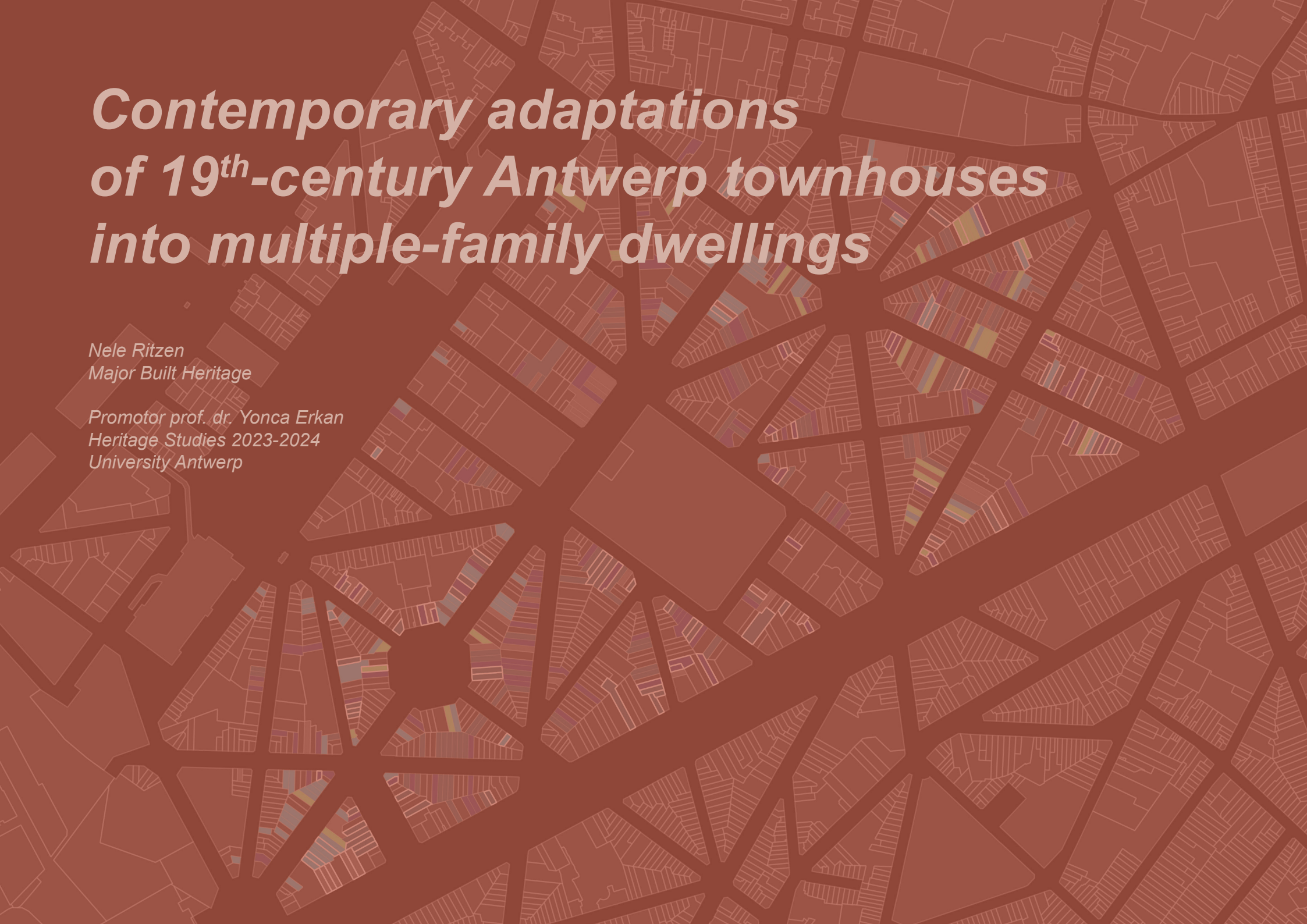




Contemporary adaptations of 19th-century Antwerp townhouses into multiple-family dwellings

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Major Built Heritage*

*Promotor prof. dr. Yonca Erkan
Heritage Studies 2023-2024
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*Acknowledgements**

First and foremost, I would like to thank my parents for allowing me to pursue and immerse myself in heritage studies. Your consistent encouragement, advice, and genuine interest in my research have been appreciated.

A special and heartfelt thank you to my promotor, Yonca Erkan, whose warmth, patience, and shared curiosity guided me through this challenging journey. Our fruitful discussions and your insightful input helped shape this thesis. This would not have been possible without your wonderful guidance.

I’d also want to thank Mr. Johan Veeckman and Ms. Vicky Van der Meynsbrugge from the City of Antwerp’s heritage protection department for their time, advice, and enthusiasm for my thesis topic.

My heartfelt gratitude goes to the architects who participated in informative discussions and provided their opinions on the subject. Your practical insights greatly enriched my understanding.

I am especially grateful to the *Zuidwijk* inhabitants who allowed me into their beautiful homes and shared their experiences with the neighborhood throughout my research. Trusting a stranger is a difficult task, and I sincerely appreciate your support and participation to this thesis.

Finally, I’d want to thank my fellow students, who have become great friends, for the camaraderie, stimulating talks, and moments of laughter and relaxation that made our university years so memorable.

** To assist my writing, I made use of AI tools such as ChatGPT, QuillBot, and DeepL. These tools were exclusively used to paraphrase sentences and not as a replacement for original thinking or writing.*

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This thesis will investigate contemporary adaptations of 19th-century townhouses in Antwerp into multiple-family houses, with a particular focus on the increasingly popular neighborhood of *Zuidwijk*. My interest in this subject arises from a passion for interior architecture, a commitment to preserving built heritage, and a conviction that heritage can be adapted and utilized to meet contemporary needs. Residing in close proximity to *Zuidwijk*, I have found it both engaging and enlightening to explore this area through its historical evolution, current appeal, and future possibilities. The primary aim of my research is to investigate how historic townhouses can be utilized to densify the urban fabric, addressing the issue of unsustainable urban sprawl while also preserving built heritage in historic cities. This thesis investigates more specifically the conversion of townhouses into multiple-family houses. This research is geographically focused on *Zuidwijk*. This neighborhood, developed during Antwerp’s 19th-century expansion after the demolition of the Spanish Walls, declined afterwards in the 1950s. Today, *Het Zuid* is a desirable area, with its historic buildings representing a typical 19th-century district in Antwerp.

Its high concentration of 19th-century townhouses, which are currently undergoing transformation regarding subdivision, makes it an ideal case study to better understand the transformation of single-family houses to multiple-family houses. Given that the majority of historic townhouses were constructed between 1890 and 1914, my research is confined to buildings from this period. The investigation of contemporary adaptations will be restricted to 21st-century examples. This limitation ensures the research’s relevance to current and future adaptation practices, emphasizing contemporary heritage valorization, current housing standards, and present-day building policies. Townhouses, characterized by their three to four floors, consist of a main volume and a narrower annex. These structures typically feature a three-window façade, a monumental staircase, high ceilings, and a sequential arrangement of spaces. In certain Chapters, the term “bourgeois houses” will be employed to describe the general characteristics of upper-class residences, including both townhouses and city mansions. Multiple-family houses are residences where multiple units, each comprising one or several rooms or floors, are arranged within

a single building. Examples of a multiple-family house are apartments, duplexes, and studios.¹ For this research, other forms of communal living, like Cohousing and student residences, are excluded due to their typically higher levels of cohabitation intensity. I will approach my thesis with mixed research methods, including literature review, (digital) archival research, conducting interviews with architects, and on-site analysis. A literary study is made to find out more about Antwerp’s historic townhouses and the context in which they were erected, the history of *Zuidwijk*, the specific typologies of townhouses in *Zuidwijk*, and the local building legislation and its evolution. Following, both quantitative analyses, including database development, and qualitative analyses, conducting interviews with architects and on-site visits, are conducted. I establish a database by using the inventory of Built Heritage Flanders (‘*Inventaris Onroerend Erfgoed Vlaanderen*’)² as a basis. Next, I make a door-by-door visit to check whether each property is functioning today as a single-family house or a multiple-family house. This information is then added to the database and transformed into graphs and maps, using respectively Excel and QGIS, to

show current tendencies in *Zuidwijk*. Furthermore, interviews with practicing architects in *Zuidwijk* will provide valuable insights into their design approaches for these adaptations, thereby enriching the research. Subsequently, the Felix Archive³ and the Parcel Information Platform Antwerp (‘*Percelen Informatie Platform Antwerpen*’)⁴ will be utilized, in combination with some case-study visits, for a detailed analysis of specific cases through available building permits. This analysis will be synthesized into a classification system for the various approaches towards adapting townhouses into multiple-family residences. These distinct adaptation typologies will be illustrated with schematic maps of several notable cases and further analyzed through mapping in QGIS. Finally, general and typology-specific recommendations will be developed to guide future adaptations of townhouses into multiple-family dwellings.

1.1. Problem statement

The tendency of urban sprawl, which contradicts the goal of creating sustainable cities, and its impact on historic urban centers will be examined.

Sustainable development and historic cities

Furthermore, achieving sustainability today involves striving towards the goals set forth in The European Green Deal, ratified by the Convention of the Parties (COP) in 2020.⁵ It indicates the goal of producing no net greenhouse gas emissions by 2050. Given that the built environment currently accounts for nearly 40% of the total final energy consumption in Europe,⁶ and acknowledging the extensive vacancy and underuse of existing buildings globally,⁷ the existing building stock holds significant potential to play a vital role in meeting this target. By choosing to adapt our built heritage instead of demolishing existing buildings for new ones, we not only reduce operational energy for enhanced comfort, but we

also reuse the embodied energy within structures. As sustainability is located on the same crossroads as heritage, namely between the economic, social, cultural, and ecological dimensions, and Sustainable Development Goal (SDG) 11 includes Target 11.4, aiming to ‘strengthen efforts to protect and safeguard the world’s cultural and natural heritage’,⁸ heritage can be used as a tool to contribute to sustainability.⁹ Heritage can help ‘deliver positive environmental, wellbeing and regeneration outcomes’,¹⁰ and it can enable a sense of belonging and tolerance.¹¹ By aligning heritage conservation with sustainability goals, we address both environmental targets and the preservation of cultural heritage. According to Sophia Labadi, heritage has the potential to play an even much larger role in the Sustainable Development Goals (SDGs), as it is currently only mentioned directly in one of the 169 targets. In ‘Rethinking Heritage for Sustainable Development’, her aim is to understand whether and how heritage can contribute to three key dimensions of sustainable

1 “Metadata: Woningtypologie”, Vlaanderen, Accessed 15 April 2024, <https://www.vlaanderen.be/statistiek-vlaanderen/bouwen-en-wonen/woningtypologie/metadata-woningtypologie>.
2 Onroerend erfgoed Vlaanderen, “Inventaris Onroerend Erfgoed”, Accessed 14 May 2024, <https://inventaris.onroerenderfgoed.be/>.

3 “FelixArchief”, Stadsarchief Antwerpen, Accessed 29 May 2024, <https://felixarchief.antwerpen.be/>.
4 “Percelen Informatie Platform”, Stad Antwerpen, Accessed 29 May 2024, <https://perceleninfoplatform.antwerpen.be/>.
5 European Commission, “Delivering the European Green Deal”, 14 July 2021, https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en.
6 Buildings Performance Institute Europe, *Europe’s buildings under the microscope: a country-by-country review of the energy performance of buildings* (2011), https://www.bpie.eu/wp-content/uploads/2015/10/HR_EU_B_under_microscope_study.pdf, 19.
7 Satu Huuhka, “Vacant Residential Buildings as Potential Reserves: A Geographical and Statistical Study”, *Building Research & Information* 44, no. 8 (November 1, 2016): 816–839.
8 United Nations Department of Economic and Social Affairs, “Goal 11”, Accessed 18 January 2024, https://sdgs.un.org/goals/goal11#targets_and_indicators.
9 Hana Morel, and Brenda Denise Dorpalen, “Adaptive Thinking in Cities: Urban Continuity within Built Environments”, *Climate* 11, no. 3 (2023): 1.
10 Heritage Counts: There’s No Place Like Old Homes-Re-Use and Recycle to Reduce Carbon”, *Historic England* (London: 2020): 63.
11 John D. Egan, “The Egan Review: Skills for Sustainable Communities,” *Office of the Deputy Prime Minister* (January 1 2004), <https://dera.ioe.ac.uk/11854/>, 20.

development, namely poverty reduction, gender equality and environmental sustainability’.¹² This approach can similarly be extended to the adaptation of historic townhouses into multiple-family residences, where such conversions may act as a catalyst in addressing poverty by increasing the availability of affordable housing units while preserving cultural heritage. Historically, these properties have been integrated into efficient urban planning strategies, strategically located near amenities and services, presenting contemporary opportunities for enhancing efficiency in resource consumption such as electricity and water.

Urban sprawl and historic cities

Additionally, urbanization driven by a growing population presents additional challenges for the management of sustainable cities. According to United Nations ‘World Urbanization Prospects: The 2018 Revision’, 68% of the world’s population is projected to be urban by 2050, compared to 55% in 2018. In Europe, 74% of the population already

lived in urban areas in 2018.¹³ According to the United Nations Development Programme (2018), demographics and urbanization tendencies are a great risk in the sustainable development of cities because sustainability ‘depends on successful management of urban growth’, which is closely related to economic, social, and environmental sustainability:

‘Well-managed urbanization, informed by an understanding of population trends over the long run, can help to maximize the benefits of agglomeration while minimizing environmental degradation and other potential adverse impacts of a growing number of city dwellers.’¹⁴

The ever-growing population results in urban sprawl, posing challenges on the limited space in historic cities all over the world. Urban sprawl refers to the uncontrolled expansive growth of urban areas with low-density development.¹⁵ This phenomenon is linked to ecological, climate, and social transformations, leading to widespread facilities and infrastructure that pose a threat to sustainable urban management.¹⁶

Additionally, this rapid and often unregulated transformation means a danger to cultural heritage, as it has the potential to fragment and degrade heritage sites worldwide.¹⁷ Following World War II, increased car ownership and government incentives for homeownership led many people to move to the suburbs, resulting in the decline of historic city centers. However, ongoing population growth and the rediscovery of urban cores as creative hubs have shifted real estate development back to these historic areas, increasing development pressures.¹⁸ This has led to the demolition of some structures and the transformation of large single-family homes into smaller multiple units. Many of these converted units are now used as Airbnb rentals,¹⁹ raising concerns about housing affordability for local residents.

A controlled densification of the existing urban core offers an alternative to widespread and uncontrolled development, facilitating increased urban population within the city. In North America, this phenomenon is referred to as “smart growth,” which emphasizes the development of high-density neighborhoods within

city cores while also minimizing travel distances between residences, workplaces, and amenities.²⁰ However, densifying historic cities poses significant challenges. These include the potential loss of heritage values due to modifications of historic buildings, the ongoing need for spatial and social identity in a globalized world, uncertainties related to crime and privacy, and rising cultural tensions, all of which complicate the process of densification. My objective is to explore sustainable approaches to densifying built heritage, as densification also presents numerous advantages. Larger unbuilt areas can be reserved for biodiversity and natural heritage outside of the urban core, which allows to allocate more extensive areas for natural heritage conservation. Furthermore, the adaptive reuse and densification of built heritage can strengthen cultural identity in a globalizing world. Additionally, reutilizing existing building fabric reduces CO² emissions, and underused, unmaintained and abandoned buildings get the chance to be revitalized. Moreover, by adapting and subdividing the built environment,

more people can find an affordable place in the city, close to amenities and social interactions. Finally, densifying the urban core creates opportunities to accommodate a wider range of family structures, as contemporary shifts have led to a move from large or nuclear families to smaller households and single-person residences.²¹ Although the need for more housing and the urge for a more sustainable environment seem to clash, the built environment – and consequently the built heritage - can be effectively adapted and even used as a tool to venture both challenges. As Rodney Harrison stated, we should think of heritage ‘as a creative engagement with the past in the present’ so that we can take ‘an active and informed role in the production of our own future’.²²

Antwerp’s expansion

The conflict between urban sprawl and the preservation of the historic city is also evident for Antwerp. In this study, the city of Antwerp is understood as an example for addressing common

urbanization issues that cities worldwide experience. Antwerp has a rather old building stock: 13,2% of existing dwellings are built before 1900; this percentage even extends to 30,7% in the historic city center.²³ Currently, around 1400 buildings – both residential and non-residential - in Antwerp have been vacant for over 12 months.²⁴ While a direct link between the age of these buildings and their vacancy status remains unclear, such a connection is a plausible consideration. Although specific data on underutilized buildings is not available, it is speculated that many existing structures are currently not being used to their full potential, leading to inefficient use of their total surface area. This underuse may be attributed to high maintenance costs, including energy expenses, the need for upgrading outdated systems, and structural repairs. The city of Antwerp was home to 539.419 people in 2023.²⁵ According to this statistical information, Antwerp is considered to be the most populated city (excluding the Brussels-Capital Region) in Belgium.²⁶ In that same year, it ranked among the top six of

12 Sophia Labadi, *Rethinking heritage for sustainable development* (London: UCL Press, 2022): 2-3.
13 United Nations, “World Urbanisation Prospects: The 2018 Revision, Key Facts”, (2018), <https://population.un.org/wup/publications/Files/WUP2018-KeyFacts.pdf>, 1.
14 United Nations, “World Urbanisation Prospects”, 2.
15 Lewis Mumford, *The Culture of Cities* (London: Secker & Warburg, 1945).
Luca Prono, “Urbanization”, *Salem Press Encyclopedia* (January 2022), <https://research.ebsco.com/linkprocessor/plink?id=b827eb99-3ca3-3630-873f-6539369f4405>.
16 Athos Agapiou et al., “Impact of Urban Sprawl to Cultural Heritage Monuments: The Case Study of Paphos Area in Cyprus”, *Journal of Cultural Heritage* 16 (2015): 671.
17 Agapiou, “Impact of Urban Sprawl to Cultural Heritage Monuments”, 671.
18 Anthony M. Tung, *Preserving the World’s Great Cities: The Destruction and Renewal of the Historic Metropolis* (New York: Three Rivers Press, 2001).
19 Jon Henley, “Ten Cities Ask EU for Help to Fight Airbnb Expansion”, *The Guardian* (20 June 2019), <https://www.theguardian.com/cities/2019/jun/20/ten-cities-ask-eu-for-help-to-fight-airbnb-expansion>.

20 “Smart Growth”, *United States Environmental Protection Agency*, Accessed August 13 2024, www.epa.gov/smartgrowth
21 “Bevolkingsvooruitzichten: Alleenwonenden”, Vlaanderen, Accessed 9 July 2024, <https://www.vlaanderen.be/statistiek-vlaanderen/bevolking/bevolkingsvooruitzichten-alleenwonenden#nav-8percent-meer-alleenwonen-den-in-2033-dan-in-2023>.
22 Rodney Harrison, *Heritage Critical Approaches* (Oxon: Routledge, 2012): 229.
23 Stad Antwerpen, “Wonen en ruimte”, Stad in Cijfers, Accessed 16 January 2024,
24 “Leegstandsregister Stad Antwerpen”, Stad Antwerpen, Accessed 11 August 2024, <https://portaal-stadantwerpen.opendata.arcgis.com/datasets/stadAntwerpen::leegstandsregister-stad-antwerpen/explore?location=51.179489%2C4.378904%2C11.7>.
25 Stad Antwerpen, “Demografie”, Stad in Cijfers, Accessed 16 January 2024, <https://stadincijfers.antwerpen.be/dashboard/hoofd-dashboard/demografie>.
26 “Demografie”, Stad in Cijfers.

most compact Belgian municipalities (excluding the Brussels-Capital Region) with a population density of 2.641 people per square kilometer.²⁷ Given that Antwerp accommodated nearly 100.000 fewer people in the year 2000,²⁸ and considering the global population expansion trends, it is anticipated that the city’s population, and consequently its density, will continue to increase in the coming decades.²⁹ My primary objective is to examine how densification of historic townhouses has been implemented in the 21st century.

In Antwerp, the ongoing demand for housing underscores not only the growing population trend and shifting family structure – from large, nuclear families to smaller households – , but also the necessity for spatial identity rooted in heritage. A 2022 local newspaper article highlights a growing trend of people seeking residences with historical significance, particularly stately townhouses.³⁰ Although older properties have additional difficulties in achieving modern comfort standards, such as insufficient insulation, restricted accessibility, and antiquated heating systems, they continue to be in

great demand among buyers. The article in ‘*Gazet van Antwerpen*’ delineates four primary aspects that contribute to the popularity of these houses. First, their allure stems from their historical narratives and ties to the past. Secondly, people value the architectural spaciousness and grandeur that is characteristic of townhouses. Thirdly, there’s a willingness to invest in real estate, particularly in authentic properties. Lastly, Antwerp townhouses are typically situated in desirable neighborhoods, either close to the city center such as *Zuidwijk* or in adjacent cores such as *Zurenborg* or *Berchem*. Historic townhouses, typically row houses located in the city’s core, serve as a prime example of ideal urban planning. Providing services and amenities such as water, energy, supermarkets, and public transport is far more efficient and cost-effective for these houses in comparison to suburban villas, for instance. The typical townhouse thus connects to the idea of the 15-minute city, founded by Carlos Moreno.³¹ This urban model promotes a decentralized city where amenities are accessible within a 15-minute walk, bike ride, or public transport trip. According to this

idea, Antwerp is advantageous of integrating this urban model and improving vibrancy, creativity, and active citizenship for the common good. The overall popularity of townhouses in Antwerp is bolstered by the city’s efforts to preserve as many historic houses as possible.³² One of my objectives is to analyze the ways in which the existing building stock can be strategically utilized to enable densification while preserving heritage values.

Zuidwijk and its transformation

These same factors concerning urban sprawl in historic cores are also evident on the scale of *Zuidwijk*. Notably, the trend of shifting family structures is also evident in this area. In 2018, nearly half of the residents in *Zuidwijk* lived alone, and approximately 16 percent lived solely with a partner. Only 21 percent of *Zuidwijk*’s population were part of a ‘traditional’ family structure, consisting of both parents and one or more children.³³ We can also observe the growing population trend and popularity of this area,³⁴ and speculate on its effects that this had on the densification of the historic townhouses.

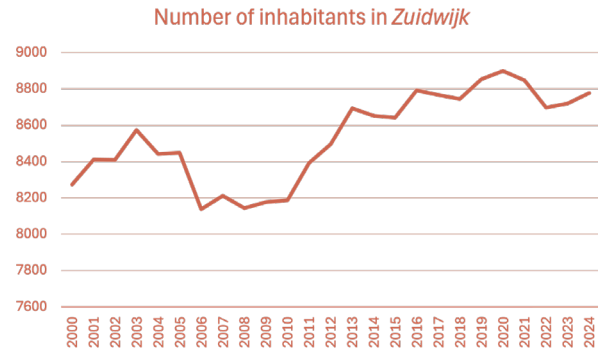


Fig. 1 Total number of inhabitants in Zuid.

Although no specific data is available on the number of vacant buildings in *Zuidwijk*, it is speculated that there are currently missed opportunities related to underused or abandoned houses in the area. Although a lot of historical documentation is missing or unavailable, we know that subdivision of houses was already done during the 19th and 20th century for several reasons. One reason for the subdivision of houses in *Zuidwijk* was that, by the end of the 19th century, the area was viewed as a temporary solution until residents could move to their preferred neighborhoods, prompting the creation of additional space through subdivision. Another factor was maintenance costs: particularly during the 1960s and 1970s,³⁵ when the neighborhood was in decline

and lacked vibrancy, the expenses associated with maintaining these houses became prohibitively high. Given that most houses in the area were constructed in the 19th century as townhouses for middle-upper-class families, my primary objective is to explore how the densification of these 19th-century townhouses is approached today. This transformation is done by for example reconfiguring each floor into independent units, adding an additional top floor unit, or incorporating annexes to provide circulation for additional housing units, and many more interventions. Such adaptations come with both advantages and disadvantages. On the positive side, reusing a heritage building with architectural and historical value preserves cultural heritage and allows it to serve more people or families. These houses often have a central location, providing easy access to amenities like public transport, schools, and shops. However, there are notable disadvantages, such as the necessary modifications to the building’s architectural structure or appearance to accommodate multiple families. For instance, the building must meet fire safety regulations and provide kitchens and sanitary facilities for each unit, which can alter its original design and character.

These alterations have an impact on the authenticity, integrity, and reversibility of the built heritage. The thesis aims to explore in greater depth the various methods for subdividing and densifying historic townhouses.

1.2. Research gaps and state of the art

Despite extensive research on urban sustainability and adaptive reuse, significant gaps persist in exploring alternative strategies for utilizing built heritage to mitigate the effects of urban sprawl in historic cities. While research has addressed various aspects of urban sprawl and its impact on historic cities, including the use of vacant and underused (heritage) buildings to enhance urban resilience, there remains a gap in practical recommendations for practitioners. For example, Gillian Armstrong, Sara Wilkinson, and Elizelle J. Cilliers examined how vacancy intersects with adaptive reuse,³⁶ and Satu Huuhka explored the role of vacancies in building stock dynamics and environmental impacts.³⁷

27 "Demografie", Stad in Cijfers.
28 "Demografie", Stad in Cijfers.
29 According to United Nations, by 2050, 68% of the world’s population is projected to be urban, compared to 55% in 2018. In Europe, 74% of the population already lived in urban areas in the year of 2018. United Nations, "World Urbanisation Prospects", 1.
30 "Vraag naar Antwerpse herenhuizen blijft groot: 'Wat aan het begin van mijn carrière 100.000 euro kostte, gaat nu voor 300.000'", *Gazet van Antwerpen* (30 November 2021), https://www.gva.be/cnt/dmf20211130_93685197.
31 Carlos Moreno, *The 15-Minute City: A Solution to Saving Our Time and Our Planet* (New York: John Wiley & Sons, 2024).
32 "Vraag naar Antwerpse herenhuizen blijft groot", *Gazet van Antwerpen*.
33 "Demografie", Stad in Cijfers.
34 As shown on Fig. 1. "Het ooit verkommerde Zuid heet nu te populair voor Antwerpen", *De Morgen* (30 March 2001).

35 Lut Prims, and Ronald De Meyer, *Het Zuid (Antwerpen, 1875-1890)* Architectuur & Maatschappij (Schoten: Continental, 1993): 217.
36 Gillian Armstrong, Sara Wilkinson, and Elizelle Juanee Cilliers, "A Framework for Sustainable Adaptive Reuse: Understanding Vacancy and Underuse in Existing Urban Buildings", *Frontiers in Sustainable Cities* 5 (May 2023).
37 Huuhka, "Vacant Residential Buildings as Potential Reserves".

Furthermore, Indrè Gražulevičiūtė-Vileniškė and Vilius Urbonas discussed how built heritage can contribute to a socioeconomic revitalization of historic urban centers.³⁸ However, these studies are largely exemplified by case studies without offering actionable guidance for applications. Numerous scholars, such as Gerard Hautekeur, Lucy Sargisson, and Jan Gudmand-Høyer have explored the concepts and degrees of communal living, particularly cohousing and alternative communal arrangements.³⁹ However, there is a notable lack of research specifically focusing on multiple-family living, such as apartments, and the opportunities this typology presents. Research into the history and development of Antwerp and *Zuidwijk* has been conducted, with some scholars speculating on the future of these areas, primarily in the public and industrial domains. For instance, Elisabeth Wouters has speculated on the future significance of *Zuidwijk* within a broader public context.⁴⁰ However, there is a research gap concerning the residential potential of these 19th-

century neighborhoods, particularly in terms of sustainability and livability within a historic urban context. The historical context and architectural characteristics of bourgeois houses, particularly in Antwerp and *Zuidwijk*, are well-documented. Lut Prims and Ronald De Meyer, for example, have extensively analyzed the architecture of *Zuidwijk* and its historical development.⁴¹ However, no research has yet explored the potential of these houses for urban densification and the impact such adaptations might have on their historic narrative and heritage values. Most studies on adaptive reuse focus on non-residential functions, such as cultural, service, and business uses, rather than residential ones. For instance, Sander Gelinck’s work on adaptive reuse in the Netherlands predominantly addresses commercial, social, and cultural functions, leaving a clear gap in the adaptation of historic buildings for residential purposes.⁴² By addressing these research gaps, this study will propose an alternative approach to sustainable

solutions for urban sprawl and densification by exploring the potential of subdividing historic townhouses.

1.3. Research objectives

This research has four objectives, deriving from the aforementioned problem statement, to support the primary objective and research question: **How have 19th-century townhouses in *Het Zuid* been transformed and utilized as multiple-family residences in the 21st century?** The objectives will be introduced subsequently and examined in detail in each Chapter.

The first objective is to understand the historical context and architectural characteristics of historic townhouses in Antwerp. This issue will be dealt with in Chapter two, aiming to answer question such as:

- What is the historical context in which 19th-century townhouses were erected in Antwerp?
 - What are the architectural characteristics of 19th-century townhouses in Antwerp?
-
- What is the historical context in which 19th-century *Zuidwijk* was developed in Antwerp?
 - What are the different bourgeois housing typologies in 19th-century *Zuidwijk* and what are their architectural characteristics?
 - What is the current state and use of 19th-century townhouses in *Zuidwijk*?
 - How do 21st-century architects react on the current need for densification in *Zuidwijk*?

The third objective is to analyze how residents and architects are responding to urban densification in *Zuidwijk* and how they propose various design solutions. This qualitative analysis will be conducted

43 Analyzed with 'Inventaris Onroerend Erfgoed Vlaanderen'.

- based on several criteria, including the impact on contemporary spatial quality, heritage values, and current building policies. Different approaches will be classified and examined to provide a comprehensive overview of the various strategies employed. Chapter four will analyze these issues, with the aim of addressing questions such as:
-
- How do historic townhouses get adapted into multiple-family dwellings?
 - How is contemporary spatial quality implemented while adapting historic townhouses into multiple-family residences?
 - How are heritage values safeguarded while adapting historic townhouses into multiple-family residences?
 - What does building legislation prescribe in relation to the adaptation of (town)houses into multiple-family residences?

The fourth and final objective is to develop recommendations for future adaptations of historic townhouses into multiple-family houses, based on the established adaptation typologies. This aspect will be examined in Chapter five, with the goal of

- addressing questions such as:
-
- How can future adaptations of historic townhouses into multiple-family residences be facilitated, tailored to each specific building typology?
 - How can future adaptations of historic townhouses into multiple-family residences be facilitated to ensure spatial and architectural quality?
 - How can future adaptations of historic townhouses into multiple-family residences be facilitated to ensure the safeguarding of heritage values?
 - What legislative recommendations are necessary to ensure high-quality (according to spatial and architectural quality and safeguarding heritage values) future adaptations of historic townhouses into multiple-family residences?

1.4. Research scope

To comprehend the scope and nature of the spatial adaptation (of single-family townhouses into multiple family apartment unit) of residential heritage in Antwerp, this research will concentrate on the *Zuidwijk* district, also called *Het Zuid*.

38 Indrè Gražulevičiūtė-Vileniškė, and Vilius Urbonas, "Architectural Heritage as a Socioeconomic Opportunity for Revitalization of Historic Urban Centres: A Global Perspective", *Architecture & Urban Planning*, no. 5 (December 2011), <https://research.ebsco.com/linkprocessor/plink?id=7ee16e72-323e-32f2-9e0e-85be720b025f>, 27-37.

39 Gerard Hautekeur, *Van Cohousing Tot Volkstuin: de Opmars van Een Andere Economie* (Antwerp: EPO, 2017), <https://research.ebsco.com/linkprocessor/plink?id=b8aa8bfe-8338-3e25-9749-800129dfe141>.

Lucy Sargisson, "Second-Wave Cohousing: A Modern Utopia?", *Utopian Studies* 23, no. 1 (March 1, 2012): 28–56.

Lidewij Tumme, *The Re-Emergence of Cohousing in Europe* (London: Routledge, 2016), <https://research.ebsco.com/linkprocessor/plink?id=61b80032-e033-3cf7-9911-bb9396ab79ca>.

Jan Gudmand-Høyer, "Det manglende led mellem utopi og det forældede enfamiliehus [The missing link between utopia and the outdated single-family house]", *Dagbladet Information*, (26 June 1968).

40 Elisabeth Wouters, *Antwerpen Zuid: verleden, heden & toekomst van een stadsbuurt* (Final dissertation, Hogeschool Antwerpen, 1995).

41 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*.

42 Sander Gelinck, *Rekenen Op Herbestemming Idee, Aanpak En Cijfers van 25 + 1 Gerealiseerde Projecten* (Rotterdam: nai010 Uitgevers, 2014).

This neighborhood is one of the regions that was developed during the 19th-century expansion of Antwerp after the demolition of the Spanish Walls. Additionally, *Het Zuid* not only served as a residential area but also supported new developments, such as working-class houses and a water press house for hydraulic control of sluices and cranes to facilitate port activities. The historical and current building stock of *Zuidwijk* can be utilized as a representative sample for other 19th-century districts, given its high concentration of 19th-century townhouses that are in transformation.⁴³ Up until 1958, *Het Zuid* was a vibrant neighborhood. Hereafter, the quarter falls back into disrepair with dilapidated houses, damped docks, and a demolished train station. From the 1970s onward, traffic and circulation are made possible again to revitalize the neighborhood.⁴⁴ Today, the area of *Het Zuid* is among the most sought-after neighborhoods in Antwerp for both living and leisure, with museums, fashion industry, and recreation. Urban planners have rediscovered the potential of *Zuidwijk*, along with het Eilandje and the docks, as a vital link between the city and its suburbs. Today, the

new Zuidpark, located where docks once facilitated harbor activities, inaugurates a green plaza for people to meet in the city center.⁴⁵ Due to the geographical focus on *Zuidwijk* and the fact that most townhouses there were built between 1890 and 1914, the emphasis will be on the period around the turn of the century. As the First World War introduces modernization efforts, changing architectural trends, and shifting economic conditions, the year 1914 marks the end of a period characterized by eclecticism in Belgian architecture, which, despite its diversity,⁴⁶ exhibited a sense of coherence. Only a few 19th-century historical residences in *Zuidwijk* are labeled as city mansions (Type A), which are larger-scale versions of townhouses and often feature richer decorations and materials. The most distinctive typology within this area is the townhouse (Type B), which is characteristically constructed with a façade width of 5 to 6 meters, high ceilings, a sequence of successive rooms, and a monumental hallway that provides access to the more private spaces located on the upper floors.

The research will thus focus on townhouses, as their higher concentration suggests a greater diversity in adaptations. Historically, two townhouse subtypes emerge in *Het Zuid*: the single-family townhouse (Type B) and the multiple-family townhouse (Type C). A single-family house is considered to only serve one family: 'A single-family house is a residence occupied by members of one household. It is a ground-based dwelling, meaning the house is situated on the ground floor with no residences above (or below) it. A single-family house can be detached, semi-detached, or part of a row of houses.'⁴⁷ While a multiple-family house is a residence where multiple units, each comprising one room or one floor, are arranged within a single building: 'A multifamily dwelling is located in a building where multiple households live. This means that above and/or below a household's housing unit there are other housing units of other households. A multifamily dwelling can be apartments, stacked housing (e.g., duplex or triplex), studios, rooms, assisted living facilities and rooms in an assisted

living facility.'⁴⁸ In 19th-century *Zuidwijk*, houses could be intentionally designed as either single-family or multiple-family residences. Alternatively, some houses were originally designed for single-family use but were subsequently repurposed for multiple families due to housing shortages and the economic benefits of rental income. Given the prevalent rental system associated with this typology, it can be inferred that in the 19th century, multi-family houses were commonly referred to as "rentals" ('rentenierswoning'). Since the area's revitalization in the 1970s, following its decline in the 1950s, the trend of subdividing residences has persisted. This ongoing practice is driven by the high maintenance costs of historic townhouses and the financial advantages associated with sub-letting or subdividing and selling individual apartments. According to the Urban Planning Act (Stedenbouwwet),⁴⁹ since 1962, a permit has been required for the conversion of a building into a multiple-family residence if renovation works are undertaken. Additionally, from 2000 onwards, a permit has also been mandated for such conversions

even when only maintenance works are involved.⁵⁰ Today, both historical single-family and multiple-family townhouses are still evident in the area. The trend of subdividing historic townhouses continues, albeit with evolved motivations. As the neighborhood has grown increasingly popular in recent decades, property values and rental rates have escalated due to its sought-after central location. This surge has led to a rise in smaller apartments and a trend towards communal living. A spatial analysis will be made to understand the current situation, whether and when townhouses in *Zuidwijk* changed from single-family house to multiple-family house. While there is a wide variety of collaborative housing approaches nowadays, this study is confined to researching the possibilities of multiple-family housing and co-living ('co-wonen') only, excluding student residencies and Cohousing. Co-living is considered to be a way of living together 'while only sharing spaces such as a garden, storage space, a bicycle shed etc', whereas for most other forms of communal living, such as Cohousing, 'you always voluntarily share common (living) spaces with other singles and families. You

manage these spaces yourself as a group and not through an external syndicator'.⁵¹ Although this terminology was not used during the 19th century when townhouses were constructed, historic "rental" residencies embodied the same concept of having multiple units without communal living spaces, similar to today's co-living. While this research does not explicitly focus on Cohousing, the broader phenomenon of communal living, encompassing co-living, Cohousing, and related practices, will be addressed. **1.5. Research methodology and thesis structure** I will approach my thesis with mixed research methods, including literature review, (digital) archival research, conducting interviews with architects, and on-site analysis. Following the introduction, Chapter two, titled 'Historical Context of Antwerp's Townhouses,' presents a literature review to explore the history

44 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 217.

45 Stad Antwerpen, "Zuidpark", Antwerpen morgen, Accessed 19 May 2024, <https://www.antwerpenmorgen.be/nl/projecten/gedempte-zuiderdokken/over>.

46 This will be further explained in Chapter 2 'Historical context of Antwerp's townhouses'.

47 Own translation from Dutch to English.

"Metadata: Woningtypologie", Vlaanderen, Accessed 15 April 2024, <https://www.vlaanderen.be/statistiek-vlaanderen/bouwen-en-wonen/woningtypologie/metadata-woningtypologie>.

48 Own translation from Dutch to English.

"Metadata: Woningtypologie", Vlaanderen.

49 Belgische Stedenbouwwet 1962:

Federale Overheidsdienst Justitie, "Justel Databank", ejustice, Accessed 9 July 2024, <https://www.ejustice.just.fgov.be/eli/wet/1962/03/29/1962032904/justel>.

50 Vlaamse overheid, "Besluit van de Vlaamse Regering tot bepaling van de vergunningsplichtige functiewijzigingen [...]", Codex Vlaanderen, 14 April 2000, <https://codex.vlaanderen.be/Zoeken/Document.aspx?DID=1007267¶m=informatie>.

51 Own translation from Dutch to English.

"Gemeenschappelijk wonen", Vlaanderen, Accessed 18 January 2024, <https://www.vlaanderen.be/bijzondere-woonvormen/gemeenschappelijk-wonen>.

"Cohousing", Vlaanderen, Accessed 12 April 2024, <https://www.vlaanderen.be/bijzondere-woonvormen/cohousing>.

of Antwerp’s historic townhouses and the context in which they were erected.

In the third Chapter ‘Historical context and typological analysis of townhouses in *Zuidwijk*’, a brief history on the development of *Zuidwijk* in the city of Antwerp will be discussed through literature review. After, the specific typologies of bourgeois housing in *Zuidwijk* are analysed, comprising of three principal types: the single-family city mansion, the single-family townhouse, and the multiple-family townhouse. The historical classifications will be enhanced by illustrations and blueprints derived from the previously mentioned literature and Felix Archive,⁵² presenting both typical exterior and interior characteristics. Following, a qualitative analysis of the current 19th-century townhouses in the same area is done. To gather qualitative data, information extracted from the ‘*Inventaris Onroerend Erfgoed Vlaanderen*’,⁵³ encompassing solely those existing townhouses for which the heritage value remains valid today. This platform offers details about each townhouse, including its address, construction period, architectural style, protection status, typology

(whether originally intended as a single-family house, multiple-family house, store, or other), and possible involvement by a designer, developer, or contractor. The most important information regarding this research, on how these townhouses are used nowadays, is missing from the inventory. To collect this information, I go by each of the townhouses to check the number of doorbells and mailboxes present. Missing or unclear information is then supplemented by looking into building permits using the Percelen Informatie Platform (PIP) Antwerp,⁵⁴ which is also connected to older building permits in the Felix Archive.⁵⁵ The drawbacks of this method include potential human errors, insufficient data due to building permits being standardly required only since 1962,⁵⁶ and due to some townhouses being used as multiple-family house since before 1961, that are considered legally licensed despite lacking documentation. Utilizing respectively Microsoft Excel and QGIS to visualize and map the acquired data facilitates the identification of trends in *Zuidwijk* regarding the current usage of historic townhouses, and how it differs from their historical usage.

Additionally, insights will be gathered by interviewing architects about their practical experiences with adapting townhouses in *Zuidwijk* into multiple-family houses. By analyzing building permits found on Percelen Informatie Platform,⁵⁷ I identified several architects involved in the design of these projects. I contacted these architects and asked if they would be willing to participate in my research. Ultimately, two firms responded positively, and I was able to interview them. They were all asked the same set of questions, which can be found in the appendix of the thesis.⁵⁸ These conversations result in some interesting insights of the practitioners themselves regarding the adaptation of built heritage, and more specifically of townhouses in *Het Zuid*.

The fourth Chapter ‘Analytical assessment on contemporary adaptations of townhouses into multiple-family houses’ involves a qualitative analysis through case-studies of 21st-century adaptations of historic townhouses into multiple-family residences. Properties will be evaluated through both on-site visits and digital analysis, including a review of online building permits, as previously outlined. On-

site visits will be conducted through door-to-door visits of selected properties. Additionally, by initiating a membership on Hoplr⁵⁹ - a digital platform for neighborhood communication - I sought to connect with local residents and request access to their properties. The selection of specific case studies requires a certain representativeness for common adaptation methods, a consideration of data availability, and the feasibility of conducting thorough analyses. For the on-site visits, it also depends on obtaining residents’ permission to enter their homes and possibly take photographs. Collaboration with local heritage experts also informs the selection process to ensure a representative and meaningful sample of cases. Both townhouses that were initially designed as a single-family house or a multiple-family house and those that underwent a contemporary adaptation into a multiple-family house, are addressed. Furthermore, an analytical evaluation of contemporary adaptations will be conducted, focusing on three primary criteria: the safeguarding of heritage value, the architectural quality of the modifications, and the alignment with current policy documents. Based on architectural and functional aspects, the various conversion approaches will be categorized

into distinct typologies. To understand each typology, plans and sections of the case-studies will be edited in a schematic and comprehensive way. The case-studies of the distinct adaptation typologies will be mapped with QGIS, to possibly find a correlation between the adaptation typology and its historical precedent. The concluding section of Chapter four will also highlight the impact of these typologies on the aforementioned criteria. In the final Chapter, ‘Recommendations for Future Adaptations,’ design recommendations for the adaptation of historic townhouses will be developed based on the qualitative assessment presented in Chapter four. The classification of adaptation typologies established in the previous Chapter will serve as the foundation for these recommendations. This Chapter will include both general recommendations and specific suggestions tailored to each adaptation typology discussed in Chapter four. At the conclusion of the thesis, the findings for each objective and its corresponding Chapter will be synthesized into a comprehensive summary, along with research gaps and potential directions for future research.

1.6. Managing contradictions

To bring this research to a successful result, it is important to be aware of various conflicting forces that may occur during the adaptation process of historic townhouses in *Het Zuid*. Three potentially conflicting forces will be explored: (1) the conflicting forces between the initially exclusive character of townhouses and the current policy trend towards inclusivity; (2) the conflicting forces between top-down policy and bottom-up vernacular approaches; and (3) the conflicting forces between preserving heritage and adapting heritage. Charles Montgomery emphasizes the gravity of such tensions:

‘We will not solve the conundrum of sustainable city living unless we understand these contradictory forces and resolve the tension between them. How much space, privacy, and distance from other people do we need? How much nature do we need?’⁶⁰

He also mentions that a qualitative urban revision will require mental and sociological adaptability from its residents as they will be confronted with their own habits and relationships with the city.⁶¹ Following, the three conflicting forces will be discussed..

⁵² “FelixArchief”, Stadsarchief Antwerpen.

⁵³ Onroerend erfgoed Vlaanderen, “Inventaris Onroerend Erfgoed”.

⁵⁴ “Percelen Informatie Platform”, Stad Antwerpen.

⁵⁵ “FelixArchief”, Stadsarchief Antwerpen.

⁵⁶ “Stedenbouwkundige vergunningen”, Vlaanderen Departement Omgeving, 1 September 2019, <https://indicatoren.omgeving.vlaanderen.be/indicatoren/stedenbouwkundige-vergunningen>.

⁵⁷ “Percelen Informatie Platform”, Stad Antwerpen.

⁵⁸ “Percelen Informatie Platform”, Stad Antwerpen.

⁵⁹ “Hoplr: Sociaal netwerk voor de buurt”, Hoplr, Accessed 12 August 2024, <https://www.hoplr.com/nl>.

⁶⁰ Charles Montgomery, *Happy City Transforming Our Lives through Urban Design* (New York: Farrar, Straus and Giroux, 2013): 106.

Conflicting forces between townhouses’ exclusivity and current inclusivity policies

Individuals are continuously seeking both personal and collective identities in a globalized and generalized world. As Laurajane Smith discussed in Uses of Heritage, heritage is used as an instrument to converse about identity:

‘Heritage thus becomes not only a tool of governance, but also a tool of opposition and subversion. Heritage can therefore be understood as an important political and cultural tool in defining and legitimizing the identity, experiences and social/cultural standing of a range of sub-national groups as well as those of the authorizing discourse. However, it may also be an important resource in challenging received identity and cultural/social values.’⁶²

In situations where clear frameworks of identification and distinction become uncertain, individuals and communities have consistently sought sources of

identity and distinction.⁶³ This identity is shaped by an interplay of internal and external factors, like interpersonal relationships, culture, as well as by places such as one’s home, hometown, or country.⁶⁴ The proliferation of globalization threatens the genius loci or ‘the spirit of a place’.⁶⁵ Following Smith, who explores ‘the tension between the idea of the intangibility of heritage and the reality that there are ‘places’ we call and define as heritage’, critical attention to the idea of place has recently become intertwined with the discourse on globalization as heritage helps us to ‘place’ ourselves in our cultural, social, and physical world’; it provides us both a geographical and social sense of belonging.⁶⁶ Adaptive reuse and adaptations of our built heritage can thus serve as a solution to fulfill this human quest of spatial identity and identity in general, given the close connection between built heritage, emotions, and identity.

Heritage functions as a medium for discussing

identity, which can also expose tensions between different types of identities. At the scale of Antwerp townhouses, this tension is evident in the contrast between the original identity associated with the townhouse and the new identity we seek to establish through densification, aiming to make these buildings more appealing and accessible to a broader population.

Owning a large house was a ‘distinguishing mark of social class’ throughout the 19th century.⁶⁷ Townhouses served as expressions of a family’s status, thereby declaring a certain hierarchy both between and within families.⁶⁸ Laurajane Smith states that heritage in general serves as objects of desire and prestige because of their symbolic meaning.⁶⁹ She also analyzed the English country house, which embodies the idea of the ‘British aesthetic’ and is often used to ‘justify the idea that [the country house is] a major contribution to Western ‘civilization’’.⁷⁰ These houses show an increased

division between private and public spaces to ensure the visitors exclusion from the privileged rooms.⁷¹ As the compartmentalization between private and public is also apparent in 19th-century townhouses, one can assume that they carry similar connotations to the English country house.⁷² People are drawn to these types of buildings because emotions are evoked through the connections to the past that retain historical grandeur.⁷³ The exclusive spirit of townhouses forms a paradox with the ways heritage can also unite people and communities.⁷⁴ The initial meaning of these buildings can be refashioned into a more inclusive way of living together by using townhouses to house more people in the city. This would provide housing opportunities for more people within the city, fostering a tighter-knit community through the densification of the urban landscape and, consequently, intensifying human interactions. The balance between inclusion and exclusion,

and communality and privacy is also discussed in Montgomery’s Happy City,⁷⁵ where he talks about the correlation between happiness and urban planning and how ‘happiness, as expressed in philosophy and architecture, has always been a tug-of-war (...) between private pleasures and public goods’.⁷⁶ He continues by saying that we all portray the contradictory feelings of selfishness and altruism,⁷⁷ and wraps up by emphasizing the need for communality. This idea is put into practice in the form of collaborative housing models, where individual dwellings in combination with common facilities create a city-within-a-city.⁷⁸ These innovative ways of housing are increasingly emerging in the historic city center. In recent years, there has been a revival towards more compact and collaborative living, like cohousing, cooperative housing, and tiny housing,⁷⁹ contributing to urban densification. While collaborative living arrangements initially emerged

as ideological experiments in the seventies, their implementation today is primarily driven by financial considerations and the desire to cultivate meaningful social connections.⁸⁰ The inclusion-exclusion dualism also reaches beyond citizens of cities around the world. With mass tourism as part of our reality in the 21st century, new global challenges emerge as Airbnb and other major accommodation platforms increasingly dominate urban landscapes. The hotel industry in Antwerp and the city’s residents alike point fingers at these platforms, alleging unfair competition and the displacement of inhabitants, respectively.⁸¹ Tourism and heritage are tightly interconnected, meaning mass-tourism also has an impact on the purpose and ownership of built heritage.⁸² Irene Rubino, Cristina Coscia, and Rocco Curto demonstrated that in a city like Turin, which is a comparable medium-size city like Antwerp, ‘the buildings located in the

61 Montgomery, *Happy City Transforming Our Lives through Urban Design*, 318.
62 Laurajane Smith, *Uses of heritage* (London: Routledge, 2006): 52.
63 J.T. Mommaas et al., “City Branding: Image Building & Building Images”, *City Branding* (1 Januari 2002), <https://www.narcis.nl/publication/RecordID/oai%3Atilburguniversity.edu%3Apublications%2Fce69e1ac-4a22-4325-808-c-2a2b9289b425>, 32-48.
64 Even historic places affect our identity: Thompson M. Mayes, *Why Old Places Matter: How Historic Places Affect Our Identity and Well-Being* (Lanham: Rowman & Littlefield, 2018).
Smith, *Uses of heritage*, 48-53.
65 Christian Norberg-Schulz, *Genius Loci: Towards a Phenomenology of Architecture* (New York: Rizzoli, 1979).
66 Smith, *Uses of heritage*, 74-75.
67 Harry Francis Mallgrave, Martin Bressani, and Christina Contandriopoulos, eds., *The Companions to the History of Architecture: Nineteenth-Century Architecture*, Vol. 3. (Chichester: Wiley Blackwell, 2017): 275.
68 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 275.
69 Smith, *Uses of heritage*, 53.
70 Smith, *Uses of heritage*, 118-119.
71 Smith, *Uses of heritage*, 119.
72 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 271-272.
73 Smith, *Uses of heritage*, 121.
74 Smith, *Uses of heritage*, 160.
75 Montgomery, *Happy City Transforming Our Lives through Urban Design*.
76 Montgomery, *Happy City Transforming Our Lives through Urban Design*, 23.
77 Montgomery, *Happy City Transforming Our Lives through Urban Design*, 41.
78 Gudmand-Høyer, “Det manglende led mellem utopi og det forældede enfamiliehus”, 3.
79 Sargisson, “Second-Wave Cohousing: A Modern Utopia?,”28–56.
80 Dansk Bygningsarv, Fremtidens bofællesskaber [Cohousing communities of the future] (Copenhagen: Udlændinge-, Integrations- og Boligministeriet, 2016): 15.
81 Lina El Bakkali, “Hotelsector wil dat Airbnb’s in Antwerpen strengere controle krijgen: ‘Oneerlijke concurrentie’”, *vrt* (24 April 2023), <https://www.vrt.be/vrtnws/nl/2023/04/24/airbnb-s-antwerpen/>.
Mark Eeckhaut, “Antwerpse modewijk kreunt onder Airbnb’s: ‘Straks blijft hier geen Antwerpenaar meer over’”, *De Standaard* (15 January 2024), https://www.standaard.be/cnt/dmf20240114_97825991.
82 For example, World Heritage is presented as a solution for the homogenization of culture. Yet, it is itself a product of globalization in which cultural tourism has come to dominate aspects of the world economy. Barbara Kirshenblatt-Gimblett, *World Heritage and Cultural Economics* (Durham: Duke University Press eBooks, 2006): 161–202.

areas most affected by short-term rentals seem to mainly date back to a historical period prior to 1918'.⁸³ This suggests that both travelers and hosts of accommodations benefit from staying in or renting out historic buildings and that Antwerp 19th-century houses can thus be affected too by mass tourism.

Conflicting forces between top-down policy and bottom-up vernacularity

Within the heritage discourse, the notion of power is an extensively discussed subject: who are the legitimate spokespersons for the past and who decides how to care for our past?⁸⁴ According to Smith, 'a sense of action or critical engagement on the part of non-expert users of heritage' is missing within the Authorized Heritage Discourse.⁸⁵ The intervention of a top-down government can cause

severe friction with the ideas and aspirations of citizens. By focusing on the building code in the city of Antwerp, this friction will be further explored. The current building code (article 23) in Antwerp stipulates a restriction on the conversion of single-family houses into multiple family residences. Likewise, the future building code, that is expected to be implemented latest June 2024, indicates the same policy:

'Article 28: protection of single-family houses §2: A protected single-family dwelling may not be converted into a multifamily building. Co-living and hospice dwellings are not considered a conversion to a multifamily building.'⁸⁷

According to the same building code, a protected single-family dwelling is 'a single-family dwelling where the dwelling coincides with the entire building and whose total gross floor area does not exceed

350 square meters, including any complementary functions and so-called "commercial houses".⁸⁸ Stating this policy, the city of Antwerp prioritizes a wide range of different types of housing typologies, guaranteeing there is a suitable house for everyone. Preserving the existing stock of larger houses is essential to provide ample residential choices for families.⁸⁹ Given that, in 2023, families comprised only 22,9% of residences in Antwerp,⁹⁰ and considering that the average in Flanders (2023) is 28%,⁹¹ the city's statement appears reasonable. To counter this decision of the government, the maximum size of the protected single-family house is questioned. As studied by Statbel,⁹² there has been a significant decline in the surface of new house units licensed since 2015. The size of areas granted, dropped from 261m² (2015) to 198m² (2022) in Flanders.⁹³ These

statistics serve as a crucial benchmark, reflecting the current lifestyle standards influenced by the rising costs of land under capitalism, which compel people to reside in smaller dwellings. This benchmark questions the need and financial possibility for families to live in a 350m² house, which is 150m² larger than an average newly built house nowadays. Studying literature further, Harry Francis Mallgrave, Martin Bressani, and Christina Contandriopoulus state that these 19th-century townhouses and city mansions were initially designed to serve more than one family:

'Grown children often remained in the parents' home until the time they married, such that bedrooms and shared spaces sometimes accommodated a group of adults, or multiple generations.'⁹⁴

The authors also wrote that servants sometimes occupied half of the square meters of a family's house.⁹⁵ Moreover, Els Oosterlinck and Inge Hens examined a specific neighborhood in Antwerp from

the early 20th century. They contend that the houses in this area were originally designed to accommodate more than one family, as they historically served as residences for servants and multi-generational families.⁹⁶ In addition to the dimensions of the houses, the architectural layout also suggests that multiple families once lived here: spaces are often compartmentalized, and multiple independent staircases can be observed.⁹⁷ Furthermore, among the various housing typologies in Antwerp, there is another type known as "rental", which can be equated with the modern concept of a multiple-family house. This typology is distinguished by its division into multiple apartments intended for rental.

In recent years, there has been a tendency towards more compact and collaborative living.⁹⁸ This acclaim derives from a bottom-up community of citizens and may conflict with decisions made by the government. The conflicting force of the initial use of historic houses, the building code, and the tendency

towards more collaborative living have an impact on the built environment, particularly within the context of built heritage. These forces prompt the question of the extent to which the preservation of the built heritage should be regulated and who else, besides the government and heritage experts, should hold the decision-making authority in this matter.

Conflicting forces between preserving heritage and adapting heritage

In the heritage field, there has consistently been a tension between preserving heritage in a static manner, akin to a museum object, and safeguarding heritage by actively utilizing it—either for its original purpose or in a more innovative manner.⁹⁹ Goal 11 of the Sustainable Development Goals, recorded by the United Nations in 2015, aims to 'make cities and human settlements inclusive, safe, resilient, and sustainable', with target 11.4 aiming to 'strengthen efforts to protect and safeguard the world's cultural

83 Irene Rubino, Cristina Coscia, and Rocco Curto, "Identifying Spatial Relationships between Built Heritage Resources and Short-Term Rentals before the Covid-19 Pandemic: Exploratory Perspectives on Sustainability Issues." *Sustainability* 12, no. 11 (2020), <https://research.ebsco.com/linkprocessor/plink?id=87047031-54d6-3679-b26d-08bdd2e7a26f>, 1.

84 Smith, *Uses of heritage*, 29.

85 The authorized heritage discourse and its use are extensively discussed by Laurajane Smith: Smith, *Uses of heritage*, 34.

86 "Gemeentelijke Stedenbouwkundige Verordering: Bouwcode, Gecoördineerde Versie", Stad Antwerpen (25 September 2017), https://www.antwerpen.be/docs/Stad/Stadsvernieuwing/Bestemmingsplannen/SVO_11002_233_10007_00003/SVO_11002_233_10007_00003_0000Document_SV.html.

87 Own translation from Dutch to English.

88 "Stedenbouwkundige verordering: Ontwerp Bouwcode Stad Antwerpen", Stad Antwerpen (Oktober 2023): 45.

88 Own translation from Dutch to English:

"Gemeentelijke Stedenbouwkundige Verordering: Bouwcode," Stad Antwerpen, 8-9.

89 Article 23:

"Gemeentelijke Stedenbouwkundige Verordering: Bouwcode," Stad Antwerpen.

90 A family is defined as a household containing at least one custodian and one child.

"Demografie", Stad in Cijfers.

91 "Huishoudtypes", Vlaanderen, Accessed 17 January 2024, <https://www.vlaanderen.be/statistiek-vlaanderen/bevolking/huishoudtypes>.

92 "Nieuwbouwvergunningen", Vlaanderen, Accessed 17 January 2024, <https://www.vlaanderen.be/statistiek-vlaanderen/bouwen-en-wonen/nieuwbouwvergunningen>.

93 "Nieuwbouwvergunningen", Vlaanderen.

94 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 276.

95 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 279.

96 Els Oosterlinck, and Inge Hens, *Eglantierlaan*, (Final dissertation, University of Antwerp, 1998), 87.

97 Oosterlinck and Hens, *Eglantierlaan*, 87.

98 Anna Falkenstjerne Beck, "What Is Cohousing? Developing a Conceptual Framework from the Studies of Danish Intergenerational Cohousing." *Housing, Theory & Society* 37, no.1 (2020): 41.

99 Viollet-le-Duc, for example, focused on the concept of 'creative restoration', advocating for historic buildings to embody an idealized vision of their original state rather than maintaining them in a specific moment in time; while other theorists like Ruskin emphasize the need for honest expressions of materials and construction and argued for adaptive reuse of historic buildings.

Eugène Viollet-le-Duc, *Entretiens Sur l'architecture*. A. Morel et Cie éditeurs (1863) <https://research.ebsco.com/linkprocessor/plink?id=168ce1ca-5239-38e2-bdd2-56ddb914bc51>.

John Ruskin, "The Seven Lamps of Architecture," *Bulletin of the American Art-Union* 2, no. 6 (January 1, 1849): 11.

100 United Nations Department of Economic and Social Affairs, "Goal 11".

and natural heritage’.¹⁰⁰ Viewing sustainability as a resilient and adaptable phenomenon, the question arises: to what extent should built heritage be adapted to meet current and future needs? To answer this question, it is essential to first identify the key criticism nodes. Authenticity is the primary criticism node. The Nara Document on Authenticity (1994),¹⁰¹ recognizes the need for a more flexible and culturally sensitive approach towards heritage conservation, avoiding rigid definitions of authenticity. Authenticity encompasses not only physical authenticity but also the social and historical context of heritage. Additionally, the act of reversibility is also widely discussed within the context of built heritage. The Burra Charter (1999, updated in 2013)¹⁰² underscores the importance of reversible interventions as a principle in conservation practices, allowing future change without compromising the

heritage’s significance. A third criticism node is the concept of integrity. Historically, as outlined in the World Heritage Convention (1972),¹⁰³ integrity was primarily associated with physical completeness. However, contemporary interpretations, including those in the Nara Document,¹⁰⁴ expand this concept to encompass not only physical attributes but also cultural and contextual values. These criticism nodes make clear that the academic world leans towards a more resilient, adaptable and context-dependent approach when it comes to heritage preservation and safeguarding. Janssen et al. discuss that ‘an excessively rigid approach to heritage management is neither socially justifiable nor economically viable, and it creates little cultural value’.¹⁰⁵ Conveying similar ideas, Jim Perry and Lain Gordon claim that adaptive heritage should be considered as an approach that treats

sites as living heritage and that manages adaptively. Furthermore, they describe the tension between living heritage and heritage frozen in time as follows: ‘Authenticity, a core component of site valuation,¹⁰⁶ suggests that site conditions must remain close to some defined or imagined prior condition. In contrast, living heritage is a process-based approach in which change through time is an inherent part of a site’s value.¹⁰⁷ Living heritage suggests that authenticity is defined by the evolving intersection of communities (i.e., stakeholders) and site biophysical attributes.’¹⁰⁸ Conversely, within the framework of adaptive reuse, heritage can be used more effectively and sustainably when the new function of a building closely aligns with its original purpose.¹⁰⁹ Antwerp has a rather old building stock which indicates the longevity and durability of the existing stock’s life

cycle and the needlessness of demolition and/or intrusive adaptation.¹¹⁰ The same tension can be found on the scale of historic townhouses in Antwerp. When an authentic building plan of an existing building is completely altered, we are left with facadism. Among conservation experts, facadism is considered to be one of the most common phenomena associated with the conservative heritage approach, affecting the authenticity of a building.¹¹¹ In Flanders, it is common to find buildings protected solely by their façade, with little consideration given to the relationship between the building’s exterior and interior.¹¹² Although this practice is still present in Flanders’ current heritage politics, both UNESCO and ICOMOS condemn the practice of facadism as a valid conservation method.¹¹³ Numerous theories and perspectives on facadism have been disseminated globally through literature and practical application. Some scholars

consider the preservation of only a building’s façade as a compromise between building conservation and commercial development.¹¹⁴ Some even claim that it is a compromise between the community and the actual owner, as facades would belong to the community whilst interiors would belong to the owner.¹¹⁵ Despite the assertion that ‘the façade of a building should be a natural expression of its interior,’ as put forth by Vitruvius and reclaimed by The Modern Movement,¹¹⁶ other researchers have contested this proposition. Thomas L. Schumacher explains this by listing several widely appreciated buildings that adopt the principle of facadism and Els Oosterlinck and Inge Hens encounter for example that clients planning to construct a house in Eglantierlaan in the beginning of the 20th century likely had several façade options to choose from, despite the similarity in the interior organization.¹¹⁷ The ability to select the facade separately from the interior layout suggests

that, in some instances during the 19th century, facade and interior were regarded as separate, independent architectural components. Architects also harbor uncertainty regarding the role of built heritage within the contemporary urban landscape. While some architects dread that they will not have an opportunity to produce contemporary architecture because of the amount of heritage preservation in historic city centers,¹¹⁸ others claim that heritage constraints are a call for imagination and creativity. Evangelia Kyriazi discusses that interventions within historic city centers allow for creative use, ‘while respecting the site’s cultural heritage’ and that architects, engineers, and urban developers ‘must be taught to recognize the values of a buildings’ exterior, as well as their interiors (...)’.¹²⁰ Ultimately, buildings must adapt to function effectively in the 21st century without sacrificing future potential. Modern living requirements necessitate

101 International Council on Monuments and Sites (ICOMOS), *Nara Document on Authenticity* (1994), <https://www.icomos.org/charters/nara-e.pdf>.

102 Australia ICOMOS, *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (1999, updated 2013), <https://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013.pdf>.

103 UNESCO, *Convention Concerning the Protection of the World Cultural and Natural Heritage* (16 November 1972), <https://whc.unesco.org/en/conventiontext/>.

104 ICOMOS, *Nara Document on Authenticity*.

105 Joks Janssen et al., “Heritage Planning and Spatial Development in the Netherlands: Changing Policies and Perspectives”, *International Journal of Heritage Studies* 20, no. 1 (2 January 2014): 18.

106 Perry and Gordon refer here to: UNESCO, “World Heritage Operational Guidelines”, (2019), Accessed 19 January 2024, <https://whc.unesco.org/en/guidelines/>.

107 Perry and Gordon refer here to:

Ioannis Poullos, “Moving Beyond a Values-Based Approach to Heritage Conservation”, *Conservation & Management of Archaeological Sites* 12, no. 2 (May 1, 2010): 170–85.

108 Jim Perry, and Iain J. Gordon, “Adaptive Heritage: Is This Creative Thinking or Abandoning Our Values?”, *Climate* 9, no. 8 (August 1, 2021): 7.

109 Philippe Robert, *Reconversions New Uses for Old Buildings*, Editions du Moniteur (1989), <https://research.ebsco.com/linkprocessor/plink?id=2b3c7d03-8458-3f3d-acbb-68d29efa965a>, 23.

110 As mentioned before, 13,2% of existing dwellings are built before 1900; this percentage even extends to 30,7% in the historic city center.

Gillian Foster, “Circular Economy Strategies for Adaptive Reuse of Cultural Heritage Buildings to Reduce Environmental Impacts”, *Resources, Conservation & Recycling* 152 (January 2020).

The impact of heritage on regeneration is also described in:

Bie Plevoets, and Koenraad Van Cleempoel, “Adaptive reuse for urban regeneration”, in *Adaptive reuse of the built heritage: concepts and cases of an emerging discipline* (London: Routledge, 2019): 52-78.

111 Evangelia Kyriazi, “Façadism, Building Renovation and the Boundaries of Authenticity”, *Aesthetic Investigations* 2, no.2 (2019): 187.

112 For instance, in *Zuidwijk*, the majority of townhouses are included within a protected townscape or village landscape. In these cases, the protection typically extends only to the façade and roofing, limited to what is visible from the street.

Onroerend erfgoed Vlaanderen, “Inventaris Onroerend Erfgoed”, Accessed 14 May 2024, <https://inventaris.onroerenderfgoed.be/>.

113 Bie Plevoets, “Juxtaposing inside and Outside: Facadism as a Strategy for Building Adaptation”, *Journal of architecture* (May 2021): 542.

114 Kyriazi, “Façadism, Building Renovation and the Boundaries of Authenticity,” 185.

115 Kyriazi, “Façadism, Building Renovation and the Boundaries of Authenticity,” 187.

116 Plevoets, “Juxtaposing inside and Outside,” 544.

117 Thomas L. Schumacher, “The Outside Is the Result of an inside’: Some Sources of One of Modernism’s Most Persistent Doctrines”, *Journal of Architectural Education* (1984-) 56, no. 1 (September 1, 2002): 23–33, <https://research.ebsco.com/linkprocessor/plink?id=de26c8c9-74b8-3da0-b5a9-ef078082e57a>.

Oosterlinck and Hens, Eglantierlaan, 74.

118 Kyriazi, “Façadism, Building Renovation and the Boundaries of Authenticity”,188.

Rem Koolhaas, *Preservation Is Overtaking Us* (Columbia: GSAPP Books, 2014).

119 Robert, *Reconversions New Uses for Old Buildings*, 15.

120 Kyriazi, “Façadism, Building Renovation and the Boundaries of Authenticity”, 191-192.

modifications to the existing urban fabric, such as updating individual units with modern kitchens, bathrooms, and essential systems like drainage, electricity, and heating. Architects can employ reversible design approaches to minimize the impact on future adaptations and preserve flexibility for future changes.

The conflicting objectives between preservation and adaptation raise the question of whether, to what extent and which attributes of a heritage asset should be adapted for current and future needs. Should we change historic townhouses and how far should we go in adapting them into multiple-family houses, while also safeguarding the heritage assets?

Concluding thoughts on managing contradictions

There are no universal solutions to the questions and issues arising from the conflicting forces between top-down and bottom-up approaches, the preservation and adaptation of heritage, and exclusivity and inclusivity matters. Questions such as whether built heritage should be altered, the reasons for such alterations, and the extent to which they should be carried out, as well as who decides on these alterations, remain contentious. Furthermore, the complex requirements of various stakeholders

and the numerous strategies necessary for different buildings and purposes further compound these issues. While this research is going to endorse these paradigms, they will not be substantially discussed. This is because they are not inherently correct or incorrect, but rather closely connected to policy and politics.

2.1. 19th-century cosmopolitanism and housing typologies in Antwerp architecture

The 19th century introduces significant shifts in economic, political, and social dynamics across Western European cities, fostering a new cosmopolitan ethos – that is evident in, for example, the expansion of the port of Antwerp and the organization of world exhibitions - throughout the region.¹²¹ These transformations also leave their mark on architectural development, giving rise to a variety of housing typologies. On one hand, the rise of industrialization brings about industrial plants, commercial properties, and residences for the working class.¹²² A new type of servant housing, referred to as townhouses and city mansions, arises from the 18th-century patrician house.¹²³ These buildings provide urban residences for well-to-do citizens, like bourgeois, middle class, and civil servants who come from wealthy families.¹²⁴ These families wanted to live in residential neighbourhoods, shielded from

the misery and pollution of the working class, while embodying the same efficiency characteristics of that modern outside world:

‘Although the interiors of the upwardly mobile bourgeois middle class of the nineteenth century have often been described as ‘worlds unto themselves’, or ‘anti-worlds’ turned away from public life and, above all, the realm of industry and labor, the new science of planning showed that they were actually organized, developed, and inhabited with the same efficiency typical of that modern world that lay outside.’¹²⁵

During this era, the material appearance of the house and its representation hold significant importance.¹²⁶ Never before had so many bourgeois buildings been erected, driven by hedonism, civic engagement, artistic impulses, and the desire to leave a tangible legacy for future generations.¹²⁷ This ensured that craftsmanship in construction reached an exceptional level of quality during this period.¹²⁸ Additionally, up until the 20th century, dwellers from one typology didn’t get along with residents of the

other typology due to social disparities and diverging political viewpoints. Subsequently, the term ‘servant house’ had a rather negative connotation among working-class individuals. In history, however, these bourgeois houses have contributed enormously to the improvement and expansion of working-class housing through competitive means, especially after the First World War.¹²⁹

2.2. 19th-century domesticity and general architectural characteristics of the bourgeois house in Antwerp

The architectural features of the bourgeois house serve as a tangible expression of civic virtues and the ideologies of the upper-middle class. Following, the exterior and interior characteristics of a bourgeois house will be discussed. A ‘bourgeois house’ serves as an umbrella term encompassing both city mansions and townhouses, as both types of residences accommodate affluent citizens and their families.

Architectural styles of the bourgeois house

The 19th-century citizen considers himself a modern man.¹³⁰ When time takes away his certainties and he is confronted with the multiplicity of a new architectural style called eclecticism, the citizen must choose.¹³¹ According to Bart Verschaffel, eclecticism involves ‘welcoming the multitude, displaying it, and living with it. And at the same time: surviving the multitude, mastering it through choosing’.¹³² This blend of idealism and materialism represents a prevalent characteristic of 19th-century architectural thought, reflecting the century’s endeavor to reconcile the ideal with the new conditions ushered in by industrialization.¹³³ The experience of living in two worlds simultaneously was an inherent characteristic of daily life during this period, as industrialization was rapidly transforming a still very traditional

landscape.¹³⁴ This style can be considered one of the first modern styles:

‘Eclecticism is deeply modern in the realization that, from now on, everything is available - that all meanings are on display in world history and under the crystal palaces of the world’s exhibitions - but that none of it is yet perfectly valid.’¹³⁵

Eclecticism counters thus the nostalgia for origins, the longing for the ‘purity’ of tradition, and the notion that a single life or culture suffices for fulfillment.¹³⁶ Instead, it encourages curiosity and a spirit of exploration.¹³⁷ Buildings in the 19th century were designed with a stylistically pluralistic approach, often incorporating various neo-styles into their architecture, like neoclassicism and neo-Flemish Renaissance style.¹³⁸ The neoclassical style is characterized by its emphasis on simplicity, symmetry, and the use of

classical orders. The style features grand facades with restrained ornamentation, drawing heavily from the proportions and motifs of ancient Greece and Rome.¹³⁹ The Flemish Renaissance Revival style is characterized by its rich ornamentation, including intricate brickwork, steeply pitched roofs, and elaborately gabled facades. It features vertical emphasis, complex rooflines, and decorative details that evoke the historical Flemish Renaissance aesthetic.¹⁴⁰ On the one hand, the architect aimed to depart from previous architectural traditions and showcase their individual taste and design.¹⁴¹ On the other hand, the bourgeois family aims to present itself as a respectable family, seeking to convey to others the embodiment of civic virtues and values.¹⁴²

121 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen, XVe - XIXe Eeuw: Een Overzicht* (Antwerp: Generale Bankmaatschappij, 1980): 26-27.
122 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen*, 27.
123 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen*, 29.
124 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen*, 29.
125 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 290.
126 Yves Schoonjans, *Architectuur En Vooruitgang: de Cultuur van Het Eclecticisme in de 19de Eeuw* (Ghent: A&S/books, 2007): 251.
127 Jos Vandenbreeden, *De 19de Eeuw in België: Architectuur En Interieurs* (Amsterdam: Terra-Lannoo, 1994): 7.
128 Jos Vandenbreeden, *De 19de Eeuw in België*, 7.
129 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen*, 27.

130 ‘The characteristics of modern 19th society are well known: the legacy of the intellectual revolution of the 18th century, the demand for individual liberty and equality as formulated in La Déclaration des Droits de l’Homme et du Citoyen, a very individual interpretation of this in 19th century liberalism, the growing secularization, the coexistence of numerous political and intellectual opinions and positions the political changes driven by the growing middle class, the concepts of democracy, public interest, public order and public safety, the growth of scientific knowledge and of well and efficiently trained technicians, the optimism of progress, the industrial revolution with the development and automation of production, new energy sources, (...), the raising of living standards and consumption, demographic growth, urban industrial society, the bourgeoisie and factory proletariat, the appearance of innumerable studies and novels, journalism, the great attention to history, and so on.’
131 Schoonjans, *Architectuur En Vooruitgang*, III.
132 Yves Schoonjans, *Architectuur En Vooruitgang*, III.
133 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 9.
134 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 11.
135 Schoonjans, *Architectuur En Vooruitgang*, IV.
136 Yves Schoonjans, *Architectuur En Vooruitgang*, IV.
137 Yves Schoonjans, *Architectuur En Vooruitgang*, IV.
138 Yves Schoonjans, *Architectuur En Vooruitgang*, 2.
139 Luc Dhondt, *18de-Eeuwse Architectuur in België Laatbarok, Rococo, Neoclassicisme* (Amsterdam: Lannoo, 1998).
140 Alfred Willis, *Flemish Renaissance Revival in Belgian Architecture (1830-1930)*, (University Microfilms International, 1984).
141 Schoonjans, *Architectuur En Vooruitgang*, 2.
142 Schoonjans, *Architectuur En Vooruitgang*, 251.

Exterior characteristics of the bourgeois house

While 18th-century architects were mostly interested in the elevation instead of the floor plan of a building, 19th-century architects were more concerned with ensuring harmony between the interior and exterior design.¹⁴³ In the second half of the 19th century, the traditional order of symmetrical facades was questioned because of the changing interior.¹⁴⁴ During this era, the positioning of windows, balconies, and decorative moldings on the façade is orchestrated to reflect the internal spatial connections of the building.¹⁴⁵ An attempt to evoke a ‘palace-spirit’ in new buildings is implemented by opting for façade decorations that have sprung from a particular architectural history.¹⁴⁶ The façade of 19th-century bourgeois houses differed from those of working-class residences. The facade possesses a public character, enabling the seamless integration of the institutional aspects to which eclecticism refers. This public character could

also be recognized by integrating very confluent spaces that blended the outside surroundings with the interior of the bourgeois house: ‘Rooms often jutted out from the main massing of the house like peninsulas, and bay windows offered serial and nearly filmic views of the surrounding landscape.’¹⁴⁷ They could be distinguished ‘by a more expensive kind of brick of the facade and by the sidewalk of two steps at the entrance’. In the latter half of the 19th century, Antwerp saw the emergence of a novel technique for sculpting facades. Ornate designs were crafted using a combination of gypsum and lead white paste, applied over a thin layer of lime. This method resulted in the creation of “white streets” within the urban core of Antwerp. This method originated due to the high expenses associated with importing the large stone blocks commonly used for facades in earlier periods.¹⁴⁸

Interior characteristics of the bourgeois house

At the end of the 18th century, the interiors of bourgeois houses are still strongly inspired by those of the aristocracy of Paris.¹⁴⁹ A palace-like spirit from the earlier period is sustained in the 19th century within the interplay of floor levels, stairs and landings, and the use of marble and stucco.¹⁵⁰ The bourgeois interior arises from a challenging equilibrium between personal comfort, hygiene standards, societal norms, and individualistic expression.¹⁵¹ The detailed description of rooms in relation to their placement, function, and design unveiled a tight correlation between the floor plan and its occupants, a relationship that persisted well into the 20th century.¹⁵² Internally, these houses had two rooms next to a corridor with an ornate staircase – which constitutes the spine of the house - , a kitchen and sometimes a veranda.¹⁵³ On the upper floors, there were typically two rooms, with an attic space above them.¹⁵⁴

The dinner room served as a separate entity, oriented inward rather than outward, encapsulating the essence of family life.¹⁵⁵ It embodies the core values of 19th-century interior design in bourgeois houses, emphasizing civic respect and the powers of presentation, which should ideally align with culture, or rather, with refined taste.¹⁵⁶ Yves Schoonjans explains extensively the ambiguous relationship between privacy and visibility inherent in interior spaces in this time period:

‘In a society where bourgeois life takes place in a series of (closed) spaces, the domestic interior is the intersection between the private sphere of the family and that of a social class. Therefore, however closed off this class behaves, the bourgeois home is at the same time highly visible. It is an open house. In other words, as closed the bourgeois interior is to the outside world, so public and transparent must it be in the privateness of its own social class. The private here is a public construction. It is the place where the middle-class family is judged by others.

In the home, therefore, one must be able to discover the bourgeois values, established ideals and bourgeois culture of the middle class. This demand is formulated in very different kinds of documents that speak of the family and bourgeois values. (...) The home has a moral and social significance.’¹⁵⁷ Although often regarded as private, even within the genre paintings of this era that depict the bourgeois ideal of an intimate family sphere,¹⁵⁸ the civic interior unmistakably maintains connections to the outside world. Within these spaces, the cosmopolitan spirit of the 19th century is manifested through a fascination with history, collections, and encyclopedic knowledge. Placing the table as the focal point in the dinner room emphasizes the hierarchy and protocol entrenched within the bourgeois family.¹⁵⁹ While these grand residences conveyed elevated social status, they also afforded family members the chance to retreat from one another and lead isolated lives for extended periods daily. Consequently, rooms became closely linked to individual family members

and gender, reflecting the hierarchical family structure through these associations. For example, men typically oversaw the dinner room, library, billiards room, and office, whereas women managed the kitchen and parlor. Children were typically confined to nurseries and playrooms, expected to be seen but not heard. Grown children often continued to reside in their parents’ home until marriage, maintaining the tradition of sharing spaces with multiple generations. The decorations of these different rooms express the association with individual family members. The dinner room is decorated in dark, heavy colors and furniture while the parlor features floral patterns and furniture arranged in clusters to encourage intimate conversations. Despite dinner rooms sometimes being nearly as large as individual parlors in modest houses, their distinct location within the house and unique decor and furnishings immediately distinguishes their identity. Over time, another evolution can be seen related to the relationship of parents and their children. With bedrooms located

143 Vandenbreeden, *De 19de Eeuw in België*, 26.
144 Jos Vandenbreeden, *De 19de Eeuw in België*, 205.
145 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 272.
146 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen*, 29.
147 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 275.
148 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen*, 27.
149 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen*, 25.
150 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen*, 29.
151 Schoonjans, *Architectuur En Vooruitgang*, 254.
152 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 290.
153 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen*, 27.
154 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen*, 27.

155 Yves Schoonjans, *Architectuur En Vooruitgang*, 248.
156 While pleasure is usually an intimate experience, taste is almost always a group phenomenon through which the personal is normalized into the social. Schoonjans, *Architectuur En Vooruitgang*, 256.
157 Own translation from Dutch to English. Schoonjans, *Architectuur En Vooruitgang*, 251.
158 Schoonjans, *Architectuur En Vooruitgang*, 253.
159 Schoonjans, *Architectuur En Vooruitgang*, 274.
160 Vandenbreeden, *De 19de Eeuw in België*, 201.
161 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 275-277.

closer to each other over time,¹⁶⁰ it can be argued that intimacy between parents and children increased during the 19th century.¹⁶¹ Another noticeable evolution can be observed concerning the kitchen, which gradually moved farther away from the dinner room.¹⁶² This shift was prompted by concerns about kitchen fumes and a growing desire to distance the staff, who were primarily employed in this space.¹⁶³ The overarching idea of distancing or even ‘hiding’ housekeeping employees is also reflected in the arrangement of staff bedrooms under the attic, the preference for English basement kitchens, and the implementation of separate service stairs.¹⁶⁴ The servant staircase, accessible from the kitchen, contrasts the grandeur of the main hall’s monumental staircase with its steeper and narrower design.¹⁶⁵ It ascends to the servant’s bedrooms upstairs and descends to the laundry room and other work areas downstairs.¹⁶⁶

At times, servants inhabited as much as half of the square footage of a family house, with the kitchen often serving as the central space, and occasionally, they were provided with their own dining area.¹⁶⁷ The number of servants typically correlated with the wealth of the family.¹⁶⁸ Advanced techniques and the concept of ‘comfort’ from England introduced various improvements during this period, including advancements in hygiene, heating boilers, as well as the emergence of tapestries, cushions, and curtains.¹⁶⁹ Most of these newly built houses in the 19th century were equipped with access to piped water.¹⁷⁰ An interior can always be considered eclectic, as it is mostly a collection of objects from different time periods and tastes. While merging inherited family heirlooms with new furniture and trinkets from big department stores can be seen as ‘natural eclecticism’, ‘intended eclecticism’ is a stylistic

exercise, in which the variety of material and color in the interiors is such that one might think of a sample book.¹⁷¹ Regarding surface patterns and textiles botanical motifs predominated, ranging from more pictorial to more abstract, and subject to changing trends.¹⁷² During the 19th century, the responsibility for managing this interior domain fell upon women, based on the assumption that they possessed an intrinsic ability to detect beauty, harmony, and elegance.¹⁷³ This concept gained traction through the emergence of new media, like magazines, within the feminine sphere of house furnishing and fashion.¹⁷⁴ Conversely, the aspirations, promotion, and marketing of the decorative arts are integral to the feminist progression through modernization.¹⁷⁵

Outdoor living spaces of the bourgeois house

The garden could also be considered a living

space, as it acted as a physical and social buffer for the house. It serves as a sanctuary for individuals seeking solitude or as a safe topic of conversation during uncomfortable social conversations.¹⁷⁶

2.3. 20th-century domesticity and general architectural characteristics of the bourgeois house in Antwerp

From the early 20th century, and especially since the emergence of modernization due to the First World War, ideas on interior organization and architecture in general, drastically changed. The 20th-century house plan blurs those strict separations between rooms that were common in the period before. The open plan therefore provides greater versatility within limited spaces. The house no longer features a central hall dividing the rooms; instead, the staircase, kitchen, and porch seamlessly integrate into the main structure. This redesign allows for the unprecedented option of arranging a bedroom on the ground floor, a concept previously unimaginable. The open-plan concept could be deemed a technological marvel, given its efficient spatial layout, which minimizes the

footprint of middle-class houses while enhancing living conditions. This new spatial idea also leads to a rediscovery of the relationship with nature, offering expansive views, ample natural light, and fresh air throughout the house. The ideas of modernization therefore are intertwined with the importance of a healthy living environment, which encompasses natural ventilation. Although domestic labor, including kitchen duties, largely remained the responsibility of women within the family, notable shifts from previous periods are evident in kitchen dynamics. Again, a more streamlined organization became feasible thanks to the introduction of the rational kitchen layout, which emphasizes the triangular arrangement comprising the fridge, cooking plate, and sink. Unlike the sterile, white kitchens prevalent in the 19th century, 20th-century kitchens can be adorned with decoration and color, harmonizing with the aesthetic of other rooms in the house. Finally, social, economic, and technological changes led to the decline of household servants. Consequently, the need for additional rooms and staircases dedicated to servants diminished in 20th-century bourgeois households.¹⁷⁷

162 Vandenbreeden, *De 19de Eeuw in België*, 12.

163 Vandenbreeden, *De 19de Eeuw in België*, 12.

164 Vandenbreeden, *De 19de Eeuw in België*, 12.

165 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 272.

166 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 272.

167 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 279.

168 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 279.

169 Vandenbreeden, *De 19de Eeuw in België*, 11-12.

170 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen*, 29.

171 Nationaal Hoger Instituut voor Bouwkunst en Stedebouw, *500 Jaar Woonhuizen Te Antwerpen*, 29.

172 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 413.

173 Schoonjans, *Architectuur En Vooruitgang*, 253.

174 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 413.

175 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 412.

176 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 277.

177 Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 271-272, 277-279, 280-281.

*Historic context and typological analysis of
townhouses in Zuidwijk*

3

3.1. Zuidwijk in the development of Antwerp

The city of Antwerp has undergone various phases of expansion, beginning in the 12th century and culminating around the turn of the last century with the demolition of the 19th-century Brialmont ramparts. Between these milestones, four major expansions can be identified: (1) Around 1300, the oldest settlement nucleus expanded southward, incorporating nineteen water and land gates and numerous towers; (2) Around 1600, rapid demographic growth within the 16th-century Spanish ramparts prompted the next major expansion, with the remnants of these defensive walls still visible in the Leien today; (3) Around 1800, the rising popularity of second residences outside the Spanish city walls among the upper middle class led to further expansion, serving as both houses and safe real estate investments; (4) The most relevant expansion for this research occurred around 1900, when the demolition of the Spanish walls and the Southern citadel gave rise to a new area called *Zuidwijk*, which will be the focus of the thesis.¹⁷⁸

When in 1859, Antwerp was designated as the national Reduit due to rising European political tensions, it thus remained confined within its new 19th-century Brialmont walls, in contrast to many other 19th-century European cities that were finally freed from their wall confinements. The new defensive walls rendered the 16th-century Spanish walls obsolete. The damming of these earlier ramparts in 1864 initiated Antwerp's 19th-century urban expansion within its (inter)national socio-economic and political context, emphasizing efficiency and rationality. The Southern citadel, located in what is now known as *Het Zuid* or *Zuidwijk*, remained intact even after the damming, as it was also part of the 19th-century fortification. It wasn't until 1869 that the city of Antwerp was granted permission to demolish the citadel. This demolition, completed in 1881, marked a promising start to urban development in the neighborhood of *Het Zuid*.¹⁷⁹

The neighborhood of *Het Zuid* is located within the historic city center of Antwerp, situated in the south of 16th-century Antwerp. The area is bordered by the docks of the Scheldt River to the west, Sint-Andries to the north, and the Leien, where the old ramparts once existed, to the southeast and south. After the

citadel was demolished, the 108-hectare area was leveled and repurposed to accommodate both harbor operations and residential construction. The underlying intention was to maximize profits from the sale of vacant land in this area to finance the completion of the Brialmont ramparts. Eventually, the private corporation overseeing the development of *Het Zuid* began collaborating with the city of Antwerp, leading to the establishment of Société Anonyme du Sud d'Anvers. This organization takes care of the plot distribution, plot sales, and decides on the materiality and appearance of *Zuidwijk*. In 1875, the final design of the street map of *Het Zuid* was agreed upon, with some minor adjustments made in the following years. City plans of Brussels and Paris served as major inspirations for this design, as all three cities embraced similar concepts of perspective, functionality, and building speculation. Today's perception of *Het Zuid* is largely determined by its monumental street plan, rather than through its individual monuments. Another idea that was embraced in this design was the connection of the new neighborhood to the existing road network in Antwerp.¹⁸⁰

Two major infrastructure works in the historic center



Fig. 2 The expansion of Antwerp 1150-2000.

¹⁷⁸ Ilja Van Damme et al., *Historische Atlas van Antwerpen. Stad van Droom En Daad* (Antwerp: Thoth, 2022): 8-10, 16, 34-36, 48.

¹⁷⁹ Inge Bertels, and Herman Van Goethem, "Vergankelijke stedelijke ruimte: de afbraak van de Spaanse omwalling in de negentiende eeuw", in *Antwerpen versterkt: de Spaanse omwalling van haar bouw in 1542 tot haar afbraak in 1879*, ed. Piet Lombaerde (Brussel: UPA, 2009): 119-133.

¹⁸⁰ Wouters, *Antwerpen Zuid: verleden, heden & toekomst*, 7-9.

were supposed to positively affect sales of building lots in the new quarter. The straightening of the Scheldt docks and the remediation of Sint-Andries, also known as the fourth quarter, necessitated the relocation of many residents within the city:

‘Far-reaching was the demolition in the old city center and along the quays associated with these works. Not only shopkeepers, artisans and homeowners were affected, but also the staff of businesses and residents.’¹⁸¹

Due to the housing shortage that ensued from these developments, *S.A. du Sud d’Anvers* also anticipated the arrival of speculators who would invest in rental or yield properties. Additionally, the remediation of Sint-Andries provided the opportunity to widen Boeksteeg, now known as Nationalestraat. This grand street ensured a clear connection between the historic city and the new quarter of *Het Zuid*, making the area more appealing to potential residents. Other attempts to make the neighborhood more attractive included plans to build a south train station and construct a bridge over the Scheldt river at *Het Zuid*. Although these projects were never realized, or far later than expected, other facilities and monuments did get constructed over time to revamp the quarter:

¹⁸¹ Wouters, *Antwerpen Zuid: verleden, heden & toekomst*, 9.



Fig. 3 Map with comparison of former Zuid Citadel and new Zuidwijk



Fig. 4 Map of Antwerp with Zuidwijk in yellow.

The Royal Museum of Fine Arts, schools, an open-air swimming pool, a fish market, and a water press house for hydraulic control of sluices and cranes for port activities in the barge docks for inland shipping. Although all these efforts were made for attraction, the deep and thus expensive plots were not easily sold. The World Exhibition of 1885 taking place in *Het Zuid* highlights, on one hand, the abundance of undeveloped land—only 10 percent of the total area had been sold—and, on the other hand, the efforts made to invigorate the quarter. Despite the success of the World Exhibition, plots remained unsold and therefore undeveloped. The staging of a second World Exhibition in 1894 in *Het Zuid*, marking the completion of the Royal Museum of Fine Arts, underscores the ongoing difficulty in selling plots of land. Hopes were pinned on the completion of the southern train station as a final launch for the sale of the plots.¹⁸²

S.A. du Sud d’Anvers attempted to accelerate developments by constructing additional streets. This strategy aimed to create shallower, less expensive parcels of land. Additionally, the company developed its own housing properties to serve as architectural models for other developers. From 1890 onwards,

¹⁸² Wouters, *Antwerpen Zuid: verleden, heden & toekomst*, 9-13.

the city of Antwerp is forced to continue the trend of constructing more streets, squares, and statues – like Schelde Vrij on Marnix Square – that was started before. The statues and street names in *Het Zuid* usually refer to the 16th century historic city and the liberation movement concerning the southern citadel:¹⁸³

‘On a historically charged slab like the South Citadel, which has been completely demolished for the sake of the new district, one charges the streets in this new district – which possesses a distinct spatial character due to its star-shaped street pattern, but unlike the adjacent city has no history – with historical references. A strange ambiguity is created: on the one hand one wants to break with the past, but on the other hand one wants to preserve it, albeit in a purely literary form. As a result, the district not only acquires its own spatial face in the street network, but also a historical identity.’¹⁸⁴

Although this type of neighborhood development was initially too expensive for Antwerp and its residents, *Zuidwijk* was ultimately completed between 1890 and 1914.¹⁸⁵ Real estate companies, private investors

and developers wanted to earn a daily living with the investments on this new wasteland. They have long harbored hopes for a particular scenario that could lead to fortune in *Zuidwijk*, a sentiment that remains recognizable even today:

‘For example, the purchased plot was located along the barge docks, which guaranteed the arrival of a crowd, for clientele, for life. To this day, this scenario is used whenever people want to change something about the neighborhood. In 1970, for example, the labor court would bring the dilapidated neighborhood back to life. Since 1985, that honor has fallen to the new contemporary art museum.’¹⁸⁶

In Antwerp, the confinement by old fortresses emphasized the significance of land speculation and extensive subletting as primary sources of income. The pursuit of profit often resulted in exploitative property management and acquisition, disadvantaging others. This mentality even extended to the middle class, who sought security through property ownership, ensuring stability during times of adversity. Coupled with demographic pressures in the 19th century, this led to increasingly subdivided

space for lower strata, fostering the subletting of townhouses and the eventual emergence of slums. The rise of slumlord practices and land speculation, driven by relentless profit motives, rapidly made the city unlivable by systematically eliminating green spaces and aspects of livability.¹⁸⁷ *S.A. du Sud d’Anvers* aimed to quickly sell the plots while advocating for the construction of ‘evident’ neoclassical architecture, characterized by its typical white plastered façade, which was favored by middle-class society:

‘This white architecture would find no sympathy, neither with the ‘architects’ of the day who were striving for a ‘modern’ neo-Flemish Renaissance architecture, nor with the ‘white’ modernists of the early 20th century. The white plastered facades (...) with the recurrent facade typology, the simple “rational” floor plans, the prefabricated and standardized door and window profiles, are reviled precisely because of the neo-classical ornaments used. Ornaments that made the naked facade rise above the ‘banal’ for the conventions of the time, acquire an ‘architectural’ character.’¹⁸⁸

At the dawn of the 20th century, even before the neighborhood was fully completed, its architecture was already regarded as a prime example of ‘poor’ design.¹⁸⁹

Up until 1958, *Het Zuid* was a vibrant neighborhood, thanks in part to the popular Hippodroom theater. Hereafter, the quarter falls back into disrepair with dilapidated houses, damped docks, and a demolished train station. From the 1970s onward, traffic and circulation are made possible again to revitalize the neighborhood.¹⁹⁰

Today, the area of *Het Zuid* is among the most sought-after neighborhoods in Antwerp for both living and leisure. Together with ‘*het Eilandje*’ and the docks, its urban potential next to the river is rediscovered also by urban planners, who consider *Zuidwijk* to serve as a link between the city and its suburbs.¹⁹¹ Today, the new Zuidpark, located where once the docks served harbor activities, inaugurate a new green plaza for people to meet in the city center. The park serves both as a green space, an underground car park, and facilitates water infiltration and water reservoirs.¹⁹²

3.2. Bourgeois housing typologies in Zuidwijk

A range of housing typologies were developed in *Het Zuid*: from merchants building stores with adjoining residences to working-class houses for laborers displaced by ongoing construction in their former neighborhoods; from large-scale rental housing (‘huurkazernes’), known for their flexible and pragmatic architectural organization, to many townhouses for the upper-class and a small amount of city mansions for the wealthiest residents.¹⁹³ The city mansion and townhouse can be collectively referred to under the umbrella term ‘bourgeois house’.

Bourgeois housing in this area is delineated by three principal typologies. The city mansion (Type A) and the townhouse (Type B) share similarities, primarily being designed for single-family occupancy. Conversely, the multiple-family townhouse (Type C) is intended for use by multiple families. Most facades in *Het Zuid* typically measure between 5.5 and 6 meters in width with a three window order.¹⁹⁴

This suggests that *Zuidwijk* predominantly consists of townhouses, in contrast to the wider facades of city mansions, which typically range from 9 to 11 meters with a four window order.¹⁹⁵ The predominant housing typology in *Zuidwijk*, and the most relevant one for this study, is indisputably the single-family townhouse.

Type A: single-family city mansion
Type B: single-family townhouse
Type B1: <i>bel-etage</i> single-family townhouse
Type C: multiple-family townhouse
Type C1: rental property (<i>bel-etage</i> or not)
Type C2: apartment (<i>bel-etage</i> or not)

183 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 47-48.
184 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 61.
185 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 217.
186 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 7.
187 Catharina Lis, “Woontoestanden en gangsaneringen te Antwerpen in het midden der 19e eeuw”, *Belgisch Tijdschrift Voor Nieuwste Geschiedenis* 1969, no. 1 (January 1, 1970): 96, 130.
188 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 31.

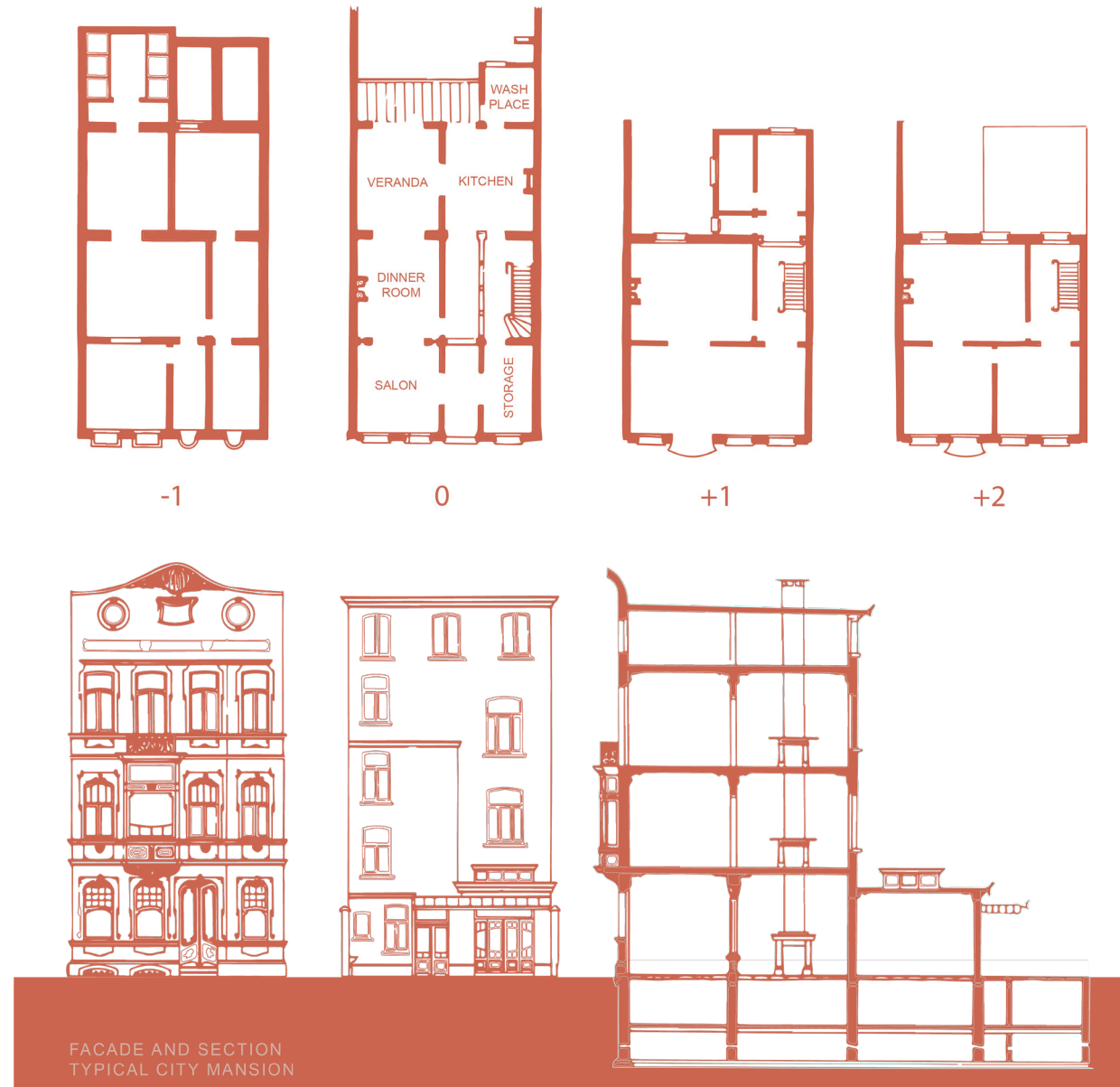
189 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 31.
190 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 217.
191 Wouters, *Antwerpen Zuid: verleden, heden & toekomst*, 32.
192 “Zuidpark”, Antwerpen morgen.
193 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 74, 88, 148.
194 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 92.
195 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 50.

Type A: single-family city mansion

The first typology (Type A), the city mansion, is scarcely found in *Het Zuid* and will be primarily discussed to highlight its differences from the townhouse. The typical city mansion employs a complex organizational scheme, partly due to its larger size compared to the townhouse. While 18th-century aristocrats often displayed their power and wealth openly to the public, the upper bourgeoisie of the 19th century preferred to keep their lives hidden both from the public and from their servants. This new idea resulted in the need to manage double circulation patterns, where the circulation of the bourgeoisie had to be entirely separate and discrete from that of the staff and suppliers. This shift also counters the symmetrical rules on interior organization, that were once considered sacrosanct within the design of a city mansion. The idea of privacy and zoning is also envisioned in the clear separation between hosting rooms and private rooms and the layered entry sequence. The dinner room, for example, needed to be able to be closed off from the adjacent spaces and it is common to have a waiting room for staff of visiting bourgeois.¹⁹⁶

The main floor plan reveals a trio of specialized

¹⁹⁶ Vandenbreeden, *De 19de Eeuw in België*, 203-205.



(top) Fig. 5 Plans typical city mansion

(bottom) Fig 6 Facade and section typical city mansion

rooms—the parlor, the library, and the dinner room—each of equal size.¹⁹⁷ The kitchen is independent from the front house or again located in a semi-subterranean cellar. Kitchens are often spacious and surrounded by ancillary spaces like a passageway to the dinner room. The private bedrooms and bathrooms are, similarly to the townhouse, located on the levels.¹⁹⁸ Vestibules of city mansions often feature grand staircases that lead to these private rooms.¹⁹⁹ These staircases address incidental family encounters and provide privacy from servants through the presence of seating areas on landings and in hallways.²⁰⁰ In the second half of the 19th century, it is typical to replace the parlor on the ground floor for a study room and families opt to have a greenhouse in their city garden.²⁰¹

Type B: single-family townhouse

The typical townhouse (Type B) is a row house originally situated in urban neighborhoods with minimal commercial activity or on the city's outskirts - however, following numerous urban expansions,

these houses are today often found in the city center. It consists of two to three floors and a façade width of approximately five to six meters. Typically, the ground floor is elevated to accommodate a semi-subterranean kitchen, which includes a laundry room and a courtyard with a toilet on the garden side. A few steps on the street level lead up to the front door, which opens into the vestibule, providing access to all other spaces. The vestibule is often decorated with marble steps and glass doors. Through a double door, access is provided to the more public spaces, namely the parlor and the dinner room; the latter sometimes enlarged with a veranda. The vestibule transitions into a corridor that leads to a private room or intimate dinner room on the garden side. The stairwell is located in line with the front door and leads to the private bedrooms on the floor levels and the bathroom on the mezzanine floor. If a townhouse had multiple cellars, it was common for one to be designated for coal storage, while another was used specifically for storing wine.²⁰²

According to the S.A. du Sud d'Anvers, the

organization overseeing the neighborhood's development, developers had to follow a specific set of guidelines, regarding the construction of townhouses: roofs could not use red tiles, the cornice had to be at least 12.5 meters high, and buildings were required to have at least three levels.²⁰³ Most parcels in *Zuidwijk* are 30 to 40 meters deep and the ones that are located centrally in the street, have a small city garden. Especially in the early years of the neighborhood's development, the average length of stay in a property in *Het Zuid* was less than a month. This transient nature earned the area the nickname Hotel Zuid, referring to the commuting population of the fourth district, known today as Sint-Andries.²⁰⁴ The first houses developed in this neighborhood were townhouses, built by the S.A. du Sud d'Anvers itself, and served as an architectural model for future housing developments.²⁰⁵ In total, they built seventy-one houses, accompanied with mostly façade drawings to serve as good cases for private developers:

'The seven architects responsible for the 51

¹⁹⁷ Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 272.

¹⁹⁸ Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 272.

¹⁹⁹ Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 279.

²⁰⁰ Mallgrave, Bressani, and Contandriopoulos, eds., *The Companions to the History of Architecture*, 272.

²⁰¹ Vandenbreeden, *De 19de Eeuw in België*, 205.

²⁰² Vandenbreeden, *De 19de Eeuw in België*, 201.

²⁰³ Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 51.

²⁰⁴ Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 49, 121.

²⁰⁵ Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 64.

dwelling and Thielens, who drew the 20 dwellings, together realized a type album of possible facade types for approximately the same floor plans. (...) With these drawings “in mind,” the façade drawings of individuals who invested in “the south” were evaluated.²⁰⁶

In a first wave of development around 1879, fifty-one of these buildings were constructed together in Verbondstraat and the streets that lead to Marnix Square to spread the ideas of these preferred aesthetics. Most of these buildings are designed and constructed in groups of three, so that one had to erect only four instead of six dividing walls. The middle house of the three typically has a wider façade, a higher cornice, more façade decorations, a dormer window, and sometimes more windows. The final quality of these townhouses was rather minimal as materials from other constructions in Antwerp got recuperated for these houses. In addition, they had a lower level of equipment as ‘drinking water until then had to be pumped up from a tank on the ground floor, presumably in the annex behind the main building’.²⁰⁷

The second wave of developments in 1884 consisted of the development of twenty more townhouses in Brederodestraat. This time, buildings were

206 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 71.
207 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 67-69.



(top) Fig. 7 Plans typical townhouse

(bottom) Fig 8 Facade and section typical townhouse



(top) Fig. 9 Plans townhouse with store on ground floor

(bottom) Fig 10 Facade and section townhouse with store on ground floor

constructed in pairs with a façade width of 5.5 meters to make them more affordable for renting out. These pairs of townhouses had a communal outdoor space at the back. Although in the first wave, the *S.A. du Sud d’Anvers* deliberately avoided integrating non-residential functions like shops and café’s on the ground floor, in the second wave, commercial-residential buildings were included. These types usually feature a facade with a display window, flanked by a door on each side or with just one door that leads to an intermediate corridor.²⁰⁸

While ninety percent of the houses in *Het Zuid* were designed in its typical neoclassical style, architects and critics promoted the ‘better’ neo-Flemish style by appealing to the Flemish tradition.²⁰⁹ In the current streetscape of *Het Zuid*, only three percent of the townhouses are identified as being designed in the neo-Flemish style, with sixty-three percent constructed in the neoclassical style.²¹⁰

Maintaining the neighborhood’s image with attractive facades was crucial for preserving its marketability:

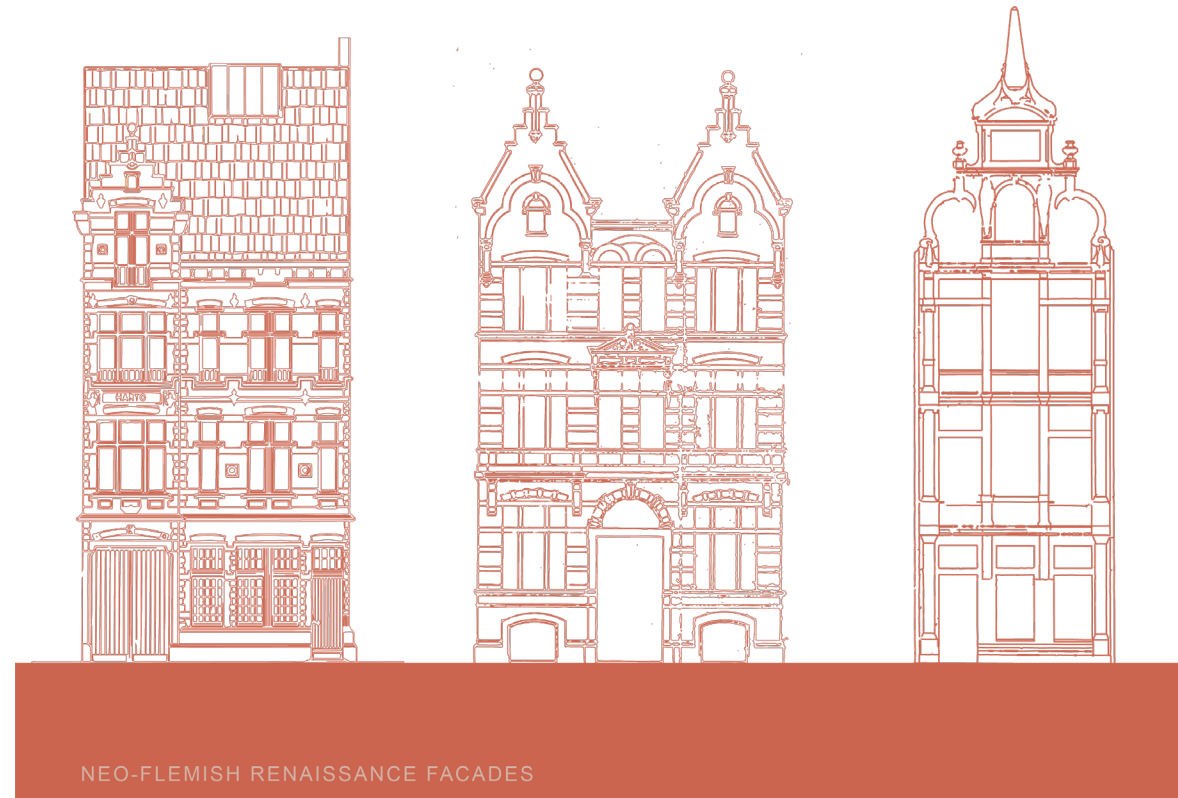
‘Either “bad” use or a “bad” façade would reduce the adjacent lot’s value, or simply make it unmarketable. Architecture and society form an inextricable whole here.’²¹¹

208 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 68-70.
209 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 138.
210 These percentages are according to the data collected in Chapter 3.3.
211 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 51.

Since only the facade drawing was required for approval by the *S.A. du Sud d'Anvers*, there's a scarcity of details regarding interior organization and design. The *S.A. du Sud d'Anvers* is known to have developed seventy-one townhouses, all featuring a similar interior layout. This typical townhouse included a main volume that was ten meters deep and spanned the full width of the parcel, with a six-meter-deep, narrower annex situated behind it on the side of the front door. Presumably the staircase was located in the rear part of the main volume on the side of this annex and the rooms in the annex were served from the intermediate landing of the staircase. Given the dimensions of the annex, it typically only housed a toilet and a water pump on the ground floor and rooms on the other floors. Rooms in the main volume could be possibly connected to each other with double doors.²¹²

Within the typology of townhouses, there is also a specific type known as the *bel-etage* house (Type B1). This type can be recognized foremost by its section, as the typological difference is related to the height at which the ground floor rises above street level. The *bel-etage* house gets its name from the fact that the main floor is above street level, as the 2.5-meter-

212 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 31, 51-52, 64-66, 72, 93.



(left) Fig. 11 Neo-flemish Renaissance facade

(middle) Fig. 12 Neo-flemish Renaissance facade

(right) Fig. 13 Neo-flemish Renaissance facade



(top) Fig. 14 Facade and section bel-etage townhouse

(bottom) Fig. 15 Facade and section townhouse

high basement is partially elevated. The difference in height between street and entrance level is 'bridged by a staircase in the corridor behind the front door'. The cadastral mutation sketches reveal that behind the *bel-etage* façade, there is a smaller annex compared to the typical townhouse. The difference in depth between the two typologies arises from *S.A. du Sud d'Anvers*' decision to construct all houses at the same price. Given this uniform pricing, it follows that the *bel-etage* house, with its more ornate facade and fully basemented structure, has a shallower annex behind its 10-meter-deep main volume to balance the costs. In contrast to the typical townhouse, kitchens or bathrooms were likely not present in the *bel-etage* houses. It can therefore be assumed that there were only rooms – no kitchens or sanitary facilities – in the annexes of this typology. While the façade of the *bel-etage* house is very much ornated, the interior spaces seem to be undecorated. The false door opposite the door to the basement serves as the only ornament in the interior that references the ornaments of the facade. These houses were also appropriate for renting out, as even the basement spaces were possible to be rented out.²¹³

213 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 64-67.

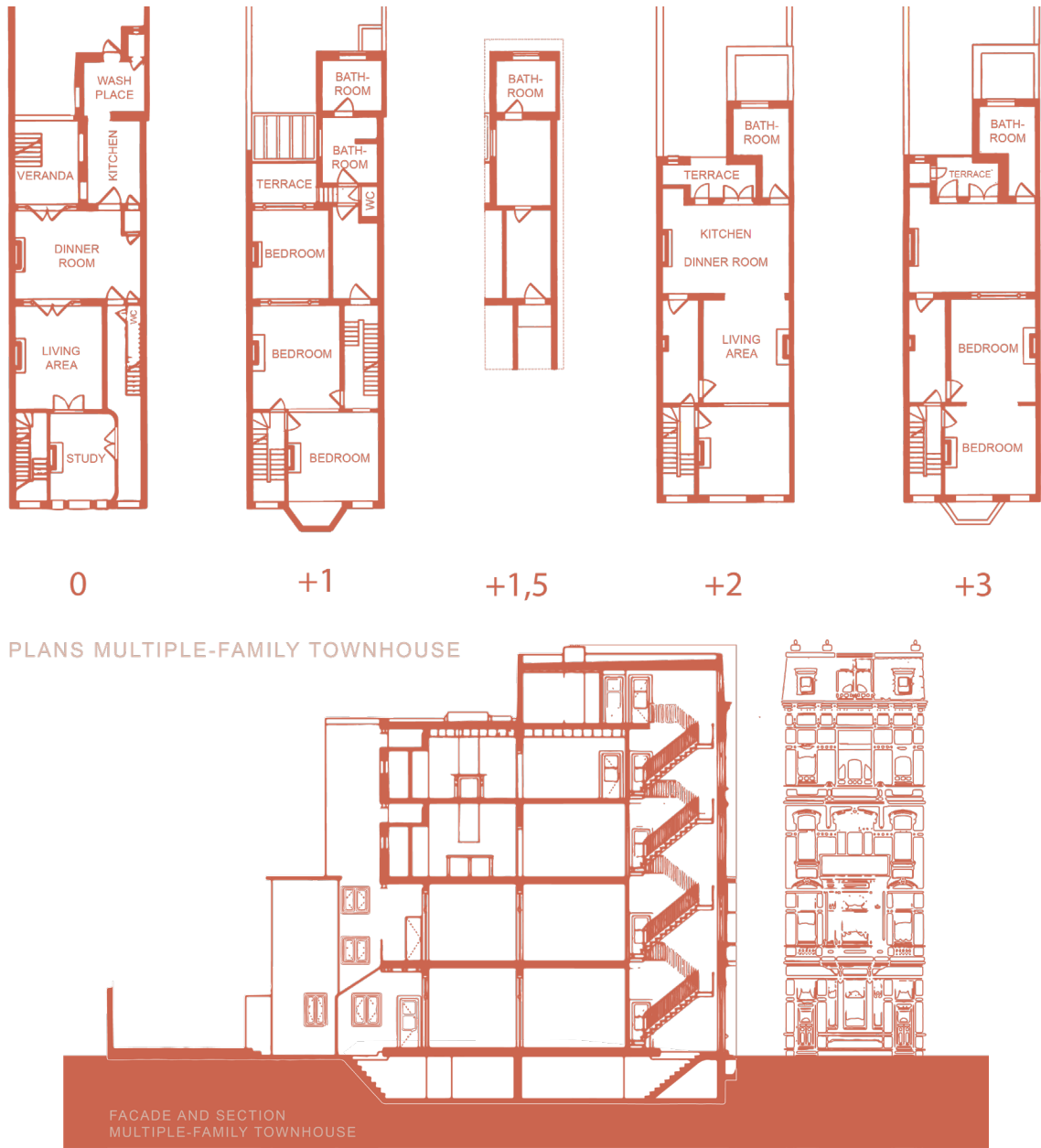
Type C: multiple-family townhouse

With the increase in land prices and the desire to maximize the use of valuable land, multiple-family houses (Type C) began to appear in Antwerp. The housing shortage problem in the 19th century spurred the search for a building typology that could accommodate higher concentrations of people living together, a concept that was not yet present in 19th-century Antwerp:

‘This issue is addressed in an 1855 article from Le Journal Belge de l’Architecture. The author suggests that the disadvantages of individual living (of the middle class) and communal living (of the worker) should be resolved by generating an intermediate solution. This intermediate solution is modeled on the rental of furnished rooms and superior middle-class boarding houses.’²¹⁴

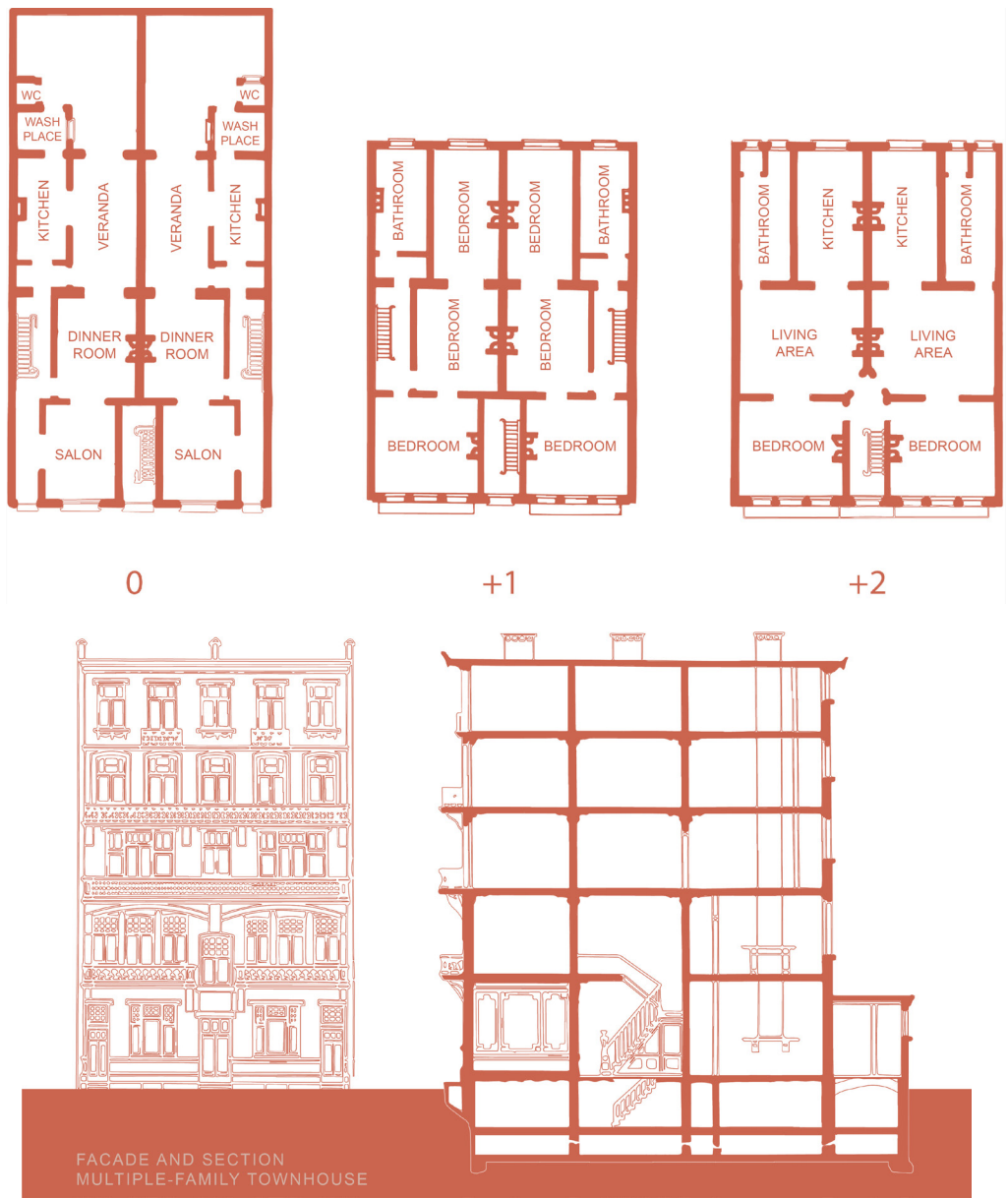
Following, a small-scale typology emerged, known as the multiple-family house. Often, multiple-family houses had a store or café at the ground floor with three other floors to rent out by floor or room. This typology could be considered a mixture of the townhouse and the rental property as its interior organization is similar to that of the rental, but its façade looks like a townhouse. The façade and

214 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 91.



(top) Fig. 16 Plans multiple-family townhouse

(bottom) Fig. 17 Facade and section multiple-family townhouse



(top) Fig. 18 Plans multiple-family townhouse

(bottom) Fig. 19 Facade and section multiple-family townhouse

the interior are also more decorated like a typical townhouse. Sanitary facilities had to be individually accessible for each unit in the multiple-family house. These amenities were typically located in the annex, along with kitchens, bathrooms, and optionally, spaces for house staff.²¹⁵

During the same time, another approach towards multiple-family dwellings emerged by transforming the existing townhouses. Both the typical townhouse (Type B) and the *bel-etage* house (Type B1) in *Het Zuid* were utilized for renting out rooms or apartments, despite their original intent as single-family residences. The *S.A. du Sud d'Anvers* rents its properties to an individual, who in turn tries to rent out the various rooms to tenants. For many new residents, the neighborhood initially served as a transitional residence between the fourth district and other destinations, or as a temporary stop before returning to their original neighborhood.²¹⁶ The early townhouses in *Zuidwijk* primarily functioned as rental properties (Type C1), allowing landlords to lease out rooms or entire floors. Deeper houses, with their extended annexes measuring up to six meters, attracted tenants more quickly due to their potential for offering additional rooms per floor, thereby

215 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 92-93.

216 Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 93, 121.

increasing profitability for landlords. Alongside these existing building types adapted for multiple-family use, new architectural typologies specifically designed to accommodate multiple families also emerged. From 1878, a new typology of yield properties (Type C2), or appartements as we know them today, emerged. These large-scale housing units allowed for separate rooms to be rented individually or jointly, with interconnecting single doors.²¹⁷ Since this typology was not implemented in *Zuidwijk*, it will not be discussed further.

3.3. Current state of townhouses in Zuidwijk

I developed a comprehensive database to analyze residential and architectural trends in *Zuidwijk* bourgeois houses, with a particular focus on their contemporary residential functions. The primary aim is to determine whether the remaining townhouses are currently utilized as single-family residences or as multiple-family dwellings. To analyse these trends,

historic data, such as the initial function and style of the bourgeois houses, is compared to contemporary data, such as the current function of the respective houses. The database is derived from the “*Inventaris Onroerend Erfgoed*’ *Vlaanderen*”,²¹⁸ where each building is associated with a unique identification number. It includes details such as address, construction period, architectural style, protection status, typology (indicating whether the building was originally intended as a single-family house, multiple-family house, store, or other use), and any involvement by a designer, developer, or contractor. Additionally, I verified the building’s current residential function (single-family house, multiple-family house, or other) and recorded the year of adaptation, incorporating this information into the database. During the compilation of this database, only properties that have endured physically and retained their heritage value in *Het Zuid*, as identified by the Inventaris Onroerend Erfgoed, have been included. This selection resulted in a total of 494 cases. My database for *Zuidwijk* indicates that only two percent of all historic houses in the area, built between 1900 and 1914, are classified as city mansions (Type A).

²¹⁷ Prims and De Meyer, *Het Zuid (Antwerpen, 1875-1890)*, 92-93.

Vandenbreeden, *De 19de Eeuw in België*, 197.

²¹⁸ Onroerend erfgoed Vlaanderen, “Inventaris Onroerend Erfgoed”.

²¹⁹ The brief history of *Zuidwijk* in Chapter 3.1 explains why most houses are built during this period.

²²⁰ In the next Chapter, the differences between both typologies will be analyzed.

The majority of these houses, constructed between 1890 and 1914,²¹⁹ are categorized as townhouses.²²⁰ Following, only the evolution and current state of these 486 townhouses will be discussed. There are no significant properties in the northernmost part of *Zuidwijk*, adjacent to the dampened docks, as this area was primarily dedicated to port activities,

Heritage protection

In Flanders, heritage can be protected or inventoried. Protected heritage has a formal, legally binding status that imposes strict rules for alterations and restorations, with potential access to subsidies. Inventoried heritage is listed in an inventory due to its historical or cultural value, but it lacks formal protection and has less strict regulations. Protection provides more certainty for preservation, while inventory mainly serves for recognition and

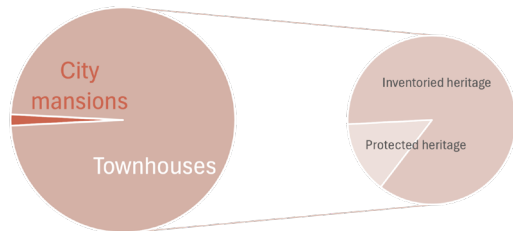


Fig. 20 Pie chart of bourgeois house typologies in Zuidwijk and their protection status

awareness.²²¹

Of all the properties examined, 14 percent are protected, while the remaining 86 percent are inventoried as heritage. Most protected townhouses are located at the most prominent streets in the neighborhood, like *Lambermontplaats* and *Leopold Dewaelplaats*. An observable trend is that there is no stylistic preference in protection compared to those inventoried, indicating that the proportion of protected houses in specific styles aligns with the overall distribution of styles in *Zuidwijk*. Approximately half of these protected townhouses have retained their original number of units. Given that around half of the protected buildings have undergone functional changes over time, with more townhouses converting from single-family to multi-family dwellings than vice versa, it can be concluded that the protected status does not influence the likelihood of changes in the residential function of the townhouses.

Architectural styles

Certain architectural styles in *Zuidwijk* were more prevalent than others, driven by various factors. The neoclassical style emerges as the clear favorite, with 63 percent of the historic houses built in this manner.

²²¹ “Soorten erfgoed”, Onroerend Erfgoed Vlaanderen, Accessed 23 July 2024, <https://www.onroenderfgoed.be/soorten-erfgoed>.

Trailing behind is the eclecticist style, representing 30 percent. Smaller proportions are attributed to Neo-Flemish Renaissance (3 percent), Art Nouveau (2 percent), and a single unique instance of the Beaux-Arts style. No clear distinction can be identified in the distribution of townhouse styles across various locations or their specific functional adaptations, as the architectural style predominantly reflects façade characteristics rather than interior features. One in four townhouses is a *bel-etage* townhouse, with 40 percent of these *bel-etage* houses currently serving as multi-family residences (Type C), compared to 17 percent in the 19th century. Over time, 20 percent of *bel-etage* houses transitioned from single-family (Type B.1) to multi-family use (Type C), while 10 percent have consistently functioned as multi-family residences (Type C). The tendency to utilize this particular typology for multiple-family use is likely attributable to the fact that *bel-etage* townhouses provide an additional semi-subterranean floor, which can be repurposed for living spaces. The *bel-etage* houses are evenly distributed throughout the *Zuidwijk* area.

Residential function

The most important finding from the quantitative analyses focuses on the function of these historic townhouses, particularly the distinction between its use as single-family house (Type B) or multiple-family house (Type C). Most townhouses (63 percent) in this area were originally built as single-family houses (Type B). Around 33 percent were initially constructed as multiple-family houses (Type C). This relatively high percentage can be attributed to the early development of *Zuidwijk*, when these houses primarily served as temporary and short-term residences or ‘rentals’ (Type C.1) for individuals from *Sint-Andries* and other areas undergoing development at the time. For this study, rental properties and properties constructed by *S.A. du Sud d’Anvers* are considered to be built as a multiple-family residence (Type C.1). Around 20 percent – or 32 out of 163 properties - of the multiple-family residences were originally developed by *S.A. du Sud d’Anvers*. Historically, the majority of multiple-family houses are situated along the main axes of *Zuidwijk*, such as *Lambermontplaats* and its extensions towards *Leopold Dewaelplaats*. This distribution is likely due to the larger size of these

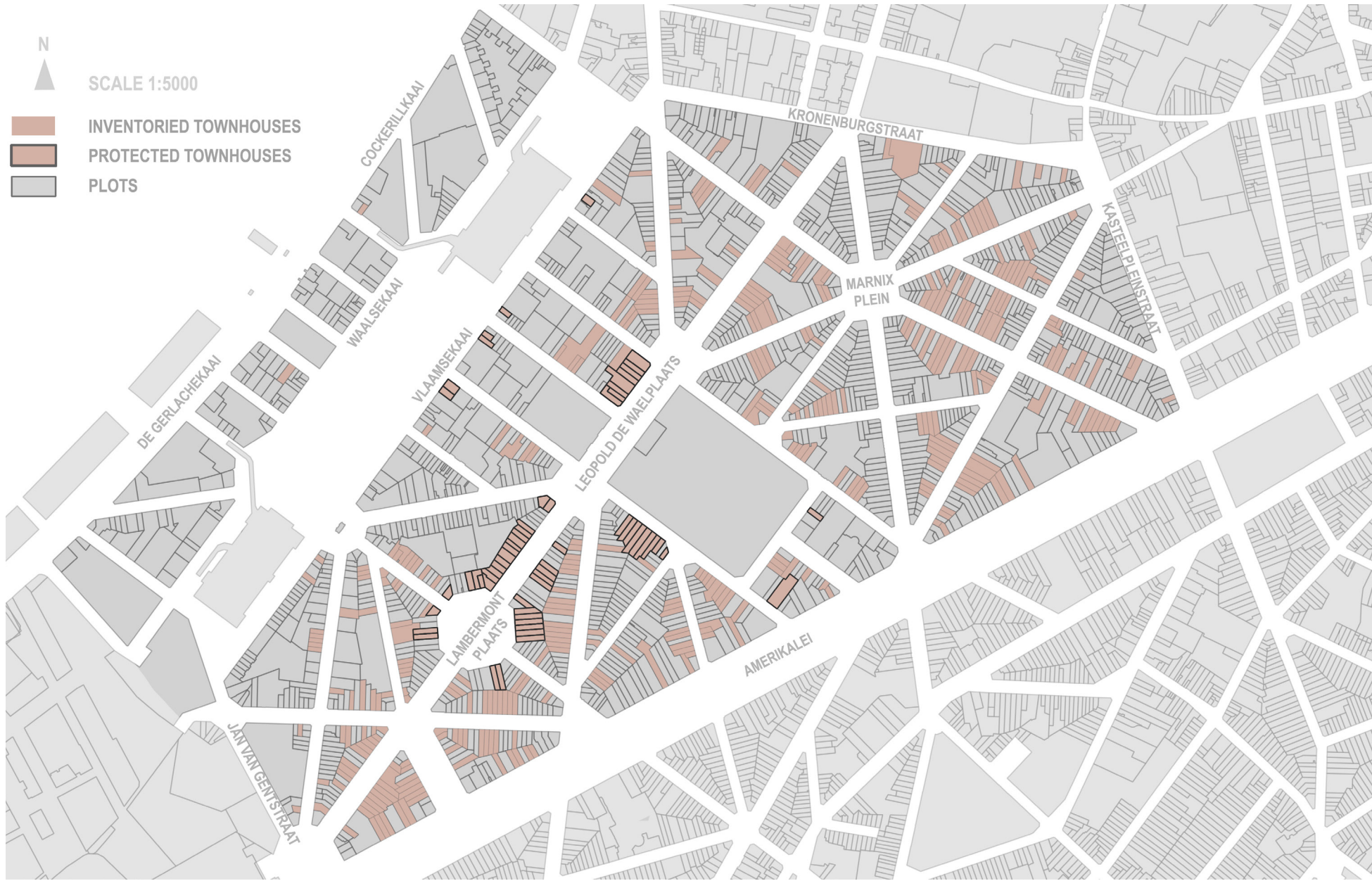


Fig. 21 Mapping of protection status of townhouses in Zuidwijk

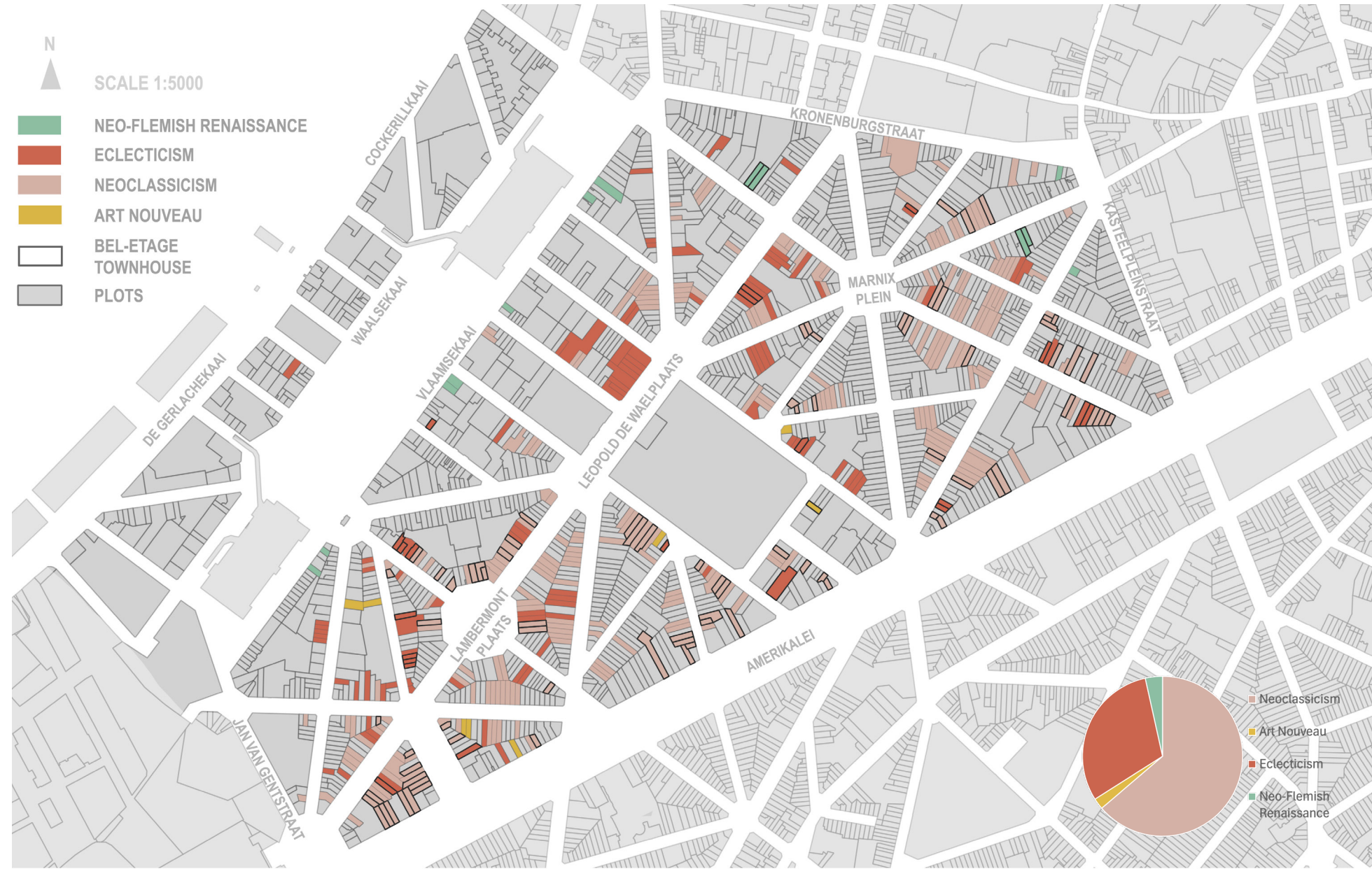


Fig. 22 Mapping of townhouse architectural styles in Zuidwijk

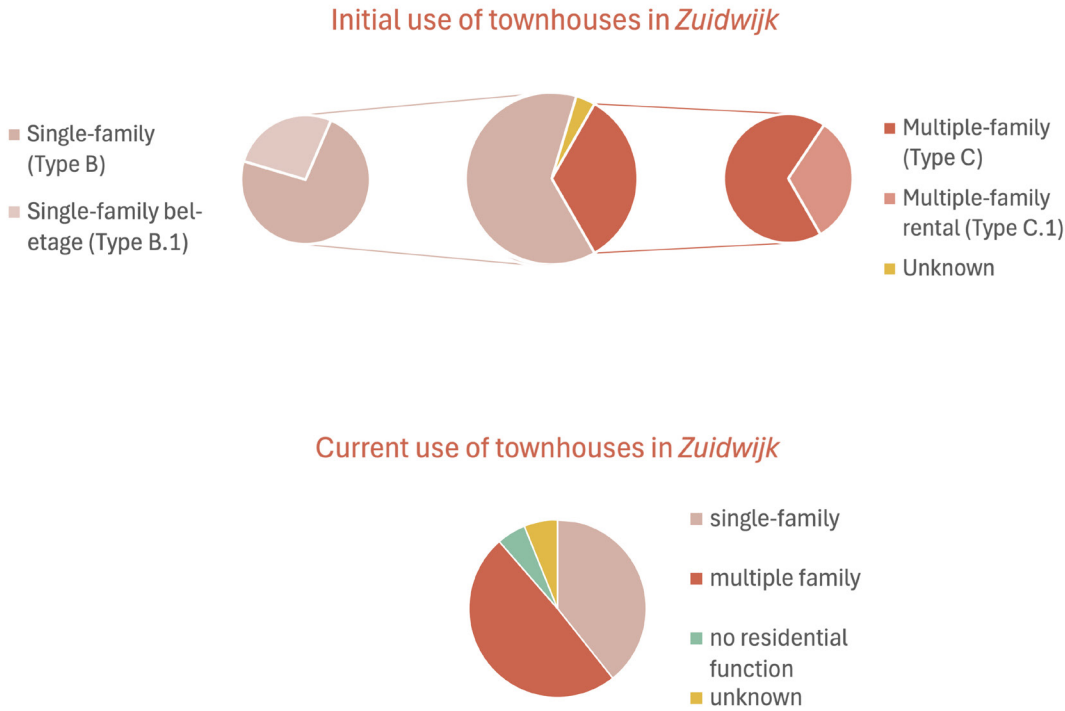
Fig. 23 Pie chart of townhouse architectural styles in Zuidwijk

townhouses. In contrast, the prominent Amerikalei features few multiple-family houses, likely due to its appeal to upper-class residents. All properties that are not explicitly labeled as multiple-family house on the *'Inventaris Onroerend Erfgoed Vlaanderen'*, are considered to function as a single-family house (Type B). No data could be found or confirmed regarding the initial function of 3 percent of the historic townhouses. Today, my research reveals an opposite trend. 49 percent of townhouses is currently used as a multiple-family house (Type C), while only 38 percent is used as a single-family house (Type B). Currently, multiple-family houses are distributed randomly throughout Zuidwijk. Another 6 percent of the townhouses have been repurposed from residential use to serve as offices, schools, student housing, businesses, or for other purposes. The function of another 6 percent is unclear.

When comparing the initial and current data, 31 percent of the houses remained single-family residences, while 22 percent continued to function as multiple-family residences, contingent upon adjustments in the number of units. Additionally, 25 percent of the existing single-family townhouses

converted into multiple-family houses, and only 8 percent of the multiple-family houses transitioned into single-family residences. This last phenomenon likely emerged during a challenging period in the 1960s when the neighborhood was less popular

than it had been at the end of the 19th century and compared to today. The remaining 14 percent have either changed to non-residential functions or lack available data.



(top) Fig. 24 Pie charts of initial use of townhouses in Zuidwijk

(bottom) Fig. 25 Pie chart of current use of townhouses in Zuidwijk

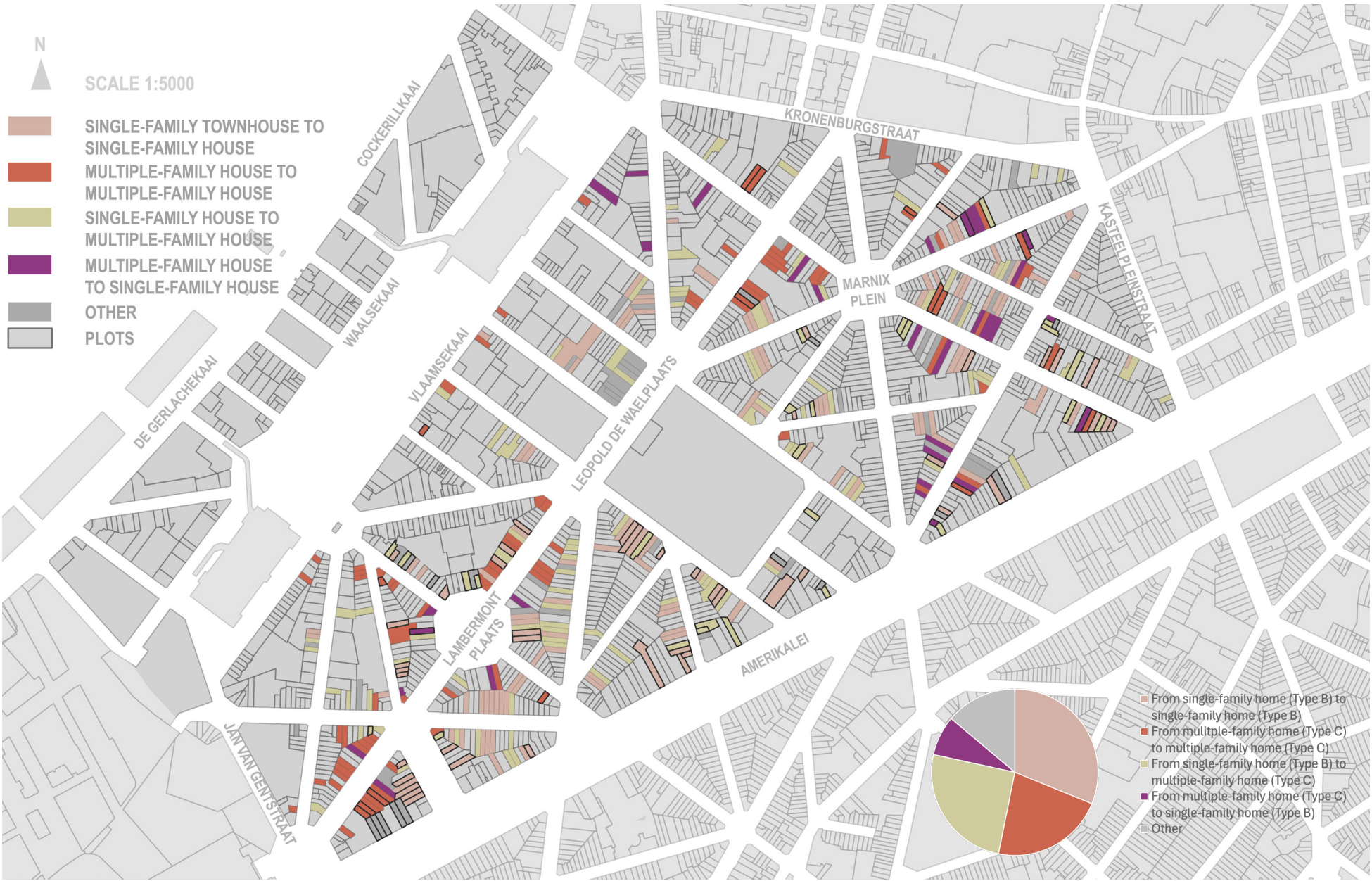


Fig. 26 Mapping of changes of townhouses functions in Zuidwijk

Fig. 27 Pie chart of changes of townhouses functions in Zuidwijk

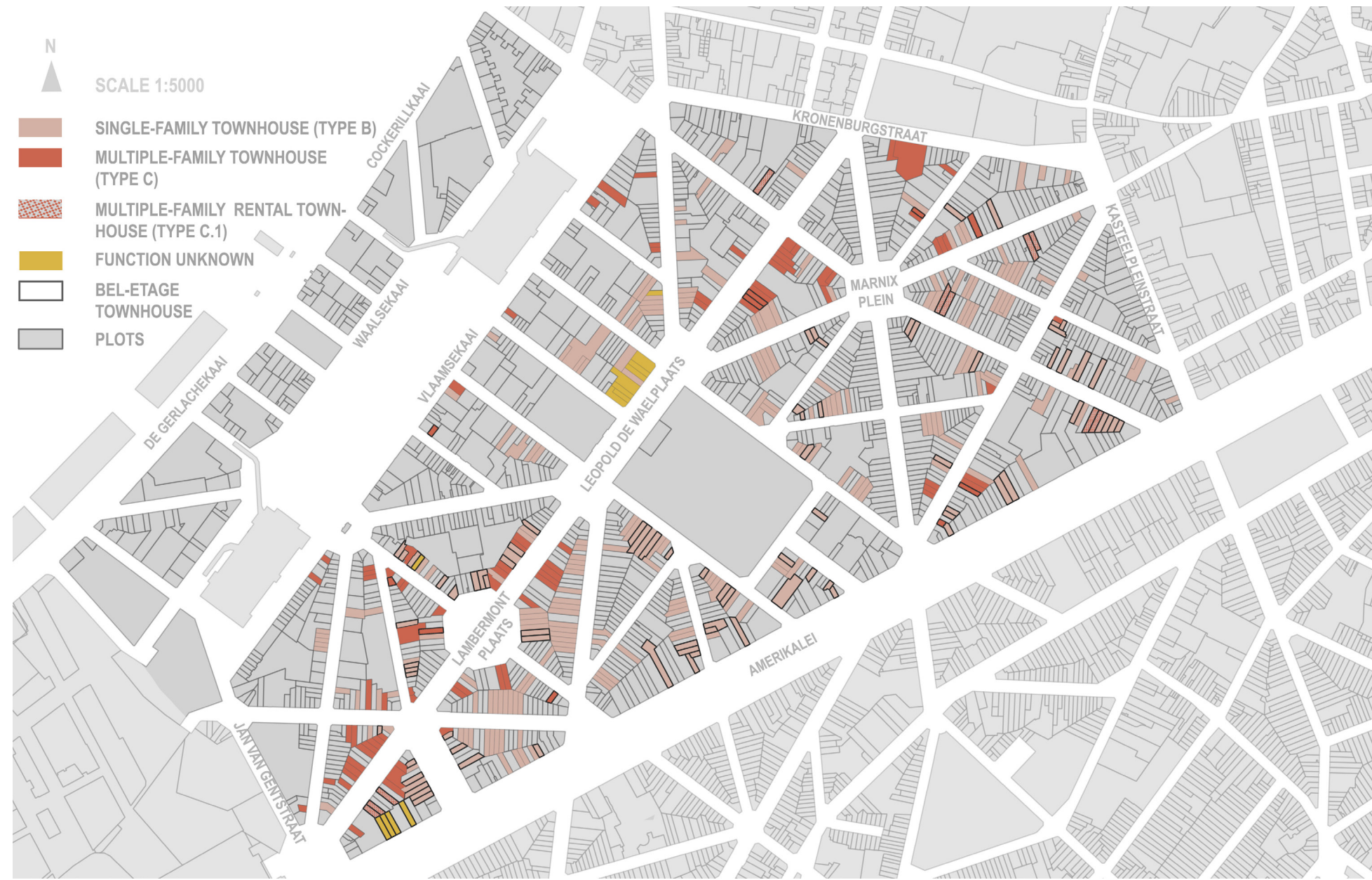


Fig. 28 Mapping of initial function of townhouses in Zuidwijk

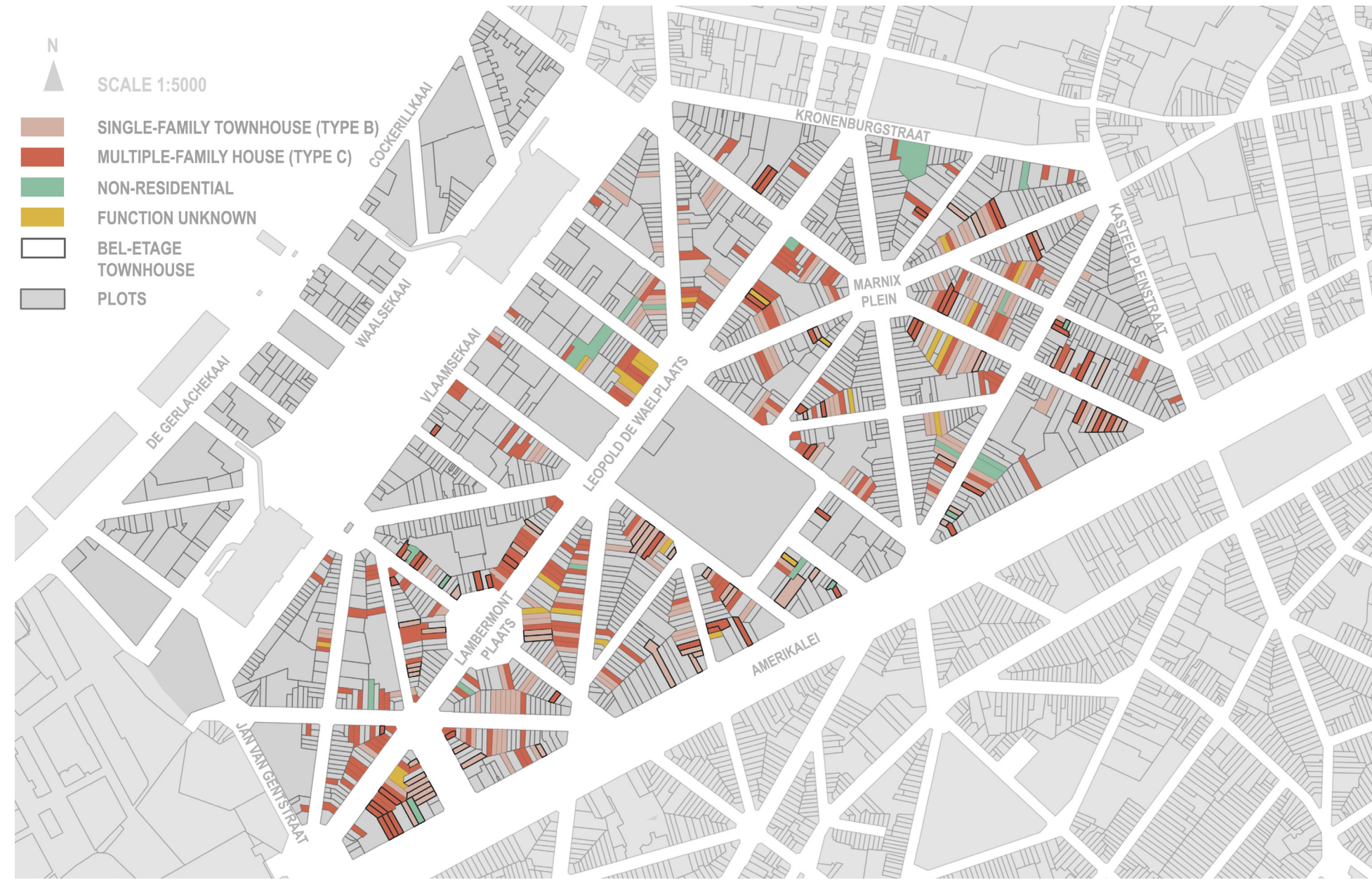
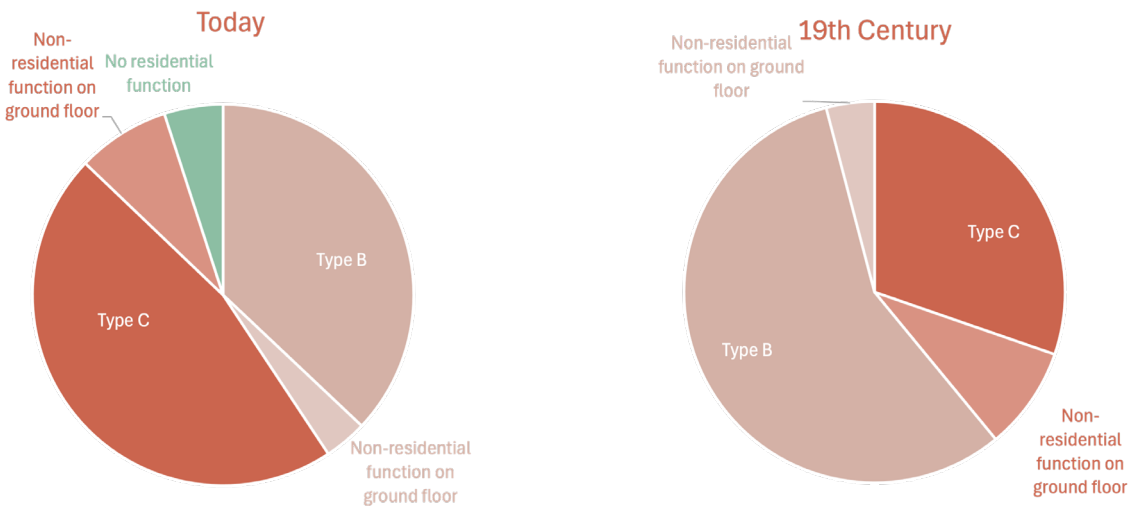


Fig. 29 Mapping of current function of townhouses in Zuidwijk

Despite the transition of many residences from single-family houses to multiple-family houses, the practice of allocating the ground floor for non-residential functions has consistently remained. Approximately 7 percent of single-family residences (Type B) originally incorporated non-residential functions on their ground floors historically, a figure that has increased to 9 percent in contemporary contexts. Similarly, 28 percent of multiple-family residences (Type C) initially featured non-residential uses on their ground floors in the past, a proportion that has declined to 16 percent in present-day conditions.



(left) Fig. 30 Pie chart of non-residential functions on ground floor of townhouses in 19th-century Zuidwijk

(right) Fig. 31 Pie chart of non-residential functions on ground floor of townhouses in 21st-century Zuidwijk

Although only less than one out of three dates regarding the adaptation year of the historic properties is known in *Zuidwijk*, a prevalent trend can be observed in the year of adaptation from single-family house to multiple-family house. Since 2005, and particularly between 2012 and 2015, there has been a noticeable peak in the phenomenon of transforming these properties into more housing units.

The line chart illustrates fluctuations in the population size in *Zuidwijk* throughout the 21st century, showing periods of both growth and decline. The significant

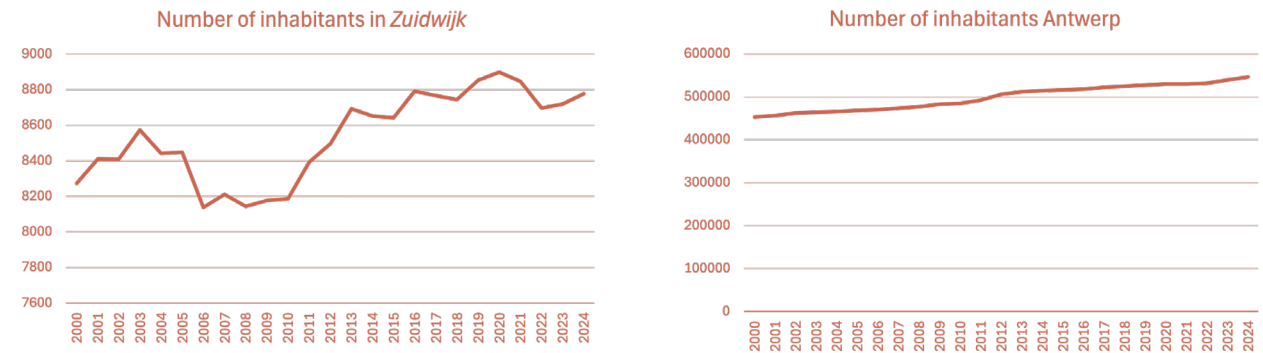
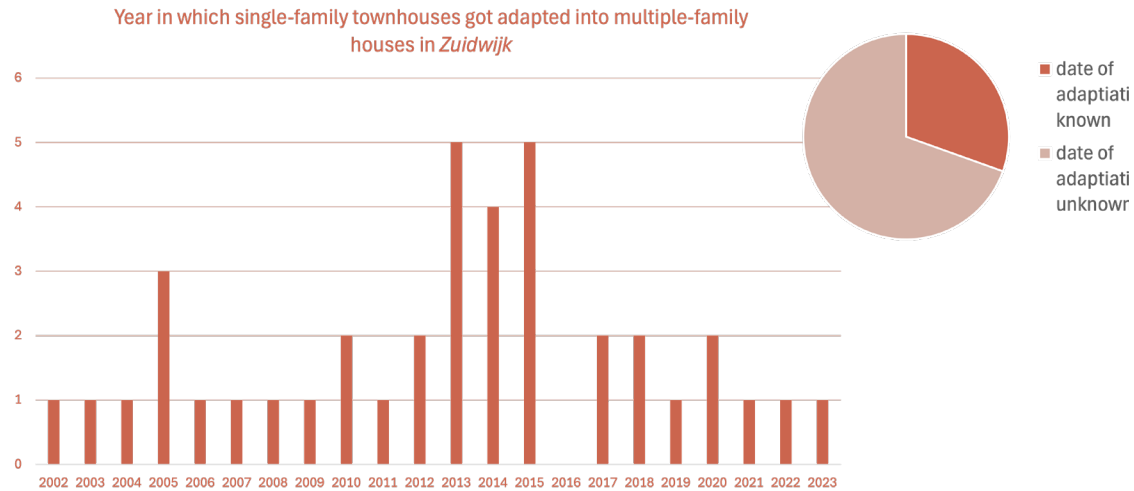
population growth in *Het Zuid* from 2010 to 2013, and the even greater increase from 2014 to 2020, likely contributed to the increased subdivision of townhouses during these years. Alternatively, rising owner interest in subdividing properties, motivated by financial or maintenance considerations, may have spurred population growth in the area. Another notable increase of population can be observed from 2023 onwards, after a steep decline in the years before. The impact of this trend on the number and methods of adaptations into multiple-family residences warrants future study.

Another noticeable trend is the slight reduction in the adaptation of single-family houses into multiple-family residences starting from 2019. This could be related to the update in Antwerp’s building policy that year, which prohibits the subdivision of ‘protected family house’²²²—those that are 350 square meters or smaller—into multiple units.

Conclusion

The findings from this data highlight first and foremost the ongoing trend of converting single-family houses into multiple-family dwellings within the context of 19th-century townhouses in *Zuidwijk*. In the 19th

²²² “Gemeentelijke Stedenbouwkundige Verordening: Bouwcode, Gecoördineerde Versie”, Stad Antwerpen, 8-9.



(top left) Fig. 32 Bar chart showing the years in which contemporary townhouse adaptations in Zuidwijk happened

(top right) Fig. 33 Pie chart showing the number of contemporary townhouse adaptations in Zuidwijk, comparing the amount of known years of adaptation versus unknown years

(bottom left) Fig. 34 Total number of inhabitants in Zuid

(bottom right) Fig. 35 Total number of inhabitants in Antwerp

century, approximately 33 percent of townhouses functioned as multiple-family residences. Today, this percentage has increased to 49 percent, surpassing the number of single-family houses. This shift is most probably driven by economic factors, such as the income potential from rental properties, and socio-demographic factors, including the increasing desire for urban living in a vibrant city center like Antwerp. Historically, multiple-family townhouses were constructed along major streets, presumably due to their larger size. In contrast, they are now distributed uniformly across the entire neighborhood.

This trend, observed in *Zuidwijk*, can be extrapolated to other 19th-century neighborhoods in Antwerp. Over the years, a modest increase in conversions from single-family to multiple-family houses is evident between 2010 and 2013, likely attributable to or in response to a rising population in *Zuidwijk*. It is plausible to speculate about the continuation and extent of this trend in the future, given that starting in 2019, townhouses may be categorized as “protected single-family detached dwellings,” potentially restricting their subdivision.

Another conclusion is that, despite varying legal statuses regarding heritage protection, these

differences do not impact the extent of functional adaptation undergone by the buildings. Finally, regarding architectural typologies, the *bel-etage* townhouse is deemed well-suited for multiple-family housing due to its provision of an additional semi-subterranean floor, as one out of five changed over time from single-family house to multiple-family house.

3.4. Practitioners’ views on contemporary adaptations

This section presents the findings obtained from interviews conducted with professional architects.²²³ Due to constraints in time and availability, interviews were conducted with only two architectural firms actively involved in converting townhouses in *Zuidwijk* into multiple-family residences. The interviews primarily explored the architects’ general viewpoints on communal living and adapting built heritage, their personal design approaches, and their strategies for navigating regulatory frameworks. The interview questions posed are specified in the appendix.²²⁴ The responses from both practitioners often

corroborate each other, occasionally provide complementary insights, and at times, present contrasting opinions. Following, the general outlines of these conversations are examined within different themes.

General vision on adaptations of townhouses into multiple-family houses

The adaptation of single-family houses to multiple-family houses, particularly in the context of townhouses, is influenced by the changing needs of residents over time. These functional changes are not problematic, if managed carefully. These townhouses are typically large and consequently expensive. To reside in such a property with a single family and to undertake renovations that address current needs requires substantial financial resources. One advantage of maintaining the townhouse as a single-family residence is that it facilitates the preservation of the typical sequenced room layout, which may not always be feasible in multiple-family configurations.

Stakeholders

There are several key players involved in the process of transforming townhouses into multi-

family residences. Initially, the fire department and the urban planning department are key participants due to their oversight of fire safety regulations and urban development standards, which significantly impact the feasibility and design of renovation projects. Additionally, the city’s heritage consultants are crucial players. According to architects, over time, they develop a rapport with heritage conservation authorities, making interactions with heritage consultants a particularly valuable aspect of these adaptations. These conversations frequently revolve around finding creative solutions in areas that aren’t bound by strict regulations, resulting in the development of innovative ideas. When dealing with protected buildings, the ‘Agentschap Onroerend Erfgoed Vlaanderen’ also becomes involved. Finally, the client plays a significant role. In these projects, the client is often a large developer who typically provides more flexibility compared to private clients. These days, clients seem to be leaning towards bigger, luxurious units that have fewer bedrooms. It appears that smaller bedrooms are becoming harder to sell. Conversely, private clients usually acquire and refurbish these properties as investment opportunities, similar to major developers.

Regulations and permits

The evolution of legislation has a significant impact on the trends in the adaptation of townhouses. A significant number of these buildings which were initially constructed as individual dwellings during the 19th century, had already been converted into multiple-family housing before undergoing renovation. Converting a single-family house into a multiple-family dwelling poses considerable difficulties in accordance with the existing building code. An architect contends that the current policy of ‘protected single-family residences,’ which imposes restrictions on subdividing properties less than 350 square meters, should be reevaluated. This approach mostly favors affluent people who possess the financial means to cover the considerable expenses linked to renovating and utilizing expansive properties. The architect suggests that a 120-square-meter apartment can adequately serve as a three-bedroom unit and questions the market demand for single-family houses that often lack a substantial garden, thus limiting their appeal.

To facilitate renovation projects, it is advantageous to provide evidence that the building previously functioned as a multiple-family residence, which can

be obtained through archival research. Renovations must also address various requirements such as bicycle storage, waste storage, and compliance with changing regulations. Implementing bicycle storage can be challenging due to the loss of ground-floor or basement space and the difficulty of maneuvering bicycles through historic entrance halls. One possible solution is to utilize metals that are resistant to scratches for components such as railings. An architect highlights that strict requirements for square meters per room and other regulations when dividing a property do not always accommodate the preservation of historic buildings. He suggests that legislation should allow for more flexibility and creativity, with urban planners and heritage consultants exploring grey areas. For example, one creative solution involved concealing a second staircase behind secret doors in each unit to meet fire safety standards while preserving the original monumental staircase.

Advantages and disadvantages of working with historic townhouses

Townhouses present various advantages, such as spaciousness from high ceilings, historical character,

ample natural light, and the preservation of original floors, paneling, and doors. Architects find working with and revitalizing heritage properties particularly rewarding. However, these properties also come with several challenges. Acoustic issues can arise from hollow floors with parquet on top and plasterwork underneath. Fire safety poses a significant challenge due to historical elements like floor-to-ceiling doors, which cannot be entirely removed due to their heritage value. The fire department typically prefers solutions such as installing fire-resistant walls behind unused doors, but compromises are possible: the doors may remain if new framing is installed to seal all gaps with rock wool and a fire-resistant barrier is applied. Such interventions are expensive, but fire safety regulations have become somewhat more flexible over time. If a comprehensive fire detection system is present, exceptions are made regarding the fire resistance of certain elements, allowing for the preservation of wooden floors and stairs. Additionally, lowered ceilings, often implemented during the oil crisis, pose restoration challenges and costs if the original ceiling underneath is to be restored. When removing original stucco, heritage

223 [Architect 1 and 2], video-call interview, May 30, 2024.

[Architect 3], in-person interview, June 28, 2024.

224 Shown in appendix 1

conservation authorities always require photographic documentation of the original ceilings.

Generally, architects do not experience unusual difficulties in implementing modern systems, except for the installation of vertical shafts and toilet drains, which can be technically challenging. Technical integrations are often problematic due to wooden floors that have already been altered, either from incorrect grinding work or previous build-ups. Sanitary facilities are best organized vertically above each other and not in the middle of a space. Historically, wet spaces were often located in the annex, a tendency that persists in contemporary adaptations. Solar panels are rarely integrated into multiple-family buildings, and it is preferable to insulate a townhouse in the roof, back façade, and potentially the front façade from the inside, provided there is no valuable stucco. The lack of rainwater tanks in townhouses in *Zuidwijk* complicates rainwater harvesting.

Another disadvantage of working with historic townhouses is the limited availability of communal areas, usually restricted to stairwells and mandatory facilities such as bicycle and waste storage, as the typical townhouse does not offer sufficient space to provide additional communal areas.

Design strategy for adaptation

Many townhouses have undergone renovations at similar periods, including their initial construction, modifications in the 1920s, such as facade alterations or the addition of extra floors or annexes, reconstruction during World War I and World War II, and adjustments in the 1970s for energy efficiency. However, many of these changes were never officially documented, leading to gaps in historical records and necessitating a return to the original construction period for accurate restoration. Every renovation project begins with a historical analysis of the property, using archives and the experience of heritage experts to fill the knowledge gaps. It is essential to determine what elements are authentic and what has been previously modified. As an architect, one must rely on intuition and historical knowledge to complete the project successfully. The objective is to identify the building's strengths and to discover its soul, for example through the creation of collages or images inspired by intriguing references. Sometimes, destructive investigations are necessary to trace undocumented renovations. Problems arise when historical elements that need preservation, according to heritage conservation standards, are of

poor quality.

The discussed projects involve four to five units per building. Generally, the architect strives to maintain the typical room structure (or 'doorzon') of the basic typology of the townhouse in *Zuidwijk*, as also required by heritage conservation authorities. This does not mean that openings cannot be enlarged, for example. It is always a balancing act. Townhouses typically consist of several large rooms on each floor. To convert such a house into a multi-family residence, these spaces must be divided into smaller units. Viewing these divisions, such as kitchens or storage rooms, as furniture can simplify the retention of the existing structure. These elements can then tell their own story without compromising the building's identity. When the common hall or other significant spaces are subdivided, they should remain readable as a single space, using features like glass overhead lights. New interventions should be visible within the context of a historic townhouse to distinguish between authentic and modern additions. Renovation programs should always be reversible to allow functional changes over time without damaging the townhouse's fundamental characteristics, even if reversibility is not required by the client. This ensures

sustainability for future generations. Additionally, developers may standardize floor layouts or introduce minor variations across all levels to reduce costs, thereby preserving both architectural and heritage cohesion.

Horizontal expansions of the townhouse must be contextually evaluated like any new construction project, whereas vertical expansions are almost always requested by clients. Mansard roofs offer high living quality. It is also common to add a new floor to a flat roof on an annex. Integrating an elevator is possible with the involvement of heritage conservation authorities. Reusing the historic service stairs for a multiple-family house can be interesting but is not always desirable, as it sacrifices valuable square footage. In one project, the architect converted the service stairs into bathrooms on each level for each unit, in a reversible manner. Subdividing a house into more units is easiest when the main volume and annex are on the same level, which is often not the case in *Zuidwijk*. The architect always tries to connect the main volume and annex within the unit, respecting existing circulation. In some projects that have already undergone changes, the annex is raised.

Attics and the floor below are often designed as a duplex unit, with internal circulation provided within the unit itself, or, if the staircase is wide enough, it can be compartmentalized. However, it is paradoxical that larger duplex units do not have garden access, whereas smaller units do. Developers often prioritize designing two bedrooms at the front for profitability, with living spaces arranged around the terrace at the rear. However, it is more logical to organize living spaces in contact with public areas and arrange sleeping areas in the private interior space. Since the pandemic, outdoor spaces have gained popularity. In certain projects, architects feel compelled to provide each unit with an outdoor area, even if the client does not require it. Often, city gardens are overgrown or have makeshift structures. A solution is to adapt existing principles like the void or English courtyard ('souterrain') to create more spaciousness. One architect chose to open up an existing patio to give a valuable basement a more prominent place within the house, generating a unique space within a historic building.

Heritage conservation authorities require that historic facades remain intact. For instance, if a balcony was previously removed, it must be reintroduced during

renovation. In contrast, rear facades are often opened up in such renovations. Architects may organize internal terraces on this side, ensuring privacy, and approach the rear facade as a contemporary interpretation of the front facade, with elements like pronounced plinths or a freer window rhythm. The interviewed architects have never opted for facadism in these projects, as this situation has not arisen. According to the architects, facadism might be considered if the facade is entirely out of sync with the structure behind it or if the building has undergone significant previous renovations. Otherwise, heritage conservation authorities are unlikely to support it. The identity of the typical townhouse is conveyed through its intricate details and decorations. A townhouse generally features a distinct structure: the facade, entrance hall, and public rooms on the ground floor are designed to showcase the owner's wealth and taste. As one moves to the upper floors, the interior elements become less ornate and elaborate, yet they maintain a cohesive aesthetic. This typology is crucial to consider during a renovation project. A common issue involves preserving specific heritage elements, such as non-functional fireplaces. While these fireplaces can add character to living spaces,

they can sometimes impede spatial utilization. Ground-floor fireplaces are often more elaborately decorated and of higher quality than those on the upper floors, and these differences should be considered during valuation and renovation. Although these elements can present challenges, they can also provide solutions, such as accommodating technical utilities.

Future desires

Architects advocate for increased flexibility in the design and implementation of roof gardens on townhouses. Roof gardens offer a practical solution for enhancing the livability of ground-floor city gardens and can serve as communal areas. Green roofs also contribute to reduced building heating and improve the urban landscape. Nevertheless, current regulations frequently lead to the rejection of applications for roof gardens, as they are classified as additional volume. While such adjustments are often negotiable for larger projects, there is considerable resistance for smaller projects, such as most townhouses in *Zuidwijk*. The incorporation of common living spaces is often overlooked by developers due to concerns over sales

viability. However, architects view these spaces as valuable assets that foster social interaction among residents. The challenge remains in addressing the practical issues related to the funding and maintenance of such areas. Cohousing, which is gaining popularity among both younger and older individuals seeking social interaction, presents more opportunities compared to co-living. Today, some developers are already devoting their time on realizing Cohousing projects in historic properties. In this specific case, the developer supports the Cohousing concept by for example integrating a cinema in an underused basement space to enhance the property. Overall, architects advocate for enhanced feasibility in creatively experimenting with building norms for historic townhouses and their adaptation. Greater regulatory flexibility would facilitate these innovations, enabling the incorporation of roof gardens, communal spaces in multiple-family residences, and Cohousing initiatives.

*Analytical assessment of contemporary townhouse
adaptations into multiple-family houses*

4

4.1. Criteria

The criteria for assessing adaptation strategies - more particularly conversions into multiple-family homes - are delineated in this section. The evaluation is centered on three primary criteria: the impact on architecture and living quality for contemporary society, the effect on heritage properties, and conformity to Antwerp’s current building policy.

Architectural and living quality

The contemporary living quality is assessed based on several factors, including the efficiency and size of spaces, such as the addition of a mezzanine floor or the utilization of the souterrain level. Another important factor to consider is privacy, especially if occupants must go through shared areas in order to access different parts of an apartment. The assessment also looks at the existence and operation of necessary amenities such as restrooms, kitchens, outdoor areas, and storage places. Lastly, the usefulness and condition of common areas are taken into account, especially their capacity to strengthen interactions amongst residents.

Heritage value

Upon examining the descriptions on the “*Inventaris Onroerend Erfgoed Vlaanderen*”, it becomes understandable that these descriptions offer valuable information on the cultural significance of the ‘typical townhouse’ in *Zuidwijk*. However, these descriptions primarily emphasize the architectural and exterior characteristics of the townhouses. This emphasis reflects the fact that most protected townhouses in *Het Zuid* are categorized as part of a ‘protected town or village scape’. In that case, protection is limited to facades and roofing as far as visible from the street. Only two properties in *Zuidwijk* are individually protected as monuments: 22 Beeldhouwersstraat and ‘De Vijf Werelddelen’ on the corner of Plaatsnijdersstraat and Schildersstraat.²²⁵ These art-nouveau properties are protected for their artistic value and ‘general interest’.²²⁶ Given that current descriptions and protective statuses for townhouses in *Zuidwijk* predominantly rely on architectural and aesthetic criteria, there is a need to evaluate these adaptations through a more holistic lens. The Burra Charter,²²⁷ a set of guidelines established by ICOMOS, addresses this

by considering a broader range of values, including aesthetic, historical, scientific, social, and spiritual aspects, and occasionally incorporating additional terms such as ‘architectural’ or ‘archaeological’ value. The charter will serve as the foundation for evaluating the effect of modifying historic townhouses on their authenticity and integrity. This publication offers a holistic comprehension of heritage values for individuals who offer recommendations and carry out responsibilities related to locations of cultural importance. For this assessment, the impact on the following values will be examined: the aesthetic value, which refers to ‘the sensory and perceptual experience of a place’; the historic value, due to its influence or it has been influences by ‘an historic event, phase, movement or activity, person or group of people’; the architectural value, which overlaps with the aesthetic and historic value; the scientific value, which refers to ‘the information content of a place and its ability to reveal more about an aspect of the past through examination (...)’; the social value, which refers to ‘the associations that a place has for a particular community (...) and the social or cultural meanings that it holds for them’.²²⁸

The impact of the adaptations on the cultural significance of townhouses will be assessed through the physical investigation of adapted townhouses, and research.

Building legislation on adaptations

The alignment with contemporary legislation, specifically the ‘bouwcode’ (2019) in the city of Antwerp,²²⁹ is essential for adapting single-family houses into multiple-family houses. Key regulations include the requirement for bike and waste storage since 2010, and the restriction that houses smaller than 350m² cannot be subdivided since 2019 to protect family houses, excluding Cohousing.²³⁰ Each living space must have windows for daylight and

views,²³¹ and dwellings must be accessed directly or through shared circulation spaces from the public realm.²³² In buildings with at least two dwellings, all spaces within an independent living unit, except for garages, bicycle sheds, or storage areas, must form a continuous unit without being separated by common areas like stairwells.²³³ Any change in the number of independent living units requires each new or altered unit to have a qualitative outdoor area with a minimum net floor area of 4m², plus 2m² per additional bedroom.²³⁴ Minimum area standards for new or changed dwellings are as follows: studios must be 35m², rooms 14m² plus 3m² per additional function (kitchen, bathroom, or toilet), one-bedroom units 51m², two-bedroom units 70m², three-bedroom

units 83m², and units with four or more bedrooms 97m². Conversion of a dwelling larger than 350m² into a multiple-family building is permitted if it includes at least one independent unit with a net floor area of 130m² and an outdoor space of 15m².²³⁶ Regarding fire safety, and in accordance with the Royal Decree of July 7, 1994,²³⁷ which establishes the basic standards for fire and explosion prevention in buildings, the key features of this policy for multiple-family residences will be examined. The primary objectives of this policy are to prevent fires, ensure safety, and facilitate the work of firefighters. Since most townhouses in *Zuidwijk* are between 10 and 25 meters in height, the regulations for medium-rise buildings will be discussed.²³⁸ Each building must

225 Onroerend erfgoed Vlaanderen, “Inventaris Onroerend Erfgoed”.

226 Koninklijke Commissie voor Monumenten en Landschappen, “Burgerhuis in art nouveaustijl”, Inventaris Onroerend Erfgoed, 8 June 1988, <https://inventaris.onroerenderfgoed.be/aanduidingsobjecten/6935>.
Vlaamse Executie, “Art-nouveauburgerhuis Het Bootje”, Inventaris Onroerend Erfgoed, 31 March 1976, <https://inventaris.onroerenderfgoed.be/aanduidingsobjecten/5706>.

227 Australia ICOMOS, *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (1999, updated 2013), <https://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013.pdf>.

228 Australia ICOMOS, *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*, 2-4.

229 “Gemeentelijke Stedenbouwkundige Verordening: Bouwcode, Gecoördineerde Versie”, Stad Antwerpen.

230 Article 4: definition ‘protected single-family house’, own translation from Dutch:

‘A single-family dwelling where the dwelling coincides with the entire building and whose total gross floor area does not exceed 350m2, including any complementary functions and so-called “commercial houses” (...)’.

Article 11, § 4, own translation from Dutch:

‘Within a building with at least 2 dwellings, all spaces that are part of an independent living facility, with the exception of garages, bicycle sheds or storage areas, must form one continuous unit. They must not be separated by common areas such as stairwells.’

231 Article 10, § 1

232 Article 11, § 1

233 Article 11, § 4, own translation from Dutch:

‘Within a building with at least 2 dwellings, all spaces that are part of an independent living facility, with the exception of garages, bicycle sheds or storage areas, must form one continuous unit. They must not be separated by common areas such as stairwells.’

234 Article 12, § 1, own translation from Dutch:

‘For new construction, reconstruction, volume expansion, change in the number of independent living units, or change of function to residential, each new or altered independent living unit must have a qualitative outdoor area. The minimum net floor area of this outdoor space is 4 m2, plus 2 m2 of net floor area per bedroom, counting from the second bedroom.’

235 Article 26, § 1

236 Article 28, § 4

237 Algemene Directie Civiele Veiligheid: Brandpreventie, “Koninklijk Besluit van 7 juli 1994 tot vaststelling van de basisnormen voor de preventie van brand en ontploffing waaraan de gebouwen moeten voldoen: Gecoördineerde versie op 20 mei 2022”, Federale Overheidsdienst Binnenlandse Zaken, (20 May 2022), https://www.securitecivile.be/sites/default/files/explorer/partie_s_incendie/1994-07-07kb_basisnormen_geel_2022.pdf.

238 These regulations apply to the following buildings to be erected and the following extensions to existing buildings, for which the application for construction is submitted as of December 1, 2012.

“Koninklijk Besluit van 7 juli 1994”, Federale Overheidsdienst Binnenlandse Zaken, 4.

be divided into compartments, each with an area of less than 2,500 square meters, and the height of each compartment should correspond to one floor.²³⁹ Exceptions to this rule include duplex units and situations where the ground floor and second floor (or split level) may form a single compartment.²⁴⁰ Another exception applies if the compartment is equipped with an automatic extinguishing system and a smoke and heat extraction system, provided that evacuation is adequately managed.²⁴¹ Additionally, every compartment must have an evacuation route that does not require passing through a communal hallway.²⁴² Stairwells must provide access to both the evacuation level and all upper levels of the building.²⁴³ The walls between different compartments must be fire-resistant for one hour, the doors should be fire-resistant for half an hour.²⁴⁴ Moreover, structures need to have notification and firefighting equipment. The qualified fire department will advise on the quantity and kind of equipment needed, taking into account the building's size, condition, and danger

level.²⁴⁵ According to the Antwerp 'bouwcode,' which governs heritage policy, listed heritage must be conserved to the greatest degree possible, while preservation values for inventoried heritage will be weighed against possibilities for transformation and functional usage.²⁴⁶ The assessment on policy will be conducted briefly, mostly concentrating on the alignment with the 'protected family-house regulation'. Further future investigation on a building plot basis will be necessary to conduct a comprehensive examination of adherence to building codes and other norms.

4.2. Adaptation typologies

While all these criteria will be discussed in the assessment and in the recommendations in Chapter 5, the categorization of adaptation approaches here is based exclusively on architectural and functional

aspects. By giving priority to these qualities, we establish an effective basis before considering broader factors such as sustainability, heritage value, and policy compliance in subsequent analyses. This methodical approach guarantees a thorough assessment of the tangible consequences of each adjustment prior to addressing further complexities. Using architectural plans from building permits, a categorization of adaptation typologies is created. The primary sources of these plans are the Felix Archive for older documents, the 'Percelen Informatie Platform Antwerpen' for more recent documents, and documents provided to me personally by architects. Due to the incomplete availability of permits and the existence of other classification parameters, this analysis is neither exhaustive nor complete. The analysis will primarily utilize floor plans to examine various adaptation typologies, focusing on the organization and evolution of multiple units compared to the original townhouse layout. Plans and images will be used to support case studies

from *Zuidwijk* that demonstrate the typologies of adaptation. Additionally, sections will offer a detailed architectural and spatial analysis, examining patterns in size, spatial relationships, circulation in order to shed light on social shifts, living patterns, and architectural elements related to townhouse adaptations. The assessment identifies five main types of adaptations:

(A1) A single-family house is converted into a multiple-family house with two units, usually resulting in two duplexes.

(A2) A single-family house is converted into a multiple-family house with one unit per floor, sometimes including a (new) mezzanine for the upper unit.

(A3) A single-family house is converted into a multiple-family house incorporating the souterrain floor, which is typical for *bel-etage* townhouses with semi-subterranean floors.

(A4) A single-family house is converted into a multiple-family house with multiple diverse units located randomly.

(B) A multiple-family house is reconfigured into a different layout for multiple units.

(OTHER) Cases that fall outside clear typologies, such as those involving facadism or the conversion

of two townhouses into one multiple-family unit, will be excluded from this analysis. The different typologies will be subsequently discussed in more detail along with schematic drawings and, if available, photos. The presentation of various building phases will be made available

if they are documented. The categorization mainly concentrates on the most current modification, stressing the examination of its key features and differences from the historical arrangement. When relevant, additional transitional modifications—if any exist and are accessible—will be covered

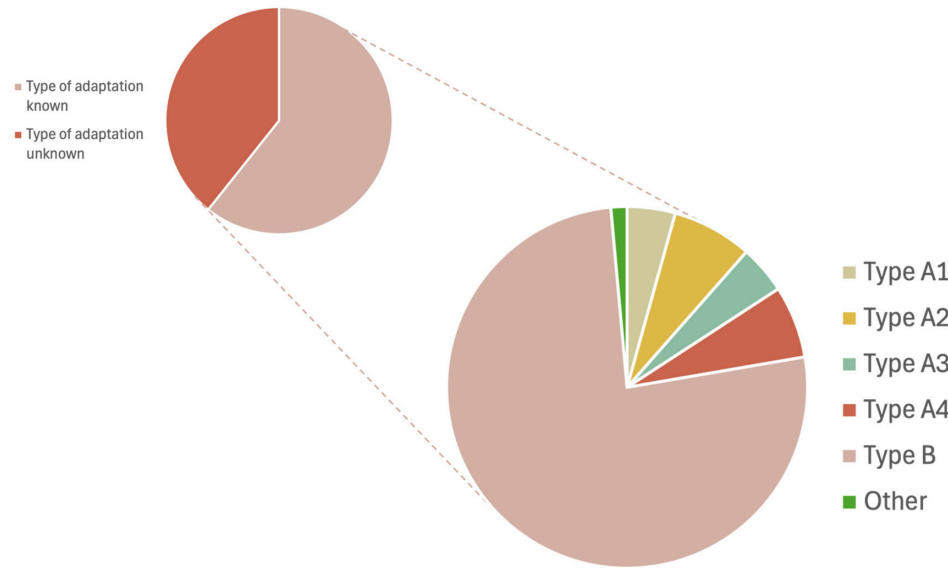


Fig. 36 Pie chart of known/unknown townhouse adaptations and their typology in Zuidwijk

239 A compartment is considered to be a part of a building bounded by walls designed to prevent fire propagation into the adjacent compartment or compartments for a specified period of time. A compartment may or may not be divided into rooms.
According to: "Koninklijk Besluit van 7 juli 1994", Federale Overheidsdienst Binnenlandse Zaken, 4.

240 Algemene Directie Civiele Veiligheid: Brandpreventie, "Koninklijk Besluit van 7 juli 1994", Federale Overheidsdienst Binnenlandse Zaken, 108.

241 "Koninklijk Besluit van 7 juli 1994", Federale Overheidsdienst Binnenlandse Zaken, 108.

242 Algemene Directie Civiele Veiligheid: Brandpreventie, "Koninklijk Besluit van 7 juli 1994", Federale Overheidsdienst Binnenlandse Zaken, 108-109.

243 Algemene Directie Civiele Veiligheid: Brandpreventie, "Koninklijk Besluit van 7 juli 1994", Federale Overheidsdienst Binnenlandse Zaken, 117.

244 The fire resistance of doors is tested according to standard NBN EN 1634-1 and is classified according to standard NBN EN 13501-2 evacuation "Koninklijk Besluit van 7 juli 1994", Federale Overheidsdienst Binnenlandse Zaken, 117.

245 "Koninklijk Besluit van 7 juli 1994", Federale Overheidsdienst Binnenlandse Zaken, 140.

246 Article 5 'Ontwikkelingsgerichte aanpak van erfgoed'
"Gemeentelijke Stedenbouwkundige Verordening: Bouwcode", Stad Antwerpen, 18.



Fig. 37 Mapping of adaptation typologies in Zuidwijk

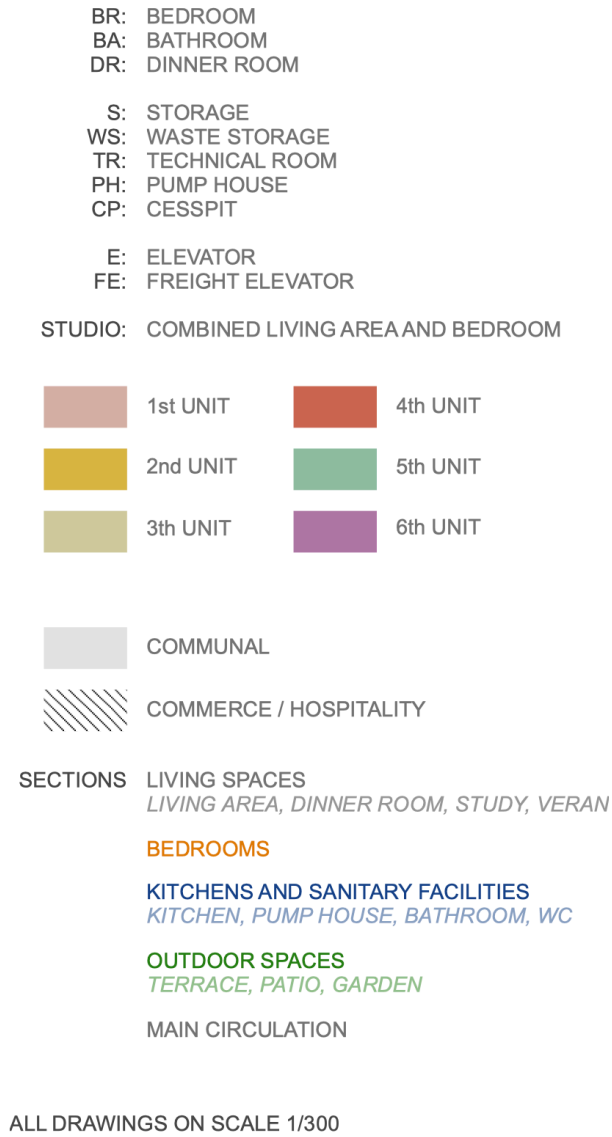


Fig. 38 Legend accompanying the plans and sections of adaptation typologies in Zuidwijk

Adaptation type A1: from single-family into multiple-family with two units

Townhouses with a “smaller” surface—that is, fewer than 350 square meters—usually operate well with the adaptation approach “From single-family into multiple-family with two units” (A1). This typology produces two duplexes that are the same size (case A1.3) or a larger family home combined with a smaller apartment (case A1.1). Usually found in the annex, a new staircase is installed within the apartment itself to ensure complete privacy and independence for both units.

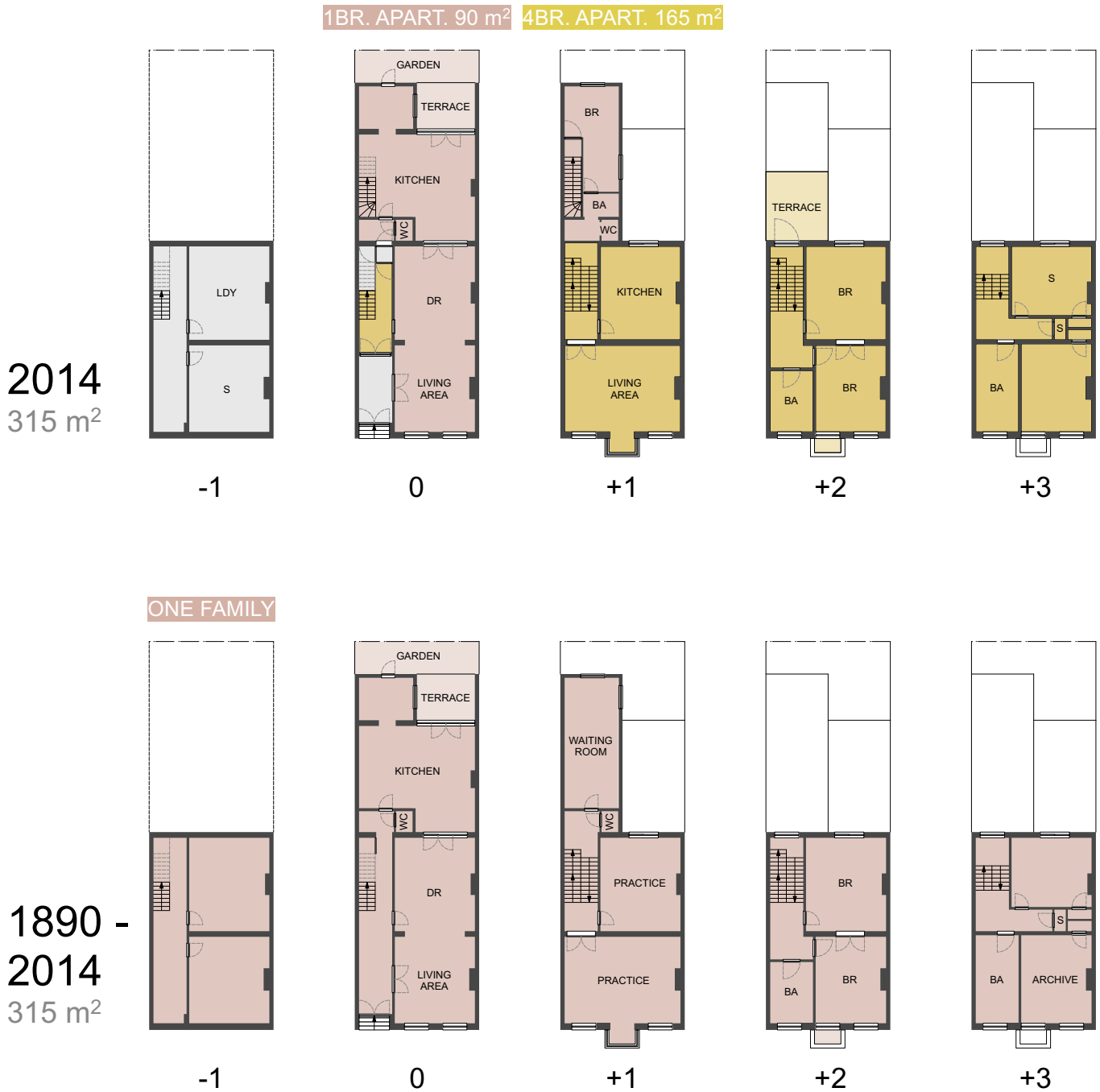
A family home combined with a ground floor smaller apartment is exemplified by Case A1.1. The upper family unit is upgraded with a new terrace created on top of the existing annex, while the first unit has a direct connection to the garden. An additional detail is that the ground level double door, which was originally located in the hallway on the first floor, was repurposed to provide a private passageway for the second apartment, which also provides access to the basement.

The conversion of a smaller townhouse into two comparable duplexes is demonstrated in Case A1.2. Because a more spacious bedroom was chosen for

the ground floor and a bathroom was added to the second floor, the original arrangement of the rooms was maintained on the first floor but not on the other floors. In the first unit, they decided to arrange the bathroom and bedroom as an open floor plan layout. The second unit’s newly implemented spacious bathroom divides the existing space.

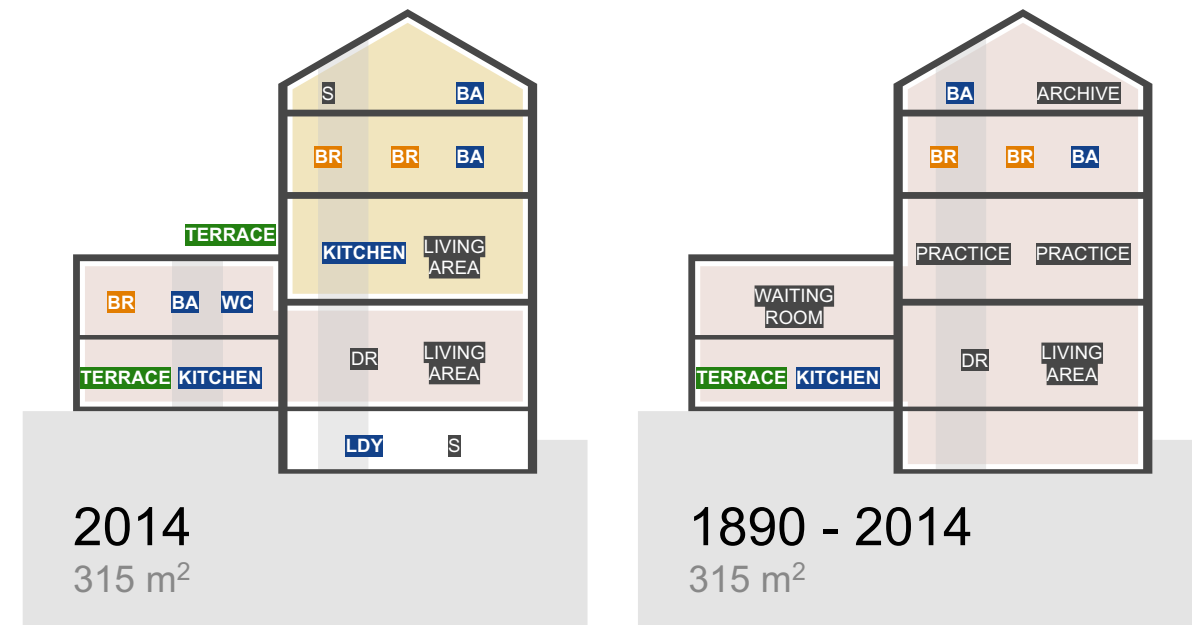
Another instance of the adaptation into two equal duplexes is demonstrated by Case A1.3. It is also feasible to arrange the private subterranean area in such a way that one can access their cellar without having to pass through any public areas. In this case, the living areas are designed to be completely open, akin to a free-flowing layout. This flexible arrangement, which eliminates the need for a typical sequence of rooms, is common in contemporary architecture. The living area is given the most room in this case. The upper level is always thought to be more private in both duplexes.

From single-family into multiple-family with two units: case A1.1



(top) Fig. 39 Plans case A1.1 from 2014

(bottom) Fig. 40 Plans case A1.1 from 1890-2014

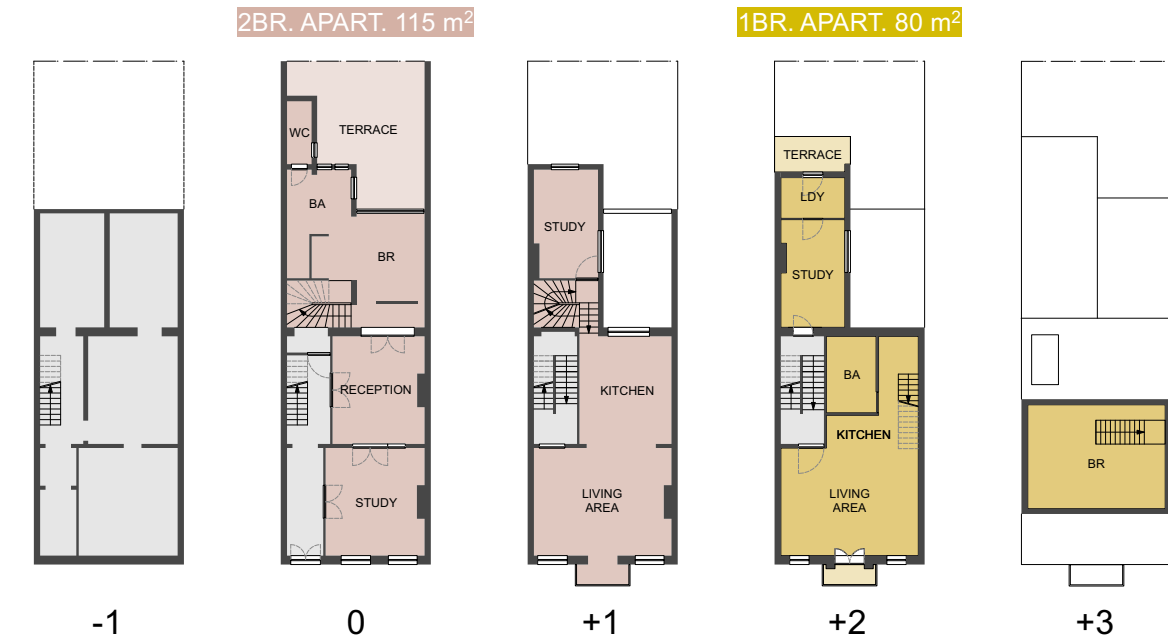


(left) Fig. 41 Section case A1.1 from 2014

(right) Fig. 40 Section case A1.1 from 1890-2014

From single-family into multiple-family with two units: case A1.2

2015
330 m²



1929 -
2015
330 m²



(top) Fig. 43 Plans case A1.2 from 2015

(bottom) Fig. 44 Plans case A1.2 from 1929-2015

1929
330 m²

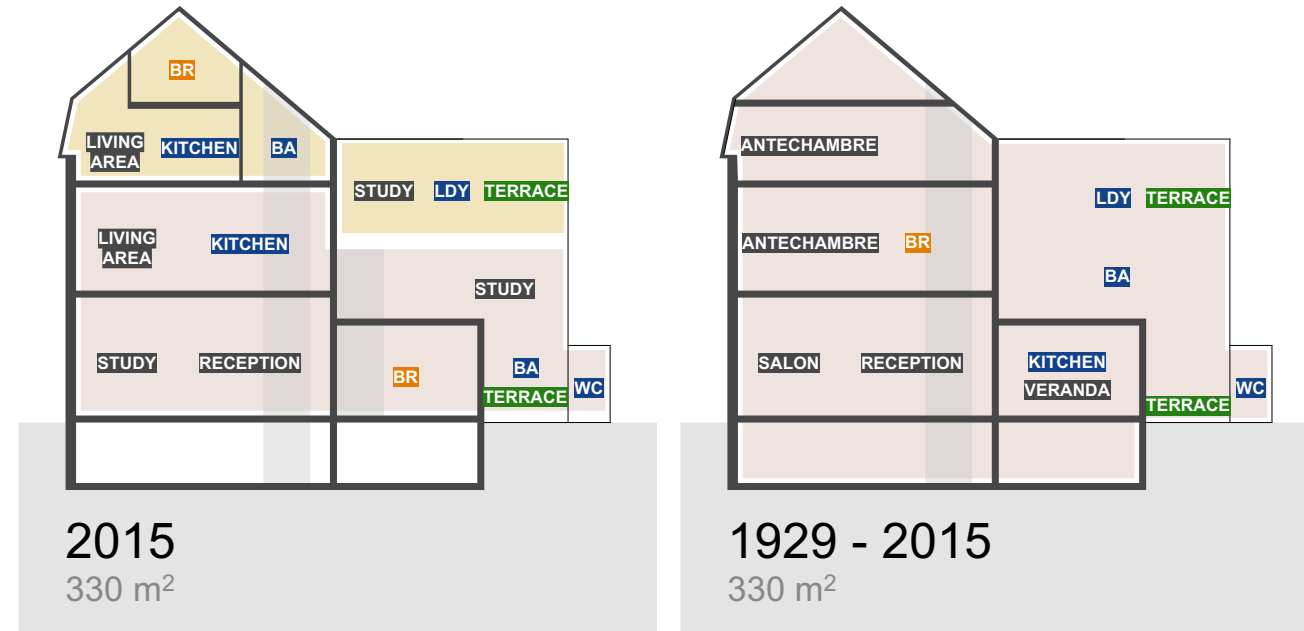


1890 -
1900
315 m²



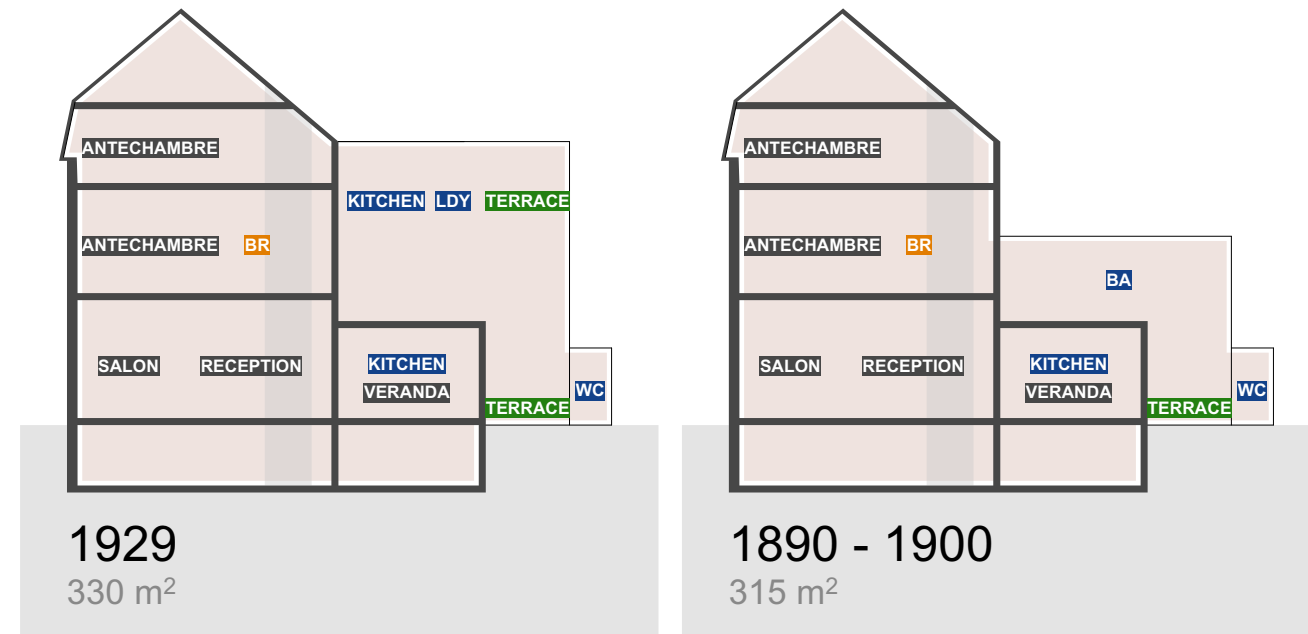
(top) Fig. 45 Plans case A1.2 from 1929

(bottom) Fig. 46 Plans case A1.2 from 1890-1900



(left) Fig. 47 Section case A1.2 from 2015

(right) Fig. 48 Section case A1.2 from 1929-2015



(left) Fig. 49 Section case A1.2 from 1929

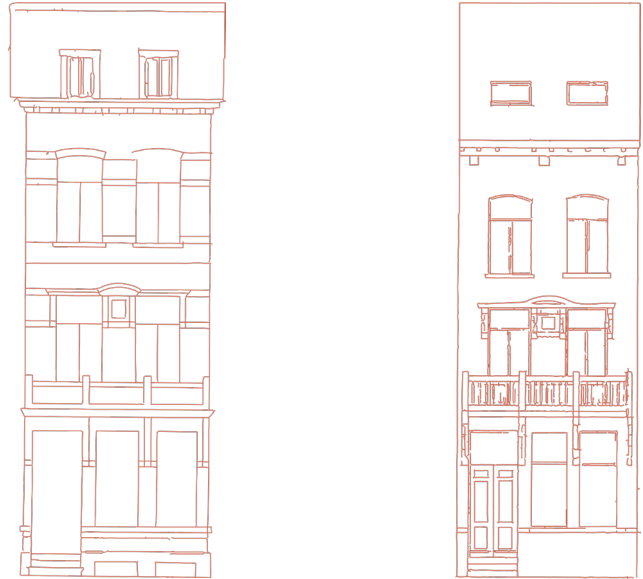
(right) Fig. 50 Section case A1.2 from 1890-1900

From single-family into multiple-family with two units: case A1.3



(top) Fig. 51 Plans case A1.3 from 2007

(bottom) Fig. 51 Plans case A1.3 from 1900-2007

*(top left) Fig. 53 Facade case A1.3 from 1928**(top right) Fig. 54 Facade case A1.3 from 2007**(bottom left) Fig. 55 Photo living area unit 2**(bottom middle) Fig. 56 Photo kitchen unit 2**(bottom right) Fig. 57 Photo bedroom unit 2*

Adaptation type A2: from single-family into multiple-family with one unit per floor

Townhouses ‘larger’ in surface area - more than 350 m² - are eligible to utilize the “From single-family into multiple-family with one unit per floor” adaptation type (A2). These dwellings often have enough surface area on each floor to fulfill every function needed for a single unit. Another criterion is the convenience of connecting the main volume and annex if the elevations differ. For example, building a small staircase inside the unit (case A2.2) or having an option to change the annex’s height because of non-valuable or poorly maintained structures are two ways to accomplish this. Within this typology, an existing attic (case A2.3) and/or a new mezzanine (case A2.1 and case A2.2) is often connected to the upper unit to obtain a larger duplex, compared to the other units.

Case A2.1 serves as an illustration of how each floor—including the attic for the higher unit—was converted into a separate unit. The kitchen and living room are one large open space that constitutes the center of the first and third units. In this case, in order to keep these amenities distinct from the private bedrooms, the restroom and toilet are always attached to the

main living space. At the back façade, new terraces have been constructed. To accommodate those additional units, the original room arrangement has been totally redesigned.

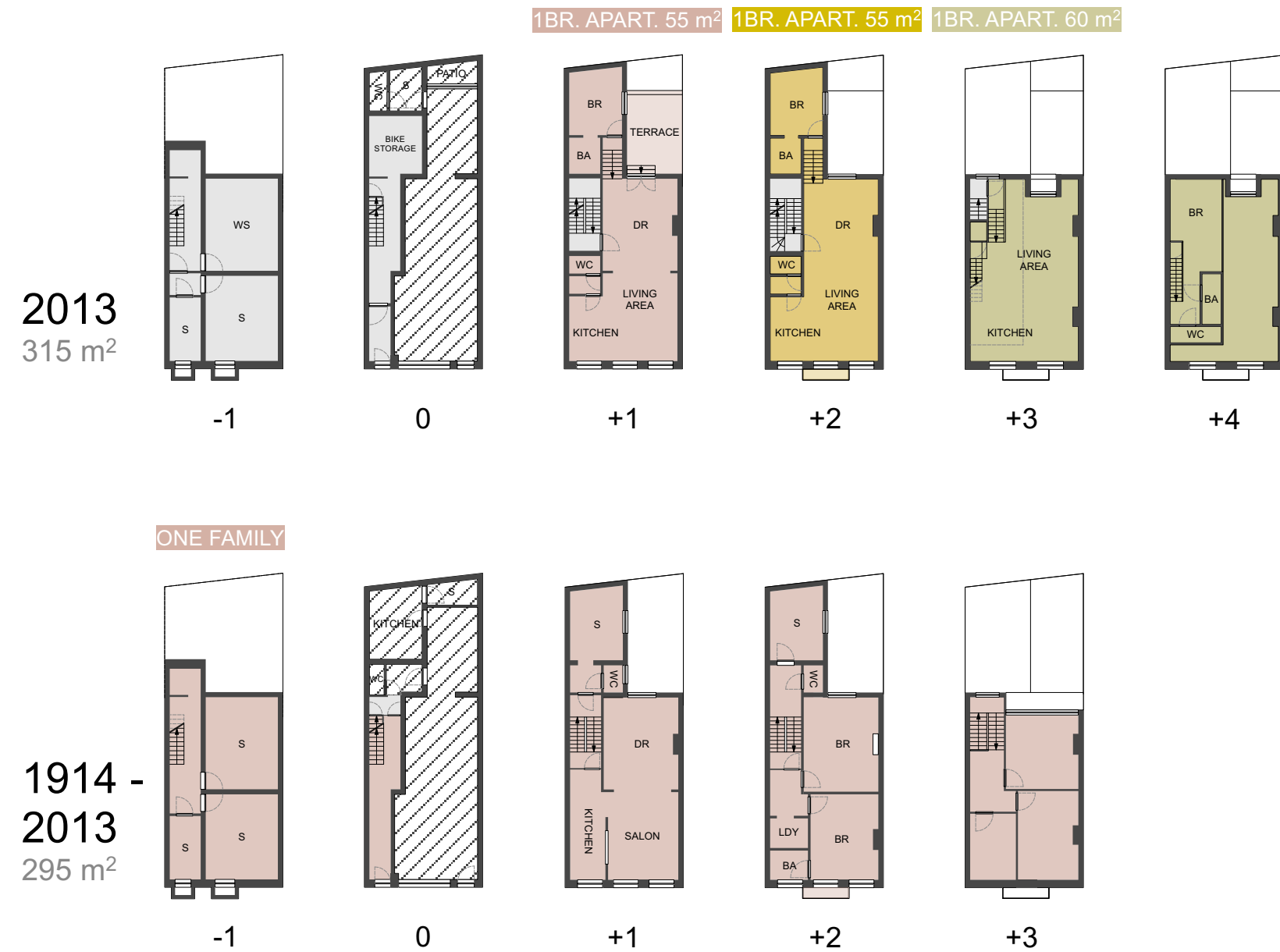
Another example is Case A2.2, where the kitchen, dining area, and living area are all perceived as one large space that is completely open and designed like a free flow layout. This kind of flexible organization is frequently found in modern architecture. This eliminates the authentic sequence of rooms. In this case, the quieter, annex and mezzanine areas are obviously where the more private parts are located. An additional relevant illustration of this adaptation technique is Case A2.3. Recently added areas, such the restroom and bathroom, are designed like furniture and act as a barrier between the public and private areas. The kitchen, dinner room, and living area are also considered to be one large space, enlarging the original openings, without removing the typical sequence of the rooms.



Fig. 58 Plans case A2.1 from 2002



Fig. 59 Plans case A2.1 from 1904-2002



(top) Fig. 60 Plans case A2.2 from 2013

(bottom) Fig. 61 Plans case A2.2 from 1914-2013

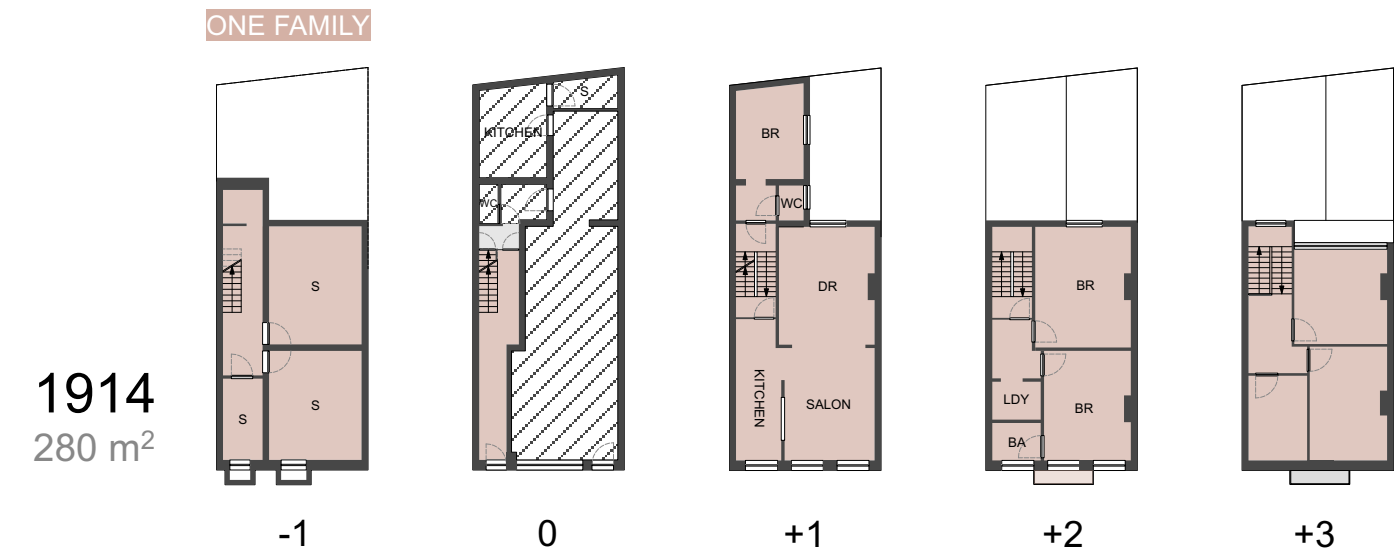
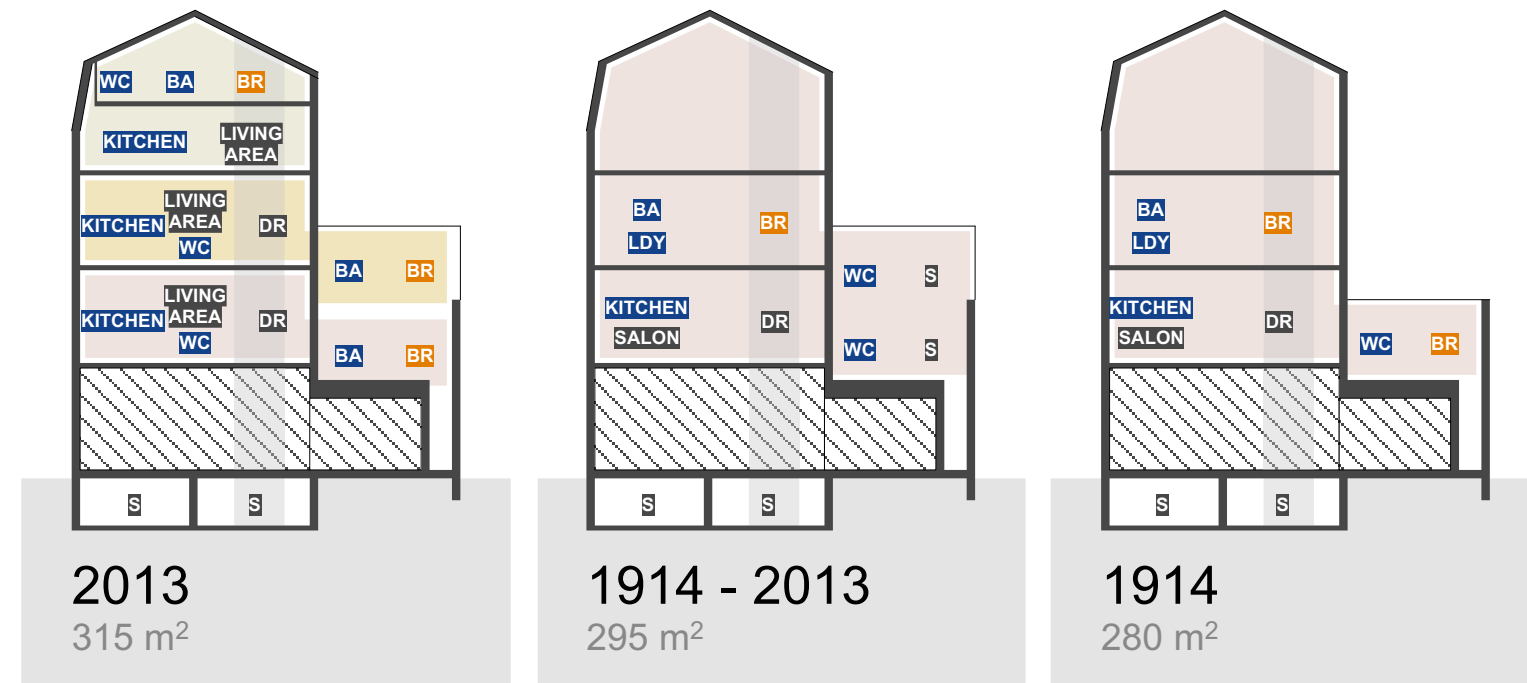


Fig. 62 Plans case A2.2 from 1914



(left) Fig. 63 Section case A2.2 from 2013

(middle) Fig. 64 Section case A2.2 from 1914-2013

(right) Fig. 65 Section case A2.2 from 1914

From single-family into multiple-family with one unit per floor: case A2.3

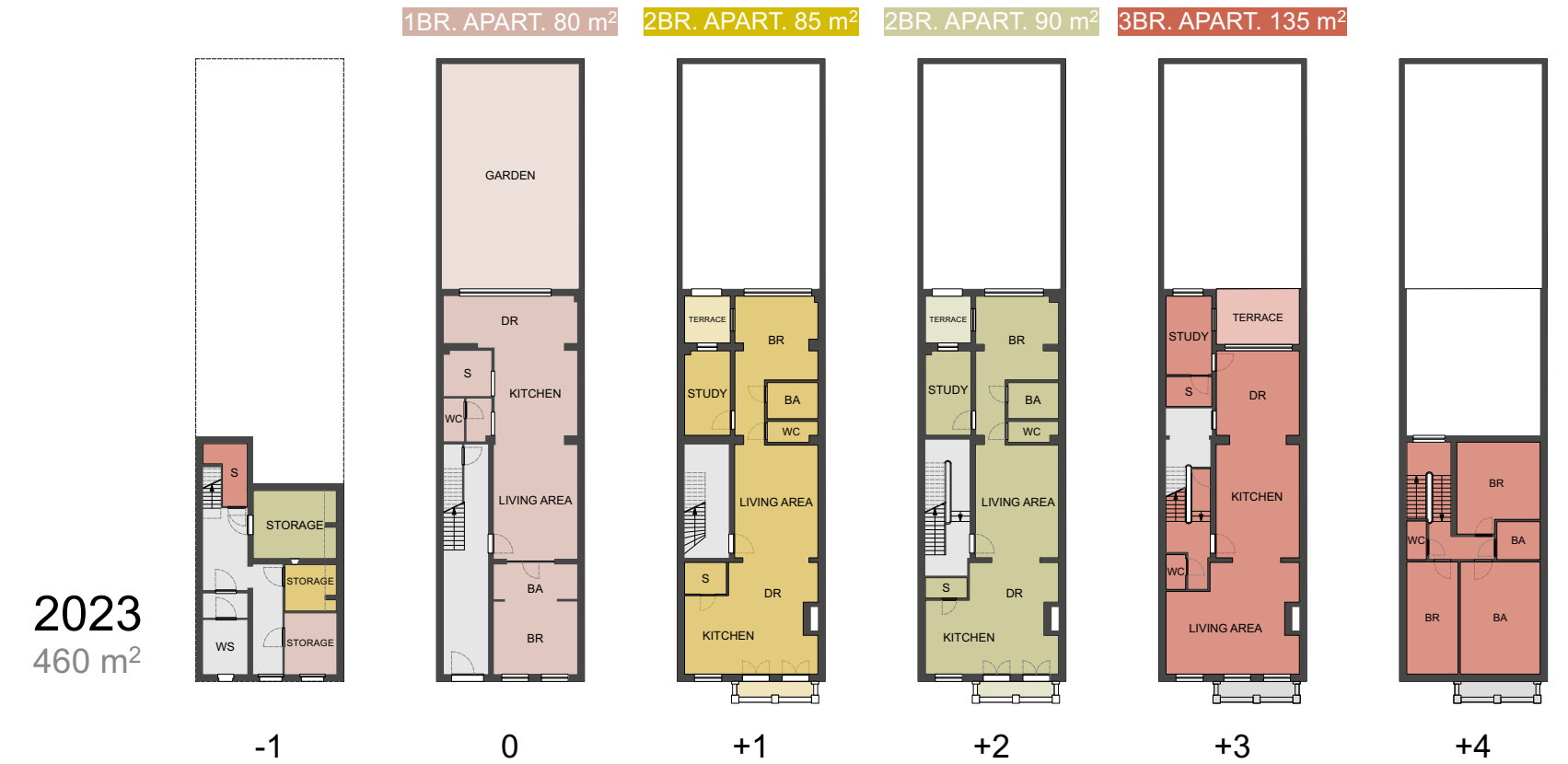


Fig. 66 Plans case A2.3 from 2023

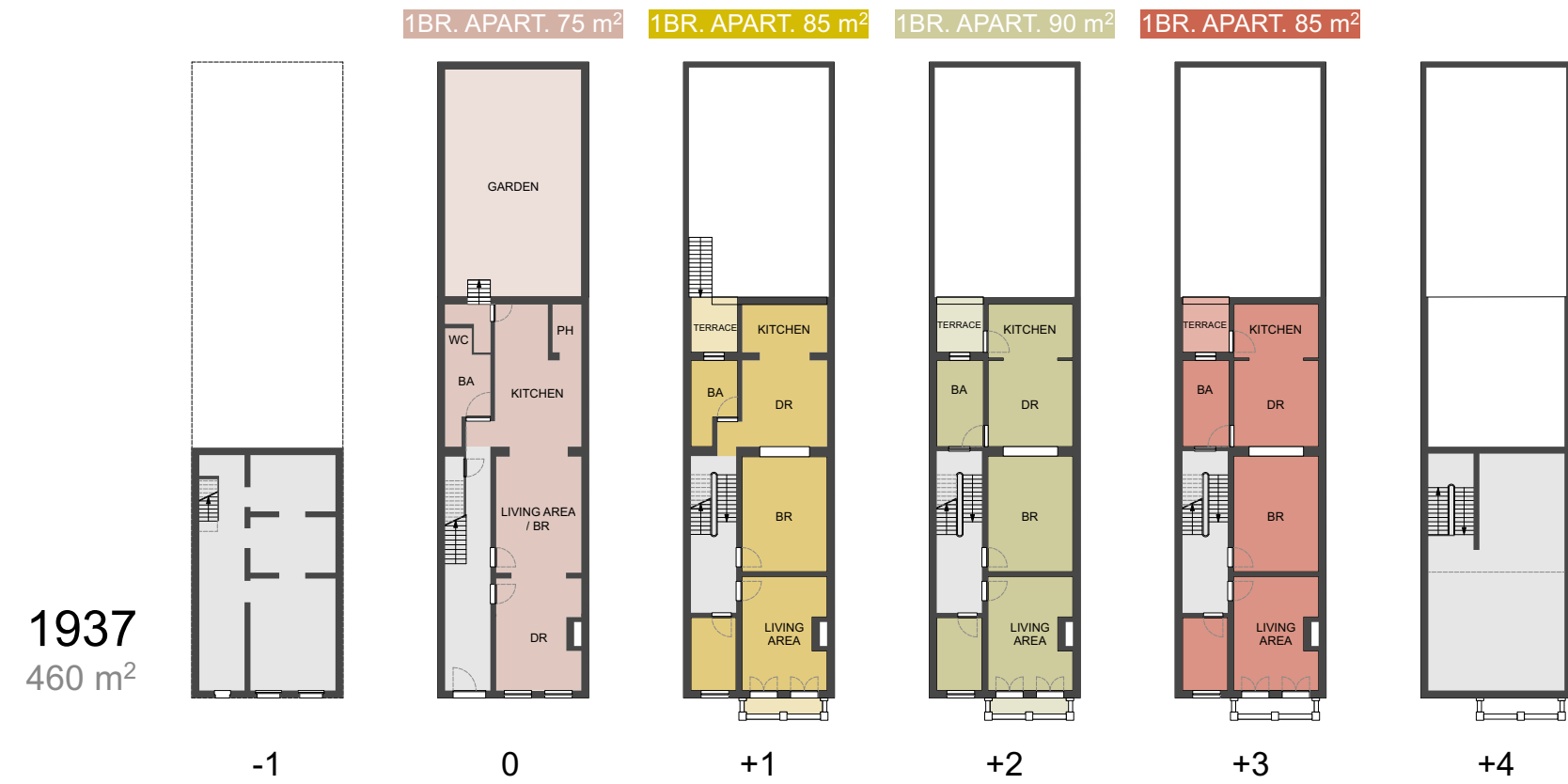
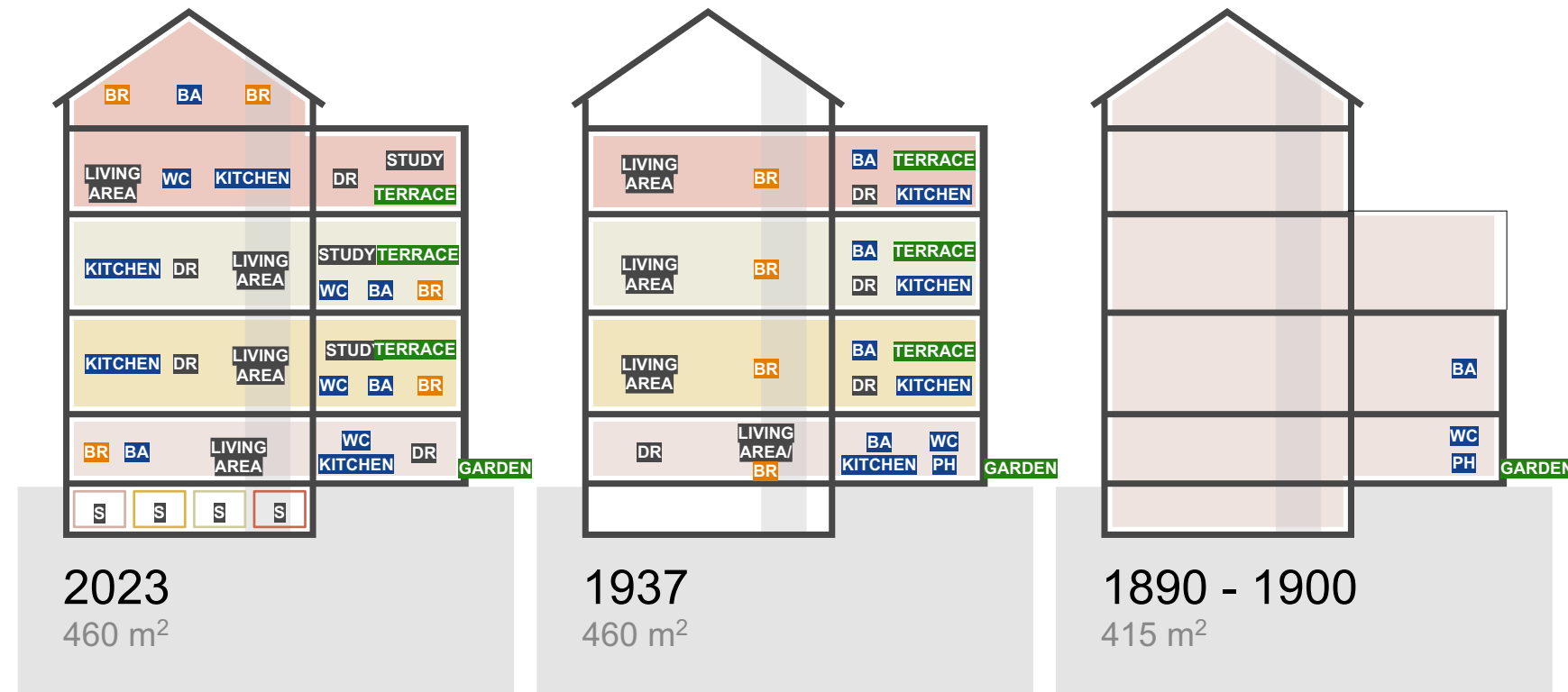


Fig. 67 Plans case A2.3 from 1937



Fig. 68 Plans case A2.3 from 1890-1900



(left) Fig. 69 Section case A2.3 from 2023

(middle) Fig. 70 Section case A2.3 from 1937

(right) Fig. 71 Section case A2.3 from 1890-1900

Adaptation type A3: from single family into multiple-family while using the souterrain floor

The adaptation typology 'from single family into multiple-family while using the souterrain floor' (A3) is typically observed in historic *bel-etage* townhouses, which feature a semi-subterranean basement ('souterrain'). The basement is partially below street level but aligns with the garden or patio at the back. Because of its configuration, the basement can be utilized for living areas comparable to those on the other floors. All functions could be implemented on the subterranean, but since this floor receives less natural light than other levels, we generally find the most private functions, such as the bedroom and bathroom, arranged on this level.

Case A3.1 provides an example of how to multiply units using the souterrain. The souterrain is connected to the floors above by the use of the service staircase in the annex, which was most likely used by the servants to get from their bedrooms to the kitchen, which was usually placed in the souterrain. This case's kitchen, which occupies a lot of space today, is truly the center of the home. A second bedroom is created by dividing the first floor's spacious historic family room. The sequence of the rooms is maintained even though the living space

and kitchen are unified in each unit.

Another illustration of the souterrain's frequent use for private purposes is Case A3.2. In the second unit, separate passageways are added to the third floor to create a private entrance hall and to the attic to construct two bedrooms and a bathroom. Subdivisions became more prevalent with the introduction of studios in the 20th century. Its typical room arrangement and other historical features have been restored by the 2013 renovation.

Case A3.3 deals with a unique problem, namely that there is a roof patio added to the upper apartment. In this case, the bathroom and bedroom merge into a single area in the annex, linked to one another without the need for a separate hallway. Guests will have to pass through your bedroom in order to use the restroom as there isn't a second guest bathroom. The sequence of the rooms is maintained in this case very well.



Fig. 72 Mapping of adaptation typologies A3 and bel-etage townhouses in Zuidwijk

From single family into multiple-family while using the souterrain floor: case A3.1



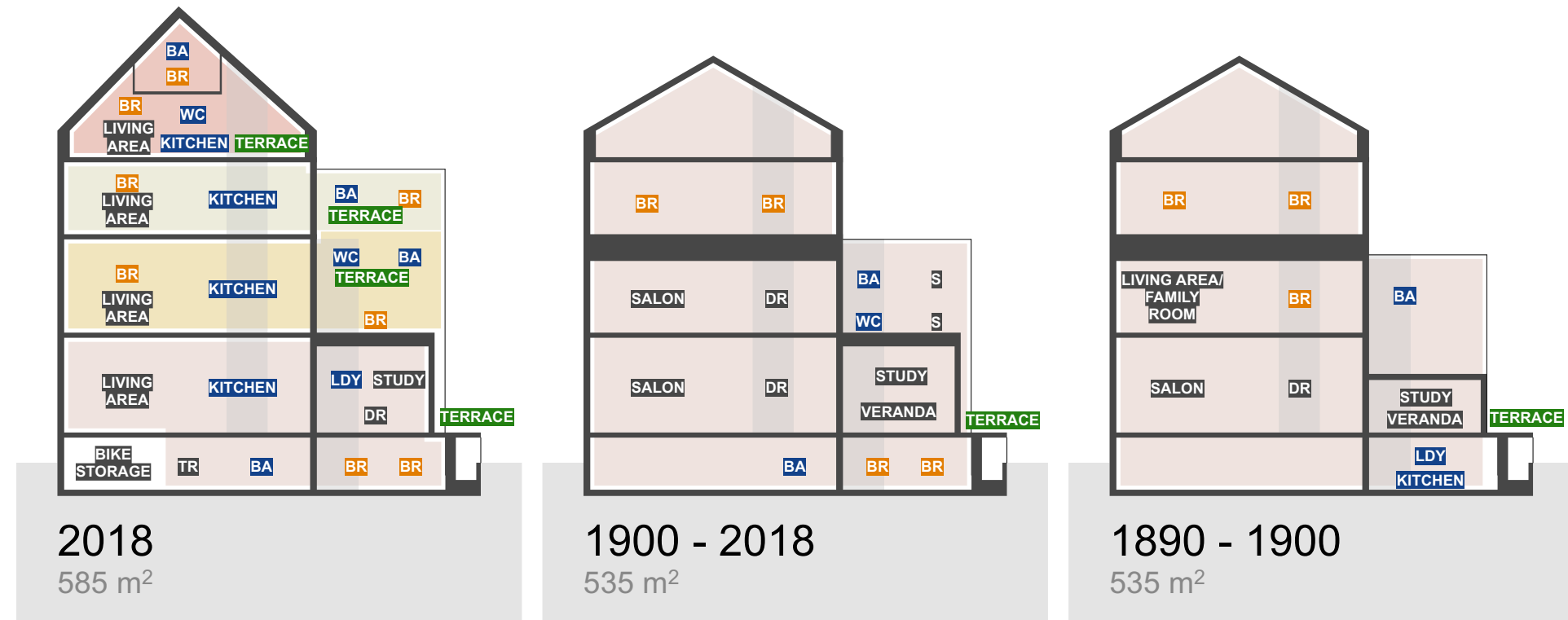
Fig. 73 Plans case A3.1 from 2018



Fig. 74 Plans case A3.1 from 1900-2018



Fig. 75 Plans case A3.1 from 1890-1900



(left) Fig. 76 Section case A3.1 from 2018

(middle) Fig. 77 Section case A3.1 from 1900-2018

(right) Fig. 78 Section case A3.1 from 1890-1900

From single family into multiple-family while using the souterrains floor: case A3.2



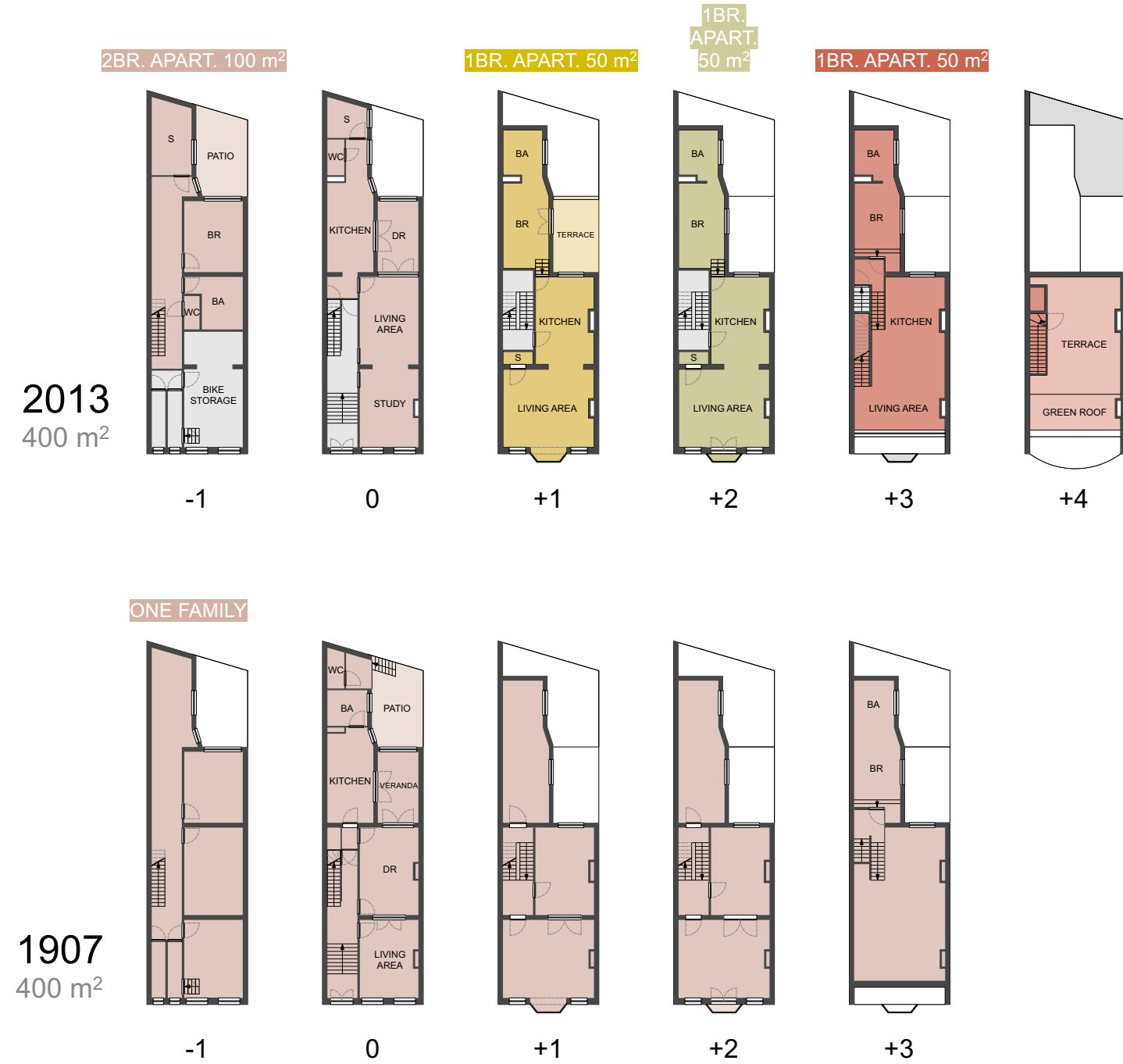
Fig. 79 Plans case A3.2 from 2013



Fig. 80 Plans case A3.2 from 1884-2013

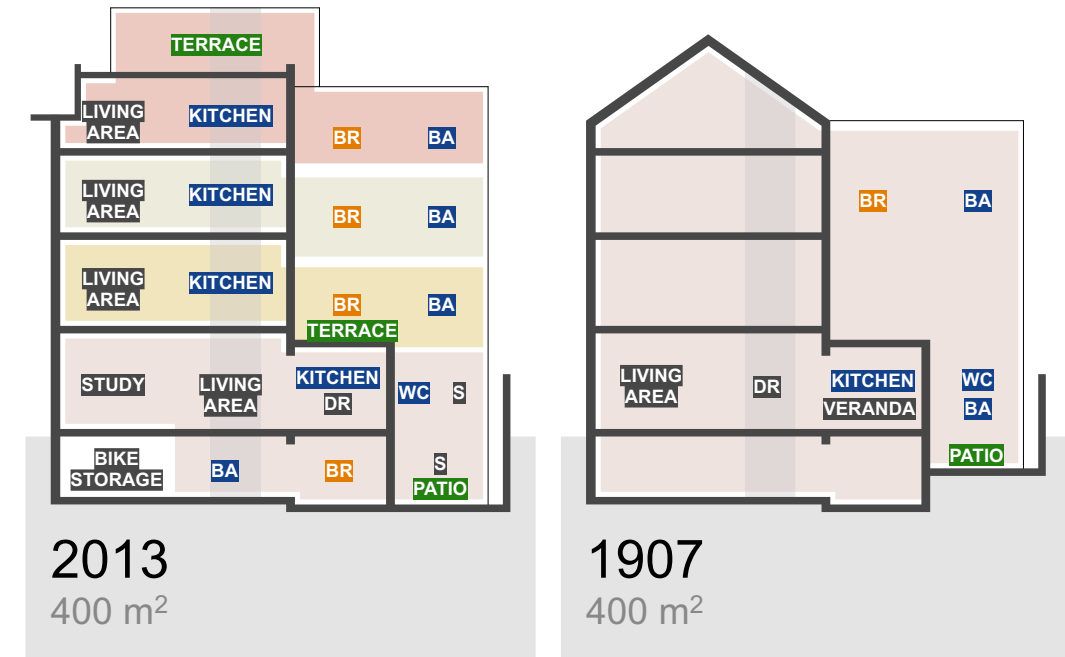


Fig. 81 Plans case A3.2 from 1884



(top) Fig. 82 Plans case A3.3 from 2013

(bottom) Fig. 83 Plans case A3.3 from 1907



(left) Fig. 84 Section case A3.3 from 2013

(right) Fig. 85 Section case A3.3 from 1907



(bottom) Fig. 87 Photo bedroom unit 2



(top) Fig. 86 Photo dinner room unit 1



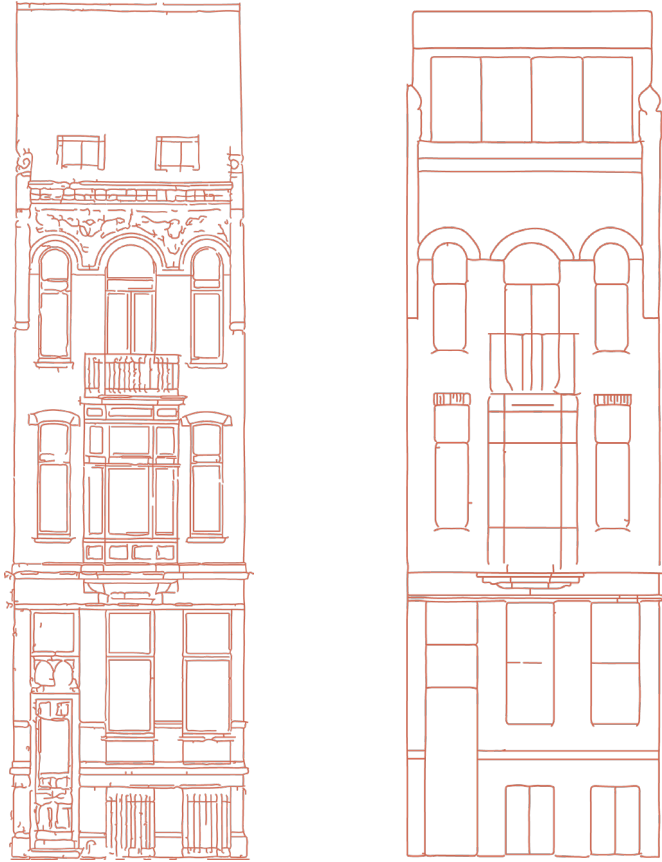
(bottom) Fig. 89 Photo living area unit 2
(top) Fig. 88 Photo living area unit 1



(bottom) Fig. 91 Photo kitchen unit 2
(top) Fig. 90 Photo kitchen unit 1



(bottom) Fig. 93 Photo terrace unit 2
(top) Fig. 92 Photo living area unit 1



(left) Fig. 94 Facade case A3.3 from 1907
(right) Fig. 95 Facade case A3.3 from 2013

Adaptation type A4: from single-family into multiple-family with scattered units

The following adaptation type, ‘From single family into multiple-family with scattered units’ (A4), is typical of townhouses with an original or later-modified annex that has a different number of levels than the main building. The floors’ varied sizes as a result make it more difficult to divide the spaces into homogeneous groups of several units. As a result, this root typology is typically divided into numerous, varied units that are customized to fit various family arrangements. For example, depending on the particular opportunities and context of each situation, duplexes are merged with single-floor units and family apartments.

It may be argued that Case A4.1 fits this typology because the property consists of two main volumes, each with a different height, both situated next to another street. Both volumes’ ground floors combine to form a single unit. In order to increase natural light on the ground floor, a new patio is constructed inside the existing building. One of the volumes has a duplex and one unit per floor, whereas the other volume just has one duplex. Today, smaller areas are frequently needed, particularly for the restroom and toilet. Organizing several units can easily be done

nowadays because the building was historically divided into many subdivisions. Once more, the kitchen and living area are regarded as one space. Case A4.2 is a protected property that is composed of two one-story apartments and a three-story family apartment situated on top. The kitchen and living room in the second and third units are not seen as one open floor plan as the kitchen is sheltered from them. The introduction of the freight elevator forms an obstacle concerning the existing plan layout. There is a lack of consideration for the spaces’ historic sequence.

From single family into multiple-family with scattered units: case A4.1



Fig. 96 Plans case A4.1 from 2022

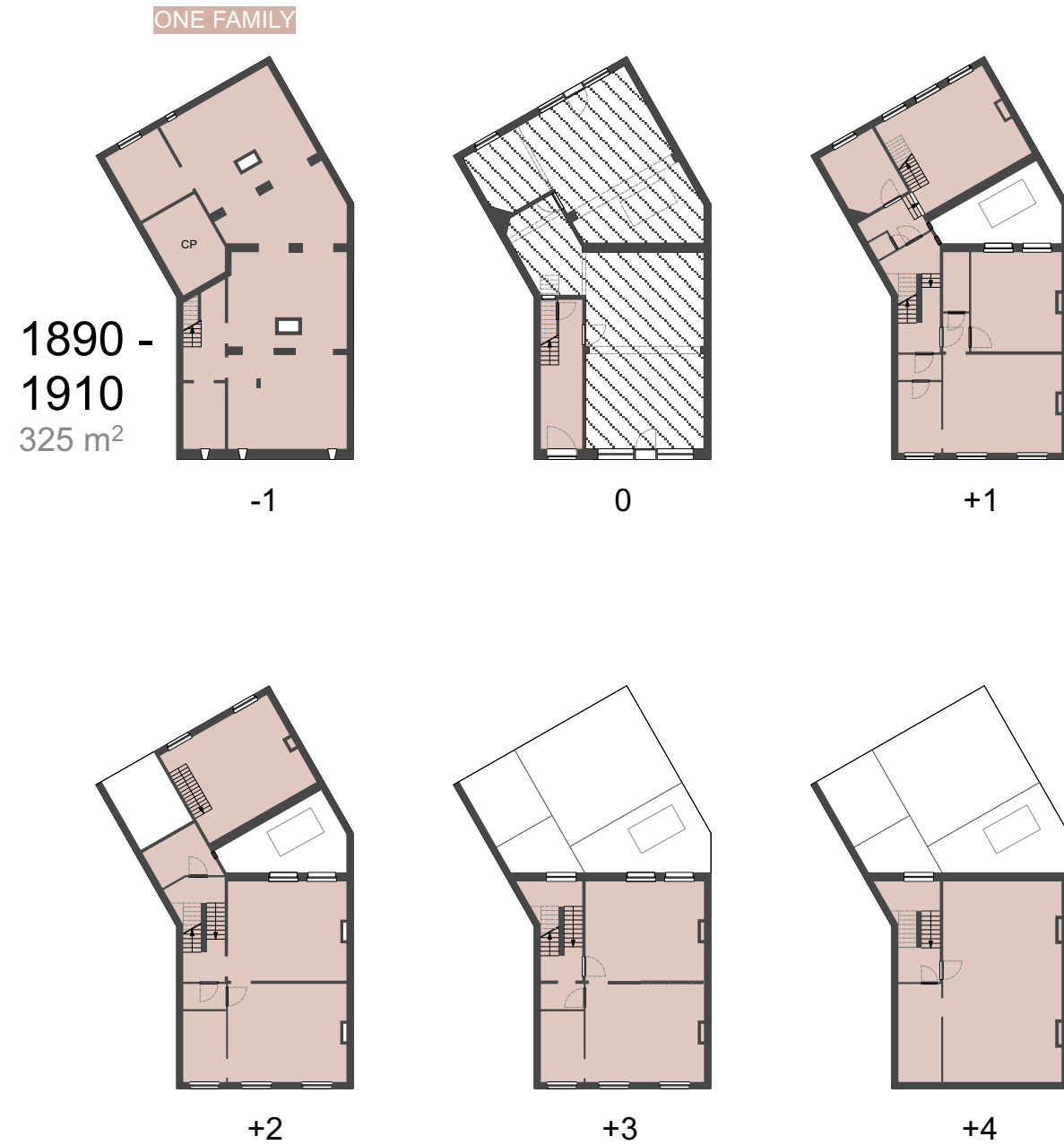


Fig. 97 Plans case A4.1 from 1890-1910



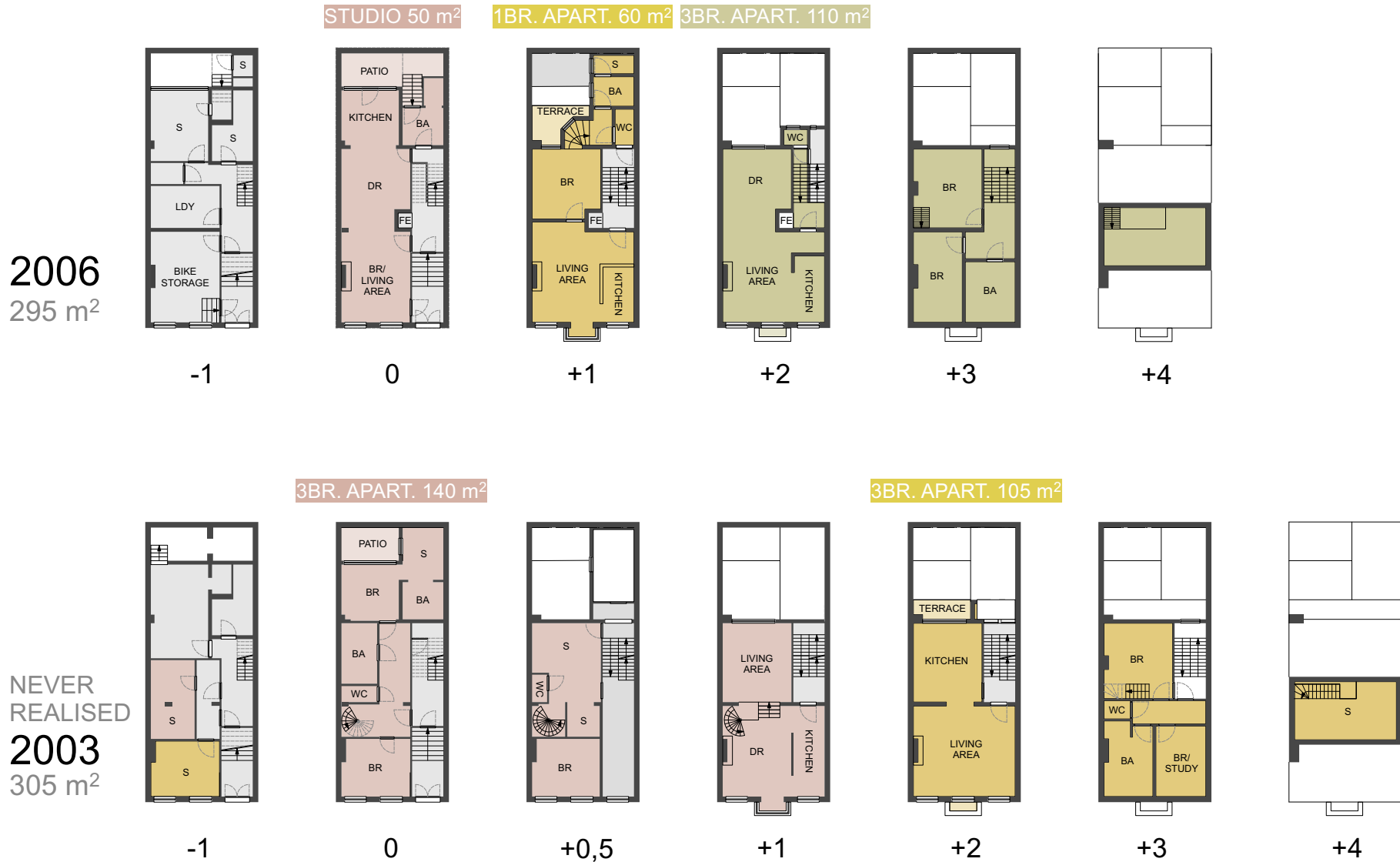
(top) Fig. 98 Front and back facade case A4.1 from before 2022

(bottom) Fig. 99 Front and back facade case A4.1 from 2022



(top left) Fig. 100 Photo living area unit 2 or 4
(top middle) Fig. 101 Photo kitchen unit 5
(top right) Fig. 102 Photo living area and kitchen unit 2
(bottom left) Fig. 103 Photo bathroom unit 5
(bottom right) Fig. 104 Photo bedroom unit 5

From single family into multiple-family with scattered units: case A4.2

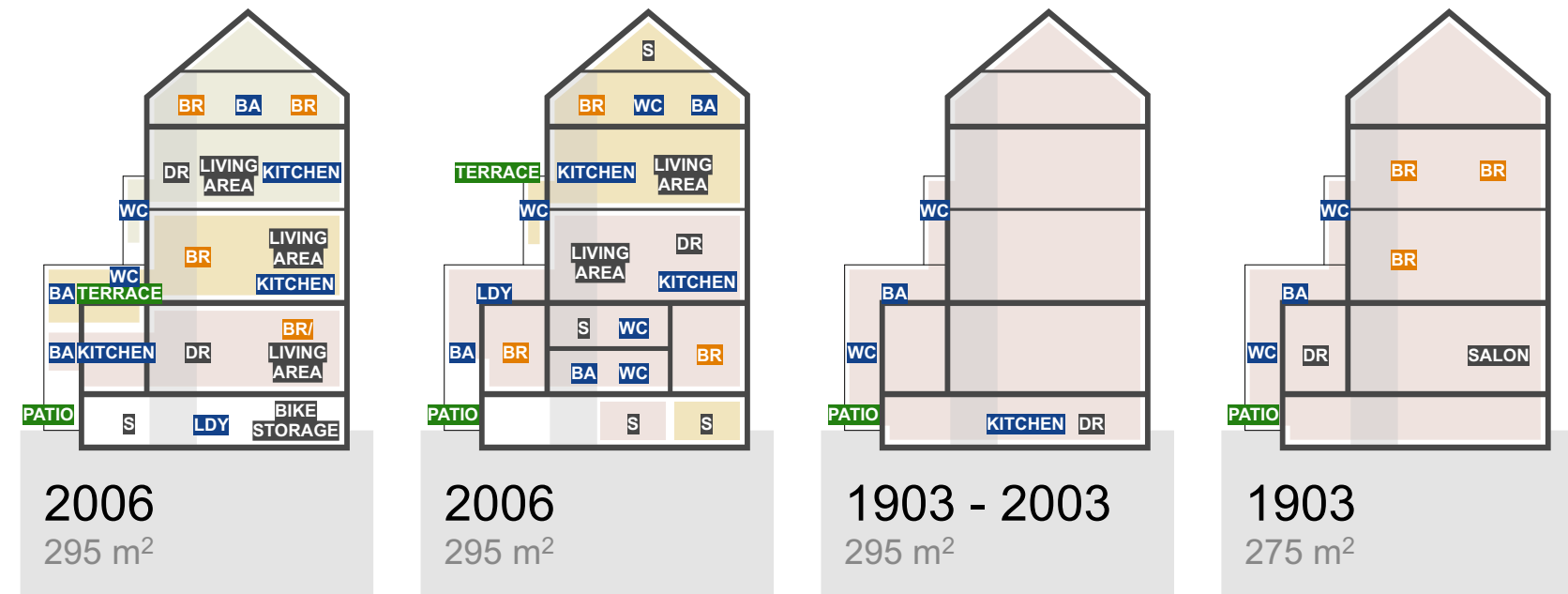


(top) Fig. 105 Plans case A4.2 from 2006
(bottom) Fig. 106 Facade case A4.2 from 2003 (never realised)



(top) Fig. 107 Plans case A4.2 from before 1903-2003

(bottom) Fig. 108 Facade case A4.2 from 1903

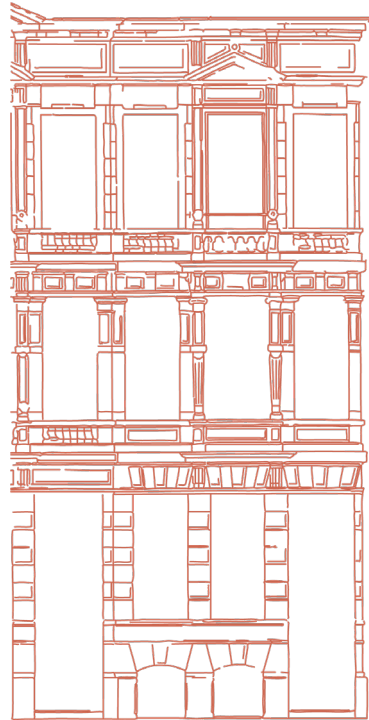


(left) Fig. 109 Section case A4.2 from 2006

(middle left) Fig. 110 Section case A4.2 from 2003 (never realised)

(middle right) Fig. 111 Section case A4.2 from 1903-2003

(right) Fig. 112 Section case A4.2 from 1903



(left) Fig. 113 Facade case A4.2 from 1903



(right) Fig. 114 Facade case A4.2 from 2006

Adaptation type B: from multiple-family into multiple-family

Buildings initially intended for multiple families but modified to change the number of units and/or comply with modern comfort standards and building regulations are the root typologies of the adaptation typology 'From multiple-family into multiple-family' (B). This adaptation typology is frequently employed in scenarios where existing units are too small, lack private kitchens or bathrooms, or require passing communal areas to access different parts of the unit. In *Zuidwijk*, there are several very specific historical forms of multiple-family townhouses that have two front doors, each opening to a corridor that provides access to a separate unit.²⁴⁷

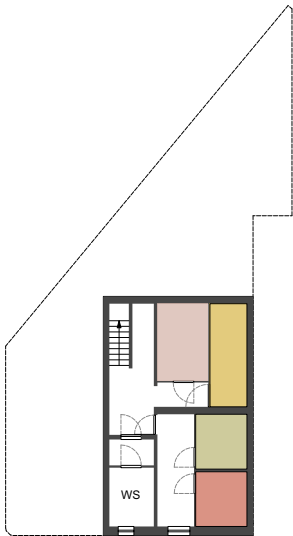
A multiple-family townhouse with updated living standards that was converted into the same number of units is Case B.1. In this case, a subdivision in the original dinner room is required in order to provide separate entrance halls for each unit, as well as restrooms and vestiaires. These functions were conceptualized as elements of furniture rather than as genuine spatial subdivisions.

A similar situation but with a protective status is Case B.2. The number of units shifted from three to four

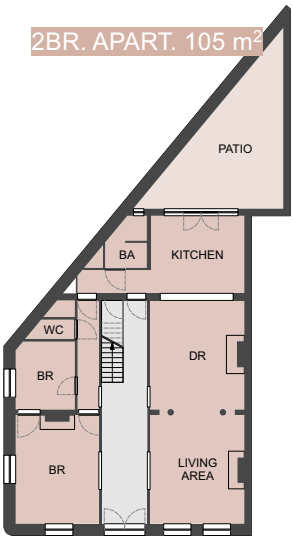
over time. The original staircase remains shared, but a new one is built in the fourth apartment to access the floor beneath the attic. Patios eventually become verandas, which once again become terraces. The annex is prolonged over time and a second staircase is added to facilitate access within the expanded area. The annex's peculiar arrangement of bedrooms and bathrooms is still in place today. The 20th century marked the addition of an elevator is situated in the common hallway and serving the private apartments. Although the current spaces are more open floor plan, they still conform to the original spatial layout.

²⁴⁷ This typology is discussed in Chapter 3.2. 'Bourgeois housing typologies in *Zuidwijk*', under typology C.

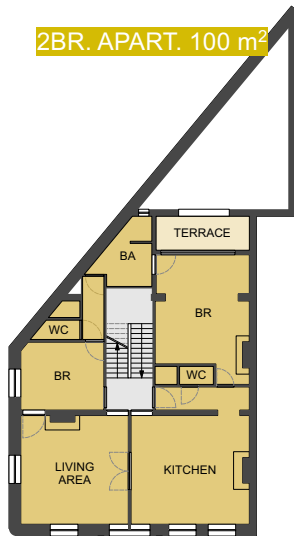
2024
510 m²



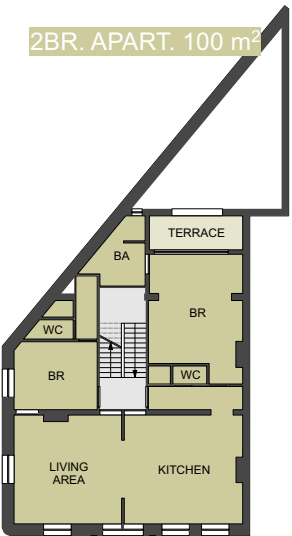
-1



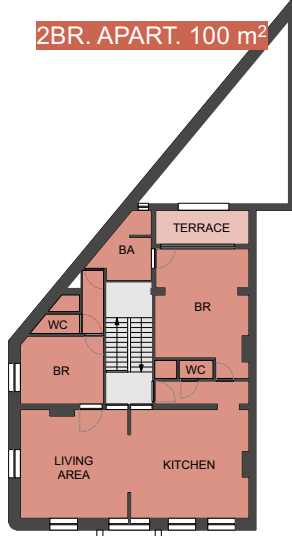
0



+1

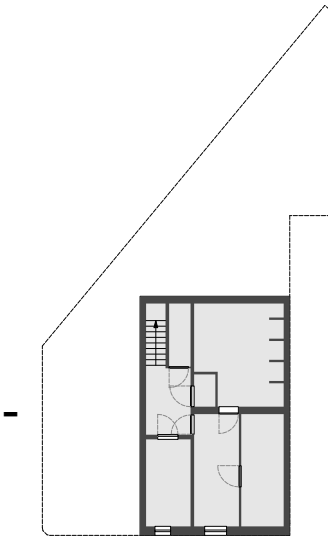


+2

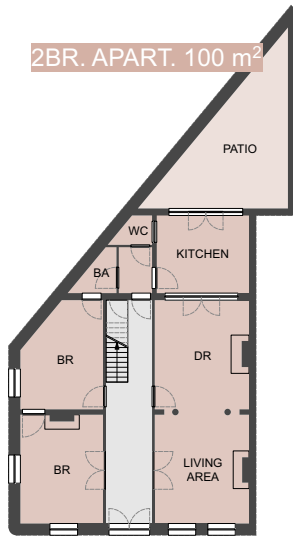


+3

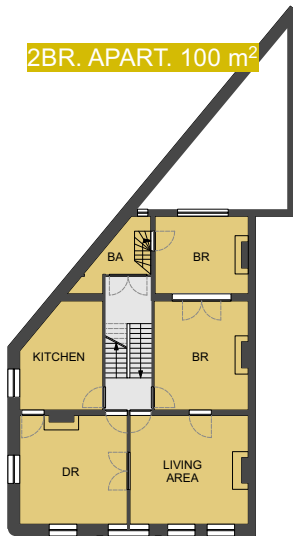
1928 -
2024
510 m²



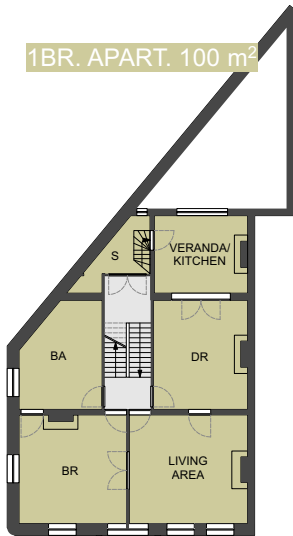
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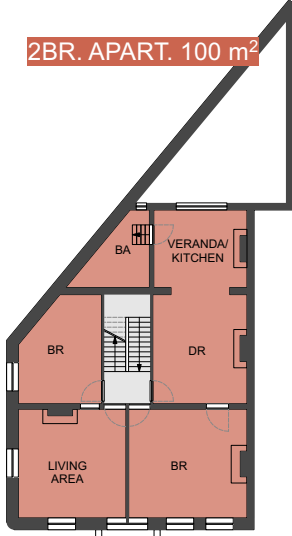
0



+1



+2

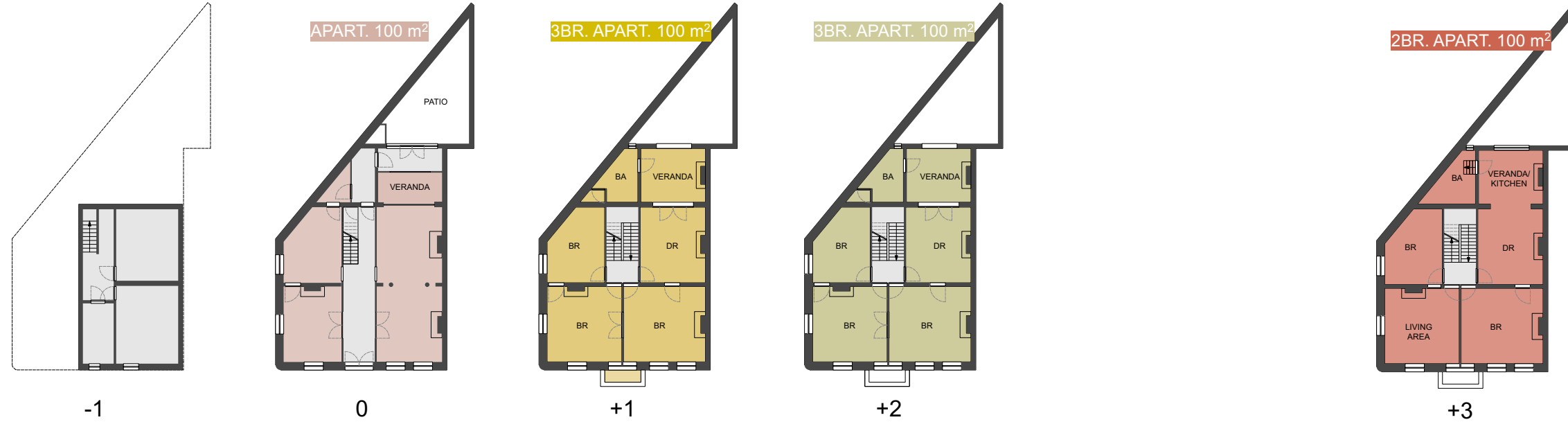


+3

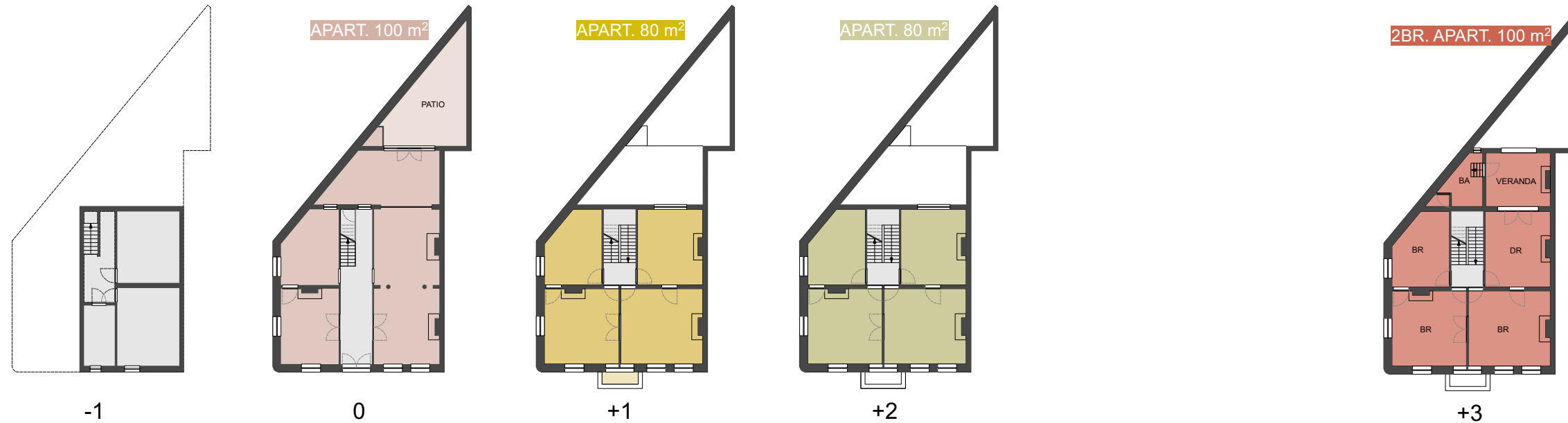
(top) Fig. 115 Plans case B.1 from 2024

(bottom) Fig. 116 Plans case B.1 from 1928-2024

1928
510 m²



1901
445 m²



(top) Fig. 117 Plans case B.1 from 1928
(bottom) Fig. 118 Plans case B.1 from 1901



Fig. 119 Plans case B.2 from 2019

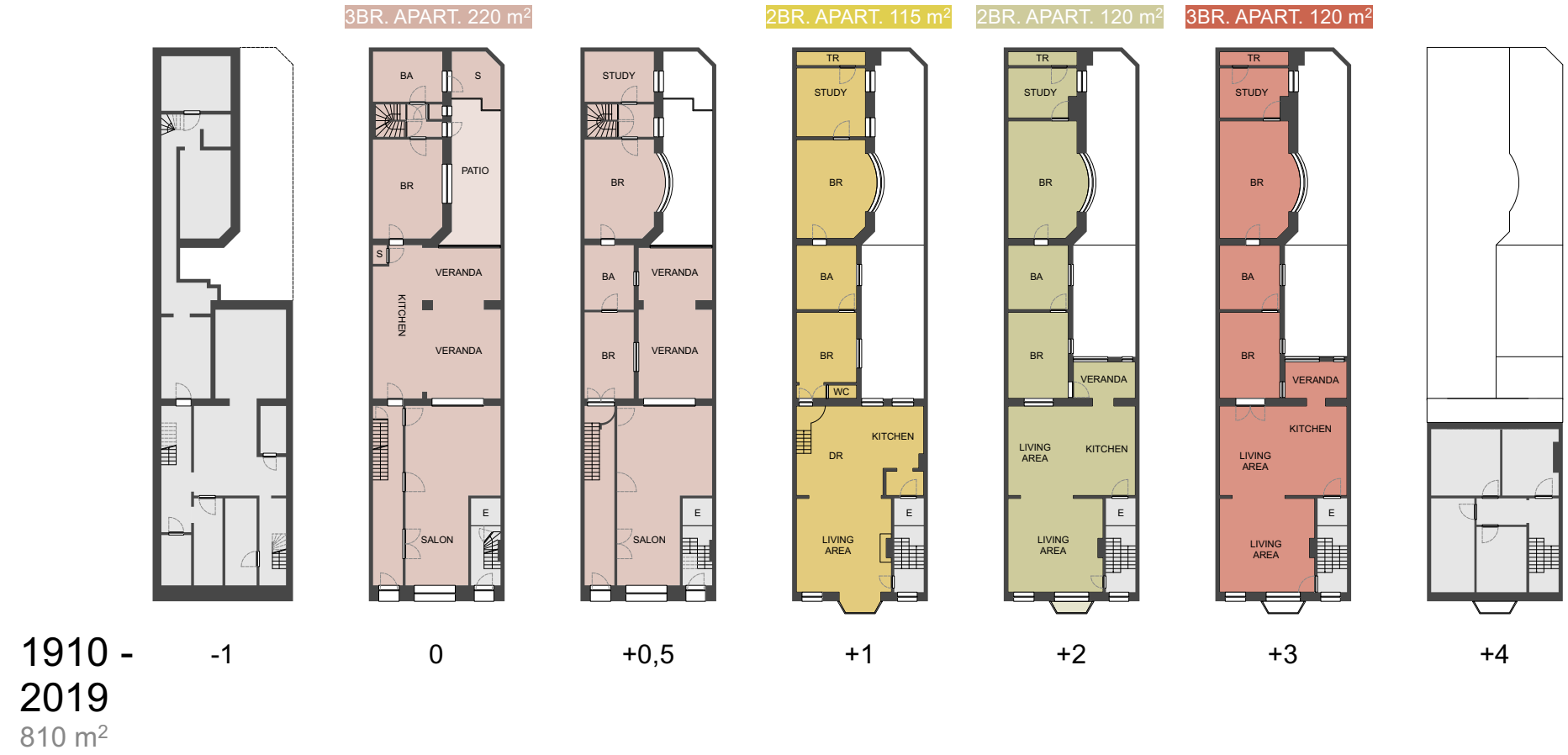
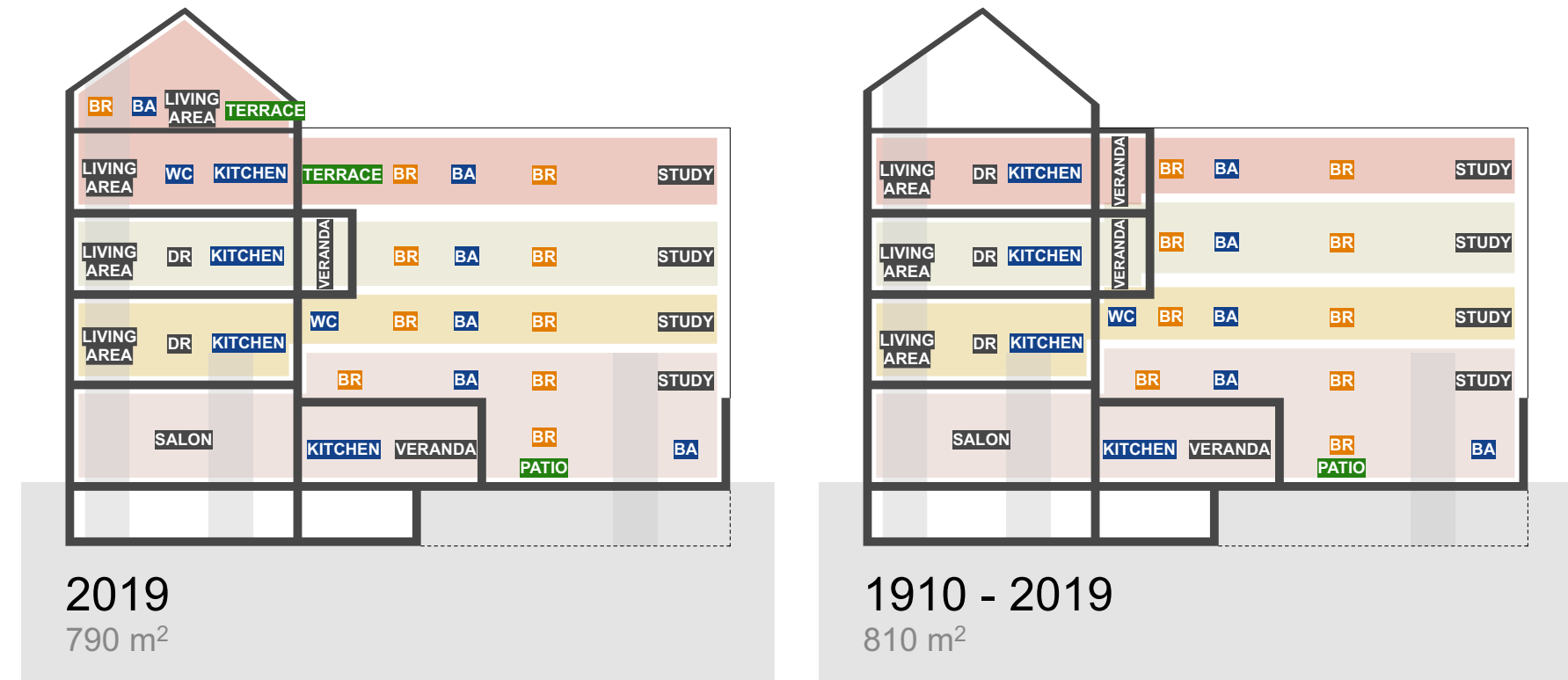


Fig. 120 Plans case B.2 from 1910-2019



Fig. 121 Plans case B.2 from 1910



(left) Fig. 122 Section case B.2 from 2019

(right) Fig. 123 Section case B.2 from 1910-2019

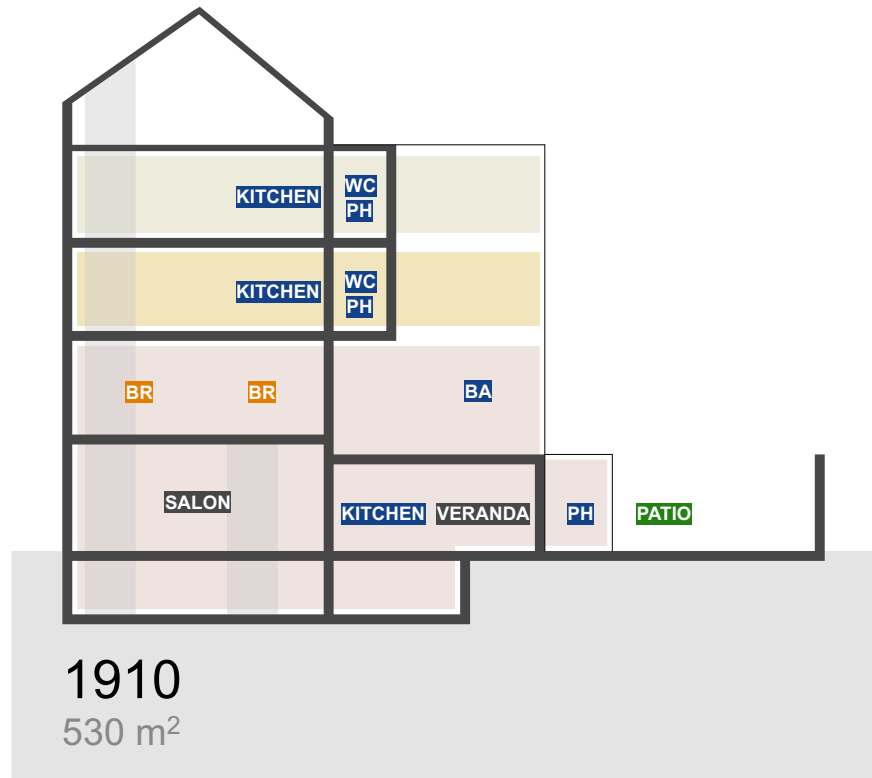


Fig. 124 Section case B.2 from 1910

4.3. Assessment of townhouse transformations into multiple-family townhouses

Root typology	Single-family house Total surface < 350 m ² (Small type B)	Single-family house Total surface > 350 m ² (Large type B)	Single-family house <i>Bel-etage</i> house (Type B.1)	Single-family house Annex has different number of levels compared to main volume (Type B)	Original multiple-family house (Type C)
Adaptation typology	A1	A2	A3	A4	B
Current number of units	2 units	Several units	Several units	Several units	Several units
Type of units	2 duplexes or 1 small apartment and 1 family apartment	1 unit per floor	1 unit per floor	All types	All types
Plan configuration	Lay-out: Every unit will have a tailored layout.	Lay-out: A uniform plan can be assigned to all units.	Lay-out: A uniform plan can be assigned to all units.	Lay-out: Every unit will have a tailored layout.	Lay-out: A uniform plan can be assigned to all units.
	Basement: Basement can be subdivided and connected to each unit.	Basement: The basement is not utilized for living purposes.	Basement: Souterrain is used and considered as a fully functional floor. This results in less storage space for the other units.	Basement: The basement is not utilized for living purposes.	Basement: The basement is not utilized for living purposes.
	Attic: Historically, attics were not used and not considered as fully functional levels. Today, the attic is used and considered as a fully functional level, sometimes with an added mezzanine floor. Sometimes a gable roof is replaced by mansard roof, to provide more space.				
	Annex: Additional levels are often added to the annex or an extra split level is introduced when ceilings are high enough to provide more space. Since an annex is typically only a few meters wide, it is often dedicated to a single room, as there is no extra space for a hallway to reach a second room. A way to implement more than one room in the annex is demonstrated in case A3.3, where the bedroom in a 1-bedroom apartment also functions as a hallway leading to the bathroom.				
	Garden: Historically, townhouses only had a small city garden of patio. Over time, more and more terraces got added, often on top of existing annexes. Today, the upper units tend to come with a terrace, usually constructed on top of an existing annex, while the ground floor unit still has its original patio or garden. In some cases, a new terrace is implemented within the existing building structure. When a unit has a garden, the living spaces are most of the times connected to the garden. When a unit has a balcony or terrace, the living areas are most of the times situated towards the street side.				

Fig. 125 Table root typologies and plan configuratino of adaptation typologies

Adaptation typology	A1	A2	A3	A4	B
Criteria 1: Architectural and spatial quality	Façade: Facades generally do not change over time because of their protected status. The replacement of joinery, the conversion of gable roofs into mansard roofs, and the installation of new roof windows are the main visible alterations in contemporary adaptations. In one particular case, a terrace is added on top of the building, which is out of view from the street.				
	Circulation: In the past, townhouses had one grand staircase and occasionally a servant staircase that led from the servants' bedrooms to the kitchen located in the basement or annex. These days, every duplex needs to have a new staircase added. Servant staircases can be used to connect different levels within one unit, providing more possibilities of arranging different spaces on different floors into one unit. In a townhouse, the main volume and the annex are usually different heights. In certain adaption typologies, it is necessary to join the two sections to form a single unit. Two options to get around this height are to have a small staircase inside the unit or to have the possibility to raise or lower the annex due to non-valuable or poorly maintained constructions.				
	Sanitary facilities: Historically, sanitary facilities were located in the annex or basement/souterrain. Today, with sanitary facilities are extending to the attic, additional technical facilities are required. Historically, restrooms were located in the annex or on the patio. Today, restrooms are mostly located close to the living spaces, on more central locations. Historically, bathrooms were situated in the annex. Today, bathrooms are more compact but also more numerous and often integrated and connected to the master bedroom. Generally, bathrooms and restrooms are still situated in the annex, as this simplifies the installation of technical facilities.				
	Kitchen: Historically, the kitchen was located in the annex or basement/souterrain. Today, the kitchen gets a prominent, central location in the house, connected to the living area. Living spaces: Historically, living spaces were designated to specific rooms like the salon, dining room, and living room, with the kitchen excluded from these areas. In the 19 th century, the dining room encapsulated the essence of family life, oriented inward the home. In contemporary design, the kitchen is often integrated into the living area, frequently becoming the central hub of the home and oriented towards public spaces to foster a connection with the outside world. The living area is now generally designed as an open floor plan, where the dining area, living area, and study seamlessly blend together. Bedrooms: Historically, as you ascended through the house, the functions got more private, such as bedrooms and bathrooms. Today, in most cases there is still a clear division between public and private functions in an individual unit. Bedrooms and bathrooms are located at the rear of the house and in the upper floor, when a duplex, where there is less noise. Historically, bedrooms in 19 th century townhouses were spacious and luxurious. Whereas during the 20 th century, investors tried to implement as much small rooms as possible to increase apartment prices. Today, there's a trend towards fewer but more spacious bedrooms. Historically, rooms were assigned to specific family members, creating a hierarchical order within a family: men oversaw the dining room and library, while women managed the kitchen and parlor. Today, this hierarchy almost completely disappeared in the contemporary home. The only individually assigned rooms left are the bedrooms.				
	Communal spaces: Other than the halls, the policy-mandated bike and waste storage, and the technical spaces, there are no common areas in the studied cases.				

Fig. 126 Table architectural and spatial quality adaptation typologies

Adaptation typology		A1	A2	A3	A4	B
Criteria 2: Heritage value	Aesthetic value	When adapting root typologies into multiple units, the authentic decorative and, in some cases functional elements, are frequently compromised. For example, existing stucco, molding, and paneling are often altered due to space subdivision, while original doors may need to be modified or replaced with fire-resistant alternatives. Additionally, unused hearths can impact the efficient use of space and authentic carpentry, like windows, are impacted by evolving energy standards Historically, as one moved upward through a townhouse, the rooms became progressively more luxurious in their finishes and decorations. However, this characteristic is often lost in modern adaptations, as all units are typically priced equally and thus feature uniform finishes.				
	Architectural value	The new staircases in the duplexes have an impact on the authentic layout and structure.	Originally large rooms hold a greater risk of subdivision, which affects the typical sequence of spaces.		A uniform layout across all floors is no longer feasible.	This root typology features significant architectural characteristics, such as double doors that each serve different units.
		If the subdivision of smaller rooms, such as the bathroom and laundry room, is executed in the annex, the monumental rooms in the main volume are safeguarded.				
		If the annex is deemed non-valuable or poorly maintained, it is often destroyed and replaced with a new one that is usually the same height as the townhouse's main volume. Adding additional levels on annexes or adapting them for new uses like terraces is considered to be a continuation of historical architectural development, as these interventions continue the historical narrative of the typical townhouse. The original main staircase remains the primary means of circulation in all scenarios that have been discussed. The remaining servant staircase may occasionally be utilized to serve a new unit.				
	Historic value	/		Because the kitchen was usually located here, the souterrain used to be a vibrant area, which is continued in this adaptation typology.	/	The original residential function stays exactly the same, sometimes adding more units, and thus continuing its historical narrative.
		Over its history, townhouse densification has been implemented and abolished. Reversing the act of densification - and ensuring that subdivision resulting from it - can be reversed in the future, adds a fresh, yet continuing chapter to the history of the <i>Zuidwijk</i> townhouse.				
	Scientific value	It is not clear whether particular techniques are being safeguarded during adaptation processes. For instance, specific staircases that fold, enabled by a counterweight, to give access to the basement, or a marble imitation painting technique.				
Social value	The historic townhouses in <i>Zuidwijk</i> serve as symbols of the wealthy bourgeoisie who resided in this area of Antwerp during the 19 th and 20 th century, as well as of the significant developments that shaped the district. These houses continue to embody the typical middle-class preferences in architecture, aesthetics, and bourgeois values, reflecting the identity of the 19 th -century middle-class citizen. Today, they are highly sought after for their connection to the past, their association with grandeur and beauty, and their symbolic representation of the 'ideal home.' However, adapting these houses to accommodate more units alters their exclusive character. This transformation introduces a new social value by making these homes more inclusive, enabling more people to live in a denser environment. This shift promotes greater social interaction among neighbors, a component of community life that has become less common in contemporary society. However, it also echoes the 19 th -century tradition of large households, which often included multiple generations and live-in employees.					
Protection status	When the townhouse is protected, a more gentle approach is typically taken. Closer attention is paid to the authentic arrangement of rooms, yet modern conveniences like open kitchens that are joined to the living space are not sacrificed. Facades generally do not change over time because of their protected status. The replacement of joinery, the conversion of gable roofs into mansard roofs, and the installation of new roof windows are the main visible alterations in contemporary adaptations.					

Fig. 127 Table heritage value adaptation typologies

Adaptation typology	A1	A2	A3	A4	B
Criteria 3: Policy	Subdivision: There are currently more strict rules concerning subdivisions. While cases from the 20 th century indicate that occupants had to cross common halls to get to another part of their apartment, this no longer happens today. Standards for privacy and fire safety are related to these laws. Since 2019, it has been prohibited to subdivide houses that are smaller than 350 square meters, with some exceptions. One may observe from the cases under discussion that this occurred prior to 2019 under adaption typology A1. However, it is unclear if these homes had functioned as multiple-family residences in the meantime.				
	Communal spaces: Historically, no communal functions were obliged in a multiple-family residence. As required by current policy, bike and trash storage are included in the most recent modifications into multiple-family townhouse.				

Fig. 128 Table policy adaptation typologies

Recommendations on future adaptations

5

General proposals will be mentioned in relation to the aforementioned criteria, namely the impact of adaptations on architectural and spatial quality, heritage value, building policy, and consequently sustainability. Selecting the appropriate typology for a given building is a crucial act within the adaptation process, as it determines the potential of the existing townhouse and the objectives to be achieved through the adaptation. Typology-specific recommendations will briefly be discussed.

5.1. General recommendations

On the one hand, the table shows the overall acceptability of these adaptations regarding their impact on spatial quality, heritage safeguarding, current policy, and technical and sanitary facilities and potential for densification. On the other hand, the contradictions, shown in the same table, confirm the contradicting forces, explained in the introduction. The tension between the exclusive character of townhouses and the tendency to densify these residences is reflected in the way that these large, luxurious spaces now get subdivided under

adaptation typology A2, A2 and A3, which affects the houses’ authentic character. The contradiction between top-down policy and bottom-up approaches is evident in the case of adaptation typology A1: although this typology is acceptable in terms of spatial quality, heritage preservation, and densification, the government has prohibited this adaptation since 2019. The conflicting forces between preserving heritage and adapting heritage for contemporary use are made clear within the contrasting demands between spatial quality and heritage safeguarding. For instance, the impact on the heritage value of adaptation typology B is considered acceptable because the original subdivision can be preserved. However, residents increasingly prefer not to pass through communal spaces to access different parts of their unit, a practice that was common in the 19th century. Both demands can be, but are not necessarily, contradictory. Architects and developers must come up with creative solutions to manage these contradictions in their projects.

Methodological recommendations

The table above indicates the overall acceptability of the different adaptation types based on the criteria

of spatial quality, heritage preservation, policy, and sustainability. However, since not all data is available in this thesis to draw comprehensive conclusions about the policy and sustainability criteria, this assessment covers only a small portion of what these criteria could and should encompass. It is my hope that this evaluation can serve as a starting point for further studies into the impact of adaptation into sustainability—such as insulation, energy efficiency, longevity, building materials, and education—and its impact on regulations, including the origins and evolution of policy regulation and how to align adaptations with these policies. A thorough assessment of these criteria with more nuanced data should be conducted at a later stage.

A relevant literature source to consider while examining sustainability criteria is the publication ‘Thematic Indicators for Culture in the 2030 Agenda’ by UNESCO,²⁴⁸ which was released in 2019. It offers a new framework for quantifying and gathering information on culture, as well as strategies for incorporating this into development plans and policies aligned with the 2030 Agenda for Sustainable Development.²⁴⁹ This revised perspective on sustainable development can serve as a foundation

		A1	A2	A3	A4	B
Overall acceptability regarding spatial quality		Acceptable if family units are provided with an outdoor area.	Acceptable if each level has sufficient space to accommodate all necessary facilities.	Acceptable if each level has sufficient space to accommodate all necessary facilities.	Acceptable if surface is efficiently used and if family units are provided with an outdoor area.	Acceptable if residents do not have to pass through common areas to access a second part of their apartment.
Overall acceptability regarding heritage safeguarding		Acceptable if subdivision of spaces is done in annex.	Originally large rooms hold a greater risk of subdivision.	Originally large rooms hold a greater risk of subdivision.	Authentic or uniform plan lay-out can't be duplicated on all levels.	The authentic subdivision of rooms can be reused and the original residential function maintains.
Overall acceptability regarding current policy		Not acceptable as most root typologies are smaller than 350 m².	Acceptable because total surface is larger than 350 m².	Acceptable if enough space is left in the souterrain for the obliged waste and bike storage and if surface is larger than 350 m².	Acceptable if surface is larger than 350 m².	Acceptable to organize the same amount of units as was permitted before.
Overall acceptability regarding sustainability	Key facilities	Additional technical and sanitary facilities are probably required.	Additional technical and sanitary facilities are probably required.	Additional technical and sanitary facilities are probably required.	Additional technical and sanitary facilities are required as the plan lay-out can't be uniform on all levels.	Acceptable because the key facilities are already present.
	Densification	Although it offers only two units, it is well-suited to the building's size and is designed to attract families.		Highest densification level, as it also uses the basement level. Optimal for different kinds of family arrangements.	Optimal for attracting different kind of family arrangements.	It won't be possible to implement more than one additional unit.

Fig. 129 Table acceptability regarding criteria adaptation typologies

248 UNESCO, “Thematic Indicators for Culture in the 2030 Agenda”, (2019).
249 UNESCO, “Thematic Indicators for Culture in the 2030 Agenda”, 10-11.

for conducting an in-depth review into the ways in which the adaptation of historic townhouses affects sustainability, with the aim of collecting additional data on the subject. The 2021 publication 'Heritage and the Sustainable Development Goals: the Policy Guidance for Heritage and Development actors'²⁵⁰ by ICOMOS can serve as an additional inspiration to delve into the interrelationships between sustainability and heritage as the authors claim that heritage 'enables social cohesion, fosters socio-economic regeneration and poverty reduction, strengthens social well-being, improves the appeal and creativity of regions, and enhances long-term tourism benefits.'²⁵¹

Sustainability recommendations

In this thesis, sustainability is primarily linked to the capacity for densifying urban cores, as outlined in the introduction. The adaptation typologies previously discussed each contribute to varying degrees to the densification of *Zuidwijk* and, consequently, to the development of a more sustainable and resilient urban core in Antwerp. Additionally, the interviewed architects' advocacy for more green roofs on top of (town)houses highlights the significance of green

roofs as another element in promoting sustainability. Further recommendations for enhancing sustainability include minimizing the impact of additional technical facilities by implementing a uniform layout across all levels. Additionally, ensuring reversibility in the adaptation of single-family townhouses into multiple-family units is crucial; this concept will be further explored in the following paragraphs. Finally, efficient utilization of available space is also essential for creating sustainable housing solutions.

Architectural recommendations

Utilize the entire available surface and create additional space by adding new floors to existing annexes where appropriate, continuing the 20th-century trend. Enhance unused souterrains by improving subterranean spaces, such as lowering existing patios or terraces to provide natural light, and reintroduce attics and mezzanines. Instead of restructuring annexes, leverage split-levels in annexes to create interesting spatial relationships, such as transitions from private to public areas. For living comfort, heritage value, and economic reasons, it is preferable to provide fewer, larger bedrooms rather than multiple smaller ones. Subdivision of

existing spaces should preferably occur in annexes — organizing amenities like bathrooms, toilets, and laundry rooms — rather than in the main volume. To maintain cultural sustainability for future generations and adaptability to potential future uses, new elements should be integrated in a reversible manner. In cases of subdividing authentic spaces, maintain the readability of the original space by treating new spaces as 'furniture' or by installing indoor overhead windows to preserve visibility of the entire ceiling. Additionally, providing an outdoor area for each living unit will significantly enhance both liveability and value.

Heritage protection recommendations

Regarding the impact of adaptations on aesthetic values, adapt the design to incorporate historic elements. For instance, if a secondary servant staircase is present, consider utilizing it to create a new duplex, or organize living areas around a grand hearth rather than removing it for new functions. If a heritage element must be removed, seek to reintroduce it elsewhere in the townhouse where it remains functional - as demonstrated in adaptation typology A1.1, where double doors originally

removed from the first floor were repurposed on the ground floor following a hallway reorganization. Regarding the impact of adaptations on architectural values, preserve the typical sequence of spaces in townhouses while allowing for a more open floor plan living area with a combined kitchen, achievable by enlarging existing openings. It is generally preferable to subdivide larger spaces into smaller ones rather than further dividing already small spaces. Adding additional levels on annexes or adapting them for new uses like terraces is considered to be a continuation of historical architectural development, as these interventions continue the historical narrative of the typical townhouse. Regarding the impact of adaptations on historic values, townhouse densification has been both implemented and abandoned repeatedly throughout its history.²⁵² The potential to reverse densification and undo subsequent subdivisions introduces a new, yet continuous, Chapter in the history of *Zuidwijk* townhouses. Regarding the impact of adaptations on scientific values, responsibility should be taken to safeguard specific technical masterpieces, such as folding staircases and special painting techniques. Regarding the impact of adaptations

on social values, it is beneficial to draw inspiration from the 19th-century concept of social cohesion among residing families and employees, for its contemporary version of densifying the urban fabric. Regarding the impact of adaptations on protection status, it is always advisable to account for all the aforementioned values and their potential impacts, even if the townhouse is not officially protected.

Legislative recommendations

The policy assessment primarily focuses on the conformity with the 'protected family-house' regulation. Additional future research will be required to carry out a thorough and detailed analysis of compliance with building codes. The current limitation of 350 square meters for 'protected single-family houses' appears outdated, given that many individuals today, particularly in expensive areas like *Het Zuid*, cannot afford to renovate or maintain such large spaces. Adaptation typology A1 illustrates that a townhouse can be effectively organized into a family apartment alongside additional units, although it is smaller than 350 square meters. According to the architects interviewed, greater flexibility in legislation would foster creativity and

innovation in townhouse adaptations and Cohousing concepts. Additionally, more adaptable regulations for roof gardens and communal spaces could enhance social cohesion and promote greenery within the urban landscape.

5.2. Typology-specific recommendations

Adaptation typology A1

This adaptation typology is no longer permitted by the current building laws since single-family townhouses, smaller than 350 m² cannot be divided. Nonetheless, the examples looked at show that these townhouses can suit families well and be creatively repurposed while maintaining heritage characteristics. Therefore, it remains worthwhile to advocate for this typology. Apply this adaptation typology when dealing with smaller townhouses and wanting to attract families. Try to minimize the impact on the heritage values – the sequence of rooms and the original finishes and stucco - of the newly added staircases in the duplexes. Seek to organize any function that requires a smaller space - like a bathroom, laundry room, or

250 ICOMOS, "Heritage and the Sustainable Development Goals: Policy Guidance for Heritage and Development Actors", ICOMOS, (2021).

251 ICOMOS, "Heritage and the Sustainable Development Goals: Policy Guidance for Heritage and Development Actors", 12.

252 As explained in Chapter 3.

bedroom - in the annex if subdivision is required to execute them.

Adaptation typology A2

When dealing with larger townhouses, where there is adequate surface area on each floor to organize one unit on each level, apply this adaptation type. In this way, it is possible to generate more or less equivalent apartments in size and layout. Keep in mind to maintain the most monumental rooms. If it is not possible to subdivide other areas, such as the annex or less notable rooms, then try to design these added smaller spaces as furniture. Replicating the same layout on all floors can simplify the integration of technical installations.

Adaptation typology A3

Use this adaptation typology when dealing with *bel-etage* townhouses that typically have a souterrain. By using this typology, a diverse range of units can be created, for both smaller and larger families or individuals. Again, preserve the most monumental rooms. If subdividing other areas is not feasible, consider designing smaller spaces as built-in furniture. Ensure that the souterrain is connected to

the ground floor level to establish an acceptable unit. Avoid designating living areas for the souterrain, as the ground floor offers better access to natural light. Additionally, allocate sufficient space in the souterrain for communal bicycle storage.

Adaptation typology A4

This adaptation typology can be used when dealing with large townhouses where the annex has a different number of levels compared to the main volume. It will provide several units, different from each other in size and layout, serving diverse family arrangements.

Adaptation typology B

Apply this adaptation typology when renovating original multiple-family houses, to accommodate contemporary living standards or to change the number of units. Preserve the original layout to ease the integration of technical installations and reduce additional subdivision. Additionally, incorporate modern living standards, such as an open floor plan living area with an integrated kitchen, by enlarging existing openings while preserving the authentic sequence of rooms.

The objective of this research was to determine how to preserve and adapt built heritage while simultaneously adding density to the urban fabric of historic cities. Densifying already-existing houses could be an effective alternative for urban sprawl, which is unsustainable and puts cultural heritage at risk by causing heritage assets to become fragmented and deteriorated.

Historic context and housing typologies Zuidwijk

The neighborhood *Het Zuid*, located in the south of the historic city center of Antwerp, is an interesting case to examine opportunities of densification in relation to built heritage. The demolition of the *Zuidercitadel* in 1881 marked a promising beginning for urban development, largely driven by external pressures. The majority of the existing buildings in *Zuidwijk* dates back to the period when the area was completed, specifically around the turn of the century (1890-1914).

There were three main types of 19th-century bourgeoisie residences present in *Zuidwijk*. The **city mansion (Type A)** typically served a single-family, possibly shared with different family generations and house staff. The **single-family townhouse**

(Type B) can be considered to be a smaller, less decorated version of the city mansion, including a main volume of ten meters deep with a six-meter-deep and narrower annex situated behind it. Another distinct variety within this typology is the *bel-etage* townhouse (Type B1), characterized by its ground floor elevated significantly above street level. The third typology present in *Het Zuid* is the **multiple-family townhouse (Type C)**, which emerged as a prevalent solution for the 19th-century housing shortage problem. These townhouses, while functioning as rental properties with rooms or floors available for individual lease, retain architectural characteristics similar to those of single-family townhouses (Type B). Furthermore, transformation of existing single-family townhouses (*bel-etage* or not) was executed, resulting in multiple-family houses (Type C1). The *S.A. du Sud d'Anvers* played a pivotal role in the development of *Het Zuid*, overseeing the construction of numerous townhouses characterized by specific architectural guidelines. Their influence extended to shaping the early architectural identity of *Zuidwijk*, emphasizing 'evident' white neoclassical styles while also accommodating practical considerations for urban living in the late 19th century. The *S.A. du Sud*

d'Anvers advocated for the construction of houses in groups of three, utilizing reclaimed materials from other construction sites throughout Antwerp. The criticism of these townhouses' quality and their perceived 'banal' neoclassical architecture in the 19th century stands in stark contrast to their current widespread popularity and significant economic value.

Current state of historic townhouses

I developed a database comprising 494 townhouses in *Zuidwijk* that have maintained their value to the present day, as documented by the '*Inventaris Onroerend Erfgoed Vlaanderen*'. Data about the residential functions of these townhouses today – single-family, multiple-family or other – is than added to this database. Although historical analysis reveals that many of these townhouses were originally designed as multiple-family homes—often serving as temporary residences for those displaced from their original neighborhoods in the late 19th century—there is still a significant and ongoing trend today towards converting single-family homes into multiple-family units. While 63 percent of the townhouses functioned originally as single-family houses, we see

that today the share of multiple-family houses (49 percent) has surpassed the number of single-family houses (31 percent). My research suggests that the current reasons for this type of adaptation are socio-demographic factors, such as an overall growing population and an increasing desire for urban living, and economic factors, such as the income potential of rental properties.

Adaptation typologies

When comparing contemporary plans with original plans in terms of architectural and functional analysis, five primary adaptation typologies emerge: A single-family house with a total area of less than 350 m² (**small type B**) typically undergoes **adaptation typology A1**, resulting in its conversion to a multiple-family house with two units, often configured as two duplexes; A single-family house with a total area of more than 350 m² (**large type B**) typically undergoes **adaptation typology A2**, resulting in a multiple-family house with one unit per floor; A single-family *bel-etage* house (**Type B1**) typically undergoes **adaptation typology A3**, resulting in a multiple-family house incorporating the souterrain

floor; A single-family house with an annex that differs in the number of levels from its main volume (**Type B**) typically undergoes **adaptation typology A4**, resulting in a multiple-family house with multiple, varied units arranged in a non-uniform manner; A multiple-family house (**Type C**) typically undergoes **adaptation typology B**, resulting in a multiple-family house with a different layout for multiple units.

Assessment of contemporary adaptation attitudes

Following, these adaptation typologies got subjected to several criteria, such as their impact on spatial quality and heritage values, their alignment with current building policy, and their contribution to sustainability. When examining the architectural and spatial qualities of the various adaptation typologies, a notable observation is the shift in the configuration of living spaces. Historically, these areas were segregated into distinct rooms, such as the dinner room, salon, and living area. In contrast, contemporary adaptations increasingly integrate the kitchen into an open floor plan, resulting in a unified living space where the

kitchen, dining, and living areas are combined into a single, expansive area. While sanitary and kitchens historically were situated in the annex or basement, they are nowadays located closer to the living area. The historical staircase is always maintained but often supplemented with newly added staircases to serve individual units. The façade is mostly left untouched due to its protection status. The impact of adaptations on the heritage value of townhouses is discussed in terms of aesthetic, architectural, historical, and social value. Regarding the impact on the aesthetic value, decorative elements and typical spatial sequences are often compromised during adaptation processes due to subdivision, fire regulations, and evolving energy standards. In terms of impact on architectural value, the existing annex is often destroyed and replaced. Adding additional floors to annexes or adapting them for new uses, such as terraces, is a continuation of historical architectural development, as these interventions continue the historical narrative of the typical townhouse. In addition, the originally large rooms present in the adaptation typologies A2 and A3 are at greater risk of being subdivided, which affects the typical sequence of rooms. Furthermore, the new

staircases introduced to serve the duplexes have an impact on the architectural value. As for the impact on the historical value, townhouse densification has been implemented and abolished over time. Reversing the act of densification—and ensuring that subdivision resulting from it—can be reversed in the future adds a fresh, yet continuing, chapter to the history of the *Zuidwijk* townhouse.

In terms of social value, the historic townhouses of *Zuidwijk* are emblematic of the wealthy bourgeoisie of late 19th-century Antwerp, reflecting the architectural and aesthetic values of that era. While these houses are valued for their historical grandeur and representation of the ‘ideal home’, their adaptation for multiple-unit housing transforms their exclusive character, promoting greater social interaction and inclusivity in a denser urban fabric.

The analysis of the alignment with current policy shows that before the regulation on the ‘protected single-family house’, small townhouses used to get subdivided as well. As for common areas, historically there was no obligation to provide them, unlike today, where a bike and garbage storage area should be provided in a multiple-family dwelling. In general, communality is in all cases not embraced as an

opportunity for strengthening social cohesion. In this thesis, sustainability is primarily linked to the capacity for densifying urban cores, as outlined in the introduction. All adaptation typologies serve a different purpose and aim to attract different kinds of family arrangements. Adaptation typology A1 is well-suited to attract families, while adaptation typologies A3 and A4 are optimal for housing diverse kinds of family arrangements, also including couples and individuals.

Practitioners’ view on the adaptation of townhouses

According to practicing architects, these adaptation attitudes reflect changing residential needs and financial feasibility of families or individuals, as townhouses in *Zuidwijk* are often high-priced. From an architectural perspective, the main disadvantage of subdivision is the loss of the original sequence of rooms, as this is one of the main key features of townhouses, together with its high ceilings and abundant natural light. Other challenges that arise during the adaptation process, according to the practitioners, are acoustic problems, fire safety regulations, and technical challenges with modern systems. Additionally, architects should take into

account heritage policy and building regulations, such as the 2019 regulation on ‘protected single-family houses’, which forbids subdivision of houses with a larger surface than 350 m². Furthermore, architects emphasize the need for reversible acts when adapting townhouses for multiple units to not impede future changes in function. Finally, there is an advocacy among practitioners for more flexible regulations, specifically regarding roof gardens, communal spaces, and the concept of Cohousing.

Recommendations

Architectural recommendations for adapting townhouses include maximizing space by adding floors to annexes, enhancing subterranean areas, and providing outdoor areas for each unit. To maintain heritage value, prioritize fewer larger bedrooms and, if needed, subdivide spaces in annexes. Try to ensure reversibility of new elements and preserve the original layout’s readability.

Great attention is needed to preserve the heritage values while adapting townhouses. Take into account that originally large spaces hold a greater risk of subdivision and thus loss of their typical sequence. This means that it is more acceptable to adapt

townhouses with already smaller rooms (adaptation typology A1) or that are already subdivided (adaptation typology B). Aim to adapt the design to incorporate or reintroduce historic elements and to preserve the typical sequence of spaces in townhouses.

In terms of policy alignment, adaptation typology A1 is deemed unacceptable under the ‘protected single-family’ policy, whereas adaptation typology A4 is permissible only if the property’s surface area exceeds 350 m², in accordance with the same policy. The current limitation of 350 m² for ‘protected single-family houses’ appears outdated, given that many individuals today, particularly in expensive areas like *Het Zuid*, cannot afford to renovate or maintain such large spaces. Additionally, interviewed architects believe that greater regulatory flexibility would stimulate creativity and innovation in the adaptation of townhouses and Cohousing, while more adaptable regulations for roof gardens and communal spaces could increase social cohesion and urban greenery. Each of the adaptation typologies contributes in varying degrees to the densification of *Zuidwijk* and consequently to sustainability. When adapting multiple-family houses into multiple-family houses (adaptation typology B), this obviously contributes

less to an increasing densification, as it will probably house the same amount (or slightly more) units compared to the other adaptation typologies. On the other hand, this typology contributes to sustainability as this type of adaptation can probably make use of the existing technical and sanitary facilities, while the other types will need additional key facilities, which will probably have an impact on the authentic finishes.

The assessment on the different adaptation typologies confirms the conflicting forces that were introduced in the introduction of the thesis: between the initially exclusive character of townhouses and the current policy trend towards inclusivity; between top-down policy and bottom-up vernacular approaches; and between preserving heritage and adapting heritage. Selecting the appropriate typology for a given building is crucial within the adaptation process, as it determines the potential of the existing townhouse and the objectives to be achieved through the adaptation. Although not in alignment with current legislation, adaptation typology A1 remains a viable option when aiming to adapt smaller townhouses for families. Adaptation typology A2 is suitable when wanting to adapt larger townhouses with uniform

apartments. When aiming to adapt *bel-etage* townhouses to obtain diverse unit configurations, use adaptation typology A3. Adaptation typology A4 is suitable when seeking to adapt large townhouses with complex levels into multiple and diverse units. Finally, adaptation typology B suits when wanting to renovate a multiple-family house to meet modern standards.

Limitations and future research

This thesis research implies both methodological and practical limitations. One limitation of this study is the sample size of architects interviewed. Despite identifying numerous architectural firms involved in such adaptations in *Zuidwijk* and reaching out to them, responses were limited. Additionally, a more detailed examination of their practical interventions would have been valuable, as the current focus mainly addresses their perspectives and opinions on adapting single-family townhouses into multiple-family residences.

Another methodological limitation lies within the categorization of the different adaptation typologies. My categorization is based exclusively on the architectural and functional aspects of the

adaptations. However, it is evident that other criteria, such as policy or sustainability, could provide alternative categorization frameworks for different typologies. This exercise is thus neither exhaustive nor complete. This categorization has notably affected adaptation type B (transformation from multiple-family townhouse to multiple-family townhouse), which now represents a significant proportion relative to other adaptation typologies. Further investigation into the subtypes of B is necessary to gain a more comprehensive understanding of these typologies.

The sample size of analyzed case studies in *Zuidwijk* is relatively small, primarily due to the inaccessibility of many contemporary building permits and the fact that numerous adaptations and renovations from the 20th century were carried out without formal building applications. Consequently, gathering information often requires physical site visits. While my database predominantly includes data from the construction period and the present, further analysis could explore the relationship between these adaptations and the fluctuations in the number of inhabitants in *Zuidwijk* over recent decades.

Additionally, the analysis of case studies is mostly limited to the investigation of plans, as visiting

interior spaces was not easy in this research. This means that many elements, such as finishes, energy conformity, and atmosphere, are challenging to fully assess, resulting in their treatment in this thesis being relatively superficial.

Since not all data is available in this thesis to draw comprehensive conclusions about the policy and sustainability criteria, this assessment covers only a small portion of what these criteria could and should encompass. An in-depth evaluation of these criteria with more differentiated data should be carried out in the future. I hope that this assessment will be a starting point for further research on the impact of adaptation on sustainability and policy.

Finally, I propose several avenues for future research. Comparing *Zuidwijk* with other 19th-century neighborhoods, both within Antwerp and beyond, could yield valuable insights into various adaptation strategies. Additionally, examining adaptations executed since the introduction of the 'protected single-family house' regulation in 2019 could provide insights into the policy's specific impact on urban density and heritage preservation.

An additional examination can be made by looking in closer depth to the period and reasons for

adaptation in *Zuidwijk*, as this data would provide more background information on the reasoning behind certain interventions. In addition, a more practical approach towards the research topic, including practical guidelines, would be suitable to guide practitioners during their research and design process. Last but not least, research can be carried out regarding the opportunities of communal living within the context of the densification of townhouses.

Concluding thoughts

This research demonstrates that there is a current tendency in *Zuidwijk* towards the adaptations of single-family townhouses into multiple-family houses. This adaptation can occur through a variety of strategies, which can be employed to work towards the densification of the urban fabric, leading to the creation of a more resilient and sustainable historic city core. This thesis underscores the current practices and the heritage and spatial implications associated with the densification of built heritage in urban cores. It aims to serve as a basis for conducting more in-depth research into the phenomenon of adapting historic residences into multiple-family units, exploring its range of opportunities.

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Fig. *Photo dinner room unit 1*, 2024. Digital photo.

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Fig. 87 *Photo bedroom unit 2*, 2024. Digital photo.

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Fig. 88 *Photo living area unit 1*, 2024. Digital photo.

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Fig. 129 Nele Ritzen, *Table acceptability regarding criteria adaptation typologies*, 2024. Pdf file.

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Appendix 1:
Questions interview with practitioners

Experience:

Have you or your firm previously worked on a renovation project involving the transformation of a townhouse into a multiple-family dwelling in the *Zuidwijk* district? If so, which building(s), and when did this/these project(s) take place?

What are the biggest advantages and disadvantages of working with a historic townhouse?

What is your vision regarding the conversion of townhouses into multiple-family dwellings?

Heritage Values:

How do you consider heritage values during such a project? How are these values assessed and preserved throughout the project?

What collaboration or approval is required from local heritage authorities for such projects?

Process:

What are the differences in renovating a historic townhouse compared to other (e.g., new construction) projects?

What distinguishes the renovation into a multiple-family dwelling from the renovation of single-family homes?

How do you transform townhouses into multiple-family dwellings? What design interventions do you implement for this purpose? The following topics are discussed one by one: circulation, horizontal and vertical extensions, façade, privacy, outdoor spaces, and communal spaces.

How do you utilize historical elements during a renovation project, or draw inspiration from existing architecture and interior layouts to create a multiple-family dwelling? In short, how do the historical characteristics of a building influence the design choices you make during the renovation?

How do you integrate modern comfort and energy standards within such projects? The following topics are discussed one by one: kitchen, sanitation, fire safety, insulation, and energy.

What changing trends have you observed throughout your career concerning the adaptation of townhouses into multiple-family dwellings?

Would you approach previous renovation projects, where a townhouse was converted into a multiple-family dwelling, differently now?

Conclusion:

Have the renovation projects that turned townhouses into multiple-family dwellings inspired other (new construction) projects?

Which aspect of this/these renovation project(s) are you most proud of?

Give one tip for architects who may receive a similar assignment in the future.

What is your vision on cohousing as a means of urban densification, and how do you see this trend evolving in the context of townhouses?

