

## **HIBIWOOD – GRANT ERASMUS+ EDUCATION WITH PBL METHOD IN INNOVATIVE STRUCTURAL SYSTEMS ON ARCHITECTURE OF TIMBER BUILDINGS**

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### **ABSTRACT**

The ERASMUS+ program is the European Union program which goal is "supporting students, teachers, volunteers and lecturers to raise their competences. Will also be crucial for students until 2025. for planned creating European Education Area. It will allow EU to provide access to education and courses on highest possible level for all young people, will support an easy movement between scholar systems among different countries, as well as access to job opportunities in Europe ”[1].

As part of this program, the Erasmus+ HiBiWood grant, Sustainable, energy acquisition, wooden, sustainable, High-Performance Building Solutions in Wood) [2] was created, which task is to develop a strategy of introducing sustainable building materials – prefabricated engineered timber elements for erection sustainable, energy-efficient buildings. As part of this grant, the Faculty of Architecture of the Cracow University of Technology cooperates with a consortium of: Rigas Celtniecibas Koledza RBC Latvia (Lider), FH-Campus Wien - Austria, Hameen Ammattikorkeakoulu Oy - Finland, Klaipedos Valstybine Kolegija - Lithuania, Study and Consulting Center - Lithuania. The HiBiWood project is part of the current of Euro-integration and Euro-education

streams in the field of research and educational activities. The goal is to create innovative interdisciplinary elective education module, an e-learning course with PBL (Project Based Learning) methods [3,4] for students, teachers and stakeholders for rising their competences in a field of sustainable, high-performance building technologies in timber. The goal is also to grant access to the project results for local, country, European and international research groups [2].

The project based learning (PBL) method used in the grant is to 'teach through the implementation of projects. It is a method of providing knowledge and qualification of competences through independent student work in primary described time, in order to solve a problem, that is to prepare a project "[3].

The PBL method not only helps to expand sharing, it also gives the student the opportunity to develop many soft skills, like: "working in a group, synthesizing information from different sources ,decision making and taking responsibility for them, planning and organizing work with time managing and keeping deadlines. This method also enables the art of argumentation - formulating and expressing ones opinions. It also shows what a rehearsal and speaking process looks like, which is very important to get the foundation for your own personality "[3].

Participants in working with PBL method are gaining knowledge in more active and practical ways than present, traditional way, and they learn skills of individual, creative and self-critical thinking. Teacher have a new task: He becomes a leader of an independent way of getting and implementing knowledge, highlighted by Koncjusz's maxim: "Tell me and I will forget, show me and I will I'll remember, let me do it myself and I will understand"[3].

Using this new tool under the grant EU project Erasmus+ (HiBiWood) "Sustainable, high-performance construction solutions in wood" - PBL, participation in seminars, training and workshops and additionally in lectures by Professor Mark Anderson (University of California, Berkeley) and Professor Peter Anderson (California College of the Arts, San Francisco) titled "Mass Timber" as part of the Visiting Professors Program at the Faculty of Architecture of the Cracow University of Technology [2] made it possible to collect materials, describing outcomes and developing of a new educational program about sustainable, energy effective timber buildings, which can be designed and erected with eco-friendly timber laminated materials [5].

"We are still using mostly steel and concrete materials and components to fill structural, fire-safety, humid and economical requirements. Systems, which combine concrete, steel and timber parts are capable to

introduce sustainable structural issues for tall buildings, and to improve erecting process and functioning of a building in future years. In many countries architects and structural engineers are trying to include timber as an equal material for over 80m buildings. Education of engineers is unfortunately still focused on steel and concrete technologies for this type of structures. Timber elements are preset in education and on a market but mostly as glulam elements of wide span structural elements in buildings not higher than 20m. To meet work market's needs it is necessary to prepare students for designing, rising and managing modern, high-performance tall buildings in wood.”[2].

## REFERENCES

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