

METRE

Practical MEthod for Assessing Timber REuse Opportunities

Development of a technical and heritage-based visual assessment protocol to evaluate the structural reuse potential of 19th-century residential timber frames

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Introduction

With the Green Deal, the European Union aims to achieve carbon neutrality and circularity through building renovation and the use of secondary resources. As a major source of carbon emissions, resource consumption, and waste, the construction sector must play a central role. In Wallonia, where construction generates 39% of waste, large-scale energy renovation of historic buildings, often considered as energy-inefficient, creates significant material flows. From an Urban Mining perspective, these flows represent a valuable stock of reusable materials, particularly historic timber, valued for its durability, cultural significance, and carbon storage capacity. However, its reuse remains limited by normative barriers, leading most end-of-life timber to energy recovery.

Objectives

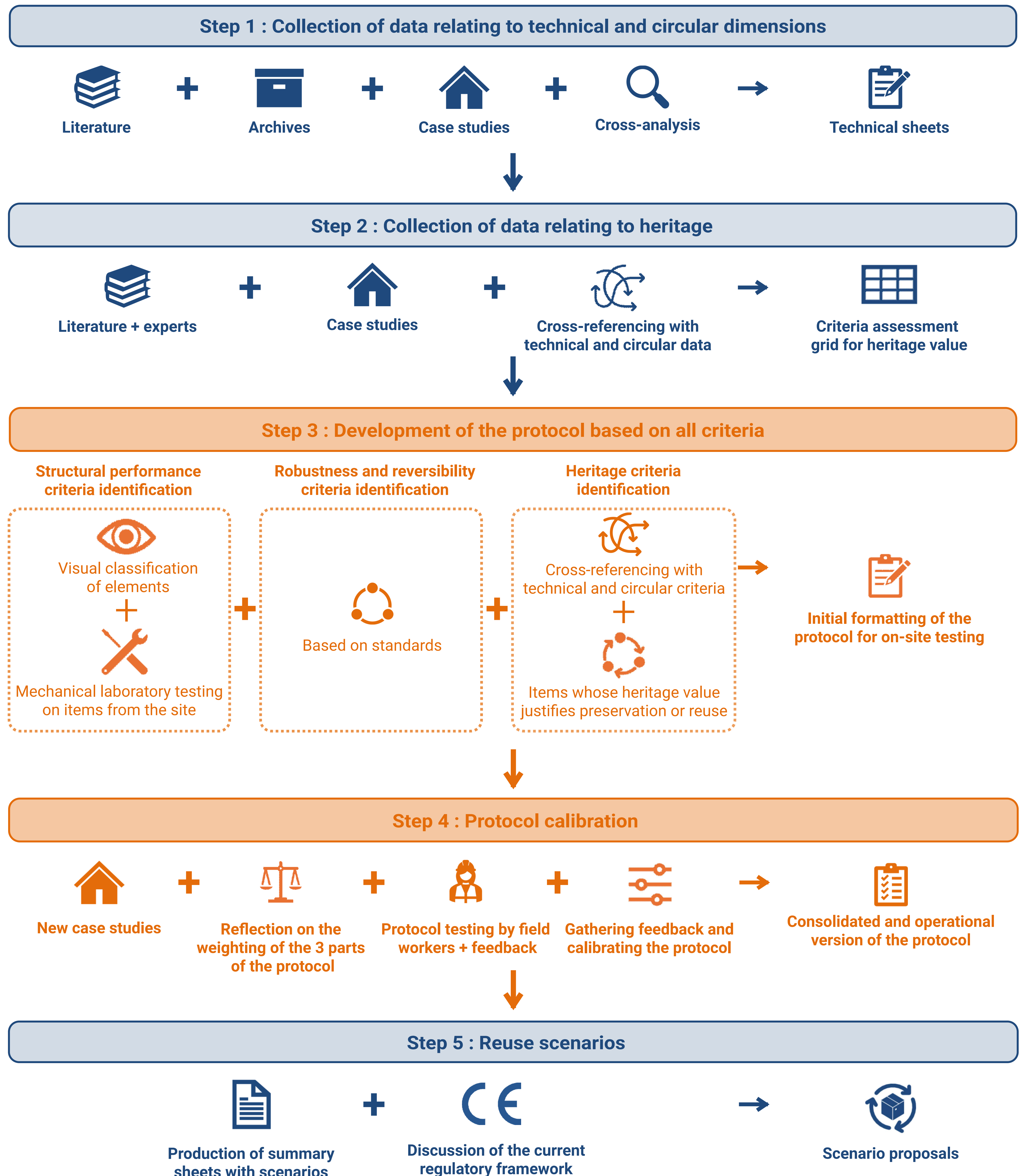
1. Provide **technical knowledge**, on 19th-century timber, which is currently poorly documented, unprotected and threatened by building energy performance requirements.
2. Develop, based on case studies, technical dataset and current standards, the three parts of the **protocol**: technical (structural performance), circular (technical reversibility and future reuse) and heritage (cultural and construction values).
3. Propose valorisation **scenarios** demonstrating that this wood is a reusable resource that is technically reliable, culturally and ecologically relevant.

Deliverables

1. **Technical characterisation** of the Wallonia available resources
2. **Tool** to facilitate reuse practices, without external technical assistance, and at a lower environmental cost
3. **Recommendations** for use and implementation in new projects

Methodological steps

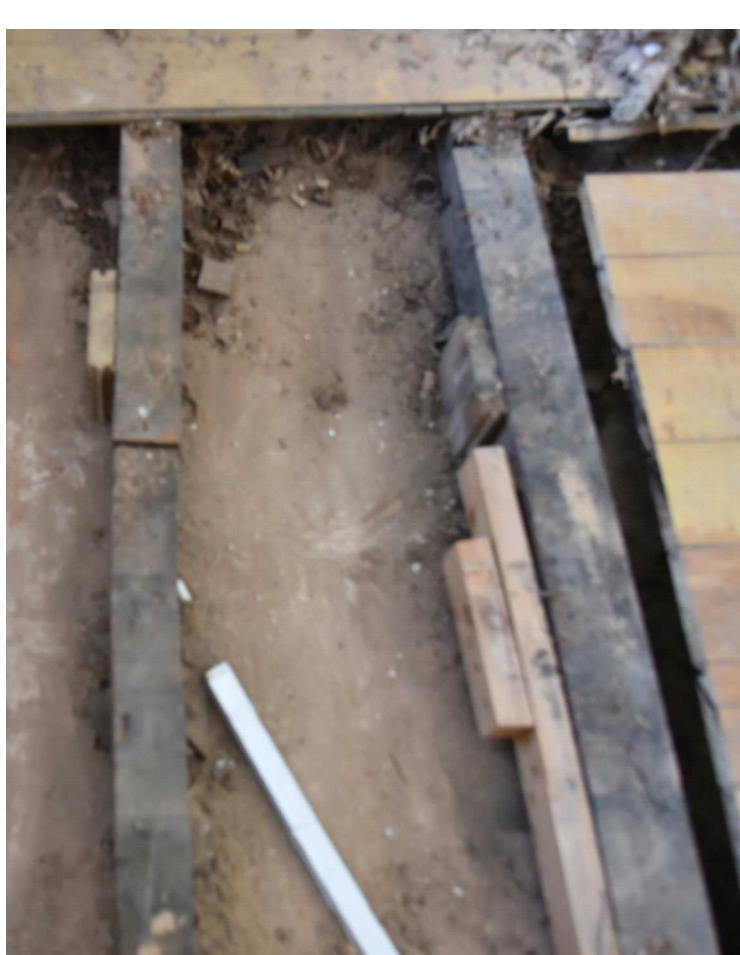
The methodology innovates through a **co-creation approach with renovation and reuse professionals** and an interdisciplinary approach, combining building archaeology, structural engineering and circular construction.



Case studies



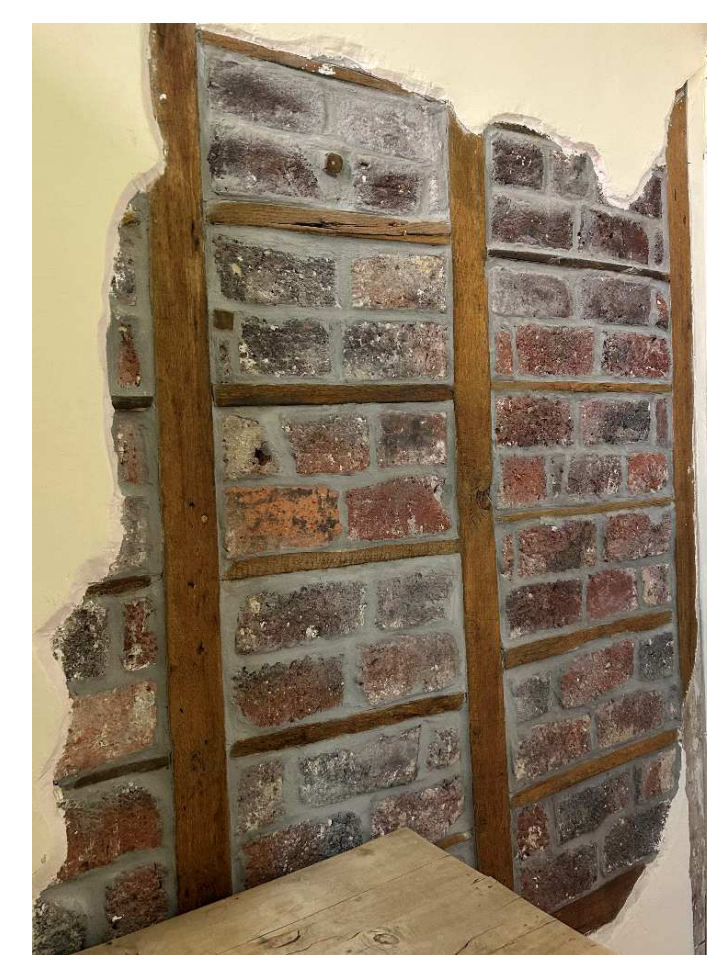
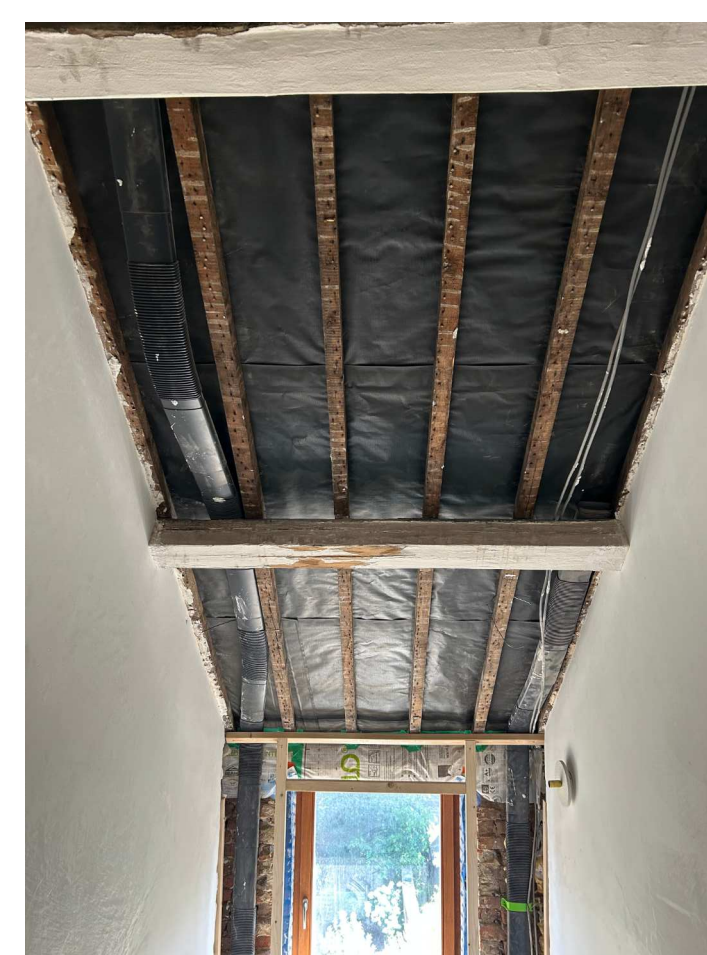
Gembloux - 1860



Liège (Fragnée) - 1900



Liège (Vennes) - 1893



Liège (Center) - XIXths.



Verviers - 1875



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