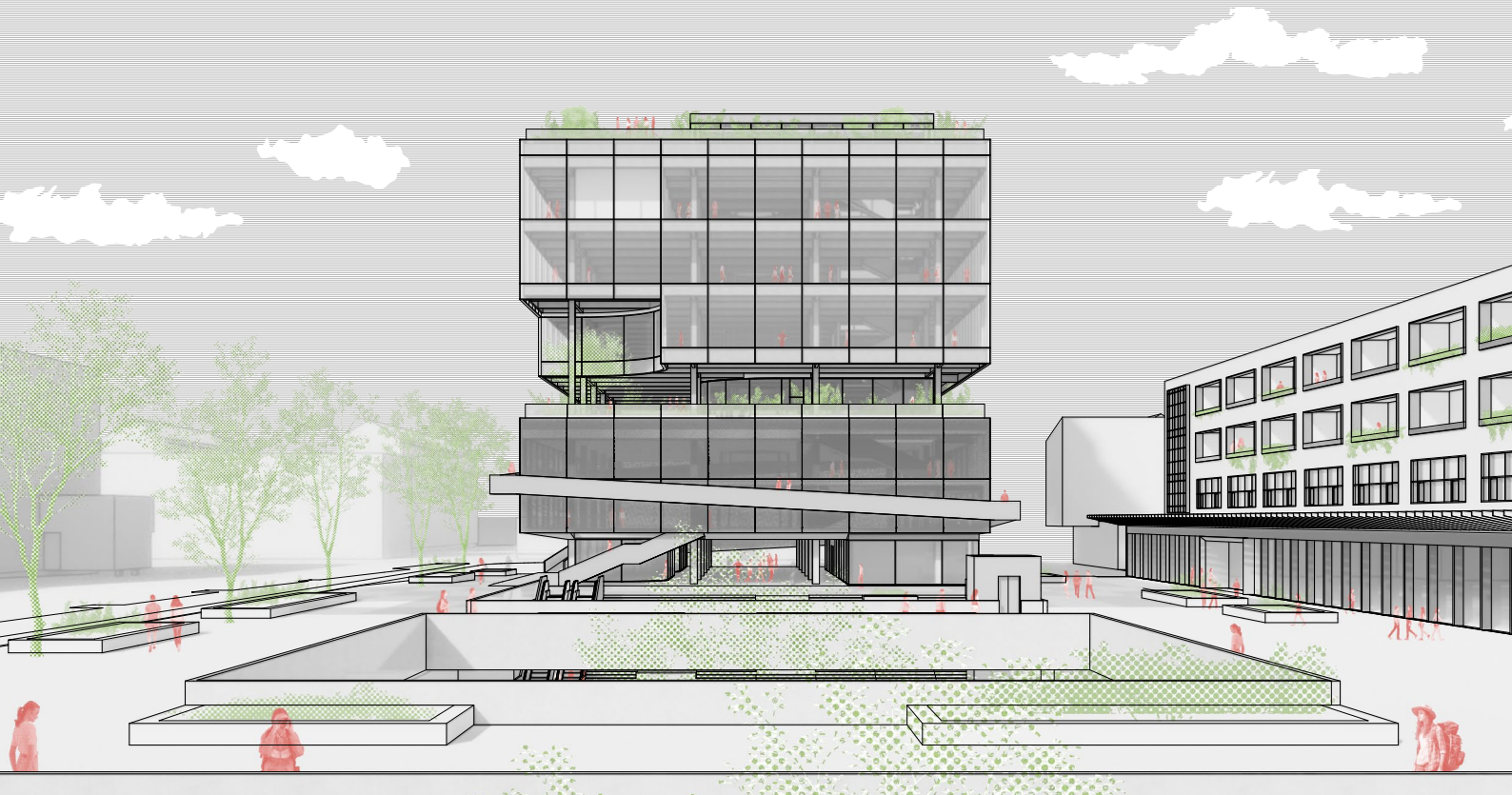
Towards a Livelier Garden City

urban vitality as a heritage conservation strategy
: the case of Plein ‘40-‘45 in Western Garden Cities



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: the case of Plein ‘40-‘45 in Western Garden Cities

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1. Introduction

1.1 Concepts and Relations

Methods for conserving historic cities have evolved from the conventional approaches of architectural restoration of historic buildings and sites to wider and more integrated approaches, such as the revitalization of historic urban fabric (Helmy, 2024). According to UNESCO(2013)'s recommendations on Historic Urban Landscapes, the key to understanding and managing a historic urban environment is to recognize that a city is not a static monument or group of buildings, but subject to dynamic forces in the economic, social, and cultural spheres that have shaped it.

Urban revitalization is the process through which the mismatch between the services offered by the fabric of historic quarters and contemporary needs can be reconciled (Tiesdell et al., 1996). Helmy (2024) notes that urban revitalization involves various urban strategies that lead to the livability of historic places, which in turn contribute to the overall conservation and sustainability of historic areas. She further argues that revitalizing historic plazas is significant as an integrated approach to urban conservation.

This study focuses on how to increase the ***urban vitality*** of a historic square as a strategy for conserving historic cities. Urban vitality is the synergism of various urban conditions that animates certain city areas (Maas, 1984), which Jacobs (1961) referred to as "continuous pedestrian activity in a city." Increasing urban vitality contributes to a safe and attractive city (Lynch, 1981), with economic, social, and environmental benefits for the city (Coupland, 1997), and can contribute to the livability of the city, which in turn attracts investment and housing (Ruth & Franklin, 2014).

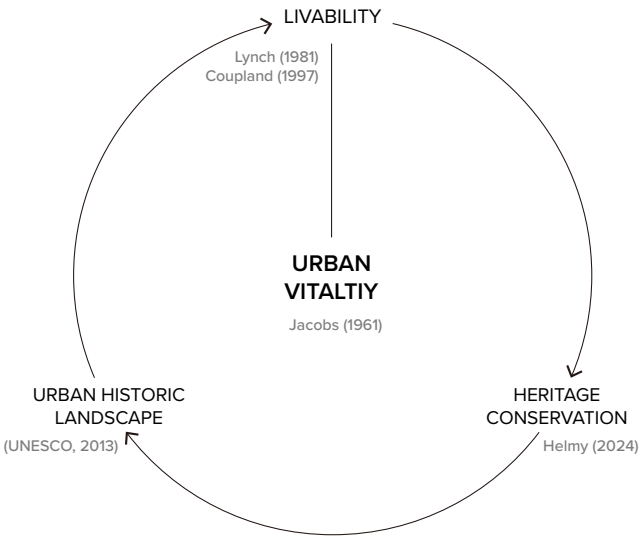


Figure 1. Concept and Relation.

1.2 Problem Field

Western Garden Cities, Amsterdam Nieuw-West, was designed by city planner Cornelis van Eesteren under the influence of the Garden City Movement. The plan was included in the General Expansion Plan (AUP), which was adopted in 1935 as a solution for the housing crisis of Amsterdam at the time. After World War II, the second Western Garden City, Slotermeer area, was developed from 1952 (Van Esteren Museum, n.d.). Many of the houses that were developed at the time were of poor quality, hence, urban renewal began in 2001, including a large amount of demolitions and new construction (Archined, 2001; Oefelt et al., 2010).

The Cultural Heritage Agency of the Netherlands designated Western Garden Cities as one of the Reconstruction areas in 2011. This was to reveal the region's presence as a cultural heritage with special characteristics and to play an significant role in future spatial planning. Now, when redeveloping in Nieuw-West, it is supposed to consider how to conserve the city's special characteristics and combine them with redevelopment (Rijksdienstvoorthe Cultureel Erfgoed, 2016).

Meanwhile, Amsterdam, a growing metropolis, is facing urban challenges such as overtourism and a housing shortage (Gemeente Amsterdam). Environmental Vision Amsterdam 2050 (Beuken & Kuijt, 2021) sets out a number of visions for the growing city. These include a multicore development that distributes functions such as urban facilities and employment from the central area, and a distinctive development that takes advantage of Nieuw-West area characterized by a sophisticated cohesion of buildings, neighborhood greenery, and urban greenery.

Plein '40-'45 is a historic Post-war square located in the center of Slotermeer district. With a large shopping center, a variety of restaurants and cafes, hotels, public offices, and a market during the day, it is the center of public life in the neighborhood. Revitalizing the historic square is an important factor in conserving the heritage area, and the various activities that take place there play a significant role in revitalizing the square (Helmy, 2024).

Figure 2. Cityscape of Amsterdam Nieuw-West. Copyright by Vastgoedmarkt.

1.3 State-of-the-art

1.3.1 Integrated Heritage Conservation Approach

UNESCO (2013) explains that the historic urban landscape approach goes beyond preserving the physical environment to consider the entire human environment and its tangible and intangible qualities. They add that “a historic context and new development can interact and mutually reinforce their role and meaning.”

Helmy (2024) argues that revitalizing historic plazas is a way to reconcile meeting the changing needs of the local communities with conserving the historic urban landscapes. The author analyzes several cases of historic plazas based on their historic value, physical structure, context, accessibility, and activities/events, and analyzes how the selected plazas were revitalized.

1.3.1 Urban Vitality and Observations

Observation is a common method used to measure the urban vitality of certain areas. Observation is usually adopted when the research area is relatively small. Farahani et al. (2017) used observation methods to investigate the uses of a suburban neighborhood center in Geelong, Australia, and people’s activity and vitality patterns. They studied how repurposing the neighborhood center could promote social life in the neighborhood. Altaema & Hatipoglu (2023) used behavioral observation to study how changes in the city led to changes in residents’ activities and, furthermore, cultural changes. As such, observation is a common research method used to understand the relation between the urban environment and public life.

1.4 Aims & Objectives

This research is an extension of an integrated approach to conserving heritage and historic urban landscapes. It studies the specific method of (re) vitalizing a square as a way to conserve historic urban landscapes. The methods and methodology for (re) vitalizing a square are based on Jacobs’ research and Gehl’s observation method, which, as mentioned in the introduction, is significant in that it shifts the view of heritage conservation from an approach to static buildings to an integrated view in relation to public life. Furthermore, the study moves towards suggesting design proposals that are in line with the city’s development vision and policies.

1.5 Research Questions

“How can the urban vitality of the historic square of Plein ‘40-‘45 be enhanced while considering uses and green environment?”

The sub-questions to answer the main question are as follows:

“What are the conditions that affect urban vitality?”

“How can Plein ‘40-‘45 and its surrounding uses be improved concerning diversity and concentration?”

“How can a green environment in and around Plein ‘40-‘45 be improved concerning diversity and concentration?”

2. Methodology

2.1 Theoretical Framework

The premise of this study is that (re)vitalizing historic squares has a positive impact on the overall conservation of cultural heritage (Helmy, 2024). Liveliness or vitality is one of the ways to (re)vitalize a historic square. As a way to enhance the urban vitality of the square, this study focuses on the diversity and concentration of uses in and around the square, and the diversity and concentration of green, based on the vision of the city as mentioned in Environmental Vision Amsterdam 2050 (Beuken & Kuijt, 2021). Figure 3 shows the framework of this study.

2.2 Methods & Sources

The main question leads to three sub-questions. A literature study was conducted to answer the first sub-question, “What are the conditions that affect urban vitality?”. Studies on the relation between use and vitality, including those by Jacobs (1961) and Coupland (1997), identified several conditions that affect urban vitality. Based on the answer, the following sub-questions were studied.

Comparative case studies were conducted for the second sub-question, “How can Plein ‘40-‘45 and its surrounding uses be improved concerning diversity and concentration?”. The area analyzed alongside Plein ‘40-‘45 is Spui, located in Amsterdam Centrum. Spui is already a lively square with various uses, including tourism, work, living, and education. The comparison in terms of the relationship between uses and vitality provides insight into how Plein ‘40-‘45 can be transformed into a livelier square, accommodating a mix of uses for tourists as well as local residents.

A literature study was conducted for the third sub-question, “How can a green environment in and around Plein ‘40-‘45 be improved concerning diversity and concentration?”. Studies showing the relation between a green environment and vitality were reviewed. Within the process of the transformation of the green environment of Nieuw-West as presented in Environmental Vision Amsterdam 2050, this study examined what changes are needed in terms of diversity and concentration of green environment.

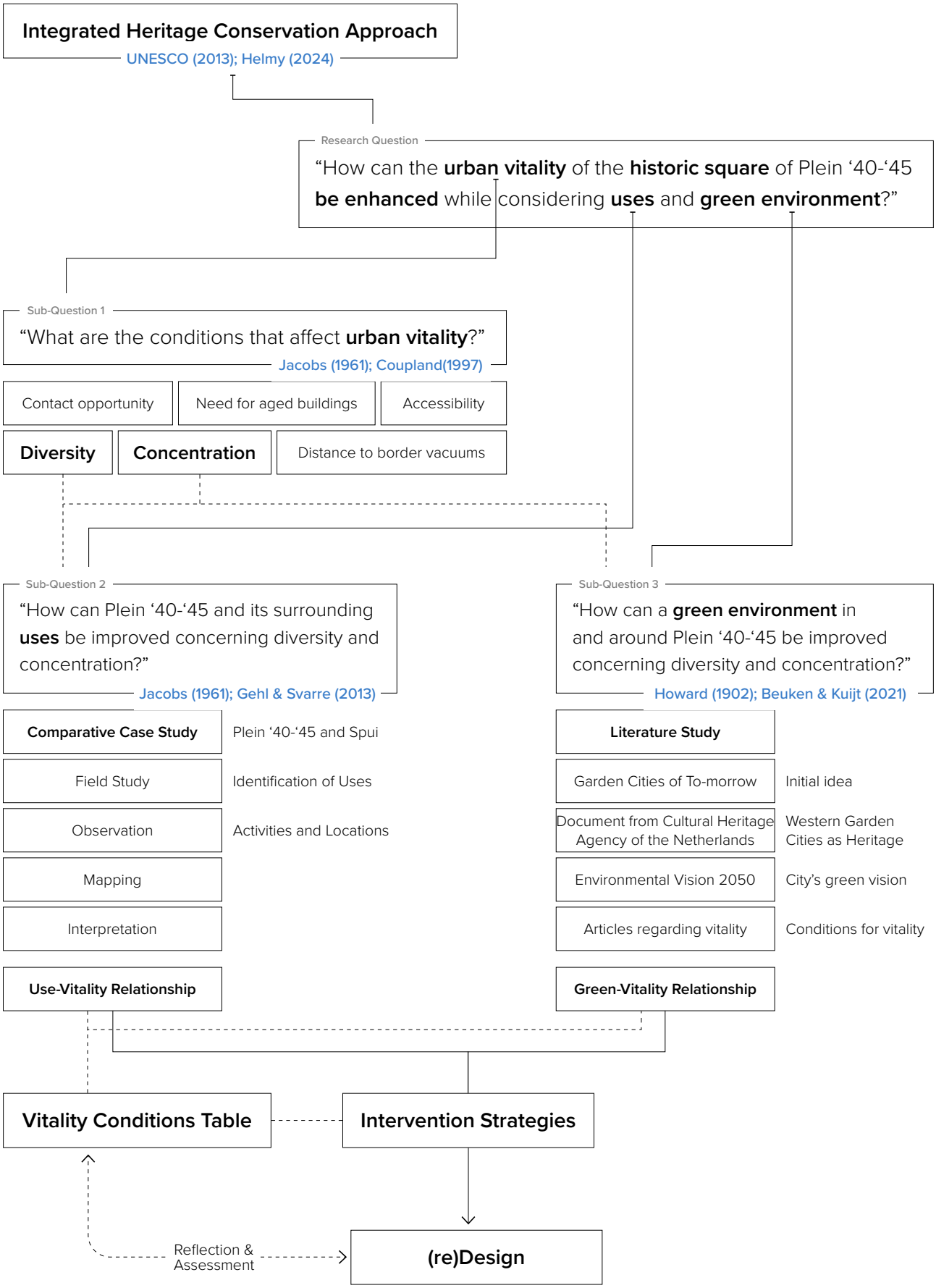


Figure 3. Theoretical Framework & Methodology. Own Work.

2.3 Case Study

2.3.1 Study Area

The study areas are ***Plein '40-'45*** and ***Spui***. Spui, the comparison area, was chosen based on Google search volume. According to Google Trend, Spui had about four times more search volume than Plein '40-'45 in the last 12 months (January 2023 - January 2024). Based on this, this study expected Spui to have more vitality than Plein '40-'45, i.e., more users. If the observations in this study show that Spui has more vitality, the findings on the relation between uses and vitality in Spui can work as a guideline for design interventions to improve the urban vitality of Plein '40-'45 in a design phase afterward.

Plein '40-'45 is located in Slotermeer, Amsterdam's second Western Garden City. The market is held every Tuesday to Saturday in the square, and on the east side of the square is the Shopping Center, which is filled with about 40 various kinds of shops. Next to the square is a two-lane tram and two-lane road, and across the street is a mixed-use building with a hotel, several restaurants and cafes, and residential uses.

Spui is located in Amsterdam Centrum, next to Kalverstraat, one of the busiest shopping streets in Amsterdam. The square is characterized by a book with two bookstores next to the square, the Athenaeum and the American Book Center, and a second-hand book market every Friday.

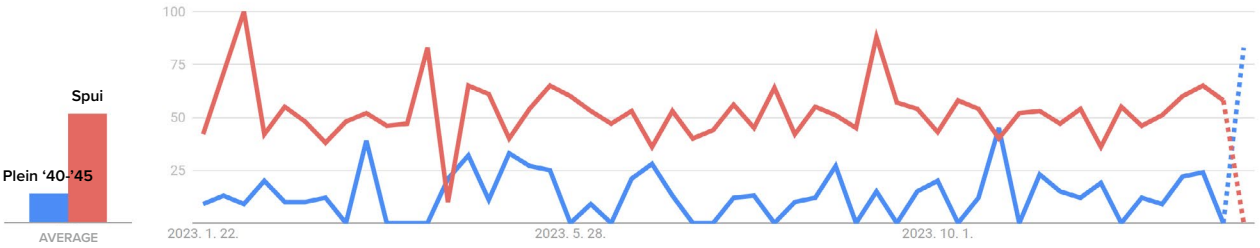


Figure 4. Google Search Volume during last one year. Google Trend.

Figure 5. Case Study Areas in Amsterdam. Google Maps.

2.3.2 Field Study

Before observing each area, a field study was conducted to identify the uses in and around the squares. The uses were categorized into eleven categories: educational, health, recreational, beauty, food, sports, retail, services, office, art, and residential. The categorized uses were converted into a non-residential use ratio graph, and residential-non-residential use ratio graph to be compared.

Observations were conducted every two hours, from 8:00 am to 10:30 pm. The author was the only observer, and to make observations more accurate, each square was divided into two parts, with 15 minutes per part, for a total of 30 minutes per observation period. The division of the square and the observer's position is shown in Figure 9. During the periods before sunrise and after sunset, the observer moved away from the observation position to identify targets for more accurate identification (Gehl & Svarre, 2013).

2.3.3 Observations

After the field study was completed, observations were conducted for each case. The purpose of the observations was to identify the relationship between the uses of the built environment and the activities of users. Observations were conducted once on weekdays and once on weekends for each case. Although the market is one of the big events in the square and is the core of its vitality, it is considered a temporary use; hence, market days were excluded from the observation.

Observations were of activities that were sufficiently related to the use, so passing through the square without stopping and pausing were not recorded, and only those who were sufficiently using the square with static activities were recorded (Cao & Kang, 2019). The contents of the record are the location, gender, and type of behavior of the user. An observer recorded gender identifiers (O, X) and behavioral information immediately upon observation using an iPad on images of the square. This data was later converted into mapping images using the Illustrator program.

Figure 6. Plein '40-'45, Amsterdam Nieuw-West.

Figure 7. Spui, Amsterdam Centrum.

Aspect	Description
Object	Location of user Static activity Gender (observed but not analyzed)
Site	Plein ‘40-‘45, Amsterdam Nieuw-West Spui, Amsterdam Centrum
Observational Span	15 min for a sub-part Total 30 min every 2 hour From 8AM to 10:30PM One weekday and one weekend
Observational Position	2 sub-part for a site
Activity	Behavioral mapping

Figure 8. Observation method.

2.4 Scope & Limitations

In the case studies, observations were conducted during the December and January periods, only once on weekdays and once on weekends for each case. This only reveals the results and vitality of that time of year, so the vitality of other weather in different seasons is unknown.

In addition, there was a difference between the weather on weekdays and weekends. The weather on weekdays was relatively cold compared to the weekend, from -4 to 0 degrees Celsius, which may have affected the amount of outdoor activity.

Also, use is not the only factor that determines the vitality of the square; but there are many other things, such as the size of the square, the width and number of roads connected to it, the size of the surrounding buildings, and the distance from public transportation. These variables may have affected the vitality of the square.

Figure 9. Observer’s location and part of observation for each case

Figure 10. Plein ‘40-‘45, Amsterdam Nieuw-West. South view (left) and north view (right).

Figure 11. Spui, Amsterdam Centrum. West view (left) and east view (right).


MARKT
ACTION
ACTION
Tanger markt
JUMBO

3. Results

3.1 Use-Vitality Relation

3.1.1 Diversity and Concentration of Uses

Figure 14 is a color-coded mapping of the uses in and around Plein ‘40-‘45 and Spui. The uses identified through the field study were divided into 11 categories based on their type and then color-coded accordingly. The categories and their corresponding uses are shown in Figure 12. The number of uses (Figure 13) is not directly comparable, as the two cases differed significantly in the area and perimeter of the squares.

Educational
University
Training institution

Health
GP
Clinic
Pharmacy

Recreational
Cafe
Restaurant
Pub
Takeaway
Ice cream

Residential

Beauty
Tanning shop
Barber shop
Cosmetics store

Food
Supermarket
Grocery
Bakery

Sports
Gym
Billiards

Retail
Tabacco
Clothing
Mobile shop
Book store
General store
Sounevir

Services
ATM
Hotel

Office

Art
Sculpture
Decorative tree

Figure 12. Categories of Uses.

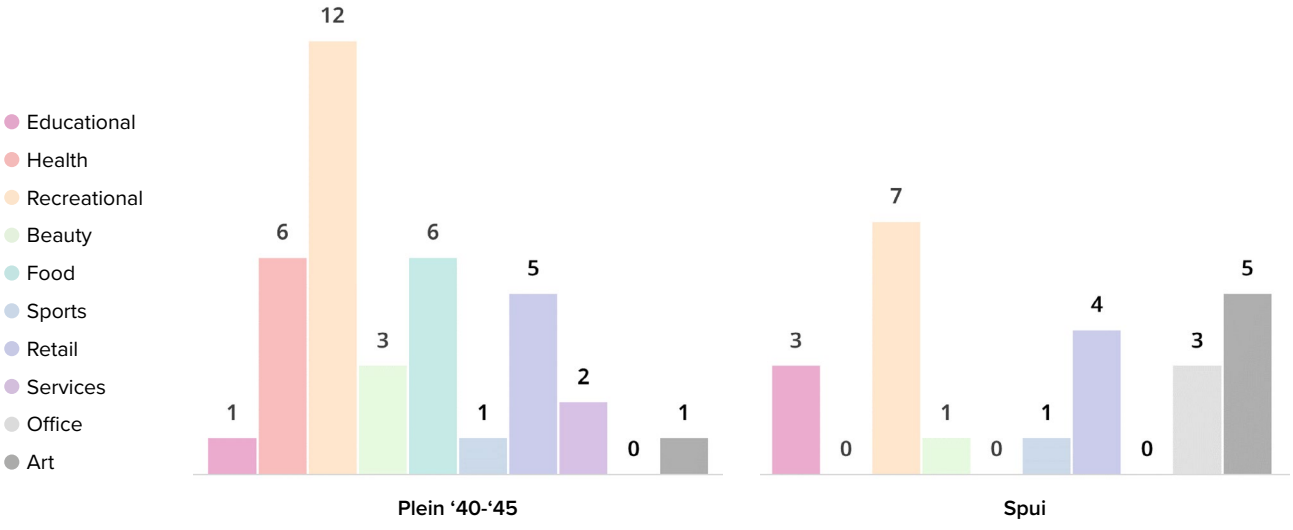


Figure 13. Number of uses of each square.

Figure 14. Uses in and around each square, Plein '40-'45 and Spui.

Figure 15 shows the ratio of uses in each square. It can be seen that both squares have a high ratio of recreational and retail uses in common. What is characteristic of Plein ‘40-‘45 is the high ratio of health uses, i.e., pharmacies and GPs, and food uses, i.e., supermarkets, grocery stores, and bakeries, which shows that Plein ‘40-‘45 is geared towards residents. On the other hand, Spui has a distinctively high ratio of uses for education, office, and art. This shows that there are more uses for visitors than for residents

Meanwhile, even though the non-residential use ratio graph shows a high percentage of uses for residents in Plein ‘40-‘45 and a high ratio of uses for visitors in Spui, the residential-non-residential use ratio graph shows a higher percentage of residential use in Spui than in Plein ‘40-‘45.

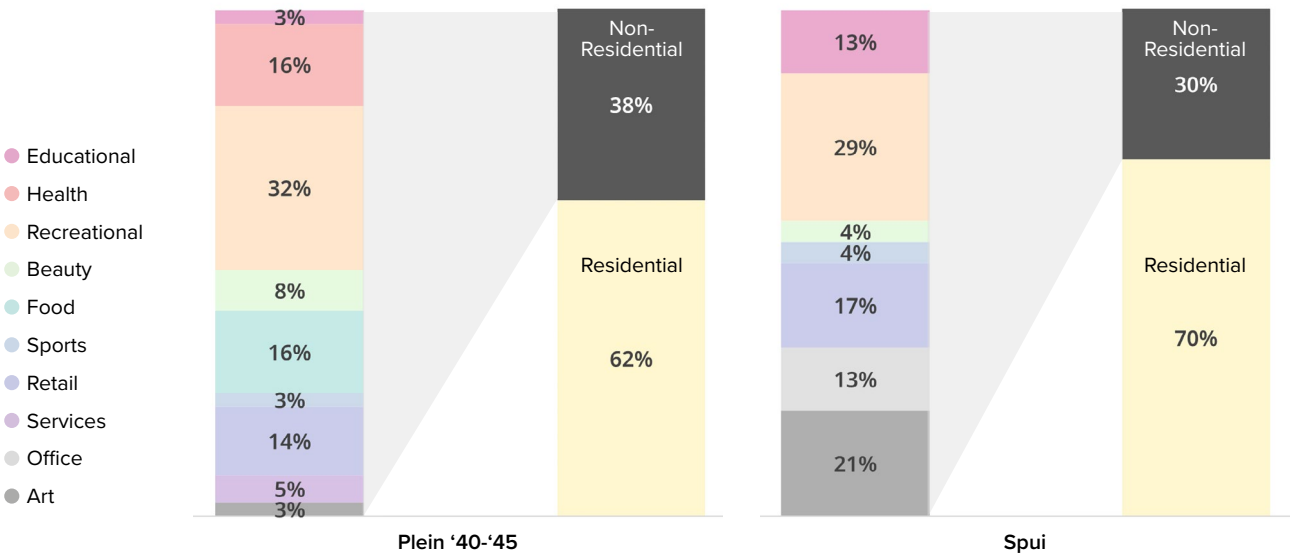


Figure 15. Ratio of uses of each square.

Figure 16 shows that the housing density of the neighborhood where Spui is located is 6,288 houses per square kilometer, higher than the 4,663 houses per square kilometer of Plein ‘40-‘45. At the same time, Figure 17 shows that the population density of Plein ‘40-‘45, 10,086 people per square kilometer, is higher than the 7,915 per square kilometer of Spui. This indicates fewer houses in Plein ‘40-‘45 per unit area, but the population is higher.

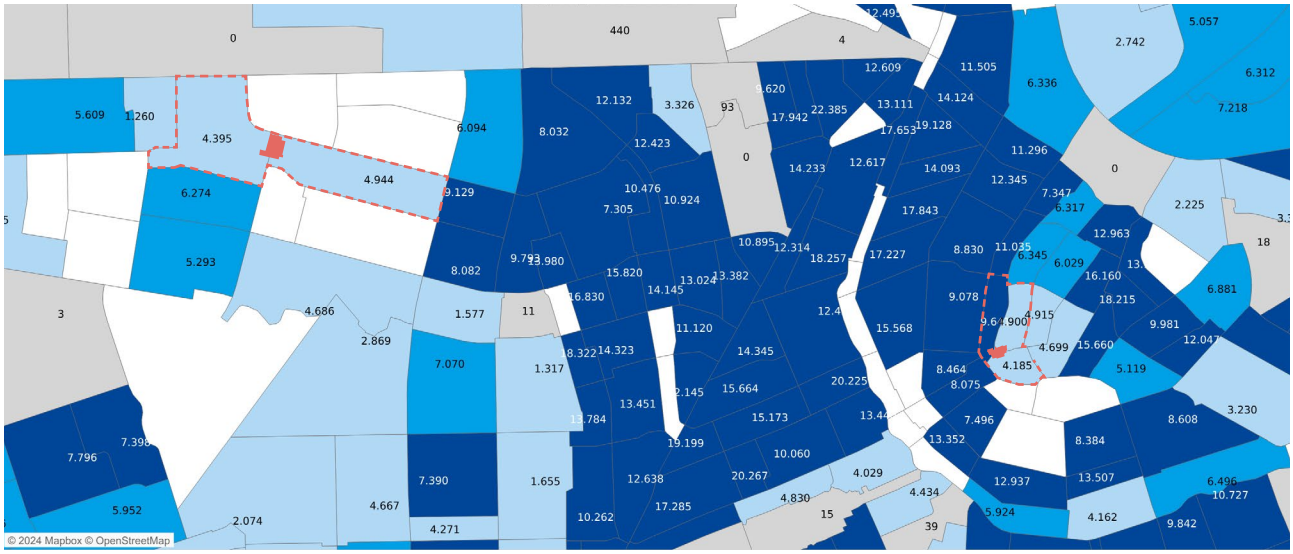


Figure 16. Housing density. Copyright by Research, Information and Statistics Amsterdam.

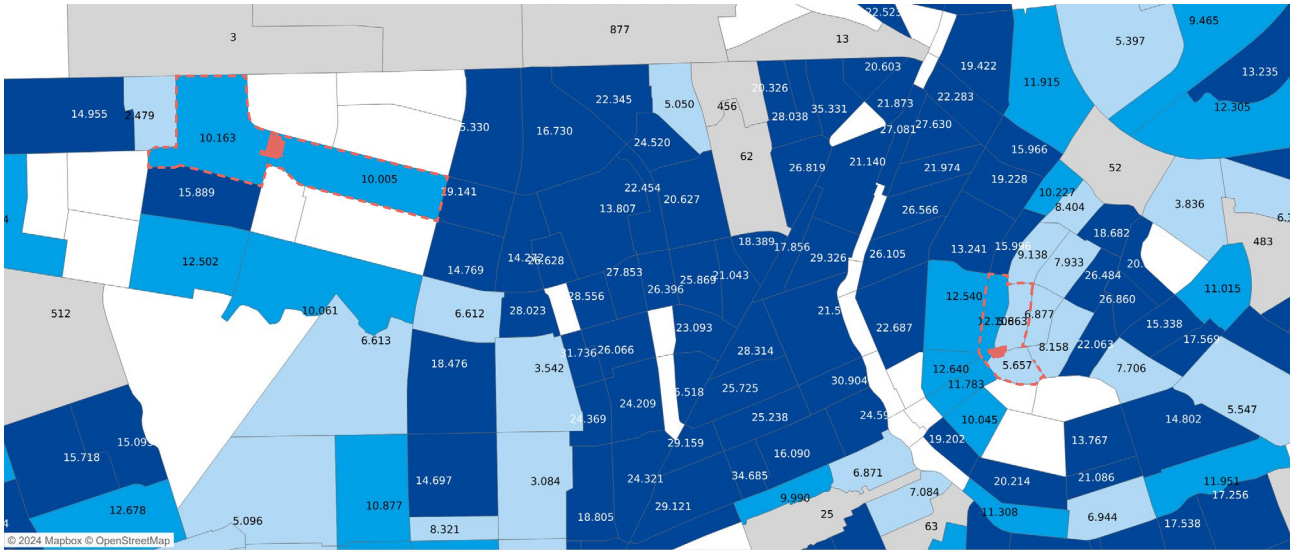


Figure 17. Population density. Copyright by Research, Information and Statistics Amsterdam.

3.1.2 Amount of Activities and Vitality

Figure 18 and Figure 19 show the number of observed activities over time. The number of people observed at each time of day shows the degree of urban vitality of the two squares. The number of activities is highest on a weekend in Spui, followed by a weekday in Spui, a weekday in Plein ‘40-‘45, and a weekend in Plein ‘40-‘45. As expected, Spui has a higher vitality than Plein ‘40-‘45. Based on this result, interventions can be made to increase the urban vitality of Plein ‘40-‘45 by referring to the composition and proportion of uses in Spui. The data for each period underlying Figures 18 and 19 can be seen in Figures 22 to 25.

On the other hand, on a weekend in Plein ‘40-‘45, the later the time, the more people were observed. The observation of the Plein ‘40-‘45 on a weekend was conducted on December 24, and this may be an outlier due to the observation period, so it is necessary to conduct additional observations on other weekends to ensure the reliability of the results. Daytime vitality of Plein ‘40-‘45 did not increase as much as Spui, which is likely related to the inflow of visitors and tourists. Spui has more floating population from outside during the day, but this does not seem to be the case for Plein ‘40-‘45.

		08	10	12	14	16	18	20	22
Plein ‘40-‘45	Weekday	45	55	85	109	100	68	62	44
	Weekend	14	38	55	51	56	60	96	151
Spui	Weekday	27	58	104	120	146	112	83	48
	Weekend	13	61	194	305	346	306	250	201

Figure 18. Number of activities in the areas

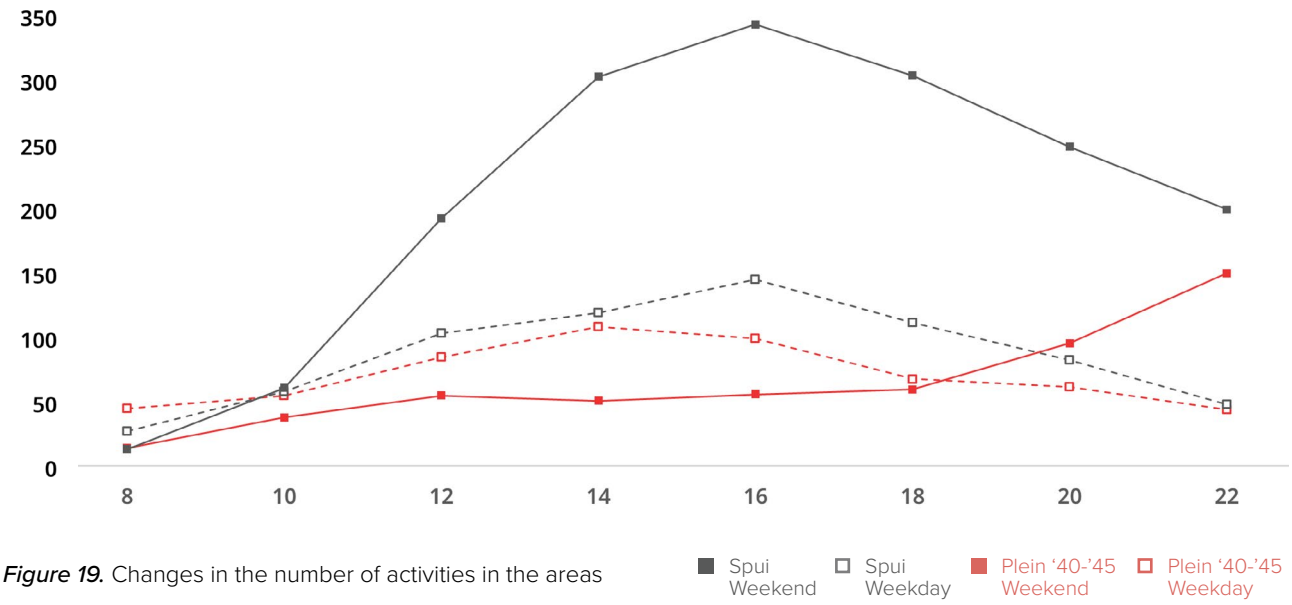


Figure 19. Changes in the number of activities in the areas

3.1.3 Relation Between Uses and Activities

Figures 20 and 21 are mappings of all observations on a weekday and weekend for each square. This shows which locations in each square were heavily used and which were not. Figures 22 through 25 are observations for each square by time of day on weekdays and weekends. They show the concentration of people at different times of the day and their relation to their use.

As shown in Figure 20, in Plein '40-'45, people were concentrated in front of food uses, i.e., supermarkets, and shopping center entrance, and recreational uses, regardless of the time of day, both on a weekday and a weekend. During the hours that the supermarket

Figure 20. All observed locations in Plein 40-45, a weekday and a weekend.

Figure 21. All observed locations in Spui, a weekday and a weekend.

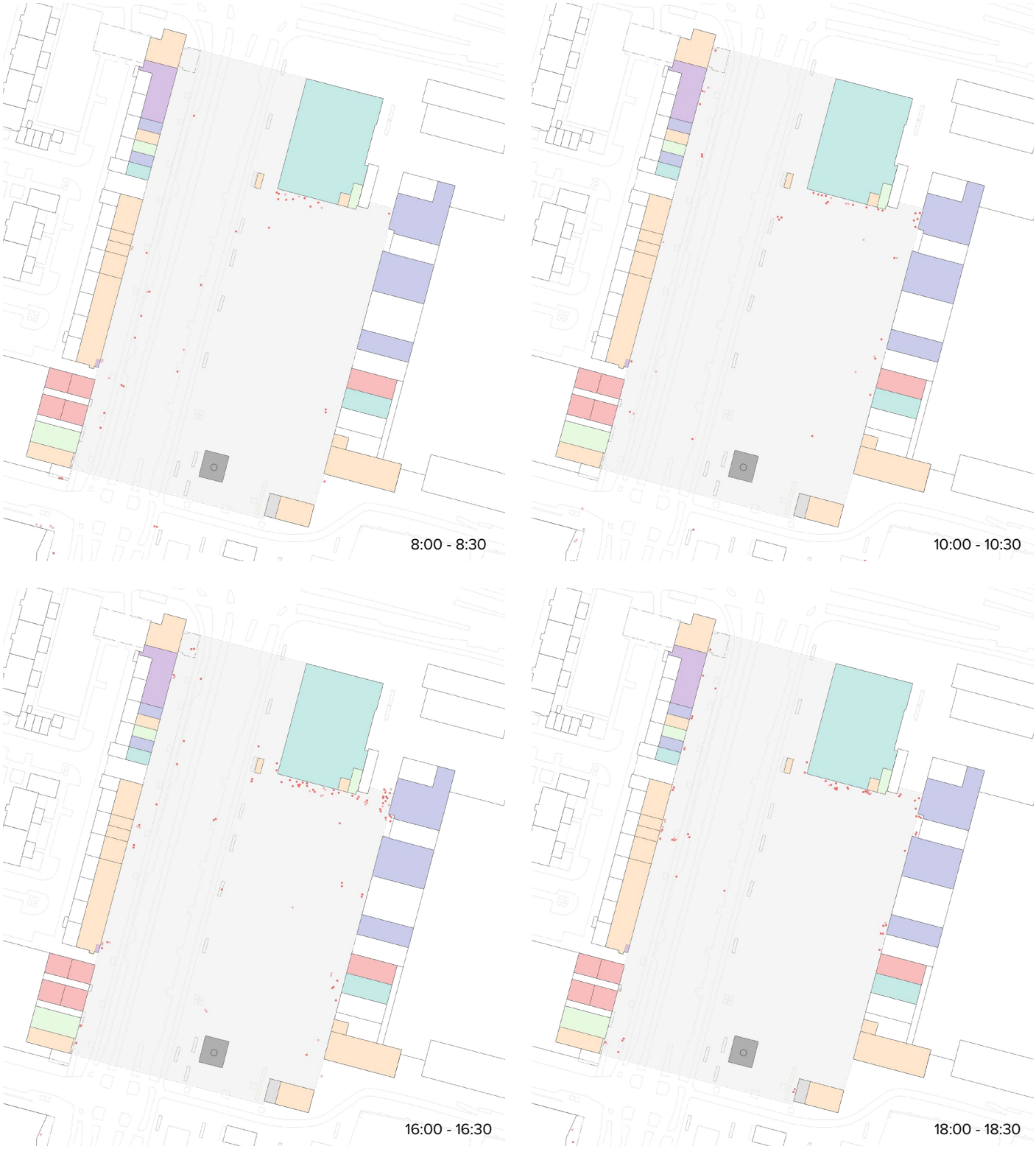


Figure 22. Location mappings of activities in Plein ‘40-‘45 on a weekday from 8AM to 10:30PM


12:00 - 12:30


14:00 - 14:30


20:00 - 20:30


22:00 - 22:30

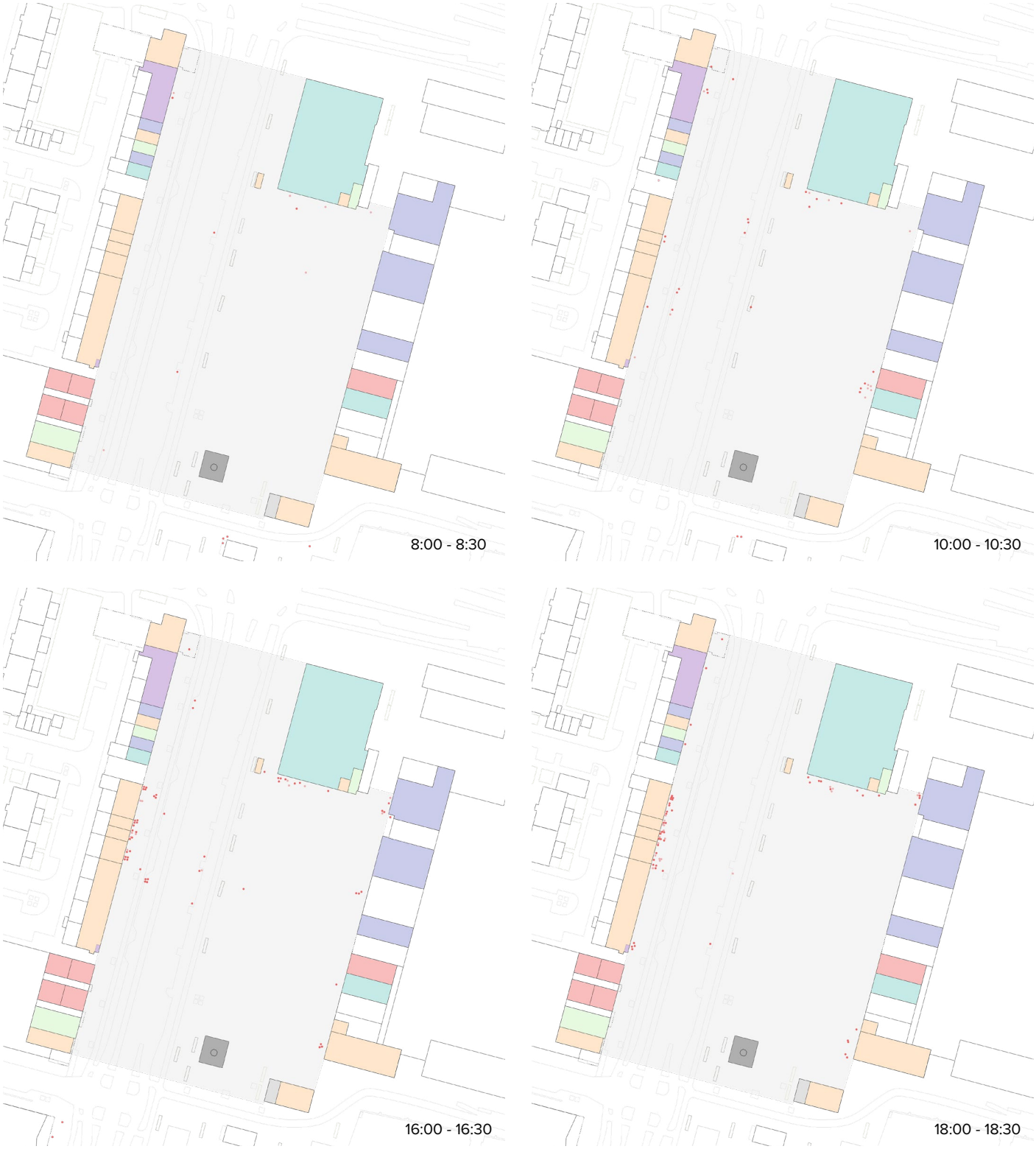


Figure 23. Location mappings of activities in Plein ‘40-‘45 on a weekend from 8:00AM to 10:30PM

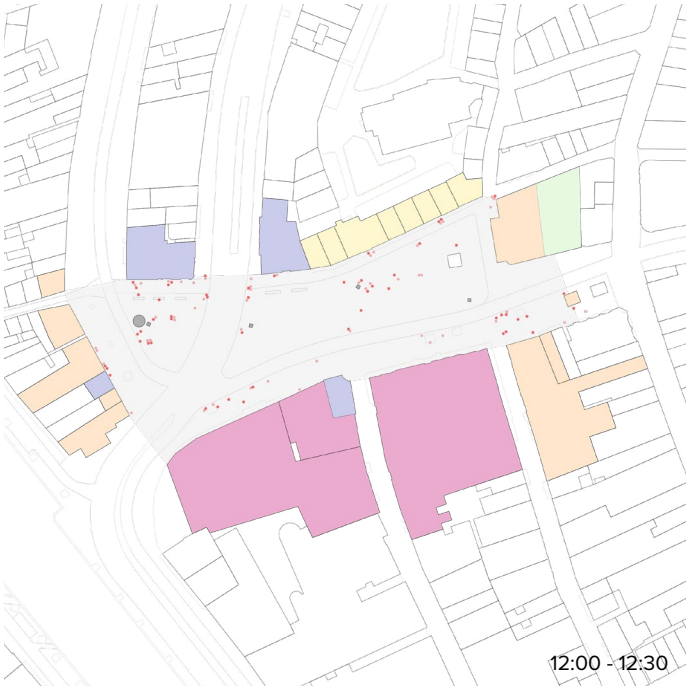

12:00 - 12:30

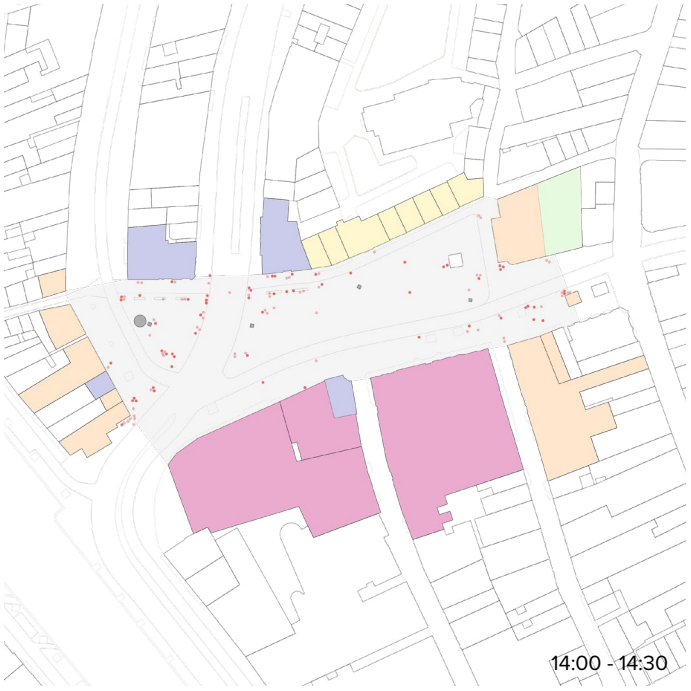

14:00 - 14:30

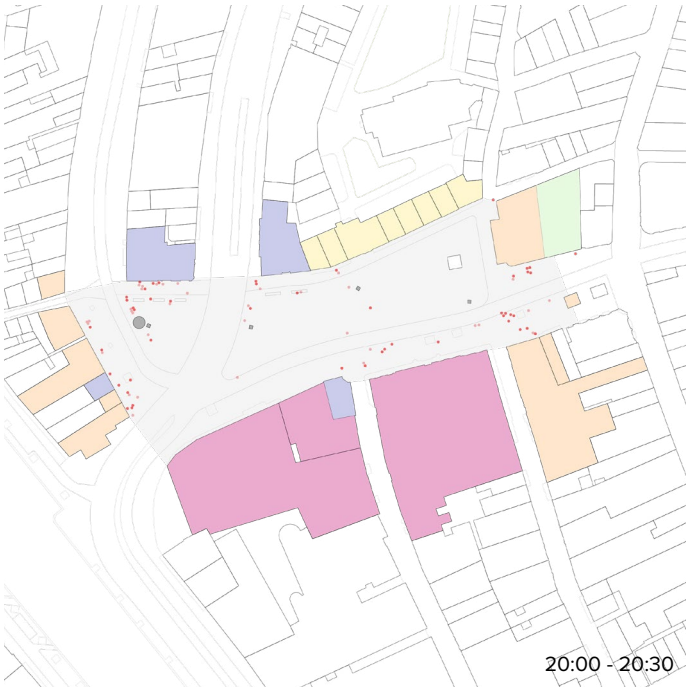

20:00 - 20:30


22:00 - 22:30

Figure 24. Location mappings of activities in Spui on a weekday from 8:00AM to 10:30PM


12:00 - 12:30


14:00 - 14:30


20:00 - 20:30

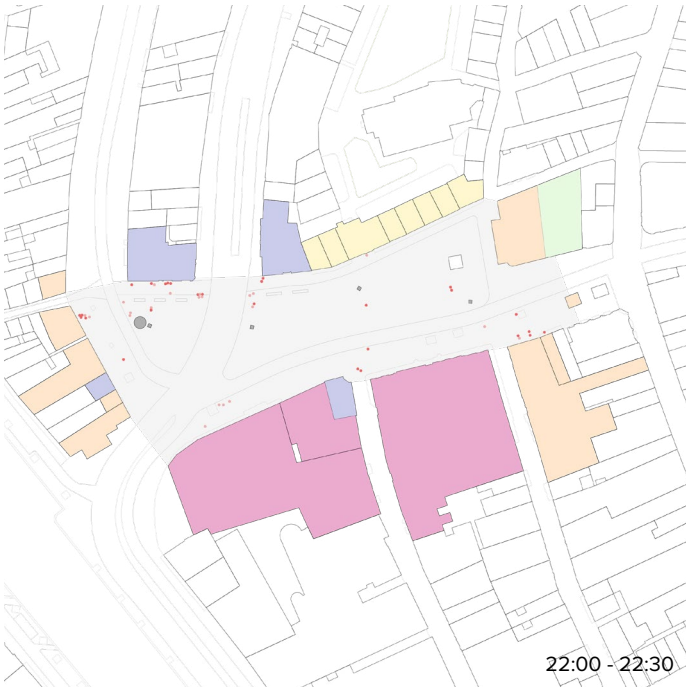

22:00 - 22:30

Figure 25. Location mappings of activities in Spui on a weekend from 8:00AM to 10:30PM


12:00 - 12:30


14:00 - 14:30


20:00 - 20:30


22:00 - 22:30

Figure 26. Mappings of all observed locations, Plein ‘40-‘45 and Spui.

was open, there was a steady flow of people on both a weekday and weekend. The observed behaviors were mainly parking bicycles, getting groceries, and taking a break from shopping. Recreational use also had a steady flow of people after lunchtime. On the weekend, the number of people increased steadily untill evening, becoming the busiest spot around the square.

Meanwhile, people rarely stopped in the center of the square. People observed on the roadside were mainly smoking or parking. People mostly moved along the border of the square and the mall, so stopping to make calls, talk, or smoke also occurred at the border of the square. A few people used the benches at the border of the square and the street, but only rarely. No one was observed stopping to look at or take pictures of the Freedom Carillon, the only artwork in the square. There was little stopping in front of retail stores, except to enter or exit the store. The overall volume of people was similar between a weekday and a weekend.

	Plein '40-'45	*Spui*
Standing	43	38
Sitting	4	4
Parking(bike, scooter, car)	**31**	14
Using a mobile phone	6	9
Photographing	**0**	**6**
Relaxing(smoking, eating)	13	13
Talking	11	16
Waiting	8	1
Looking around	**8**	**20**
Enjoy artworks	**0**	**2**

Figure 27. Types of activities (weekday 16:00)

In Spui, as in Plein '40-'45, many activities such as looking at menus and eating food were observed in front of recreational uses. After lunchtime, people were observed steadily. A characteristic feature was the presence of a decorated tree, sculpture, and benches on the western side of the square, where many behaviors such as standing, taking pictures, waiting, and smoking were observed. In particular, many people took pictures with the decorated tree as a backdrop. The tree itself may have acted as an attraction for people, or it may have acted in combination with resting uses such as the benches. There are two types of bookstores in Spui, and in both cases, they have windows that allow people to look inside. It was a common behavior for people to stop and look at the books inside as they walked by. Even outside the bookstore's opening hours, the bookstore kept the lights on inside, so people would stop in front to look inside before and after the opening hours.

In Spui, the central part of the square was heavily used, both on a weekday and a weekend. Stopping in the central part of the square was most often a photo-taking behavior. People also moved in groups, stopping to chat or take photos whether in the central part of the square or on the side of the street.

On the square's north side is a block of residential uses, and on the south is a block of educational uses. The residential uses had very few people stopping except at the entrance. The educational uses also had few people stopping except to park their bikes or take pictures. While these uses may increase the amount of floating population, they do not appear to have a direct impact on the activity that occurs in the square. Nevertheless, people occasionally stopped in front of them to take pictures of the buildings themselves.

3.2 Green-Vitality Relation

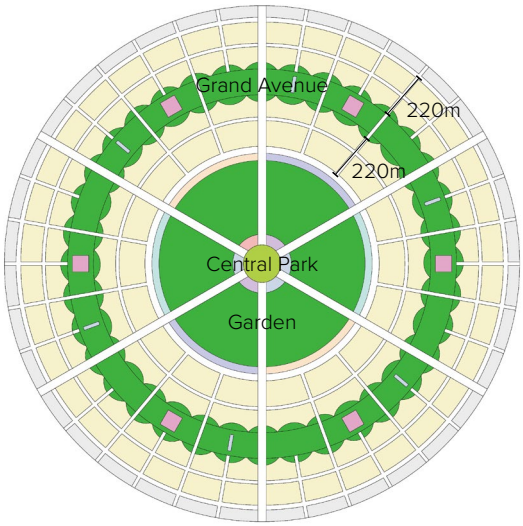
3.2.1 The Original Idea of Garden City

Van Eesteren Museum (n.d.) states that Western Garden Cities were designed under the influence of the Garden City Movement. The idea of a green environment in Garden City, as described by Howard (1902), is shown in Figure 28. He specifically emphasizes easy access to public gardens and parks. Figure 28 shows the location and distance of public gardens and parks from residential areas in Garden City. In the city, there is a park and garden in the center, and residential areas surround it, which are also connected by a park called Grand Avenue. Therefore, the farthest distance from the residential area to the park is about 220 meters, which is very close.

3.2.2 Green Structure as a Heritage and City's Vision

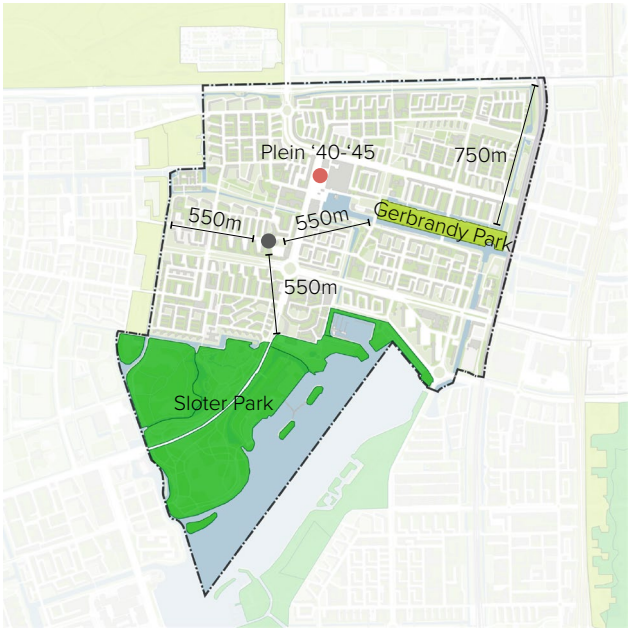
Cultural Heritage Agency of the Netherlands (2016) notes that one of the most important, spatially distinctive core qualities of Western Garden Cities is the "hierarchical layout of infrastructure and green structure with associated planting profiles." This implies a graduated structure of green environments, starting from Sloterpark and Sloterplas in the center of the city, followed by public parks through green strips, gardens surrounding the housings, and courtyards within the housings.

Figure 30 shows the specific types of green environments in the Slotermeer district. The neighborhood on the north side of Plein '40-'45 is a mix of green strips surrounding strip housings with courtyards between them, and hook-shaped housings embracing courtyards. The neighborhood on the south side is mostly hook-shaped housings embracing courtyards. In Plein '40-'45, the only greenery is street trees.



Area	4.04 km^2	Park	0.78 km^2
		Park Density	26.6 %

Figure 28. Green environment, Garden City.



Area	3.82 km^2	Park	0.78 km^2
		Park Density	20.3 %

Figure 29. Parks in Slotermeer, Amsterdam Nieuw-West.

Meanwhile, Environmental Vision Amsterdam 2050 (Beuken & Kuijt, 2021) mentions that the development of the Nieuw-West area will invest in quality of green space and parks, that high-density neighborhoods will be developed with greenery and open public spaces, and that the Slotermeer area will focus on green walking and cycling connections. This is part of a larger push for greener development and greater access to green space across Amsterdam. Figure 29 shows the farthest distance from a residential area to public parks in Slotermeer.

Figure 30. Urban design of Slotermeer. Cultural Heritage Agency of the Netherlands.

3.2.3 Green Environment and Vitality Relation

Regarding the relationship between green environment and vitality, basically, the quantity and quality of green environment affects urban vitality. Jacobs (1961) states that wide-open public space can cause a park to become a border-vacuum. Li et al. (2022) also mention that parks located in urban centers can easily become dead-ends. This suggests that the size of parks in urban centers is important.

Regarding the quality of parks, a high level of greenery is positively related to visual attraction and also encourages people to stay (Huang & Ouyang, 2022). Especially on a small-scale, a better green environment makes people feel comfortable and improves vitality (Wu et al., 2022).

Conversely, the surrounding environment also affects the vitality of a park. Jacobs (1961) explains that the vitality of a park is influenced by its neighborhood, and lively mixed-use neighborhoods attract people to parks. This is supported by Zhu et al. (2020), who argued that the mix and density of urban functions and park vitality have a positive correlation.

In conclusion, dense, mixed-use neighborhoods and high-quality green environments appear to positively influence each other's vitality.

Sources	Green Environment-Vitality Relation
Jacobs. (1961). The Death and Life of Great American Cities.	- Wide-open public space like parks or waterfront can be a border-vacuum which discourages pedestrians from spending time on the street. - Parks reflect the neighborhood instead of transforming a neighborhood. - Lively neighborhoods with diverse uses attract people into its parks.
Zhu et al. (2020). Vitality of Urban Parks and Its Influencing Factors from the Perspective of Recreational Service Supply, Demand, and Spatial Links	- Urban function mix and density and park vitality are positively related at the urban block scale. - The presence of water and facility density in the park has positive relation with the park vitality from the perspective of the recreational supply factors. - The nearby population density has positively correlation with park vitality.
Li et al. (2022). The six dimensions of built environment on urban vitality: Fusion evidence from multi-source data	- Parks located in urban centers are easily create dead-end space, border vacuum. - Reasonable subdivision can be made to control the negative effects on walkability and human flows near vacuum-adjacent areas.
Wu et al. (2022). Evaluating the Effects of Built Environment on Street Vitality at the City Level: An Empirical Research Based on Spatial Panel Durbin Model	- On the micro scale, such as a single street segment level, a better green environment can provide people comfortable experience, so that improving vitality. - However, on the macro scale, openness have more negative effect. The more open the street, the less street activity occurs. - The optimization and renewal of streets with the green environment should be consistent with the street function and people's demands.
Huang & Ouyang. (2022). Measuring Visual Attractiveness of Urban Commercial Street Using Wearable Cameras: A Case Study of Gubei Gold Street in Shanghai.	- A reasonable greening level can improve environmental quality and ensure environmental levels. - Green environment can provide a sheltered place for people, and can work as a buffer zone and sound insulation from the noisy environment. - The vitality and people staying behavior in higher greening area were significantly higher than lower greening area. - The greenery levels and visual attraction have a positive correlation.

Figure 31. Relation between green environment and vitality

4. Conclusions

4.1 Use-Vitality

The comparative case studies show how, within the changing context of Amsterdam and the given policy direction of the city, Plein ‘40-‘45 can be transformed into a neighborhood center that can accommodate not only residents, but also visitors and tourists. The uses in Plein ‘40-‘45 were focused on local residents, while Spui has uses for residents, as well as uses for visitors, such as offices and educational facilities. Spui’s mixed-uses could be a direction in the (re)vitalization of Plein ‘40-‘45 for more visitors and tourists.

The observations also showed where people gather, what they are attracted to and stop at, and how they use the square. One of the characteristic points of Spui was that people frequently stopped in front of the bookstores and looked inside the buildings, which reveals the importance of the visual appeal of use.

Meanwhile, the bookstore can also be seen as a unique use like a second-hand book market held every week there, which also could enhance the identity of the place and attract people. Currently, Plein ‘40-‘45 also has various restaurants, cafes, and bakeries that reflect the demographics of the neighborhood, as well as a market in the square, many of which sell items that meet the needs of residents of the neighborhood. Hence, interventions could take advantage of these features to reveal or enhance the identity of the place.

In addition, people’s using of the benches was frequently occured in Spui, in contrast to Plein ‘40-‘45, where people rarely used the benches. While observation does not reveal the exact reason, it seems that the mix of elements around the benches - bike parking area, a sculpture, and a decorated tree - created a synergy with each other.

The frequent use of the center of the square in Spui is likely the result of a combination of various factors. In particular, the high level of photography in the center of the square is likely due to the visual attraction of the square as a whole. Given that the center of the square was used less frequently and photographed less frequently in Plein ‘40-‘45, it seems likely that enhancing the visual appeal of the place would also help its vitality.

4.2 Green Environment-Vitality

The green environment of Nieuw-West area will change towards a more walkable and bikeable green environment and better green connectivity, as envisioned by Environmental Vision Amsterdam. Green connectivity will extend from the public parks to smaller gardens on a neighborhood and building scale.

Currently, the green environment of Plein ‘40-‘45 is limited to the street trees planted along the street that passes beside the square, and a small number of trees at the southern end of the square. Changes to Plein ‘40-‘45’s green environment can be made in ways that contribute to the green connections mentioned above, but also in terms of its internal quality: increasing the overall density of the green environment and diversifying the types of green environment.

Ways to increase the density and diversity of green environement can be developed in conjunction with the Use-Vitality conclusions: not only visual diversity of green environments, but also diversity in the types of uses that residents and visitors use.

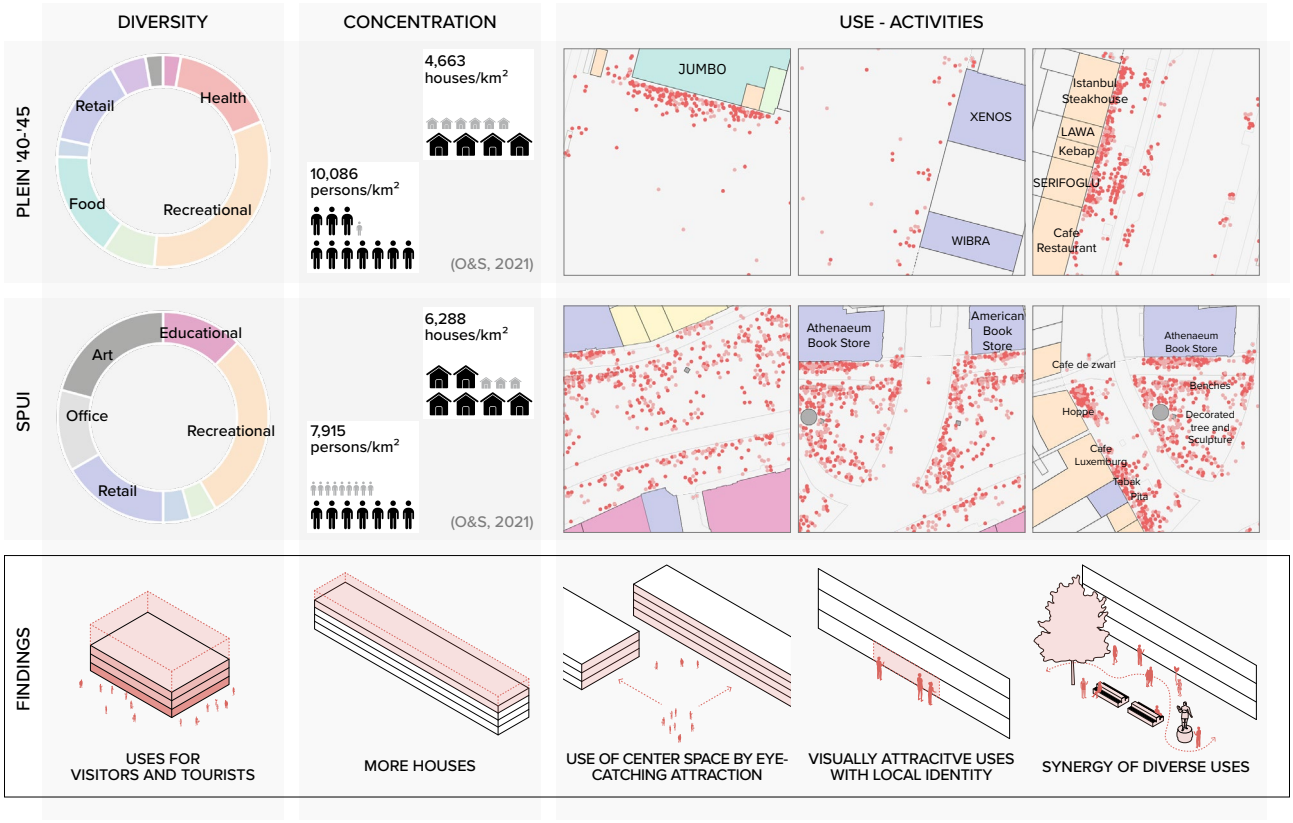


Figure 32. Use-Vitality Findings

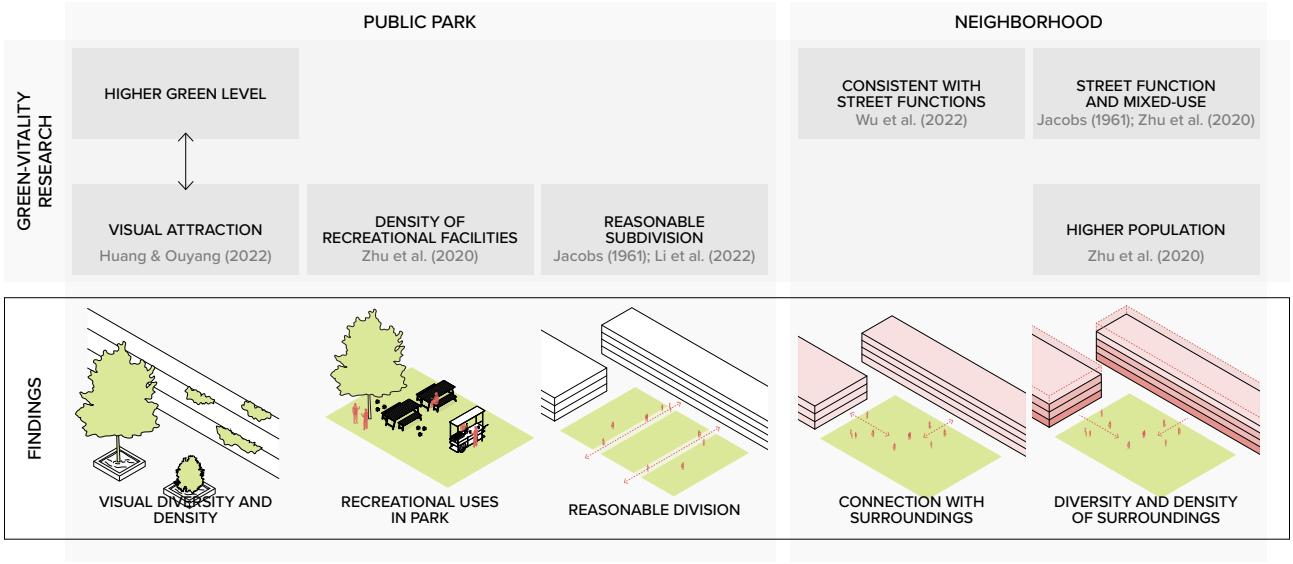


Figure 33. Green-Vitality Findings

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Figures

Figure 2
Vastgoedmarkt. (2023). Cityscape of Amsterdam Nieuw-West. [Photograph]. https://www-vastgoedmarkt-nl.tudelft.idm.oclc.org/186722/winkelcentrum-plein-40-45-in-andere-handen

Figure 4
Google Trend. (2024). Google Search Volume during last one year. [Image]. https://trends.google.com/trends/explore?date=2023-01-22%202024-01-22&geo=NL-NH&q=plein%2040%2045,kalverstraat

Figure 5
Google Maps. (2024). Case Study Areas in Amsterdam. [Google Maps]. Reproduced by Author.

Figure 6
Google Maps. (2024). Plein ‘40-‘45, Amsterdam Nieuw-West. [Google Maps]. Reproduced by Author.

Figure 7
Google Maps. (2024). Spui, Amsterdam Centrum. [Google Maps]. Reproduced by Author.

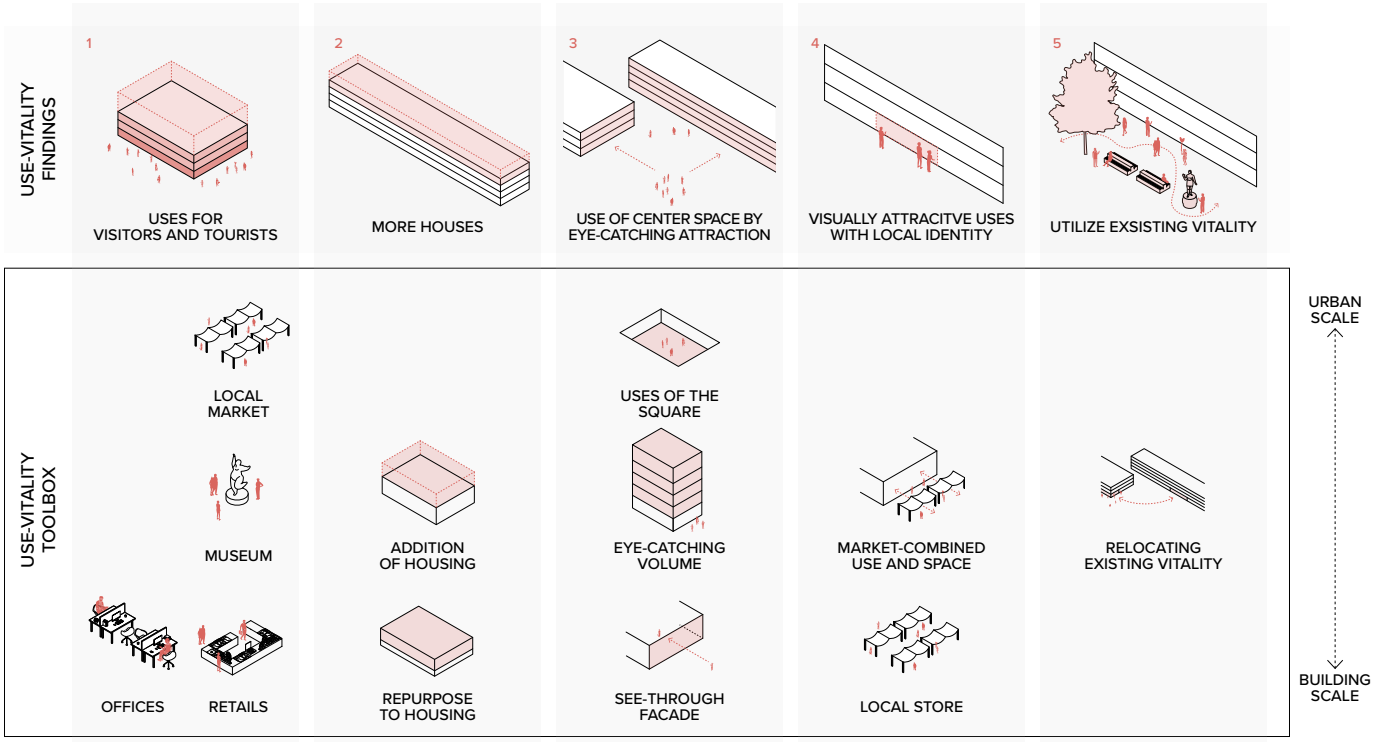
Figure 16
Research, Information and Statistics Amsterdam. (2023). Housing density. [Image]. Reproduced by Author.

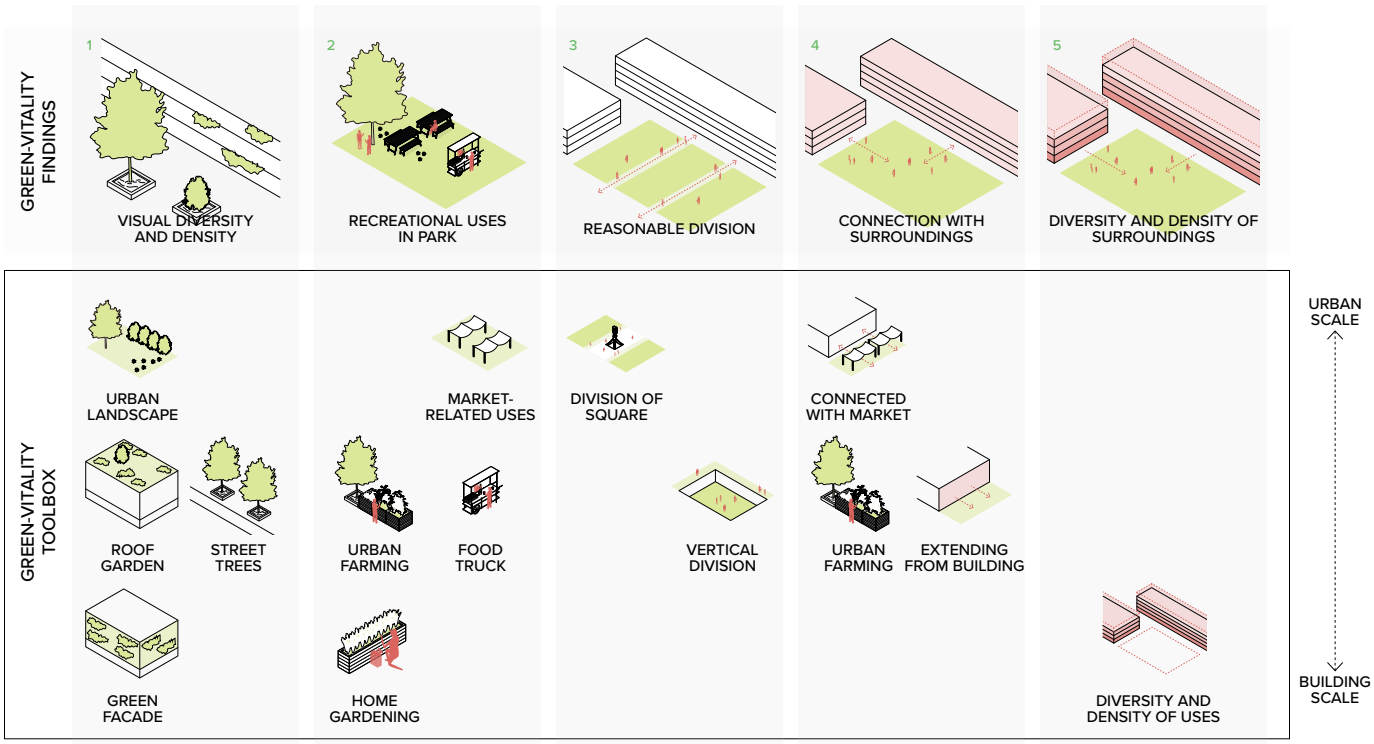
Figure 17
Research, Information and Statistics Amsterdam. (2023). Population density density. [Image]. Reproduced by Author.

Figure 29
Gemeente Amsterdam. (2023). Parks in Slotermeer, Amsterdam Nieuw-West. [Image]. Reproduced by Author. https://maps.amsterdam.nl/stadsparken/

Figure 30
The Cultural Heritage Agency of the Netherlands. (2013). *Westelijke Tuinsteden*.

6. Appendix 1 - Design Toolbox





7. Appendix 2 - Reflections

7.1 Choice of the Studio and the Topic

The studio's theme is how the reuse and adaptation of post-war 20th-century housing can contribute to solving the current housing problem in Amsterdam.

The project focuses on fundamental solutions to create an urban environment for housing to be supplied, in addition to direct housing supply, as a way to address the housing shortage problem. A city's vitality affects its livability, which in turn affects its ability to attract investment and housing supply (Ruth & Franklin, 2014). Therefore, by studying ways to make the neighborhood livelier, I sought to find solutions for the housing shortage in the long term.

The diversity of uses in a neighborhood affects the vitality of a city (Jacobs, 1961). Among the Western Garden Cities, Slotermeer and its neighborhood center, Plein '40-'45, began as a residential neighborhood and is now transforming into a shopping area. In this process of transformation, the value of the neighborhood as a heritage is its specificity and qualitative character as a Garden City (Rijksdienst voor het Cultureel Erfgoed, 2016), so it was important during the research and design phase to consider how to maintain or change its character as a Garden City.

7.2 Research Methodology and its Process

The process of forming the research methodology was to balance intuition and personal ambition with setting the scope and limitations of the research within the time limits. The research plan I presented in P1 was to compare the selected sites concerning Jacobs' six conditions of vitality. The feedback I received was that if the scope of the research is broad, the results will inevitably be shallow, so it would be better to narrow the scope and do more in-depth research instead, so I gradually narrowed the scope of the research after P1.

In order to compare the vitality of Plein '40-'45 and Spui and to see the relationship between uses and vitality, I used the observation method proposed by Jan Gehl. After thoroughly reviewing several papers that used observation methods, I made a proper observation plan and conducted the observations, from which I was able to get information about the number, location, gender, and behavior of pedestrians at different times of the day. This process gave me concrete information to use in my design.

To point out the limitation of the first research method, the number of observations was conducted only once on weekdays and once on weekends per each case. In addition, the different weather conditions and the specificity of the time of year at the end of the year and the beginning of the year can be considered variables in the study's results.

The second research method, the literature study, was to identify the direction of the Garden City in terms of its uses and the connection between a garden or green environment and urban vitality. To do this, "Garden Cities of To-morrow", in which the idea of the Garden City is revealed, was analysed in terms of its uses. Through this, it was possible to identify the areas of green and other uses proposed by Ebenezer Howard. However, since the size of the city suggested in the book and the size of the study site, it was difficult to draw direct conclusions from Howard's vision. However, some conclusions can be drawn from other studies that have addressed the relationship between green and vitality.

7.3 Relation Between Research and Design, and Design Process

The conclusions from the research part led to the design experimentation of how interventions in existing built environments can enhance vitality. The six conclusions from the study led to the three architectural strategies.

Since the research was conducted in the urban built environment of Plein ‘40-’45, converting it into architectural design was a challenge. The proposals can be divided into two categories: interventions in the square and interventions in the architecture surrounding it. The focus of the study was not only on the behaviors that take place in the square, but also on what happens at the boundary between the outside and inside of the buildings, so the design proposals were also a proposal that could add to the vitality of the square, and a proposal that could bring the vitality of the outside into the inside of the building (or vice versa).

The initial phase of the design focused on the square. During the tutoring, I determined that it was more important to focus on the relationship between use and vitality, which is the focus of the study: what happens at the boundary between the square and the buildings. Therefore, the primary design proposal has been to renovate the buildings that border the square to improve their relationship with the square from a vitality perspective.

In conclusion, out of three architectural strategies, I developed it by focusing on the most effective suggestion considering the research topic and the timing of the intervention regarding urban context. I put the other two as relatively brief proposals, which I think was a good strategy given the limited time. The remaining two proposals are also good proposals, so if developed further, they could be good strategies for a comprehensive master plan for developing Plein ‘40-’45 as one of the multi-cores in Amsterdam.

7.4 Academic and Societal Value

The Dutch National Cultural Heritage Agency states (2016) that the urban planning ideas of the Western Garden Cities and their distinctive urban fabric from other regions where they originated are of significant value. Meanwhile, through its Environmental Vision 2050, the Municipality of Amsterdam aims to preserve the green spaces of the Nieuw-West, while giving direction to its development as an urban center. This graduation project experiments and proposes how two seemingly conflicting ideas can be brought together: increasing density while maintaining an urban fabric that includes green environments. It is an idea of how the green environment can be mixed with the built environment and, at the same time, how it can be densified in order to move towards the urban center.

The area around Plein ‘40-‘45 started as a residential area when it was developed in the 1950s. However, it gradually changed into a mixed residential and commercial area with the vitality changes of the square as a marketplace and the addition of various commercial facilities. In the process of transforming into an urban core or urban center, it is inevitable that the function and use of the area will change and densify. In the process, this project demonstrates design ideas for time frames ranging from the near to distant future. In the process, the users of Plein ‘40-‘45 will evolve from people from the immediate neighborhood to people from other areas of the city coming to spend their day, to tourists coming to the area as a unique place to spend their day. This will also contribute to solving one of Amsterdam’s other urban problems: Amsterdam Centrum attracts too many tourists.

Furthermore, during the research process, I learned that the social or economic aspects of urban vitality are also considered in the process of urban revitalization and can have a direct or indirect impact on the conservation of historic urban landscape by

affecting livability (UNESCO, 2013; Helmy, 2024). This was a confirmation of the greater relevance of this research to the studio's theme, and it is a fact that strengthens the link between this research and society.

7.5 Transferability

The methodology in this study was divided into two main parts: first, to identify the relationship between the built environment's uses and vitality, and second, to identify the relationship between the city's green environment and vitality.

Depending on the results of several studies, the fact that high density, diversity of uses, and diversity of green environments have a positive effect on urban vitality could be generally applicable to what is called cities. However, the direction to densify and diversify will depend on the specificity of the site and the district.

Also, in terms of methodology, translating the results of observation into design language and applying it to design is an important element of the design process. It seems that many architects still design without considering the actual life of the people in the city, much like modern urban planning methods. Discovering the characteristics of the city and the life in it through observation and applying them to architecture is a timeless and important method of architectural design.

7.6 How to translate intangible values into physical architecture

It was an interesting challenge to translate the intangible into the physical. I had taken a similar architectural approach when I was an undergraduate. At that time, I couldn't find a link between the intangible and the tangible so that I couldn't produce results. However, in this project, the research process and results helped connect the intangible with the physical architecture. Translating vitality directly into architecture could have been difficult and daunting, but translating vitality into diversity and density and translating it again into architecture has made the task much more feasible. Of course, vitality is not only interpreted in one way, nor is there only one design answer. But anyway, research takes the subject into shape and suggests design direction.

7.7 How to design without deviating from the subject

Architects often draw a conclusion from certain inspiration through intuition when designing. If we talk about this as a process of 'inspiration ➔ intuition ➔ design', I think the graduation design can be expressed as a process of 'topic ➔ research ➔ design'. It seems that the process before and after P2 was about controlling intuition. Intuition sometimes deviates from the research subject and creates a different basis for judgment. Therefore, I have tried to control my intuition as much as possible and, go back to research as much as possible, and make decisions based on the results and conclusions obtained from research.

Nevertheless, I believe that intuition still works and is meaningful in architectural decisions. Intuition is often subjective and abstract, so it isn't easy to explain to others, but research is relatively objective and, therefore, easier to explain. In any case, I think that architectural desicion is meaningful only when the intention is felt as space. I wouldn't say which is the right way to design, but rather, I would like to say that I learned another way to design.

7.8 What and How to learn from Design References and Why WE have to learn from them?

I tend to try to design mostly from the materials within me. After the P5 presentation, my tutor's questions and the last comment gave me a lot of thoughts. Everything that happens in the world builds on previous knowledge and research and work.

This would be the case with creation. Creation would not be completely new, but a new fusion of what exists. We learn from what already exists. What is good, what is lacking. If we have to do architecture with a new theme, we should also prepare the materials within us for it accordingly. References are such materials.