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**DOCTOR OF ENGINEERING SCIENCES**

of **Marylise Parein**

The public defense will take place on **Wednesday 17<sup>th</sup> June 2026 at 4pm** in room **D.2.01** (Building D, VUB Main Campus)

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**CAPTURING THE MATERIALITY REGIME AND HERITAGE VALUE OF BUILDINGS FROM 1975-2000. A STUDY OF HOUSING IN THE BRUSSELS-CAPITAL REGION**

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## Abstract of the PhD research

The growing demographic, environmental and renovation pressures on the built environment of the late 20<sup>th</sup> century have intensified the need for a deeper understanding of the materiality of buildings constructed between 1975 and 2000, as well as for heritage assessment approaches capable of capturing their specificities. Despite their number and architectural relevance, these buildings remain poorly studied and insufficiently valued. The thesis identifies three major research gaps: (1) a material knowledge gap, as the materiality of this period—shaped by rapid technological innovation, diversification of building products, and shifts in construction culture—has not been systematically documented; (2) a value assessment gap, since existing heritage frameworks, developed primarily for older buildings, inadequately address late-20<sup>th</sup>-century buildings; and (3) a conceptual gap at the intersection of materiality and value assessment, where no integrated approach exists to translate material knowledge into heritage significance.

To address these gaps, the thesis pursues two main objectives. First, it seeks to determine whether the period 1975–2000 constitutes a distinct materiality regime, by examining how socio-technical, cultural and regulatory developments reshaped material practices. Second, building on these insights, it aims to develop a more nuanced and operational approach to the heritage value assessment of late-20<sup>th</sup>-century buildings, with particular attention to materiality as a conceptual and methodological bridge.

With regard to the first objective, the research adopts a multi-scalar approach. A context-led analysis traces six major developments that reconfigured material practices at the European scale—energy-efficiency and performance engineering; the multiplication of standards and quality assurance systems; advanced production technologies and segmented production chains; mass-customisation; rising environmental and health awareness; and the expanding influence of industry alongside shifting actor roles. A material-led analysis examines three material case studies—PVC window frames, facing bricks, and fibre-cement slates—using archival documentation, technical sheets, norms and standards, patents, professional journals, and promotional material. These case studies reveal how macro-level developments materialised in specific practices related to material composition, properties, production methods, industry organisation, and marketing strategies. The empirical anchor for both parts is a systematic study of Brussels' residential building stock (1975–2000).

With regard to the second objective, the thesis shows that traditional heritage values and criteria require renewed interpretations to become meaningful for late-20<sup>th</sup>-century materiality. Through Brussels case studies, it operationalises alternative readings of a selection of them: technical value as constructive detailing and scientific value as performance-driven knowledge; rarity as configurational uniqueness rather than physical material scarcity; representativeness as typological exemplarity; authenticity as continuity of construction logic; and integrity as coherence and legibility of design intentions. Together, these operationalisations illustrate an approach for assessing this vulnerable and often undervalued built heritage, enabling more informed and materiality-sensitive heritage decision-making.