Towards A Evolution Heritage

20th Century Shopping Mall Skin Redesign

Graduation Reflection
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1. Introduction

1.1 The definition of skin

The outermost layer of a building is referred to as the “skin”. It serves a critical function in separating the interior structure from the external environment. [1] Apart from the function, it not only shapes a building’s external identity but also communicates its history, purpose, style, and cultural context. [2]

In the realm of built heritage, Steward Brand (1995) categorized skin as one of the six shearing layers of a building. He notes the mutability of the skins ‘to keep up with the fashion or technology, or for wholesale repair.’ [3] In recent decades, the evolution of building envelope technology, coupled with public awareness of environmentally sustainable living, has made skin upgrade an integral part of most conservation projects. [4]

1.2 Problem statement

The existing literature about façade design appears to be on opposing sides – the one emphasizing the application of state-of-the-art materials and technologies while the other prioritizing complete preservation of the original design. How to modify the old appearance of a building and connect the new design with the old is less described. This results in a lack of strategies to follow when we deal with non-listed heritage buildings such as the shopping malls. They present unique challenges in balancing necessary updates and changes while preserving heritage values.

Many malls constructed in the latter half of the last century in the Netherlands are now considered outdated, despite featuring the latest fashion trends at the time of their construction. Some of these malls have undergone multiple renovations to adapt to the changing needs of society, while others have remained unchanged and face the challenge of high vacancy rates. After analyzing several cases, they showcase that overly radical redesigns of a mall’s exterior can result in problems such as material waste, energy loss, and the loss of heritage values. On the other hand, inadequate intervention fails to address the issue of low attractiveness, which can lead to the risk of obsolescence and social insecurity. .

1.3 Research Question

The main research question in this study is: ‘How can the preservation of heritage values and establishment of new identities be balanced in the skin redesign of 20th century Dutch shopping malls?’

1.4 Research Case - Hoog Catharijne, Utrecht, The Netherlands

Hoog Catharijne (HC) is a shopping mall in Utrecht, The Netherlands, that was constructed in the 1960s as part of the Urban Plan Hoog Catharijne. It aimed to revitalize the city’s economy by creating a modern shopping mall, apartments, offices, a new railway station and bus station, and reconstructing the area’s infrastructure. Despite its ambitious goals, the project was perceived as rigid, outdated, and unattractive even before its official opening. The mall’s image was further damaged by the presence of drug addicts and homeless people. In 1987, the city launched the Utrecht City Project (UCP) to upgrade the area, but the plan was never implemented due to conflicting interests of stakeholders. By 1997, many believed that HC would be demolished. However, a new master plan to renovate the area was approved in 2003. [5] Finally, in 2005, STIR Architecture was chosen to further develop the design, and the majority of the project was completed by 2020. [6]

The case study was selected due to its distinctive and intricate context, situated amidst a historical city center and a newly developed urban area, posing challenges in preserving the old and creating new designs. Moreover, the project underwent nearly 30 years of discussion and debate prior to implementation, leading to a meticulously planned approach that incorporated

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[1] Kuipers, M., & de Jonge, W. (2017). *Designing from Heritage: Strategies for Conservation and Conversion*. Delft University of Technology. p40.

[2] Schittich, C., Lang, W., & Krippner, R. (2006). *Building skins*. Birkhäuser. p9-10.

[3] Brand, S. (1995). *How buildings learn: What happens after they’re built*. Penguin.p19.

[4] Pomponi, F., Piroozfar, P. A., Southall, R., Ashton, P., & Farr, E. R. (2015). Life cycle energy and carbon assessment of double skin façades for office refurbishments. *Energy and Buildings*. 109. p143.

[5] Hommels, A. (2008). *Unbuilding cities: obduracy in urban sociotechnical change*. Mit Press.p41-45.

[6] Gemeente Utrecht, CU2030 station area. https://cu2030.nl/project/hoog-catharijne. (accessed May 17, 2023).

multiple proposals. The final design integrated various designs and strategies, making it a comprehensive case study with the potential for practical application in other mall redesign projects. The research primarily focuses on comparing the original building envelope constructed in the 1960s with the renovated version completed in 2020.

1.5 Design Case - Amsterdamse Poort Cluster 8, Amsterdam, The Netherlands

Situated in close proximity to the Amsterdam Bijlmer ArenA railway station and the ArenA Boulevard, adjacent to the multicultural Bijlmermeer neighborhood, the Amsterdamse Poort (AMS) shopping center was established in 1987. Renowned as one of the largest retail establishments in the Netherlands, it offers a diverse array of commercial options to cater to a wide range of consumer preferences. However, in recent years, the Amsterdamse Poort has encountered a series of challenges. These include a considerable vacancy rate within the shopping center and a notable level of safety concerns. [7]

Cluster 8, situated at the heart of the shopping complex, was designed by the esteemed architectural firm Van den Broek en Bakema. In the year 2010, the Amsterdamse Poort shopping center underwent a renovation led by OZ architects. The focal point of this renovation was the notable transformation of the façade. The previous white panels were covered by new colorful polycarbonate panels, which made the building have a distinct look within the complex. The selection of this particular case was motivated by its unique positioning within diverse urban spaces and its abundance of rich facade design elements both within the building itself and its surroundings. Therefore, it serves as an ideal case for testing and demonstrating the research and findings, utilizing its design as an extension of the research question.

[7] Amsterdamse Poort (shopping centre). (2023, May 15). In Wikipedia. https://en.wikipedia.org/wiki/Amsterdamse_Poort_(shopping_centre).

2. Methodology and Methods

2.1 Methodology

The study is grounded in the theoretical framework of heritage architecture. Firstly, it adopts Brand's classification of six shearing layers [8] (Fig. 1). and further expands on the skin layer by categorizing it into diverse components based on Veldpaus's classification of tangible and intangible attributes of heritage buildings (Fig. 2). [9] Additionally, the research applies Pereira Roders' proposed value matrix (Fig. 3) to map the heritage values onto the skin layer. [10]

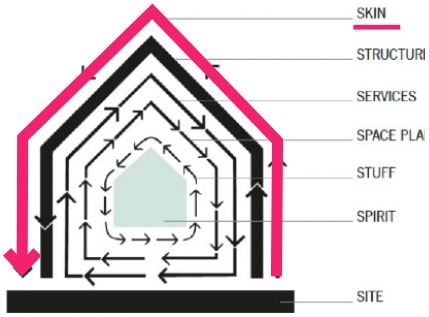

Fig. 1 Six shearing layers (Brand, 1995)

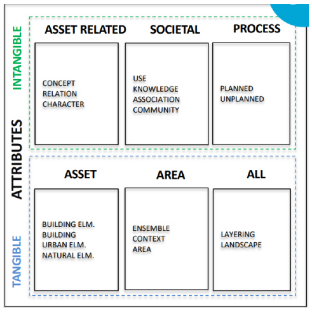

Fig. 2 Tangible and intangible attributes classfication (Veldpaus, 2015)

Fig. 3 Heritage value classification (Roders, 2007)

2.2 Methods

As depicted in Fig. 4, the building's skin has been divided into several tangible attributes, namely material, pattern, sign, element, and roof. These attributes are closely linked to intangible aspects such as the relationship with the context, exterior and interior character, and the perception of architecture. Various data collection methods have been employed to analyze the aforementioned attributes. They include archival research and field trips to compare old and new photographs, as well as reading old newspapers, academic papers, and publications to understand the renovation process and different stakeholders' viewpoints. The design office, Stir Architecture, provided primary documents and drawings, which were crucial in gaining a deeper understanding of their design intentions. Furthermore, the study incorporates a survey consisting of 100 randomly selected comments from online platforms YouTube and SkyscraperCity. Additionally, 379 photographs are obtained from Instagram and Facebook to gather individuals' perspectives on the project.

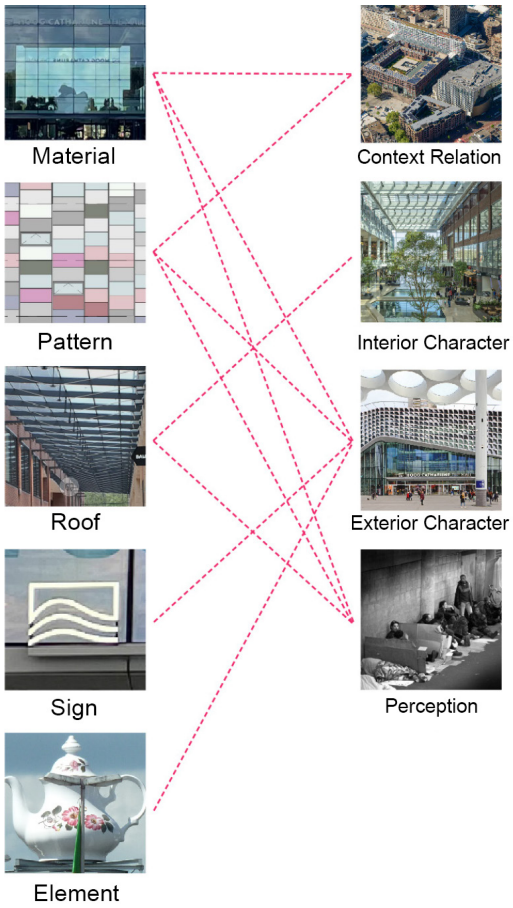

Fig. 4 The tangible and intangible attributes of skin layer

[8] Brand, S. (1995). *How buildings learn: What happens after they're built.* Penguin.p19.

[9] Veldpaus,L.(2015).Historic urban landscapes framing the integration of urban and heritage planning in multileve/governance.[Phd Thesis 1 (Research TU/e Graduation TU/e),Built Environment].Technische Universiteit Eindhoven. p85.

[10] Silva, A., & Roders, A. (2012). Cultural heritage management and heritage (impact) assessments. *Proceedings of the Joint CIB W, 70, W092.* p6.

3. Relevance

3.1 What is the relation between your graduation project topic,your master track (Ar,Ur,BT,LA, MBE) and your master programme (MSc AUBS)?

Today, renovation projects are becoming increasingly significant in the building industry, making up 70-80% of the European market. [11] Many of these project require a change of appearance due to the change of interior functions, people's aesthetics, or the urban settings. This research presents a comprehensive set of redesign methodologies and principles specifically tailored to such projects. Currently, many non-protected building's façades are easy to be demolished and replace with a total new design. However, since it is the layer people see and interact with the most in the city, the skin carries people's memory and history of the city development. [12] Therefore, it is worthwhile to approach the facades of these seemingly "unimportant" buildings with more care and consideration. This research encourages designers to explore the cultural and historical values embedded in building skins and aims to reduce the amount of casual demolition. Moreover, careful consideration of the skin components such as materials, façade patterns, glazing and shading during the design phase can help the old building move towards sustainability and circular economy. [13]

3.2 How did your research influence your design/ recommendations and how did the design/recommendations influence your research?

By presenting a case study of HC and utilizing a value-based assessment approach, this research provides an example of how to evaluate the exterior of shopping malls. The findings of this study have contributed to the formulation of multiple considerations that guide my own design of AMS.

1. Balance between the tangible and intangible attributes: According to Veldpuas (2015), the tangible and intangible attributes often coexist within the same heritage asset. A modification of one aspect will inevitably trigger a change in another. [14] This suggests that achieving a well-balanced skin redesign requires careful consideration of both sides. A design can either start with a vision of intangible attributes to guide the tangible attributes or begin by identifying the tangible aspects and subsequently shaping the intangible ones.

2. Balance between the attributes and values: As The Burra Chart (2013) stated, heritage values are embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. [15] Hence, the preservation of values necessitates a comprehensive assessment of the attributes involved. Additionally, groups and individuals attach different weight to cultural values and different significances to the same heritage asset. [16] Therefore, the involvement of the local community and other stakeholders not only helps designers understand the multiple meanings of facades but also establishes the necessary foundation for initiating a well-balanced design approach.

3. Balance Between the preservation and alteration: as the city continues to develop, the heritage and its associated values are dynamic and constantly evolving. [17] According to Veldpaus (2015), the principle of the alteration is to enhance both the social and spatial aspects of the existing building in collaboration with the local community, while preserving its current values and considering future sustainability. [18] Therefore, the heritage values, current requirements, and future adaptability are equally important in considering making a change to the skin. Such considerations prevent the creation of new identities that lack connection to the local community and ensure that the design remains integrated within its context and part of the city's history.

3.3 How do you assess the value of your way of working (your approach,your used methods,used methodology)?

The general methodology is founded on existing studies and has proven to be effective in the selected case. This research specifically examines the challenges associated with redesigning non-listed heritage buildings, particularly shopping malls, with a focus on achieving a balance between incorporating

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[11] Ayón A, Pottgiesser U & Richards N. (2019). *Reglazing Modernism*. Birkhäuser. p22.

[12] Rodger, R. (2022). The facade of power and the power of the facade: memory and meaning in Victorian cities. *Urban History*, p1-2.

[13] Pushkar, S. (2015). Application of Life Cycle Assessment to various building lifetime shearing layers: Site, Structure, Skin, Services, Space, and Stuff. *Journal of Green Building*, 10(2), p200.

[14] Veldpaus, L. (2015). Historic urban landscapes: framing the integration of urban and heritage planning in multilevel governance. *Bouwstenen*, p70.

[15] The Burra Charter, Australia ICOMOS, (2013) http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf.(accessed May 17, 2023).

[16] Pereira Roders, A., & Hudson, J. (2011). Change management and cultural heritage. *Facilities change management*. p175-189.

[17] Ginzarly, M. (2019). Socio-cultural characterization of historic urban landscapes: an integrated approach based on the use of social media. p80

[18] Veldpaus, L. (2015). Historic urban landscapes: framing the integration of urban and heritage planning in multilevel governance. *Bouwstenen*. p55-56

new features and preserving the existing ones. It expands upon the existing six shearing layers framework by delve into a more detailed analysis of the skin layer, recognizing its significance and multifaceted roles. Building upon Veldpaus's (2015) theory, this research further develops a comprehensive taxonomy that considers both tangible and intangible aspects, with a specific emphasis on the building's skin. By presenting a case study of HC and utilizing a value-based assessment approach, this research provides an example of how to evaluate the exterior of shopping malls.

Unlike listed heritage buildings, which many experts, organizations, and governments often try to define their values, non-designated heritage remains largely absent in literature. [19] Hence, methods like using international documents to do the value assessment [20] are not applicable for shopping malls. However, this research still adopts a value-based approach by applying the same principles of text analysis and utilizing Pereira Roders' value matrix (2007), but with a unique focus on using social media as a data source. The results demonstrate that social media platforms provide individuals with opportunities to express their opinions and emotions, offering valuable insights into everyday interactions with the building that may not be captured by experts. [21] For example, despite the prevailing view of the government and developers that the old HC skin required replacement, still a lot of residents expressed nostalgia for Utrecht's past through online comments.

3.4 How do you assess the academic and societal value,scope and implication of your graduation project,including ethical aspects?

Cultural contribution: Using the skin evaluation system, people will be able to understand more about a façade's cultural value and original design intent, especially those that haven't been considered significant heritage buildings. Therefore, improvements can be made without sacrificing those key aspects.

Social contribution: By examining how heritage buildings should be presented to cities, the government, technical experts, and designers can make choices that will support sustainable urban development. Keeping the essence of the past while moving forward is what makes a city rich in culture and vibrant in life. The research not only respects people's memories of the old building but also searches for ways to form new identities for buildings and cities.

Ecological contribution: The energy crisis and climate change we are experiencing are both real and urgent threats. As a result of low thermal performance in many heritage buildings, skin upgrades can significantly reduce energy waste. This study will combine heritage assessments and energy-saving building design. During the redesign, factors such as envelope insulation, window size, glazing and shading, and ventilation will be considered.

Ethical considerations: Throughout the research process, the researcher adhered to the ethical considerations developed by the European Research Council. [22] Information and data were presented without any bias, and the analysis of the cases and strategies maintains the highest level of objectivity. A high level of confidentiality was maintained when handling the data. Online participants are guaranteed no harm in any way for taking part in this study, and their privacy is protected. All information retrieved from social media was anonymized by removing account IDs, personal photos, and any other information not relevant to the study.

3.5 How do you assess the value of the transferability of your project results?

Although this research primarily focuses on 20th-century Dutch malls, its applicability extends to numerous other heritage buildings, particularly those of a younger heritage. The division of tangible and intangible attributes of the building's exterior can serve as a fundamental framework for various building types. The same value-based strategy used to assess the building's exterior can be applied. With the growing popularity of social media, buildings that lack expert attention can utilize this platform to gather the opinions of local communities for conducting value assessments.

The three aspects discussed in this study, namely the relationship between tangible and intangible attributes, the balance between values and attributes, and the balance between preservation and alteration, hold universal significance for many buildings. By considering these aspects in the early stages of redesign and integrating them with other design ideas, a more comprehensive understanding of the meaning of the building's exterior and its embedded values can be achieved. Consequently, the occurrence of casual demolition can be avoided.

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[19] Havinga, L., Colenbrander, B., & Schellen, H. (2020). Heritage significance and the identification of attributes to preserve in a sustainable refurbishment. *Journal of Cultural Heritage*, 43, p286.

[20] Silva, A., & Roders, A. (2012). Cultural heritage management and heritage (impact) assessments. *Proceedings of the Joint CIB W, 70, W092*.

[21] Bai, N., Nourian, P., & Pereira Roders, A. (2021). Global citizens and world heritage: Social inclusion of online communities in heritage planning. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, 46, p23.

[22] Oliveira F, Ethics Review in SS&H Procedures in Horizon 2020, The European Research Council.

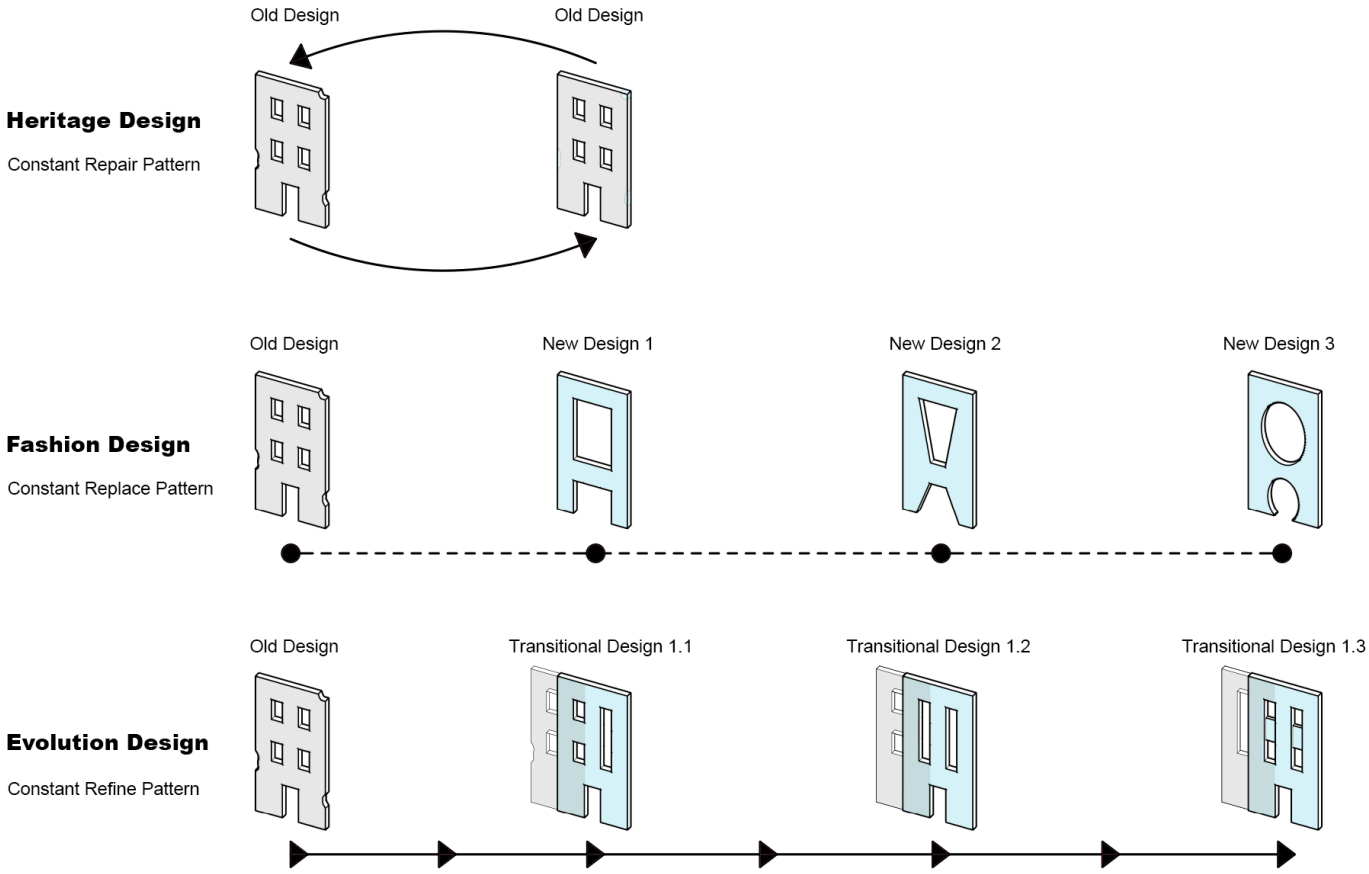

Fig. 5 Different facade design pattern demonstration

4. Research to design

This research specifically examines the challenges associated with redesigning non-listed heritage buildings, particularly shopping malls, with a focus on achieving a balance between incorporating new features and preserving the existing ones. It expands upon the existing six shearing layers framework by delve into a more detailed analysis of the skin layer, recognizing its significance and multifaceted roles. Building upon Veldpaus's (2015) theory, this research further develops a comprehensive taxonomy that considers both tangible and intangible aspects, with a specific emphasis on the building's skin. By presenting a case study of HC and utilizing a value-based assessment approach, this research provides an example of how to evaluate the exterior of shopping malls. The findings of this study have contributed to the formulation of multiple considerations that can guide the redesign of numerous outdated buildings in a balanced manner.

The results indicate that individuals consider not only the visual quality of a façade but also their personal experiences, activities, and the cultural values associated with the building. The interaction between individuals and the place cannot be replaced by trendy modern designs. Hence, the most significant challenge in the redesign process is determining what should be preserved and identifying the most suitable new features for old buildings.

As illustrated in Fig. 5, the current two predominant approaches for dealing with old building facades, namely 'heritage design' which prioritizes the preservation and restoration, and 'fashion design' which requires constant demolition and replacement for complete renewal, are neither suitable for addressing the preservation of young heritage. Hence, this paper seeks to present an intermediary solution, referred to as "evolution design" - an approach that advocates for the coexistence of both old and new elements in building facades. Acknowledging the dynamic nature of urban development, this approach aims to avoid a complete overhaul of the building facade by minimizing demolition and utilize existing features to generate new identities. This approach enables heritage values to evolve and flourish, rather than stagnate or vanish. Consequently, the young heritage will become integrated into the city's development and serve as a witness to its progress, extending its significance beyond the façade of a single building.

The design of the AMS follows the research findings and looks back on the history, aiming to understand the site and building while seeking to discover the old attributes and associated values. Simultaneously, it

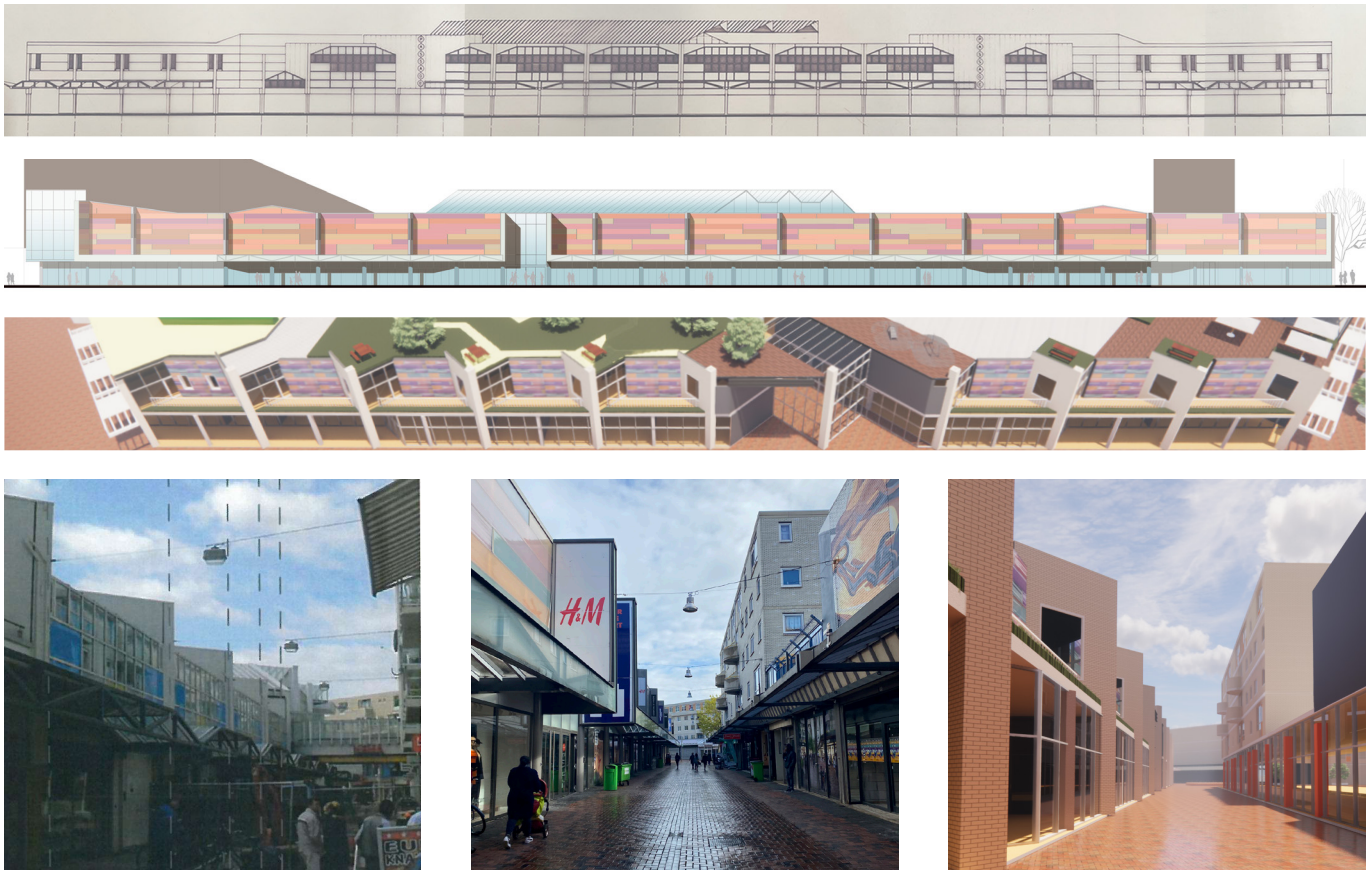

Fig. 6 The evolution of the facade of AMS, my design is a combination of the old and current design

Fig. 7 Using the new program (apartment) to create new identities for AMS

Fig. 8 Open up the facade to enhance the contextual relationship with the surrounding apartment.

respects the current situation and the attributes that can be reused. Ultimately, the new design not only strives to make the hidden history visible and repurpose the current materials but also creates new identities that align with the development's needs while serving as a showcase of the building's evolution throughout history. (Fig. 6, Fig. 7, Fig. 8) Furthermore, the reuse of current materials, minimal demolition, and the application of sustainable materials and structures that can be disassembled ensure the building's future-proof capabilities.

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