

CIVIL ENGINEERING RESEARCH GROUP

Contact details

Name	Civil Engineering Research Group
Acronym	
Logo	
Site	http://ccia.ubm.ro/
Address	62A, Victor Babes street, Baia Mare, County of Maramures
Faculty Department	Faculty of Mineral Resources and Environment, Civil Engineering, Materials' Science, Soil Science Department
Telephone	0371 050 160
Fax	0262276153
Director	Prof. Dr. Eng. Filip-Vacarescu Daniela
e-mail	labcon00@gmail.com superfilda@gmail.com

Areas of expertise

Civil engineering;
Quality control of building materials, modern design methods, optimizing, rehabilitation, monitoring of buildings' behaviour;
Study of the behaviour of structures under seismic actions;
Advanced structural modelling with finite elements;

Team and key skills

Prof. Dr. Eng. Daniela Filip Vacarescu – graduate of Facultatea de Constructii Timisoara -1972, dr.ing.1981, proficient in calculus and dimensioning of structures, finite element modelling, steel structures;
Assist. Prof. Dr. Eng. Gelu Danku – graduate of Facultatea de Constructii, U.P. Timisoara -2007, dr.ing. 2011, proficient in calculus and dimensioning of structures, modelling in Abaqus, steel and composite structures;
Lecturer dr.. Eng. Florin Filip Vacarescu – graduate of Facultatea de Constructii Timisoara-1981, PhD student at UTCluj, proficient in structural design, study of materials, destructive and non-destructive tests;
Lecturer dr.Eng..Gelu Zaharia- graduate of Facultatea de Constructii Cluj 1992– Napoca, proficient in calculus and dimensioning of structures, seismic performance of structures, modelling in ROBOT,Ansys;
Assist. Eng. Radu Zoicas – graduate of Facultatea de Constructii Cluj - Napoca 2008, PhD student at UTCluj, proficient in structural design, structural optimization, modelling in Ansys;

Infrastructure

Hydraulic testing machine Heckert ZD30, 3000 kN, static tests;
Hydraulic testing machine Tecnotest F050, 2000 kN (compression), 500 kN (tension)
Electrical thermostat;
Rock cutting apparatus;
Casagrande apparatus;
Permeability apparatus with 6 cells;
U humidity scale;
Mechanical and digital sclerometer;
Owen;
Vicat apparatus;
Device for determining the consistency of fresh concrete;
Molds for concrete cubes – 6 pcs.;
Molds for mortars and cement;
Compressor;
Concrete mixer, cap. 60l;
Dial gauge 1/100, 1/1000;
Electronic vibrometer;

Defectoscope – 1 pcs.;
Vibrating table;
Small crane Einhell 250 kg;
Strain Bridge- typ :P3(Vishay measurements group)

Development strategy

Contracts with third parties, research in the fields of building materials, special concrete for precast elements;
Research by parametric modelling of structural subassemblies;
Publishing articles in national and international journals, with B+, BDI and ISI scores;
Participating in conferences, products presentations or technology development in the field of structural engineering;

Representative projects

“**Design and initial tests for precast road drain lids, elaboration of concrete recipes and initial tests for curbstone**”, Contract no.2/16.07.2012: client: SC EDILCOM SRL, Negresti Oas;
“**Certification documents for natural paving stones**”, Contract no. 933/21.04.2010: acc. to SR EN 1341(Exterior natural paving stone), client: SC RE-CONF-MET, Baia Mare;
“**Determining of geometrical and physical-mechanical characteristics for Romanian and import steel, according to domestic and German standards**”, Contract no. 284/06.02.2009.: client: SC KONTRON Baia Mare, part of INSERV Holding SA, Baia Mare;
“**Project for an Industrial Steel Hall in Recea**”, Research and design contract no. 335/12.02.09.: client BEBONYX GRUP SRL, Baia Mare;
Leonardo da Vinci (VETPRO) with teachers Number : 2011-1-GR1-LEO03-06508 Title: Laboratory Techniques for Building Materials Tests (EUROCODES)Problems of Wooden **Ecobuildings,Design,Rehabilitation Methods**

Significant results

1. **Filip Vacarescu Florin**, Kollo Gavril, Study of the co-operation between perfobound continuous connectors and concrete slab, Innovative materials and technologies for concrete structures Proceeding of the FIB Congress, Hungary, sept.2011, pag.335-338, ISBN 978-963-313-036-0, www.fib.bme.hu/cc2011;
2. **Filip Văcărescu Florin** Köllő Gabor Egy folytonos, felső részén kivágott acéllemezből kialakított kapcsolóelem végeelem analízise Finite Element Analyse for a Particular Perfobound Sheet-type Shear Connector Using Single Push-out Tests Erdélyi Magyar Műszaki Tudományos Társaság(Hungarian Technical Scientific Society of Transilvania) Cluj,MŰSZAKI SZEMLE- Technical Review Nr.58/2012 pb.11-20 ISSN 1454-0746 www.emt.ro
- 3 **Gelu Danku**, D. Dubina , Adrian Ciutina **Influence of steel-concrete interaction in dissipative zones of frames:II – Numerical study**. *Steel and Composite Structures, An Int'l Journal* Vol. 15 No. 3, 2013 [Abstract](#); [Full Text \(1257K\)](#) <http://www.techno-press.org/?page=search2&mode=result>
4. **Gelu Danku**, D. Dubina , Adrian Ciutina **Influence of steel-concrete interaction in dissipative zones of frames:I – Experimental study**.*Steel and Composite Structures, An Int'l Journal* Vol. 15 No. 3, 2013[Abstract](#); [Full Text \(2529K\)](#) <http://www.techno-press.org/?page=search2&mode=result>
5. Petrina M., Socaciu N., Petrina T., Hulea R., **Zoicaş R.**, Nicoreac M., Pârv B., „Problems of Tensioning Bracing Elements for the Roof Structure Assemblage”, IABSE – IASS Symposium Taller, Longer, Lighter, 20 – 23 Septembrie 2011 , Londra, Anglia, ISBN: 978-0-7079-7122-3, pag 273 www.iabse-iass-2011.com/ (ISI Proceedings);
6. Petrina M., Pârv B., Nicoreac M., Petrina T., Hulea R., **Zoicaş R.**, „Comparativ Study of a Tall Building Using Equivalent Column and FEM”, IABSE – IASS Symposium Taller, Longer, Lighter, 20 – 23 Septembrie 2011 , Londra, Anglia, ISBN: 978-0-7079-7122-3, pag 275 www.iabse-iass-2011.com/ (ISI Proceedings);
7. Petrina Mircea, Nicolae Socaciu, Radu Hulea, **Radu Zoicas**, Rares V.Dragan, Tudor Petrina, STRUCTURAL DESIGN OF THE GYMNASIUM ROOF OF CLUJ NAPOCA, Proceedings of the International Association for Shell and Spatial Structures (IASS) Symposium 2010, Shanghai Spatial Structures - Permanent and Temporary, November 8-12 2010, Shanghai, China - pg. 2915 – 2924, ISBN 978-7-112-12504-3 (19755) <http://www.iass.2010.cn> (ISI Proceedings);
8. Gelu Mugurel Zaharia, **Radu Mircea Zoicaş**; Rehabilitation of the Municipal Emergency Hospital “Dr. Constantin Opreş” from Baia Mare 7th Central European Congress on Concrete Engineering “Innovative materials and technologies for concrete structures” 22–23 September 2011, Balatonfüred, Hungary,pg.401-404 www.fib.bme.hu/cc2011;
9. **Gelu Danku**, Dan Dubina; Numerical Simulation of Composite Steel-Concrete Eccentrically Braced Frames (EBF) under Cyclic Actions 11th WSEAS Int. Conference on Sustainability in Science Engineering (SSE '09), Timisoara, Romania, 27-29.05.2009, ISBN 978-960-474-080-2, [ISI], pg. 413-418;
10. **Gelu Danku**, Dan Dubina, Extensive Study of Plastic Hinges In Composite Steel-Concrete Members Subjected To Shear And/Or Bending 6th PhD. & DLA Symposium, University of Pecs, Pollack Mihály Faculty of Engineering, septembrie 2010, Pollack Periodica, ISSN 1788-1994,Vol.6nr.1/Aprilie 2011, pg. 37-46.[BDI];
11. **Gelu Danku**, Adrian Ciutina, Dan Dubina, Plastic hinges in composite steel-concrete beams of moment resisting and eccentrically braced frames, Eurosteel 2011 - 6th International Conference on Steel and Composite Structures, EUROSTEEL 2011, Budapesta, 31 August – 2 Septembrie 2011, ISBN 978-92-9147-103-4, ed. ECCS, pag. 1047-1053;

The offer addressed to the economic environment

Research & development in core areas	– Fundamental domain CIVIL ENGINEERING: design of reinforced concrete, steel, composite and timber structures, modern techniques and methods used in building erecting.
Research & development in applied fields	– Developing of recipes for concrete with admixtures, in order to improve the quality of precast elements for road and edilitary buildings; – Design of steel framed structures using sections of class 3 & 4; – Study of the behaviour of composite beams under dynamic loads; – Topological optimization of structural shapes and dimensions; – Finite elements modelling and parametrical calculus of structures;
Consulting	– Design and execution of civil and industrial buildings;
Applied engineering services	– Tests on concrete and reinforcement bars, determining the physical-mechanical characteristics of materials; – Tests on timber samples; – Tests on other building materials (natural stone, aggregates, etc.) – Observation of the behaviour of structures in real-time through use of tensometry and ultrasonic methods;
Training	– Usage of modern software for computer aided design (CAD).



Fig. 1. Compression test on concrete cylinder



Fig. 2. Compression test on concrete cubes

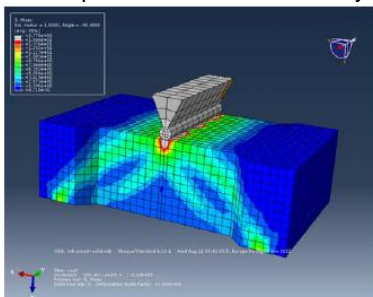


Fig. 3. Numerical simulation for reinforced slab



Fig. 4. Model of sheet types with indented cut forms



Fig. 5. Single push out test for sheet type with indented cut forms