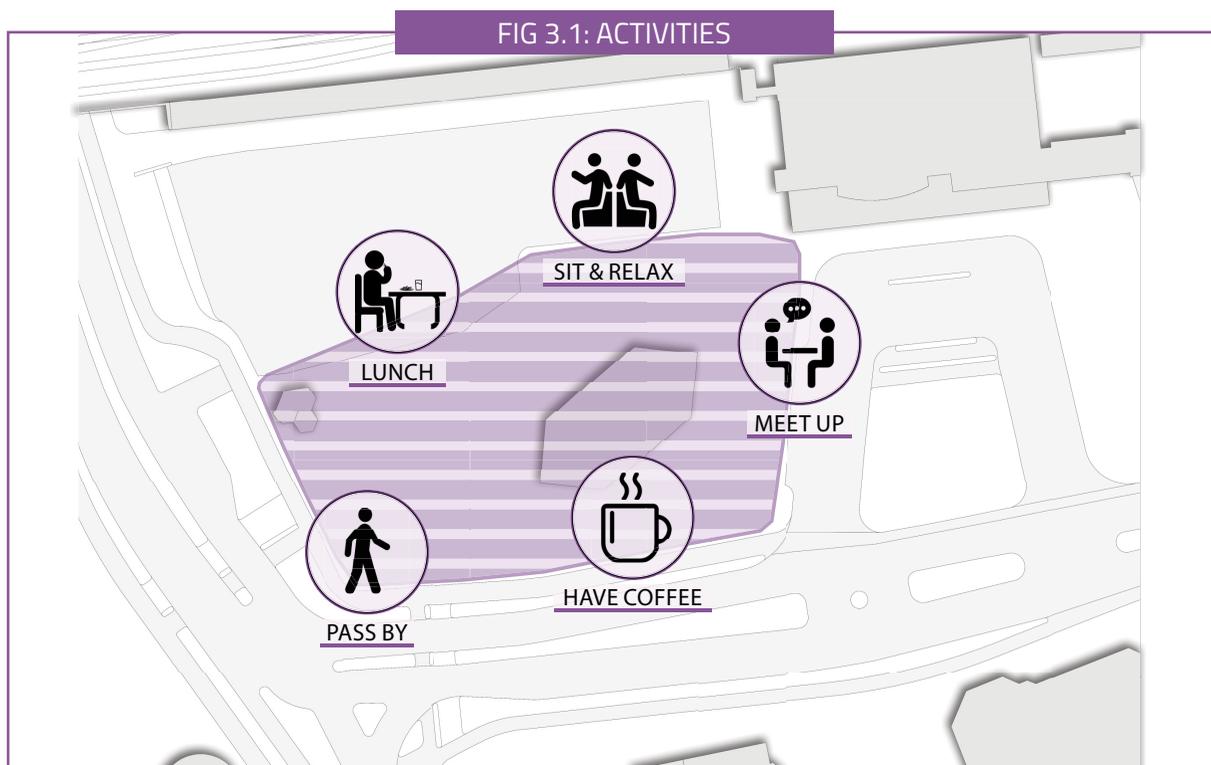
As shown these fundamental human needs are divided into three parts, that each has been discussed in this chapter, and all these aspects can improve the people's experience of a place. The more this theoretical background is followed, the more these aspects contribute to the public space and the better the user experience of visitors will be. Also, when this public space is more focused on the human needs, the first impression that is created on this Stationsplein as 'entrance' square will be more positive which leads to a better image of the city.

# Strategy

## Program

With the theoretical background in mind, the focus can be drawn back to the specific location of this graduation project. The challenge is to transform the currently weak and chaotic Stationsplein into an attractive staying area, where people want to stay for a while. A visitor should have plenty of options when arriving at the square, varying from

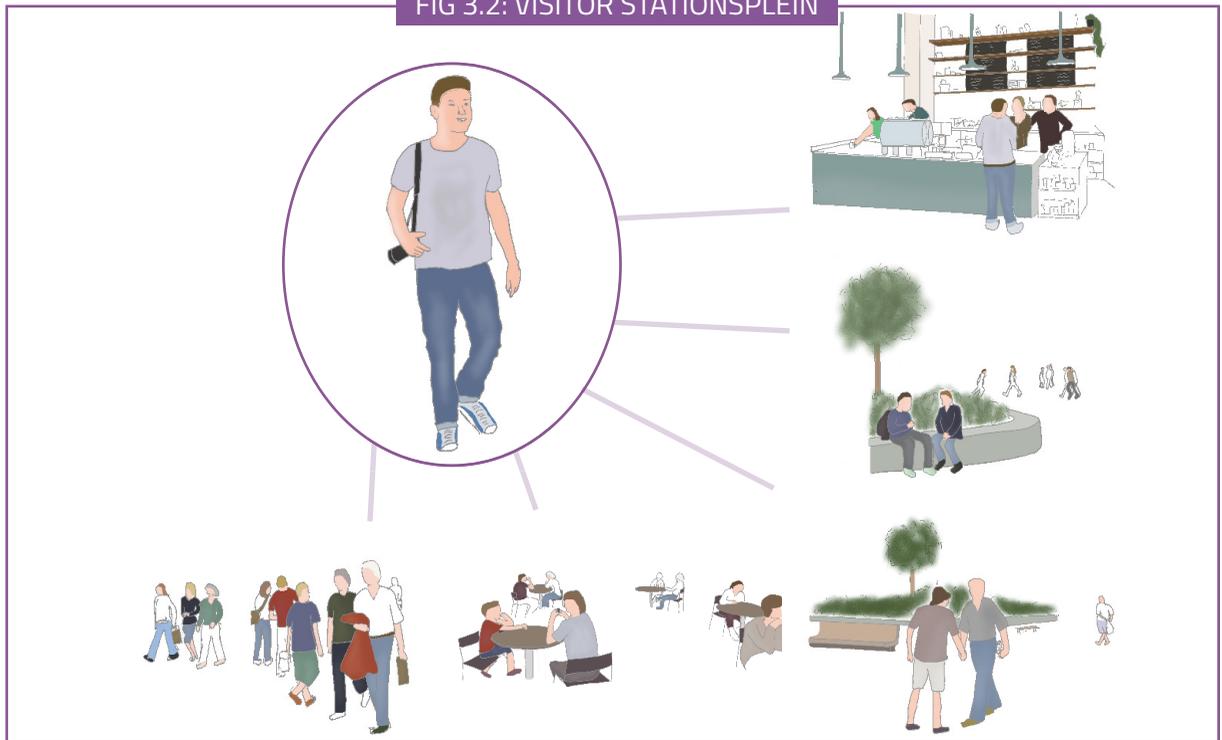
resting after a long day shopping or working, having lunch or coffee, meeting people or walk over and enjoy the scene. Where at the moment the square is especially used for a quick walk through, the new plan should provide visitors with enough opportunities to hang around for a while. Now people can already pay a visit at the small coffee bar



in the tourist info building, and this coffee bar is one of the few positive features of the square and should extend their limits. Besides a place where people can get their coffee there should also be opportunities to have lunch. This lunch and coffee can be served as to go, but enough places should be available to sit, relax and finish your food.

Also meet up with people can be stimulated, just as a short break from work to get some fresh air in a nice environment. Of course, passing by will remain one of the functions of the Stationsplein as these desired routing should be clear. In this way, people can easily find their destination and do not feel confused anymore.

FIG 3.2: VISITOR STATIONSPLEIN

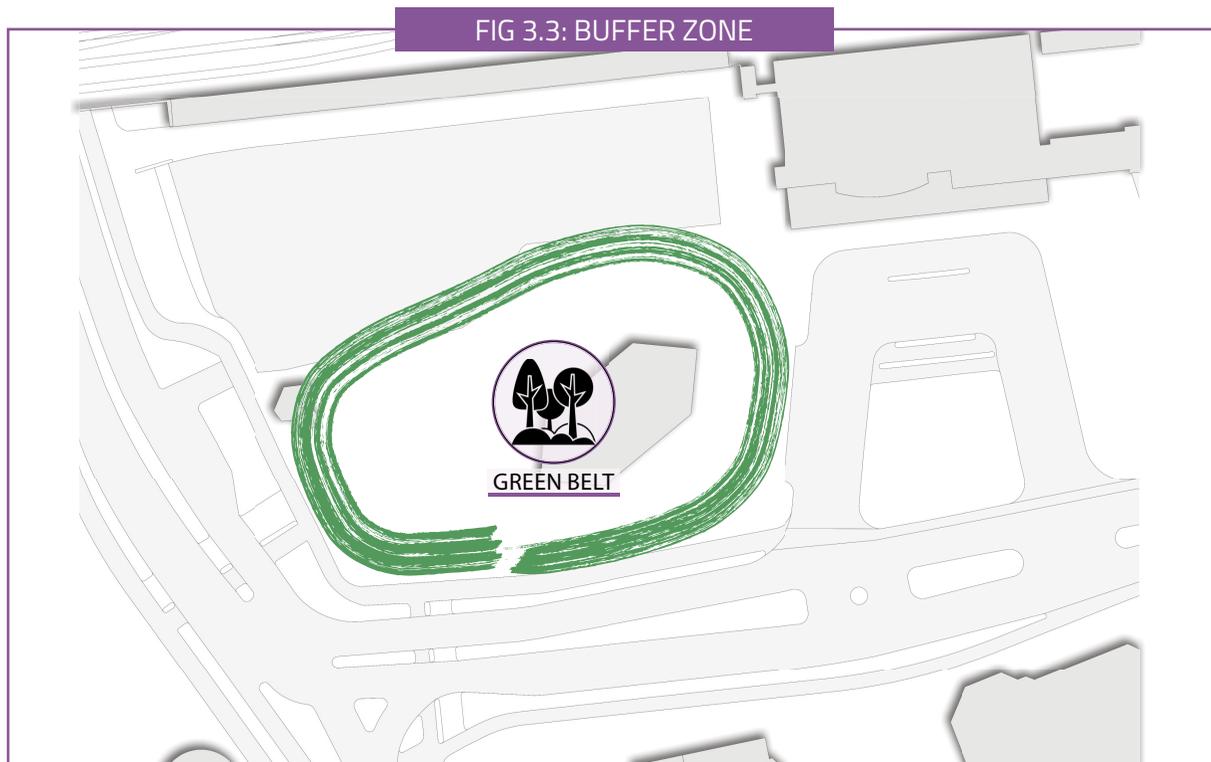


## Concept

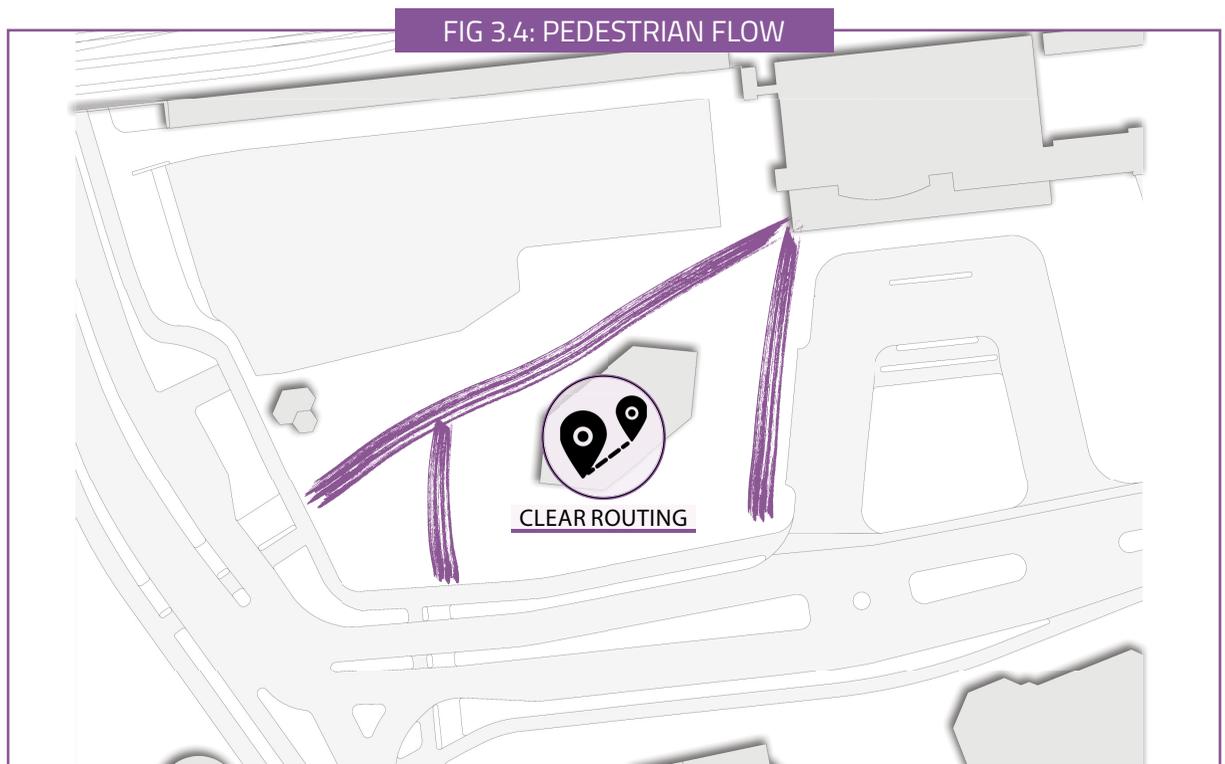
The concept for this plan has to connect with the boundary conditions of a plan with low investments, short-term applicable and an expandable plan. Therefore, a brief two-sided concept has been created.

Firstly, the square will be surrounded by a buffer zone. This zone is a planted buffer that protects the public space from the

surrounding traffic roads and parking lot. In this way, the unattractive sight of the cars will be partly blocked and this contributes to a feeling of privacy and safety to the pedestrians. The green belt will emphasize the presence of a 'square' and will create a pleasant space within the surroundings of busy streets.



The second aspect of the concept is the strengthening of the pedestrian flows. People feeling confused or lost will be in the past as these three routes are highlighted to give pedestrians a clear routing.



# Design

The previously discussed program and concept resulted into a design that is again two sided. First of all, a short-term master plan will be given, that is focused on the ambition to work with small investments and to work with the current built structure. This plan is called the short-term master plan.

The second design part is the long-term master plan, which is a plan that can be realized in about 10 years from now in case that the short-term plan has proven to be successful. In this long-term master plan, larger investments will be needed, and this again should be completed in phases.

## Short-term master plan

The short-term plan is focused on the current situation, and the challenge to work with the existing buildings and structure. That is why the two small buildings on the square are still present in the master plan. The pavilion in the center is now filled with the tourist information and a coffee bar. These functions are working well at the moment and remain present. The coffee bar will extend their terrace, because of the new surroundings more people will come there for a drink. Also at the south entrance, some seating will be provided for people to enjoy their coffee. On the eastern side of the pavilion are two ATM's, those also will remain present in the new master plan.

The second small building on the square is located on the western edge, which is now locating a travel agency. They have a deal with the municipality that they can stay there until the square will be renovated. They will get an offer for a new similar place in the city center, and the small building at the Stationsplein will be the office of the 'curator' out of which he can watch over the public. This curator is the square manager, that has the job to keep the square tidy

and clean. He will be responsible for the maintenance of the Stationsplein, including the maintenance of the trees and plants.

In figure 4.1 the green belt is well visible. This buffer zone separates the pedestrians from the busy traffic, providing them a safe and healthy feeling. It has a varied width that fluctuates around six meters and has a wavy appearance that creates some sheltered spots. The planting buffer has a raised border, on which people can sit down if no benches are available. This raised border is only applied on edges directed inwards the square, on the outer edges towards the road and parking lot there is a slim corten steel border that functions as a subtle delimitation to the traffic.

FIG 4.1: SHORT-TERM MASTER PLAN



FIG 4.2: MASTER PLAN WITH TAGS

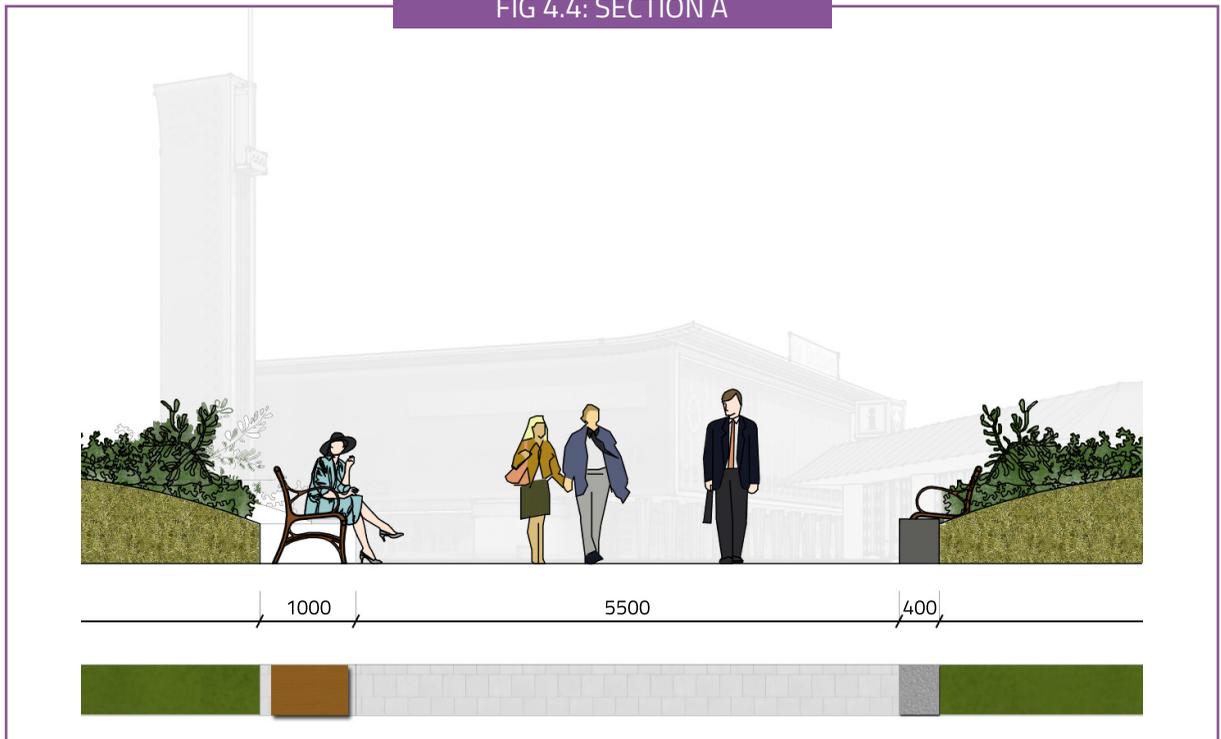


FIG 4.3: CONTEXT OF MASTER PLAN



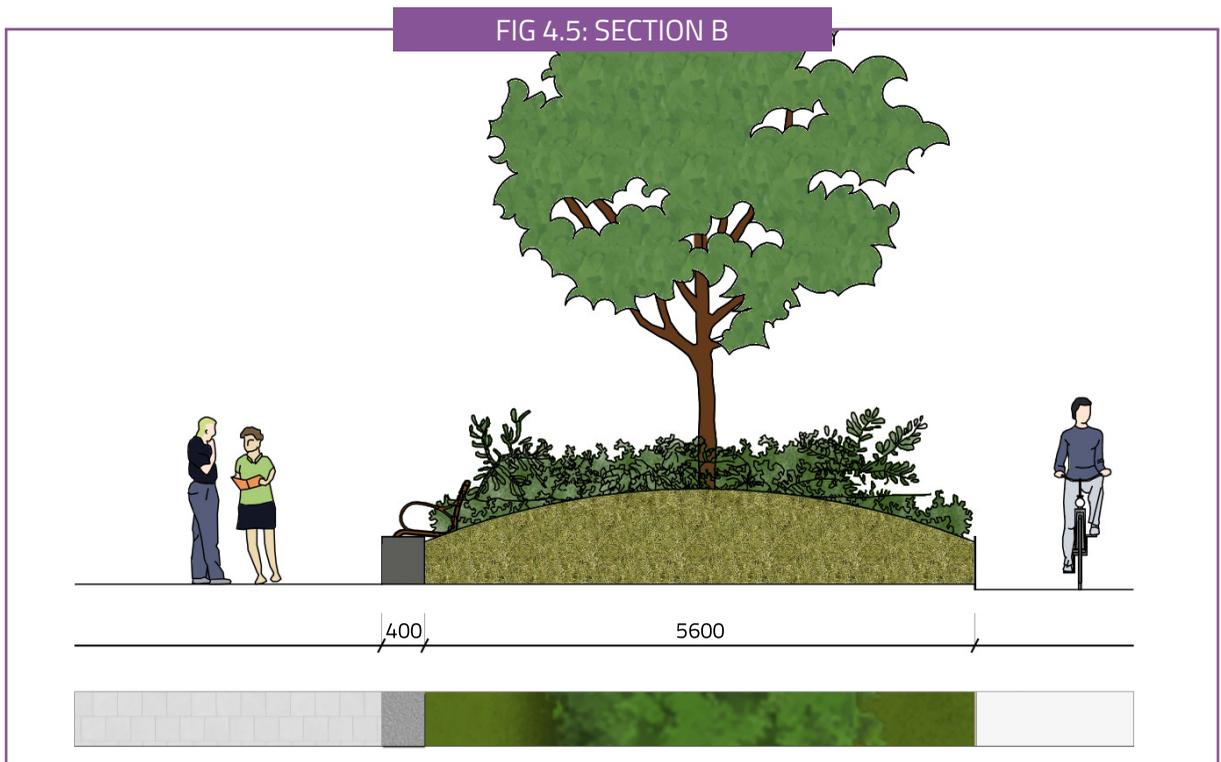
This raised border also functions as a retaining wall for the greenery that is inside. The soil in this green buffer is in the middle elevated to a maximum of one meter and descending on the sides. On this elevated soil, plants can grow with a maximum of half a meter so that the total height of this planting is between one and one and a half meter. In this way, people are mostly separated from the surrounding traffic, but still have a visible connection to this surrounding.

FIG 4.4: SECTION A



The elevated green also will contribute to the feeling of being in a healthy and natural environment, which also refers to Eindhoven as a green city. To complete this green buffer, trees will be planted that help to create a pleasant and attractive square. The green buffer will be continuously surrounding the square, with only five gaps of which three

strengthen the clear routing over the square. The other two are smaller and are providing the square with an entrance to the parking lot and a connection to the footpath going underneath the railway.



On distributed spots in the green buffer are locations for food trucks to establish. These five locations will provide the visitor of all different kind of snacks, which they can enjoy hanging out on the square. These food trucks are not permanently, but they can rent these spots for a few months. This gives other owners of food trucks the possibility to

enter this Stationsplein. Therefore, the food will vary within the different spots, but can also vary within different times of the year. Visitors of the square can experience these new stands over and over, from waffles to nachos, to Asian food, to burgers or urban food. Everything is possible, as long it is edible. When people are getting something

FIG 4.6: BIRD'S EYE VIEW



to eat out of these food trucks, there are plenty of sitting possibilities for them. As in the green buffer benches are included, where they can sit almost in the greenery, surrounded by this healthy environment. Of course, these benches are also available for people that just want to rest or relax for a moment, or for people to wait for someone.

In contrast to the current situation, in the future people can hang out on the square and be socially active with others. Relaxing or just watching people pass by, there are enough seating places for all kinds of reasons to sit, even when the benches are filled. In this case, the elevated border of the greenery provides enough space to sit down.

FIG 4.7: MAIN ROUTING



In the intersection on the square between the pedestrian routes, a circular element is created in contrast with the diagonal and orthogonal lines of the buildings and walkways. Also, the circular element has no specific direction and therefore fits perfectly in this now undefined space. Circular elements like this one will come back later in the long-

term plan. In both plans, these circles are being cut through by the footpaths, which leaves three green 'islands' highlighting this place. These islands accentuate the corners of the routing, which result in clear routing and easy navigation.

FIG 4.8: GET FOOD



Figures 4.6-4.7 are 3D views that show how the area will look like, after the completion of the short-term master plan.

Some impressions are given in figures 4.8-4.9 about daily activities that will take place on the square. People getting their lunch from a food truck and enjoying their food while sitting down. And the terrace near the

coffee bar is visualized, that is available for people that want a comfortable place to sit down to have a chat or read the paper.

FIG 4.9: DRINK COFFEE



To make the visitor conscious of this special circle, a small twist in the pavement can be made. The bricks within this circle can be slightly rotated and replaced in a different order according to the three 'waves' of the Eindhoven logo. In this way, a subtle branding feature can be applied to the Stationsplein that raises a certain awareness for people

walking over it, but also that is relating to the city of Eindhoven.

Another branding idea is the processing of creating a wooden bench in the shape of a wave out of the Eindhoven logo. These benches can be made out of wood and be twisted in the right direction as one of the

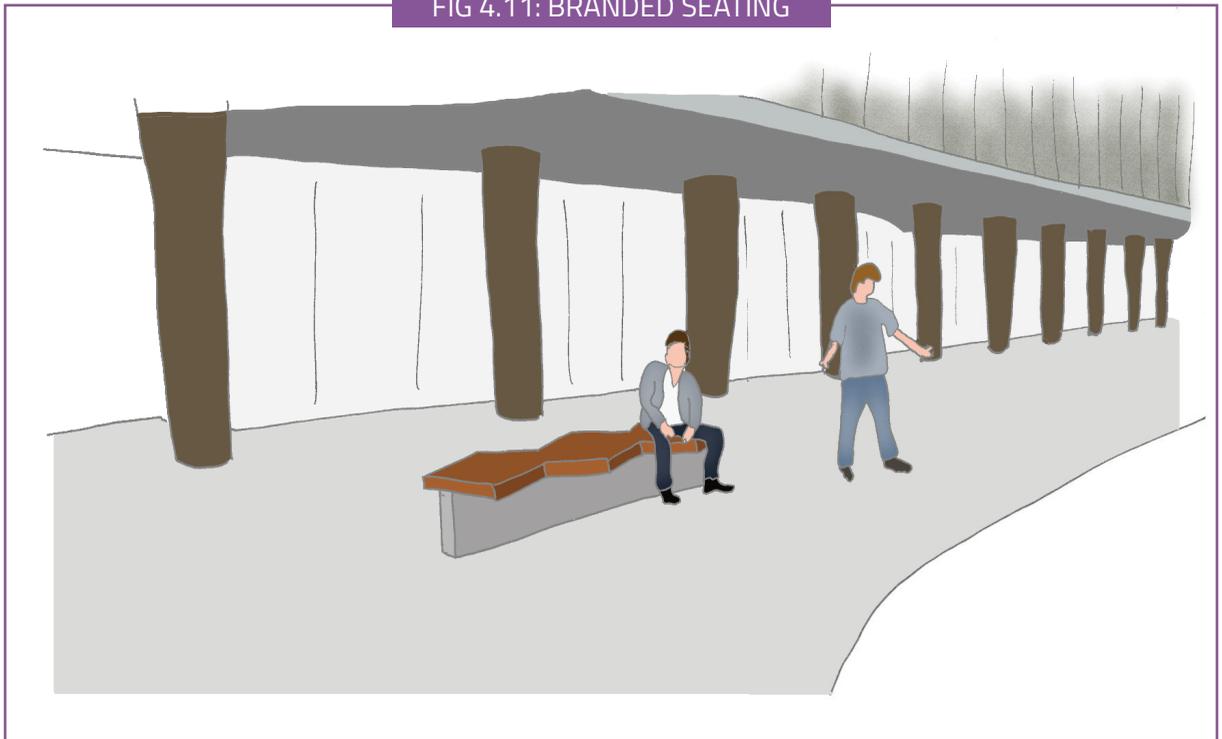
FIG 4.10: BRANDED PAVEMENT



waves is. This idea should be first tested on a small scale to see if people like it, so for example in between the taxi loop and the station building a few benches could be placed. On this spot are often people waiting for their ride, while there is no seating available. Providing them with these newly designed benches will give them sitting

possibilities and they will function as a pilot to test these benches before applying it to the rest of the square or even through the rest of Eindhoven.

FIG 4.11: BRANDED SEATING



## Materialization

To underpin the previously discussed master plan, these are some materialization details that strengthen the design.

Figure 4.12 shows the elevated border of greenery that is providing the public with secondary seating. Concrete is chosen to connect with the 18-septemberplein, but also as an inexpensive and relatively simple

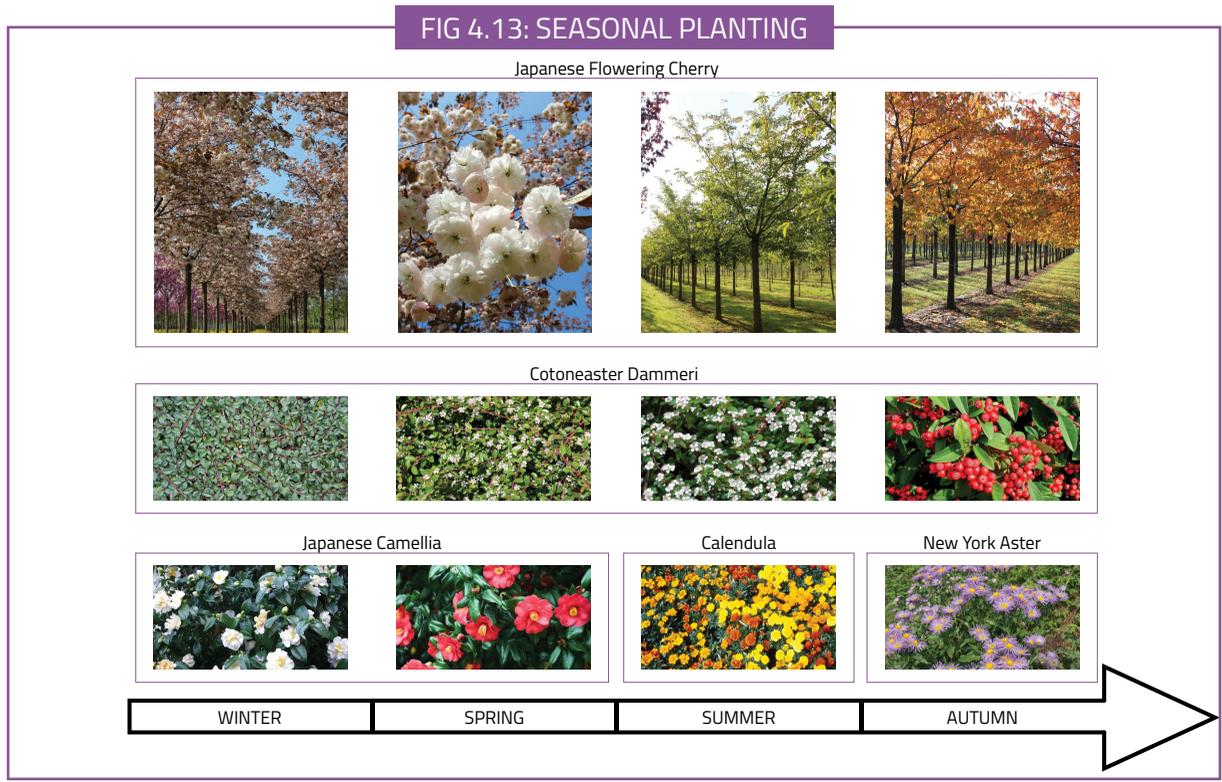
application that fits into the program. As this edge will be 450 mm high, it is a pleasant dimension to sit on when all benches are occupied. It is also protecting the planting from people stepping on them and gives the plants enough space to grow on.

FIG 4.12: ELEVATED BORDER OF GREENERY



Figure 4.13 is an overview of different planting types that will be planted in this area. These types are carefully chosen and selected for their blooming season. As tree the Japanese Flowering Cherry is chosen, that has throughout the year different colors providing the Stationsplein with a new look every season. Also, the

small planting is selected on their blossom coloring and blooming time. These small plants will be mixed throughout the square, and their different periods will ensure that every season the planting has another look. Each plant will pop up when it is his time to bloom and later other plants will take over, providing different colors around the year.



This seasonal planting will encourage a dynamic feeling during the year, but also the street lights can contribute to this aspect. Light bulbs can be used that can change their color to create a different atmosphere of the place, and of course, Philips can be linked to this lighting plan.

Another feature that can be applied here, and that helps the curator to keep the square clean, is an interactive trash can. This will stimulate people to put their garbage in one of the bins instead of scattered around the square or in the greenery. Figure 4.15 shows an example of the University of Sydney, that lets people play Tetris with their trash. The blocks are dependent on the dimensions of the trash that is thrown into the bin and the on the timing of disposal.

The last example is focused on the road that is surrounding the Stationsplein. The pedestrian flow is blocked by this road and at these points often congestion of pedestrians occur. Waiting for the traffic lights can be turned into a pleasant experience when Streetpong is applied. This is a simple game that is played with another person that is standing on the other side of the road. These features can add attractiveness to the area.

FIG 4.14: DYNAMIC LIGHTING



Colorful Street Lighting - Web Headers

FIG 4.15: INTERACTIVE BINS



TetraBIN - University of Sydney

FIG 4.16: STIMULATE INTERACTION

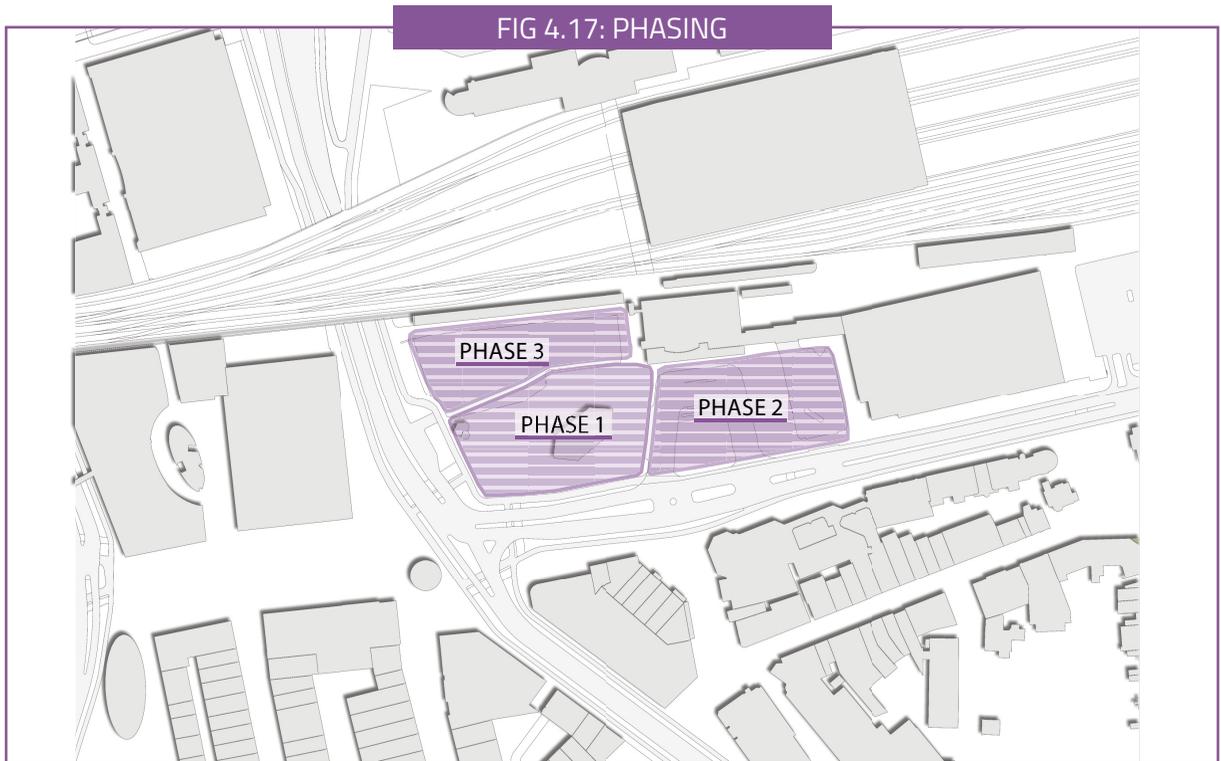


ActiWait Streetpong - Sandro Engel & Amelie Kunzler

## Long-term master plan

After this short-term plan is completed, there is a long-term plan available to extend the plan in the future. This master plan will be executed in phases, to prevent that visitors will experience too much inconvenience. The first phase of the long-term master plan will be the moving of the taxi loop, creating a clear view straight out of the station building and

adding valuable space to the pedestrian zone. The last phase will be the transformation of the currently above-ground parking into an underground one. This will be combined with a real estate location in the upper left corner of the square. This location is according to the municipality intended for the realization of a large building project.



For this master plan, the prediction will be made that after about ten years, the municipality will have enough resources available to renovate the rest of the Stationsplein, including this parking lot and taxi loop.

This taxi loop is now blocking the front entrance of the central station and this should be moved to another place. In this plan, the taxis are moved to the east and given a smaller area. This will provide space to connect the Stationsplein with the Lichthoven project, which is currently being built on the east side of the Stationsplein. This Lichthoven project will include a few towers with a passing through in the middle that will be connected to the square.

The second large part of this master plan is the moving of the parking lot, that will add new space to the Stationsplein. This parking will be created beneath ground level, and both cars and bicycles can enter this parking at the north-west corner underneath the new planned real estate location. The municipality points out this location for a high rise building, but no specific program or building is planned so far. This building in the long-term master plan is thus an estimation

of the future situation, where the exact dimensions can change.

The concept of the green buffer zone has been continued over the new areas, so this pedestrian zone has been extended. Some elements out of the short-term master plan will remain present, such as a part of the green buffer and the circular element that is cut through by the walkways. The two small buildings that were located on the square, the tourist information combined with the coffee bar and the small office of the curator, are in the long-term plan removed. These functions will be established in a new compact building with another location. Still in the middle of the square, just next to the main pedestrian route, but the moving of these functions will provide the square with new spatial possibilities.

So is the old location of the tourist information now the place for a large water surface, where people can interact with the water. On the northern edge of this water, a seating platform is created with some wide stairs where people can sit on. They can enjoy the view or sound of the water fountains that stand in the middle of the water or they can even hang their feet in the water

FIG 4.18: LONG-TERM MASTER PLAN



FIG 4.19: MASTER PLAN WITH TAGS



FIG 4.20: CONTEXT OF MASTER PLAN



on a hot summer day. This water surface is in the shape of a circle cut in half and is complemented by greenery that completes this circle. Also in this spot, the circle has been cut through by the pedestrian route, with the branded paving applied just like in the short-term master plan.

These circles form a strong element in the master plan and have been continued to the rest of the square, where in front of the station entrance a circle is created in which the current historical 'radio waves' are interlaced. These waves are in the current situation present but are isolated by the taxi loop that is going around them. The circle is cut off at the edge, to preserve a clear routing in a southern direction and the circle is again subtle continued with branded paving. The design of the waves is relating to the design of the station building as a Philips radio that is emitting sound waves. Philips also has a statue standing on this location, that will be preserved. The master plan has enough open space for events to happen that can bring people together, like street performers or outdoor games.

FIG 4.21: EVENTS



Chess in public space - PPS



Food vendor - Jon Pesochin



Scrabble on the street - Seattle



Street performers - PPS Brazil

The concept of the green buffer zone and clear pedestrian routes has been continued as much as possible and the number of food trucks thus can be raised. The taxi location is shifted to the east and is shielded by the green belt from the pedestrian zone. The lawn in front of the building, that currently is hardly reachable for the visitors, stays intact

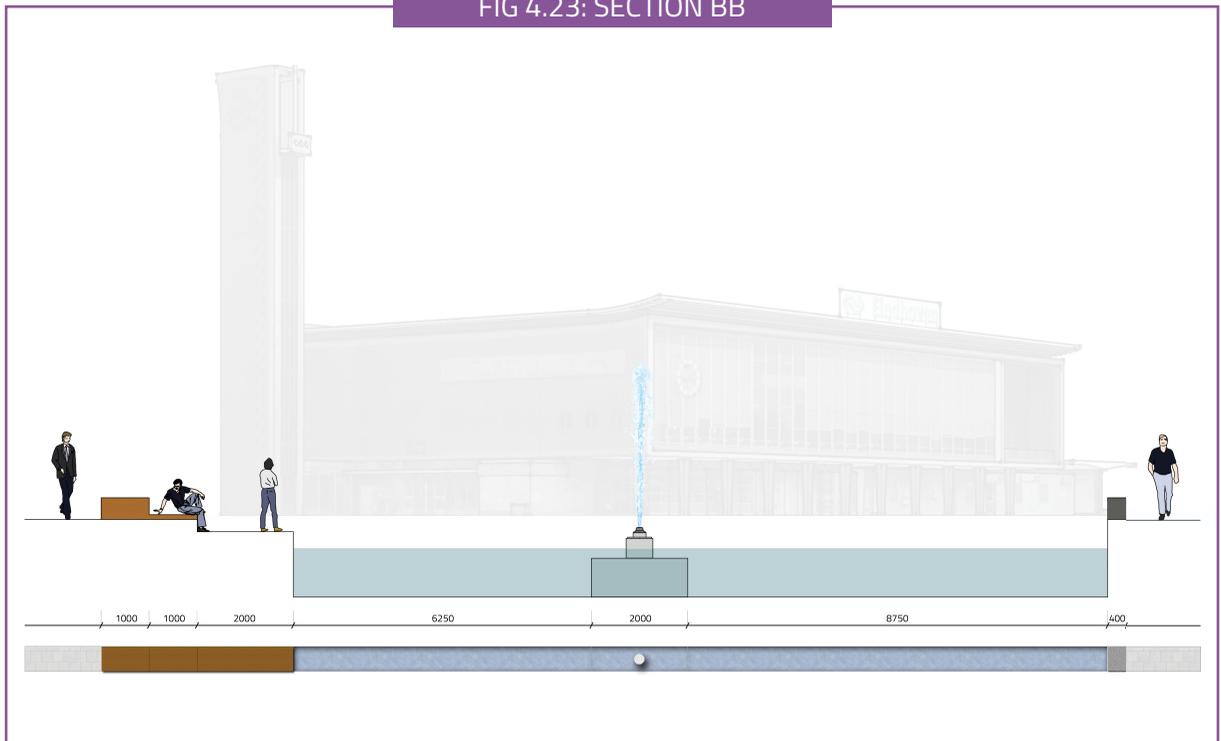
and will be surrounded by food trucks and terraces. The tourist information building will move to another place, inside a new pavilion located in the 'biggest circle' next to the main pedestrian route.

FIG 4.22: SECTION AA



The movement of the tourist information and coffee bar leaves a big spot in the center of the square, which will be used for a water surface. On the sunny side of this surface will be a wooden plateau that offers seating places and interaction with the water.

FIG 4.23: SECTION BB



# Conclusion

The main question on which the thesis is based was stated in the introduction:

- What does Eindhoven as a changing city need in their public spaces, what does it have to offer now and what should be done to improve it?

Now it can be concluded that a changing city like Eindhoven needs public spaces that are focused on every human being. All kinds of people should be attracted to the public spaces and therefore, the fundamental human demands have to be met.

The current situation of the Stationsplein desperately needs improvements, as everyone that walks over is feeling unwanted and uncomfortable. Improvements have been made to transform the area into a pleasant area where people like to stay, and these improvements are based on small investments that fit the current difficult economic situation.

The aim of this graduation project was to give the public space of Eindhoven a boost and create an attractive place by meeting fundamental human demands. With the proposed plans a realistic solution is originated, that has a high potential for realization.

According to the research literature and the visitors of the square both master plans fit perfectly to the needs of the people visiting the Stationsplein and the city of Eindhoven. When the plan is realized, people more likely will have a more positive image of Eindhoven when they enter the inner city via this Stationsplein.

The proposed and applied new approach of small interventions and steps with big impact can be an eye opener during this economic time. Therefore, this method can be copied to other public spaces or cities, where the flexibility is needed. The Stationsplein can be a promising example of how a better human experience can be gained without big investments.

# Discussion

In the proposed design, both the long-term and the short-term master plan, the design principles of the research literature are represented. The spatial qualities are all included in the design and this thesis is mainly based on the application of for example activities, comfort, linkage, and sociability. The second part of the literature is concerning the design features. Also, these aspects are implemented in the design, with as most important ones the seating, food, program and water. The last element is the linking value, with navigation, placemaking and branding as subcategories. These are also present in the final design, which makes this project a serious candidate to become an attractive space. It meets almost all the researched literature that is proven to be successful, and by matching the plans to the theory the chance of success will raise.

The proposed short-term and long-term plans provide some tolerance in terms of phasing and financing. A certain degree of flexibility is needed in this time and the used method based on small steps can be an added value in the future.

When the Stationsplein shows this method is paying off, it can function as an example for other areas. The principles of the process can be copied by other municipalities, to help them improve public spaces with flexibility in financing.

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