



Dutch Post-War Shopping Centers:

A Comfortable Public Space

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Research Paper**

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"The Lijnbaan became
the living room for the
city" - Architectural
Historian Astrid Aarsen

The first Shopping Center of the Netherlands:
The Lijnbaan in Rotterdam (van der Zee, 2018)



Abstract

This paper examines how comfort is experienced at Dutch post-war shopping centers by studying the behavior of users. Since the development of the first shopping center in the Netherlands, the Lijnbaan in Rotterdam, retail spaces served as public spaces for the neighborhood where community life could emerge. Throughout the years, new typologies for retail spaces were introduced, to respond to the evolving public life of society. To be able to continue fulfilling the needs that the modern consumer seeks in a public space, it is important to understand how shopping centers are currently valued by its users. Comfort is a basic need that influences the value of a space and helps stimulate other needs such as passive engagement, active engagement, relaxation and discovery. By methods of observational analysis, results are collected on the different ways in which people experience comfort while walking, standing and sitting at shopping centers. These show a strong relationship with the objects, functions, building design elements and natural design elements with the space.

Keywords: Shopping Centers, Comfort, Public Space, Public Life, Walking, Standing, Sitting



“It is our belief that there is much need for actual shopping centers - marketplaces that are also centers of community and cultural activity.”

- Architect Victor Gruen (Architakes, 2011)

Victor Gruen's vision for Fulton Mall, 1948 (Moore, 2014)

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The Lijnbaan, Rotterdam, 2023

01 Introduction

The Shopping Center as a Public Space

New trends in the retail landscape are continuously influencing the way people like to shop. The growing trend of e-commerce has been a major influence, demonstrating that people enjoy the comfort of shopping online and at physical outlets. While online shopping activity is growing in the Netherlands, 75% of consumers still visit physical retail places (APG, 2022). This is because these places, whether it is a mall, a shopping center or a shopping street, serve as public spaces for visitors and residents. The Austrian-American architect, Victor Gruen, was the first to highlight the ability of a shopping center to function as a public space, expressing the importance of creating “marketplaces that are also centers of community and cultural activity” (Gosseye, 2013). The communal life that unfolds at shopping centers (Carr et al., 1992) makes it a valuable place for users, and therefore an important public space to evaluate as our public life and the way we live together continues to evolve over time.

In the book *Public Space*, the architect, landscaper and environmental psychologist Stephen Carr and its co-authors, talk about “public space and the life it supports” (Carr et al., 1992). The authors “see public space as the common ground where people carry out the functional and ritual activities that bind a community, whether in the normal routines of daily life or in periodic festivities” (Carr et al., 1992). In the Netherlands, the development of the shopping center was a result of the functional needs for new neighborhoods in the late 1950s, when towns and cities were in the process of urban reconstruction and development after the second world war (Galema & Van Hoogstraten, 2005). The growing influx of people confined in crowded urban areas, the car dominating the streets, and the rising wealth and increased leisure time of citizens, inspired the need for more pedestrian friendly public spaces that focused on daily commerce (Carr et al., 1992). In reference to Gruen’s model of the modern marketplace, the well known Dutch Architects in post-war Netherlands Van den Broek en Bakema, introduced Europe’s first pedestrian shopping center in the historic center of Rotterdam, called the Lijnbaan. To build a car free zone was unheard of at that time, but proved to be a great success. (van der Zee, 2018) The safety it provided for pedestrians to move freely without the disturbance of the car, stimulated activities beyond the efficiency and economic activity of shopping i.e. run shopping. The Lijnbaan showed people strolling along the promenade, gazing at the 70 luxurious shop windows, and sitting on terraces and benches to observe the crowd and meet friends (van der Zee, 2018). The shopping center supported a new form of public life that was developing at the time, known as recreational shopping.

Recreational shopping became a browsing activity in post-war Netherlands. When the Dutch government was required to develop expansion plans to deal with the growth of cities, a group of European architects called CIAM introduced modern planning concepts that inspired the idea of seeing shopping as part of the living area and not as a separate function (Galema & Van Hoogstraten, 2005). Shopping centers became the heart of new neighborhoods, where people would come to buy their daily necessities. "The indomitable desire of humans for social contact, entertainment and chit-chat" (Galema & Van Hoogstraten, 2005), encouraged the integration of more leisure activities in shopping centers as a strategy to attract more visitors, lengthen their stay and stimulate the desire for shopping (Baghaee et al., 2021). In the expansion phase of the Lijnbaan for example, the exhibition space the Lijnbaan Centre was built. In the basement a cinema was added, and later converted into a jazz club called Thelonious. The restaurant Ruteck's was also added, designed by C.Elffers. (Post-war reconstruction Community Rotterdam, n.d.) More shopping centers in the Netherlands were built, like the Boogaard in Rijswijk, Leyweg in Den Haag and the shopping center in Schalkwijk. As a public space in these neighborhoods, they become a setting of communal life. It is therefore important to discuss how the post-war shopping center in the Netherlands is valued as a public space to support the evolving public life of the visitors and residents in the area.



The Lijnbaan, Rotterdam, 1960s (Post-war reconstruction Community Rotterdam, n.d.)



The Bogaard, Rijswijk, 1960s (Beeldbank, 2019)



Schalkwijk, Haarlem, 1960s (Toen in Haarlem: 9 X Schalkwijk Door De Jaren Heen, 2022)



Leyweg, Den Haag, 1960s (Gemeente Den Haag, 2021)



The terrace of Ruteck, 1958. (Post-war reconstruction Community Rotterdam, n.d.)

02 Problem Statement

Introducing the Research Question

Over the years, new typologies of public retail spaces have developed as a result of responding to the changing needs of the modern consumer. In the late 1960s, some pedestrian malls began incorporating a public transit function. Transit malls allowed for the accommodation of buses and light rail lines, which made it more accessible for certain users. (Carr et al., 1992, pg.72) The Lijnbaan for example, was extended further between 1967 and 1970 with a tram line added between the old and new shopping promenade (Post-war reconstruction Community Rotterdam, n.d.). Planners and developers also introduced more controlled environments by creating indoor mall typologies (Carr et al., 1992, pg.74). The Bogaard shopping center in Rijswijk that opened its doors in 1963, was the first partly covered mall of the Netherlands (02. Ontstaan In De Bogaard, n.d.). These enclosed structures were still at street level and easily accessible from the sidewalk for pedestrians, but new large complexes like the Westfield mall of the Netherlands are relatively separated from the street. These newer typologies are known as a megastructure - a "huge multipurpose complex combining offices, stores, hotels, and garages, and enclosed in a great carapace of concrete and glass." (Carr et al., 1992, pg.74) The historic marketplace is also a popular mall variation in today's retail landscape. Such typologies focus less on department stores as an anchor to attract more visitors, but more on upscale specialty stores, eating places and entertainment. (Carr et al., 1992, pg.76) In addition to these evolving public spaces, the currently growing trend of combining offline and online sales channels is inspiring brands to explore new business formats with flagship stores, regular showrooms, specialty stores & pop-ups (APG, 2022). By tracing the evolution of these different types of retail spaces, it shows how changes in the way we live our public life continues to influence the design and management of these places. Yet, through its various transformations, it also shows how the space always stays as a central place for the public life of the community to exist (Carr et al., 1992, pg. 1).

Since the way that people live together is constantly evolving, the question remains if older mall typologies like post-war shopping centers are still meeting the desires of the modern consumer. In *Public Space*, Carr explains that public spaces are dynamic spaces that help fulfill pressing needs to escape from more settled places and routines of work and home life (Carr et al., 1992, pg. 3). He continues by describing that there are five types of reasons that explain people's needs in public spaces: comfort, relaxation, passive engagement with the environment, active engagement with the environment, and discovery (Carr et al., 1992, pg.91). Comfort is one of the most important factors because it is a basic need, and "without comfort, it is difficult to perceive how other needs can be met" (Carr et al., 1992, pg.92). It not only involves physical comfort, but also social and psychological comfort.

This can be achieved by shelter from the weather, the quality and quantity of seating and lighting, access to greenery and by the presence of cafés and restaurants. Comfort as a basic need represents the need for food, drink, shelter and a place to rest. (Carr et al., 1992, pg. 94) If these elements are not successfully implemented, the place will be a major discomfort for relaxation, passive and active engagement, and discovery.

Before being able to judge if Dutch post-war shopping centers still fulfill the public needs of its visitors and residents, it is important to understand how these spaces currently offer such needs. In respect to the length of this investigation, the research will focus on the basic need of comfort. By studying the behavior of people to identify how post-war shopping centers in the Netherlands are valued as a comfortable public space, leads to the following research question:

How does the behavior of users demonstrate how comfort is experienced at a Dutch post-war shopping center?



The Lijnbaan Promenade, Rotterdam, 2023

03 Theoretical Framework

Public Space by Stephen Carr, 1992

In the book *Public Space*, Carr briefly explain what is meant by comfort as a need in public space. The way that this has been defined, is by “understanding the interaction of people and places and how this affects the ways settings function.” (Carr et al., 1992) This inspired the chosen research method of analyzing the behavior of people in the shopping center. When describing comfort, the author highlights the importance of protection from the weather. This can be understood as relief from sun or access to sun, and shelter from the rain or inclement weather. Seating is also an important aspect of creating a comfortable public space. Comfortable seating is dependent on “the orientation of the seating, its proximity to areas of access, seating that is movable, seating for individuals and groups, seating that enables reading, eating, talking, resting and privacy, seats with backs, and, in the case of adults with children, seating in the sigh of play areas” (Carr et al., 1992, pg 94). The comfort of seating is also dependent on the length of time that people are able to remain in the area. Although the physical comfort of people is important, public spaces should also offer social and psychological comfort. This is mainly achieved by creating “spaces that have access to sunlight, trees, water, and food, among other amenities” (Carr et al., 1992, pg. 95). It is also about creating a sense of security, by paying attention to providing visual access into the site and sufficient lighting. (Carr et al., 1992)

Life Between Buidlings by Jan Gehl, 2011

Numerous factors of comfort have been mentioned by Carr, but there are other human behaviors present in shopping centers that are left out in the book *Public Space*. In addition to seating, shopping centers also show many people walking and standing, which also requires a degree of comfort. In the book *Life Between Buildings*, the author Jan Gehl highlights the importance of walking, standing and sitting in public spaces to create comfortable places for staying. Gehl mentions that “it is not enough merely to create spaces that enable people to come and go. Favorable conditions for moving about in and lingering in the spaces must also exist” (Gehl, 2011, pg.129). Gehl also introduces the relevance of seeing, hearing, and talking in public spaces (Gehl, 2011, pg.163). Although they could also support social comfort, in relation to Carr's five categories of needs in public spaces, these human behaviors fall under passive and active engagement with the environment. Passive engagement “involves the need for an encounter with the setting, albeit without becoming actively involved” (Carr et al., 1992, pg. 105) and active engagement “represents a more direct experience with a place and the people within it” (Carr et al., 1992, pg.118). Since the research question explores the behavior of people in the shopping center,

the study will focus on people walking, standing and sitting in the area. Gehl goes into much detail of how these human behaviors are performed differently depending on the quality of the public space. This will help understand why people have different intentions while walking, standing and sitting at the shopping center. In the following, a list is created that summarizes Gehl's understanding of how comfort is experienced by these three user behaviors in public spaces.

Table 1. Gehl's attributes for creating spaces for walking and places for staying

Walking	Standing	Sitting
Room to walk	Stopping for a moment	Choice of sitting places
Dimensioning of streets	Standing to talk to someone	Placement of seating
The "wheeled" walking traffic	Standing for a while	Orientation and view
Paving materials and street surface conditions	Zones for staying - the edge effect	Type of seating
Walking distances - physical distance, experienced distance	Zones for staying - half shade	Primary seating
Walking routes	Standing places - supports	Secondary seating
Spatial sequences	Supports - indoors and outdoors	Sitting landscape
Pedestrian routes in open spaces	Irregular facades	Benches for resting every 100 meters
Differences in level		
Ramps rather than stairs		

04 Methodology

Various methods will be used to explore the research question; **how does the behavior of users demonstrate how comfort is experienced at a Dutch post-war shopping center?** To carry out these research methods, a case study will be used throughout the investigation. The Dutch post-war shopping center the Lijnbaan, located in Rotterdam, has been chosen as the case study. The Lijnbaan is an interesting shopping center to analyze, because of its strong cultural history of post-war Netherlands, its monumental value, and central location in a large, dynamic and evolving city. Six locations in the Lijnbaan will be chosen to collect observational results. These locations are chosen for their different spatial characteristics to get a good overview of different human behaviors of comfort in the shopping center. In each location, three sets of data are collected. This includes taking pictures of how people are using the space, tracing by hand where people are walking, sitting and standing, and lastly, noting down the number of people in the space by their group size, age category, and mode of transportation. This will be further elaborated in this chapter.

Case Study: The Lijnbaan, Rotterdam

Known as the first pedestrianized shopping center in Europe, the Lijnbaan marked a revolution in urban design (van der Zee, 2018), a symbol of the growing wealth in the Netherlands after the second world war (Rijksdienst Voor Het Cultureel Erfgoed, 2012). In 2010, it has been marked as a national heritage site in response to possible demolition plans in 2005. Plans to demolish the Lijnbaan were discussed because the site was losing popularity amongst visitors and residents in the center of Rotterdam. Steep rents were driving the luxurious shops of the early years into peripheral areas, and were replaced by large complex stores and fast food chains. Additionally, the number of visitors were also influenced by competition from nearby indoor shopping centres. There were plans by architects OMA and Ove Arup & Partners in the 1980s to build a roof over the Lijnbaan, but the high cost of redevelopment discouraged the interest of shopkeepers. Instead, the Lijnbaan took part in an expansion project and several renovations of roofs, street surfaces and facades. Today, the aim is to restore the first phase of the Lijnbaan back to its original condition and transform the second phase to an improved public space for the city centre, whether it is to discard or revive old spaces to make way for new spaces. (van der Zee, 2018) These discussions show how shifting trends in public life have influenced how the Lijnbaan has been perceived as a public space over time, and how the design might need to change to adapt to the public life of the modern consumer. This makes the Lijnbaan an interesting case study for investigating how comfort is experienced by users in the shopping center

The 6 locations in the Lijnbaan



1. Binnenwegplein
2. Square next to G-Star store
3. Van Oldenbarneveltplaats
4. The Lijnbaan Promenade
5. Square between Korte Lijnbaan and Stadhuisplein
6. The Korte Lijnbaan

Observational analysis: Taking Pictures

The pictures taking at the Lijnbaan are taken on a sunny day and on a rainy day to capture different behavioral patterns on days of “bad” and “good” weather. The aim is to capture how, where and why people are walking, standing and sitting in the space. In Public Space, Carr describes the importance of seating for things like reading, talking and eating (Carr et al., 1992, pg.94), and Gehl mentions the relevance of type of seating (Gehl, 2011, pg.159). By capturing moments like these, it can become clear how people experience comfort in the shopping center.

Example of Location 1: Binnenwegplein



Making Observations:

1. People standing in line for food
2. People sitting in groups of 2 and on their phone
3. People sitting and eating on a bench next to a tree
4. People sitting alone on a pole in the sun
5. People along the edge of the square in the sun
6. A person crossing the square on a scooter

Observational analysis: Tracing Movements

A floor plan for each location is prepared in advance to later use on sight to trace where people are walking, standing and sitting. This will give an indication of the walking distances, routes and room for walking, as described by Gehl (Gehl, 2011, pg.137). It also identifies the zones for staying, choice of seating and placement of seating (Gehl, 2011, pg. 149 - 157). These results can show how different ways of comfort are experienced by different users that share a space.

Example of Location 1: Binnenwegplein



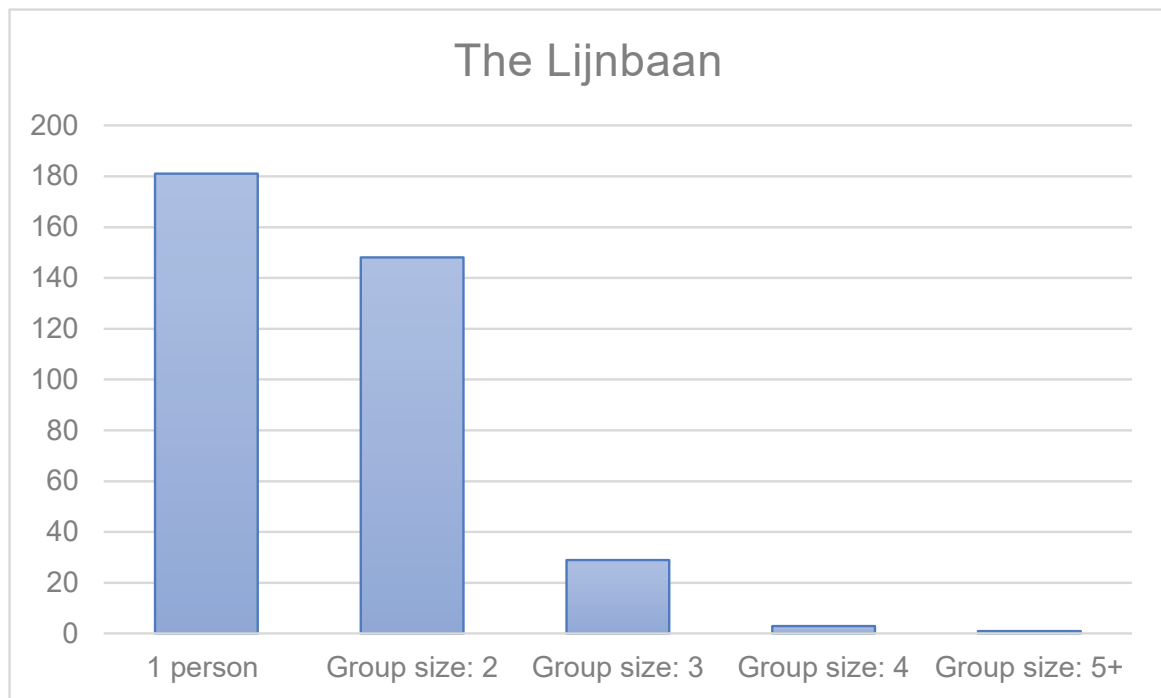
Making Observations:

- People cross-walking
- People walking along the edge of the square
- People walking straight in the middle of the square
- People sitting in the middle of the square
- People sitting on the side, facing the square and the shops
- People standing next to the sculpture in the middle of the square
- People standing by the food truck

Observational analysis: The number of people walking by categorized by group size, age & mode of traffic.

For each location in the Lijnbaan, the number of people walking alone, in groups of 2, 3, 4, 5 or more, are calculated in a period of 3 minutes. The same process is used to calculate the number of people walking by, categorized by their age group. This includes, children, teenagers, young adults, adults and seniors. Then, the number of people walking with a mode of transportation, like a bike or stroller, is also calculated. The benefit of collecting this data is because comfort is also defined by the choice of walking, standing and sitting for different users. Carr (1992) and Gehl

(2011), mention the importance of seating and room to walk for individuals and groups. These result can give an indication of who is experiencing comfort in the shopping center.



05 Results

The results collected from all 6 areas of investigation in the Lijnbaan, are summarized in table 2. The first column of the table shows all the different ways in which people were walking, standing and sitting at the shopping center. The second column refers back to how these observations are linked to the different attributes for walking, standing and sitting that are defined by Gehl (2011) (see table 1). The last column includes the reference of the observations made in the first column. These references can be found in the appendix of this paper.

Table 2. A collective summary of the results for all 6 locations (see appendix for more information)

	Walking	Attributes of Walking (GeHl, 2011)	See result:	Standing	Attributes of Standing (GeHl, 2011)	See result:	Sitting	Attributes of sitting (GeHl, 2011)	See Results:
People mostly walking in groups of 2 or 3	Room to walk	Graph 1		Standing in groups	Standing to talk	Graph 1	Sitting and on the phone	Choice of sitting places	Image 3 - Binnenwegplein
	Room to walk	Graph 1		Standing to talk on the phone	Standing to talk	Image 5 - Binnenwegplein	Sitting and eating	Choice of sitting places	Image 3 - Binnenwegplein/Image 1 - Square at G-Star; Image 3 & 4 - Liljabaan Promenade; Image 2 - Korte Liljabaan
Mostly people aged 13 - 65	Room to walk	Graph 2		Standing next to someone sitting	Standing to talk; standing for a while	Image 2 & 5 - Binnenwegplein; Image 1 - Square at G-Star	Sitting and drinking	Choice of sitting places	Image 3 - Liljabaan Promenade
People walking straight	Walking routes	Drawing 4 - Liljabaan Promenade; Drawing 6 - Korte Liljabaan; Image 3 - Van Oldenbarnevelplaats		Standing in line next to a food stand	Stopping for a moment	Image 1 & 3 - Binnenwegplein; Image 4 & 3 - Square at G-Star;	Sitting and waiting	Choice of sitting places	Image 1 - Stadhusplein
People crosswalking	Walking routes	Drawing 1, 2, 3, 4, 5, 6; Image 4 - Liljabaan Promenade;		Standing and playing music	Standing for a while	Image 5 - Binnenwegplein	Sitting and watching	Choice of sitting places	Image 5 - Binnenwegplein
People walking with a bike	Paving materials and street surface conditions / Room to walk	Picture 2 & 4 - Square at G-Star; Graph 3		Standing to drink from the fountain	Stopping for a moment	Image 7 - Binnenwegplein	Sitting to talk	Choice of sitting places	Image 5 - Binnenwegplein; Image 3 - Liljabaan Promenade
People in a wheelchair	The wheeled walking traffic	Graph 3		Standing to eat	Stopping for a moment	Image 4 - Van Oldenbarnevelplaats	Sitting under an umbrella	Choice of sitting places	Image 4 - Liljabaan Promenade
People with a suitcase	Paving materials and street surface conditions / Room to walk	Graph 3		Standing in between the trainline	Stopping for a moment	Drawing 3	Sitting under a tree	Choice of sitting places	Image 6 & 2 - Binnenwegplein; Image 1 - square at G-Star; Image 1 - Stadhusplein
People walking with a stroller	Paving materials and street surface conditions / Room to walk	Image 4 - Square at G-Star; Image 5 - Liljabaan Promenade; Graph 3		Standing to watch	Standing for a while	Image 5 - Binnenwegplein; Image 2 - Square at G-Star	Sitting in the sun	Choice of sitting places	Image 4 & 5 - Binnenwegplein; Image 3 - Liljabaan Promenade; Image 1 - Stadhusplein; Image 2 - Korte Liljabaan
People walking along the edge	Pedestrian routes in open spaces	Drawing 1, 6; Image 1, 2, 3 & 4 - Liljabaan Promenade; Image 1 - Korte Liljabaan		Standing to wait for someone	Standing for a while	Image 7 - Binnenwegplein; Image 5 - Liljabaan Promenade;	Sitting in the shade	Choice of sitting places	Image 2 & 3 - Binnenwegplein; Image 1 - Square at G-Star; Image 4 - Liljabaan Promenade
People walking under canopies	Walking distances	Drawing 4 - Liljabaan Promenade; Drawing 6 - Korte Liljabaan; Image 1, 2 & 3 - Liljabaan Promenade		Standing under a tree	Zones for staying	Image 6 - Binnenwegplein; Image 1 - Square G-Star; Image 5 - Liljabaan promenade; Image 3 - Stadhusplein	Sitting facing each other	Placement of seating	Image 2 - Korte Liljabaan
People crossing traffic streets	Walking distances	Drawing 3 - Van Oldenbarnevelplaats		Standing under a canopy	Zones for staying	Image 3 - Liljabaan Promenade; Image 3 - Korte Liljabaan	Sitting next to green	Placement of seating	Image 2 & 3 - Binnenwegplein
People walking in the sun	Walking distances	Image 9 - Binnenwegplein; Image 3 - Van Oldenbarnevelplaats; Image 1 - Korte Liljabaan		Standing in the sun	Zones for staying	Image 5 - Binnenwegplein; Image 5 - Liljabaan Promenade; Image 3 - Stadhusplein	Sitting in the middle of the promenade	Placement of seating	Image 3 & 4 - Liljabaan Promenade
People walking in the shade	Walking distances	Image 3 - Oldenbarnevelplaats; Image 1, 4 & 5 - Liljabaan Promenade; Image 1 - Korte Liljabaan		Standing in the shade	Zones for staying	Image 1 & 3 - square at G-Star; Oldenbarnevelplaats; Image 3 - Liljabaan Promenade; Image 3 - Korte Liljabaan	Sitting along the side of the square	Placement of seating	Drawing 1 - Binnenwegplein; Drawing 5 - Stadhusplein; Image 5 - Binnenwegplein; Image 1 - Stadhusplein
People walking in the rain	Walking distances	Image 1 - Liljabaan Promenade; Image 5 - Stadhusplein		Standing next to a lighting pole	Standing places - supports	Image 5 - Binnenwegplein	Sitting in the square	Placement of seating	Drawing 1 - Binnenwegplein; Drawing 2 - Square at G-Star; Image 2 & 6 - Binnenwegplein; Image 1 - Binnenwegplein
				Standing against a wall	Standing places - supports	Image 5 - Binnenwegplein; Image 5 - Liljabaan Promenade; Image 2 - Van Oldenbarnevelplaats; Image 4 - Stadhusplein	Sitting facing the promenade	Orientation and view	Image 5 & 8 - Binnenwegplein; Image 1 - Stadhusplein
				Standing next to planter	Standing places - supports	Image 2 - Stadhusplein	Sitting facing the square	Orientation and view	Image 2 & 3 - Binnenwegplein; Image 1 - Square at G-Star; Image 3 - Liljabaan Promenade; Image 4 - Liljabaan Promenade; Image 2 - Korte Liljabaan
				Standing next to a sculpture	Standing places - supports	Image 2 - Stadhusplein	Sitting facing the shops	Orientation and view	Image 2 & 3 - Binnenwegplein; Image 1 - Square at G-Star; Image 3 - Liljabaan Promenade; Image 4 - Liljabaan Promenade; Image 2 - Korte Liljabaan
				Standing with a bike	Standing places - supports	Image 6 - Binnenwegplein	Sitting by a table (movable)	Type of seating	Image 2 - Korte Liljabaan
				Standing with a scooter	Standing places - supports	Image 3 - Korte Liljabaan	Sitting by a table (non - movable)	Type of seating	Image 3 - Liljabaan Promenade; Image 1 - Stadhusplein
				Standing with a stroller	Standing places - supports	Image 3 - Square at G-Star; Image 5 - Liljabaan Promenade	Seating with back support	Type of seating	Image 3 - Liljabaan Promenade; Image 1 - Stadhusplein
						Seating without back support	Type of seating	Image 2, 3 & 6 - Binnenwegplein	
							Type of seating	Image 2 & 3 - Binnenwegplein; Image 1 - square at G-Star; Image 3 & 4 - Liljabaan Promenade; Image 2 - Korte Liljabaan	
							Type of seating	Image 4 - Binnenwegplein; Image 1 - Square at G-Star; Image 3 - Liljabaan Promenade; Image 1 - Stadhusplein	
							Type of seating	Image 2, 3, 5 & 6 - Binnenwegplein; Image 1 - Square at G-Star; Liljabaan Promenade; Image 1 - Stadhusplein	
				Sitting on benches		Sitting on benches	Primary seating	Binnenwegplein; Image 1 - Square at G-Star; Liljabaan Promenade; Image 1 - Stadhusplein	
				Sitting on chairs		Sitting on chairs	Primary seating	Image 4 - Liljabaan Promenade; Image 2 - Korte Liljabaan	
				Sitting on a pole		Sitting on a pole	Secondary seating	Image 4 - Binnenwegplein	

06 Conclusion

By studying the behavior of the users, the results show that there are various ways in which people experience physical, social and psychological comfort while walking, standing and sitting in the shopping center. Essentially, comfort is experienced by being able to complete certain intentions by the user, whether it is to sit to wait for someone or watch people, to walk in the sun or out of the sun, or to stand in line for food or to make a call. Looking at the results, it is noticeable that people are not just simply walking, standing and sitting without an intention in mind. An action is performed while doing so, which is stimulated by the assembly of different design features in the space. This involves the assemblage of objects, functions, building design elements, and natural design elements. These will be elaborated further in this chapter.

Objects - in spaces for walking and places for staying

In the shopping center, the results show that people are standing next to streetlamps, planters and sculptures. These objects provide people with a resting place to lean against, to stand while waiting, talking and watching. Gehl (2011) explains how people standing to talk to someone is an act where no one knows how long the conversation will take place, and so the participants can't suggest moving the meeting to a suitable standing place and groups of conversations are then found anywhere, "more or less independent of time and place" (Gehl, 2011, pg.147). These object provide such a space for spontaneous interaction. They also allow for longer stays, like waiting for a mother to check on her child in the stroller and standing to watch a musician perform in the middle of the square. Interestingly, these objects also showed to be support systems for other objects carried by the users, mainly bikes. This opportunity stimulates walking with your bicycle, since there is the option of parking it against a lighting post. There were also people present that were walking with suitcases and strollers who can also find safe spaces to rest, since these support systems are not only used to stand against and near to, but also to put things next to (Gehl, 2011, pg.151).

Other objects include terrace umbrellas, drinking fountains, chairs, tables and benches. Terrace umbrellas offer users to sit in the shade and find relief from the sun. Drinking fountains allow people to stand, stop for a moment and refresh with a drink of water. In the shopping center, moveable chairs and tables are also present. These objects allow for people to adjust their view and orientation, whether it is to look at someone or something, or to face the sun or hide from its sharp glare. The type of seating can meet the demands of different groups of people and can influence how comfortable it is to remain seated for an extended period of time (Gehl, 2011, pg.159). The results indicate a large amount of people alone at the shopping center, in groups of 2 and 3, and between the ages of 13 to 65. Seating can

be found for such groups to sit and rest. There is also secondary seating noticeable in the shopping center, like the poles surrounding a sculpture on the binnenwegplein that are used to sit on. Gehl (2011) explains that such seating is "needed for times when the demand for seating is great" (Gehl, 2011, pg.161). It allows for people to sit and wait when primary seating is occupied or not present in the space.

Functions - in spaces for walking and places for staying

Various forms of comfortably walking, sitting and standing experiences were supported by nearby functions in the area. The results showed people walking straight, cross walking and along the edges of shop windows. As Gehl (2011) mentions, "walking is physically demanding", and just like the physical distance, the experience distance is also an important factor in determining how far people can or are willing to walk in a certain situation (Gehl, 2011, pg.137). The visible shops, services, and food and beverage points present in the area contribute to the quality of the route. Since it is generally tiring to walk, pedestrians are naturally very aware of their choice of routes and have a goal in sight. When people are cross walking, they are likely to directly steer toward the determined function (Gehl, 2011, pg.137), like the shop across from the shopping promenade of the Lijnbaan.

There is also a noticeable trend of people sitting and standing while eating and drinking. Looking at the results, these activities are usually stimulated in the presence of food stands and fast food restaurants located nearby. Functions also serve as views for sitting and standing. People sit and stand facing the shops surrounding the squares and promenade, watching at and waiting for people going in and out of shops and walking by the shop windows. People also sit and stand facing the food trucks on the squares, watching and waiting for people standing in line. Gehl (2011) describes the importance of places to stay with "unobstructed views of the surrounding activities." (Gehl, 2011, pg.159), and such are activated by the surrounding functions to create a form of social comfort.

Building Design Elements - in spaces for walking and places for staying

In addition to objects and functions, people also show behaviors of seeking comfort by interacting with the building elements of the shopping center. Notice people walking under canopies to seek for shade from the sun or to protect themselves from the rain. Sometimes people are walking under canopies while the sun is still coming through. Maybe it's the large shop windows that lure people to walk along the edges. Gehl (2011) explains how such movement makes it possible for pedestrians to simultaneously experience both the small details of the street facade and the view of the large open space. Such elements influence the walking distance that pedestrians experience in open spaces. Walking in the rain for example can feel

much longer in distance than walking under a canopy that protects you from the rain (Gehl, 2011, pg.141). Building elements that protect users from the weather is a design feature that make it comfortable for people to walk, sit and stand in a public space. In the Lijnbaan people are also standing and sitting in the sun instead of hiding from it. The half shade that is created by having an open promenade with canopies, allow for people to stay in different zones that are characterized by different climate conditions.

There is also an example of a person leaning against the wall. The closed nature of the facade, in comparison to the open nature of shop windows, creates a space for people to stand along the edge of the space and wait for someone, while watching the crowd in the open space. Such techniques allow for people to engage with the space in more than one way while standing. Another design element that is influencing the way that people experience comfort is the pavement material of the shopping center. Gehl (2011) describes how "pedestrian traffic is quite sensitive to pavement and surface conditions" (Gehl, 2011, pg.135), and the results show people walking with their bike, strollers and suitcases, as well as people skateboarding and on scooters. Allowing users to carry their mode of transportation with them is shown to be a form of comfort. It is also introducing a new user intention, which is the "biker and the skateboarder", instead of the walker, sitter and stander.

Natural Design Elements - in spaces for walking and places for staying

Natural design elements that could be found in the results are trees and shrubs in planters. Images showed people leaning against, standing under or next to trees. The same accounts for the planters present in the Lijnbaan promenade. In the binnenwegplein trees were accompanied by benches, offering people a place to sit next to green for psychological comfort. Trees also provide a form of shade, providing physical comfort for the users.

07 Discussion

Evaluating the results

The results helped establish an understanding of how people experience comfort while walking, standing and sitting in a shopping center. It revealed the activities and intentions of the user while performing these human behaviors, showing that there is a relationship between the comfort of walking, standing and sitting with the objects, functions, building design elements and natural design elements in the area. After establishing this relationship, it could lead to further studies on comfort in the public space. Currently, the results do not indicate the level of comfort experienced by the user. This requires an investigation in how the assemblage of these factors influ-

ence how comfortable the user views the public space. Another noticeable trend in the results, is the close relationship between comfort and the other needs for a public space, introduced by Carr (1992). While people are walking, standing and sitting, you notice people engaging with each-other (active) and the space (passive) and seeking relaxation. For further research, it would be interesting to see how the assemblage of design features might create comfort to fulfill a certain other need, like passive and active engagement, relaxation and distraction.

To improve the validity of the results, it would be best to perform the same methodology at different times in the day and different seasons. Maybe at night, or at different temperatures, the results will indicate other forms of walking, standing and sitting that are now not documented. Applying the methodology to different shopping centers can also be beneficial for capturing better results. Other shopping centers may have different user groups and design features that support the comfort experienced by its visitors and residents. By being able to compare, a judgement can be made on why certain spaces in the shopping center indicate high levels of comfort by users and some low levels of comfort.

The value of the research

The research conducted in this paper marks the beginning of understanding how the shopping center is valued as a public space to support the public life of its surroundings. This allows for city planners to judge if a space should be discarded or revived in order to create new spaces that meet the demands of the evolving public life of the modern consumer. The current results show that public life is emerging at the shopping center, by people walking, standing and sitting, revealing that it is a place of value for some users. To discard the shopping center as a public space, would mean that certain users lose a place in the city. Whether the shopping center attracts a lot or little visitors, is not an indicator of how valuable the space is.

A certain comfort is experienced at shopping centers. If the comfort experienced is successful enough to stimulate the other needs of the user is still in question and worth investigating. After establishing that there is a relationship with the presence of objects, functions, building design elements and natural design elements, it can be assumed that by exploring the placement and assemblage of these factors can help enhance the comfort that is already experienced in the area. The value of this kind of research can help identify how the shopping center should evolve as a public space.

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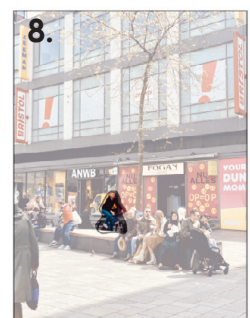
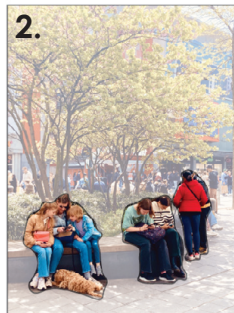
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Appendix



Location 1: Binnenwegplein



Location 2: Square next to G-Star



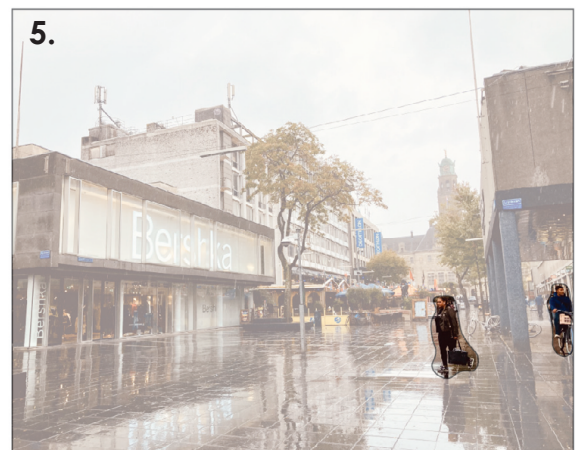
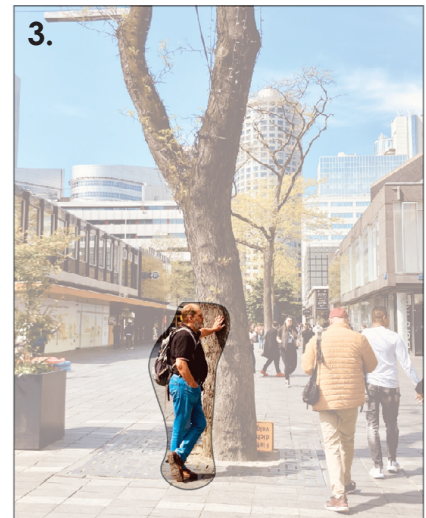
Location 3: Van Oldenbarneveltplaats



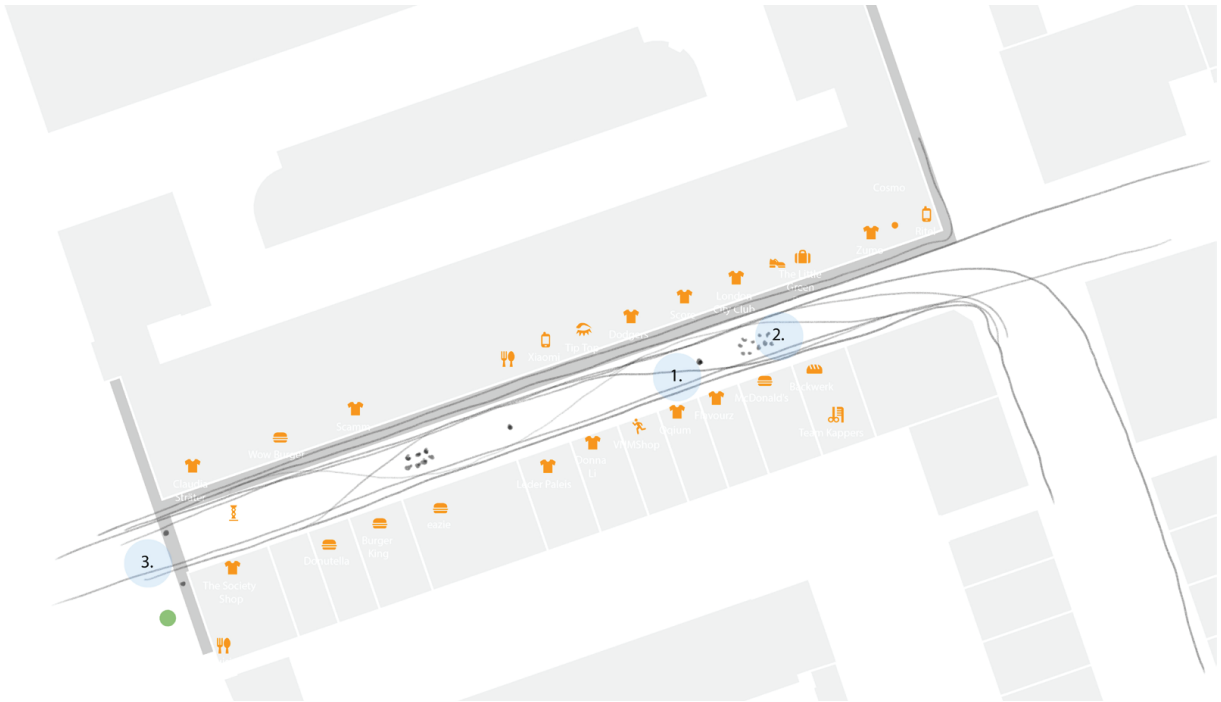
Location 4: Lijnbaan Promenade



Location 5: Square Korte Lijnbaan - Stadhuisplein

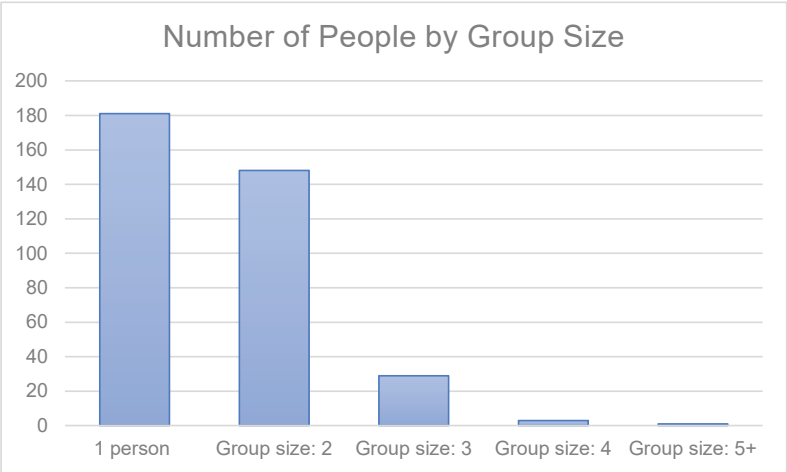


Location 6: Korte Lijnbaan

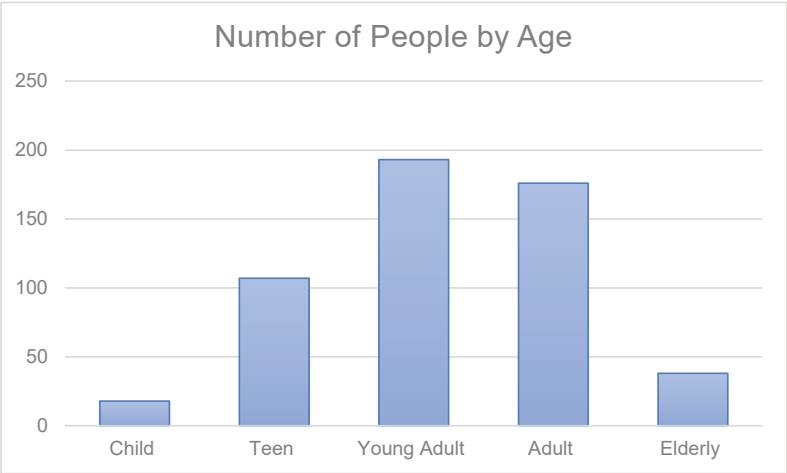


Number of people by group size, age and model of transportation for all locations

Graph 1.



Graph 2.



Graph 3.

