

PROPOSALS FOR TOPICS OF DIPLOMA THESES for undergraduate students of the Civil Engineering Structures course

Unit:

Institute of Building Engineering

Department of Fundamentals of Building

NOTE: In the Department of Fundamentals of Building, there is a possibility to arrange a topic of the thesis with a supervisor, taking into account the specified interests of a diploma student.

Supervisor	Thesis topic	Thesis scope	Speciality
dr inż. Agnieszka Kaliszuk-Wietecha	Energy map of multifamily building with analysis of the results		CEM, CES, SB
	Energy audit and thermomodernization of the historic building for a given object		CEM, CES, SB
	The energy performance of a building on the specific example (eg.: multi-family house, preschool, school, etc.) before and after thermal modernization based on energy audit of the		CEM, CES, SB
	The project of multifamily passive building.		CEM, CES, SB
	Raising the energy standard of the historical building.		CEM, CES, SB
dr inż. Szymon Firląg	Optimizing the cost of construction of single-family plus energy house		
	Integrated assessment of the impact of the building on the environment		
	Minimizing heat loss through thermal bridges		
	Selecting the economically optimal energy standard of building		
	Deep renovation of building		
	Adaptation of the multi-family building to the NZEB		
	How to meet the requirements NZEB?		
	The project near zero energy building		
	Technical aspects of deep renovation		
	The use of RES in buildings		
	Closed circular economy in construction		
	Adapting buildings to climate change		
	Integrated environmental assessment of buildings		
	Sustainable office buildings, LEED, BREEAM certificates		

dr inż. Szymon Firląg	Dynamic building simulations		
	Quality of the indoor environment in buildings		
	Impact of buildings on outdoor air quality		
dr inż. Wojciech Terlikowski	High rise buildings and sustainable development		
	Design of a high rise building in a selected shape, selected structural system, selected technology, including structural assessment of selected structural members.		
	Design of a high rise building considering energy efficiency (curtain walls, wind turbines etc.), including structural assessment of selected structural members		
	Design of a selected social service building in a selected technology, including structural assessment of selected structural members.		
	Design of a revitalisation of selected structure or building (renovations, modernisations, superstructures, strengthening, changes of functions, adaptations).		
	Design of a revitalisation of a historical or monumental structure or building		
dr inż. Piotr Narloch	Designing physical properties of building materials and building partitions		SB
	Assessment of the feasibility of using natural or recycled building materials in temperate climates		SB
	The project of thermal modernization of the existing building		SB/CES
	Low-energy building design		SB/CES
dr inż. Anna Al Sabouni-Zawadzka	Project of a timber skyscraper		CES
	Structural analysis of a timber tower		CES
	Deployable tensegrity structures		CES
dr inż. Jan Pełczyński	Modelling of timber connections		CES
	Project of a timber structure with nontypical geometry		CES