DESIGNING CHANGE – THE SHAPE OF TRANSFORMATION

19TH VENICE ARCHITECTURE BIENNALE

ARCHITECTURE FOR ECOLOGICAL REFORM

École Nationale Supérieure d'Architecture et de Paysage de Lille

Université de Lille

NAME OF THE UNIVERSITY : Ecole Nationale Supérieure d'Architecture et de Paysage de Lille / Université de Lille

SUPERVISING PROFESSOR: Vincent DUCATEZ, senior lecturer, architect

SPECIFICATION OF THE SEMESTER: Master, architecture Studio

MOTIVATION:

This project studio is part of the Lille School of Architecture and Landscape's desire to train our students for an intellectual and professional future that aims to achieve carbon neutrality by 2050.

Thanks to the non-profit association HABITER2030, this project studio benefits from a broader and unique multidisciplinary framework: architecture and engineering students work together, guided by input from users, local authorities and professionals.

This teaching is in continuity with our winning project at Solar Decathlon Europe 2019, for which we built a full-scale demonstrator showing how an ordinary townhouse from the industrial era could become a positive energy house.

This project is also in line with the school's research laboratory and contributes to our testing of novel teaching methods for the Interreg NSR Circular Trust Building project.

We believe that our students and our school will benefit enormously from the opportunity to attend this summer school. It will be an opportunity for further learning, to share our experience, giving us a new international perspective on our commitment to changing education.

LOCATION OF THE ASSIGNMENT : Lille Metropolitan Area - France

FORMAT AND DURATION OF THE ASSIGNMENT: semester project, 20 tutored days over 14 weeks

DEADLINE FOR SUBMISSION OF THE DESIGN TASK TO THE UNIVERSITY : end January 2026

NUMBER OF STUDENTS : 18

INDIVIDUAL OR GROUP WORK (APPROXIMATE GROUP SIZE FOR GROUP WORK) : mainly group work with individual tasks.

Our wining project at Solar Decathlon Europe 2019

Building with raw earth workshop

Student made heliodon to complement digital tools

Renovating a coalmine building with innovative climate control strategy, bio-based and reused materials

ARCHITECTURE FOR ECOLOGICAL REFORM

Teaching module for the autumn semester 2025
Course: Architecture - Masters - Subject: Materiality - Project studio – 13 ECTS
Tutor: Vincent Ducatez, senior lecturer – 18 students

KEYWORDS:
ARCHITECTURE / ECOLOGY / CARBON NEUTRALITY / MULTIDISCIPLINARITY / ECO-DESIGN

LEARNING GOALS AND SKILLS TO BE ACQUIRED:
1. To adopt a research-based approach to the design process (diagnosis, state of the art, investigation, analysis, hypotheses, verification protocol)
2. To practise multidisciplinary (learning to prepare, meet, exchange, listen, analyse and synthesise)
3. Formulate and communicate architectural proposals (to define and prioritise problems, to use the architect's resources and tools, to translate into an architectural project, to share).

SUMMARY:
The need for ecological reform challenges standardised practices. The issue is deeply architectural: the 'phenomenal' experience of material, the equally 'phenomenal' experience of the comfort of the body in space, the architectural dimensions of thickness and the tectonics of construction, the social and economic issues of comfort, carbon neutrality, community-based decision-making and the changing role of the architect in the face of evolving technology. The Studio's ambition is to prepare you for the challenges your generation faces over the next quarter of a century. To do this, you will work with engineering students on a unique multidisciplinary project. Thanks to the academic, technical and local authority partnerships of the HABITER2030 association network, the real world will be tangible. Starting from the existing building stock and in conjunction with research, the transfer of knowledge to new construction will always be present.

CONTENT:
Will architecture be about the increasing production of materials or the intelligent and frugal improvement of what already exists?

The European Union is aiming for carbon neutrality by 2050. In France, this is already reflected, among other things, in the laws on the circular economy, zero over and above the expected reduction in energy consumption, there are progressive thresholds leading to carbon neutrality through a gradual reduction in the carbon footprint of buildings, starting with a one-third reduction by 2031. It's radical and very near.

Add to this a confusing and multifaceted context characterised by demographic change, the decline of biodiversity, threats to our democracies, work in the age of robotics and uncertainties about the impact of climate change. The next quarter of a century is your future as professionals and citizens.
This course places architecture at the heart of ecological reform. The issues at stake are technical and economic (the imperative of scaling up efficient carbon

Modeling building with cob

Visiting factories

Scale 1/1 prototype reusing existing windows

neutral solutions), but above all human, spatial, social and urban. Beyond the threats, there are many weak and optimistic signals to be heard. The future of your generation is taking shape around a real revolution in the art of designing our living environment.

This studio will be based on research and in particular on the four scenarios of the French Environment and Energy Management Agency (ADEME) to achieve carbon neutrality by 2050. It is a continuation of the multidisciplinary work carried out over several years by the students and the network that supports them: our winning project at Solar Decathlon Europe 2019, the applied research project Renostandard and the Méta Plateau Project (MPP) led by the Habiter2030 association (https://www.habiter2030.com/) and its network. This framework offers you a unique and innovative learning format: It involves working in multidisciplinary teams with students from INSA Hauts-de-France (strategy and thermal simulation, civil engineering, prototype testing) and ENSAM (electrical production and consumption, industrialisation) - other partners to be confirmed.

In addition, the HABITER2030 network (CD2E, professionals, companies, social landlords, local authorities) and its resources will be mobilised to provide managerial and logistical support, access to materials and their implementation. This workshop is linked to the exploratory modules and scientific tutorials of the 'Materiality, Thought and Constructive Culture' unit. You will be encouraged to link the themes addressed in the workshop to the introductory research proposed in the different seminars of the school. Possible questions are origin and typological evolution (History and Theory), territorial inscription and local resources (Territory), interaction between actors and design processes (Complexity and Design), materiality, tectonics and morphology (Materiality). The aim is to closely link project and research in a fruitful dialogue and to enable those who wish to do so to present a thesis-based diploma project.

STUDY SITES 2025/26:

The study sites and programmes are chosen each year from the rich regional heritage studied at ENSAPL (the former coalfield, buildings from the industrial era, 20th century heritage) based on proposals from members of the HABITER2030 association. This year, the City of Lambersart, has selected the "Carnoy-Liberté" district. This area forms the north-western edge of the city. It is an undefined sequence of mixed neighbourhoods with a strong school and housing vocation, bisected by a railway line. In Roubaix, the city has identified three dilapidated blocks where industrial heritage meets high levels of poverty.
This studio is linked to the Circular Trust Building project of the Interreg North Sea programme (see www.interregnorthsea.eu), which promotes circularity to reduce the footprint of building materials by 25%. The studio will benefit from funding for specific actions currently being defined (lecturers, workshop, study tour, study days, dissemination, etc.).

METHOD OF ASSESSMENT:

The principle of assessment is that mainly of continuous co-assessment of skills throughout the semester. It will be based on a 'design report' that the student knowledge and methods, illustrated by his/her graphic production. The

Reusing components from the office world in a domestic situation

Communicating

Straw based insulation, reused beams, thermal curtain

weighting of the assessment of the different skills is 25% for the research approach, 25% for the interdisciplinarity and 50% for the architectural project.

PERSONAL WORK REQUIRED
outside the 168 supervised hours (144 studio hours + 24 hours dedicated to the scientific module):

Diagnosis: quantity and sensitive surveys, simulations, modelling: 5 x 8 hours = 56 hours including 3 full days in the first week of the semester
State of knowledge (documentary research and organised feedback): 2 x 8 hours = 16 hours
Initial hypotheses (questions, methods, initial diagrams): 2 x 8h = 16h -
Consolidation of hypotheses (verifications, diagrams and modelling): 4 x 8h = 32h

For those planning to prototype part of their project:
- Implementation protocol (search for industrial partners, development of manufacturing and testing protocols): 3 x 8h = 24h
- Full-scale prototyping: 3 x 8h = 24h (3 full days in the penultimate week at the end of the semester)
- Presentation: 3 x 8h = 24h (3 full days in the 3rd intensive week)

For those not prototyping:
- in-depth study of the project, graphic presentation, communication (including 3 full days in the penultimate week at the end of the semester): 6 x 8h = 48h
- Presentation: 3 x 8h = 24h (3 full days in the 3rd intensive week)

BIBLIOGRAPHICAL REFERENCES:
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BANHAM, Reyner. The Architecture of the Well-Tempered Environment (trans. Antoine Cazé). 1st French edition, Orléans: HYX (Collection Restitution), 2011, 336p. [The Architecture of the Well-Tempered Environment, Architectural Press,1969]
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[Anon.], 'Isoler avec les matériaux biosourcés pour un meilleur confort d'été' (Insulating with bio-based materials for better summer comfort), *Ordre des Architectes: Les Cahiers de la Profession*, 71, 2021, p.22-31
ADEME, Les futurs en transition, https://www.ademe.fr/les-futurs-en-transition/les-scenarios/

PLANNED COURSE MATERIAL:
- Available measured survey and diagnostics of the building under study.
- Short courses on various aspects by Vincent Ducatez or guest speakers.
- Support from the HABITER2030 association for multidisciplinary coordination and communication.
- Full-scale workshop and model workshop