

Hostile architecture and its effect on public space in Nijmegen

A casus study at the central station of Nijmegen



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Preface

Dear reader,

You are reading the thesis 'Hostile architecture and its effect on public space in Nijmegen; a case study at the central station of Nijmegen'. This thesis is written in the context of my graduation of the study Geografie, Planologie en Milieu (Geography, Planning, and Environment) at the Radboud University in Nijmegen. The research question and sub-questions came about with the help of my supervisor Friederike Landau-Donnelly. After conducting various qualitative research methods, I have tried to answer this question. During this research my supervisor, Friederike Landau-Donnelly, was always available for questions and feedback, which allowed me to continue my research.

During the research period I received the help from many people who I would like to thank for their efforts. First of all I would like to thank my supervisor for the guidance and support, and her everlasting enthusiasm throughout the process of writing this thesis. I would also like to thank everybody that participated in the street interviews. Lastly, my friends and family who were always ready to listen and provide moral support whenever I needed it. Especially my parents whose words and love assisted me in bringing this thesis to an end. I would like to send a special thanks to a certain friend, who prefers to stay anonymous, for their incredible help, without them this thesis would not have existed, as many of the ideas and even the overall theme of 'hostile architecture' were inspired by them. Their moral support was an even greater contribution, as they showed me time and time again that I could do this. Thank you so very much.

I hope you enjoy reading this,

Anna van Rossem

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Summary

The main aim of this research was to find out how hostile architecture and nudging are present at the central station of Nijmegen and how these affect the station as a public space. The station was chosen to narrow the scope of the research, as it would be impossible to research every public space in Nijmegen. The following research question was asked *‘How is the public space of the central station of Nijmegen shaped by hostile architecture?’* In support of this main question, three sub-questions were formulated. These questions were answered with the help of a qualitative research method named triangulation. This is a process where multiple forms of, in this case qualitative, research methods are used together.

The first sub-question aimed to seek out how nudging relates to hostile architecture at the station. A visual analysis concluded that it seemed there was no evidence of hostile architecture or nudging. However, it was noted that there is a serious lack of seating possibilities except for at the perrons. It is argued that the way benches are placed in the station is a nudge. The absence of benches in the entrance area lets users know that they are not allowed to stay in that area of the station. Through this nudge they are encouraged to either progress through the station or leave. This argument was backed up by the presence of the OV-gates that divide the station in two parts, a ‘free’ part and a ‘paid’ part. It was analyzed that seating options are only available at the paid part of the station. Furthermore, the general design of the station has a negative impact on the accessibility of the station. The inaccessibility is only increased by the lack of benches. However, the station seems to be easy to navigate, except for the underground tunnel. The station is also accommodated to support the flow of people and is able to guide them to their respective perrons. But the OV-gates located in the entrance hall were argued to be unfit in this scenario as they were observed to significantly slow down the flow of people.

A policy document analysis was also in place to examine the omgevingsvisie and the KRK. This analysis concluded that the omgevingsvisie utilized rather confusing language. The documents utilize three lenses through which the city is viewed; citizens, tourists, and companies. Alongside these lenses the term ‘everyone’ was frequently used in combination with other, more narrowly defined, terms like ‘residents’ and ‘inhabitants’. None of these terms were further specified in the document, this creates a gap as it is unclear who is actually included in the policies and who is not. Furthermore, the omgevingsvisie refers a lot to the city of Nijmegen and public space in terms of safety, comfort and aesthetic value. This same language can be found in the KRK in regard to the station. The policy document analysis also found that the KRK mentions ‘hostile design’ one time in regard to creating a vandalism proof station. From this statement it was concluded that the station may incorporate hostile architecture, however it is never mentioned what is regarded by the station as hostile architecture or what the implementations are. It was also concluded that many of the concerns raised in the visual analysis correspond to the plans mentioned in the policy documents. Especially the plans to make the station more accessible. However, after careful examination it was concluded that the actual planned accessibility remains questionable, because there are plans to make the entrance hall smaller by allocating the OV-gates in order to create more space at the perrons. This means a larger part of station will become inaccessible to those who are not in the possession of a public transport card or money. In addition, this decreases the well regarded function of the station as a meeting place. It can be argued that this is a rather hostile act as it excludes people from using the space and possibly the amenities offered. This begs the question ‘who is allowed to use the station?’

In order to say something about the user experience, ten interviews were conducted at the station. An examination of the interviews revealed that users regard the station as a public space,

however unwelcome and according to some only partially public because of the OV-gates. Many participants were not aware of the term hostile architecture but when asked if they would change something about the station many mentioned aspects that could be regarded as hostile. Many improvements mentioned correspond to the findings of both the visual and the policy document analysis.

The answer to the main question concluded that hostile architecture and nudging seem to have an influence on the central station of Nijmegen. The OV-gates and lack of seating were seen as two of the biggest nudges. The KRK pointed out that the station has no intention of changing these. Meaning that the station does exclude people from using the station as a public space. This also has a negative impact on the stations accessibility, as the lack of seating may provide difficulty for people who cannot stand or walk for too long. Generally speaking, it can be said that more hostile design or nudging will result in the loss of the public character that the station carried. Lastly it was concluded that this conclusion follows Mitchell's ideology of space made for people, only allowing the 'right' people to interact with these spaces.

This research could have benefited from interviews with experts on the KRK or the station area of Nijmegen. Moreover, a second round of street interviews, with questions adjusted after the first round, could have led to more insight into the user experience. This research does a suggestion that more research is needed in the field of hostile architecture especially the relation between hostile architecture and nudging and their effects on public spaces experienced by various users. Furthermore, this research suggests that policy makers reconsider the placement of the benches as their current location is not accessible. Moreover, it is advised that the municipality considers the inclusivity of the station.

Index

Preface.....	III
Summary	IV
1. Introduction.....	8
1.1. Research aim and question	9
1.2. Scope of research	10
2. Relevance	10
2.1. Social relevance	10
2.2. Scientific relevance.....	11
3. Theoretical framework.....	11
3.1. Public space	11
3.2. Hostile architecture	12
3.3. Placemaking.....	13
3.4. Conceptual model	14
4. Methodology	15
4.1. Methods	15
4.2. Grounded theory.....	17
4.3. Reliability and validity	18
5. Results	19
5.1. Analysis of the current situation	19
5.1.1. History of the station.....	19
5.1.2. The outside area.....	19
5.1.3. Station entrance hall	21
5.1.4. Hallways leading the perrons 3 and 4	23
5.1.5. The perrons	24
5.2. Policy vision	26
5.2.1. Omgevingsvisie.....	26
5.2.2. Kader Ruimtelijke Kwaliteit (KRK).....	28
6.3 User experience.....	31
6. Conclusion	35
7. Discussion	36
7.1. Interpretations	36
7.2. Limitations of the research.....	36
7.3. Reflections on researcher's positionality	36
7.4. Policy suggestions and Recommendations	37
8. Bibliography.....	38

9.	Appendix.....	42
9.1.	Exploratory observations	42
9.2.	Observation protocol central station	44
9.3.	Interview guide.....	44
9.4.	Codebook	47

1. Introduction

'Public space is the stage upon which the drama of communal life unfolds' (Carr, Stephen, Francis, Rivlin & Stone, 1992. PP.3).

According to Carr et al. (1992) public spaces are dynamic places, essential in the everyday routines of human beings. Private life has a profound influence on the layout of public space. As people's routines change over time so do public spaces. Old spaces, like desolate squares that are found in the vicinity of many office buildings (Mitchell, 2003), need to be changed and new spaces need to be maintained to fulfill to the needs of their users. Therefore, the ability to change as public life changes is a crucial element of public space (Carr et al, 1992).

Human behavior shapes public space, but public space also shapes human behavior. These spaces are controlled and regulated through rules and codes. These rules and codes not only control how public space is used, but also by whom (Miller 2007). These restrictions can take the form of barriers such as fences, security checks or other structures that determine who is allowed to enter a space and who is not. Another example of this is hostile architecture, also known as defensive urban design. The Cambridge dictionary (2022) defines hostile architecture as a way to design public space that stops unwanted behavior. Furthermore, hostile architecture is often quoted as a component of Crime Prevention Through Environmental Design (CPTED) (Chellew, 2016; Chellew, 2019; De Fine Licht, 2017), however through-out history, it is easy to find earlier examples where public space is used to target certain groups and discourage them from making certain movements or actions.

One of the earliest examples can be found in France in the 19th century when Napoleon III gave Georges-Eugene Haussmann the order to redesign Paris. 19th century Paris had taken the shape of a typical city for that time; working class people lived together in small, narrow streets that reeked of sewage and were filled with disease. Haussmann was ordered to direct the urban renewal as a political action to improve these circumstances. However, it is widely regarded that Napoleon had darker intentions with this redesign. Napoleon III did not merely want to 'clean-up' the city, he wanted more control over what happened in the cramped slums that often were the breeding-grounds of protests and riots (Pinkney, 1955). The 19th century was a politically turbulent time for France, the working-class people often protested against the government. Though unpleasant to live in they might be, the narrow streets were easy to barricade. The small streets proved difficult for the army as the made it difficult to navigate and transport cannons. Haussmann replaced the narrow streets with the now famous and barricade-proof boulevards that provided the army easy access to protests (Belfanti, 2021). A more contemporary example of a large-scale project is the Jones Beach State Park in New York, designed by Moses. The park opened for the public in 1929, but Moses' roads heavily influenced what public could actually visit the park.

Allegedly, Moses did not want the often poor, Black people that lived more near the edge of the city to visit the parks. Because cars were too expensive most Black families relied on buses for transport. Moses built bridges across the new parkways that were too low for buses. In order to reach the parks, the buses had to take a detour via public roads. Moreover, to enter state parks a bus needed a permit, but buses that transported Black people were almost never granted this permit (Kessler, 2021). Whether or not this is accidental or a result of his racist views is still highly contested (Kessler, 2021; Barron, 2019; Campanella, 2017). However, something that is not up for discussion are the heights of the clearances over Moses' parkways, which are considerably lower than the average clearance (Campanella, 2017).

These examples are quite large and direct, but one does not have to look far or hard to find more subtle examples of hostile architecture closer to home. Train stations and inner cities are excellent examples of how through small and less obvious designs behavior can be influenced and people can be excluded. Such examples are (but not limited to): arm rests on benches that prevent laying down (figure 1), spikes on windowsills and under bridges (figure 2), but also mosquito sounds in parks and stores that prevent antisocial behavior and blue lightning in restrooms that should prevent drug injection (Omidi, 2014).

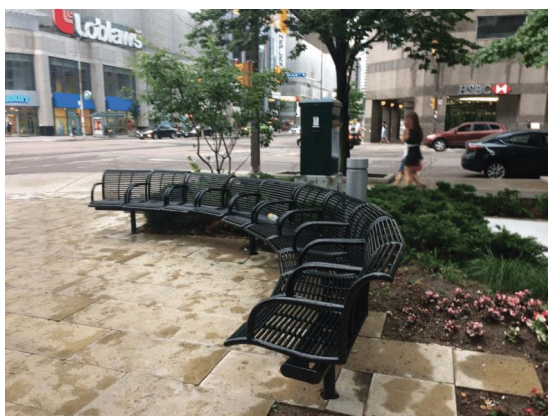


Figure 1: Benches with armrests. Source: Chellev (2019)



Figure 2: Spikes under a bridge. Source: ChinaHush (n.d)

A more friendly cousin of hostile architecture is nudging. Brandsma, Rauws & de Roo (2021) describe a nudge as a type of intervention that alters people's behavior, without limiting the actual choices or making certain choices less obtainable. Nudging are policy instruments that are increasingly used by urban planners to promote livability and safety in public spaces. However, the effectiveness of nudging has proven to be limited. Wrongly placed nudges can even aggravate problems instead of addressing them (Brandsma et al., 2021). An effectiveness study by Mertens, Herberz, Hahnel and Brosch (2022) further proved this point. This research analyzed more than 200 publications reporting nudging and found that the effectiveness of nudging is statistically significant. Furthermore, they reported that the effectiveness of this effect can be categorized as small to medium, using Cohen's *d*. However, it is important to note that this measured effectiveness is limited to the choice of architectural intervention. Interventions based on substitute for the original targeted behavior, described as 'decision information,' and interventions that highlight alternative behavioral intentions are heavily outshined by interventions that focus on the structure and organization of alternative choices (Mertens, Herberz, Hahnel and Brosch, 2022).

1.1. Research aim and question

The aim of the research is to gain insight in hostile architecture and nudging and how they shape public spaces in Nijmegen. Due to time constraints it would be impossible to research every public space in Nijmegen his research takes the central station of Nijmegen as case study. On the one hand it will focus on how policy physically shapes these places and with what intentions. And on the other hand, how the actual realized public spaces shape people's behavior. The research question that is central in this research is: *How is public space of the central station of Nijmegen shaped by hostile architecture?* The sub questions that support the main question are:

- How does nudging relate to hostile architecture at the central station of Nijmegen?
- How is the policy vision for the central station in Nijmegen implemented?
- How is the station of Nijmegen perceived by users?

1.2. Scope of research

the scope of the research was to be further defined with the help of exploratory observations of certain places within the center of Nijmegen. The website 'IntoNijmegen' was used as framework to define the inner city as shown in figure 3. This website was used because it is created by the municipality of Nijmegen in partnership with a few cultural organizations, the website focusses on the key locations within Nijmegen (IntoNijmegen, 2022). The key locations provided by the website were used to determine which places would be suitable for the exploratory observations. The following sites were chosen to be analyzed:

- Central station
- Kronenburgerpark
- Central shopping streets
- Waalkade
- Vaklhofpark

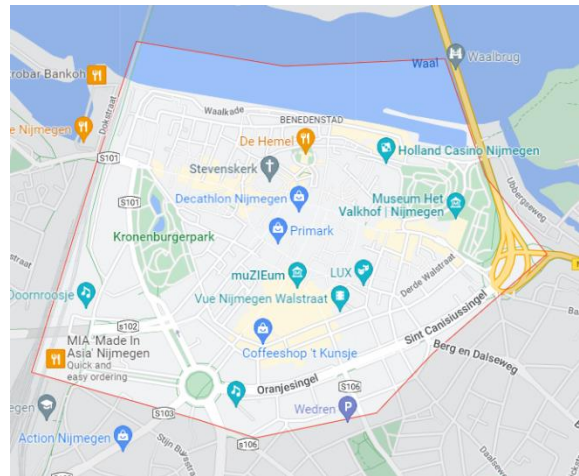


Figure 3: Inner city of Nijmegen. Source: Google

The exploratory observations focused on what forms of hostile architecture were present, or what commodities are missing. For example: benches, public toilets, places where one can shelter from whether conditions etc. See appendix for observation protocol (Appendix 9.1).

Through the observations conducted, the central station and the path leading up to the city were decided upon as the scope of the research. At first glance not a lot of evidence of hostile architecture was apparent, but a lack of commodities was noticeable. In addition, parts of the station area have been renovated or are set to be renovated in the coming years. This means there is enough information available about this area.

2. Relevance

2.1. Social relevance

Wandalowski (2021) writes that hostile architecture is criticized for being unnecessarily cruel to homeless people. Instead of forming a solution, hostile architecture hinders the homeless population from using public spaces. Hostile architecture, according to Wandalowski (2021), also alters the way in which public space can be used by all public, writing "*Hostile architecture is not only irrational, but also morally repugnant and detrimental to all of society.*" (Wandalowski, 2021). Furthermore, he writes that hostile architecture transforms public space as a space of communication, where people come together, to a space that is unwelcome and uncomfortable, and where long-term use is discouraged.

When applied incorrectly or in spaces that are not suitable nudging, too, can have unwanted consequences (Brandsma et al., 2021; Meder, Fleischhut & Osman, 2018). There is evidence to suggest that incorrectly implemented nudging can lead to aggravate a problem instead of addressing it (Brandsma et al., 2021). Mender et al. (2018) also highlighted how nudging focused on changing behavior cannot be separated from the environment where the behavior that the nudge is set to change takes place. For that reason, it is important to consider all applicable factors in an environment.

The research is socially relevant because public space is something that all people encounter and interact with on a daily basis. Not only are cities shaped by people, people and their behavior are shaped by cities. The results of this research can be linked back to policy makers and urban planners in Nijmegen to make the public spaces in inner city of Nijmegen safer and more livable for everyone.

2.2. Scientific relevance

De Fine Licht (2017) concludes in his research on hostile architecture that more empirical research is needed on the topic of hostile architecture and the violation of people's rights. In another research he suggests that more research is needed on hostile architecture and its general effects (De Fine Licht, 2020). In the same conclusion de Fine Licht suggests that a more thorough debate is to be had about hostile architecture. Rosenberger (2019) echoes this statement in his research, stating that there is a need for a greater conceptual clearness. This research may contribute to that by creating a framework based on ideologies prevalent in the real of public space. In addition, Rosenberger writes that there is a need for more research on people's awareness of and attitude towards hostile architecture. Moreover, Rosenberger suggests research should be done to find out people's impressions of certain populations such as those of youths or the homeless. Therefore, this research is scientifically relevant because it adds to the discussion surrounding hostile architecture. Moreover, the conclusions of this research can be used to tell something about the effects on hostile architecture on public space and society as a whole.

This research is scientifically relevant because little research has been done on the relation between hostile architecture and nudging. Johnsen, Fitzpatrick, and Watts (2017) mention both hostile architecture and nudging, they write that hostile architecture under certain circumstances can be seen as nudging. Mostly when behavioral choices are not limited but certain actions are strongly discouraged. However, in this research this is further explained on the basis of social control inventions in policy directed at housing and welfare.

3. Theoretical framework

3.1. Public space

Public space has been addressed in literature on multiple occasions. As such, the term has collected various meanings and interpretations. However, a general definition of public space includes the notion that it is a space to which people have unlimited access. Everyone has the right to exist and be present in a public space. Public spaces are accessible for varying individuals and groups; thus, they often serve multiple, sometimes overlapping, purposes (Sendi & Goličnik Marušić, 2012). The idea of having a right to space and to be present in a space is discussed at large by Henri Lefebvre. Lefebvre is a highly significant sociologist that, in much of his work focused on the importance of spatial design and its relation to power structures and cultural relations (Kingma, Dale, Wasserman, 2018). Lefebvre is often associated with the slogan 'right to the city.' This slogan was initially found in *Le droit à la ville*. This short work contains one of Lefebvre's most important arguments; the city is an oeuvre. In other words, the city is a construct in which all its citizens are able and allowed to participate (Mitchell, 2003). According to Lefebvre the right to participate is the right to city. This is one of the most important human rights, because the right to the city symbolizes the right to freedom, urban life, and the right to inhabit (Lefebvre, 1996). David Harvey, a writer of a variety of books relevant in the field of critical geography and a defender of the right to the city (Wyly, 2020), echoes this thought writing that the claim to the right of the city is equal to the claim of shaping cities and processes of urbanization (Harvey, 2013).

Access to public space, therefore, is important because it enables access to social goods and resources such as conversations with others, but also protests. In addition, public space also enables access to material goods and resources, one might need to cross a public space to buy food or other necessities (Von Hirsch & Shearing, 2001). But as Lefebvre and Harvey note: access to public space is also of great immaterial importance. Access to public space allows people to influence this space and form it to their desire. Harvey writes:

“...then the question of what kind of city we want cannot be divorced from the question of what kind of people we want to be, what kinds of social relations we seek, what relations to nature we cherish, what style of daily life we desire, what kinds of technologies we deem appropriate, what aesthetic values we hold. The right to the city therefore, far more than a right of individual access to the resources that the city embodies: it is a right to change ourselves by changing the city more after our heart’s desire.”

(Harvey, 2013, pp.4).

This sentiment comes back in Lefebvre’s notion of the city as a place of heterogeneity (Mitchell, 2003). A place where one encounters people from different walks of life and where one meets ‘the other.’ All these differences result in a conflict over rights and the shape of the city. This is where, according to Lefebvre, the city would arise as an oeuvre, the participation of all would result in a cohabitation. This idea is countered by Mitchell (2003) who gives an account of the ‘real’ cities where people actually live. The city is still characterized as an oeuvre. However, this oeuvre is alienated and no longer a place where everybody can participate, the oeuvre is ruled by the dominant class. This class is not interested in creating a city that is inhabitable for all, but instead is led by economic interest. This constitutes to the feeling that an increasing number of spaces are produced *for* us rather than produced *by* us.

3.2. Hostile architecture

It can be argued that hostile architecture is an example of space that has been produced for people instead of by people. Hostile architecture is often portrayed as something inhumane (Chadalavada & Sripadma Sanjiv, 2020; Chellew, 2016; Chellew, 2019). However, De Fine Licht (2017) argues that hostile architecture might not deserve the bad name it tends to get. More specifically de Fine Licht argues that arguments that paint hostile architecture as unjust are not always viable or that hostile architecture in general might be beneficial to society. Stating that the positive effects of hostile architecture for the ‘better-off’ part of society are greater than the negative effects for the ‘worst-off.’ Similar claims have been made in the past. George Will wrote that preserving public order in public space is nothing but commonsense and that in this pursuit the need for a ‘collective order’ exceeds the needs of a homeless person that is using public space as a place to, for example, sleep (Will in Mitchell, 2003). De Fine Licht (2017) even argues that hostile architecture might benefit those who are targeted by it. For example, if benches become increasingly difficult to sleep on by installing armrests, people seek other places to sleep, places like shelters. This begs the question: ‘Why do not all homeless people go to shelters?’ A study by Magwood et al. (2019) found that young people often feel like shelters are inadequate in fostering the development of young people. Moreover, the study found that the youth have problems assimilating to the institutional environment of the shelters, concluding that the physical situation of the shelters often forms a structural barrier.

The notion of hostile architecture (and nudging) in this research will be studied based on the ‘modes of power’ as conceptualized by Johnsen, Fitzpatrick & Watts (2018) in their study on homelessness and social control. The study conducted by Johnsen, Fitzpatrick & Watts (2018) created

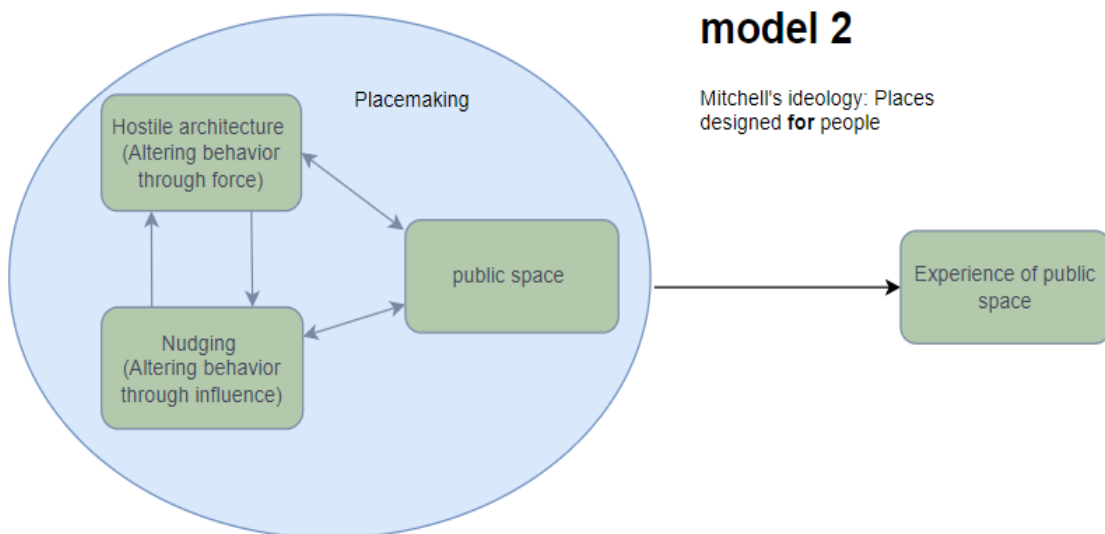
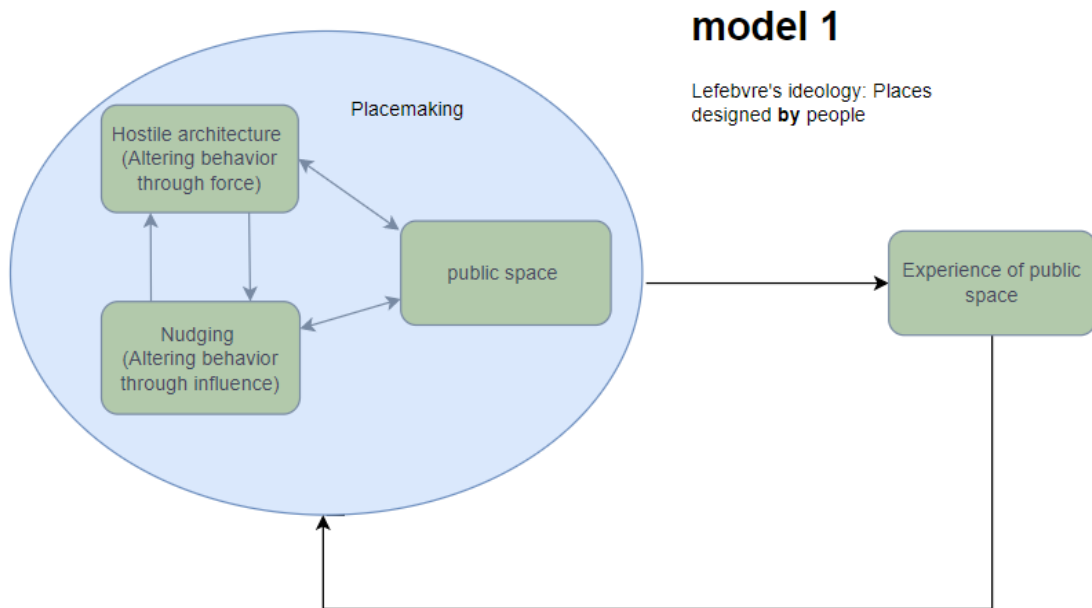
a typology in which the responses to street homelessness are conceptualized on basis of five 'modes of power'. These so-called modes of power are implemented to change behavior through 'force,' 'bargaining,' 'Influence,' 'tolerance' and 'coercion.' Not all modes are relevant for the research conducted in this thesis, however, the modes can be used to operationalize hostile architecture as a notion that has an influence on human behavior. It is important to note that there is visible overlap between the modes. On the one hand one can reason that hostile architecture belongs to the mode of force. Certain forms of hostile architecture, such as gates, exclude homeless people from spaces by force. On the other hand, other embodiments of hostile architecture make use of milder designs that manipulate behavior without limiting the actual actions that can be taken. For example, benches designed to be uncomfortable to lay on or playing loud music at night. This locates certain forms of hostile architecture under the mode of influence. Nudging also falls under the mode of influence. Influence is described as changed behavior without the use of force or limitation of choices. This definition largely corresponds with the earlier definition of 'nudging' (Johnsen, Fitzpatrick & Watts, 2018).

3.3. Placemaking

Placemaking originates from urban design and has many different definitions. It can simply be described as the physical production and transformation of (public) places. Recently this meaning has shifted to include not only the physical aspects but also the social relations that create meaning on a day-to-day basis (Akbar and Edelenbos, 2021). Akbar and Edelenbos (2021) put it simply as: '[Placemaking] is seen as a process where the setting of place is a product of the users' activities, and therefore, remaking a place is a social activity that involved people.' (P.2). Courage (2021) writes how 'placemaking' almost loses its meaning because it has been used for so many different things. However, for Courage what sets placemaking apart from other sectors concerned with built environment is the centrality of the community in deciding how a place should look and function.

Generally placemaking is seen as an important aspect of urban design. Verheul (2017) writes that good public space is greatly appreciated by its users. In addition, Verheul states that good public space creates identity for an area. In this vein good public space stimulates encounters and/or offers commodities that suit the need the users of the place. All these factors signal the importance of public space. However, according to Verheul, public space is the battle ground of two discourse. The first discourse depicts public space as a **free meeting space**. A place by everyone and for everyone (Verheul, 2017). This plays into Lefebvre's idea that cities are created by and for people (Mitchell, 2003). The second discourse describes public space as a transition space within friction. This discourse focuses on control and the creation of efficient and safe spaces (Verheul, 2017). This discourse is more in line with Mitchell's idea that public spaces nowadays are built for people instead of by people (Mitchell, 2003).

3.4. Conceptual model



Public space is both influenced by hostile architecture and nudging. Both instruments give a public space shape and meaning. Certain forms of nudging and hostile architecture influence what kind of behavior can be exhibited at a public space. In return public space also influences what kind of hostile architecture or nudging can be used.

Hostile architecture and nudging also influence each other. Moreover, in the literature hostile architecture and nudging are not always completely differentiated. Hostile architecture can sometimes also be seen as nudging and vice versa, allowing the instruments to work in close proximity of each other (Johnsen, Fitzpatrick & Watts, 2018). However, in order to create a more complete framework the choice to differentiate between nudging and hostile architecture was made. This differentiation is based on the modes of power model as created by Johnsen, Fitzpatrick & Watts

(2018). Hostile architecture and nudging are both used to describe designs that change people their behavior. Hostile architecture does this making alternative actions impossible, thus forcing people to display the desired behavior. Nudging is a milder variation of this. Through nudges the desired behavior is prioritized. Alternative choices are not made impossible but made to appeal less appealing.

Nudging and hostile architecture influence the look and feel of a public space, thus influencing the way it is experienced by the public. This framework takes form prominent ideologies in the field of public space. The ideologies explored in this thesis are those by Lefebvre and Mitchell. Model 1 expresses how to application of Lefebvre's ideology applied to hostile architecture and interaction with public spaces might look like. If Lefebvre is right, this means that public space will change to the likes of its users. Thus, creating a feedback loop. Model 2 explores this with Mitchell's ideology in mind. If Mitchell is right, this feedback loop would disappear because according to Mitchell spaces are designed in a way that only attracts a certain kind of people and thus only allows them to interact with this space (Mitchell, 2003).

4. Methodology

This study makes use of qualitative research methods in order to formulate answers to the research questions. Qualitative research is focused on data that is gathered in a natural setting and not in isolation. It attempts to carefully observe social reality and interpret the findings in the terms of human given definitions or meanings given to this social reality. This means that qualitative data is expressed in words as opposed to numbers (Vennix, 2019). In addition, qualitative research is characterized as an iterative process, because the researcher is aiming to understand the perspectives of the stakeholders that are involved, and this understanding can hardly be realized in one 'round' of research. Therefore, multiple rounds of observations and interviews are conducted and after each round the researcher reflects on the findings and relates these back to the research question. It is through this circular process that the research is conducted (Vennix, 2019). This form of research is in line with the research objective in this study, as this study attempts to discover how hostile architecture in public spaces in the inner city of Nijmegen is perceived and how people attribute meaning to public space based on this perception.

4.1. Methods

To gather more information sub-questions were formulated. The answering of these sub-questions required multiple research methods, therefore this research made use of 'triangulation.'

Triangulation as described by Carter et al. (2014) refers to the act of using multiple research methods to gather a complete understanding of a certain phenomenon or concept.

The first sub-question aims to find out how nudging is related to hostile architecture. The concepts of nudging and hostile architecture are operationalized according to the theory on the modes of power as explained in the theoretical framework. This means that hostile architecture refers to designs that force a certain behavior/make alternative behavior impossible and nudging refers to designs that make the preferred behavior more appealing, but alternative behavior is not made impossible. The theoretical framework is also used to operationalize the notion of public space and it plays a supporting role with the applied research methods. In order to answer the first sub-question a visual analysis of the central station of Nijmegen was conducted. Banks (2018) writes that due to the ubiquitous nature of pictures, a visual analysis can be beneficial for almost every qualitative research on society. In addition, Banks argues that visual data can assist in uncovering insights that are impossible to get through any other means. This can be true for hostile architecture, as it is very unlikely that policy makers will deliberately mention it in their reports. A visual analysis is usually an

exploratory research method. In other words, the method cannot be used to find evidence that confirms or refutes predetermined hypothesis. Instead, the method can be used to gather information they may have not been considered before (Banks, 2018). Various images of the station area were evaluated using visual analysis (for codebook see appendix 9.4). The analysis did not just look what was there, but also for what was not visible. In this way a complete picture of the station was created. The pictures used for this analysis were almost all taken by the author. A few additional pictures were borrowed from the *Kader Ruimte Kwaliteit station Nijmegen en omgeving (2020)*. These pictures were borrowed because they showed parts of the station that were hard to photograph. Furthermore, for privacy reasons all faces in the pictures have been edited to be made unrecognizable. In addition, an observation was used to find out how the physical layout of the station as analyzed in the visual analysis influences the interactions visitors have with the station. Through observation the researcher took part in the social reality as experienced by the research subjects (Vennix, 2019). An observation can be conducted through a variety of different methods. This research made use of a non-participant observation; this means that the researcher is present in the spaces where the activity takes place but does not actively participate in the events unfolding in these places (Vennix, 2019). One can argue that by being present in public space, the researcher is taking part in social reality. This is not untrue, but the researcher resides in these places for a limited amount of time, that it can be rendered insignificant. It should be mentioned that the researcher is an avid user of the station (3 to 4 times a week), this means that the observer might be tempted to turn a blind eye to important aspects because of the familiarity. An observation protocol was set up as a guide (For the observation protocol, please refer to appendix 9.2). The observation of the central station of Nijmegen was targeted at finding forms of hostile architecture and/or nudging, but also at the behavior of the visitors and how this behavior might be affected by the general layout of the station.

The second sub-question that is asked aims to discover what the policy vision for the central station of Nijmegen looks like and how this might have been implemented. This question is answered via a policy document analysis. This form of research is used to look into the nature of a policy document. It aims to find what is said in the document and what lies behind this (Vennix, 2019). Evidence of hostile architecture or nudging was gathered by coding policy documents (for codebook see appendix 9.4). Policy documents will almost certainly avoid mentioning hostile architecture since it might be perceived as offensive. Therefore, in the analyses emphasis was put on the language used in these texts. This concerns language associated with aesthetic value, safety and safety of public space and the station in particular. The following documents were used for the policy document analysis:

- *Omgevingsvisie Nijmegen 2020-2040*. An 'Omgevingsvisie' is the long-term vision the municipality has for the living environment of a city. The omgevingsvisie of Nijmegen runs from 2020 till 2040. This document contains the long-term visions and goals the municipality has for Nijmegen as a whole, this includes public spaces. Therefore, this document was analyzed because it is essential to create an understanding of how the municipality thinks about and creates its public spaces. page number: 100
- *Kader Ruimte Kwaliteit Station Nijmegen en Omgeving (2020)*. This document describes the framework that is and will be used to ensure the spatial quality of the central train station and surrounding area in Nijmegen for the coming years. Both the text and the pictures included in this document were coded. Where the omgevingsvisie is focused on the entirety of the city Nijmegen, this document is solely focused on the future of the

station area. This document was chosen because it depicts what the station's probable future may look like, as well as what principles this future is based on. In addition, it was analyzed how these principles correspond to the theories discussed in this thesis. Page number: 78

The last sub-question in support of the main question is directed at the experience of the users of public space. This question is answered by conducting 10 short and structured street interviews. This allowed the respondents to stay on topic. In addition, this kept the interviews relatively short, which increased the likeliness of response (for the interview guide see appendix 9.3). The researcher also has the possibility to ask probing questions to extract more information on certain topics. This method of interviewing might not result in in-depth answers. However, the researcher was still able to ask follow-up questions and this method made it possible to gather more results in a shorter amount of time (Vennix, 2019). The interviews took place on May 30, 2022, between 10am and 11am. The interviewees were picked at random, but there was a preference for people that were standing still or sitting down to avoid disturbing people who seemed to be a hurry (see table down below). It was also made certain that persons of belonging to different age groups and genders were questioned. The interviews were processed by means of coding. This, too, is an iterative process where the findings of each round of coding were linked back to the theoretical framework. The coding process aimed to find patterns in the interviews and determine a link between the empirical findings of the observation and the theoretical framework (Vennix, 2019). The preciously stated observation was used in addition to the interviews because it assisted in matching what people said about their experiences with the station to what was observed. And thus, helped to interpret the observations.

Interviewees May 30, 2022	
1	Elderly man (60+)
2	Group of adults or maybe students in their early twenties, both men and women
3	Elderly woman (60+)
4	Middle aged man (50+)
5	Middle aged man between 40 and 50
6	Young women (maybe a student) in her early twenties
7	Middle aged women (50+)
8	Elderly woman (60+)
9	Young women (maybe a student) in her early twenties
10	Young women (maybe a student) in her early twenties

4.2. Grounded theory

In order to uncover information through the policy document analysis, this research made use of 'grounded theory.' Grounded theory lends itself for research where data is simultaneously collected and analyzed. Grounded theory can be used for both qualitative and quantitative Nobel & Mitchell, 2016). This means that grounded theory works well in combination with coding, because here too, data is collected and analyzed (in various rounds) at the same time (Vennix, 2019).

In line with grounded theory as explained by Nobel & Mitchell (2016) the coding took place in three rounds. The first round involved open coding. In this stage key phares were pinpointed. Furthermore, these key parts of the documents were link together in subcategories and categories. This helps the researcher understand what the documents are about (Nobel & Mitchell, 2016). Because this research used two different policy documents, they will also help to compare the pieces and find similarities or differences. The documents used for this research do not directly name

hostile architecture/ defensive architecture or any other related terms. Therefore, sentences and terms addressing the safety or cleanness of public spaces were highlighted (the codebook can be found in appendix 9.4). The second round of coding revolved around identifying relationships between the categories formed in the first round of coding. Finally in the third round of coding a core category was chosen, this category was then related to the other categories. In this last stage the categories were also refined. Finally, this round ends in the development of a grounded theory.

4.3. Reliability and validity

Triangulation is a method that is often used to increase both the reliability and validity of a study. Reliability in general refers to the presence of accidentally made mistakes in one's research. The results of a reliable research are independent of the time the research was conducted, the researcher and the measuring system that was used. In other words, reliability focuses on the question 'Will the same results be achieved if the research is conducted at another time, by another researcher, using a different measurement tool?' (Korzilius, 2008).

In general, the reliability of qualitative research is lower than quantitative research, because while reliability is concerned with the stability of the research context, qualitative research is often more or less context dependent (Vennix, 2019). By using triangulation, the reliability of a research can still be accounted for. Using multiple methods lowers the chance that the fundamental biases from a singular method significantly impact the results (Noble & Heale, 2019).

Validity concerns itself with does the research instrument measure what is intended to be measured? In other words, do the results paint an accurate picture of reality? When a result is deemed reliable, this does not automatically mean that it is also valid (Korzilius, 2008). Triangulation also adds to the validity of results. Noble & Heale (2019) explain that this is the result of multiple methods creating a more complete and balanced explanation of a concept.

5. Results

5.1. Analysis of the current situation

This chapter is based on a visual analysis and an observation of the current state of the central station of Nijmegen. This chapter will start by giving a concise overview of the history of the station, this will serve to create an understanding of how the station is as of today. This will be followed up by the visual analysis. The analysis the station is split into four parts; the outside, the entrance hall, the hallways leading to the perrons and the perrons. Each part will be separately analyzed this way differences between the areas may come forward. Insights of the observation will be added throughout to enrich the visual analysis.

5.1.1. History of the station

In 1865 Nijmegen opened its the first station opened, just outside the fortifications of the city. Roughly 15 years later, in 1879, the station was allocated to its current location. As train use became more popular, the station had to accommodate to the growing number of railway lines and passengers. This led to the development of a new station building which opened in 1894. In only a brief time period of 30 years the station had already changed 3 times. For a long time, the station remained as it was, until February 1945, when the building took a couple of direct airstrikes. What remained of the station burnt out completely a few months later. It took 10 years to design and built a new station, the new design incorporated many of the old parts that had miraculously survived the air attack, such as the roof over the platform and the old waiting rooms for the first class travelers on the perron island (track 3 and 4). However, some of these original elements have been lost due to renovations in the postwar years (Noviomagus, n.d.). It is apparent that the station is no stranger to transformations, as it has been the subject of change since the very beginning.

5.1.2. The outside area

This part is focused on the outside part of the station. This area stretches from the bus station to the bicycle storage and is largely made up out of the station square. Because this part of the station is directly connected to the station building it serves as both the entrance and the exit of the station.



Figure 4: Station square. Source: Author (2022)

An analysis of the station square shows that the space is largely empty and lacks nearly any presence of amenities (such as benches, shops, trashcans, anything that provides service to a visitor) (Figure 4). Outside of the station there are no seating options available, except for the bus station, which has extremely restricted possibilities. Observation shows that these benches are used frequently when



Figure 5: Stairs in front of the station square. Source: Author (2022)

people have to wait on their train. However, due to the limited availability some people take to the stairs that are positioned in front of the square to sit down (picture 5). Nevertheless, the openness of the space does create a clear overview of the station, making this part easy to navigate. In addition, the almost obstacle free space allows for a free flow of people. But the lack of amenities or greenery do leave to station square to look rather uninspired and boring.

The roof installed above the bus station is also one of the only places in the vicinity of the station to offer some form of shelter. The only other option is the extended roof of the station. These roofs, however, do not provide protection from wind or coldness. If one really need protection from these conditions, the only place people can go is inside the station.

Furthermore, there are only a few trashcans located outside. The few that are present can be found up against the station, under the overarching roof. As a result, people tend leave their trash lying around. Figure 6 shows an example of this, due to a lack of seating and trashcans people have used the electricity box as a makeshift table and left their trash.



Figure 6: Trashed electricity box. Source: Author (2022)

Lastly the accessibility of the station can also be questioned. The square itself looks rather accessible, as it is flat and free of obstacles. However, the station square is slightly elevated, therefor is it only accessible by going up a few steps (or down if one is leaving the station), as shown in figure 5. Initially this issue might seem minor, but it could be very inconvenient for wheelchair users or people who have trouble walking/going up and down stairs. Moreover, the lack of seating options outside, can also cause an issue for people with walking difficulties or those who cannot stand on their feet for too long. Access to the station square via the Keizer Karel plein is also not without difficulty. To get into the square one needs to cross a road, a bike lane, and a bus lane. There are no pedestrian crossings or traffic lights, creating a rather dangerous situation, especially as the bike lane is very busy but not very visible to the eye, especially to first time visitors.

5.1.3. Station entrance hall

The entrance hall is the first part of the station one sees upon entering the station building (figure 7). Visitors can enter this area through various sliding doors that face the bus station, the station square, and the outside bicycle storage. The entrance hall mirrors the station square in that it contains virtually no seating possibilities. The only options analyzed are in the small restaurant and coffee shop; nevertheless, these options are arguably paid seating possibilities, as one must purchase something in order to utilize those areas. The lack of seats is the only thing the exterior and interior of the station have in common because the outside offers almost no facilities, but the inside has a rather broad assortment.

The entrance hall provides the traveler with everything one may expect to find at a station, such as an information desk, travel information and ticket automates. In addition, the station provides a plethora of additional shops like a flower shop, a small supermarket, a Starbucks, a small restaurant, an office supplies/bookshop, a sandwich shop, a drug shop, and a snack bar. Furthermore, the visual analysis showed that the outside of the station provided very few trashcans.

This is a direct contrast with the inside, where more bins can be found. As a result, less littering trash is found, making the inside look more cleaned up than the outside. The number of available amenities does not make the entrance appear as a crowded space, figure 7 shows that there is still plenty of open space to allow for a free flow of people. However, it is important to take note that this flow is limited to this part of the station. The OV-gates that divide the station in two areas, as visible in figure 8, stop the flow of people. It was observed that the gates create a congestion, because it



Figure 7: Entrance Hall. Source: Author (2022)

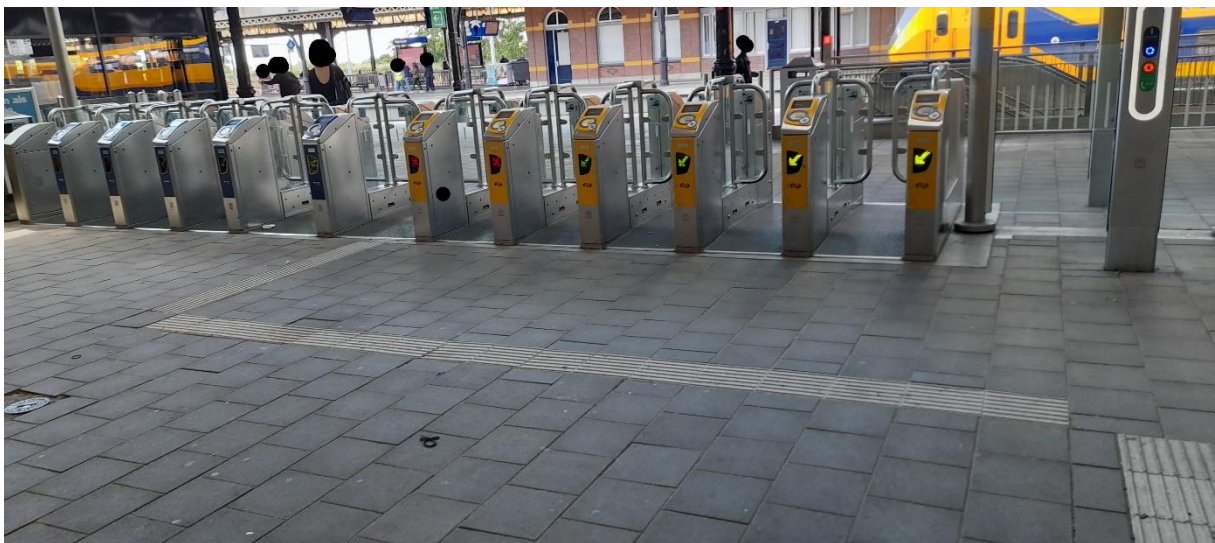


Figure 8: OV-gates. Source: Author (2022)

takes some time for the gates to open and allow people to pass through. This proved to be especially inconvenient at peak hours.

Generally speaking, the entrance can be considered a sheltered and accessible space, the floors are even and there seems to be plenty of space for wheelchair users. In addition, there are also wider OV-gates that allow people in wheelchairs or travelers with other walking aids through. Nevertheless, the lack of seating options is somewhat concerning as people who cannot stand or walk for extended periods of time are hardly able to find a place to sit. There are benches located in the station, however these are almost exclusively placed in the area after the OV-gates. It is important to mention that this area is only accessible after one has paid at the OV-gates with their public transport card. This causes a disconnection between the two parts. The so called 'free part' seems to be designed to support the flow of travelers and help them to get to their destined perron as quick as possible as it is spacious, even floored, rather easy to navigate and accessible. In other words, this part seems to be designed for movement but not for staying. The part behind the OV-gates does provide places to sit, however, this part is not accessible without a train ticket or public transport card. It can be argued that one needs to 'prove' that one has a reason and the means to use that part of the station.

It can be argued that the entrance hall contains a system made of nudges. The first nudge is the absence of seats in the free part, which indicate to travelers that they should not linger in this area, instead they are nudged to proceed to the next section of the station. This can be argued as a nudge as it is not made impossible to stay in the entrance hall, instead it is turned into a less attractive choice. The second nudge are the OV-gates which indicate that moving past this point is only permitted after payment. The OV-gates may also be considered as hostile architecture because it is impossible to get through them without paying. However, visitors of the station can purchase train tickets in the entrance hall. Thus, moving on to the next section of the station is not absolutely impossible. This plays into Mitchell's ideology of places designed for people instead of by people. This argument is backup by the presence of a paid public toilet, following the argumentation that only people who have the money can use the station and the amenities it offers (figure 9).



Figure 9: Public Toilet. Source: Author (2022)

5.1.4. Hallways leading the perrons 3 and 4

In this research and visual analysis this part of the station is seen as separate from the entrance hall, since this it is only accessible by going through the OV-gates. In addition, this part is also on a different level than the entrance hall. This area is made up of the hallways leading to perrons 3 and 4. There perrons are located on the so called 'perron island' and are only accessible via the underground tunnel that will lead travelers underneath the tracks from perrons 1 and 2 (figure 10).

The visual analysis concluded that this part of the station has a very poor overview. As a result, these visitors may find it difficult to navigate these corridors. The low ceiling also creates the illusion of a compact space. When standing at either end of the tunnel, it is hard to see if people are coming down the stairs. Figures 11 and 12 show that the reverse is also true, the tunnel is invisible when transcending the stairs. However, it seems that the station has tried to remedy this by providing signs that help to steer people to the perrons, but this does not take away many obscure turns and corners remain.

Nevertheless, the space might feel somewhat compressed due to the low ceiling, but the hallways are very wide allowing a free flow of people even when there are both travelers leaving and entering perrons 3 and 4.



Figure 10: Small underground tunnel to perrons 3 and 4. Source: KRK (2021)

The visual analysis also concluded that this section is not very accessible. First of all, the floor is not even. Figure 6 shows how the floor slightly dips in the middle. Second, as mentioned before this part located, underground, at a lower level than the entrance hall. While the perrons are all on the same level as the entrance hall. This means one needs to take the stairs or escalator downstairs to then take them back up again. The station does provide an elevator for those who need it. But the

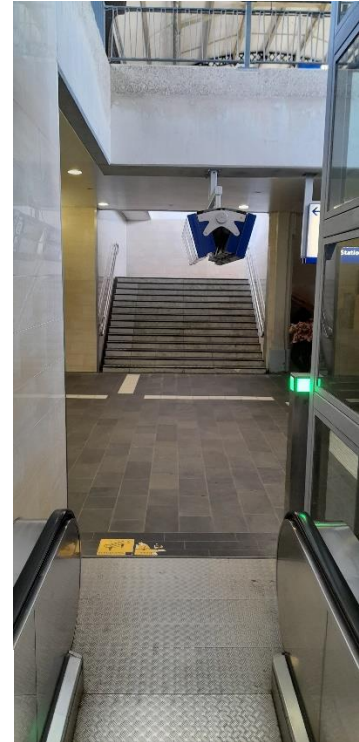


Figure 11: Top of a staircase leading to perrons 3 and 4. Source: Author (2022)

operation of going down, just to go up again continues to be somewhat cumbersome. To conclude this part of the station is hard to navigate and inaccessible due to its general design, however it is evident that the station has put effort into making it easier to navigate and more accessible.

Lastly the visual analysis revealed that, except from travel information signs, no other facilities are provided in this section of the station. This means there are no seating options either. This may be explained by the fact that this part is relatively small and severs solely to direct users to the appropriate perrons. However, as mentioned multiple times before, the lack of seats can be troublesome for certain users. Furthermore, this does not explain the blandness of these hallways. As visible in the figures 10, 11 and 12, no effort has been made to make these corridors appear more appealing. Together with the low ceiling and the dim lights this creates a gloomy atmosphere.

*Figure 12: Point of view from the escalator shows that the rest of the tunnel is not visible.
Source: Author (2022)*



5.1.5. The perrons

The last section of the visual analysis focused on the perrons. It is important to mention that perrons 3 and 4 are located on the perrons island that is separated from perrons 1 and 2. Perrons 1 and 2 flow almost seamlessly into the waiting space behind the OV-gates and thus the entrance hall. As a result, differences between the perrons were analyzed.

Of all the areas that were analyzed, the perrons contain, by far, the most seating options. All perrons are equipped with benches that face their respective tracks. However, the designs of the benches can definitely be called out as 'hostile' as seen in pictures 13 and 14. The benches come in two varieties. The first variety (figure 13) are seemingly ordinary benches and very 'classic hostile architecture' in their design, with armrests placed in the middle to separate each bench into 3 seats. The second variation are the metal 'benches' in figure 14. These seats look less like actual benches and more like extended bars. This design also fits the term 'hostile' because they cannot be sat on in the same manner that a bench can. In addition, they make laying down impossible. However, this seems like an odd section of the station to place hostile architecture. As established earlier this area is only accessible to those who have the means to take a train. Therefore, the armrests might be placed to show how many people can use the bench and/or prevent people from taking up an entire bench. And the extended bars can be argued to be the result of still creating seating options where there is no space to place actual benches.



*Figure 13: Benches with arm rests in the covered waiting room.
Source: Author (2022)*

The perrons are very open spaces, especially perrons 3 and 4 (Figure 15). On the one hand, this is very beneficial for the flow of people and navigation of the station. The openness and evenness of the perrons also make the perrons rather accessible. On the other hand, this results in windy and frigid perrons, where finding shelter from these conditions may prove to be difficult. The visual analysis revealed that the station has attempted to combat this in a number of ways. Pictures 10 and 11 show one of the sheltered waiting rooms, essentially these are glass boxes with some benches inside, this is where travelers can take shelter. However, these waiting rooms are only present on the perron island. They are also relatively small, only providing shelter for a limited number of people. There are a few windscreens as well as the station, however they appear to serve more as a barrier between perron 3 and 4. These adjustments are missing from perron 1 and 2.



Figure 14: Seating option outside the covered waiting room. Source: Author (2022)

The perron island also offers a few other amenities, in addition to the benches and sheltered waiting rooms. There are enough trashcans to prevent littering. There is also a food kiosk and vending machines. Lastly there are also electrical boards that show travel information.



Figure 15: Perron island. Source Author (2022)

The presence of seating possibilities and the other amenities on the perrons plays into the already proposed argument that the station is designed with nudges. The benches can be seen as the last nudge to show travelers that they have reached their destination and can now sit and wait for the train. This argument also fits with Mitchell's ideology, the station as a place designed for people. If this ideology is used as a frame of reference, the nudges may be regarded as designs made to determine who is permitted to use the station and then steer these individuals to their destination. The lack of seating in the entrance hall directs people to the OV-gates, which determine who is entitled to use the station, and the benches on the perrons indicate that people have arrived at their destination.

To conclude, hostile architecture of nudging might seem absent from the station upon first glance, but through analyzation it becomes clear that certain design choices, such as the instalment of OV-gates and the way benches are only place at the perrons, can be regarded as nudges that determine who is privileged to use the station and utilize its amenities. In other words, the station appears to be tailored to a specific demographic. As a result, does who are not regarded as suitable to use the station are excluded. This fits into Mitchell's ideology of places designed for people instead of by people.

5.2. Policy vision

This chapter is concerned with the policy vision as it is imagined and the actual implementation of these policies. The first section of this chapter will look at the 'omgevingsvisie' to get a sense of how the municipality as a whole is concerned with placemaking and the design of public space in general. Following that, it will be evaluated hoe this vision manifests itself in the station-specific framework knows as 'Kader Ruimte Kwaliteit Station Nijmegen en Omgeving' (KRK).

5.2.1. Omgevingsvisie

The omgevingsvisie's overarching goal is to convey an image of the status of Nijmegen as well as an overview of the principles that apply to the use of (public) space in Nijmegen. The document is written in 2020 and relevant up to 2040. The report focuses on 4 main tasks:

- the economic resilience of the city;
- the city as a social and healthy place;
- the attractiveness of the city;
- the sustainability of the city.

This research is mostly concerned with tasks that focus on the city as a social and healthy place, and the attractiveness of the city, as these two tasks are the most concerned with public space in a way that is significant for this research. These 4 tasks come paired with 8 integral solutions of which only the ones deemed relevant have been analyzed. This includes: compacte, dynamische stad, toekomstbestendige wijken, groene, gezonde stad, duurzame mobiliteit and groter centrumgebied.

Lenses

There was no mention of hostile architecture of defensive design in the omgevingsvisie. However, this does not mean that the document does not exert exclusion. This becomes clear through the way the document references 'lenses.' Several parts of the document have been written with a specific point of view in mind. Theoretically this can be used as a technique to ensure that certain groups or people are not forgotten, however in this document the usage of lenses is treated differently. Through coding three major lenses were distinguished: Citizens/residents/inhabitants, tourists, and companies. The analysis will primarily concentrate on the citizen and tourist lenses. For the reason that these lenses are concerned the utilization op public spaces. The company lens is mainly focused on areas that are irrelevant for this research.

Citizens/residents/Inhabitants, this lens is by far the most common lens. The omgevingsvisie is eager to proclaim that Nijmegen is an inclusive city, fit for anyone and everyone under the sun. The aim to build inclusive neighborhoods, with housing for people with different economic backgrounds is frequently mentioned. Oftentimes in tandem with the ambition to offer enough amenities for everyone.

The term 'everyone' is often used along side terms with more narrowly defined meanings that best translate to 'citizens' 'resident' or 'inhabitants.' The mixed use of terms makes it hard to

determine if the city really is inclusive to ‘everyone’ or only those who reside in the city. The part of the text concerned with the city as a social and healthy place describes the following:

*‘We want to design of the city to contribute to a social and healthy city. In which the **resident** is central and **everyone** can participate. Where **others** are taken into account and attention is paid to **those who need help**.’* (Omgevingsvisie, 2020. P.23, [translation and emphasis added])

In this short citation alone, multiple terms to indicate people (of a certain group) are used already. It should be mentioned that through out the document none of these terms are further specified. ‘The pedestrian’ (voetganger) is a good example of what is meant by term with a clear definition and framing. Throughout the omgevingsvisie the pedestrian is often mentioned as a critical point of view for infrastructural purposes and with concern to the setting of public spaces. First of all, the same term (voetganger) is used almost exclusively. Secondly the document contains sections that specify who the policies about walking/ transport are specially aimed at (for example older people who tend to stay home because they cannot walk long distances). Explanations like these are missing for concepts such as ‘everyone’ ‘citizens’ etc. This begs the question: who is everyone? Does ‘everyone’ mean every person in the city at any given moment or is ‘everyone’ defined by all those who have residency in the city? The same problem arises from the statement ‘helping those who need help,’ who are the ones that need help? In what way are they receiving help? Why do they need help in the first place? Even though it is an admirable aim, the report never further specifies the ways that might be used to achieve this.

This matter is reminiscent of the difference between Lefebvre’s ideology that the city is a place shaped **by** people and Mitchell’s claim that the city is designed **for** people (Lefebvre, 1996; Mitchell, 2003). Assuming that cities are made by people, the first definition of ‘everyone’ might be believed to be true; everyone present in the city at any given moment, regardless of their (material) connection to the city. However, when assuming that Mitchell is right and cities are designed for people, the second definition of ‘everyone,’ all those who have residency in the city, might be believed to be true. It can be argued that the second definition is the more viable option as Mitchell (2003) proposed his idea as the more realistic version to Lefebvre’s ideal.

This claim is further supported by the other lenses present in the omgevingsvisie. The two main lenses besides inhabitants/residents/citizens are Tourists and Companies. The existence of these lenses indicates that a distinction is made between people based on their relation to the city, between people who go to the city for a limited stay and people who live in the city. A lens that accommodates to ‘everyone’ seems to be missing, while a lens that centers around residents is present. However, this cannot be said with certainty as the omgevingsvisie itself does not directly state this.

Ambitions

The omgevingsvisie contains no discussion on hostile architecture. This is logical considering the public function of a municipality, therefor it is unlikely that any report will just ‘casually’ mention hostile architecture or the desire to discourage specific people from using certain spaces. However, this does not mean that indirect references to hostile architecture cannot be found. Therefore, all of the omgevingsvisie’s tasks and solutions were evaluated based on the language employed to describe them. As the document contains plenty of ambitions for the use of space in Nijmegen.

The report states that public space is essential for the attractiveness of the city. Hence the ambitions all mention the importance of the quality and attractiveness of public spaces. These ambitions can roughly be divided into two categories:

- Material aims this includes talk about the presence of amenities and who gets to use them. Think about: benches, shelter, bins etc.
- Immaterial aims: this includes pieces of text that emphasize the comfort, safety or aesthetic value of a public space and the wish to maintain or increase this.

The material aims in the omgevingsvisie are mostly housing related. The municipality has ambitions to provide housing for everyone, regardless of one's income. But what does this mean for people who don't have an income or whose income is still too low to afford housing despite the municipality's efforts to provide housing for all? This question is not answer in the document. Material aims in general are not very prevalent.

Instead, the so-called immaterial aims are more extensively present. The three lenses are also rather apparent in the immaterial aims, as the idea of 'attractiveness' is examined through the eyes of residents, tourists, and companies. In this examination the report proposes the questions *'What qualities of the city make companies want to settle in Nijmegen?'* and *'What makes Nijmegen an attractive city for residents and tourists?'* Through the principles written in the omgevingsvisie the city tries to accommodate to these two groups. Because of this focus the term 'attractiveness' is often surrounded by words that refer to the city's beneficial properties, such as 'quality,' 'safety,' 'clean' and 'comfort'. These terms are all concerned with experiencing and living in the city. In other words, the municipality has ambitions to maintain and increase the livability and likeability of the city in a way that might appeal to residents and tourists.

A remarkable concept that is mentioned only once in the omgevingsvisie is 'placemaking.' It is brought up in regard to spatial developments that keeps the living environment and well-being of residents in mind. The document claims that placemaking is used to realize improvements. But in the whole text placemaking is never mentioned again. This means that the definition is not further discussed. However, this is necessary because, as explored before, placemaking can be explained in numerous ways.

Station era

The station era does not have a leading role in the omgevingsvisie, it is only mentioned a few times. The empty office buildings in the near vicinity of the station are set to be repurposed and rebuild as new, future proof, office spaces. Furthermore, the possibility of housing is brought up. What is interesting is that this possibility of new living spaces is paired with the need to increase the amenities present in and near the station.

It can be concluded that the municipality strives to improve the livability of the city in a variety of ways. All these policies are written from at least one of the lenses present. In other words, the omgevingsvisie shows principles that will help to transform the city into a livable, comfortable, safe place to live stay, through the eyes of citizens, tourists and/or companies. But it remains unclear what this means for the people that stay in the city but are not perceived as 'residents' or 'tourists'.

5.2.2. Kader Ruimtelijke Kwaliteit (KRK)

The Kader Ruimtelijke Kwaliteit (Framework Spatial quality) is a policy document published in 2020. The KRK is the framework that is established to safeguard the integral spatial quality of future developments of the station and the surrounding areas. The station of Nijmegen is one of the so called 'Collectiestation' (Collection-station), this is a station that is to set an example for all other stations in the Netherlands. One of the important points of this framework is to accommodate to the increasing flow of people to and from the station by forming an adequate station area. In order to

fulfill this idea multiple areas of the station are set to be improved or completely demolished to build a better alternative (Prorail, 2020).

This document barely uses lenses in the way they were present in the omgevingsvisie. The only lens that is really used is 'travelers.' However, that is understandable as the report concentrates on a train station and its surrounding areas. This is a considerably narrow defined region with a specific role as opposed to the omgevingsvisie, which focused on the city as a whole. Therefore, other lenses beside travelers are likely to be considered less relevant for the KRK.

General ambitions

In the document a few general ambitions are stated. The first one being; the traveler is priority number one. Thus, further solidifying 'the traveler' as the most present lens. The station should be a space that is 'safe,' 'comfortable,' and easy to orientate for travelers. It can be argued that when looking at the language utilized in the KRK to describe the way in which the traveler is prioritized, is similar to the language that is used in the omgevingsvisie to describe the qualities of public spaces.

The second assumption is concerned with accessibility. The station as it is now, cannot be considered a very accessible space. Significant differences in height make the station difficult to enter and navigate. As a result, the report writes that the station and the areas in the near vicinity must be easily accessible for people with reduced mobility, hearing impairment and/or vision impairment. It can be argued that with this ambition the station is influenced by the omgevingsvisie's aim to 'help those who need help.' The KRK having specified who the people that need help are.

The document then continues with 6 ambitions concerned with the aesthetic value of the station, functionality, upkeep, and the connection of the station design to the cultural-historical value of the city.

Where the omgevingsvisie did not mention hostile architecture in any way, the KRK carefully introduces the ambition of making the station 'vandalism resistant.' Stating the following: *'Design and materialization should be such that they are vandalism resistant, **without applying designs that are too defensive.**'* [translation and emphasis added] (Prorail, 2020. P.25). It is noteworthy that this ambition is never further explained. Which leaves the reader with a rather ambiguous statement because what is considered vandalism is in this case? And what 'not too defensive design' means is not clear either. Furthermore, it is also unclear how this design might impact other users of the station. However, this highlighted half sentence does not only leave uncertainties in its wake, because it reveals that the municipality is not against the general use of hostile design. Only the implication is left undetermined.

It should be noted that, even though this document mentions defensive architecture to some extent, there is also more acknowledgement for amenities. The document mentioned plans to increase the greenery outside of the station. There are also plans to add more seating possibilities, this would be a considerable improvement considering the visual analysis that concluded a severe lack of seating possibilities. The inside of the station will continue to display all the amenities one may expect to find at a station such as ticket automats, travel information, an information desk, etc. In addition, there is an aim to include more trashcans inside the station, this would also be an improvement from the situation as observed in the visual analysis. Lastly, the document proposes a plan for new waiting spaced inside the station and at the bus station, as the old one is inadequate in offering protection from harsh weather conditions. The absence of sufficient waiting rooms that offer protection from more than just wind was also brought up by the visual analysis.

Tunnel

One of the municipality's biggest plans for the station is to build an underground tunnel to connect the front of the station to the area at the back of the station. The tunnel would open up a whole area that is now nearly inaccessible (for pedestrians/bike riders). Moreover, the tunnel would offer shelter from weather conditions. However, in the report it does not become clear how accessible the tunnel truly will be. In order to explain this, it is important to understand that Nijmegen station utilizes a specific type of 'OV-paaltjes' (public transport poles), these are the poles where travelers can scan their public transport card to pay for their trip. The OV-paaltjes in Nijmegen, visible in figure 16, function like gates and these gates only open when one pays first. In other words, one cannot enter the perrons without paying first. These gates divide the station in two parts, the entrance, where people can entre without cost, and the perrons, where people must before they are granted access



Figure 16: OV-gates Nijmegen station. Source: KRK (2020)

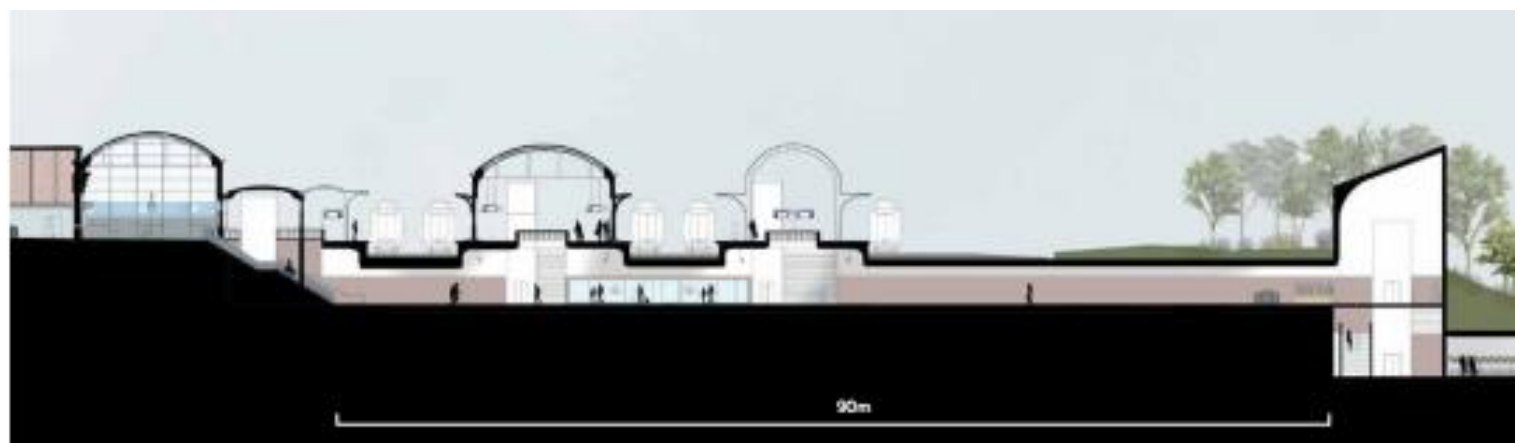


Figure 17: Profile view station tunnel. Source: KRK (2020)

From the drawings in the KRK (figure 17) one might carefully argue that it will be likely that the tunnel can only be entered when one is in possession of a public transport card. This can be said because the tunnel is drawn like an extension to the already existing underground part of the station, and this part is located behind the OV-gates. However, this cannot be said with certainty. Regardless, the gates remain a hostile aspect of the station. Especially since the KRK describes plans to locate the gates closer to the station entrance to create bigger perrons, which will allow the travelers (that can pay) more space to stay. But why can it be argued that these gates are hostile? This question can be answered by comparing the central station of Nijmegen to the central station of Den Bosch. The station of Den Bosch is also built to connect the area in front of the station to the area at the back of the station. This connection is formed by a bridge that spans across the perrons and is connected to the perrons via stairs and escalators (Gemeente 's-Hertogenbosch, 2019). So, both stations are bridging two parts of the city in some way, the difference is that the station of Den Bosch is accessible for everyone, even those who do not have public transport card. As is visible in figure 18 Den Bosch does not use OV-gates, but just poles that only have to be used when one is planning on taking a train.

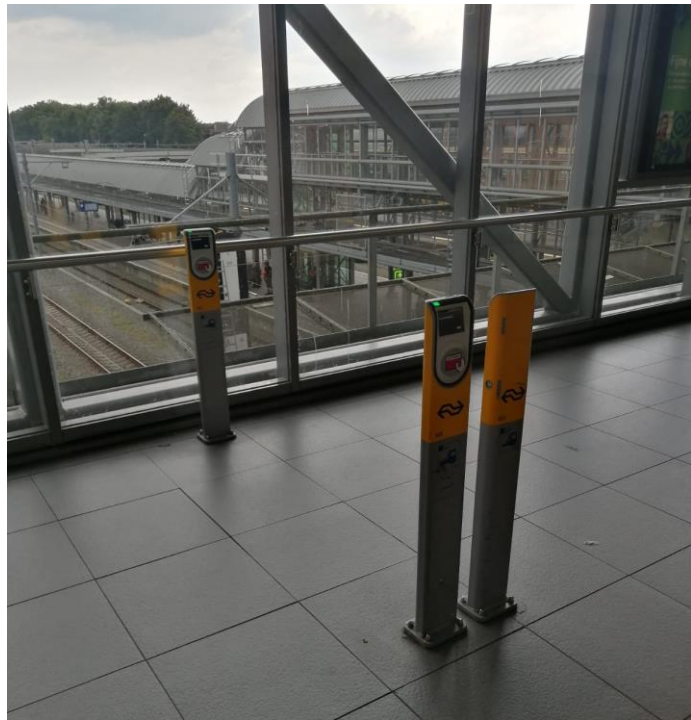


Figure 18: OV-poles in Den Bosch. Source: Jan van Rossem (2022)

In conclusion, compared to the omgevingsvisie the KRK is more so focused on practicalities around transforming the station area, although elements of language used in the omgevingsvisie can be found. Both documents share a focus on providing safety and comfort for their concerned target groups. Moreover, the omgevingsvisie's emphasis on the aesthetic value of public spaces is reflected in the KRK's considerations about the aesthetic quality of the station. The policy documents also seem to contain plans to change many of the short comings as analyzed by the visual analysis.

6.3 User experience

This chapter will concentrate on the user experience of the station. The data in this chapter was acquired through brief street interviews. Ten participants answered a few short questions regarding public space and hostile architecture in relation to the station.

Frequency

The first interview question asked how frequently people would visit the station. This question was asked to see if frequency has any effect on the user experience of the station. Initially it was thought that people who visit the station frequently, say multiple times a week, would have stronger, more polarized opinions (either very positive or very critical) compared to people who visit the station less often, as they are more familiar with the station's positive and negative sides. However, as it turned out, all the answers were pretty unique, ruling out this initial idea.

Hostile architecture awareness

The second question asked people whether or not they were familiar with the term 'Hostile architecture.' In the interviews the English term was utilized, but sometimes 'architecture' was replaced with the Dutch translation 'architectuur.' If the participants said that they were not familiar with the term, they were provided with an (Dutch) definition of the term (See interview guide, appendix 9.3) About half of the people interviewed were unfamiliar with the term. Even when provided with an explanation, the term still did not ring a bell.

The other half, which was familiar with the term, was then asked the following probing question: *'Does this [knowledge of hostile architecture] influence the way you look at or engage with public spaces?'* All but one participant answered this question with yes. For one person hostile architecture colored the entire atmosphere of a building as negative. Other people commented that they only noticed hostile architecture and recognized it as such but that this had no further effect on their interaction with the space (personal communication, May 30, 2022). An example that came up 2 times were the benches with extra armrests that make laying down impossible. An interesting comment that was made in regard to the station of Nijmegen was that they noticed that the atmosphere was somewhat hostile. They felt like they were welcome to use the station but not stay there and 'just chill' (personal communication, May 30, 2022). This comment was made after they noticed that the entrance hall lacks any form of seating.

Station as a public space

For the next question participants were asked if they regard the station as a public space. All participant unanimously decided that they regard the station as a public space. To gather more insight, participants were asked why they answered yes. The answers varied a lot, but one reason that kept coming back was that the station allowed people to enter and leave as they desire. The same person that commented on the hostile feeling of the station said that even though the atmosphere is not the most friendly, one is still able to do everything one needs to do, buy a quick lunch and some coffee, purchase a train ticket, and check in (personal communication, May 30, 2022). The same reason, the station as a place where one can get what they need and move on, was shared by others as well.

The station as a place where people come and stay together was also brought up a few times. More intriguing were the people that said that the station is a somewhat limit public space. A few visitors observed that the only fully public area of the station is the entrance hall; beyond the entrance hall, one must check in to proceed past the OV-gates (personal communication, May 30, 2022). In other words, to enter the remainder of the station, one must be in the possession of a public transportation card and pay. According to the participant this is where the station's public nature is lost. The division of the station in two parts by the OV-gates is also acknowledged in the KRK. The KRK writes how the gates disrupt the cohesion of the station hall and the perrons. However, it is never further discussed. One participant also commented on the presence of camera's in the station, questioning whether or not the station can be considered a public space at all if there are camera's tracking your behavior day and night (personal communication, May 30, 2022). This is an interesting comment because through observations of the station it can be concluded that police, another form of surveillance are also often present at the station. However, not a single participant made notice of that, even though police were present at the time of interviewing. It might be said that the station is a more surveilled place than passengers initially notice.

Possible improvements for the station

The last question was focused on improvement, more precisely participants were asked if they had any ideas to enhance or improve the atmosphere at the station. Surprisingly a little less than half the

participants answered that according to them no improvements were needed. Interestingly some of these people did question the public character of the station more than the rest, however, they still considered the station as 'complete.'

A little more than half of the 10 participants answered that they did have improvements that they would like to see realized. Some people commented on the lack of benches in the entrance hall. They explained that if one buys a sandwich, it is not possible to eat and sit down or one has to carry it with them through OV-gates and to the perrons where benches are available. Two other participants pointed out that the station lacks sheltered places where people can meet each other and where people can stay when their train is delayed. One participant mentioned that the station should create an ambience where staying and meeting others is comfortable. It can be concluded that not everyone enjoys the station, one participant in particular talked not only about not liking the atmosphere at the station but also the lay out. Commenting on the lack of 'gezelligheid' at the entrance and that there is nothing interesting going on. In addition, they mentioned the absence of benches inside and outside. They also pointed out that both the perrons inside the station and the bus station provided insufficient shelter from weather conditions such as wind and rain. According to this participant the station could use more greenery (personal communication, May 30, 2022).

The safety of the station was also questioned by various participants. One participant would like to see more police in and around the station, as they often feel unsafe. This comment in safety is interesting as another participant pointed out the presence of camera's and even questioned the station as a public space because of this. Another participant mentioned that the layout of the station does not provide an ample overview. According to them, this is especially true for the underground part of the station. This part is made up out of different halls, resulting in obscure nooks and corners that create an unsafe atmosphere. They compared Nijmegen station to Arnhem station, concluding that Arnhem provides a better overview, one where it is possible to look 100 meters ahead. Something that is impossible in Nijmegen.

The piano is one thing that came up frequently when asked about the atmosphere at the station. Many participants said that they consider the piano an asset to the station. One participant commented on this saying *'...someone just plays a bit around with it and it does not even matter if is good or not'* (personal communication May 30, 2022, translation added).

Interview interpretations

Be analyzing the interviews it becomes abundantly clear that many people do consider the station a public space however, an unwelcome one at that. It can also be concluded that hostile architecture is an unfamiliar term for many. Although, when asked about the ambience or atmosphere people are quick to call out aspects that could definitely be considered as hostile architecture. Mentioning things such as missing benches or the way the OV-gates divide the station in two parts, one public, one more or less private. Describing how this creates the feeling of a space being public in the sense that one can pass through it and use it for the purposes it is designed for, but not a welcoming space as visitors feel like they are not supposed to stay.

It is interesting to see that many visitors regard the station as a meeting place. The KRK does mention this aspect of the station to in relation to the allocation of the OV-gates to the entrance hall. This is unfortunate, because this would mean that in the future visitors need to be in the possession of a public transport card in order to utilize the station in that manner. Because the allocation of the OV-gates the station will result in less 'free' meeting space.

It is noteworthy to mention that when looking at the changes recommended by the participants, many of them can be found in the visual analysis and KRK as goals for the station. For

example, the visual analysis pointed out that underground part of the station is very hard to oversee and navigate, because it is made up out of dark hallways. This connects to the strong vision the KRK has to make travelers the number one priority, and 'wayfinding' is key to this aspiration. Travelers have to be able to easily oversee and navigate the station. This objective is related to the argument that there is no clear overview of the station due to the numerous routes that create hidden nooks and corners that obscure the view. In addition, a better wayfinding may contribute to an increased sense of safety, which is also mentioned a few times, as one can more easily find their way and oversee the station. Surprisingly, participants did not mention accessibility, Meaning the degree in which the station is reachable for people with impaired hearing or sight, or those who are physically handicapped, despite the fact that it is related to wayfinding in certain ways. The KRK emphasizes in particular that there are intentions to improve the accessibility. This is even more remarkable given that the visual analysis has also often called the station's accessibility into doubt. However, it should be noted that a rather limited amount of people was interviewed. In addition, most of the participants visited the station regularly/ semi-regularly and they all seemed to be able-bodied. Thus, it might be the case that they never considered the accessibility of the station.

The KRK also provides a plethora of statements of how it intends to enhance the aesthetic value of the station. As the visual analysis conclude, the station has a rather bland look. Not much decoration or physical enhancements were analyzed. The majority of the statements in the KRK provide ideas to increase the outward appearance of the building. This could help to address the feedback that the station is 'simply just stone' and does not offer anything of visual value (Personal communication, May 30, 2022). Furthermore, the KRK contains numerous plans to add additional greenery around the station. Although, greenery is frequently mentioned in regard to climate adaptation, it may also serve to create a more pleasant and welcoming environment.

Shelter is another criticism that is partially addressed by the KRK. Many participants commented on the lack of available shelter both inside as well as outside the station. Because of its insufficiency to both house and safeguard people, the waiting area outside the station that is intended for the bus station is frequently cited. The KRK mentions plans to construct a waiting area with a roof that can accommodate a sufficient number of people. Planned improvements to the station's waiting rooms are discussed, but not as often as might be expected considering participants have complained about how cold and windy the perrons can get as well as the little shelter they offer. The only time that these areas are indicated is the relocation of the OV-gates to the station hall to allow for more perron space for passengers to stay. If one examines the station's current reality, it is clear to see that many of the envisioned rules have yet to be implemented. However, it is worth noting that the KRK was issued in 2020, therefore the document is still relatively young.

The comparison between the policy documents and the users perspective throws this study for a loop. On the one hand one may argue that the users of public places follow Mitchell's idea and perceive the station as a place designed for them to use in a certain way. Because users report that a lack of seating options in the entry hall as creates an environment in which they are not expected to stay. On the other hand, the station can be described as a place created by people. Many of the concerns participants mentions can actually be found as ambitions in the KRK. Thus, providing an argument for Lefebvre's ideology that places are designed by people, for people.

6. Conclusion

This research aimed to gain insight into hostile architecture and nudging and how these might affect public spaces in Nijmegen. To narrow the scope of the research, the central station of Nijmegen was chosen as focus area. The research aim resulted the following main question *'How is the public space of the central station of Nijmegen shaped by hostile architecture?* Three sub-questions were formulated in support of the main question. With the help of various qualitative research methods, known as triangulation, it can be concluded that even though very little physical evidence of hostile was present, certain design choices of the station do come across as hostile, influencing the public space of the central station of Nijmegen. A visual analysis concluded that there was no physical evidence of hostile architecture that made it impossible for people to exhibit certain behavior. However, there is evidence to suggest that the lay-out of the station is very much a nudge to determine which people get to use the station and who are excluded, because the lack of seating encourages people to either 'do their business' and leave or to progress through the station to eventually end up at their perron. This was concluded because the visual analysis found that there are almost no seating options before the OV-gates. In other words, people could use some of the amenities provided by the station however, they are not allowed to stay there. The OV-gates seem to create a split in the station, one 'free' part that one can access but where they are not allowed to stay, and one 'paid' part where one has to prove that one possesses a reason and the means to access this rest of the station. This argument was backed up by the interviews that concluded that participants noticed this dichotomy and the lack of seating to too. Adding that this negatively influence the atmosphere at the station.

A policy document analysis of the omgevingsvisie of Nijmegen and the KRK concluded that, the omgevingsvisie claimed the city as an inclusive city for all. However, the analysis also concluded that the term 'everyone' was frequently used in combination with other, more narrowly defined, terms like 'citizens' and 'inhabitants'. None of these terms were later defined or explained, leaving the reader with the question 'who is everyone', especially since the text examines the city of Nijmegen through three lenses; citizens, tourists, and companies. it remains unclear to which lens 'everyone' belongs. Furthermore, the analysis brought up that, though many of the concerns brought up by the visual analysis and the interview participants were addressed in the KRK, including the lack of seating, the OV-gates remained. Even more, the KRK expresses the plans to move these gates further into the entrance hall to create more room at the perrons for travelers to stay. This means the 'free' area of the station will become smaller, possibly excluding more people from using the station and diminishing the well regarded function of the station as a meeting place. It should also be mentioned that there is no clarification on where the additional seating options will be placed. It might be stated that more hostile architecture of nudges will result in the loss of the station's public character.

7. Discussion

7.1. Interpretations

The results of this research are somewhat surprising, in the beginning it was expected that evidence of hostile architecture and/or nudging would have been easier to find. The possible evidence that has been found is very subtle therefore nothing can be concluded with certainty. This is why an interview with an expert would have been very useful. It was interesting to see that none of the participants mentioned accessibility as a point of improvement. Because accessibility was a big concern in both the visual and the policy document analysis. This might be explained by the relatively small amount of people that was interviewed. Many of the concerns expressed through the interviews and the visual analysis were addressed by the KRK, which is good to see as the KRK should be focused on altering the station in such a way that it benefits the users. Due to the uncertainty of the answers, it was hard to write a coherent and logical conclusion as most of the data found was based on mere assumptions rather than empirical data.

7.2. Limitations of the research

Originally a plan was formed to interview at least one policy maker/municipality employee concerned with the station. In order to gather more information on nudging in and around the station. However, after several emails, referrals, and phone calls to the municipality still no interview was arranged. Therefore this method was completely scrapped and replaced with a visual analysis of the station. Admittedly, interviewing an expert on the field would have been a great addition to this study.

It is important to mention that this research could have benefited from a larger number of participants. As more answers could have led to more solid conclusions. The conducted interviews were also rather short, lacking a bit of depth. But this was deemed necessary as shorter interviews are more likely to gather practitioners. A second round of interviews, adjusted with the results of the first round would have been beneficial. However, due to time constraints this was not possible. The interviews that were conducted were mostly with middle-aged and elderly people. This was not done intentionally; however busy people were avoided as to not disturb them. This group of ignored people might have been made up out of younger people as they are at the station because they are commuting to or from work or school.

7.3. Reflections on researcher's positionality

It is important to consider that qualitative research comes with a certain degree of abstraction (Vennix, 2019). Therefore, this research will never be able to completely discover the influence of hostile architecture on public spaces at the station of Nijmegen. Moreover, this research is not complete because it is nearly impossible to interview every single user of public space in the inner city of Nijmegen within the given time frame or even in general.

What is also notable is that I, as researcher, do not live in Nijmegen nor have I lived there for any part of my life. This means that the researcher is inclined to look at public spaces in Nijmegen with an 'outsider-perspective.' However, the researcher is a frequent visitor of the station. This means the visual analysis and the observation are colored by this. As the researcher has experiences with the station, they might overlook certain things as they have become 'normal' to them. In addition, because of this familiarity the research might have unconscious biases about the station. This

means that the use of an observation as a research method can lead to what is known as both 'observer bias' and 'participant bias'. The former is used when a researcher collects and interprets data to confirm their pre-existing ideas and opinions. The latter is a phenomenon where participants are aware of a researcher's position and start to act according to what they think the researcher wants to find (Vennix, 2019).

This research vividly mentions the accessibility of the station. It is important to keep in mind that the researcher is an able-bodied person, therefore they will have an 'outsiders-perspective' on this issue too. Moreover, they are not able to see the full scope of what is accessible and what is not.

7.4. Policy suggestions and Recommendations

This research suggests that policy makers rethink the placement of seating possibilities as the current locations are inaccessible and the KKK does not clarify the future locations. More seating options at the 'free' parts of the station could do a lot for the accessibility of the station. It is also suggested that allocation of the OV-gates is compensated in some way. The OV-gates are not an inherent problem as they are a useful mechanism to make sure that travelers pay for their use of the train. However, this is not the only valued function of the station, as many interviewees brought up the fact that they see the station as a meeting place. This function should be protected and planned in a way that everyone, not just those who can afford to use the station for its other functions, may utilize the station in this fashion. This way the station will keep its name as a public space.

Lastly, this research recommends the following possibilities for future research. A research similar to this research could be conducted at other public spaces in Nijmegen or even in other cities. One could also conduct a more extensive research about the user experience of public spaces in relation to hostile architecture. Similarly, a large policy document analysis could be conducted where various policy documents of a multitude of public places are analyzed and compared. These studies could help broaden the relatively small body of research about the influence of hostile architecture on public spaces. As this research only scratched the surface and more research about this topic is still needed.

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9. Appendix

9.1. Exploratory observations

Observation: Public space Nijmegen						
Area of observation: Hostile architecture	Date: 22-04-22					
Site location:	Central station	Central shopping streets	Kronenburgerpark	Valkhofpark	Waalkade	Interpretation
Bins (are they present? With 'lid'? How many?)	Few bins are present. All of them have a 'lid'	Bins are present. All of them have a lid.	Bins are present. All of them have a lid.	Few bins are present. All of them have a lid	Very few bins are present. All of them have a lid.	Waalkade and Central station had the least amount of bins present. All bins had a lid.
Benches (are they present? How many? What do they look like?)	Few benches, only inside the station and at the bus stop. Street leading up to the city has plenty of benches/ possibilities to sit. Benches are regular benches.	Present at more open space. But overall, very little. Benches are not modified in any way to signal any type of behavior.	Plenty of benched present. Benches are not modified in any way to signal any type of behavior. One is also allowed to sit on the grass	Benches are present. Benches are not modified in any way to signal any type of behavior. One is also allowed to sit on the grass.	Few benches are present. Benches are not modified in any way to signal any type of behavior.	Benches are mostly present in places where they are expected, such as parks. The station has the least number of benches. Non of the benches seem to be modified to signal any type of behavior.
Public restroom (are they present? For whom?)	Only bathroom is present in the station. This restroom is paid.	Not present. Only in the cafes or stores. These restrooms are often paid or one needs to have bought	Public restrooms are present. Urinals are located at the entrance of the park.	No public restrooms present.	No public restrooms present.	Overall, very little public restrooms are present.

		something in the café.				
Spikes (are they present? Where?)	No spikes are present.	No spikes are present.	No spikes are present.	There are spikes surrounding the ruins.	No spikes are present.	No spikes were found in this observation.
Sheltered places (are they present? Are they accessible? By whom?)	It is possible to take shelter under the station's roof.	Very little shelter is available.	The trees offer shade but otherwise little shelter is present.	The trees offer shade but otherwise little shelter is present. The ruins are not reachable because of the spikes.	Very little shelter is available.	The place that offers the most shelter is the station.
Area of observation: General description						
Context (What else is happening? What is the weather? What day is it?)	There was a lot of sun and very little wind. There was quiet a lot of people present.	“	“	“	“	“

9.2. Observation protocol central station

Observation: Public space Nijmegen	
Area of observation: Hostile architecture	Date: 30-04-22
Site location:	Central station
Bins (are they present? With 'lid'? How many?)	Trashcans are present outside as well as inside the station. The inside has more trashcans than the outside. Outside suffers more from littering. Non of the trashcans seems to be overfull/it seems like the get emptied regularly
Benches (are they present? How many? What do they look like?)	Outside: little to no benches or other seating options. Only at the bus station, but still very limited. Stairs in front of the station get used as seating. Inside: only benches past the OV-gates. Very little seating options before that point, maybe at the restaurant and the Starbucks.
Public restroom (are they present? For whom?)	There is one public toilet available inside the station. Technically available for all, but it is paid.
Spikes (are they present? Where?)	No spikes found
Sheltered places (are they present? Are they accessible? By whom?)	Outside: very limited shelter available, only underneath the extended roof of the station and at the bus station. No protection against wind or cold. Inside: of course, the inside was covered by a roof, but no benches in the entrance area so it is uncomfortable to stay there. The perrons are covered but very windy. Few glass waiting rooms and windscreens at perrons 3 and 4.
Area of observation: General description	
Context (What else is happening? What is the weather? What day is it?)	The weather this day was pretty average for the time of the year. No rain or wind. There were a lot of travelers with suitcases and a lot of students. There were two policemen patrolling the station. People seems to go outside either to smoke or find a seat at the bus station to drink their coffee/tea/whatever. More people seem to 'loungue' outside than inside, but that may be due to the nice weather.

9.3. Interview guide

Interview guide

**For English see below*

Hallo mijn naam is Anna van Rossem en voor mijn bachelor thesis doe ik onderzoek naar de invloed van hostile architecture* op publieke ruimtes. Hierbij focus ik op het centraal station in Nijmegen en de omliggende gebieden.

Ik ben geïnteresseerd in welke mate bezoekers van het station op de hoogte zijn van hostile architecture en hoe dit hun ervaring van het station beïnvloedt. Als u vijf minuten heeft zou ik u hier graag 4 vragen over willen stellen.

Met uw toestemming zou ik het interview graag willen opnemen, zo duurt het interview korter en zijn de antwoorden meer accuraat. De opnames zijn anoniem en worden enkel voor onderzoeksdoeleinden gebruikt (alleen ik hoor ze en misschien mijn begeleidster, mocht zij hier naar vragen). Deelname aan dit interview is volledig vrijwillig en u kunt zich op ieder moment terugtrekken.

Definitie hostile architectuur (mocht dit gevraagd worden)

*Hostile architecture is ontwerpen van gebouwen en openbare ruimten op een manier die het aanraken, beklimmen of zitten ontmoedigt of onmogelijk maakt. Vaak wordt dit gedaan met het doel schade of ongewenst gebruik te voorkomen. Als voorbeeld kan men denken aan extra armsteunen op bankjes waardoor liggen onmogelijk wordt gemaakt.

Vragen:

1. Hoe vaak bezoekt u dit station?
 - (een keer per week, een paar keer per maand, etc.)
2. Weet u wat 'hostile architectuur' is?
 - Zo ja, beïnvloedt dit de manier waarop u naar publieke ruimtes kijkt of hoe u met publieke ruimtes omgaat?
3. Vindt u het station een publieke ruimte?
 - Zo ja waarom?
 - Zo nee, waarom niet?
4. Heeft u ideeën om de atmosfeer op het station te versterken/verbeteren?

Interview guide: English

Hello, my name is Anna van Rossem and for my Bachelor thesis I am looking at the influence of hostile architecture* on public spaces. I have chosen to focus on the central station in Nijmegen and the surrounding areas.

For my research I am interested in the extent to which station visitors are aware of hostile architecture and how it affects their experience of the station. If you have 5 minutes, I would like to ask you 4 questions about this.

With your permission I would like to record this interview, this way it will take less time and your answers will be more accurately measured. The recordings are anonymous and used for research

purposes only (the only ones to hear them are me and my supervisor if she asks for them). Participation is completely voluntary and you can withdraw at any time.

*Hostile architecture is the act of designing buildings and public spaces in a way that discourages or prevents certain actions such as climbing, laying down or sitting. This is often done with the aim of preventing damage or unwanted use. For example, think about extra armrests on benches that make lying down impossible

Questions

1. How often do you visit this station?
 - One a week, multiple times a month etc.
2. Do you know what hostile architecture is?
 - If yes, does this knowledge influence the way you interact and think about public space?
3. Do you consider the station a 'public space'?
 - If yes, why?
 - If no, why not?
4. Do you have any suggestions to amplify or increase the atmosphere at the station?

9.4. Codebooks

Visual analysis	
Accessibility	Things that improve the accessibility of the station
Amenities	Services that the station offers
Benches	Seating possibilities
Clear overview	Station proves to be easy to navigate
Difficult to access	Inaccessibility
Free flow of people	Station allows visitors to easy move through the station
Hostile	Traches of hostile architecture
Limited green	Greenery is limited available
Limited seating	Seating options are limited available
Limited trashcans	Trashcans are limited available
No benches	No seating possibilities available
No clear overview	Station is not easy to oversee
No free flow	Station does not allow for a free flow of people
No green	No greenery available
No shelter	No shelter is offered
OV-gates	Division created by OV-gates
Shelter	Station offers shelter
Trash	Traces of littering
Trashcan	Station provides trashcans
Grounded Theory	
Defensive design	Either mentions or visual evidence of defensive design
General aims: omgevingsvisie	All ambitions found in the omgevingsvisie
General aims: stationsgebied	All ambitions found in the KRK
Immaterial aims	Ambitions that focus on quality, safety, attractiveness etc.
Immaterial qualities	Qualities that focus on quality, safety, attractiveness etc.
Lens: citizen/inhabitant	Citizens and their needs are central
Lens: Companies	Companies and their needs are central
Lens: tourist	Tourists and their need are central
Material aims	Ambitions that focus on material qualities such as benches, shelter, bins etc.
Omgevingsvisie: Central station	Mentions of Central station in the Omgevingsvisie
Omgevingsvisie: placemaking	Mentions of placemaking in the omgevingsvisie
Omgevingsvisie	
Physical qualities	Qualities that focus on material things such as benches, shelter, bins etc.
Interviews	
Appreciation piano	Participants show a fondness of the piano
Familiar with hostile architecture	Participant has heard of hostile architecture
Improvement	Improvements mentioned by participants
Influence appreciation space	Knowledge of hostile architecture influences participants appreciation of space
No improvement needed	Participant had no improvements for station

Station is a public space	Participant views station as public space
Station is limited public space	Participant views station as a limited public
Unfamiliar with hostile architecture	Participant is unfamiliar with hostile architecture