UCLouvain

larct2162

2026

Building in the Built Environment 2: Working on Existing Buildings

5.00 credits	40.0 h + 15.0 h	Q2

Teacher(s)	Bolle Caroline ;Gobbo Emilie ;
Language :	French
Place of the course	Tournai
Main themes	The course aims to equip students with the skills required to approach projects within existing structures from a material design perspective. Intervention in existing buildings is addressed in all its complexity, synthesizing cultural, material, and constructive considerations, including the architect's environmental responsibility. The course explores a range of intervention strategies—such as conservation, renovation, transformation, extension, reallocation, rehabilitation, deconstruction, and reinforcement—while remaining closely tied to the built object. Students will integrate concepts of environmental impact and circularity into their approaches.
Learning outcomes	**At the end of this learning unit, the student is able to :** **Specific Learning Outcomes** By the end of this course, students will be able to: • Identify, propose, and justify intervention strategies based on the physical and spatial characteristics of the building, its state of conservation, and the objectives of the project (e.g. issues, constraints, regulatory framework), • Compare and evaluate the impact of proposed measures using a multi-criteria approach, including the sustainability of the solutions, • Outline and synthesize the correlation between proposed measures, presenting them clearly and intelligibly, • Design an architectural detail specific to an existing building, • Articulate views effectively, using discipline-specific terminology appropriately. **General Learning Outcomes** In line with the program's learning outcomes (LOs), this course contributes to the development and acquisition of the following LOs: • LO1.1 Prioritize the parameters and issues of a given situation. • LO1.2 Justify the intentions and choices of an architectural project at different intervention scales. • LO1.4 Compose the material elements of a construction or development with artistry. • LO1.6 Integrate Sustainable Development requirements into the design process, at multiple scales. • LO3.3 Understand and integrate scientific and technical knowledge to realize an architectural project. • LO3.4 Understand and assess the environmental, social, and economic consequences of construction and technical choices. • LO4.4 Understand and assess the environmental, social, and economic consequences of architectural choices.
Evaluation methods	As part of this course, students are assessed in two ways: • continuous assessment, including a compulsory assignment to be submitted at the end of the semester (40% of the final mark) • a written exam during the exam period, based in part on the assignment submitted (60% of the final mark). Pursuant to Article 72 of the General Regulations for Studies and Examinations, the course instructor may propose to the jury that a student who has not submitted the assignment within the required time frame be barred from registering for the exam. Note: If generative artificial intelligence (AI) is used, it must be used responsibly and in accordance with academic and scientific integrity practices. This means that anyone who uses generative AI in a manner that does not comply with the uses specified in the course description for the teaching unit in question is committing an irregularity within the meaning of Article 107 of the RGEE (non-personal work produced by the student in the context of an assessment).
Teaching methods	Theoretical presentations Visits Exercises
Content	This course builds on the knowledge acquired in previous courses on construction, and more specifically on the initial diagnosis (LARCT 1362), to integrate current regulatory, environmental, and comfort issues while developing a design that anticipates future changes. The topics covered in this course include:

	• Introduction to the context and issues, as well as a framework for understanding terms related to the renovation of existing buildings and normative and regulatory developments. • **Cultural issues** (from monumental buildings to ordinary architecture): - review of LARCT 1362. • **Programmatic issues**: use value of the building, diversity, developments. • **Construction and technical issues**: combining the specific features of the existing building, performance targets, pathologies. • **Energy and comfort issues** (operational phase - PEB): thermal and envelope performance, thermal and seasonal zoning. • **Environmental, social, and economic** issues: life cycle(s), demolition, materials and construction techniques (material stocks and flows), maintenance/upkeep, reversibility, circularity, etc. • Identification of possible intervention strategies using a multi-criteria approach concerning the issues mentioned above.
Inline resources	All information is shared on MOODLE: • Course plan and structure • Course materials posted online after each class • Useful resources
Bibliography	Carassus, J. (2015). *Rénovation énergétique des bâtiments : enjeux, pratiques, stratégies*. Paris : Le Moniteur. Day, K. (2012). *Sustainable retrofits: Improving buildings for energy-efficiency and sustainability*. Hoboken, NJ: Wiley-Blackwell. Feilden, B. M. (2003). *Conservation of historic buildings* (3e éd.). Oxford: Butterworth-Heinemann. Giebeler, G., Musso, F., Fisch, R., Petzinka, K.-H., Krause, H., & Rudolphi, A. (2012). *Rénover le bâti: Maintenance, reconversion, extension* (Atlas de la construction). Basel: Birkhäuser. Outrequin, P. (2018). *Rénovation durable : améliorer sans dénaturer*. Paris : Le Moniteur. Zucchi, B. (Ed.). (2016). *Building reuse: Sustainability, preservation, and the value of design*. New York: Routledge. Rotor asbl. (2014). *Deconstruction and reuse: An economic study*. Brussels: Rotor. Buildwise (Centre Scientifique et Technique de la Construction). (2011). *NIT 251: Rénovation énergétique des bâtiments existants*. Bruxelles: CSTC. Bruxelles Environnement. (2019). *Guide de la rénovation durable*. Bruxelles: Bruxelles Environnement. Agence wallonne du Patrimoine (AWaP). (2018). *Guide pratique pour la restauration et l'entretien du patrimoine bâti*. Namur: AWaP.
Faculty or entity in charge	LOCI

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Architecture (Tournai)	ARCT2M	5		