



WORKSHOP 1 - ASSIGNMENT

DESIGN OF RESIDENTIAL TIMBER BUILDING (3-4 FLOORS)

The 30 students are divided into six international and multidisciplinary teams. Each team consists of three architects along with two students from the fields of civil engineering and/or building site management.

Task formulation

The main task during the O2 intensive course in Vienna is to design a timber building with residential units, featuring adaptable floor plans and convenient access to outdoor spaces. The building should have three to four stories, specifically tailored to the requirements of young people and families. The design should encompass individual flats ranging from 30 to 45 m², as well as larger units approximately between 60 and 90 m², with the option to merge two smaller flats into a larger one. The design also should incorporate shared areas, communal rooms, gardens, and a bicycle storage room to enhance the usability of the residential space and staircase.

The construction should meet the criteria of an Austrian construction class III, with a maximum building height not exceeding 11 meters. Additionally, the design needs to prioritize efficiency and affordability, employing innovative serial or modular construction methods while ensuring architectural quality and maximizing resource conservation throughout production, construction, operation, and dismantling phases. The sustainability concept of the project should emphasize life cycle considerations and highlight the importance of resource-saving practices, dismantling processes, and recycling for future reuse.

Documents to be prepared for the final presentation:

1. A3-Folder with the following contents:
 - Site plan, 1:500 (urban concept)
 - Floor plans, 1:200 (of one of the buildings/parts of the building, showing the different flat types)
 - Sections, 1:200
 - Plans with the structural grid (explanation of the static system)
 - Calculation of the vertical and horizontal load transfer
 - Partial section through the façade, 1:50
 - Assembly/joining technology, degree of prefabrication.
 - Connection details, 1:5, 1:10 (material selection)
 - Calculation of the thermal transmittance of the constructions /Explanation of thermal bridges
 - Concept: Heat / Sound / Moisture management & Fire resistance
 - Dismantling and flexibility concept
 - Sustainability concept
 - Photo collages, renderings, sketches, explanatory text



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2. Power Point presentation
3. Physical model, 1:500

Type of assessment: group work (international teams, group of 5 students)

Learning materials: Course 1

Number of hours: 50h

Learning Outcome: The task provides the students with profound understanding of timber construction systems, including their load-bearing characteristics and their effects on design requirements. This knowledge is successfully incorporated into the design process, leading to the creation of multi-storey timber buildings with outstanding architectural quality.

Applied during: O2 intensive course in Vienna, Austria (September 2021, Host University: FHCW)



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