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# DISSERTATION RESEARCH THEMES DOCTORAL STUDIES ADMISSIONS FA CTU ACADEMIC YEAR 2025/26

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Doctoral Study Programs

**ARCHITECTURE AND URBANISM**

FIELDS OF STUDY

**AKT** / Architecture, Building and Technology →

**ATT** / Architecture, Theory and Creation →

**DAPP** / History of Architecture and Monument Conservation →

**UUP** / Urban Design and Spatial Planning →

**SMART CITIES** →

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In Prague 30th of March 2025 | Admission procedure →

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**FACULTY  
OF ARCHITECTURE  
CTU IN PRAGUE**

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**Program**

**ARCHITECTURE  
AND URBANISM**

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**Studie Field**

**ARCHITECTURE,  
BUILDING AND  
TECHNOLOGY**

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**Theme of Research**

→ **Timber Architecture – Limits and Possibilities,  
the Way to Sustainability and Efficient Architecture**  
Ing. arch. Marek Pavlas, Ph.D.

**Theme of Research**

**TIMBER ARCHITECTURE – LIMITS AND POSSIBILITIES,  
 THE WAY TO SUSTAINABILITY  
 AND EFFICIENT ARCHITECTURE**

**Summary**

Demand for multi-storey wooden buildings is growing. However, the idea that it is not possible to build wooden buildings with more than two floors is still strongly rooted. Objectives and main points: To show real limits of wooden construction. To point out the importance of using wood for larger buildings in the areas of: Environment, Speed and efficiency of construction, possibilities of prefabrication, Saving of human resources, Construction accuracy, Link to the use of BIM. Proof of hypotheses on the basis of examples of realized buildings. The aim of the work will be to contribute to a change in thinking about the possibilities and limits of wooden architecture. Research area: Finding optimal ways to build multi-storey wooden buildings in terms of acoustics, fire safety, statics and building costs. The topic will be adjusted according to the specific student's interest and needs.

**Program**

☒ Architecture and Urbanism [ ] Design [ ] Smart Cities

**Field of Study**

☒ AKT [ ] ATT [ ] DAPP [ ] KA [ ] UUP

**Form**

[ ] Full-time ☒ Combined

**Number / Department**

15 123 / Department of building construction I

**Supervisor**

Ing. arch. Marek Pavlas, Ph.D.

**Supervisor – Specialist**

**Grant Connection**

**Related Department's Priority**

research on current development in the field of timber architecture; relation to the teaching in courses: Building Materials and Civil Engineering (I–VII)

**Requirements for Applicant**

The student will demonstrate an interest in the subject based on the results of previous studies or architectural practice. The student is expected to be involved in the teaching process. The topic is offered only for the combined form of study.

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**Program**

# **ARCHITECTURE AND URBANISM**

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**Zaměření**

# **ARCHITECTURE, THEORY AND CREATION**

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**Theme of Research**

- **Sustainable Energy Sources from the Perspective of Architecture**  
doc. Ing. arch. Martin Čeněk, Ph.D.
- **Modern and Contemporary Architecture  
within the Frame of Nature**  
doc. PhDr. Jana Tichá, Ph.D.

**Theme of Research**

**SUSTAINABLE ENERGY SOURCES  
FROM THE PERSPECTIVE OF ARCHITECTURE**

**Summary**

Since 2017, the Department of Architectural Design II has been involved in research on the application of photovoltaic systems in architecture within the Centre for Advanced Photovoltaics (CAP). Since 2024, it is part of the inter-university project OP JAK Energy Conversion and Storage (Eco&Stor). The main focus of the research is Building-Integrated Photovoltaics (BIPV) and its potential in sustainable architecture. The 2nd area of research focuses on the possibilities and criteria for the use of PV systems in different types of urban environments. The candidate will actively participate in ongoing research on BIPV and its potential in future architecture, and further develop the research on urban environments in relation to sustainable energy sources: application, role of environment character, architectural design, social context, user habits, energy needs and role of the architect.

**Program**

☒ Architecture and Urbanism [ ] Design [ ] Smart Cities

**Field of Study**

[ ] AKT ☒ ATT [ ] DAPP [ ] KA [ ] UUP

**Form**

☒ Full-time ☐ Combined

**Number / Department**

15 128 / Department of Architectural Design II

**Supervisor**

doc. Ing. arch. Martin Čeněk, Ph.D.

**Supervisor – Specialist**

**Grant Connection**

Konverze a skladování energie (ECO&Stor) – Energy Conversion and storage (OP JAK, CZ.02.01.01/00/22\_008/0004617)

**Related Department's Priority**

sustainable architecture

**Requirements for Applicant**

Interest in sustainable architecture, basic knowledge of photovoltaic systems and sustainable energy sources. Knowledge of simulation softwares is an advantage. Proficiency in English required.

**Theme of Research**

**CONTEMPORARY ARCHITECTURE  
 AND NATURAL WORLD**

**Summary**

The research will be focused on the relationship of contemporary architecture and living nature as manifested in our environment created or modified by human design in full array of scales from single home landscape. The changes of architectural production in the 21st century will be studied in relation to environmental turn and changes in lifestyle.

**Program**

☒ Architecture and Urbanism [ ] Design [ ] Smart Cities

**Field of Study**

[ ] AKT ☒ ATT [ ] DAPP [ ] KA [ ] UUP

**Form**

[ ] Full-time ☒ Combined

**Number / Department**

15 113 / Department of History and Theory of Architecture

**Supervisor**

doc. PhDr. Jana Tichá, Ph.D

**Supervisor – Specialist**

**Grant Connection**

**Related Department's Priority**

environmental turn and architecture; contemporary architecture theory; landscape architecture theory

**Requirements for Applicant**

Interest in research of architecture in transdisciplinary context of social sciences and humanities, basic orientation in contemporary architecture theory/landscape architecture theory. Background in landscape architecture is an advantage, not a necessity.

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**Program**

# **ARCHITECTURE AND URBANISM**

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**Field of Study**

# **HISTORY OF ARCHITECTURE AND MONUMENT CONSERVATION**

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**Theme of Research**

- **History of Architecture in the Perspective of Feminist Theories**  
Ing. arch. Mgr. et Mgr. Klára Brůhová, Ph.D.
- **Architecture of World Expositions in the 19th Century**  
prof. PhDr. Pavel Kalina, Ph.D.
- **Neo-Renaissance of the 19th Century  
as a Global and Regional Phenomenon**  
prof. PhDr. Pavel Kalina, Ph.D.

**Theme of Research**

**HISTORY OF ARCHITECTURE  
 IN THE PERSPECTIVE OF FEMINIST THEORIES**

**Summary**

The topic 'History of Architecture in the Perspective of Feminist Theories' is deliberately broad, as it is assumed that a more detailed specification of the focus and methodology would take place in collaboration with the specific candidate. The doctoral thesis may address the specific conditions of women in architecture, it may take the form of e.g. a monographic research on a particular female architect, institution or office, or it may focus on answering more theoretical questions concerning e.g. critical reflection on the formation of the canon of architectural history, the theme of collaboration within architectural practice, etc. Temporally, the research should focus on the history of 20th century architecture or part of it.

**Program**

☒ Architecture and Urbanism [ ] Design [ ] Smart Cities

**Field of Study**

[ ] AKT [ ] ATT ☒ DAPP [ ] KA [ ] UUP

**Form**

☒ Full-time ☐ Combined

**Number / Department**

15 113 / Department of Theory and History of Architecture

**Supervisor**

Ing. arch. Mgr. et Mgr. Klára Brůhová, Ph.D.

**Supervisor – Specialist**

**Grant Connection**

event. Stavoprojekt 1948–1953. Collectivization of architectural designing and its imprint in the memory of Czech landscape and cities. (MK ČR, NAKI III, DH23P03OVV004, 2023–2027, stavoprojekt48.cz)

**Related Department's Priority**

history of modern architecture; critical reflections on the architectural canon; women in architecture; Czech post-war architecture

**Requirements for Applicant**

Ability to work with scientific texts in English, critical thinking skills. Basic knowledge of theses and arguments in the field of critical theories and feminism. Knowledge of 20th century architectural history.



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**Theme of Research**

**ARCHITECTURE OF WORLD EXHIBITIONS  
IN THE 19TH CENTURY**

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**Summary**

The research will focus on the architecture of world exhibitions and similar events held at a regional level. The research will include not only the architecture, its typology and its construction, but also its media image and the overall social context.

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**Program**

☒ Architecture and Urbanism ☐ Design ☐ Smart Cities

**Field of Study**

☐ AKT ☐ ATT ☒ DAPP ☐ KA ☐ UUP

**Form**

☐ Full-time ☒ Combined

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**Number / Department**

15 113 / Department of History and Theory of Architecture

**Supervisor**

prof. Pavel Kalina, Ph.D.

**Supervisor – Specialist**

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**Grant Connection**

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**Related Department's Priority**

in-depth historical studies; Czech architecture

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**Requirements for Applicant**

Language skills (English, German),  
ability to work with archival material.

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**Theme of Research**

**NEO-RENAISSANCE OF THE 19TH CENTURY  
AS A GLOBAL AND REGIONAL PHENOMENON**

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**Summary**

The research will focus on the changes in the language of architecture in the 19th century in relation to the discovery of the 16th century Renaissance as the matrix of modern architecture. The project may focus on one region (Bohemia) or broadly on an area of Europe or outside Europe and should include not only the formal aspects of architecture itself but also their social context. The project can take the form of a monograph by one architect.

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**Program**

☒ Architecture and Urbanism [ ] Design [ ] Smart Cities

**Field of Study**

[ ] AKT [ ] ATT ☒ DAPP [ ] KA [ ] UUP

**Form**

[ ] Full-time ☒ Combined

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**Number / Department**

15 113 / Department of History and Theory of Architecture

**Supervisor**

prof. Pavel Kalina, Ph.D.

**Supervisor – Specialist**

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**Grant Connection**

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**Related Department's Priority**

in-depth historical studies; Czech architecture

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**Requirements for Applicant**

Language skills (English, German),  
ability to work with archival material.

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**Program**

**ARCHITECTURE  
AND URBANISM**

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**Field of Study**

**URBAN DESIGN  
AND SPATIAL PLANNING**

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**Theme of Research**

- **New Smíchov: Vision and Reality**  
doc. Ing. arch. Irena Fialová
- **Economic demands and efficiency  
of urban structures in our cities**  
doc. Ing. arch. Vladimíra Šilhánková, Ph.D. et Ph.D.

**Theme of Research**

**NEW SMÍCHOV: VISION AND REALITY**

**Summary**

In the 1990s, the northern part of Smíchov underwent a rapid and radical transformation. A district full of old factories has become a new district and a vibrant city center. How did this happen? What urban planning principles were applied in planning this transformation? How successfully were they implemented? Do they enable the neighborhood and the center to function well even from the point of view of current sustainability principles? Architecture and even more so urban planning are among the fields that receive feedback only with difficulty and with a long time lag. The thesis is to comprehensively explore this transformation of Smíchov, which is not sufficiently documented. The need to map this period is all the more urgent, as the actors and architects participating in the transformation of the district are already of an advanced age.

**Program**

☒ Architecture and Urbanism [ ] Design [ ] Smart Cities

**Field of Study**

[ ] AKT [ ] ATT [ ] DAPP [ ] KA ☒ UUP

**Form**

[ ] Full-time ☒ Combined

**Number / Department**

15 119 / Department of Urban Design

**Supervisor**

doc. Ing. arch. Irena Fialová

**Supervisor – Specialist**

doc. PhDr. Jana Tichá, Ph.D.

**Grant Connection**

Prepared research project "CURE – Center for Urban Resilience".

**Related Department's Priority**

knowledge and care of the national architectural and urban heritage; challenges facing Czech society and its settlements today

**Requirements for Applicant**

**Theme of Research**

**ECONOMIC DEMANDS AND EFFICIENCY  
OF URBAN STRUCTURES IN OUR CITIES**

**Summary**

Our cities consist of different types of urban structures, both historical and contemporary. However, when planning and construction, the economic aspect of the actual implementation is mainly considered, less the economic demands of the actual functioning of the urban structure. The reason is that construction is mainly in the hands of private subjects, while the actual functioning of the existing urban structure is a matter for public administration. However, the government usually does not calculate the costs associated with the functioning of the territory in advance, which it should.

**Program**

☒ Architecture and Urbanism [ ] Design [ ] Smart Cities

**Field of Study**

[ ] AKT [ ] ATT [ ] DAPP [ ] KA ☒ UUP

**Form**

[ ] Full-time ☒ Combined

**Number / Department**

15 118 / Department of Building Theory

**Supervisor**

doc. Ing. arch. Vladimíra Šilhánková, Ph.D. et Ph.D.

**Supervisor – Specialist**

**Grant Connection**

**Related Department's Priority** development and economy of buildings

**Requirements for Applicant**

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**Program**

# SMART CITIES

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**Theme of Research**

- **Economic Evaluation of Public Goods Using Hedonic Price Methods**  
doc. Ing. arch. Jakub Vorel, Ph.D.
- **Sustainable Urban Mobility and Accessibility**  
doc. Ing. arch. Jakub Vorel, Ph.D.

**Theme of Research**

**ECONOMIC EVALUATION OF PUBLIC GOODS  
USING HEDONIC PRICE METHODS**

**Summary**

Estimating the value of public goods and especially public infrastructure based on its price effects on traded real estate. Methodological approaches: spatial regression analysis and other machine learning methods, the use and development of the val4plan tool.  
 Expected results: 1st year: publication of a "review article" in a peer-reviewed journal, 2nd year: submission of an article to the review process in a journal with impact factor (Jimp), 3rd year: accepted article in journal with impact factor (Jimp), publication results and dissertation in English.  
 Active involvement in scientific research projects and participation on the development of the val4plan tool.

**Program**

☐ Architecture and Urbanism ☐ Design ☒ Smart Cities

**Field of Study**

☐ AKT ☐ ATT ☐ DAPP ☐ KA ☐ UUP

**Form**

☐ Full-time ☒ Combined

**Number / Department**

15 121 / Department of Spatial Planning

**Supervisor**

doc. Ing. arch. Jakub Vorel, Ph.D.

**Supervisor – Specialist**

Ing. arch. Lukáš Makovský, M.A., Ph.D. (University of Reding, UK)

**Grant Connection**

Valuation methods of public good for spatial planning (2020–2023), <https://starfos.tacr.cz/cs/projekty/TL03000695>, the implementation of the results.

**Related Department's Priority**

innovative spatial planning tools

**Requirements for Applicant**

Basic knowledge of statistical methods, machine learning methods and computer simulation methods, programming languages (Python or R). In the study application, the applicant encloses a letter of motivation and before the final application deadline, applicant contacts the potential supervisor.

**Theme of Research**

**SUSTAINABLE URBAN MOBILITY AND ACCESSIBILITY**

**Summary**

Investigation of a) the relationship between transport mobility and land use in urban regions, b) the effectiveness of infrastructure development, administrative-regulatory measures and economic measures to achieve sustainable mobility and accessibility in urban regions. Methodological approaches: statistical analysis, machine learning, simulation modeling and agent-based models (e.g. MATSim).

Expected results: 1st year: publication of "review article" in a peer-reviewed journal, 2nd year: submission of an article to the review process in journal with impact factor (Jimp), 3rd year: accepted article in journal with impact factor (Jimp). Publication of results and dissertation in English.

**Program**

☐ Architecture and Urbanism ☐ Design ☒ Smart Cities

**Field of Study**

☐ AKT ☐ ATT ☐ DAPP ☐ KA ☐ UUP

**Form**

☐ Full-time ☒ Combined

**Number / Department**

15 121 / Department of Spatial Planning

**Supervisor**

doc. Ing. arch. Jakub Vorel, Ph.D.

**Supervisor – Specialist**

prof. Ing. Ondřej Přibyl, Ph.D.

**Grant Connection**

EF17\_048/0007435: Smart City – Smart Region – Smart Community (2018–2023). Project team is going to apply for funding of the research activities.

**Related Department's Priority**

sustainable mobility; urban systems

**Requirements for Applicant**

Basic knowledge of statistical methods, machine learning methods and computer simulation methods, programming languages (JAVA or Python or R). In the study application, the applicant encloses a letter of motivation and before the final application deadline, applicant contacts the potential supervisor.