CERIS : Civil Engineering Research and Innovation for Sustainability

RMB – Re-use of Modernist Buildings. Design Tools for Sustainable Transformations

Summary

Demographic and climate chance has resulted in huge qualitative and quantitative challenges and demands for the European building sector. The need for suitable and affordable housing in the city centres and urban agglomerations is increasing and cannot, and should not, be fulfilled with new constructions only. As a matter of fact, the bigger part of this major task for the building industry should be realized through the refurbishment of the existing housing stock, as well as conversion from other building typologies such as warehouses and offices. Most of this to be converted or refurbished building stock dates from the 20th century, mainly the post war period.

We consider a European wide scope in architectural education for both students and teachers is absolutely necessary to meet these professional challenges. This Project: Re-use of modernist buildings - Design tools for sustainable transformations (RMB), aims to integrate different European approaches and knowledge on conversion and refurbishment of this specific post war era. The partners in RMB contribute with specific knowledge and input regarding spatial patterns, cultural heritage, climate and construction principles, social and technical evaluation and the monitoring of built spaces. Thus, creating a well-balanced adequate curriculum for preparing graduates for this international job market and strengthen the European common ground in this specialized expertise.

Figure 1. RMB.

Due to discrepancies in the European job market and employment situations, graduates are well aware of the fact that they may have to leave their country to work in a different country or to be able to work in their countries but in international projects. In several international networks Bachelor's and Master's students already have the opportunity to get familiar with the challenges and requirements of the global job market in the building sector. This experience related to language training, intercultural and interdisciplinary competences are very much appreciated by the students as relevant for their professional future. RMB will add an extra level to this by not only offering a coherent international study program, combining the local and the international but also by inserting in this curriculum cooperation with industry and with other institutions to investigate and solve relevant practical, technical and societal questions. Students get acquainted with industry and with praxis via internships, graduation assignments, conferences, workshops and guest speakers. This connection between academic education and the practice is perceived as an asset for the future profession of the graduates.

The participating partners are convinced their cooperation can better prepare graduates to the requirements of a European and international job market. 'The knowledge economy needs people with the right mix of skills: transversal competences, e-skills for the digital era, creativity and flexibility and a solid understanding of their chosen field'. RMB is essentially targeted on a specific field of knowledge, reuse and transformation that requires many cross inputs from a variety of fields, too much for most single universities to offer. The program brings transversal competences but links them and makes them operative in transforming our building stock. Thus supporting growth and jobs, supporting the agenda for the modernization of Europe's higher education systems. So first of all students will benefit from this, secondly the building industry as well as authorities will profit, the Universities can lay more focus on specialized knowledge without losing the holistic aspects and of course in the end the urgent European topics on human habitat will find better solutions. RMB makes knowledge and existing teaching formats accessible on a European level. Specific parts from the curricula of the partner institutions are inserted into a comprehensive well balanced educational pack. The combination of the individual contributions forms a unique program pool. This program can be digested as a whole, as consecutive or specialized master or can function as a pool of specialized items that can be electives for the existing master courses within the individual schools. The teaching formats trough e-learning flipped classroom concepts are not that innovative in itself anymore, although they certainly contribute to the execution of the EU targets in particular in what concerns the Higher Education Modernization Agenda's priority areas and the implementation of the 2013 Communication on opening up education. RMB also explores

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Leading Institution

TH-OWL – Management University of East Westphalia-Lippe (Germany)

Partners

UC – University of Coimbra (Portugal), IST – Instituto Superior Técnico (Portugal), Istanbul Technical University (Turkey), University Antwerpen (Belgium) Docomomo International (Portugal), TERI – The Energy and Resources Institute (India)

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www.th-owl.de/gestaltung/international/projekte/rmb-projekt/projekt-rmb/

combinations of traditional e-learning forms, on site events such as conferences and workshops as well as extended very innovative e-learning options in digital fabrication and building integrated management (BIM). It improves the possibilities of a remote teaching in design education, which is not self-evident up till now. The results not only stay within the schools but are disseminated to a wider audience through open courses, open sources and best practice syllabi.