



## Recognizing young architectural heritage : An analysis of 1970-2000 facing bricks in Brussels Capital Region's housing.

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## Abstract

This thesis explores the use of facing brick in residential architecture within the Brussels-Capital Region (BCR) from 1970 to 2000, addressing the challenge of recognizing and assessing contemporary architectural heritage. By examining a broad range of residential buildings, the research aims to understand how brick facades from this period reflect architectural expression and technical advancements, and to identify distinctive features of the era. The study employs an extensive survey of residential buildings, analyzing architectural typologies such as row houses, villas, and apartment buildings. It includes a detailed review of historical and technical literature, particularly focusing on the *Terre cuite et construction* periodical, to trace advancements in brick manufacturing and construction methods. The research also examines current heritage assessment method to assess prevailing values and understand the historical significance of facade expressions.

The findings reveal that 85% of residential buildings from this period feature brick facades, with row houses being the most prevalent. The study identifies a shift towards a combination of traditional brick usage and new formal expressions post-1980, highlighting how these facades blend historical continuity with a new language. Additionally, the research uncovers a nuanced approach to technical value, emphasizing the impact of manufacturing innovations and construction methods on facade character. While advancements such as the wire-cut process and cavity walls facilitated diverse brick expressions, the period is marked by a tendency to evoke traditional image through modern techniques.

The thesis concludes that current heritage frameworks, which often emphasize aesthetic value, may overlook the historical and technical nuances of this period. It advocates for a more integrated approach to heritage assessment that considers the interconnectedness of aesthetic, historical, and technical aspects. By broadening the criteria used to evaluate architectural heritage, this research contributes to a deeper understanding of the period's architectural identity and could inform more effective preservation strategies. Recognizing these complexities is crucial for developing policies that accurately reflect and protect the architectural heritage of the late 20th century. This study enhances the appreciation of the architectural character of the BCR from 1970 to 2000 and sets a precedent for future research in architectural heritage relating to the period of interest.

## Keywords

young heritage, brick, facade, architecture, Brussels-Capital Region

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# 1 Introduction

## 1.1 Problem statement

These days, the preservation of recent architectural heritage is severely threatened by problems of maintenance, renovation or outright demolition, compounded by the current lack of recognition of 20th century architectural contributions as part of our heritage. Recognition is a crucial first step in informing the future protection and preservation of existing buildings, and thus it is the focus of this thesis. This study does not advocate for any specific stance on protection and preservation methods. Given the substantial presence of young heritage in our built fabric, it is imperative to maintain and even enhance recognition of its importance, thereby facilitating a smooth transition toward a more sustainable future.<sup>1</sup>

The lack of recognition of twentieth-century heritage was already highlighted in 1991 by a European Council's recommendation. According to this recommendation, because of the profound changes in architecture and town planning since the end of the 19th century - brought about by industrialization, new materials, changes in building techniques and new uses - there is a critical need to appreciate and protect this modern heritage.<sup>2</sup>

Three years before the recommendation of the European Council, the Documentation and Conservation of Buildings, Sites and Neighbourhoods of the Modern Movement (DOCOMOMO) was created, in particular for the documentation and conservation of buildings of the modern movement. At the time, many emblematic modern buildings have already been demolished or heavily altered. DOCOMOMO points out one of the reasons for these issues is the lack of consideration given to "recent" buildings as heritage.<sup>3</sup>

Nevertheless, a gradual interest developed in twentieth-century heritage, not only in the early modern movement, but also in later decades. Few examples exist such as The Thirties Society which was renamed the 20th Century Society in the UK in 1992<sup>4</sup>, the setup of the "Patrimoine du XXe siècle" label in France in 1999 or, more recently, the program for twentieth-century heritage and the "post-65" research in the Netherlands.<sup>5</sup> On the smaller scale of the Brussels-Capital Region (BCR), new research is also being carried out on the 1975-2000 period.<sup>6</sup> Additionally, more recent periods are attracting growing interest, exemplified by the renaming of the "architecture contemporaine remarquable" label in France, which now excludes its original temporal connotation (originally focused on the 20th century).

In the context of recognition, current heritage frameworks, as observed in Belgium, France, the Netherlands and the UK, are mainly based on the 1985 Convention for the Protection of the Architectural Heritage of Europe. Conceptually, this framework revolves around a set of values attributed or not to a specific building. These values are then assessed on the basis of multiple criteria to inform future recognition or protection. Despite obvious variations from country to country (and

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<sup>1</sup> As architectural heritage is understood as part of cultural heritage. Cultural heritage has been identified as important to be transmitted to future generation, notably in European Cultural Convention, opened for signature December 19, 1954, CETS No. 018., Or more specifically for architectural heritage in Convention for the Protection of the Architectural Heritage of Europe, opened for signature October 3, 1985, CETS No. 121.

<sup>2</sup> Council of Europe, Recommendation No. R(91) 13 On the Protection of the Twentieth-Century Architectural Heritage, adopted October 9, 1991.

<sup>3</sup> Docomomo International, "Organization," accessed April 2024, <https://docomomo.com/organization/>.

<sup>4</sup> Mil Kooning, Ronald De Meyer, Christophe Van Gerrewey, and Koen Verswijver, *Architectuur Sinds De Tweede Wereldoorlog* (Brussel: Brussels Hoofdstedelijk Gewest, Dienst Monumenten en Landschappen, 2008), 26.

<sup>5</sup> "Programma Erfgoed van de 20e Eeuw," Cultureel Erfgoed, accessed April 2024, <https://www.cultureelerfgoed.nl/onderwerpen/erfgoed-van-de-moderne-tijd/programma-erfgoed-van-de-20e-eeuw>. "Post 65-erfgoed," Cultureel Erfgoed, accessed April 2024, <https://www.cultureelerfgoed.nl/onderwerpen/post-65-erfgoed>.

<sup>6</sup> This master thesis is realized in parallel with the research 'The Brussels housing stock (1975-2000). Materiality and heritage value' of Marylise Parein under the supervision of Stephanie Van de Voorde and Ine Wouters (Vrije Universiteit Brussel) and Manja Vanhaelen and Stéphane Demeter (regional heritage administration urban.brussels) and financed by Innoviris. [www.vub.be/arch/project/archbx1975](http://www.vub.be/arch/project/archbx1975).

region to region in Belgium), the following values are present everywhere: historical, archaeological, artistic, scientific, social and technical. The notion of a group of buildings is also globally present. Rarity, authenticity and representativeness are also considered as major criteria to take into consideration.<sup>7</sup>

The criteria and values currently used to assess a building's recognition and potential protection have been called into question in recent literature. Are current heritage assessment frameworks really adapted to young heritage?<sup>8</sup> Indeed, historical and technical value, as well as criteria such as rarity and authenticity, are not adapted to an abundant presence in the urban fabric that is largely subject to modification and renovation.<sup>9</sup> Given the specificity of young heritage, a more balanced and integrated approach could generate a different understanding and enable better recognition. For example, by considering the fact that lived experience can still be evaluated or that, despite the apparent absence of technical values in the sense of innovative materials, a broader understanding of materiality and an integrated conception of criteria such as rarity and representativeness can generate a new understanding of this heritage.<sup>10</sup>

In existing literature, a significant aspect contributing to the development of young heritage is identified: the materials and their utilization<sup>11</sup>. Because of the numerous amounts of new materials and construction methods which appeared (and disappeared) from the start of the 20<sup>th</sup> century onward. As rightfully pinpointed by Marieke Kuipers, a risk in expanding the knowledge about materials and their construction technic is to only focus on new materials and innovation, which makes traditional and region-specific practices of a lesser importance.<sup>12</sup>

It is not surprising that an important part of the existing research about material is heavily focused on innovation, as it is starkly in contrast with traditional materials and techniques. In *Twentieth-Century Building Materials: History and Conservation*<sup>13</sup> as well as *Post-war Building Materials*<sup>14</sup>, the focus is indeed on innovative product and their construction methods, which do not decrease their relevance, but is rather indicative of potential gaps in the understanding of traditional construction materials and technique in recent decades.

Historically, the primary focus of architectural heritage has revolved around monuments. Although there has been an expansion of recognition to include the surroundings of these monuments, the core attention remains centered around them. The 1931 Athens Charter, focused on the "Restoration of Historic Monuments," exemplifies this focus as it is one of the foundational documents in western architectural heritage field. Architectural heritage and conservation evolved throughout the 20th century, with increasing publications and interest not only in monuments but also in their surroundings.<sup>15</sup> However, as Rem Koolhaas highlighted in his 2009 lectures, there is a threat in

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<sup>7</sup> Based on documents from Brussels-Capital Region; Walloon region; culturelerfgoed NL; ministère de la culture FR ; UK

<sup>8</sup> This questioning is part of the Post 65 research in the Netherlands, Rijksdienst voor het Cultureel Erfgoed, Verkenning Post 65 (Amersfoort: Rijksdienst voor het Cultureel Erfgoed, 2019), 7

<sup>9</sup> Rarity and authenticity criteria are rightfully questioned in "Hoe jong kan bouwkundig erfgoed zijn?" in *Architectuur Sinds De Tweede Wereldoorlog* (Brussels: Brussels Hoofdstedelijk Gewest, Dienst Monumenten en Landschappen, 2008), 15.

<sup>10</sup> Parein, Marylise, Ine Wouters, and Stephanie Van de Voorde. "Waardebepaling Van Jong Erfgoed (1970-2000): Het Belang Van Materialiteit in Een geïntegreerde Benadering." *Bulletin KNOB* 122, no. 4 (2023): 85–97. <https://doi.org/10.48003/knob.122.2023.4.811>.

<sup>11</sup> The question of material is mentioned in Evelien Es et al., "Participatief Waarderen: Het Voorbeeld Van Nieuwegein," *Bulletin KNOB* 122, no. 4 (2023): 98–103; Marylise Parein et al., "Waardebepaling Van Jong Erfgoed (1970-2000)," *Bulletin KNOB* 122, no. 4 (2023): 85–97; And Marieke C. Kuipers, "Nieuw Erfgoed Erkend, Reflecties," *Bulletin KNOB* 107, no. 4 (2008): 155–165. <https://doi.org/10.7480/knob.107.2008.4.172>.

<sup>12</sup> Marieke C. Kuipers, "Nieuw Erfgoed Erkend, Reflecties," *Bulletin KNOB* 107, no. 4 (2008): 155–165. <https://doi.org/10.7480/knob.107.2008.4.172>.

<sup>13</sup> Thomas C. Jester, ed., *Twentieth-Century Building Materials: History and Conservation* (Los Angeles: Getty Conservation Institute, 2014).

<sup>14</sup> Stephanie Van de Voorde, Inge Bertels, and Ine Wouters, *Post-war Building Materials in Housing in Brussels 1945-1975 / Naoorlogse Bouwmaterialen in Woningen in Brussel 1945-1975 / Matériaux de Construction d'Après-guerre dans l'Habitation à Bruxelles 1945-1975* (Brussel: Vrije Universiteit Brussel, 2015).

<sup>15</sup> Wen Liang, Yahaya Ahmad, and Hazrina Haja Bava Mohidin, "The Development of the Concept of Architectural Heritage Conservation and Its Inspiration," *Built Heritage* 7 (2023): 10.1186/s43238-023-00103-2.



considering everything as heritage, which can dilute the concept of heritage itself. He questioned the decreasing age of buildings necessary to be considered heritage, suggesting that at some point, heritage might even become prospective, where everything is potentially eligible for heritage. For instance, a house built in Bordeaux by OMA in 1998 was already recognized as heritage by 2002.<sup>16</sup>

This critique introduces a critical lens through which this thesis operates, acknowledging the difficulties in defining heritage without overextending its boundaries. The research thus aims to highlight the particularities of the period of interest, providing insights into the values and criteria relevant to recognizing young architectural heritage. By doing so, this thesis seeks to contribute to the broader understanding of heritage while maintaining a focus on the unique characteristics of recent architectural periods, rather than proposing concrete heritage protection measures.

## 1.2 Objective and scope of the research

Because of the challenges and critiques surrounding the recognition of heritage, the objective of this research is to contribute to the expanding field of young heritage studies in an informed manner. It aims to critically assess how heritage is currently evaluated, identifying potential flaws in the recognition of young heritage. Based on existing literature and current research, the importance of materials and their application has been highlighted as a crucial aspect in addressing young heritage. However, the focus has predominantly been on "new" materials, with a lack of interest in "traditional" ones. Therefore, this research explores young heritage through the lens of a traditional material. This choice is not intended to be provocative but rather to uncover the untapped potential of such a perspective.

The research focuses on the Belgian context, specifically the Brussels Capital Region (further referred to as BCR). This focus is both practical, framing the scope of the research, and allows for an in-depth discussion of Brussels' heritage framework, which is a regional matter in Belgium. Bricks emerged as a logical material for this research due to their ubiquitous presence throughout the region. Although this choice is rather based on a-priori rather than statistical data. Our choice to examine facing bricks also logically points toward housing, as it is a typical material used in domestic construction.

A fundamental premise of this thesis is to begin from a point of uncertainty. We intentionally did not establish a predetermined vision for recognizing heritage in recent periods, understanding heritage as a dynamic and evolving phenomenon. Contemporary buildings will, over time, naturally transition into "historical" status due to their age and the significance that time bestows upon them. However, given the current threats of demolition and extensive renovation, the question arises: will this potential heritage be recognized in time?

To translate this uncertainty regarding architectural heritage, we focused on the ubiquitous, everyday buildings. Specifically, we chose to concentrate on residential buildings, which typically receive less attention compared to public buildings. While the private house has been highlighted as the typology of interest to look for 20th-century architecture, it has mostly concerned renowned architects' production and the suitability of the program for experimentation. Existing narratives and the amount of publication around these buildings reveal an underlying opposition with the everyday life house, or the house realized by "unknown" architects.<sup>17</sup>

We therefore situate this thesis away from the obvious attribution of value to iconic buildings (public buildings and extensively published dwellings) but also away from the consideration of everything as heritage (as criticized by Koolhaas). Instead, we highlight observations and traits of the period of

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<sup>16</sup> Rem Koolhaas and Jorge Otero-Pailos, *Preservation Is Overtaking Us*, ed. Jordan Carver (New York: GSAPP Books, 2014).

<sup>17</sup> Beatriz Colomina, "The Exhibitionist House," in *At the End of the Century: One Hundred Years of Architecture*, ed. Russell Ferguson (Los Angeles: The Museum of Contemporary Art, 2000), 126-165.

interest while critically examining the current heritage assessment method. Understanding that there is a need for a global vision on heritage, we do not aim to argue for a certain position on it, but we want to contribute to the existing literature by looking at “young” architectural production.

Considering facades is crucial in heritage assessment, particularly within the current methodology conducted at the regional scale. In BCR, the evaluation of urban fabric, apart from iconic dwellings or those designed by renowned architects, primarily relies on street-level observations as the primary source for inventory selection.<sup>18</sup> Subsequent research is occasionally undertaken for these buildings to deepen the understanding of individual projects and explore their additional heritage potential. Because of the nature of the methodology currently employed, focusing on the facade allows the research to be positioned within the existing framework, thereby enhancing its relevance. While this approach is predominantly oriented towards tangible, architectural characteristics and does not encompass intangible heritage, which might be relevant for every-day buildings and neighborhoods, it aligns with current practices, facilitating practical integration into existing heritage assessments.<sup>19</sup>

By investigating the ubiquitous presence of brick facades in housing, the most prevalent architectural feature in the BCR, this thesis seeks to highlight unique challenges and opportunities presented by young heritage. Through this examination, we aim to stress how existing heritage assessment criteria may fall short in capturing the value and significance of young architectural heritage.

In addressing these issues, this paper aspires to contribute not only to research surrounding young heritage but also to inform future policymaking and recognition efforts aimed at inventorying, safeguarding, and listing architectural heritage of the BCR.

Currently, in BCR, similar values and criteria are used when assessing a building for its inclusion within the inventory or when deciding whether or not to list a building, which is the highest level of recognition. The values are as follows: archaeological, artistic, aesthetic, historical, landscape, social, urbanistic, technical, folkloric, and scientific. These values are then assessed through six criteria: rarity, authenticity, representativeness, ensemble, contextual criteria, and integrity.<sup>20</sup>

Heritage is assessed in both absolute and relative terms, meaning each building is evaluated in itself and in comparison with similar buildings regionally, nationally, and internationally.<sup>21</sup> Therefore, it appears essential to have an extensive understanding of heritage, at least at the regional scale, to properly address the relative character of heritage assessment.

However, as identified later in this thesis, there is currently no extensive overview of the urban fabric of the BCR in the existing literature, and even less dedicated to facing bricks. The inventory provides a partial overview, but it is rather scattered. It thus makes sense to first have a broad understanding of the urban fabric before discussing values and criteria and how they relate to young heritage. Therefore, we aim to address this lack of overview by looking extensively at the housing facades of the BCR.

To frame the scope of the research, the discussion of heritage frameworks is limited to specific values and criteria. As developed further in the thesis, we have chosen to primarily focus on historical value, which refers to the particularities of the period of interest for brick facades. In addition, we consider aesthetic value as not pertinent to discuss when looking at a “recent” period, as we hypothesize that aesthetic appreciation greatly depends on our chronological distance from the period of interest. Therefore, examining the particularity of a period despite its aesthetic concerns allows us to distance

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<sup>18</sup> Inventory is the first level of recognition in BCR heritage framework, more informations are available on <https://patrimoine.brussels/agir/aspects-legaux/inventaire-du-patrimoine>, accessed April 2024.

<sup>19</sup> Other perspectives to recognised young heritage exists in other recent research projects, for instance through participatory methods which involve different stakeholders of neighborhoods, and tackles both tangible and intangible heritage. Lidwine Spoormans, "Everyday Heritage," *Architecture and the Built Environment*, November 2023, <https://doi.org/10.59490/ABE.2023.21.7283>.

<sup>20</sup> Those values and criteria are legally present for the region in the Code Bruxellois de l'Aménagement du Territoire (COBAT), Title V, Chapter I, Article 206, § 1.

<sup>21</sup> Retrieved from Inventaire du Patrimoine Architectural de la Région de Bruxelles-Capitale, Cellule Inventaire du Patrimoine Architectural, april 2022, Urban.Brussels.

the assessment from potential biases due to our chronological distance from the period of interest. Technical value is chosen to investigate whether or not a ubiquitous material such as brick could still have technical particularities in the period of interest. A hypothesis of this research is that technical value can relate to historical value in the way material and construction techniques can lead to particular expression. Because the scope of the research is regional, it is challenging to reach a high level of detail for technical value, as this would require examining single buildings through archival research. Therefore, this thesis aims to highlight general technical observations that might be validated by more detailed research in the future.

Regarding criteria, representativeness and rarity appear to be the most relevant to discuss, as they are the most relative but also appear contradictory at first glance. A hypothesis is that there might exist a more nuanced understanding of these criteria, and that they could relate to each other. Additionally, the criteria of authenticity and integrity appear harder to assess at such a large scale, which is why they were not considered in this thesis.

The discussion of these particular values and criteria aims to question the assessment of young architectural heritage. We aim to determine if an integrated approach generates a different understanding of heritage. By integrated, we suggest there might be an interconnectivity between the different values and criteria, which we want to assess. While more detailed studies of particular buildings might reveal a deeper understanding, the aim of this thesis is to provide a first regional overview and discussion.

In the context of this research, we have restricted the period of interest to 1970-2000. The 1970s are characterized by multiple major changes in society, such as the oil crisis, contestation movements like May 68, and the rise of counterculture. As changes in the urban fabric are diffuse in time, the hypothesis was that choosing the 1970-2000 period would capture both the last examples of post-war housing and the changes in residential brick facades before the advent of new joint techniques, which lead to a diverging architectural expression.<sup>22</sup>

### 1.3 Research questions

To support the objective centered around the challenges to assess young heritage, the thesis is centered around a main research question:

- How to recognize heritage value of brick architecture from 1970-2000 in the Brussels Capital Region's housing?

By investigating multiple criteria and values, we aim to test a more nuanced approach, possibly answering the main research questions.

- What are Representative and rare expression of brick facades in the Brussels-Capital Region in 1970-2000?
- What are historical particularities concerning bricks facades throughout the period 1970-2000?
- What is the impact of technical evolutions in facing bricks in 1970-2000?
- How can an integrated approach provide a new understanding of young heritage in the context of brick facades in 1970-2000?

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<sup>22</sup>The first known use of Glued connections in Belgium was in the renovation of Bauduin stadium in 1996. An article was written about it in *Terre Cuite et Construction* no. 78 (Bruxelles: Groupement national de l'industrie de la terre cuite, 1996).

## 1.4 Structure of the thesis

To address the central research questions concerning the recognition of heritage value in residential brick architecture from 1970-2000 in the BCR, this thesis is organized into several interconnected chapters. Each chapter explores distinct aspects of residential brick facades, aiming to build a comprehensive understanding through different analytical lenses.

### 1.4.1 Chapter 1: Rarity and representativeness criterion

This foundational chapter focuses on understanding the criteria of rarity and representativeness in brick facades within the Brussels-Capital Region from 1970 to 2000. It begins by examining what defines 'ordinary' residential buildings of the era and identifying unique facade expressions that deviate from conventional norms. Through comprehensive regional surveys, the chapter documents a diverse array of residential buildings, categorizing them based on typology, facade composition, brick characteristics and arrangement. This detailed categorization provides insights into the varied architectural expressions prevalent during the period.

The chapter situates these findings within the regional context of the Brussels-Capital Region, offering an overview of residential brick facades and their evolution during the specified timeframe. It analyzes common features found in 'ordinary' brick facades, aiming to discern prevailing trends. Moreover, it highlights rare and distinctive facade designs that defy typical classifications, emphasizing their unique attributes and architectural particularities.

Reflecting on the criteria of rarity and representativeness, the chapter navigates the inherent tension between these concepts. It explores how certain architectural features, considered rare due to their uniqueness, might contribute to the broader representativeness of the era's architectural heritage. The outcomes of this chapter include a comprehensive catalog of brick facade variations and the identification of key characteristics distinguishing 'rare' from 'representative' brick facades. These foundational insights set the stage for deeper explorations in subsequent chapters, particularly in understanding the historical and technical values associated with these architectural expressions.

### 1.4.2 Chapter 2: Historical Value

Chapter 2 delves into the historical value associated with brick facades in the Brussels-Capital Region from 1970 to 2000, building upon the insights gained in Chapter 1. It seeks to uncover what makes this era distinctive in terms of architectural expression, examining significant sub-periods that influenced brick facade design. Through a theoretical framework, the chapter links architectural theories and discourses from the period to regional observations, providing a contextual backdrop.

The chapter employs case studies of selected buildings to illustrate significant theoretical and historical trends in brick facade architecture. It begins with a historical description of pivotal periods in Brussels during 1970-2000, highlighting the evolving character of architectural production.

By elucidating the historical context and theoretical underpinnings, Chapter 2 aims to provide a nuanced understanding of the architectural heritage of brick facades. It seeks to articulate the specificities that define the period's architectural identity, bridging the gap between theoretical discourse and practical application in architectural practice. The expected outcomes include insights into the historical significance of brick facades, a deeper understanding of theoretical frameworks influencing architectural practices, and the establishment of key characteristics defining the uniqueness of the 1970-2000 period.

### 1.4.3 Chapter 3: Technical Value and Construction Methods

Chapter 3 focuses on the technical aspects of brick facades, exploring the manufacturing processes and construction methods used in the Brussels-Capital Region from 1970 to 2000. This chapter aims to deepen understanding of the architectural expressions identified in earlier chapters through a technical lens. Conducting a literature review, it examines periodicals and existing literature on the technical aspects of brick manufacturing and construction techniques prevalent during the specified period.

Comparative studies are employed to contrast technical aspects described in literature with observed facade characteristics, offering insights into technological advancements and their impact on architectural design. The chapter provides an overview of brick manufacturing progress during 1970-2000, highlighting innovations that influenced the expression of brick within the facade. It analyzes construction methods employed in the region, assessing their implications for the arrangement of brick to form facades.

Technical examinations of select buildings illustrate practical applications of these methods, showcasing how technical considerations might have shaped architectural expressions. By examining the interplay between manufacturing techniques, construction methods, and facade design, Chapter 3 contributes to a comprehensive understanding of the evolution of brick facades in the Brussels-Capital Region.

### 1.4.4 Concluding Chapter - An Integrated Approach?

The final chapter synthesizes findings from the preceding chapters, discussing the interconnectivity between heritage values and criteria in the context of brick facades. It integrates insights gathered on historical, theoretical, and technical aspects to discuss the relevance of such an integrated approach to heritage recognition. Synthesizing key findings, the chapter identifies overarching themes and connections that could inform future framework for recognizing young architectural heritage.

This framework discussion is centered around particular criteria and values for heritage recognition based on the interconnections identified in earlier analyses. It critically examines current heritage recognition frameworks in the Brussels-Capital Region, assessing their adequacy in addressing the recognition needs of young architectural heritage buildings.

Expected outcomes include a cohesive understanding of how historical and technical aspects intersect in the recognition of brick facades. And how current heritage assessment might fall short in capturing the specificity of young heritage. The chapter aims to contribute to ongoing discussions in architectural heritage framework by focusing on the case of BCR from 1970-2000.

## 1.5 Methodology and sources

### 1.5.1 Empirical observations

To lay the foundation for our research, it was essential to first obtain a comprehensive overview of the BCR. However, a thorough review of existing literature revealed that no such overview currently exists. Consequently, we undertook the task of creating this overview ourselves.

A major challenge to investigate the 1970-2000 BCR's built fabric in an extensive way is simply the amount of existing buildings. Based on the cadaster, there are more than 8500 residential buildings built between 1970 and 2000 in BCR. If we rely on the existing methodology used for inventorying process, it is simply unrealistic to assess such a large amount of building in the context of a master thesis.

For instance, one of the last research projects conducted for the BCR inventory for the 1939-1999 period, realized by ULB- La Cambre Horta researchers, was consisting of on-site observations in several municipalities of the BCR. Those observations, realized by foot or even by bike, provided a detailed observation of the facade and allowed to reach an important amount of detail. For instance, it allowed to have a glimpse of entry-halls and technical details. But despite those advantages, this process appears time-consuming and constraint the research to be conducted at a smaller scale.

In light of the challenges identified, a novel methodology was developed for this thesis. This methodology integrates the cadastral database of the Brussels-Capital Region (BCR) with a systematic application of Google Street View, facilitated by a custom Python script created specifically for this research.

The cadastral database utilized in this study includes a comprehensive list of addresses for all housing constructed between 1970 and 2000. Each entry provides details such as the municipality, the completion date of construction, and the type of dwelling (house, apartment, or "building"). Although the database also contains additional information, such as the built and total surface area, these details were not employed in this research.

Google Street View is an online geographic visualization tool developed by Google that provides panoramic, street-level imagery of various locations around the world. It utilizes vehicles equipped with 360-degree cameras to capture high-resolution images along roads and streets. An important consideration in utilizing this tool for research purposes is the temporal variability of images captured across geographic locations. It is noteworthy that the timeframes of image acquisition may present discrepancies, particularly when examining different municipalities. The imagery used for this research spans from 2009 to 2023, with some streets captured multiple times.

Due to the temporal discrepancies inherent in Google Street View imagery acquisition, observations of facades present a degree of uncertainty. This uncertainty is particularly pronounced due to recent trends in extensive renovation on the urban fabric of BCR. It is pertinent to acknowledge that the facade of a building captured in imagery from 2009 may not accurately reflect its current state due to more recent renovations or alterations. Indeed, our analysis revealed instances where buildings underwent significant changes between 2009 and 2023, highlighting the potential limitations of relying solely on older imagery. Despite these challenges, it might be interesting to consider Google Street View imagery as a new form of archival material, offering insights into the temporal evolution of urban landscapes and architectural facades.

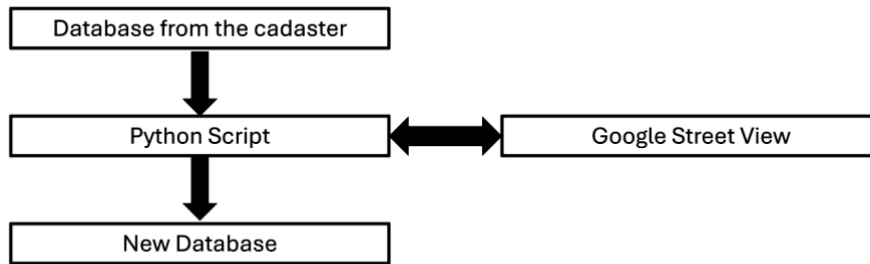


Figure 1 Flow chart of the database process

The Google Street View tool is employed in a semi-automated manner within this research. A Python script leverages the cadastral database to directly open an internet page displaying the complete address of each property. The user then manually assesses whether the facade is made of facing bricks and records these observations. Concurrently, a new database is generated, which includes only the brick facades and is enriched with the recorded observations (Figure 1).

The complexity of the script presented a limitation for this research. Additional features could have enhanced the database, such as incorporating screenshots of each facade. This addition would facilitate future use of the database, as the current method requires manual inspection of each building by the researcher.

In the context of this research, Google Street View significantly facilitated the coverage of a substantial number of buildings, saving considerable time compared to on-field inspections. This tool enables the direct identification of brick facades and provides sufficient detail to assess characteristics such as brick proportions, color, texture, joints, and arrangement. However, for instances where the tool lacks sufficient detail, on-field observations can be conducted to ensure higher accuracy.

The use of this technology is particularly advantageous for early-stage investigations. It allows for the analysis of the urban fabric without being constrained by geographical limitations. The available dataset supports multiple readings of the urban environment, potentially generating new insights and enhancing understanding at both the municipal and regional levels. For example, it is possible to focus specifically on apartments from a certain period at the regional scale and sorting them by municipality can reveal particularities unique to each area while also contributing to a broader regional understanding.

For this research, a specific approach to reading the database was defined. Initially, the data was divided by municipality to manage the workload and identify potential municipal particularities in both typology and brick usage. The data was then sorted chronologically, by typology (house or apartment building), and finally alphabetically by street. A further refinement could involve examining adjacent streets in a continuous order to better investigate heritage criteria related to ensembles or landscape values. Although some patterns were identifiable, this approach relies on a certain degree of user interpretation, which introduces some uncertainty.



Figure 2 Example of Building facade featuring brick which are excluded from the selection, 13 Avenue Jean Sobieski, 1000 Bruxelles © Google

Concerning bricks, a facade was methodologically classified as a brick facade when bricks obviously predominated visually. For instance, side walls of row houses and large apartment blocks where only a portion of the ground floor and side walls was clad with brick were excluded from consideration (Figure 2). This choice could be discussed as brick is still present in the facade, even though it is secondary in comparison to other materials. But as the thesis focuses on bricks, it is less evident to not consider the other materials in such facades.

Next, multiple observations were systematically made about the bricks.

Their proportions, color, texture and if they were painted or not. Then, how were they applied to form a facade: the arrangement pattern and the variation of it, the arrangement around the openings, and if brick was used to form three-dimensional surfaces (in opposition to planar wall). In the following chapters, a particular expression of brick is then understood based on the criterion mentioned above.

The observations made specifically about bricks were constantly related to the typology of the built structure, the street in which the building was present, and then more globally in the municipality and regionally to a further extent. It has to be noted that through the research, not every municipality was investigated with the same level of detail. By level of detail we intend the description written manually to describe the building. Indeed, given the limited scope of the research, only a more detailed investigation of the municipality of the City of Brussels was realized, whereas in the rest of them, the focus was more on highlighting buildings which appeared particular based on the different criterion mentioned previously.



## 1.5.2 Literature

Despite the crucial role of manual observations, existing literature is instrumental in enhancing the understanding of brick as a material. This comprehensive understanding informs better observations of the urban fabric, allowing researchers to grasp not only the composition of the material but also its spatial articulation in forming facades and its historical development.

### 1.5.2.1 Brick as a material

Brick, a major element of architectural history, has been utilized as a construction material for millennia, with its earliest examples dating back to the Mesopotamian civilization.<sup>23</sup> In the Belgian context, brick carries profound cultural significance, deeply rooted in the nation's architectural heritage since the 13th century.<sup>24</sup> This long-standing tradition and widespread use have invested brick with an ubiquitous image as a facade material. Consequently, it may not immediately evoke associations with the potential of young heritage.

Existing literature on Belgian brick architecture provides valuable insights into construction techniques, technological evolution, manufacturing processes, and general observations about facades.<sup>25</sup> However, those sources tend to be limited in their number of case studies as well as not focusing on the later 1970-2000 period. While magazines like *A+* and *Bouwen met baksteen* present numerous case studies, their selective nature does not aim to provide a comprehensive understanding of the urban fabric, especially as it is not focused on Brussels but rather Belgium in general.

*Terre cuite et construction* (1975-present), along with its predecessor 'Baksteen' (1970-1975), are professional periodicals published by the Belgian Brick Federation. Originally, the publication was a collaboration with the Dutch Brick Federation until 1975 when it became independent. While these periodicals occasionally rely on factual information and statistics, they primarily highlight trends and can be considered partially valuable due to their association with the Federation of Bricks. Potential biases, particularly advocating for brick (especially regarding thermal performance), are intentionally set aside. Instead, the magazines are used for factual information, statistics, and as indicators of historical trends.

While these studies and periodicals are valuable for acquiring a broad understanding of the material, its manufacturing process, and construction techniques, they often fail to link the material to its application in the built environment and its evolution. Understanding brick as heritage ultimately revolves around its physical manifestation in built projects. Nevertheless, these existing sources can serve as valuable resources to inform new research efforts.

A notable exception is the work of Lenoir, which offers a significant number of case studies mainly focused on housing and successfully links the material with its application. However, this research primarily covers a much older period (1830-1945).

Research on materiality also provides a different understanding of materials. The work of Antoine Picon emphasizes our relationship with materials and how they are linked to a 'building culture'.<sup>26</sup> This nuanced understanding allows us to connect our relationship with material to a certain state of society, thus highlighting the historical importance of materials within the heritage framework and their application.

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<sup>23</sup> James W. P. Campbell and Will Pryce, *Brick: A World History* (London: Thames & Hudson, 2003).

<sup>24</sup> Laura Le Noir, *Materialen en Technieken in Historische Metselwerkconstructies Tussen 1830 en 1945* (2017).

<sup>25</sup> Mainly in Sylvie Massaux, *Evolution de la Maçonnerie en Brique* (Institut Supérieur d'Architecture Saint-Luc Bruxelles, 1994) ; Jean-Marie Peeters, *La Brique et son Expression en Facade* (Université libre de Bruxelles, 1987) ; Giovanni Peirs and Peter Labarque, *La Terre Cuite - L'Architecture en Terre Cuite Après 1945* (Liège: P. Madarga, 1982).

<sup>26</sup> Such as in Antoine Picon, *The Materiality of Architecture* (Minneapolis: University of Minnesota Press, 2018).

### 1.5.2.2 *The facade*

The focus on facades for heritage assessment triggers the need to understand the role of the facade and its evolution. Before the 18th and 19th centuries, facades were rarely considered as cohesive units but rather as a combination of individual elements, such as columns and decorative details. It was only later that the facade began to be seen as a unified, significant component of architectural design.<sup>27</sup> Today, the facade is a critical element through which any building is assessed, especially in the context of heritage evaluation. This increasing focus on facades may be linked to a broader societal emphasis on image and the visual narrative conveyed by buildings.<sup>28</sup> Thus, the facade's expression has become a major point of attention in contemporary heritage assessment. While our study does not critique the increasing focus on facades, it embraces the observation that facade expression is a key point of attention in architecture and heritage assessment.

While not specifically focused on brick, Korman's study offers a comprehensive understanding of architectural facades and their evolution. However, it is constrained to rather iconic buildings, general discussion and narrative due to its scope.<sup>29</sup> Nonetheless, it provides valuable historical insights into the question of the wall and theoretical concepts of tectonics.

Similarly, Ledent and Porotto research explores iconic facade typologies in the BCR, although with less detailed theoretical discussions compared to Korman's work.<sup>30</sup> These studies greatly contribute to the research, offering valuable insights into the historical and typological aspects of facades. These insights will inform our analysis, helping us to contextualize and deepen our understanding of facade expression in everyday buildings.

### 1.5.2.3 *Urban fabric*

For the BCR, there are few publications offering a comprehensive understanding of the building fabric at the level of individual buildings, as much of the existing literature focuses on urbanism and treats the city at a broader scale. However, notable research extensively explores the history of BCR's housing stock through systematic case studies.<sup>31</sup> While this research provides valuable insights, it may not fully capture the complexity of the ordinary urban fabric, as it relies primarily on iconic buildings, understandable given the scale of the research. Additionally, it does not concentrate on the role of brick. Nevertheless, it offers a compelling overview of the city's built environment. It also underscores BCR's representativeness within Belgium in terms of building's typology and expression, thus enhancing the significance of research conducted at the scale of BCR as a starting point for broader investigations across Belgium.

Wingender's study, conducted at the scale of Amsterdam and specifically focused on brick, presents an intriguing approach to understanding the urban landscape. This research examines small segments of brick walls, analyzing characteristics such as color, format, texture, arrangement pattern, and joints.<sup>32</sup> However, it does not delve into the broader implications of brick facades. Other studies, such as those by Peeters, Le Noir and Korman, could complement this research by providing insights into the specific attributes of (brick) facades, including questions of color and arrangement variation, as well as the expression around openings.

As such, the existing literature on material's presence at the urban scale thus appears to be quite limited. It reinforces the relevance of performing a regional overview as it currently does not exist in the literature.

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<sup>27</sup> The evolution of the concept of facade in western architecture is developed by Stephan Truby in Stephan Truby, "Chapter 2: Facades," in *Elements of Architecture: Floor, Ceiling, Roof, Door, Wall, Stair, Toilet, Window, Facade, Balcony, Corridor, Fireplace, Ramp, Escalator, Elevator*, ed. Rem Koolhaas (Köln: Taschen, 2018), 896–9.

<sup>28</sup> Iñaki Bergera and Javier de Esteban, "Architecture and Contemporary Visual Culture, the Image of Realism and the Realism of Image," *Arts* 11, no. 1 (2022): 26, <https://doi.org/10.3390/arts11010026>.

<sup>29</sup> Randall Korman, *The Architecture of the Façade* (London: Routledge, 2023).

<sup>30</sup> Gérald Ledent and Alessandro Porotto, *Brussels Housing: Atlas of Residential Building Types* (Basel: Birkhäuser, 2023).

<sup>31</sup> *Ibid.*

<sup>32</sup> Jan Peter Wingender, *Brick: An Exacting Material* (Amsterdam: Architectura & Natura Press, 2016).

## 2 Rarity and Representativeness criteria

« La rareté d'un bien est déterminée à la fois sur le plan qualitatif (le caractère « exceptionnel ») et le plan quantitatif (la « raréfaction »), en fonction du contexte géographique (local, régional, national), chronologique et historique (la production globale dominante de l'époque : concept, style, matériaux, etc.), par rapport à l'ensemble de la production du concepteur, et ce, tant d'un point de vue formel que fonctionnel et constructif. Pour évaluer la rareté d'un bien, il convient de le comparer à d'autres biens appartenant à la même catégorie (typologie, chronologie-âge [datation]/période ou partie de cette période, aspect esthétique et/ou technique, fonction, impact social ou historique). »<sup>33</sup>

« La représentativité renvoie au fait que le bien réunit une ou plusieurs caractéristiques significatives : il doit s'agir d'un « bon exemple » qui réunit de nombreuses caractéristiques significatives. La représentativité d'un bien est évaluée en fonction de son contexte géographique (local, régional, national), chronologique (importance dans l'histoire sociale, religieuse, politique, industrielle ou scientifique, esthétique marquée), historique (par exemple, le bien traduit de manière significative une caractéristique d'une certaine époque), par rapport à l'ensemble de la production du concepteur, et ce, tant d'un point de vue formel, fonctionnel que constructif. Comme pour l'évaluation de la rareté, la représentativité d'un bien demande que l'on puisse le comparer avec d'autres appartenant à la même catégorie. »<sup>34</sup>

As described by Urban.Brussels, both rarity and representativeness are understood as highly relative criteria. A building must be evaluated in comparison to “similar” buildings. Similar is intended typologically, chronologically, aesthetically; technically; in term of function as well as in the sense of historical and social impact. The description of representativeness also mention that a representative building must be a good example of significative characteristics.

You might already question what makes a “good” example as well as what are significative characteristics. But as there is currently no overview at the regional level, it appears even more difficult to correctly address such criteria. Therefore, generating an extensive overview of the housing urban fabric appears critical to perform a relative assessment.

As stated before, the choice was made to look extensively at the urban fabric, without narrowing the scope by relying on case studies already existing in Literature or in the inventory. This choice was made with the hope to unveil unstudied building, or at least have a different understanding of the region's-built environment.

This research was mainly conducted through extensive observation of each building of the region, which is conceptually similar to the inventorying process realized by Urban.Brussels. The observation revolves around the methodology described in 1.5.1.

Those observations are first illustrated in this chapter through regional and municipal statistics to provide a first typological and quantitative overview. Then, as the visual expression of each facade is

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<sup>33</sup> “The rarity of an object is determined both qualitatively (“exceptional” character) and quantitatively (“rarefaction”), depending on the geographical (local, regional, national), chronological and historical context. (the dominant overall production of the time: concept, style, materials, etc.), in relation to the designer's overall production, from a formal, functional and constructive point of view. To assess the rarity of an object, it should be compared to other objects belonging to the same category (typology, chronology-age [dating]/period or part of this period, aesthetic and/or technical aspect, function, social or historical impact). » Retrieved from Inventaire du Patrimoine Architectural de la Région de Bruxelles-Capitale, Cellule Inventaire du Patrimoine Architectural, april 2022, Urban.Brussels.

<sup>34</sup> “Representativeness refers to the fact that the property brings together one or more significant characteristics: it must be a “good example” which brings together numerous significant characteristics. The representativeness of a property is assessed according to its geographical context (local, regional, national), chronological (importance in social, religious, political, industrial or scientific history, marked aesthetic), historical (for example, the property significantly translates a characteristic of a certain era), in relation to the designer's overall production, from a formal, functional and constructive point of view. Similarly to the evaluation of rarity, the representativeness of a good requires that it can be compared with others belonging to the same category. »

crucial in this research, it is extensively illustrated and discussed in the form of pictures retrieved from Google Street View.

Based on the observations made, the aim of the chapter is to determine what are representative and rare expression of brick facades in the Brussels-Capital Region in 1970-2000. Additionally, the chapter aims to address the current conception of rarity and representativeness within BCR heritage framework.

## 2.1 Statistics

Broadly speaking, the first finding of the research is that approximately 85% of the 1970-2000 housing's facades of the BCR are brick facades. It represents more than 7300 buildings spread throughout the region. It represents 4,5% of the total amount of residential buildings of the BCR.<sup>35</sup> This observation already emphasizes the representativeness of brick facades at the urban scale. Not only that, it also highlight the contrast with existing literature about materials in the 20<sup>th</sup> century which mainly focuses on “new” materials such as concrete, metals or plastics.<sup>36</sup> It seems questionable that the most representative facade material (at least quantitatively) is not much studied for its heritage potential, even though its historical significance might play role in not properly considering brick as a major element of young heritage. At first glance a brick appears as a brick, despite its period.

Strong quantitative variations exist between Municipality in the 1970-2000. Most of the built dwellings are located in the areas close to the exterior boundary of the region. It does not appear surprising as historically the development of Brussels was concentrated around the historical center. Despite some municipalities highlighting 50-70 percentage of brick facade, only a small amount of new construction was realized in the center of Brussels during the period of interest. Most of the other municipalities highlight much higher percentages (Figure 3-5).

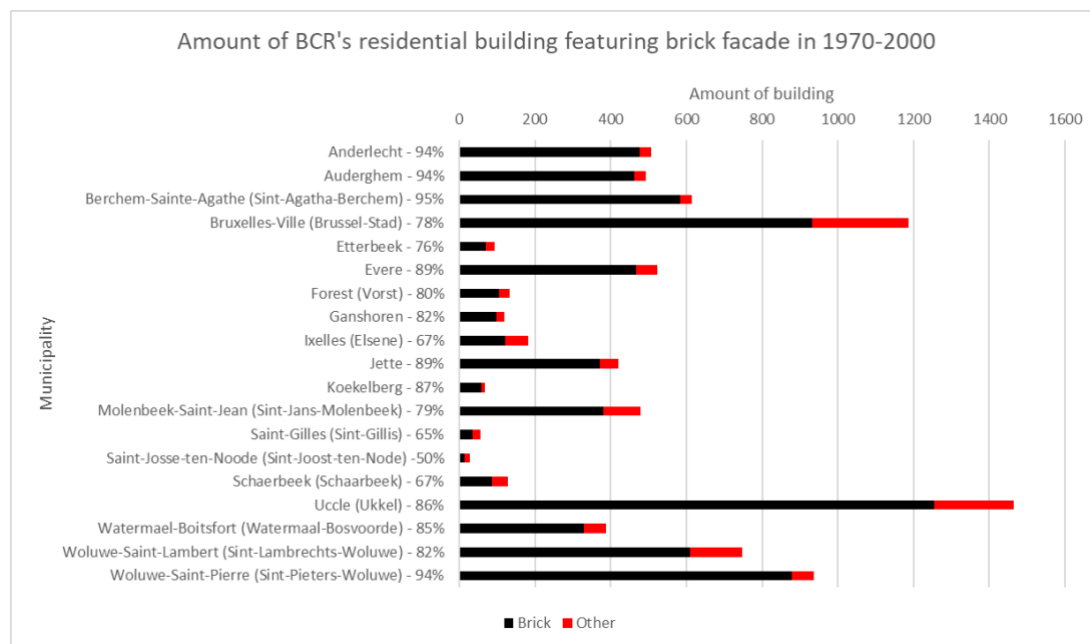


Figure 3 Quantitative distribution of residential building among the 19 municipalities of the BCR in 1970-2000.

<sup>35</sup> Based on 2023 numbers from the Belgian Statistical office, the total amount of residential buildings in the BCR is around 165 000.

<sup>36</sup> As already mention before, in publication such as 20<sup>th</sup> century building materials or Post-war construction materials.

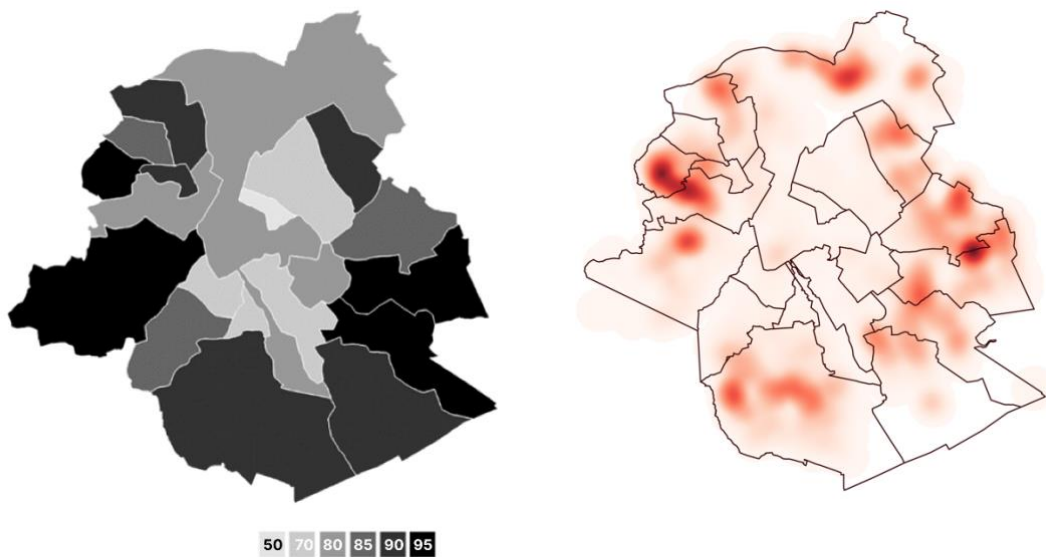


Figure 4 (left) Percentage of residential brick facade built in the BCR in 1970-2000 (per municipality)

Figure 5 (right) Spatial distribution of residential brick facade built in the BCR in 1970-2000 (heatmap)

Alongside geographical variations, the amount of building and their typology also evolves through time. The proportion of apartment buildings as well as the number of buildings diminishes from the 70's towards the end of the century. This typological division is based on the cadaster, which does not differentiate row houses, semi-detached houses, and villas. But when looking at statistics from the Belgian statistical office, only 9% of the total amount of buildings built between 1970 and 2000 are villas. Which makes the row-house and semi-detached house the quantitatively dominant typology of the period of interest.<sup>37</sup> It has to be stress that by quantity we mean the amount of building and not the number of dwellings. Otherwise the apartment buildings would have had a higher importance due to the increased amount of dwellings encompassed within a single building.

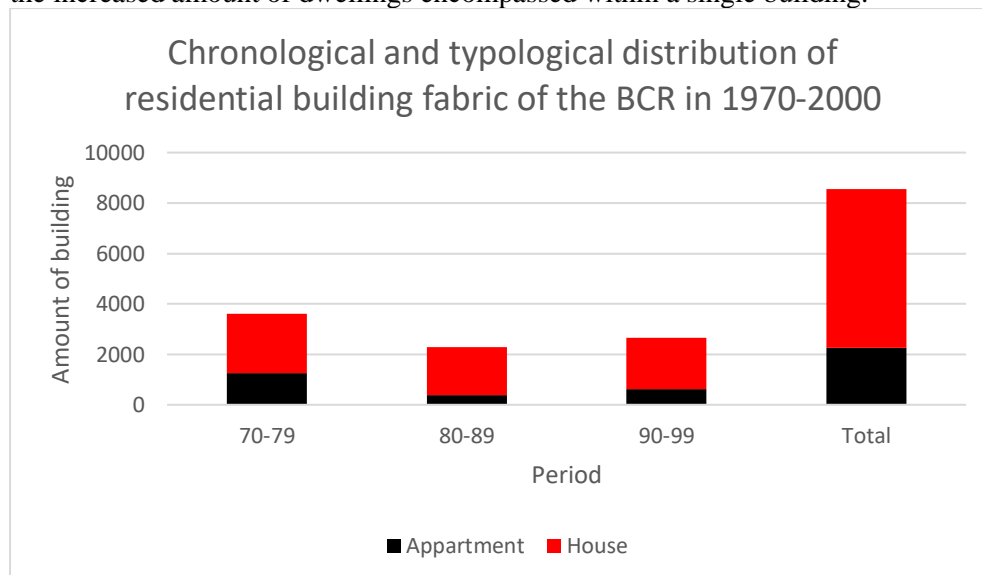


Figure 6 Chronological and Typological Distribution of residential building fabric of the BCR in 1970-2000

<sup>37</sup> Based on open data from Statbel, *Statistique cadastrale du parc de bâtiments*, 2023

## 2.2 Observations

The following observations highlight the diverse expressions of residential brick facades in the BCR from 1970 to 2000. Through more than 100 selected facades, we aim to illustrate the variety and multiplicity of expressions existing in the region. It is important to note that the number of facades illustrated does not indicate their representativeness. Rather, it serves as an indicator of the diversity of expression. For instance, curved wall facades are obviously much less common in the urban fabric than facades with a more "banal" character, even though they are represented by a similar number of examples. Thus, the observations emphasize particular expressions more strongly than ubiquitous facades, which, by nature, are less interesting to represent with an increased number of cases due to their strong similarities.

A detailed reference of each building is provided in the Annex, according to the numbering displayed on each picture. All of these pictures are sourced from Google Street View, which accounts for the varied angles and proportions.

The observations primarily focus on row houses and villas, which are quantitatively more prevalent throughout the region and exhibit greater variation compared to apartment buildings. Most apartment buildings feature a straightforward use of brick as a cladding element rather than integral walls, diminishing its expressive role on facades. This reduced prominence complicates discussions focusing solely on facing bricks, as it overlooks significant aspects of apartment building expression. Therefore, we argue that studies should adopt a different approach for apartment buildings, where features such as floor to ceiling windows and balconies often play a prominent role.

Additionally, the row houses of the period of interest refer as well to what has been described by Ledent and Porotto as the dominant housing typology in BCR.<sup>38</sup> This comparison remains relevant despite differences with the historical row house. Whether in the overall facade composition, the presence of underground garages, or the departure from the *bel-étage* organization and its relationship towards the street.

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<sup>38</sup> Gérald Ledent and Alessandro Porotto, *Brussels Housing: Atlas of Residential Building Types* (Basel: Birkhäuser, 2023).

### 2.2.1 The ubiquitous

As our statistical analysis indicates, the row house is the prevalent typology within the BCR. Thus, it is crucial to focus on this typology when discussing rarity and representativeness.

An observation made during this research is the strong homogeneity in the expression of row houses. This typology is characterized by planar facades, consistent brick colors, minimal variation in arrangement, and rectangular openings. The ground floor is sometimes elevated above a garage (1) or features different cladding materials (5, 7, 8).

A prominent feature of row houses from 1970-2000 is the presence of horizontal openings (2, 3, 6, 7, 8, 9), often located on the first floor where the living room is situated. This horizontal opening pattern is also found on higher floors, likely indicating an apartment setting (8). Despite being apartment buildings, these structures exhibit a similar typology to row houses in terms of plot width, number of storeys, and their frontal relationship with the street.

Within these buildings, despite their overall uniformity, we can hypothesize the existence of sub-periods. Until the end of the 1970s, many buildings feature horizontal openings, uniform arrangements, and glazed white bricks (7, 8, 9). From the mid-1980s onwards, we observe a shift not only in color palettes, with the gradual disappearance of white glazed bricks, but also in composition and arrangement.

Similar to row houses, the majority of villas exhibit a comparable expression. However, villas often maintain a more distant relationship with the street, featuring fewer openings than row houses.



Figure 7 Selection of commonly seen residential facades in the BCR from 1970-2000 © Google.

## 2.2.2 Relief

Despite the fact that the vast majority of the building fabric exhibit a straightforward, uniform expression, we can observe multiple expressions of relief, which differ from the ubiquitous in the sense that it disrupts the planar wall. As we focus on brick, we have made the distinction between three types of relief: orthogonal, oblique, and curved. This distinction is motivated by the different relationships between the geometry of the reliefs and the one of the bricks.

### 2.2.2.1 Orthogonal

A particularity of the orthogonal relief is its continuity with the arrangement of brick. It often appears as extrusion within the facade, while keeping a certain sense of cohesion.

While the relief can be “inward” (13, 18), “outward” (14, 16, 19) or both (15, 17, 21, 23), it creates a certain sense of composition by the distinction it creates between different areas of the facade. For instance, it can emphasize the entrance (13, 17) or create a sense of monumentality (23). In other examples, the relief can become more subtle in terms of depth (20) or fragmented (15, 21)



Figure 8 Selection of facades featuring orthogonal relief © Google.



### 2.2.2.2 Oblique

Another type of relief observed is the oblique relief, which is already much rarer in comparison to orthogonal one. It deviates from the orthogonal orientation commonly seen in facades which accentuates its contrast with other forms of expression.

This relief is often aligned vertically with the entrance, serving as a visual marker (25-29). Additionally, it can be strategically utilized to highlight the center of the building (29, 31, 32). While predominantly outward facing, some instances exhibit relief that extends both inward and outward from the facades (32).

A rarer variant of oblique relief is perpendicular to the plane of the facade (34, 35).



Figure 9 Selection of residential facades featuring oblique relief © Google.

### 2.2.2.3 Curved

Lastly, the third and least represented category of relief observed is the curved relief. Once again, the curvature of the surface sharply contrasts with the planarity of the facade.

This curvature can manifest subtly at the entrance (37) or more prominently, spanning double heights or extending across the entire facade (38-45). Typically, the curvature is outward facing, resembling a solid cylinder, although there is one example of inward curvature, which is rather exceptional (47).

Moreover, the curved relief is occasionally combined with other relief types such as the orthogonal relief (41, 45, 46), the oblique relief (45), or both (48).



Figure 10 Selection of facades featuring curved relief © Google.

### 2.2.3 Volume

We've just introduced various relief types, but a distinctive expression of these can be found in the region, particularly in semi-detached houses and villas. Given their typically larger footprint, there's a tendency toward a "deconstruction" of the facade in terms of volume.

This deconstruction is achieved through the utilization of elements similar to those described in the relief categories—orthogonal, oblique, and curved.

The facade may be carved out of a single large volume, resulting in fragmented geometry (49, 53, 56, 63), comprised of larger elements (54, 57, 61, 62), or it may appear more as a juxtaposition of elements with varying degrees of hierarchy (50, 51, 58-60).

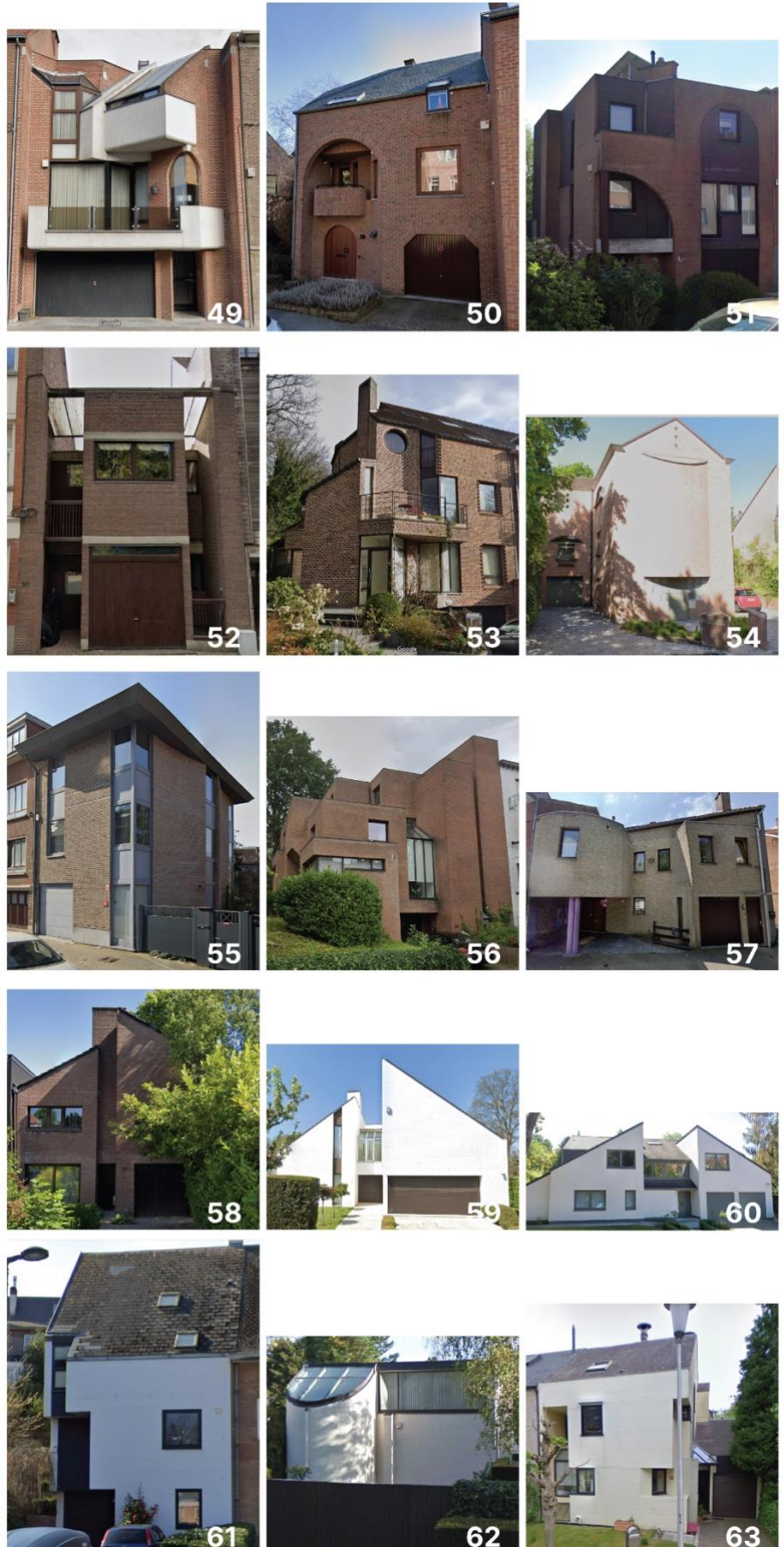


Figure 11 Selection of facades featuring particular volume © Google.

### 2.2.4 Composition

Even though relief and specific volumes often leads to a particular composition of facades, less complex volumes also present particular composition. Therefore, we have illustrated here those variations.

It sometimes breaks the vertical and horizontal alignment of the windows (64, 65) or in the contrary emphasize the continuity between the different openings (66, 70). It also utilizes particular form of openings (67-69, 74). Rectangular openings are also used to highlight a certain composition by varied proportions (71-73, 75).

The absence or omni presence of openings also mark a certain composition where levels are harder to distinguish (69, 74).



Figure 12 Selection of facades featuring particular composition © Google.

### 2.2.5 Particular openings

"Stepped" openings depart from the traditional horizontal windows featuring a series of rectangular sections arranged in a staggered pattern. This arrangement creates a hierarchy within the opening, introducing a rhythm and hierarchy to the facade. Unlike uniform windows, stepped openings vary in height, sometimes exaggerating proportions. By their design, they multiply the amount of edges and corner, which highlight the geometry of the brick by making it more readable than in a planar wall, as you can distinguish multiple faces of each bricks (76-78).



On a different tone, oblique openings starkly contrast with the orthogonality of the rectangle by cutting through it. This departure from orthogonality generates a distinctive arrangement around the opening. Indeed, bricks either have to be cut according to the shape of the window or they have to be arranged in a different manner (79-81).



In the same vein, curved openings also defy orthogonality. Often taking the form of arches, circles (82), half-arches (83), and curved corners (84). Their departure from orthogonality also implies specific arrangement around the openings.



Figure 13 Selection of facades featuring particular openings © Google.

## 2.2.6 Symmetry

Symmetry could be understood as a particular composition. But it is noteworthy of mentioning it as it is quite a widespread feature of facades of the later 1970-2000 period. It is most often rather present on the higher storeys, as the garage doors usually disrupt the symmetry at the ground floor (85-87, 90).

Nonetheless, it is sometime integrated in a way which does not disrupt the symmetry, often in combination with the entrance door (88, 89, 91-93, 95, 96). While symmetry can be emphasized at the scale of one house, for instance with the use of a central column (85), it can also occur at a larger scale between, adjacent buildings or even at the scale of a fragment of street (94-96).

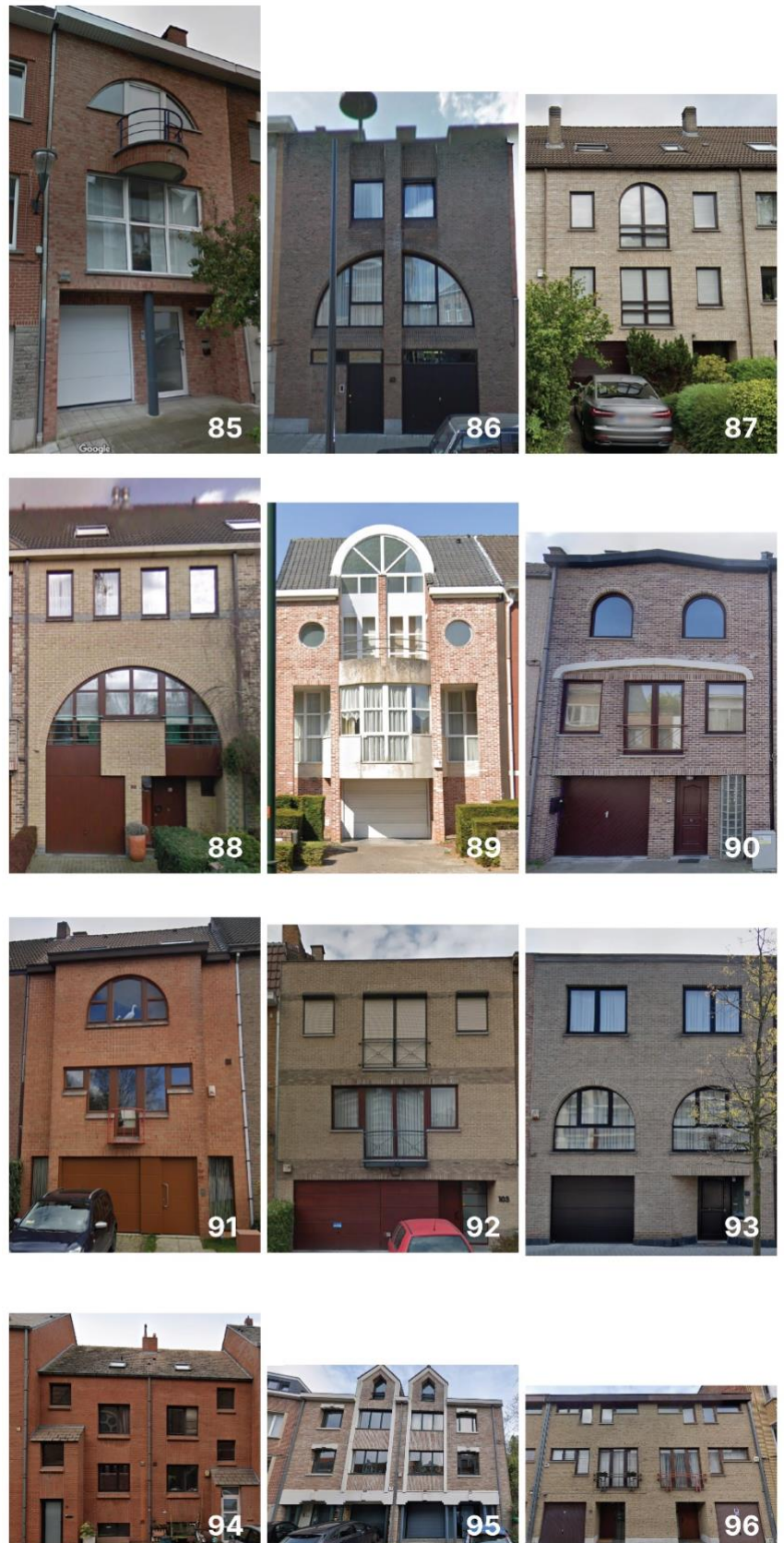


Figure 14 Selection of facades featuring strong symmetry © Google.

### 2.2.7 Ensembles

Ensembles in the Brussels Capital Region refer to groups of buildings or architectural features that share common characteristics or styles. While some ensembles are obvious and consist of adjacent buildings or fragments of streets, there are also examples that are not necessarily geographically linked but highlight similarities on a larger scale.

As mentioned before, the thesis does not aim to tackle the question of ensemble value in heritage framework. But those groups of buildings are still part of the regional overview.



#### 2.2.7.1 Extensive roof

The ensembles described here represent interpretations of repetitive typologies that extend beyond just a single street or housing complex. One such example is the "extensive roof" typology. Although it is prominently found in areas like the Cité de l'Amitié, Les Venelles, and student housing in Woluwe (part of the UCL campus), it is actually present on a broader scale throughout the region.



This typology is characterized by the extensive use of roof tiles on the facade, blurring the distinction between the roof and the wall, creating a more subtle transition between the two elements. The expression of the building thus heavily relies on the relationship between roof tiles and bricks, which are intertwined.

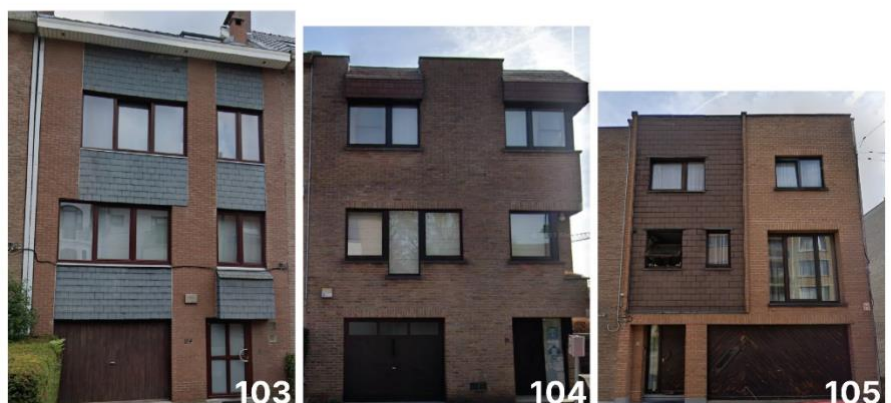


Figure 15 Selection of facades featuring "extensive roof" © Google.

### 2.2.7.2 Anthropomorphism

Anthropomorphic facades offer a playful yet distinctive ensemble where buildings take on human-like characteristics. Through clever arrangement of windows, doors, and architectural details, these facades resemble faces. While not as common as other architectural features, these expressions appear unique in comparison to the ubiquitous facades.

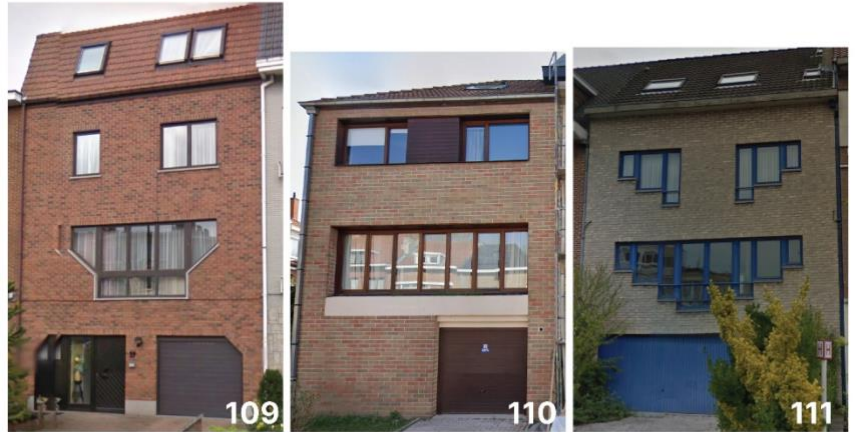


Figure 16 Selection of facades highlighting anthropomorphic features © Google.



### 2.2.7.3 White-painted villa

Finally, the extensive white-painted villas could form a distinct ensemble characterized not only by their uniform color but also by their abstract volumes and facade compositions. Some of them were already highlight in the observations of particular volumes (59-63).

An interesting observation is that most of the cases illustrated here are already present in the inventory.



Figure 17 Selection of white-painted villas© Google.

Through this research, we have provided an overview of the residential urban fabric in the BCR from 1970 to 2000. Our aim now is to discuss the criteria of rarity and representativeness and how they apply to this period of interest.

A first observation is the clear representativeness of the regular row house, which is omnipresent throughout the region. By "regular," we refer to row houses that are hardly distinguishable from one another, featuring straightforward facade compositions, uniform brick arrangements, and rectangular openings. Within this period, we can differentiate two sub-periods in terms of facade expression: the 1970s and the subsequent two decades. The first period is characterized by a straightforward expression in terms of brick arrangement, the use of rectangular windows, and a strict, regular composition. The latter part of the period shows the emergence of contrasting expressions through varied volumetry, unique openings, and diverse facade compositions.

According to the current definition of rarity, most of the cases illustrated (10-117) could be considered rare, as they formally differentiate themselves from the ubiquitous examples. While the aim of this chapter is to identify rare and representative expressions, it is worth questioning the current division of these two criteria, which at first glance appear to be opposites. Most of the row houses displayed in this chapter could be typologically linked to the ubiquitous ones. They often feature large openings on the first floor, a similar number of storeys, and a frontal relationship to the street. The difference lies more in the formal expression and composition of the facades, highlighting a qualitative rarity over a quantitative one



Figure 18(left) Kasteelhof 146, (right) Rue des Pêcheurs 28© Google.

For instance, comparing examples (1) and (80) highlights strong similarities. Typologically, they both encompass an elevated ground-floor level, accessible by stairs, even though one has a sloped roof and the other a flat one. The openings also have similar alignments and proportions. However, they can be differentiated by the shape of the windows, particular detailing around them, and an oblique relief around the entrance door. We could relate both to a similar representativeness in terms of typology and composition, while the rarity occurs more in the detail of brick arrangement as well as particular window shapes.

By providing an overview of the region, it becomes apparent that rarity exists within representativeness. Most row houses appear as variations of a similar typology, despite their formal differences, which makes them "rare." Therefore, the current state of the criteria relies more on a formal assessment. This approach does not necessarily appear problematic but emphasizes the need for an overview before proceeding to the assessment. Strongly relying on formal expression necessitates understanding what is particular about a period, which we intend to link to historical value, to avoid falling into purely aesthetic questions.

### 3 Historical value

By realizing the regional overview of the residential building fabric from 1970-2000, we have looked at some buildings already registered in the inventory. Out of the 117 Building illustrated in the last chapter, 30 of them were already in the inventory. While looking at which values are attributed to each building, a particular distribution appeared (Described in detail in the annex):

- 30 Aesthetic
- 22 Artistic
- 9 Historical
- 8 Urbanistic
- 1 Technical
- 1 Landscape

The aesthetic value refers to the “experience of beauty”<sup>39</sup> and appears highly subjective, in the sense that aesthetical appreciation evolves through time. Famous examples of art nouveau buildings such as the “Maison du peuple” were destroyed in the 20<sup>th</sup> century in Brussels. While today, art nouveau and in particular the work of Victor Horta is recognized and protected partly for its marked aesthetic. This phenomenon also applies to later architectural movements, such as Brutalism, which regain aesthetical interest in recent years.<sup>40</sup> The prevalence of aesthetic value in the inventoried buildings can thus appear as a sign of danger for young heritage, as it highlights a current lack of recognition for what is particular about the period of interest, which partly refers to the current definition of historical value:

« Le bien présente un intérêt historique **s’il témoigne d’une période particulière de l’histoire de la région ou de la commune**, s’il représente un **témoignage d’une période particulière du passé et/ou d’une évolution rare pour une période** (par exemple, une cité-jardin représentative d’un mode de construction utilisé lors des grandes campagnes d’urbanisation après la Seconde Guerre mondiale, les noyaux villageois illustrant les premiers bâtiments groupés des communes de la Seconde couronne, la Porte de Hal comme vestige de la deuxième enceinte, etc.), **s’il témoigne d’un développement urbain (et/ou paysager) particulier de la ville** (par exemple, les immeubles des boulevards centraux ou du quartier Léopold), **s’il présente un lien avec un personnage historique important**, y compris les maisons personnelles d’architectes et les ateliers d’artistes (par exemple, la maison natale de Constantin Meunier, la maison de Magritte), s’il peut être associé à un événement historique important (par exemple, les maisons datant de la reconstruction de Bruxelles suite au bombardement de 1695, la colonne du Congrès), ou s’il possède une représentativité typologique caractéristique d’une activité commerciale ou culturelle (par exemple, les églises, les cinémas, l’architecture industrielle, les pharmacies). »<sup>41</sup>

While historical value appears in several inventoried buildings present in the previous chapter, it is always in combination with artistic value, which leads to think that historical is currently rather used

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<sup>39</sup> Based on the description of Urban.brussels

<sup>40</sup> With the multiplication of publications such as Peter Chadwick, *This Brutal World* (London: Phaidon, 2016). *Atlas of Brutalist Architecture* (London: Phaidon, 2020).

Owen Hopkins, *The Brutalists: Brutalism's Best Architects* (London: Phaidon, 2023).

<sup>41</sup> “The building presents historical value if it **bears witness to a particular period in the history of the region or municipality**, if it **represents a testimony to a particular period of the past and/or to a rare development for a period** (for example, a garden city representative of a construction method used during the major urbanization campaigns after the Second World War, the village centers illustrating the first grouped buildings of the municipalities of the Second Crown, the Porte de Hal as a vestige of the second enclosure, etc.), **if it bears witness to a particular urban (and/or landscape) development of the city** (for example, the buildings on the central boulevards or in the Léopold district), **if it presents a connection with an important historical figure**, including the personal houses of architects and artists' studios (for example, the birthplace of Constantin Meunier, the house of Magritte), if it can be associated with an important historical event (for example, the houses dating from the reconstruction of Brussels following the bombing of 1695, the Congress column), or if it has a typological representativeness characteristic of a commercial or cultural activity (for example, churches, cinemas, industrial architecture, pharmacies). »

for architect's house or renown architects for the 1970-2000 period. It encourages the idea that particularities of the period of interest are not yet correctly understood.

In this chapter, we will therefore try to generate an understanding of what could be historical particularities of the 1970-2000 period. By referring to the overview realized in the previous chapter, existing inventoried buildings in the BCR as well as looking at theoretical movement present in the period of interest.

An observation made by Nesbitt "(...)Theory of the last 30 years (1960-90) finds a multiplicity of issues(...) the lack of dominance of a single issue or a single point is characteristic of the pluralist period, imprecisely referred to as postmodern"<sup>42</sup> highlight the multiplicity of theoretical movements present in the period of interest. This multiplicity makes the attribution of specific theoretical movement difficult as the number of influences grow, in particular at the urban scale. Nonetheless, we will discuss in the following chapter late post war modernism, post modernism as well as critical regionalism. By discussing, we do not intend to thoroughly delve into the theoretical discourse of each movements, but rather to establish links between the expressions presents in the urban fabric and the several theories. We will look in particular on the relationship between those theoretical alignments and the impact it has on the expression of bricks and how they are arranged to form facades.

### 3.1 Late post-war modernism

As mentioned previously, a subperiod can be identified in the 1970-2000, which is the 1970s an occasionally early 1980s. This subperiod highlights an expression which we could link to modernist period. While some of the buildings identified in the inventory are mentioned as presenting a 'post war modernism' style, they are mainly referring to extensive white-painted villas.<sup>43</sup> But a more general observation can be made for ubiquitous row-houses.

First and foremost, through the 20<sup>th</sup> century tendency towards horizontal openings. Korman's perspective underscores a fundamental change in facade construction around that time. Historically, facades relied on a predominantly stereotomic approach, deriving structural stability from solid masses of building materials like stones or bricks. This configuration often led to smaller, vertically oriented windows that conformed to the load-bearing constraints of the wall. However, the introduction of materials like concrete and steel ushered in a new era of design freedom. These materials offered architects greater flexibility, enabling the support of larger openings and more expansive window arrangements. Consequently, facades began embracing a tectonic condition, emphasizing the assembly and articulation of structural components over the sheer mass of building materials.<sup>44</sup>Theoretical discourses such as the "5 points of architecture" from Le Corbusier cannot be overlooked in this context, as it emphasizes an expression which separates the facade from its load-bearing condition.

This global transformation has a particular impact on the expression of brick facades. Historically, the bricks were expressed through massive load-bearing walls. This structural condition induce a particular attention to the openings, as it requires specific forms or other materials to sustain bending, created by the opening within the wall.<sup>45</sup> These challenges often resulted in openings rather limited horizontally speaking. Therefore, the use of brick in such configurations stands in stark contrast with the historical openings. The brick transfers from a structural condition towards a cladding condition.

This transfer result in an expression which is much more uniform in the sense that brick loses its geometrical and constructive particularity. The relief and traditional arrangement of bricks disappears in favor of large extensive planes of bricks arranged in regular half-half arrangement.

With this new expression, it is harder to distinguish the use of brick in comparison to other claddings such as natural stone panels (Figure 19). This similarity is emphasized by frequent use of uniform, white-

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<sup>42</sup> Kate Nesbitt, *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory, 1965–1995*, 1st ed. (New York: Princeton Architectural Press, 1996).

<sup>43</sup> In particular the villas situated in Uccle such as (75, 113, 117) in chapter 2.2.

<sup>44</sup> Randall Korman, *The Architecture of the Facade* (London: Routledge, 2023).

<sup>45</sup> It is a point of attention in existing literature such as in Jean-Marie Peeters, *La Brique Et Son Expression En Facade* (Bruxelles: Université libre de Bruxelles, 1987) ; Laura Le Noir, *Materialen En Technieken In Historische Metselwerkconstructies Tussen 1830 En 1945* (2017).

glazed bricks in combination with a uniform arrangement. Some facades even encompass stacked arrangement, which is the closest arrangement to cladding panels (Figure 20) as traditional arrangement most often present offsets of joints (half-half arrangement for instance) instead of continuous ones. While this expression is not specific to the 1970s as it can be found in earlier modern buildings, it is still present and particular in the period of interest (Figure 21).



Figure 19 Avenue de Lima 9, dating from 1960 ©Urban.Brussels

Figure 20 Avenue Paul Deschanel 101, dating from 1933 ©Urban.Brussels

Figure 21 Avenue des croix de guerres 357, dating from 1970 ©Google

### 3.2 Post modernism

In the architectural context, post-modernist theories emerged from the late 1960s onward, with influential publications such as the ones from Venturi, Jencks, and Eco. These theoretical discourses appear as counter reaction to functionalist and abstract modernist principles, both ideologically and formally.<sup>46</sup> A focus point in the context of this thesis is the conception of architecture as a language, notably through semiotic theory. In the work of Eco, an emphasize is put on the connotation of architectural elements, beside their purely functional aspect.<sup>47</sup> This symbolic aspect of architectural elements coincides partly with a discourse on a “language” in architecture, which dialogues both with architects and with the large public.<sup>48</sup> This idea of language is also discussed in the work of Venturi through the observation of signs and symbolic aspects of architecture. Those observations often refer to ordinary architecture, which is evocative to the large public.<sup>49</sup> Those discourses have to be contextualized in a period of questioning and rejection of established ideologies, which goes beyond architectural theory. It is epitomize in architectural discourse by the rejection of modernism, which encompass the image of capitalism and establishment.

<sup>46</sup> Critics of the modernist principles are not exclusive to the post-modern movement, as forms of critics appeared earlier, notably through Heidegger’s work on phenomenology.

<sup>47</sup> Umberto Eco, *La struttura assente: Introduzione alla ricerca semiologica*, 3rd ed. (Milano: Bompiani, 1968).

<sup>48</sup> Notably in the work of Charles Jencks, *The Language of Post-Modern Architecture* (London: Academy Editions, 1978).

<sup>49</sup> Notably through examples of “decorated shed” and “ducks” in Robert Venturi, Denise Scott Brown, and Steven Izenour, *Learning from Las Vegas* (Cambridge, MA: MIT Press, 1972).

An important part of post-modern literature focuses on the form and signs of architecture, which sometime results in “kitsch” or self-referenced architecture in the use of historical signs. While one example which could be linked to this aspect of post modernism with the use of obvious references such as the Corinthian column or the arched opening is present in the BCR (Figure 22), it appears rather anecdotic at regional scale.

The links that we have identified with post modernism in the residential brick architecture of the BCR from 1970-2000 are the following:

- A sense of exaggeration in the composition and volumetry.
- The use of brick in a way that evokes tradition

While exaggerated character is commonly attributed to post-modernist architecture, with examples such as the work of Michael Graves, series of houses of Peiter Eiseman, or the Neue Staatsgalerie by James Stirling, we can identify an exaggeration in the building fabric of the BCR through multiple aspect.

The first aspect is the extensive use of central symmetry, which often leads to a sense of monumentality, which appears contradictory at first sight in such commonplace row-houses. This central symmetry is often emphasized by the use of particular openings, which reinforces an exaggerated character., For instance, the “stepped” openings, centered on the axis of symmetry creates a sense of hierarchy within the openings, progressing from small to large openings, as well as within the facade, as it reinforces the symmetry (Figure 23).

The second aspect is the presence of fragmented composition and volumes. While those could be linked to deconstructivism theories, we want to emphasize here their exaggerated character by the use of different proportions of the openings as well as their (non) alignments to create particular compositions (Figure 24). Those compositions can be linked to post-modern discourse about architecture as “language”, where elements such as openings, columns and walls are used as to form particular expressions, as words would be used to form sentences.

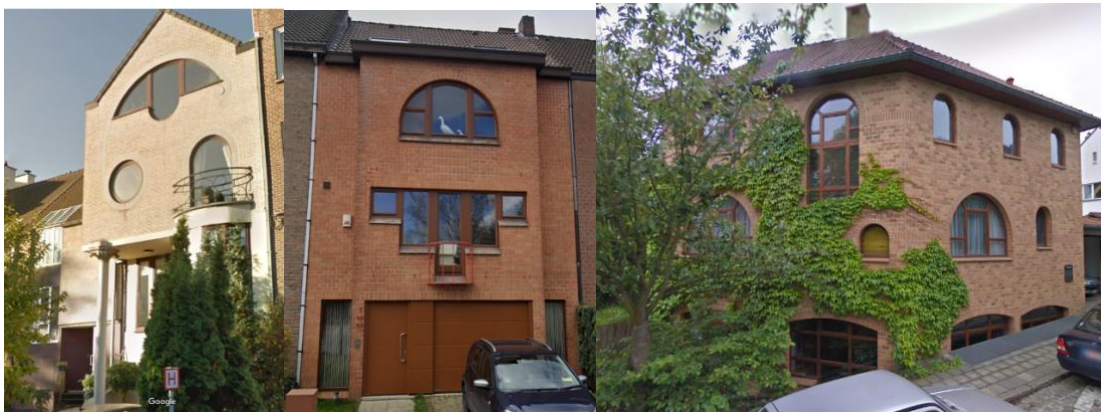


Figure 22 Avenue Léopold Wiener 33 © Google.

Figure 23 Rue Théodore De Cuyper 166© Google.

Figure 24 Avenue Dolez 241-243 © Google.

While formal expression appears as a particularity of the period through most of the cases illustrated in Rarity and Representativeness, which we can partially link to post-modern expression, the specificity of materials is almost disregarded in the postmodern discourses. While brick is mentioned in some publications, it is rather discussed for its evocative character of the tradition and housing.<sup>50</sup> What we want to discuss further is the impact of formal expression on the arrangement of bricks.

An obvious impact is the change of arrangement around particular openings.

The stepped openings of brick facades present a unique architectural challenge, as they multiply the number of corner and edge conditions for the brick. Unlike regular rectangular openings, which

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<sup>50</sup> A brief mentioned is present in Charles Jencks, *The Language of Post-Modern Architecture* (London: Academy Editions, 1978).

typically have four corners and four edges, stepped openings introduce a multitude of additional corners and edges due to their varying heights and stepped configuration. This multiplication of corners and edges has a profound impact on the expression of the brick within the facade. It draws attention to the arrangement of the brick, as each corner and edge becomes a focal point where the material transitions or intersects. The normally “hidden” faces of bricks are revealed when the brick is in a edge or corner condition (Figure 25)

While when we observe oblique openings, a first duality appears in the treatment of brick. The brick can be treated regardless of its geometry, by simply being cut according to the shape of the window (Figure 26), while other examples emphasize the geometry of the brick by thoroughly expressing its arrangement around the window (Figure 27). This expression could be seen as reinforcing an exaggerated character as it formally appears unusual, but it also emphasizes a certain sense of craftsmanship in the skills it requires to lay the brick in this particular manner.



Figure 25 Zoom in first floor stepped windows of Rue de Lombartzyde 44 © Google

Figure 26 Zoom in oblique window of Rue des Faines 100 © Google

Figure 27 Zoom in oblique window of Rue de la Cambre 2E © Google

Similar observations can be made for curved openings, although the use of arches evokes historical openings by its structural suitability for compressive transfer of forces. The curves disrupt the arrangement of the wall by its form, requiring specific arrangement to approximate the curvature. It once again emphasized craftsmanship by the precision of the arrangement required around the curves, often through the uneven joints, which creates the angle necessary to approximate the curvature. One can notice that the curvature is not only used in its evocative compressive transfer of forces, as it is sometime inverted, which do not appear as structurally logical as the arch (Figure 29).



Figure 28 Zoom in curved arrangement and opening in Rue Omer Lepreux 94 © Google.

Figure 29 Zoom in curved opening in Drève du Sénéchal 32 © Google.

We could see the emphasize of craftsmanship as a departure from modernism in the sense that modernist production was rather evoking machine-made, utilitarian use of brick through their arrangement to form

facade. We see here a tendency to highlight brick and its particularity through its arrangement, evoking traditional forms with the arche, or specific new arrangement around curved corners or oblique openings.

While this treatment of brick already differentiates post-modern expression from previous examples, the bricks in themselves also see an evolution in their characteristic. By characteristic we intend the color and texture of the brick. In the 1970s, we see the use of white-glazed, uniform bricks. While around the 1980s, the shift of color towards brown and red, which evokes traditional colors<sup>51</sup>, is accompanied by a texture and relief aspect (Figure 30), which reminds of hand-made, traditional bricks. Moreover, instead of uniformity, many buildings exhibited variations in brick color, presenting shades rather than a uniform color (Figure 31 & Figure 32).



Figure 30 Rue Edouard Olivier 57 © Google.

Figure 31 Harenberg 210 © Google.

Figure 32 Rue de la Cavatine 25 © Google.

While we can theoretically make the hypothesis of a rejection of modernist expression through facade, we have found that such rejection is also present at the scale of municipalities in the BCR where a traditional expression was sometime preferred.

For instance, in Ixelles, of one the 19 municipalities of BCR, out of over 100 residential brick facades from the 1970-2000 period, there is not a single building with yellow or white bricks. According to a resident of a house built within the period of interest, convincing the municipality to allow brick appearance other than the traditional red brown was nearly impossible. While this stance is highly discussable as it is coming from an inhabitant, it is reflected in several PPAS<sup>52</sup> documents in Ixelles, where smooth yellow bricks are explicitly forbidden for facades (Figure 33).<sup>53</sup> The smooth or glazed finishing is not explicitly forbidden with other colors, but none of the building's facades observed are featuring this aspect.

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<sup>51</sup> As most of the clay near the region of Brussels leads to rather brown or red colored brick, according to Giovanni Peirs, *La Terre Cuite* (Liège: P. Madarga, 1979).

<sup>52</sup> PPAS or *Plan particulier d'aménagement des sols* is a tool developed in the Brussels-Capital Region for specific part of the building fabric, most of the time when a zone will undergo a new development or refurbishment.

<sup>53</sup> For instance, in *PPAS-Ixelles-ilot 186 - Quartier Tenbosch*



d) Matériaux de façades.

Les façades principale, latérales et arrière d'un même immeuble, visibles de la voie publique seront érigées dans les mêmes matériaux de façade. Il en sera de même des parties de pignon en surélévation sur les toitures voisines, des souches de cheminées, des murets, etc... visibles de la voie publique.

Pour toute construction, il sera fait usage de matériaux durs naturels ou artificiels, à faire agréer par l'Administration communale. Les matériaux de façade auront, en outre, une couleur comprise entre celle de la pierre blanche et le rouge rosé Paepensteen; les briques lisses de teinte jaune vif seront exclues des limites de teintes précitées.

Figure 33 excerpt of PPAS-Ixelles-ilot 186 - Quartier Tenbosch

Similar restrictions on facade materials can be found in various PPAS in Auderghem<sup>54</sup>, where glazed bricks, notably typical of post-war modernism, are prohibited. It once again implicitly advocates for an aesthetic reminiscent of the traditional aspect of brick. While documents such as PPAS emphasize municipal influence, it is difficult to generalize such influences regionally, as we only found two explicit examples.

### 3.3 A different language?

What appears unique to the 1970-2000 period, particularly the last two decades, is the combination of a new formal approach that breaks from functional and minimalistic modernist architecture. This new approach is characterized by exaggerated compositions, volumes, and distinctive windows, while simultaneously evoking the traditional aspects of brick architecture through texture, color, and arrangement.

Despite this uniqueness, a strong form of contradiction emerges. The stance against modernism appears more formal than substantive, as post-modern examples include large openings and compositions that relate to structural advancements initiated in the early 20th century by modernist architects. Thus, post-modern architecture attempts to distance itself from modernism while still relying on similar conditions, particularly concerning the roles of structure and facade. This contradictory character and the references to the modernist period are not absent from post-modern literature. For instance, Robert Venturi's famous phrase "Less is a Bore" directly references modernist icon Ludwig Mies van der Rohe.

This mediative position between the universality of "modern" materials and the local expressions of brick, which reflect craftsmanship and tradition, can be associated with the theory of critical regionalism as articulated by Kenneth Frampton.<sup>55</sup> Critical regionalism emphasizes a self-conscious use of modern techniques while intentionally relating to local conditions, thereby distinguishing itself from a purely modernist aesthetic.

In the case of the BCR, the expression relates to local conditions primarily through the use of brick itself, as well as its color, texture, and arrangement. Although this association with critical regionalism is relevant to the mediative role of brick, it is somewhat limited to the material's expression and evocative character. There may exist a nuance in the implication of "modern" constructive logic in its impact on the expression of the facades, as they align more closely with a tectonic approach rather than a historical load-bearing wall.

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<sup>54</sup> For instance, in *PPAS-Auderghem*- 6;8;20;25;26

<sup>55</sup> Kenneth Frampton, "Towards a Critical Regionalism: Six Points for an Architecture of Resistance," in *Anti-Aesthetic: Essays on Postmodern Culture*, ed. Hal Foster (Seattle: Bay Press, 1983), 16–30.

## 4 Technical value

As we have hypothesized what are particularities of the 1970-2000 period, a question remains on the expression of traditional looking bricks. Indeed, from an exterior perspective, those bricks are hardly distinguishable from historical bricks by their texture and color. But their might exist a deeper understanding between construction techniques and facades expression, which truly differentiate the period of interest. Therefore, to tackle this question and at the same time questioning the current definition of technical value, we aim at diving into technical aspect of brick manufacturing and construction method.

This research will first be based on existing literature to discuss older technical evolutions and innovations. Then, by mainly relying on the *Terre cuite et construction* (or *bouwen met baksteen*) periodical, it will highlight the specific technical character of the 1970-2000 period. It has to be noted that more insights could be generated on manufacturing processes from archives of brick manufacturers. It was not extensively realized in the context of this research, but it currently presents a knowledge gap. It is becoming harder and harder as most of the brick manufacturers from the 20<sup>th</sup> century have either disappeared or have been integrated in larger groups such as Wienerberger.<sup>56</sup>

« Un bien possède un intérêt technique en cas **d'utilisation précoce d'un matériau ou d'une technique particulière** (ingénierie), ou s'il présente un intérêt constructif ou technologique particulier, une **prouesse technique ou une innovation technologique**. Il peut également être considéré comme ayant une valeur archéologique industrielle s'il témoigne de méthodes de construction anciennes. Bien entendu, l'intérêt technique est à mettre en relation avec l'intérêt scientifique. »<sup>57</sup>

The current understanding of technical value appears as mainly revolving around new materials and innovative techniques. This current situation does not appear surprising as the current state of literature mainly revolves around new materials, as discussed in the introduction.

As this framework places emphasis on innovative materials and construction techniques, it neglects the potential significance of more subtle technical advancements in traditional materials and techniques. Additionally, our hypothesis posits that while the technical progress during the 1970-2000 period may not have been immediately apparent or revolutionary, it nonetheless exerted a profound influence on the architectural expression of brick facades. This influence extends beyond manufacturing processes to encompass construction method as leading to a particular form of expression.

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<sup>56</sup> The diminishing amount of brick manufacturer throughout the 20<sup>th</sup> century is highlighted in Giovanni Peirs, *La Terre Cuite* (Liège: P. Madarga, 1979).

<sup>57</sup> «A building has a technical value in the case of **early use of a material or a particular technique** (engineering), or if it presents a **particular constructive or technological interest, a technical achievement, or a technological innovation**. It can also be considered to have industrial archaeological value if it provides evidence of ancient construction methods. Of course, technical interest must be linked to scientific interest. »

## 4.1 Manufacturing process

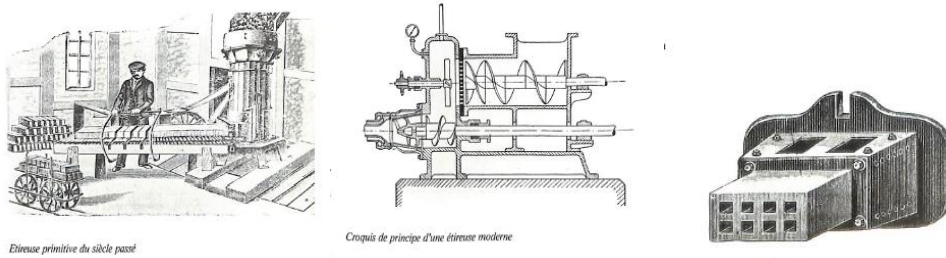


Figure 34 Illustrations of wire-cut process in the manufacturing of bricks, *Terre cuite et construction* n°48 (Bruxelles: Groupement national de l'industrie de la terre cuite, 1987).

As a reminder, brick manufacturing consists of 3 main steps: extracting and preparing the clay, molding the brick (either by hand, in a mold or with machines) and finally baking it.

In the late 19<sup>th</sup> century, major innovations appeared such as the apparition of “wire-cut” bricks. In contrast to traditional hand-made and molded bricks, “wire-cut” bricks are stretched to a machine and cutted off according to the thickness of the format (Figure 34). This process will also allow to manufacture perforated bricks, thus reducing the weight of bricks. Despite those advantages, perforated will only progressively appear, as at first it was demanding more energy for the extrusion process compared to “whole” bricks.<sup>58</sup>

New, continuous kilns, first the Hoffman and later the tunnel Kilns, appeared progressively, which allowed a more efficient and controlled firing process of the bricks, in contrast with traditional, discontinuous Kilns<sup>59</sup>. Nevertheless, their propagation was progressive as it requires heavy investment.<sup>60</sup>

Technological advancements also contributed to the mastery of brick texture and color. In the late 19<sup>th</sup> century, the widespread adoption of single-fire glazing<sup>61</sup>, coupled with new firing and extrusion processes, yielded defined, smooth, and glazed bricks, diverging from traditional hand-made masonry. Later in the 20<sup>th</sup> century, despite the prevalence of wire-cut extrusion processes, tools were developed to simulate rough textures reminiscent of hand-made bricks. Similarly, improvements in color consistency were achieved through a better understanding of the chemical composition of clay mixes and their reactions during firing.<sup>62</sup>

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<sup>58</sup> According to *Terre Cuite et Construction* no. 48 (Bruxelles: Groupement national de l'industrie de la terre cuite, 1987).

<sup>59</sup> Mentioned in Jean-Marie Peeters, “La Brique et Son Expression en Facade” (Université libre de Bruxelles, 1987).

<sup>60</sup> This observation is made by Giovanni Peirs in multiple edition of *Terre cuite et construction*

<sup>61</sup> James W. P. Campbell and Will Pryce, *Brick: A World History* (London: Thames & Hudson, 2003), 226.

<sup>62</sup> *Terre Cuite et Construction* no. 48 (Bruxelles: Groupement national de l'industrie de la terre cuite, 1987).

This technical mastery might have facilitated a diverse array of expressions within the urban fabric. Bricks with rough textures, evoking hand-made processes, are most probably mechanically manufactured, but imitates “hand-made” bricks by processing the bricks. Likewise, variations in color, characteristic of discontinuous firing processes, might have become a deliberate expression as firing techniques became more controlled with apparition of new kilns. Consequently, the characteristics of bricks might have transcended local and traditional manufacturing methods, offering architects, clients, and cities a broad spectrum of choices in texture and color aesthetics (Figure 35). One particular point attention, which is the trend towards hand-made looking brick from the 1980's onwards, was actually statistically observed by the Belgian brick federation around the beginning of the 21th century (Figure 36). This thus support hypothesis made from observation in previous chapters that there is indeed a tendency towards a different expression of brick in term of texture and color towards then end of the 20<sup>th</sup> century.

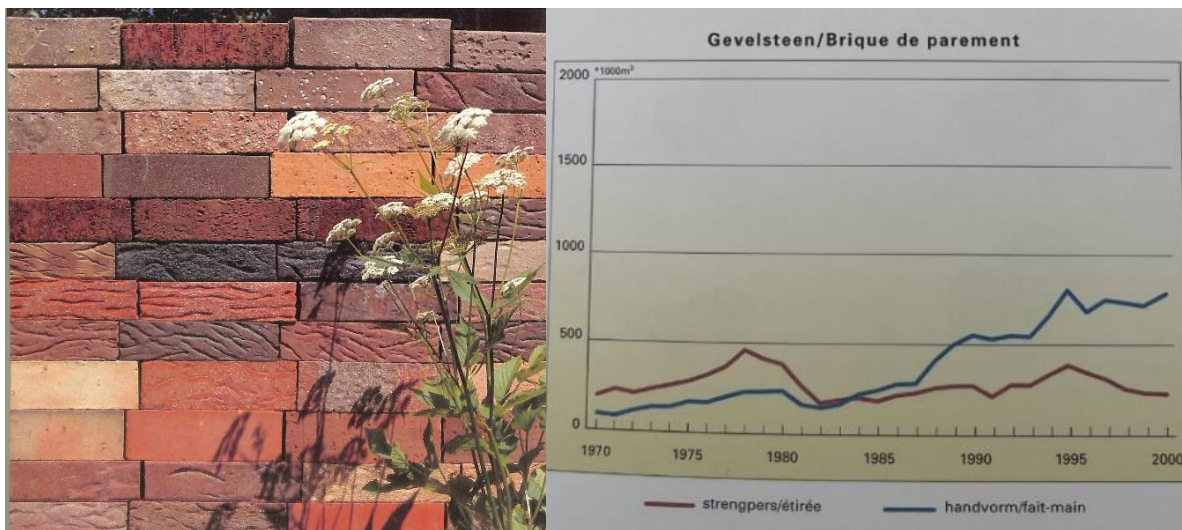


Figure 35(left) Picture illustrating the variety of colour, texture, finishing as well as format of facing bricks, *Terre cuite et construction n°48*. Bruxelles: Groupement national de l'industrie de la terre cuite, 1987.

Figure 36 Graphic illustrating the number of bricks with a “stretched” appearance (red), and the one with a “handmade” appearance (blue), Groupement national de l'industrie de la terre cuite

While these observations support the evolution of the brick's image, they also suggest a connection to critical regionalism. During the period of interest, brick manufacturing appears even more as a product of the market economy rather than a revival of local traditions. Bricks can "imitate" any appearance asked by the client. It is at the same time disconnected from the locality of the production while being able to evoke it by the appearance of the final product. This use of technical progress to evoke tradition in the image of the brick can be seen as purely aesthetic. However, it marks a significant departure from earlier modern examples by visually aligning more closely with historical local brick architecture.

## 4.2 Construction method

Historically, wall constructions predominantly consisted of massive bearing walls. However, a significant transition occurred around the late 19th century with the emergence of cavity walls. Initially appearing in England to address humidity issues,<sup>63</sup> cavity-wall construction gradually gained prominence, becoming the predominant method for wall construction in the 20th century. It is notably advised in professionals' magazines and even considered as the “default” construction method in the 1970s (Figure 37).

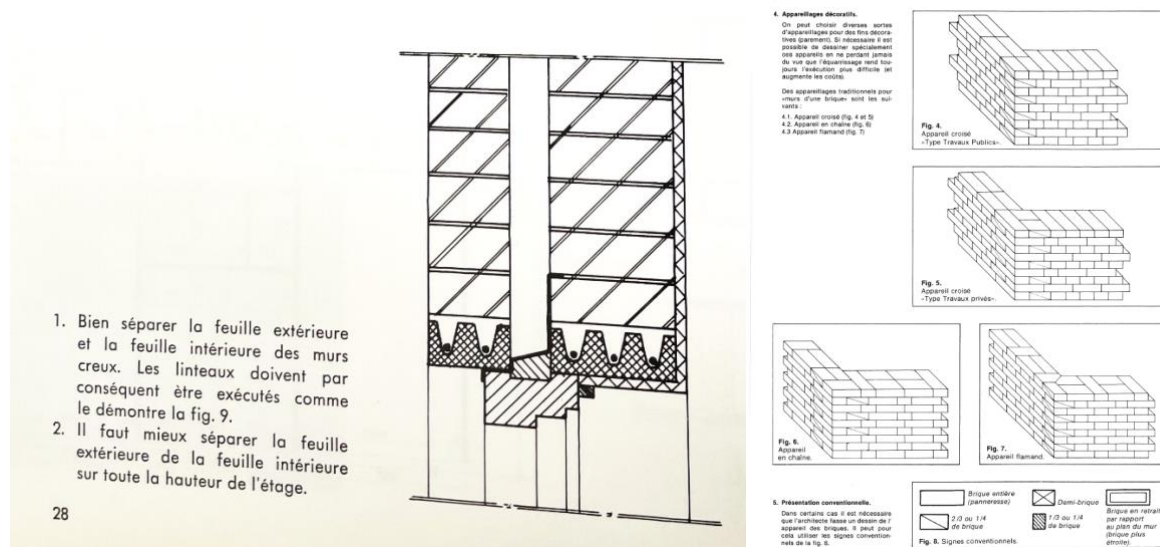


Figure 37 Detailed section featured in *La brique*, n°3. Bruxelles: Groupement national de l'industrie de la terre cuite, 1970

Figure 38 Historical brick arrangements, requiring multiple layers of brick, *Terre cuite et construction n°13*. Bruxelles: Groupement national de l'industrie de la terre cuite, 1978.

The cavity wall consists of separating the wall in two distinct layers, a cladding layer and a structural layer. While it allows to tackle technical problems of humidity, it also allows to reduce the amount of facing bricks per square meter of facade. Indeed, historical brick arrangements were often composed of multiple layers of bricks (Figure 38). Whereas in the cavity wall configuration, the arrangement of brick can be reduced to a single layer of brick.

One compelling hypothesis suggests that the transition toward cavity wall enabled the widespread adoption of the half-half arrangement, wherein the facade is divided into structural and cladding layers. This division likely resulted in substantial savings in facing brick usage compared to conventional multi-layered walls. The economic logic might have thus played a logical role in the widespread adoption of such a technique.

We could also hypothesize that this widespread adoption of the half-half arrangement led to rather more uniform expression of brick wall, in the sense that relief is harder to achieve when the facade is only half a brick thick. There would be a favor towards extensive planar walls, in opposition to traditional decorative reliefs.

<sup>63</sup> Mentioned in James W. P. Campbell and Will Pryce, *Brick: A World History* (London: Thames & Hudson, 2003).

In the continuity of “invisible” influences, we can mention the impact of lintels and their detailing in the facades. While at the scale of this research it is difficult to attribute particular details to facades without strong uncertainty as well as defining the most widespread details, it emphasizes once again the importance of technical features in the expression of facades. For instance, What could appear as formal change of arrangement within a facade could eventually hide particular technical details (Figure 39& Figure 40).



Figure 39 Terre cuite et construction n°23. Bruxelles: Groupement national de l'industrie de la terre cuite, 1981.

Figure 40 the large opening could be enabled by a similar construction technique as described in Figure 39. Avenue Nekkersgat 15 © Google.

While it is difficult to associate the technical features of the 1970-2000 period with innovation, this research suggests that a certain mastery of technical aspects characterizes this period. Emphasis is also placed on the impact of these technical features on the expression of the facades, challenging the current understanding of both technical and historical values.

Particular examples of arrangement and relief appear even more distinctive when considering that, while responding to similar constructive logic, such as the cavity wall, one would naturally expect a uniform half-half arrangement. This observation indicates that technical value could be understood through its influence on the expression of the facade rather than solely through innovation.

## 5 An integrated approach?

As a result of the different research we have conducted throughout this thesis. What appears to be a benefit from an integrated approach in the sense of interpreting different values and criteria as interconnected is an enhanced understanding of the particularities of the period of interest.

It is only as we proceeded to an extensive overview, that we have generated an understanding of the urban fabric which allows to perform relative assessment. The question of criteria of rarity and representativeness might not lead to a re-evaluation of them, given that their interconnectivity does not question their relevance in the current framework, but rather emphasizes the need for an overview. This first step allowed to avoid focusing only on “particular building”, meaning that we understand that they only represent a fraction of the urban fabric. We also better understand how particular facades relate to the overall urban fabric in their expression, in particular for row-houses.

While the overview serves as the backbone of this approach, it does not specifically produce results in the discussion of criteria within the existing heritage framework. The primary advantage of this approach lies in understanding historical value, particularly in relation to the specific period of interest. By combining the overview with an understanding of preceding periods and research on technical aspects, we can develop a new understanding of historical value that differs from the aesthetic value currently attributed to residential buildings from 1970-2000.

This new understanding, while related to the expression of facades, aims to emphasize the logic of facades in terms of typology and composition. An additional benefit of discussing brick within this research is gaining a technical understanding of this construction element. By examining the evolution of construction techniques and the manufacturing process, we can hypothesize an interconnection between constructive logic and architectural expression, such as through the cavity wall.

Simply investigating facades through observation, without a fully integrated understanding, could lead to a purely formal assessment, naturally resulting in an "aesthetic" value. In contrast, by incorporating an additional layer of understanding about the constructive conditions of the time, we can better discern what makes a facade truly particular for its period.

We could exemplify this approach with case study (76, Figure 41). At the regional scale, it relates to the row house typology by the number of stories, the frontal relationship with the street, and the organization by level. The garage and entrance door are located on the ground floor, more openings are on the first floor, most likely for the living room, and smaller openings are on the upper stories for other rooms. This house is rare in both qualitative and quantitative terms. Houses with central symmetry are quantitatively rare, and stepped openings are rare as well. However, in this case, there is a combination of central symmetry, stepped, and curved openings.



*Figure 41 Avenue Jean et Pierre Carsoel 38© Google.*

The central symmetry is emphasized by a central column, which highlights the tectonic aspect of the facade, as the massiveness of the wall rests on a single opening supported by this column. While the composition of the facade is quite particular for the period due to this combination of unique openings and symmetry, the expression of the bricks themselves is also quite interesting. The facade consists of shades of brown and red rather than a uniform color. A vertical half-and-half arrangement is present in the center of the facade, slightly recessed, which further emphasizes the central symmetry. Constructively, the facade differs from a straightforward cavity wall due to the stepped openings, which multiply the number of edges, as well as the central relief, which contrasts with flat, uniform facades.

The value attributed to this building's facade is then a combination of multiple identifiable features typical of the period: the curved and stepped openings, the composition along a central axis of symmetry, the presence of a column indicating a tectonic approach, and finally, the relief in what is most probably a cavity wall construction.



## 6 Conclusion

This thesis investigates the use of facing brick in residential buildings within the Brussels Capital Region from 1970-2000, addressing the challenge of recognizing and assessing young architectural heritage. Through an extensive survey of housing from this era, our research identifies several key findings and implications.

The analysis reveals that 85% of residential buildings during this period feature brick facades, underscoring the material's regional significance. Predominantly, row houses are the most common typology, followed by villas and apartment buildings.

Our exploration of both representative and rare features of brick facades demonstrates the intertwined nature of criteria such as rarity and representativeness, often linked to similar typological organizations. This highlights the necessity for comprehensive regional studies to accurately apply these criteria in heritage assessments.

Examining buildings currently listed in the inventory reveals a predominant emphasis on aesthetic value, potentially overlooking the historical specificities of the era. Our nuanced approach considers not only facade expressions but also their connections to historical precedents, contemporary architectural theories, and technical aspects like brick manufacturing and construction techniques. This holistic approach provides an initial understanding of the distinctive characteristics of the period.

From 1980 onward, facade expressions combine traditional brick usage, invoking historical continuity through color and texture, with new formal expressions in composition, openings, and volumetric arrangements. This synthesis of elements that simultaneously evoke traditional and contemporary imagery distinguishes the architectural identity of the period in the Brussels Capital Region.

While offering a regional overview, this thesis lays the groundwork for future research. Insights gleaned can inform nuanced assessments of specific brick buildings, advancing the recognition of young heritage beyond aesthetic considerations alone. This study suggests that heritage frameworks should adapt criteria and values to better capture the unique aspects of each period, moving beyond superficial aesthetics toward a more interconnected consideration. By incorporating this approach, heritage assessments can become more precise and relevant, ultimately leading to more effective preservation strategies. Recognition is pivotal as a step toward informing future preservation and protection policies.

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## 8 Annex - Shortlist of 1970-2000 BCR housing

n°	Address	Municipality	Year	Presence in the inventory	Value	Style
1	KASTEELHOF 146	Bruxelles	1978			
2	Av. de la Reine des Prés 35	Bruxelles	1976			
3	Rue du Pâturage 110	Bruxelles	1978			
4	Clos des Trigonelles 20	Bruxelles	1980			
5	Rue François Lesnimo 56	Bruxelles	1972			
6	Rue du Wimpelberg 109	Bruxelles	1987			
7	Boulevard de Smet de Naeyer 526	Bruxelles	1976			
8	Rue de Ransbeek	Bruxelles	1972			
9	Rue du Wimpelberg 111	Bruxelles	1975			
10	Chaussée romaine 479	Bruxelles	1976			
11	Avenue des Liserons 11	Bruxelles	1972			
12	Avenue de la Bugrane 124	Bruxelles	1983			
13	Rue Klippeld 78	Ucde	1996	Yes	Aesthetic	
14	Rue du Sillon 33	Anderlecht	1997			
15	Rue Valère Broekaert 17	Jette	1984			
16	Rue de la Magnanerie 34	Ucde	1989			
17	Clos des Trigonelles 39	Bruxelles	1980	Yes	Artistic, Aesthetic, Historical	Brutalism
18	Rue de Lombartzyde 216A	Bruxelles	1983	Yes	Artistic, Aesthetic	Post-modernism
19	Rue Solleleld 115	Wolluwe-Saint-Lambert	1988			
20	Avenue du Directoire 41	Ucde	1984			
21	Avenue Laure 66	Berchem-Sainte-Agathe	1989			
22	Boulevard de Smet de Naeyer 123	Jette	1978	Yes	Artistic, Aesthetic, Urbanistic	Brutalism
23	Rue de Wansijn 27-29	Ucde	1993	Yes	Aesthetic	Post-modernism
24	Rue Prosper Matthys 47, 49, 51	Forest	1995			
25	Rue Saint Vincent 4	Evere	1989			
26	Clos Bourgmeestre De Keyser 6	Ucde	1986			
27	Rue Papenkasteel 144	Ucde	1988	Yes	Artistic, Aesthetic, Historical	Post-modernism
28	Rue Saint-Norbert 20	Jette	1979			
29	Avenue du Mistral 14	Wolluwe-Saint-Lambert	1989			
30	Rue Louis Isidore Lamey 11	Auderghem	1986			
31	Avenue Heydenberg 31	Wolluwe-Saint-Lambert	1988			
32	Avenue de la Tanche 10	Auderghem	1990			
33	Avenue Jules de Trooz 75	Wolluwe-Saint-Pierre	1977	Yes	Artistic, Aesthetic, Historical	Brutalism
34	Rue de la Pécherie 103	Ucde	1974	Yes	Aesthetic	
35	Rue de la Tarentelle 20	Bruxelles	1991			
36	Chaussée de Gand 442-444	Molenbeek-Saint-Jean	1988			
37	Rue Théodore De Cuyper 162	Wolluwe-Saint-Lambert	1987			
38	Rue du Trophée 20	Anderlecht	1994			
39	Rue Bulins 17	Jette	1980	Yes	Artistic, Aesthetic	
40	Rue Servandoni 21	Bruxelles	1991	Yes	Artistic, Aesthetic	
41	Harenberg 225	Bruxelles	1981	Yes	Artistic, Aesthetic	Post-modernism
42	Rue Adolphe Willemyns 272	Anderlecht	1991			
43	Avenue Joseph van Genegen 12	Wolluwe-Saint-Pierre	1987	Yes	Artistic, Aesthetic, Historical, Urbanistic	
44	Rue Kasterlinden 360	Molenbeek-Saint-Jean	1998			
45	Rue Saint Vincent 81	Evere	1979			
46	Rue du Pâturage 13	Bruxelles	1997			
47	Avenue Victor Gilsoul 34	Wolluwe-Saint-Lambert	1993			
48	Rue Jean-Baptiste Serkeyn 35	Jette	1992			
49	Avenue du V-Day-7	Evere	1981	Yes	Aesthetic	
50	Rue Edouard Gersis 20	Wolluwe-Saint-Pierre	1987			
51	Rue du Château Beyeard 66	Bruxelles	1987	Yes	Artistic, Aesthetic, Historical, Urbanistic	Post-modernism
52	Rue du Bourdon 351	Ucde	1970		Artistic, Aesthetic, Historical, Technical, Urbanistic	Post-war modernism
53	Avenue des Nalades 15	Watermael-Boitsfort	1984			
54	Avenue Yvan Lutens 39	Wolluwe-Saint-Pierre	1994	Yes	Artistic, Aesthetic	
55	Rue de Wansijn 43	Ucde	1991			
56	Avenue d'Itterbeek 252	Anderlecht	1981		Artistic, Aesthetic	
57	Rue du Bourdon 341-343	Ucde	1997			
58	Drève Pittoresque 31A	Ucde	1978			
59	Clos Saint-Georges 2	Wolluwe-Saint-Pierre	1986	Yes	Artistic, Aesthetic, Urbanistic	Post-war modernism
60	Avenue Général Baron Empain 21	Wolluwe-Saint-Pierre	1998			
61	Avenue du Directoire 75	Ucde	1980			
62	Avenue Fond'Roy 78A	Ucde	1976	Yes	Aesthetic	
63	Av. du Directoire 44	Ucde	1981			
64	Chaussée d'Alsemberg 1372	Ucde	1978			
65	Rue du Coq 33-33	Ucde	1982			
66	Clos du Drossart 25	Ucde	1974	Yes	Aesthetic	
67	Avenue Léopold Wiener 33	Watermael-Boitsfort	1995			
68	Avenue d'Itterbeek 208	Anderlecht	1995			
69	Avenue du Directoire 21	Ucde	1983			
70	Avenue Molière 73	Forest	1996			
71	Avenue des Charançons 6	Watermael-Boitsfort	1979			
72	Rue des Pensées 24	Schaerbeek	1998			
73	Rue du Moulin à Vent 52	Evere	1994			
74	Avenue Dolez 241-243	Ucde	1996			
75	Avenue Hellevelt 15-17	Ucde	1980		Artistic, Aesthetic, Historical, Urbanistic	Post-war modernism
76	Avenue Jean et Pierre Carsoel 38	Ucde	1986			
77	Avenue des Grands Prix 84	Wolluwe-Saint-Pierre	1985			
78	Avenue des Grands Prix 86	Wolluwe-Saint-Pierre	1987			
79	Rue de la Cambre 2E	Wolluwe-Saint-Lambert	1989			
80	Rue des Pêcheurs 28	Bruxelles	1993			
81	Rue des Falnes 100	Bruxelles	1993			
82	Moensberg 103	Ucde	1991			
83	Avenue Wannecouter 67	Bruxelles	1989			
84	Avenue Wannecouter 65	Bruxelles	1988			
85	Avenue du Cimetière de Bruxelles 63	Evere	1986	Yes	Aesthetic	
86	Avenue de l'Exposition 254	Jette	1999			
87	Rue Ferdinand Elbers 65	Molenbeek-Saint-Jean	1995			
88	Rue de l'Azur 19	Berchem-Sainte-Agathe	1993			
89	Drève de Nivelles 137	Wolluwe-Saint-Pierre	1989			
90	Rue Ossegem 266	Molenbeek-Saint-Jean	1997			
91	Rue Théodore De Cuyper 166	Wolluwe-Saint-Lambert	1986	yes	Artistic, Aesthetic	Post-modernism
92	Avenue Zaman 103	Forest	1998			
93	Avenue du Condor 30	Molenbeek-Saint-Jean	1999			
94	Rue du coq 35-37	Ucde	1982			
95	Avenue Emile Van Becelaere 121C-D	Watermael-Boitsfort	1990			
96	Rue de la Soierie 17-19	Forest	1992			
97	Clos des trigonelles 7	Bruxelles	1978			
98	Clos des trigonelles 15	Bruxelles	1979			
99	Rue Frans Vervaeck 7	Ganshoren	1980			
100	Rue des Isserands 2-4	Koekelberg	1993			
101	Avenue Antoine de Saint-Eupéry 15-17	Wolluwe-Saint-Pierre	1985	Yes	Artistic, Aesthetic	
102	Avenue de la Bugrane 133	Bruxelles	1981	Yes	Artistic, Aesthetic	
103	Chaussée d'Alsemberg 1374	Ucde	1979			
104	Rue du Château Beyeard 60	Bruxelles	1986	Yes	Artistic, Aesthetic, Historical, Urbanistic	Post-modernism
105	Rue du Bon Pasteur 26	Molenbeek-Saint-Jean	1988			
106	Rue Henri Van Zuylen 92	Ucde	1979			
107	Rue de l'Abbaye de Dieleghem 41	Jette	1993			
108	Rue de Lombartzyde 44	Bruxelles	1991			
109	Boulevard des Invalides 39	Auderghem	1989			
110	Rue de la Rive 26	Wolluwe-Saint-Lambert	1987			
111	Avenue J.P. Rullens 23	Wolluwe-Saint-Lambert	1990			
112	Avenue Wannecouter 69	Bruxelles	1988			
113	Avenue Montgolfier 14	Wolluwe-Saint-Lambert	1978	Yes	Artistic, Aesthetic	Post-war modernism
114	Avenue Louis Vercauteren 9	Auderghem	1971	Yes	Artistic, Aesthetic	
115	Avenue Kamerdelle 28	Ucde	1983	Yes	Aesthetic	
116	Avenue du Vieux Cornet 9-11	Ucde	1980			
117	Avenue Chantemerle 4	Ucde	1974	Yes	Artistic, Aesthetic, Historical, Landscape, Urbanistic	Post-war modernism