



THE SHOPPING MALL AS AN URBAN CATALYST:

THE CASE OF LEYWEG WINKELCENTRUM

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RESEARCH PAPER

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Adapting 20th century heritage: The modern mall.

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## Abstract

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Post-war shopping centers in the Netherlands, in contrast to the ones in the U.S, were interweaved and connected to the existing urban fabric forming an urban center for the community and the adjacent district. Despite the successive alterations that they underwent so as to keep up with the shifting demands of shopping, they constituted a stable yet dynamic urban structure; a quality that can be explored under the scope of continuity and change in the urban context. Continuity in the sense of the heritage values embedded in the shopping center and change in the sense of adaptability that enables future changes to occur are the main ideas around which the present research was developed. The identification of the spatial attributes related to the notion of adaptability in the original design of the post-war shopping centers along with the exploration of the way in which these attributes can be implemented in the re-design strategies in order to ensure both future adaptability and continuity form the main goals of this research.

**Keywords:** shopping center; urban center; continuity; spatial adaptability; heritage

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# 01 Introduction

## 1.1 Dutch post-war shopping malls

The post-war shopping mall in the Netherlands was interweaved and connected to the existing urban environment, forming a finely meshed urban structure (Kooijman, 1999). As the spatial manifestation of a constantly transforming function –that of shopping– malls underwent successive alterations so as to keep up with the current trends and demands, embodying a remarkably consistent yet dynamic urban structure throughout the changes in the urban fabric (Maitland, 1985). This consistent and dynamic character can be related to flexibility and adaptability, which was rendered as a key demand of the Dutch post-war shopping center (Galema & van Hoogstraten, 2005). More specifically, adaptability was implemented in the design, on the building scale, in regard to both the different layouts of the retail space relating to the structural system and grid, the positioning of the technical installations, and the configuration of circulation, but also to future scenarios of expansion, unification, and conversion (Galema & van Hoogstraten, 2005; Kooijman, 1999).

## 1.2 Societal & academic relevance

A shift regarding the Dutch retail network toward the redesign of existing retail floor space can be noticed since 2008 (IVBN, 2016). This shift in combination with the demand for new multi-purpose urban centers and the changes in consumerism habits and patterns, have rendered the Dutch shopping center an urban asset for redevelopment.

At the same time, the gradual acknowledgment of post-war architecture and its embedded values is a recurring reality that is expected to grow further in academic and professional circles. More specifically, shopping and its spatial manifestation during the post-war era in the Netherlands is a field that has started to be explored as proven by the Rijksdienst voor het Cultureel Erfgoed’s publication (2005), and offers multiple directions and opportunities for research and reinterpretation.

Following this gradual shift of interest in both societal and academic terms, the present research paper focuses on the exploration of possible ways of adaptation of the Dutch post-war shopping mall in order to reinstate it as the “heart” of the city both for the present and the future.

### 1.3 Problem statement & research question

*“Killing the mall, paradoxically, has allowed it to become what Gruen once intended it to be—a city center. Death has allowed the mall to fulfill its original promise.”*

*D. Herman, 2001, p. 473*

Shopping is continually being reinvented and reshaped as a response to the shifts in cultural tastes and the changes in social and urban patterns, therefore shopping malls cannot be regarded as static urban structures but instead as dynamic systems, always interconnected with the concept of urbanity (McMorrough, 2001), in need of constant renewal, if they are to remain active.

Nowadays, another transition in the aforementioned patterns is being experienced; the growing tendency of e-commerce, rapidly developed due to the pandemic, the subsequent shift in the retail spatial requirements, and the vacancy rates demand the reinterpretation and the redefinition of the shopping mall so as to be integrated anew in the current context (CBRE, 2022). In addition, especially in the post-covid era, the transition from merely retail functions to mixed-use developments, where the goal is not only to shop but also to create a connection to the city is stressed as a necessity for the future survival of shopping centers (Finn, J.F., 2021). Therefore, a shift towards a reinterpretation of the shopping mall as an urban center can be noticed (CBRE, 2022).

At the same time, on a larger scale, the urge for urban resilience, in the sense of the capacity of the city to adapt and grow over the challenges it may face while maintaining continuity is an approach that gains more and more ground leading toward the concept of the flexible city. Hence, adaptability and continuity in the urban environment are rendered core notions for future development and resilience (Godwin, 2021).

In this context, the Dutch shopping mall regarded as a principal urban structure of the post-war era can serve both as an anchor bearing values of the era that it was built while offering the opportunity to be reinterpreted and adapted not only to today's but also to future conditions.

Having as starting point the adaptability of the Dutch post-war shopping mall on the building scale, the concept of adaptability on the urban scale is attempted to be explored while researching the possibilities that the spatial form of the shopping mall as an urban structure offers for accommodating change while ensuring continuity. Even though the present research focuses on the Dutch post-war shopping mall as a case study to explore the notion of urban adaptability, the presented approach could also be broadened and applied to other countries, building types and urban structures.

Therefore, the present research was conducted on the basis of the following question:

*How can heritage values and attributes related to the adaptability of the Dutch post-war shopping mall as an urban structure be employed in potential redesign strategies to ensure urban resilience?*

For this question to be fully examined, a set of sub-questions has been defined in order to structure and organize the steps needed for the research to be complete:

- *How can adaptability be spatially defined on the urban scale?*
- *What are the spatial attributes of the post-war shopping mall related to adaptability and what are the heritage values embedded in them?*
- *How have different intervention strategies affected the ability of the Dutch post-war shopping mall to accommodate change?*

# 02 Theoretical Framework

*“Our possible city must therefore have certain characteristics; adaptability coupled with a sense of past and future continuity.”*

*K. Lynch, 1990, p.772*

The theoretical framework of the present research can be linked to the following distinct factors; namely, the notion of adaptability on the urban scale, the Dutch post-war shopping malls as urban structures, their fundamental spatial attributes and the embedded in them heritage values, and finally the different redesign strategies and their impact on the adaptability of the researched cases.

## Definitions

**Adaptability** is defined as the ability of a spatial system to generate, test and facilitate new environmental and behavioral possibilities in regard to future change. (Lynch et al., 1990)

**The shopping mall** (also referred to as the shopping center) is defined as an urban complex consisting of one or several buildings designed, planned, owned and managed as a unit around a pedestrian area, usually as part of an expansion plan and occasionally integrated into pre-existing city center. (Galema & van Hoogstraten, 2005).

According to K. Lynch’s (1981) normative theory of the city form, a good human settlement should possess five dimensions of performance—vitality, sense, fit, access, and control—. For the purposes of this research, sense and fit have been chosen to be further analyzed in order to reveal the interplay of continuity and change in the shopping mall as an urban structure.

Fit is directly connected to the notion of adaptability. Even though adaptability, according to Lynch (1981), can be identified in three distinct, yet interrelated layers: spatial form, time boundaries and land control (ownership), the present research will focus on the spatial one. Therefore, the spatial criteria that, according to Lynch, can render an urban structure adaptable are the following:

01. Excess capacity
02. Networks of communication & transportation
03. Reduction of the interference between parts or of the elements likely to change from those unlikely to change.
04. The repetitive use of elements that are usable for diverse functions.

In order to reveal the adaptability levels, the Dutch post-war shopping mall as an urban structure, was further analysed to its fundamental spatial attributes, corresponding to the four abovementioned parameters. Lynch’s (1981) definitions of the parameters, Rao’s (2020) typological analysis of retail spaces and Galema’s & van Hoogstraten’s (2005) review of the Dutch post-war shopping malls defined the theoretical framework for the spatial attributes. More specifically, the following aspects were defined:

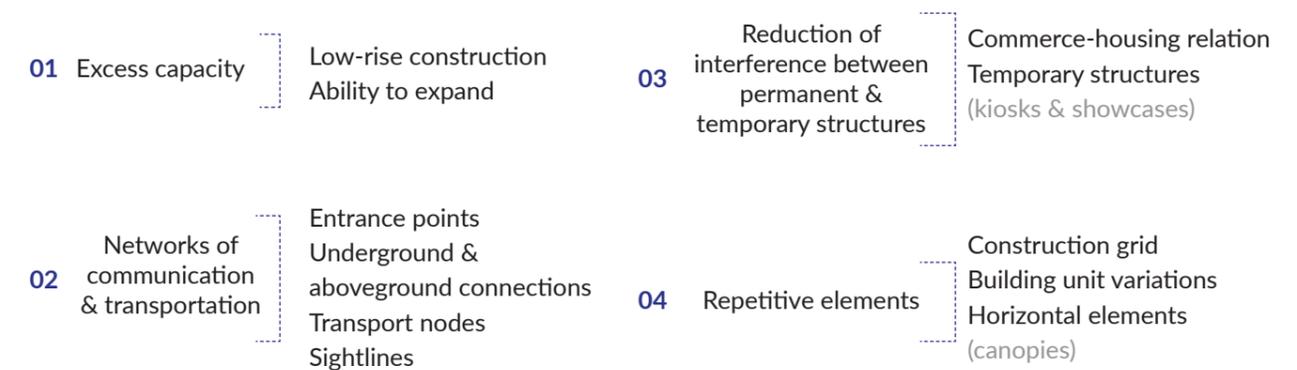


Figure 01| The spatial attributes of the Dutch post-war shopping mall and their connection to the four criteria of adaptability on an urban scale defined by Lynch (1981).

Even though adaptability qualifies as one of the characteristics of good city form, Lynch (1981, pg. 174) advocates that “a totally adaptable environment, in which each person could surround himself on the instant and without effort with the setting of his choice, would be a fairy-tale nightmare”, while, “an adaptable place can be a characterless and disorienting one”. The same risk is also pointed out by Hertzberger (2014), who stresses the importance of attaining the meaning of architecture while seeking adaptability. Therefore, sense in Lynch’s glossary, or else, meaning in Hertzberger’s, which is directly related to the heritage values embedded in the physical form, was examined for each of the attributes defined according to the heritage values’ taxonomy by Tarrafa and Pereira Roders (2012).

Consequently, the KAR (Keep, Add, Remove) classification by Pereira Roders (2007) was employed in order to examine how different intervention strategies have affected spatial adaptability and the embedded values, under the scope of Lynch’s criteria. The combination of different strategies for the defined spatial attributes may result in the enhancement or deterioration of adaptability. For the impact to be assessed the ICOMOS (2011) framework was adopted.

# 03 Methodology

The conduction of the present research can be divided into three phases; each answering one of the research sub-questions.

In the first phase, literature research and theory review have been conducted so as to reveal the definition of adaptability on the urban scale and its criteria. In this phase, two case studies were selected to be further analyzed; Lijnbaan in Rotterdam and Winkelcentrum in Leyweg, two malls developed around the same time period; each indicating different levels of adaptability.

Regarding the second sub-question, the spatial attributes related to adaptability on the urban scale were identified through the case studies' historical and contextual analyses based on the parameters defined in the previous stage (see Chapter 02). The required data for these analyses included old and current photos, drawings of the original and current state, maps of the adjacent urban development, which were obtained through archives, municipality documents, architects' archives, site visits, heritage status, books, journals, and papers, but also through the use of databanks such as GIS and relevant websites. All this material was reproduced by drawing, tracing, and mapping and expressed through personal writing. After collecting and classifying the data, an assessment regarding "fit" was conducted for each case study on the basis of Lynch's criteria. Subsequently, the collected data regarding the original condition of the shopping malls were interpreted through the method of value assessment (see Appendix), so as to relate it to K. Lynch's "sense".

The third step of the research was approached through the method of comparative analysis regarding the pre- and post- redesign state of the case studies. The intervention strategies' classification was conducted under the scope of Pereira Roder's (2007) Keep-Add-Remove so as to reveal the impact that each of them or their combination had on the adaptability of the urban structure under research. The post-redesign state's adaptability level was then evaluated according to the criteria defined in the first phase. The comparative analysis between the two states indicated the shifts in the levels of adaptability, as well as the spatial attributes related to this quality and their embedded values that remained consistent throughout time (Fig. 02). The results of both the urban adaptability evaluation and the value assessment were depicted through spiderwebs.

Overall, these three phases, applied to different urban structures, can lead to the identification of the spatial parameters related to adaptability and the cultural values embedded in them that are most severely affected by the different interventions throughout the years. The presented approach can be developed as a tool to assess fit and sense of urban structures in different contexts, but also provide certain indications regarding the steps that could contribute to the improvement of the urban adaptability levels, while attaining the values embedded in the built environment.

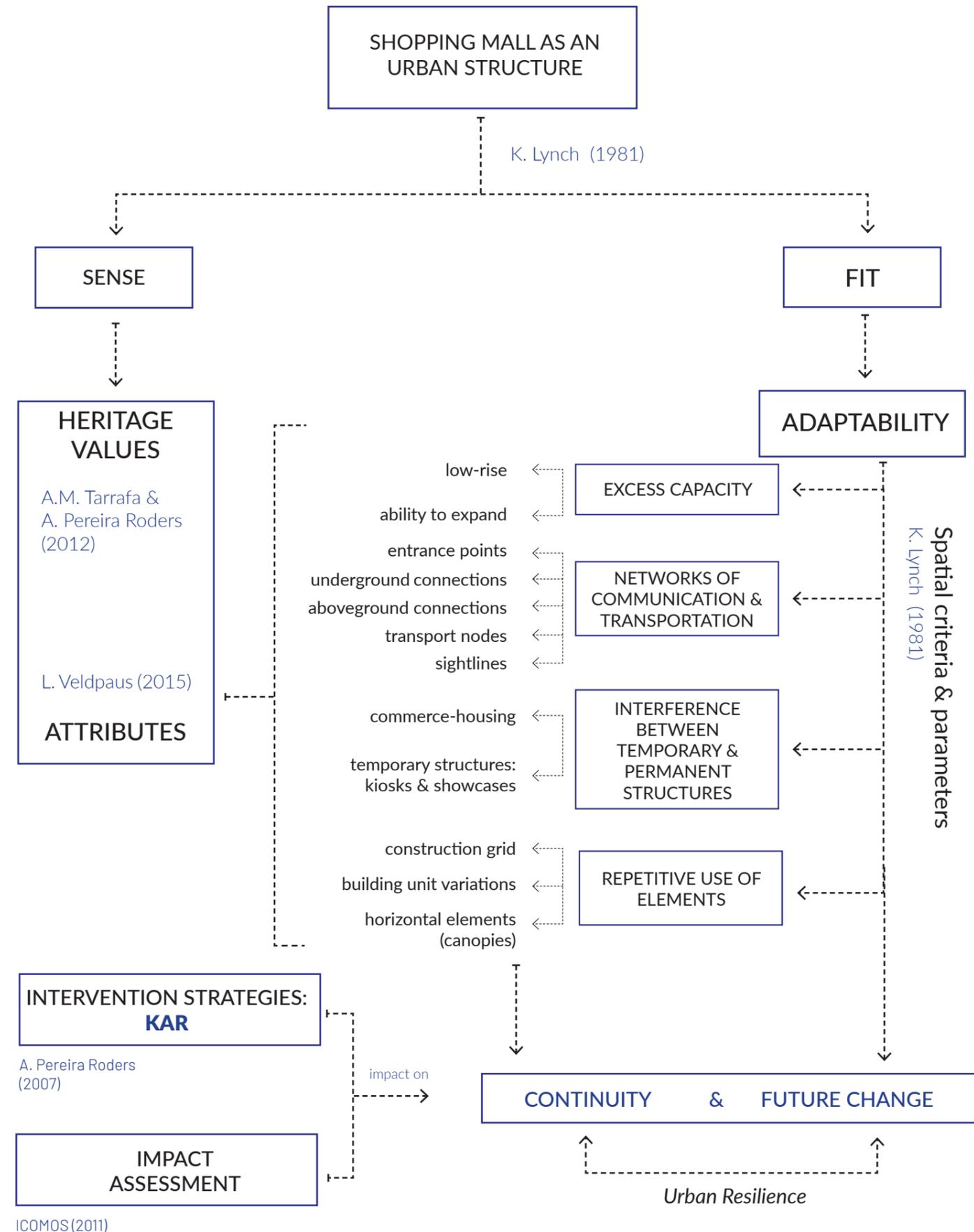


Figure 02| Theoretical Framework & Methodology diagram.



Figure 03| Lijnbaan, Rotterdam, NL. 1960. (<https://nieuws.top010.nl/lijnbaan-rotterdam.htm>)



Figure 04| Leyweg Winkelcentrum, The Hague, NL. 1964. (Haags Gemeentearchief)

# 04 Results

As already mentioned in Chapter 03, the methodology described in the previous section was applied in two research cases: Lijnbaan (Fig. 03) and Leyweg Winkelcentrum (Fig. 04).

## 4.1 Lijnbaan

Lijnbaan was developed as part of Van Traa's Rotterdam reconstruction plan in the 1950s, constituting the heart of the new city center. As an urban structure, it consists of two perpendicular-placed, car-free promenades; Lijnbaan and Korte Lijnbaan. Its revolutionary concept, which led to its recognition as a national monument in 2010, lies in the functional and spatial separation of retail, housing, and traffic flows. More specifically, the stores are situated in low strips, while the expedition streets are positioned towards the rear so that the pedestrian flow remains uninterrupted (Galema & van Hoogstraten, 2005).

Throughout the years, Lijnbaan underwent various minor changes nevertheless preserving its main layout and rhythm. The most crucial alterations were twofold; in 1967 an expansion towards the southern section, and in 2014, the large-scale restoration of the northern part by Mei architects and the intervention by OMA and WdJ architects regarding the southern one (Fig. 05).

### Excess capacity

The absence of housing above the shops resulted in a low-rise development, and thus, a more horizontal character, which has remained unaltered until today (Lijnbaan shopping precinct, n.d.).

Even though Lijnbaan was situated in the center of Rotterdam, its ability to expand was limited since its main axis was interrupted by the Coolingsingel Hospital on the south. The relocation of the hospital in 1967, followed by the abandoned building's demolition enabled Lijnbaan's expansion on the horizontal axis and its connection with Ter Meulen and De Klerk on Binnenwegplein.

In 2014, WdJ Architecten's intervention enhanced the levels of urban adaptability in terms of excess capacity, by adding an extra layer to the 1970s expansion and leaving areas available for future development, while also preserving the complex's uniformity and distinctive character.

LOW-RISE

ABILITY TO EXPAND

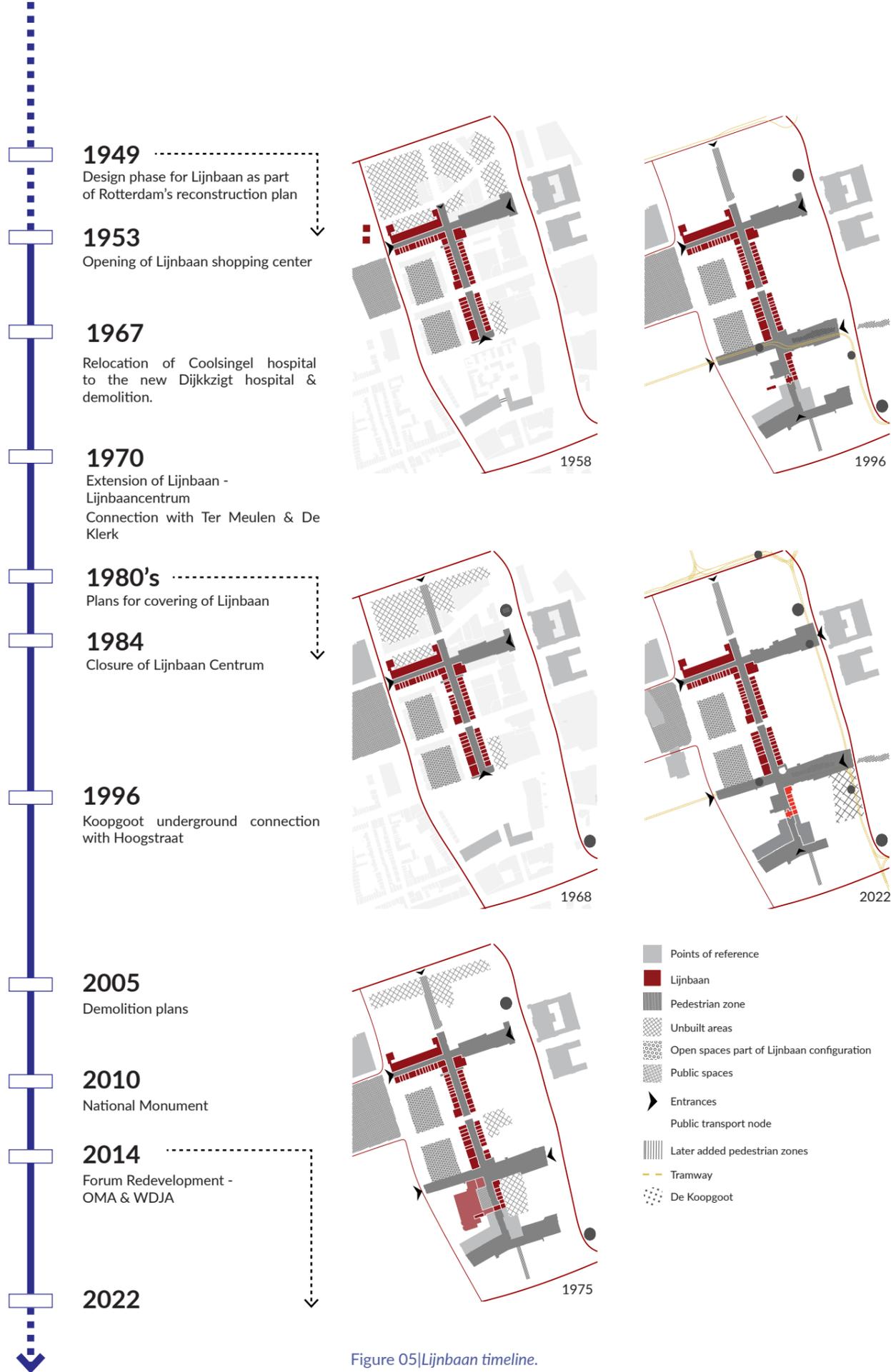


Figure 05|Lijnbaan timeline.

## Networks of communication & transportation

Lijnbaan was situated in direct contact with Rotterdam's main artery Coolsingel. The main entrances, which have remained unaltered to this day, are located in the west, at Karel Doormanstraat near Schouwburgplein, and in the south, at Van Oldenbarneveldtplaats; both entrances were highlighted by neon lettering, one of the most characteristic features of the shopping mall. With the exception of the main entrances, the four blocks comprising Lijnbaan are separated from one another by narrow passages for pedestrians leading to the expedition streets and the residential blocks. Intersections and entrances to the shopping promenade are accentuated by the deviating shape of the adjacent retail volumes, creating more spacious connections. (monumenten.nl, 2023)

The 1970s expansion added new entrance points that improved the urban adaptability levels of the urban structure by establishing more connections with Rotterdam's urban tissue and more specifically by providing a connection with Westblaak.

Initially, Lijnbaan was developed only on the ground level without underground or aboveground connections to the surrounding urban fabric. However, the 1970s extension that connected it with the department stores at Binnenwegplein took the form of a bridge building housing Lijnbaancentrum (1970-1984), a revolutionary exhibition space. The design of a glass bridge over Lijnbaan connecting the two sides, even though unorthodox due to its materiality for an exhibition space, derived from the democratic character of the institution itself. In a bustling shopping district where all kinds of visual stimuli were readily available for purchase, the open character of this structure aimed at attracting the largest possible audience to the top-notch exhibitions featured within (Puntkomma,10, n.d).

Following the closure of the arts center in 1984, the glass bridge continued to stand until 2014 when it was removed by WdJ Architects remaining only as a canopy.

In 1996, the two main shopping streets of Rotterdam -Hoogstraat and Lijnbaan- were connected through a sunken shopping promenade, Beurstraverse. Initially, it was designed as an underground passage for pedestrians to cross the Coolsingel but it evolved into a shopping street, adding extra economic value and connecting Lijnbaan and the surrounding department stores directly to the Beurs metro station.

Finally, sightlines, as an element of direction and orientation, played an important role in the configuration of the canopies, the buildings at the junctions of the main axes and also the urban furnishing. For instance, the continuous canopies interconnecting the stores were intentionally disrupted at specific junctures to facilitate sightlines towards notable reference points (such as the Town Hall) (Gussenhoven, 2019). These sightlines have remained unaltered until today.

ENTRANCES

ABOVEGROUND  
CONNECTIONS

UNDERGROUND  
CONNECTIONS

SIGHTLINES

## Reduction of interference between temporary & permanent structures

As already stated, the main concept for Lijnbaan lies in the distinction between the stores and the residential buildings (Galema & van Hoogstraten, 2005). This specific feature can be related to Lynch's criteria for the reduction of interference between permanent and temporary structures, as housing can be regarded as a more permanent one, while retail spaces are generally considered temporary. The same layout is still evident today (Fig. 06), keeping the whole complex to the human scale.

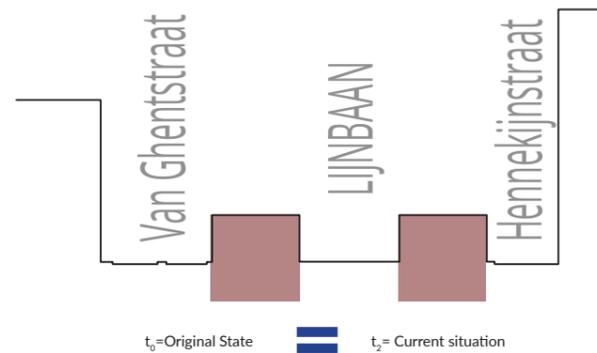


Figure 06| Lijnbaan street profile indicating the distinction between housing-commerce which has been preserved until today.

Regarding the temporary structures in terms of materiality, the main pedestrian axes were unobstructed so as to allow for seamless movement, with only selected elevated glass displays occasionally interrupting the flow. Fabricated from glass and metal, these displays, served a double purpose: not only facilitating economic interests for the shops by showcasing products but also, functioning as temporary exhibition spaces where shoppers could admire an array of curiosities from exotic parrots to small artifacts. Even though the displays were removed, due to an initiative of the shop owners three of them have re-taken their place in Lijnbaan in 2022 as small exhibition spaces (Fig. 07), while some new pavillions have also been added (#Rotterdam Centrum, 2022).



Figure 07| Showcases in the original condition & temporary structures as envisioned by Broek & Bakema and the reinstatement of the displays in 2022.

## Repetitive use of elements

The building blocks of Lijnbaan are characterized by a modular architecture in which a varied repetition of prefabricated components and a strong interweaving of interior and exterior space set the main tone. Per main element in the ensemble there are subtle variations within the common use of materials.

The construction of the retail strips in Lijnbaan is rather standardized, based on a reinforced concrete frame construction and a dimensioning system of 1.1-meter lengthways and 1-meter crossways (Lijnbaan shopping precinct, n.d.). The same module also determined the outdoor surface, while facades were composed of prefabricated concrete posts and parapets (monumenten.nl, 2023). The repetition of this grid results in the uniformity of the complex, which WdJ Architects used to design the expansion in 2014 (Fig. 08).

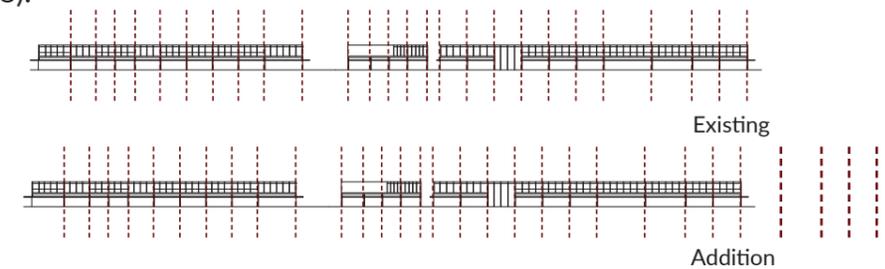


Figure 08| Uniformity of the urban ensemble-Configuration of the facades. The grid as the connecting element between the existing and the addition.

The principles guiding the design of the shops emphasized uniformity and flexibility in the layout. Two fundamental shop types were developed for the complex: the standard and the entresol. The standard type had two retail levels and a basement, while the entresol one consisted of two levels at the front and three at the rear in a split-level arrangement (monumenten.nl, 2023). The addition of mezzanines and voids allowed for numerous variations to the two main types (Fig. 09). Large openings and display windows dominated the facades on the ground floor, while the above ones were neutral covered with prefabricated elements. (Lijnbaan shopping precinct, n.d.) This standardization not only enhanced the economic status of the construction process but also expedited the overall timeline, while allowing for the uniformity of the ensemble in case of further expansion.

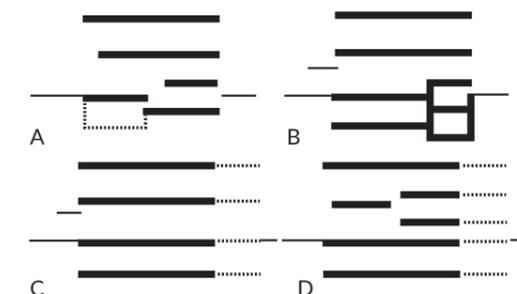


Figure 09| Variations of the standard and the entresol type.

The whole complex consisted of 65 shops in total and yet it could be understood as a “single building” based on a modular grid and the continuous canopies that interconnected the stores (monumenten.nl, 2023). Except from promoting the uniformity of the whole complex, these horizontal elements, also served as a transitional space bridging the interior and the exterior, the private and public space, while protecting both the shoppers and the passers-by from the rain. The canopies -the most characteristic element of the Lijnbaan- underwent many interventions throughout the years -the most notable in 1996, when the wooden parts were replaced by glass fillings -resulting in the alteration of the original character of the complex. In 2014, after being designated as a national monument, the canopies were restored to their original condition by Mei architects, bringing back the touch & feel of the 1950s.

To conclude, as already stated, Lijnbaan underwent multiple successive alterations throughout the years, the documentation and assessment of which can be observed in the following table (Fig. 10).

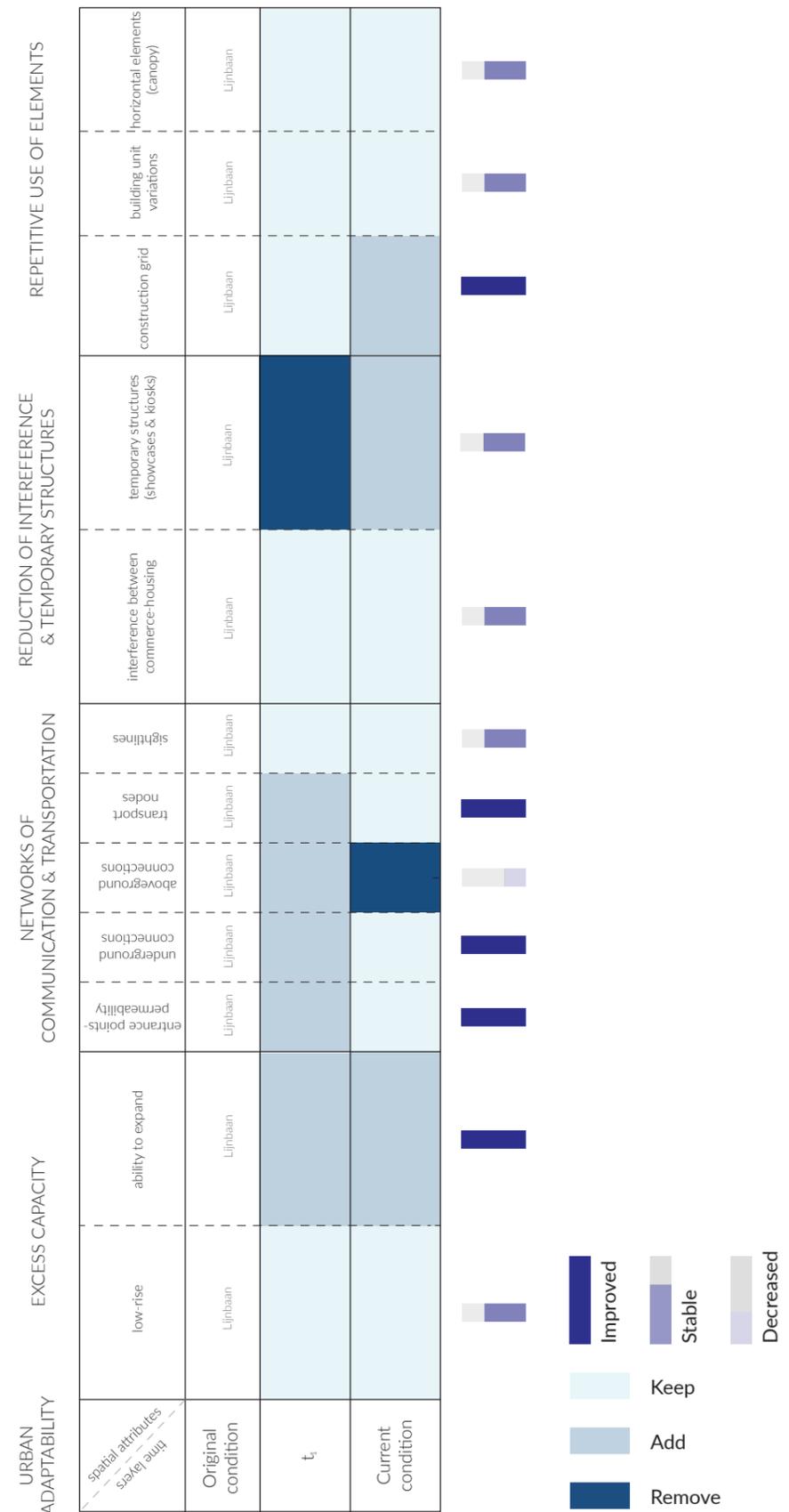


Figure 10| Lijnbaan K-A-R intervention strategies & impact assessment diagram.

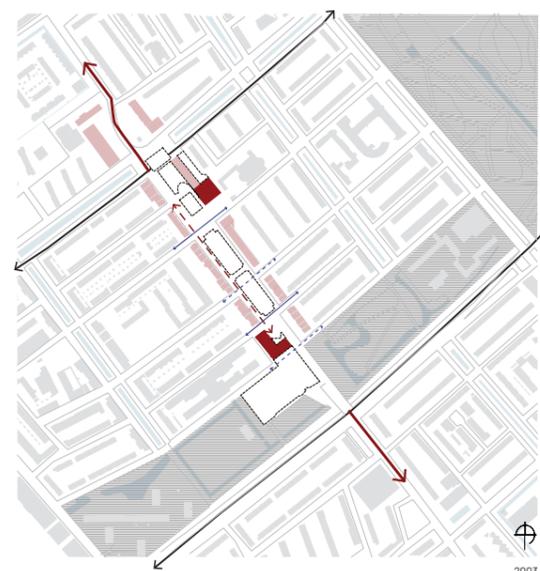
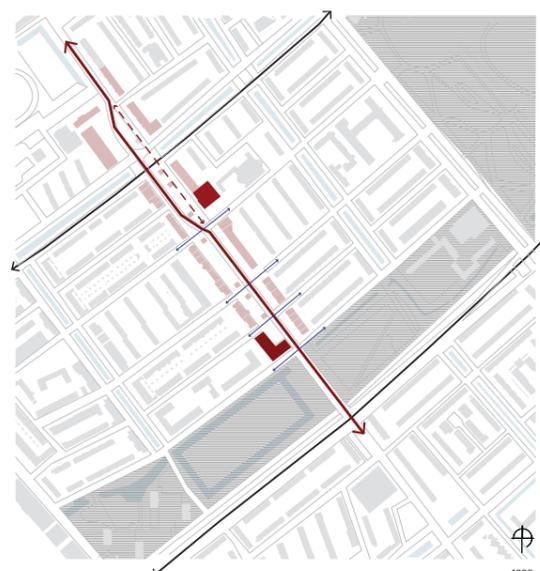
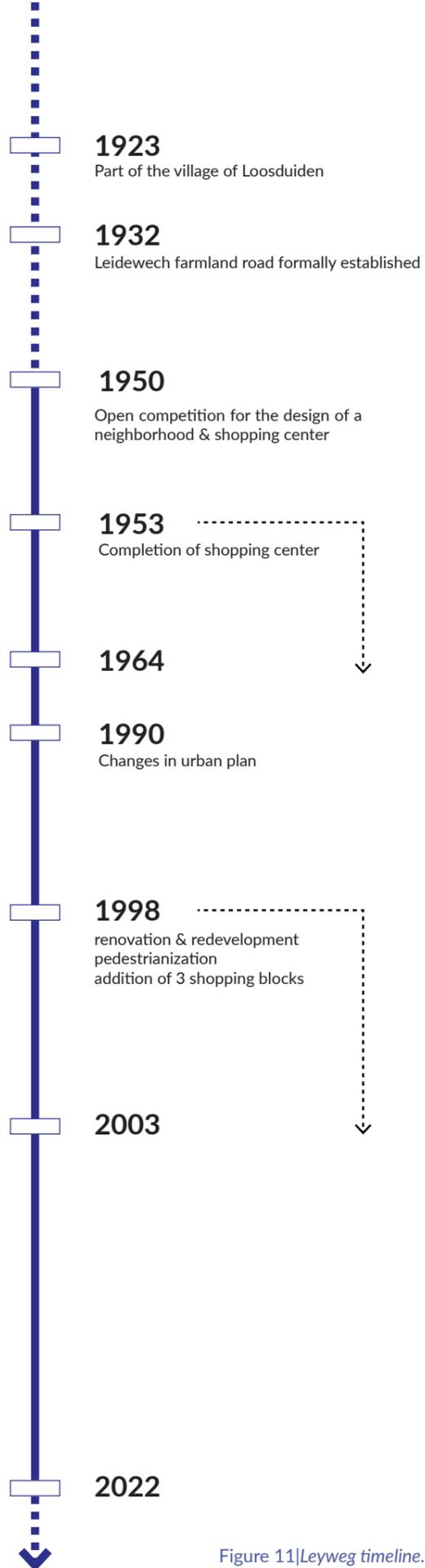


Figure 11|Leyweg timeline.

## 4.2 Leyweg Winkelcentrum

The second research case selected for the present paper is Leyweg Winkelcentrum, developed in 1953 as part of Morgenstond, one of the four neighborhoods in Dudok's expansion plan for the Hague. In contrast to Lijnbaan, Leyweg's configuration initially, consisted of both pedestrian and car ways and was perceived by the public as an incoherent urban structure (Valentijn, 2002).

Throughout the years, Leyweg underwent one major alteration between 1998 and 2003 that consisted of an extended renovation of the existing structure and the addition of three new volumes (Fig. 11).

### Excess capacity

Dudok's plan regarding Morgenstond was characterized by low-rise construction, and more specifically, building blocks with a maximum of four floors. Especially on the west side of Leyweg there is a distinct typology, altering between four-floor high residential blocks and one-floor high ones. This alternation is still evident today, enabling sightlines towards the common open spaces of the rear residential units.

LOW-RISE

Leyweg, was initially planned as a clearly defined North-South axis linked with the surrounding area, allowing for its future expansion in that direction. However, due to the later additions in both entrances and the middle part, this axis was interrupted, resulting in the current condition, where Leyweg is perceived more as a disconnected urban area rather than a finely meshed urban structure with the surrounding tissue.

ABILITY TO EXPAND

### Networks of communication & transportation

Regarding networks, in the case of Leyweg, neither subterranean nor elevated connections were implemented. Even though there were proposals for Leyweg to be developed as the first underground shopping center (*Sub-city aan Leyweg voor nieuwe wijken, 1955*), they were never realized and therefore, they will not be examined in the current research.

Originally, Leyweg was a shopping street following the dumbbell configuration, with V&D and Hema as the anchor points on the two main entrances on Hengelolaan and Melis Stokelaan, respectively. With the exception of the primary entrances, Leyweg's urban structure was rather permeable allowing for connections with the adjacent smaller streets throughout its entire length. The later additions not only partially interrupted the main entrances but also abolished certain secondary ones. The same impact can be observed in the case of sightlines, which used to be uninterrupted but have been severely affected by the addition of the three residential towers at the south entrance of the complex.

ENTRANCES & SIGHTLINES

## Reduction of interference between temporary & permanent structures

HOUSING-  
COMMERCE

Regarding the commerce-housing relation, in this case, retail establishments were situated on the ground floor, while residential units were positioned above them. This configuration is still evident today.

TEMPORARY  
STRUCTURES

Temporary structures in the case of Leyweg, took the form of both kiosks and window displays (Fig. 12 & 13). The latter ones, in contrast to the case of Lijnbaan, were linked to the stores via the canopies creating a distinct spatial quality. In the middle part, small kiosks were set up serving secondary purposes for the complex. Both the window displays and the kiosks were removed, and the latter were replaced by more permanent and out of scale structures (Fig. 14). The only temporary structures that can be found in the current situation are certain flower kiosks in the northern part of the complex, designed by Kraaijvanger in 2003.

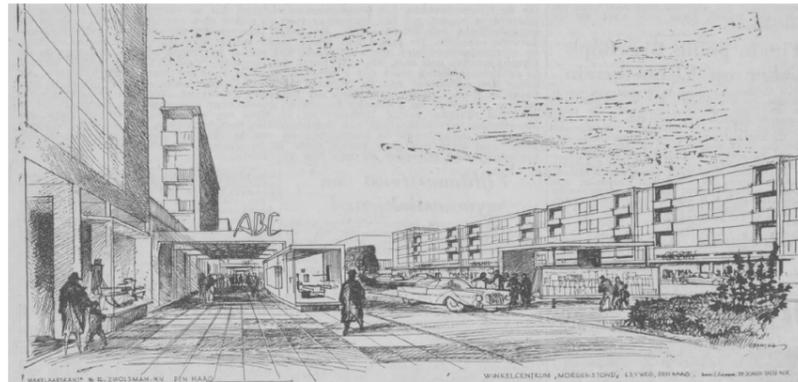


Figure 12| Sketch impression of Leyweg, where the kiosks and the canopies can be identified. (Sub-city aan Leyweg voor nieuwe wijken, 1955).



Figure 13| Impression of Leyweg. The kiosks and the canopies highlighted in blue. 1962.(Haags Gemeentearchief).

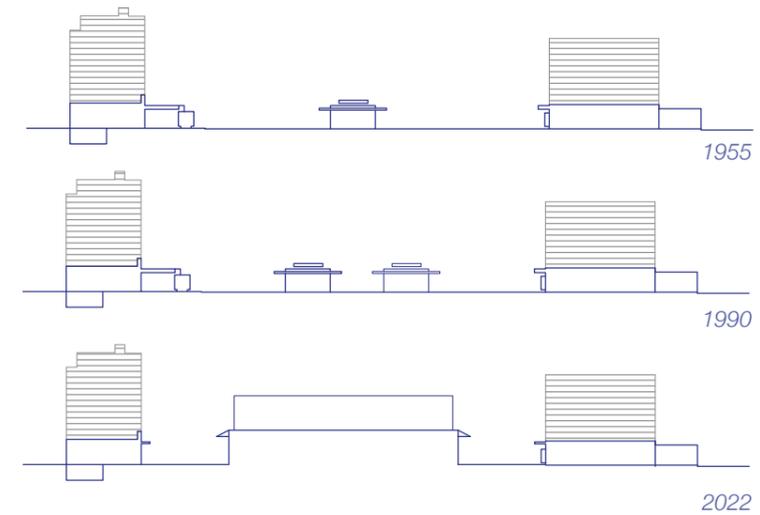


Figure 14| The evolution of the kiosks & canopies from the original condition until today (street profiles).

## Repetitive elements

In general, Morgenstond's urban development was based on heavy standardization, while variation was sought in the detailing and rhythmization during the design process (Valentijn, 2002). More specifically, the primary organizing principle of the neighborhood was the elongated building block following the regional elongated streets' pattern and not the construction grid, as in the case of Lijnbaan. Even though Morgenstond's image is characterised by endless series of multi-storey apartment blocks -with a maximum of four storeys-, numerous variations can be observed, especially in the way the blocks are opened up and the courtyards are laid out. The variation of the entrance points contributes to the differentiation of the public space surrounding the residential units (Valentijn, 2002). Typical for Moerwijk and Morgenstond are the elongated façade walls, which are characterised by a strong vertical articulation.

Leyweg as part of the Morgenstond neighborhood has similar characteristics regarding the building unit variations. Even though the majority of the residential buildings are four-story high, on the west side of the axis, there is an alternation between one-story volumes and four-story ones. This is still visible today, setting it apart from the surrounding area.

As already mentioned in the section of temporary structures, the canopies connecting the shops in Leyweg had a different quality compared to those in Lijnbaan. They were designed bearing a metal frame, forming a passage in front of the stores, where shoppers could walk in between the stores on one side and the window displays on the other. The original canopies no longer exist, and have been replaced by simpler ones attached to the stores on the side altering the original spatial quality of the 1950s shopping mall. Finally, the scale of the added canopies regarding the middle part bears no connection to the pre-existing ones'.

BUILDING UNIT  
VARIATIONS

HORIZONTAL  
ELEMENTS

### 4.3 Impact Assessment

Following the value assessment of the original condition (see Appendix) and the documentation of the K-A-R interventions for each of the research cases (Fig. 10 & 15), the final step of this research is the impact assessment in terms of the urban adaptability levels, depicted using a spider-web diagram (qualitative) for the pre- and post- redesign condition (Fig. 16 & 17).

Regarding Lijnbaan, the overall impact of the implemented interventions can be identified as mostly beneficial, while for Leyweg minor adverse. It should be taken into consideration that Lijnbaan's original condition was assessed higher than Leyweg's, which may have an impact on the final overall assessment. More specifically, as is evident in the spider-web (Fig.16), for Lijnbaan criteria 1 and 2 have improved, while 3 has decreased and 4 has remained stable.

For Leyweg, the interventions carried out had a negative impact on all aspects of urban adaptability (Fig. 17), with aspects 1 and 2 being particularly severely affected.

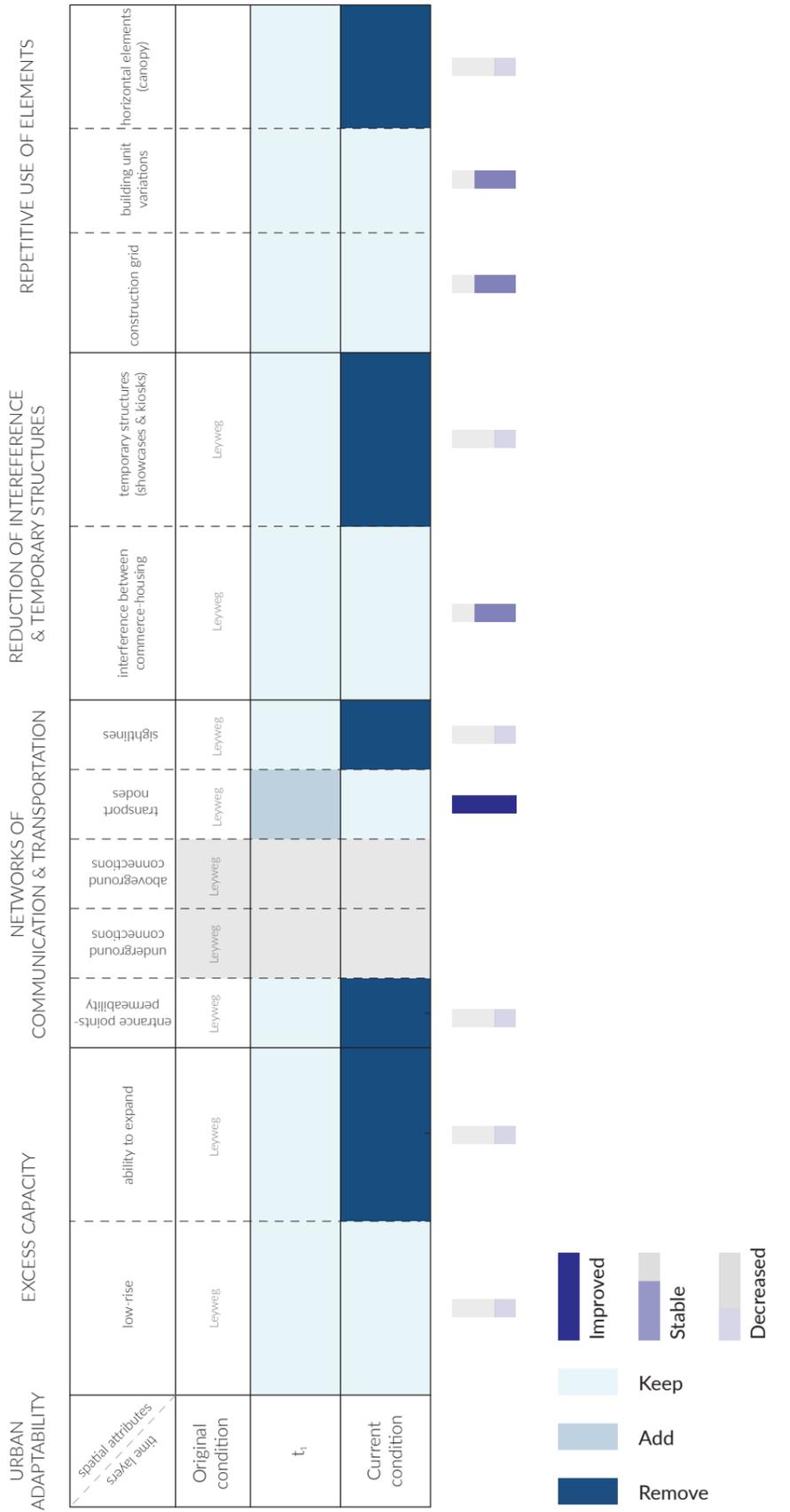
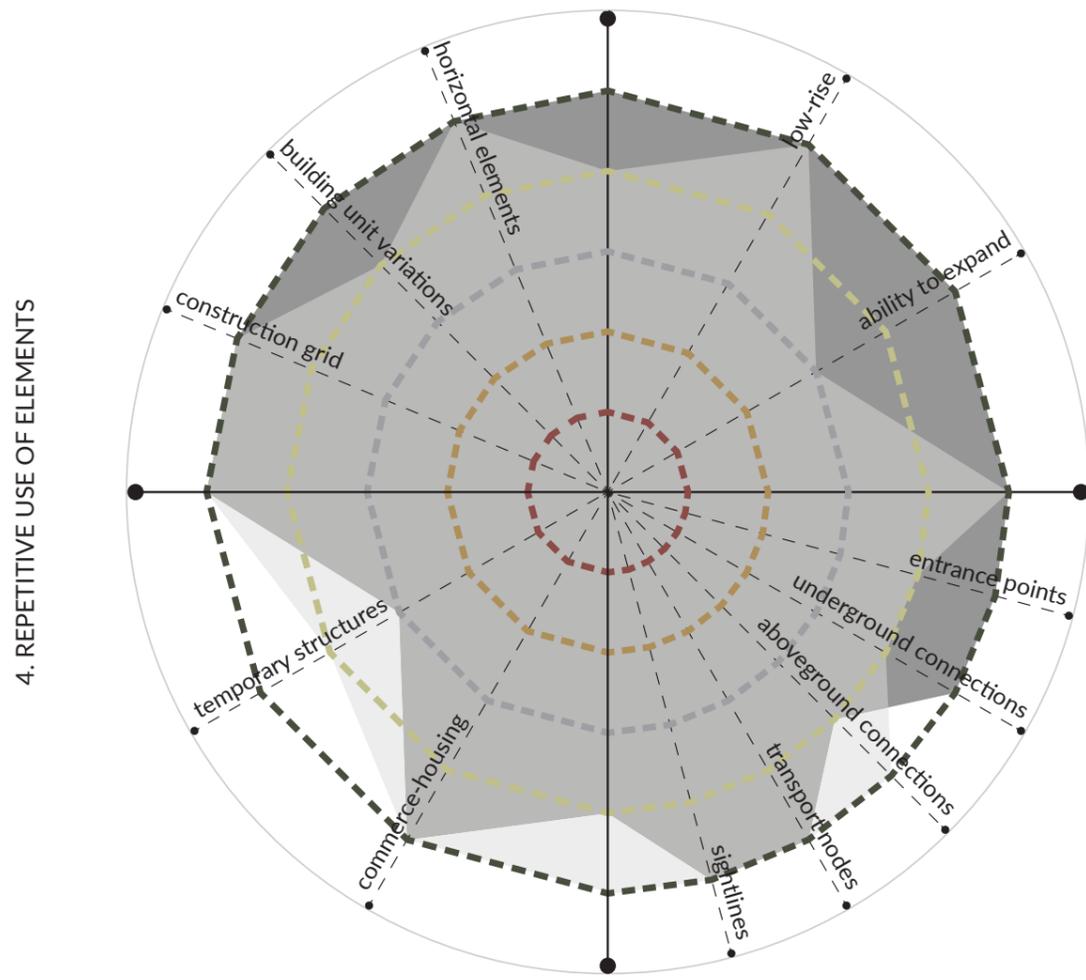


Figure 15| Leyweg K-A-R intervention strategies & impact assessment diagram.

1. EXCESS CAPACITY



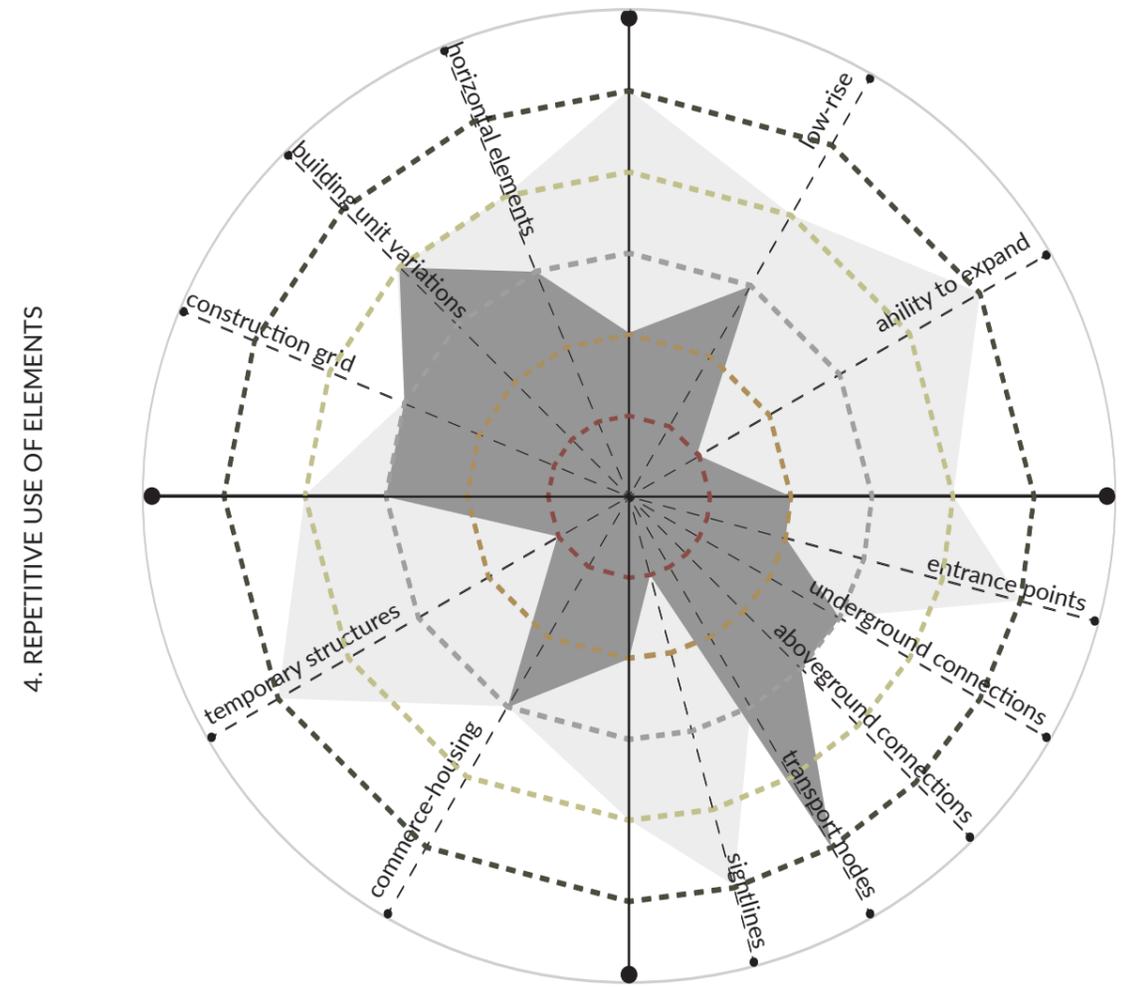
3. INTERFERENCE BETWEEN PERMANENT & TEMPORARY STRUCTURES

Original condition Current condition

Major beneficial	Major beneficial	██████
Moderate beneficial	Major beneficial	██████
Neglegable beneficial	Minor beneficial	▬▬▬▬
Minor beneficial	Minor beneficial	▬▬▬▬
Neutral	Neutral	▬▬▬▬
Neglegable adverse	Minor adverse	▬▬▬▬
Minor adverse	Minor adverse	▬▬▬▬
Moderate adverse	Major adverse	▬▬▬▬
Major adverse	Major adverse	▬▬▬▬

Figure 16| Lijnbaan impact assessment diagram.

1. EXCESS CAPACITY



3. INTERFERENCE BETWEEN PERMANENT & TEMPORARY STRUCTURES

Original condition Current condition

Major beneficial	Major beneficial	██████
Moderate beneficial	Major beneficial	██████
Neglegable beneficial	Minor beneficial	▬▬▬▬
Minor beneficial	Minor beneficial	▬▬▬▬
Neutral	Neutral	▬▬▬▬
Neglegable adverse	Minor adverse	▬▬▬▬
Minor adverse	Minor adverse	▬▬▬▬
Moderate adverse	Major adverse	▬▬▬▬
Major adverse	Major adverse	▬▬▬▬

Figure 17| Leyweg impact assessment diagram.

# 05 Discussion

*“The best environment is one in which there are both new stimuli and familiar reassurances, the chance to explore and the ability to return.”*

*K. Lynch, 1972, p.204*

Adaptability is a notion that has been continuously explored, especially during the last decades, since the need for future provision is becoming more and more topical. K. Lynch’s normative theory (1981) defines “fit”, which is directly related to adaptability, as one of the necessary qualities of a good city form, enlarging the concept of adaptability from the building scale to the urban one.

Lynch’s spatial criteria implemented in the present research referred mainly to the design of cities’ expansions, whereas today, the need for the management of the existing and its redevelopment is rendered more urgent. In this context, Lynch’s terminology regarding adaptability was revisited, reinterpreted and combined with the notion of heritage so as to ensure both continuity and change in the built environment.

After all, in the dynamic process of continuous urban evolution, “monuments” should not only be preserved but continuously presented as propelling elements of development (Rossi, 1982); as catalysts that accelerate the urban processes.

# 06 Conclusion

As already stated in Chapter 01, the presented methodology could possibly be applied, also, in other types of buildings of modern heritage that share common features, however, there are certain limitations that should be considered:

Firstly, the definition of adaptability in this case focuses more on the spatial aspect, even though it can also be examined in terms of time boundaries and land ownership.

In addition, adaptability in this framework is dealt with on the urban scale, rather than the building one.

Finally, even though the research is based on a more general approach regarding the Dutch post-war shopping malls, it still is case-specific since the values embedded in each case may vary. Therefore, the results cannot and should not be generalized.

To conclude, the aim of the present research paper was to explore the notion of urban adaptability by incorporating the concept of continuity in it. Therefore, given the apparent interrelationship between continuity and change in the contemporary context, adaptability could be redefined as the ability of a spatial system to generate, test, and facilitate new environmental and behavioral possibilities in regard to future change (Lynch et al, 1990), without the loss of continuity and basic structure. This redefinition constituted the scope of the present research and aspires to be seen as a step towards the reconciliation of continuity and change so as to ensure resilient future-proof management of heritage resources.

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# A ppendix

	Secondary Values	References
Social	Spiritual	beliefs, myths, religions (organized or not), legends, stories, testimonial of past generations;
	Emotional, individual	memory and personal life experiences;
	Emotional, collective	notions related with cultural identity, motivation and pride, sense of "place attachment" and communal value.
	Allegorical	objects/places representative of some social hierarchy/status;
Economic	Use	the function and utility of the asset, original or attributed;
	Non-use	the asset's expired function, which has its value on the past, and should be remained by its existence (of materials), option (to make some use of it or not) and bequest value (for future generations);
	Entertainment	the role that might be have for contemporaneous market, mainly for tourism industry;
	Allegorical	oriented to publicizing financially property;
Political	Educational	the education role that heritage assets may play, using it for political targets (e. g. birth-nations myths, glorification of political leaders, etc.);
	Management	made part of strategies and policies (past or present);
	Entertainment	it is part of strategies for dissemination of cultural awareness, explored for political targets;
	Symbolic	emblematic, power, authority and prosperous perceptions stem from the heritage asset;
Historic	Educational	heritage asset as a potential to gain knowledge about the past in the future through;
	Historic-artistic	quality of an object to be part of a few or unique testimonial of historic stylistic or artistic movements, which are now part of the history;
	Historic-conceptual	quality of an object to be part of a few or unique testimonial that retains conceptual signs (architectural, urban planning, etc.), which are now part of history;
	Symbolic	fact that the object has been part/related with an important event in the past;
Aesthetical	Archaeological	connected with Ancient civilizations;
	Artistic	original product of creativity and imagination;
	Notable	product of a creator, holding his signature;
	Conceptual	integral materialization of conceptual intentions (imply a conceptual background);
Scientific	Evidential	authentic exemplar of a decade, part of the History of Art or Architecture;
	Workmanship	original result of human labour, craftsmanship;
	Technological	skillfulness on techniques and materials, representing an outstanding quality of work;
	Conceptual	integral materialization of conceptual intentions (imply a conceptual background);
Age	Workmanship	craftsmanship value oriented towards the production period;
	Maturity	piece of memory, reflecting the passage/lives of past generations;
	Existential	marks of the time passage (patine) presents on the forms, components and materials;
	Ecological	Spiritual
Essential		identification of ecological ideologies on its design and construction;
Existential		manufactured resources which can either be reused, reprocessed or recycled;

Figure i| Tarrafa, S. & Pereira Roders. (2011) *Primary & Secondary cultural values table*. Retrieved from <https://brunodeandrade weblog.tudelft.nl/teaching/minor-heritage-design/> Last access 04/04/2023.

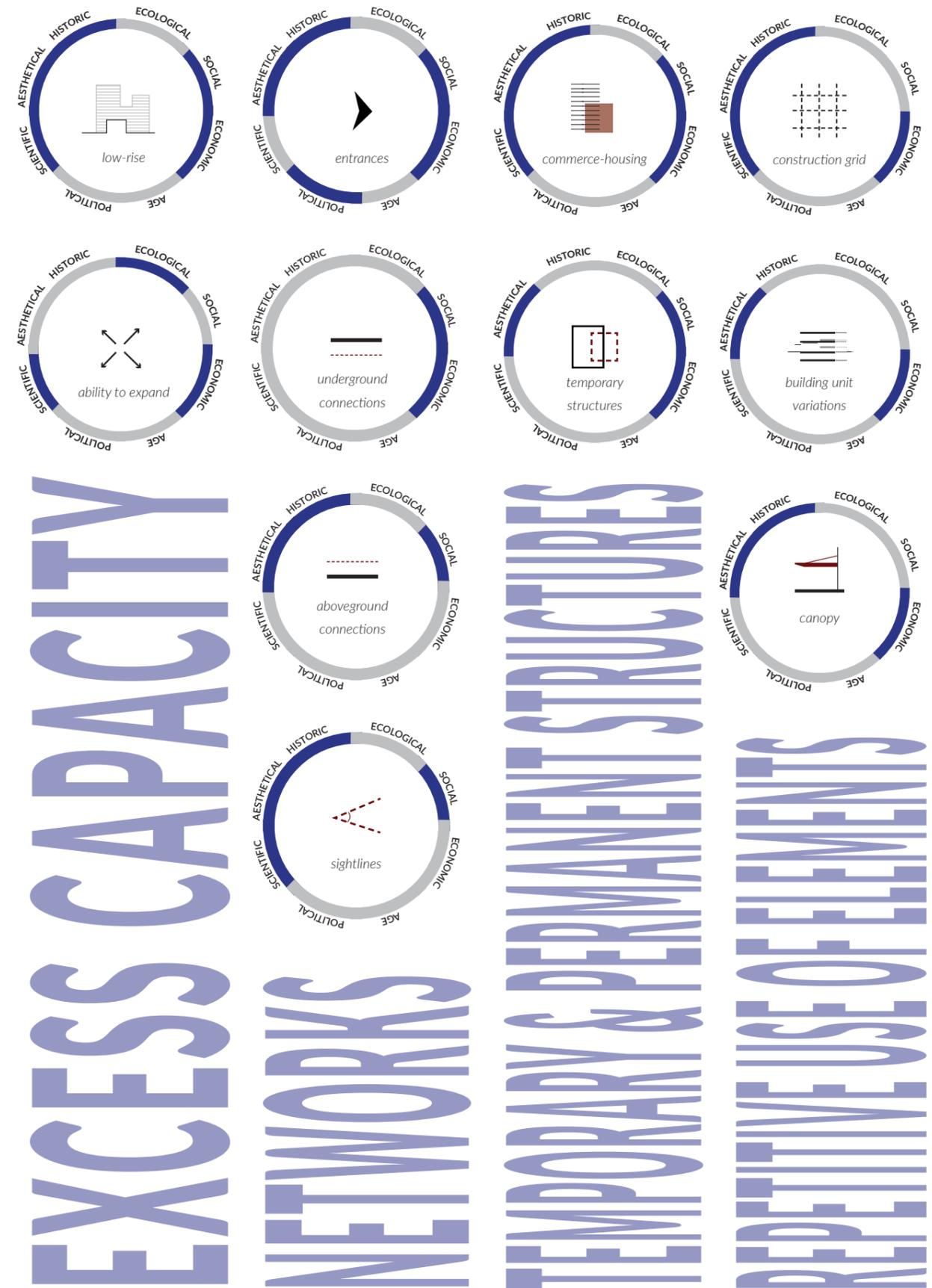


Figure ii| Lijnbaan value assessment.

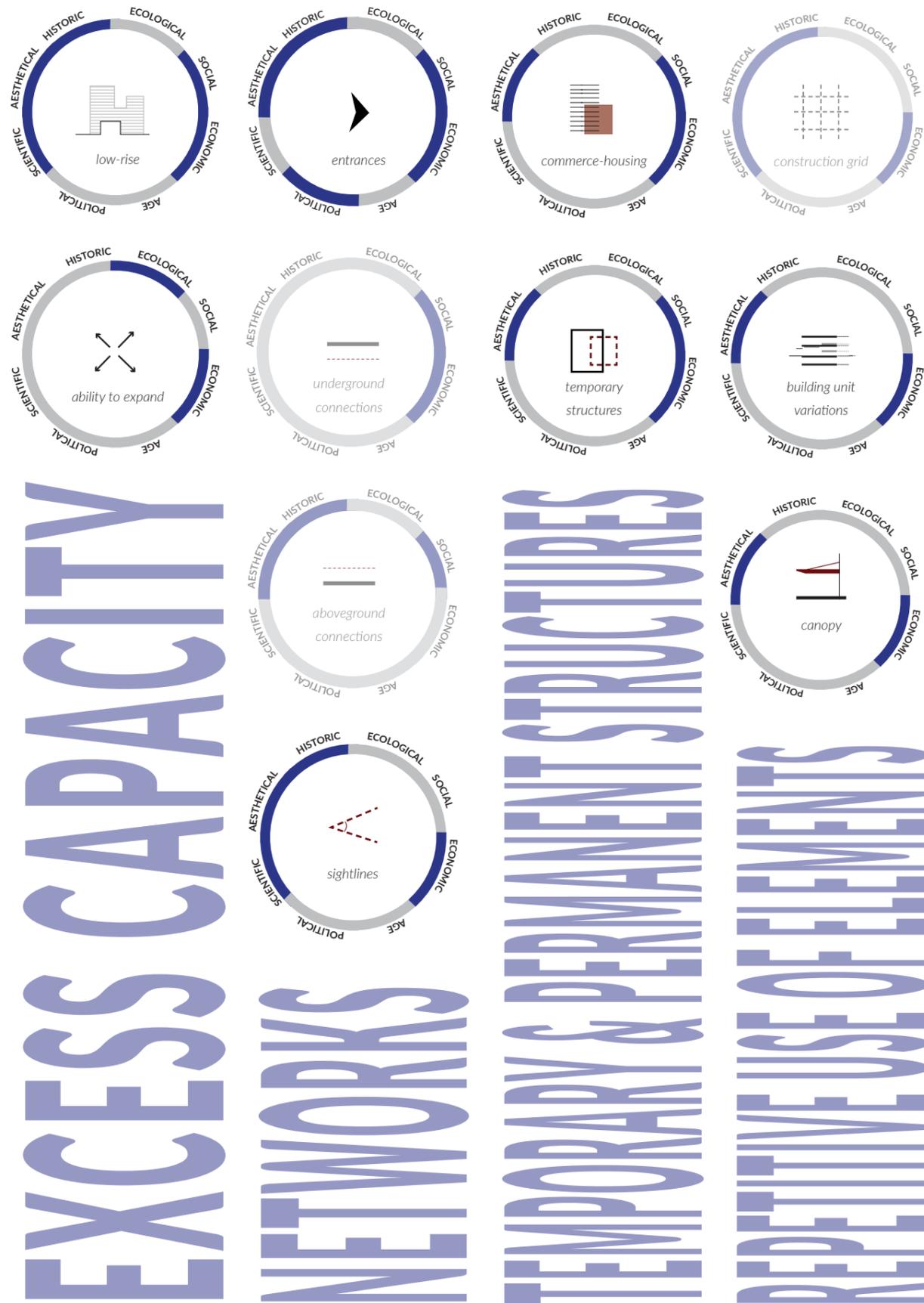


Figure iii | Leyweg value assessment.