

ROMANIAN-HUNGARIAN COOPERATION IN THE FIELD OF REDUCTION OF SEISMIC RISK TO INFRASTRUCTURES

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General frame

- In spring 2019 a cooperation agreement was signed between the „Ion Mincu“ University of Architecture and Urbanism (Dr. Maria Bostenaru-Dan from the Faculty of Urbanism) and the Szécsenyi István University Győr (Assoc. Prof. Dr. Orsolya Kegyes-Brassai)
- In January 2020 Orsolya Kegyes-Brassai from the Szécsenyi István University Győr came in frame of an Erasmus agreement in „architecture and urban planning“ with the Faculty of Urbanism of the „Ion Mincu“ University of Architecture and Urbanism
 - ▣ Teaching dimension
 - ▣ Preparation to the discussion of teaching with study tours



Teaching activities

Overview



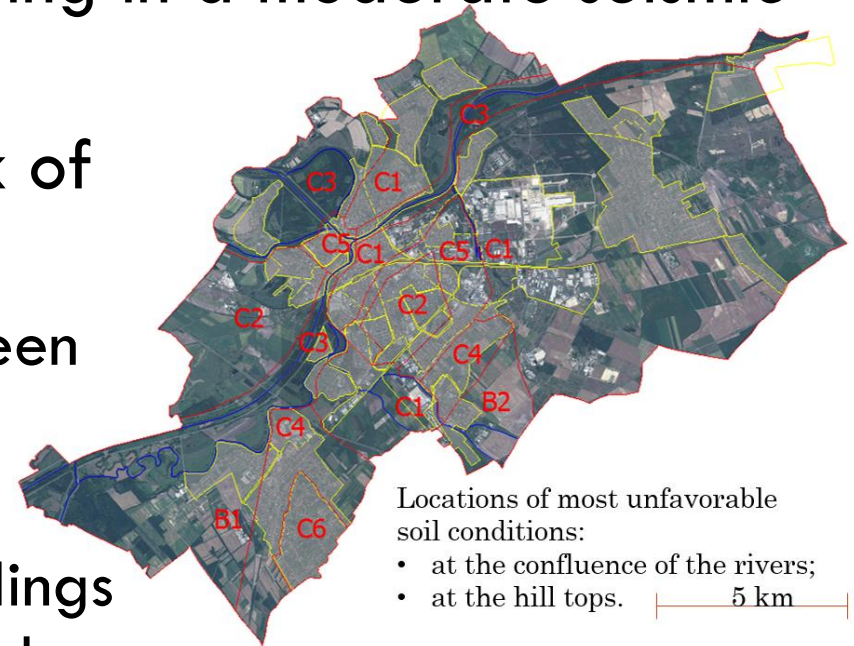
- Teaching activities for the theoretical level (doctoral school, where also Prof. Dr. Arch. Cristina Olga Gociman is a member)
- Teaching activities for the professional practice level (master)
- Teaching experience exchange

Lecture at the doctoral schools of architecture and urban planning

- Hold by Assoc. Prof. Orsolya Kegyes-Brassai
- Topic: „Moderate seismic risk: the case Hungary“
- Hosted by Assoc. Prof. Dr. Alexandru-Ionuț Petrișor
- Followed by discussion moderated by Maria Bostenaru-Dan and Mirela Adriana Anghelache (Institute of Geodynamics of the Romanian Academy). The discussion was at national level, featuring also Dr. Emil-Sever Georgescu (URBAN-INCERC)
- The lecture and discussion took place in the Centre for Architectural and Urban Studies building, which hosts also the doctoral school, but also the consulted Arhitext journal headquarters. The building was presented.

Lecture covered three topics

1. Level of seismicity in Hungary
2. Challenges concerning living in a moderate seismic area
3. Case study about the risk of the city of Győr:
 - ▣ local seismic hazard has been determined based on site investigations
 - ▣ vulnerability of 5000 buildings has been determined based on visual inspection



Districts with different vulnerability level

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TOWN PARTS					TOTAL
Function of the area	Belváros	Nádorváros	Újváros	Révfalu	
economic, commercial, industrial	2.51%	30.23%	8.34%	1.49%	Ch
special (cultural, educational, ecclesiastic)	69.79%	14.72%	5.94%	9.57%	
rural residential	-	7.69%	50.25%	36.97%	
garden city residential	-	29.74%	15.11%	34.49%	
urban residential	4.89%	12.46%	0.40%	0.14%	
Total area [ha]	90.49	256.37	117.39	263.81	728
Number of residents	10,358	20,130	4,397	6,640	41,525
Soil profile	C1	C1/C2/C5	C2/C5	C1/C3	
Basic Structural Hazard Score	2.25	4.32	4.12	2,92	
Modifier of soil	-0.4	-0.6	-0.6	-0.5	
Structural Hazard Score	1.85	3.72	3.52	2.42	

4 May 2020

Zones delineated by dominant building types of different vulnerability



Historical urban



Garden city



Housing estates



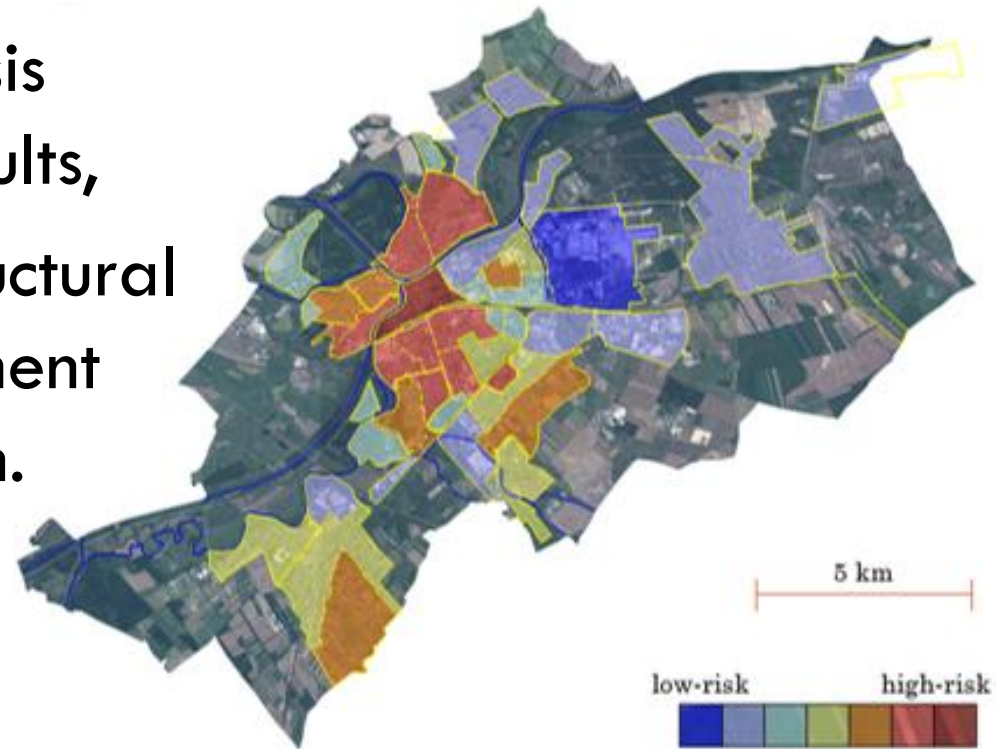
Attached villages

Seismic risk of the districts account for site effects and building types

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Further research directions:

- Perform more pushover / time history analysis to complete RVS results,
- Incorporate non-structural vulnerability assessment to the risk evaluation.



4 May 2020

Participation to the final exams of the „Protection of localities against risks course“

- Hosted by the responsible of the course Prof. Dr. Arch. Cristina Olga Gociman
- The final oral exams were presentations of the analysis of the urban planning response to a selected disaster case
- The course belongs to the module „Urban prospective“ at the master „Urban design“ at the Faculty of Urbanism

Teaching experience exchange

- Individual discussions with teaching staff:
 - ▣ Prof. Dr. Arch. Marian Moiceanu, rector of the university
 - ▣ Prof. Dr. Arch. Tiberiu Florescu, coordinator of the Master „Urban design“ and teaching the course „Urban vulnerability“ of the same module as the one attended
 - ▣ Assoc. Prof. Dr. Arch. Angelica Stan, ERASMUS coordinator at the Faculty of Urbanism
 - ▣ Assoc. Prof. Dr. Arch. Daniel Comşa, coordinator of international relations



Study tours

Overview

- The option after the 1977 earthquake: between demolition and restoration
 - ▣ Study tour demolitions in the dictatorship: Uranus, Jewish quarter, Văcărești monastery
 - ▣ Study tour Cotroceni palace – damaged but restored as prestige residence for the presidential pair as it was previously royal palace
- Study tour historic centre of Bucharest, with 1977 damages to the most vulnerable buildings

Study tour demolitions of the dictatorship

- At the Documentation centre of the „Ion Mincu“ University of Architecture and Urbanism a project was dealing with the demolitions in the Ceușescu Aera. Currently on display was the model of the Uranus quarter, built at an event at Casa Costa-Foru, and the augmented reality simulation of Simu museum. A volume of the publication of the museum was given by curator Claudia Popescu. In the Gallery the destruction of the Jewish quarter was presented.
- The Șuțu Museum presented the remains of the Văcărești Monastery.

Study tour Cotroceni palace

- This is the presidential palace in Romania.
- The palace suffered serious damages in the 1977 earthquake.
 - ▣ This was documented by a publication, authored by Nicolae Vlădescu (the project leader) consulted among other publications (including books authored by the host) and a book exhibition in the books section of the library of the „Ion Mincu“ University of Architecture and Urbanism. The library where some books are on sale was also shown.
 - ▣ Another consulted book was on the changes in history of the Royal Palace, Royal Palace which now hosts the National Museum of Art and some exhibitions were open.
 - ▣ Valuable information was collected during the guided tour, for example about the Art Nouveau interventions inspired by the Mathildenhöhe Darmstadt to Queen Mary of Romania.

Study tour historic centre of Bucharest

- The study tour included some historical orthodox churches (Curtea Veche, Dumitru-Poștă, Stavropoleos) to be compared with the roman-catholic Italian church, which features in a different architecture also earthquake strengthening, since a neighbouring building was strongly affected
- The study tour included some buildings which were strongly affected on the Magheru boulevard (Wilson, Lido, Pherekyde)
 - ▣ shown how a „red dot“ (seismic class I) looks like.
 - ▣ In the historic centre the Museum „Little Bucharest“ was visited to show how interiors of these interwar buildings, which are most affected by earthquakes, looked like.
 - ▣ In the Museum of collections paintings of interwar Bucharest were seen, in both permanent (ex. Iosif Iser, Alexandru Phoebus) and temporary exhibitions (Alexandru Phoebus), and also a painter atelier (Theodor Aman).
- Visit of the exhibition „Romanian architects, creators of cultural heritage“ curated by Cristina Olga Gociman, featuring numerous interwar buildings architects and some disappeared buildings.



Red dot



Conclusions

Conclusions

- Approaches of urban planning in Gyor and Bucharest could be compared.
 - ▣ Approaches in Gyor
 - The problem of huge number of vulnerable buildings
 - No past memories about damages caused by earthquakes
 - ▣ Approaches in Bucharest – from the single building to the urban planning dimension
 - The problem of the Modernist boulevard – vulnerable buildings since innovative technologies were not tested enough
 - The problem of Ceaușescu using the pretext of the earthquake for dictatorship and demolition
- Need for cooperation - planners, emergency management and engineering society



Questions?