

in a number of selected environments with constant moisture and with limited construction possibilities. Clay and concepts of construction with all the associated problems are a matter of bearing strength, resistance to external circumstances and execution.

A healthy relation between man and the clay construction is essential for the natural material. Modern clay can be used as a veneer, as insulation and as hard surfaces: insulation tiles in space capsules, in brakes, as hard, sharp knives. Use of clay in architecture: current maintenance means to live with the material; it is not a sterile relation. Clay cannot only be used in construction, it depends on the circumstances - protection and feelings, as a real human material.

JUVANEC, Borut. Clay in architecture : Slovenia and beyond. V: MILETO, Camilla (ur.), VEGAS, Fernando (ur.), CRISTINI, Valentina (ur.). International Conference on Rammed Earth Conservation, Valencia, 21-23 June 2012. Rammed earth conservation : proceedings of the First International Conference on Rammed Earth Conservation, Restapia 2012, Valencia, Spain, 21-23 June 2012. Boca Raton [etc.]: CRC Press, Taylor & Francis Group, cop. 2012, str. 145-150, ilustr. [COBISS.SI-ID 2717060]



**Lara Slivnik**  
**TROČLENSKI LOČNI KONSTRUKCIJSKI SISTEM**  
**34. zborovanje gradbenih konstruktorjev Slovenije,**  
**Slovensko društvo gradbenih konstruktorjev**  
**Bled, 11.-12. oktober 2012,**  
**<http://www.sdggk.si/index.php?id=100>**

Organizatorji dvodnevne zborovanja, ki združuje slovenske gradbene konstruktorje, vsako leto povabijo tudi goste iz tujine. Letos sta se vabilu odzvala dva uvodna predavatelja: prof. dr. György L. Balazs in prof. dr. Goran Markovski. Sledilo je 28 prispevkov, ki so bili razdeljeni na pet tematskih skupin: Mostovi, Konstrukcije, Gradbena fizika, Eksperimentalna in numerična analiza konstrukcij ter Gradbeni materiali. V sklopu

zborovanja je tudi skupščina društva in družabni večer. V sekciji Konstrukcije sem predstavila prispevek Tročlenki ločni konstrukcijski sistem.

V prispevku je obravnavan eden izmed najenostavnejših konstrukcijskih sistemov: tročlenki ločni konstrukcijski sistem. Teoretično so predstavljene osnovne konstrukcijske značilnosti, tem sledi zgodovinski razvoj tročlenkih konstrukcij in zgodovinsko pomembni primeri tročlenkih konstrukcij. Dva mostova v Ljubljani sta primera najzgodnejših tročlenkih ločnih konstrukcij v svetu: Hradeckega most (najstarejši še ohranjeni litoželezni tročlenki most, ki je bil pred kratkim obnovljen ter prestavljen na že tretjo lokacijo) in Zmajski most (najstarejši še ohranjeni most, zgrajen iz železobetona po tehnologiji sistema Melan). Pri obeh mostovih je tretji členek izjemno pomemben in bistven element konstrukcije. Opisani so tudi sočasni primeri tročlenkih konstrukcij iz Evrope. V zaključku so predstavljene prednosti in slabosti takšne konstrukcije.

SLIVNIK, Lara. Tročlenki ločni konstrukcijski sistem = Three-hinged arch structure. V: LOPATIČ, Jože (ur.), MARKELJ, Viktor (ur.), SAJE, Franc (ur.). Zbornik 34. zborovanja gradbenih konstruktorjev Slovenije, Bled, Hotel Golf, 11.-12. oktober 2012. Ljubljana: Slovensko društvo gradbenih konstruktorjev, 2012, str. 131-138, ilustr. [COBISS.SI-ID 2763396]

**Lara Slivnik**  
**A PREFABRICATED CAST IRON THREE-HINGED**  
**ARCH BRIDGE IN LJUBLJANA**  
**The Fourth International Congress on Construction**  
**History,**  
**ENSA Paris - Malaquais, ENSA Paris - La Villette, ENSA**  
**Versailles, Conservatoire national des arts et métiers**  
**(CNAM)**  
**Pariz, 3.-7. julij 2012,**  
**<http://www.icch-paris2012.fr/>**

Organizacijo tokratne trienalne mednarodne konference, ki združuje znanstvenike s področja raziskovanja zgodovine konstrukcij, so prevzele tri pariške arhitekturne šole: Paris - Malaquais, Paris - La Villette in Versailles, skupaj z Conservatoire national des arts et métiers. V petih dneh so pripravili pet uvodnih predavanj s preko 220 prispevki v več vzporednih sekcijah, vodene izlete po znamenitostih, ki niso odprte za javnost, in bogat večerni družabni program. V sekciji Metal Structures sem predstavila prispevek A Prefabricated Cast Iron Three-hinged Arch Bridge in Ljubljana.

The paper is an overview of the Hradecky Bridge (1867) across the River Ljubljanica in Ljubljana, the first three-hinged arch bridge built in Habsburg Monarchy and the oldest three-hinged cast-iron bridge in Europe (excluding the British Isles) still in use. The supporting structure is a prefabricated three-hinged arch with the total span of 30 meters. It is made of cast-iron pipes which are joined together with screws to make one

cantilever truss. Three cantilevers from one side of the bank are connected together with I beams and linked up with another three cantilevers from the opposite bank. Both groups of cantilevers are joined together at the crown of the arch with hinges. The prefabricated structure of the bridge permitted it to be moved three times to three different locations, each time bearing the same name, i.e., the Hradecky Bridge.

SLIVNIK, Lara. A prefabricated cast iron three-hinged arch bridge in Ljubljana. V: CARVAIS, Robert (ur.), GUILLERME, André (ur.), NÈGRE, Valérie (ur.), SAKAROVITCH, Joël (ur.). The Fourth International Congress on Construction History, Paris, 3-7 July 2012. Nuts & bolts of construction history : culture, technology and society. Paris: Picard, 2012, str. 235-242, ilustr. [COBISS.SI-ID 2741380]

**Domen Zupančič**

**Earthen architecture an evergreen type of building method**

**UL Faculty of Architecture, Slovenia**

**RESTAPIA 2012 International congress on rammed earth**

**Universitat Politècnica de València**

**Valencia, 21. – 23. 6. 2012**

**<http://www.restapia2012.es/>**

About Restapia

RESTAPIA 2012 is an international congress on rammed earth, its conservation and, in general terms, on earthen constructive techniques and its conservation. This meeting aims to incentive sharing the restoration experiences of both monumental and non monumental architectural heritage made in the Iberian Peninsula and the rest of the world in order to learn from all these interventions and derive conclusions and perspectives for the future. Thus, it aims to represent an important milestone at international level in the reflection about the conservation and restoration of rammed earth architecture and earthen architecture in general.

Camilla Mileto (coordinator) - Universitat Politècnica de València, España

Fernando Vegas López-M. (secretario) - Universitat Politècnica de València, España

Maddalena Achenza - Università di Cagliari, Italia

Eloy Algorri García - Architect. León, España

Antonio Almagro Gorbea - Escuela Estudios Árabes, CSIC, España

Fco. Javier Castilla Pascual - Universidad de Castilla La Mancha, España

Mariana Correia - Escola Superior Gallaecia, Vila Nova Cerveira, Portugal

Valentina Cristini - Universitat Politècnica de València, España

Esther de Vega García - Architect, FIRME Arquitectos S.L.

M<sup>a</sup> Teresa Domenech Carbó - Universitat Politècnica de València, España

María Fernandes - Universidad de Coímbra, Portugal

Juana Font Arellano - Historiadora del Arte, Fundación Font de Bedoya, España

Javier Gallego Roca - Universidad de Granada, España

Luis Fernando Guerrero Baca - Universidad Metropolitana Autónoma, México

Amparo Graciani García - Universidad de Sevilla, España  
Hubert Guillaud - CRATerre. Escuela Arquitectura Grenoble, Francia  
John Hurd - Presidente ICOMOS – ISCEAH, Reino Unido  
Borut Juvanec - University of Lubiana, Eslovenia  
Francisco Javier López Martínez - Universidad Católica de Murcia, España

José Manuel López Osorio - Universidad de Málaga, España  
José Antonio Martínez López - Museo Naval Nacional, España  
Frank Matero - University of Pennsylvania, Estados Unidos  
Saverio Mecca - Università di Firenze, Italia  
Jacob Merten - Escola Superior Gallaecia, Vila Nova  
Alfonso Muñoz Cosme - IPCE, Ministerio de Cultura, España  
Juan Francisco Noguera Giménez - Universitat Politècnica de València, España

Erdhard Röhmer - Interacción, Fundación Navapalos, España  
Julio Vargas-Neumann - Pontificia Universidad Católica de Perú  
Fernando Vela Cossío - Universidad Politécnica de Madrid  
John Warren - University of York, Reino Unido  
Arturo Zaragoza Catalán - Generalitat Valenciana, España

Modern earthen architecture could also benefit from the use of earth by earthen architecture of the past. In Slovenia, there are very few examples of new earthen architecture. Most investors reject earth and its composing materials as useful and modern building material. The origin of this problem lies in the notion that earthen architecture is associated with poverty, farming and dirt. We usually use a theory of the vernacular architecture of a selected region (i.e. Prekmurje, Slovenia) to empower local people. In Slovenia, mud architecture or earthen architecture has a negative image. Clay is the most commonly used material for rendering walls; the use of rammed earth is stigmatised or very poorly understood in practice. The paper explains where the obstacles lie and how to overcome them.

The aim of our research is to raise awareness of the quality of life using earth as a building material. The best way to do this is by providing useful practical examples and guidelines for local communities, architects, potential investors and last, but not least, institutions such as schools and the chamber of economy. As a university research and educational organization, we collect information, combine it with practice and disseminate the results. Our work is not over at this point; the next step is to prepare readable and understandable documents (LCA, carbon footprint CO<sup>2</sup>, work flow) and involve interested professionals, investors and others. This is the way to develop and direct knowledge transfer.

ZUPANČIČ, Domen. Earthen architecture, an evergreen type of building method. V: MILETO, Camilla (ur.), VEGAS, Fernando (ur.), CRISTINI, Valentina (ur.). International Conference on Rammed Earth Conservation, Valencia, 21-23 June 2012. Rammed earth conservation : proceedings of the First International Conference on Rammed Earth Conservation, Restapia 2012, Valencia, Spain, 21-23 June 2012. Boca Raton [etc.]: CRC Press, Taylor & Francis Group, cop. 2012, str. 599-604, ilustr. [COBISS.SI-ID 2717572]