
# 6th INTERNATIONAL ACADEMIC CONFERENCE ON PLACES AND TECHNOLOGIES

# PLACES AND TECHNOLOGIES 2019

## THE 6th INTERNATIONAL ACADEMIC CONFERENCE ON PLACES AND TECHNOLOGIES

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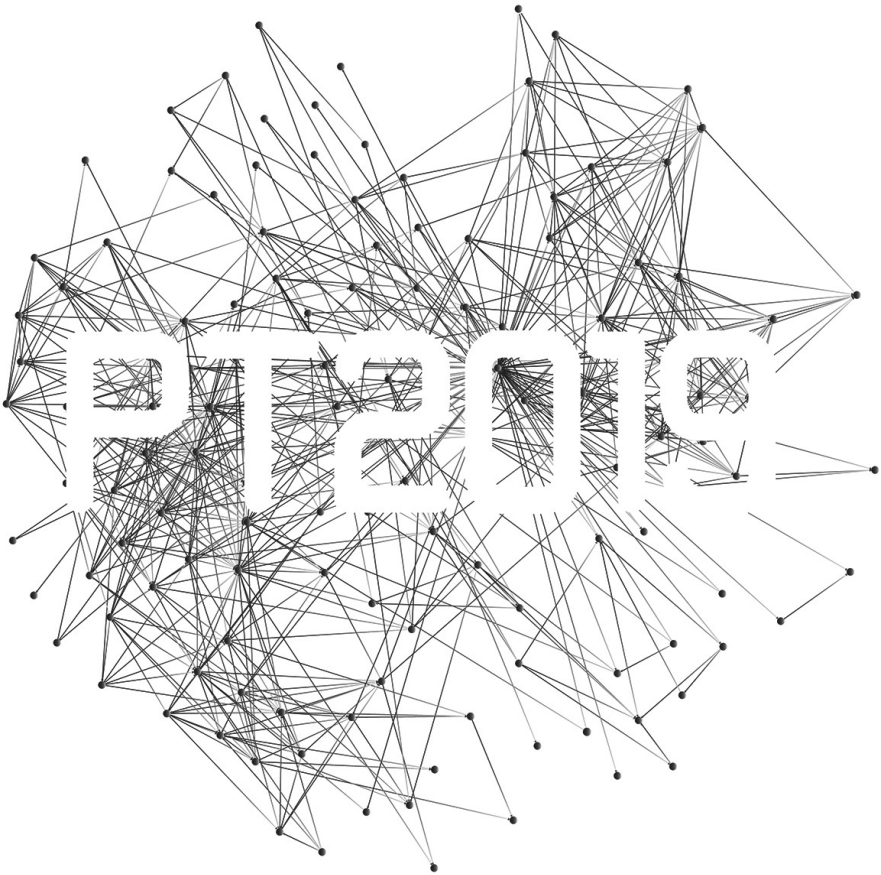

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# PLACES AND TECHNOLOGIES 2019

## KEEPING UP WITH TECHNOLOGIES TO TURN BUILT HERITAGE INTO THE PLACES OF FUTURE GENERATIONS

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# TABLE OF CONTENTS

## PLENARY LECTURE 44

**HERITAGE AND TECHNOLOGY - GENERATING A SENSE OF PLACE ..... 45**
**Demeter Nóra, BA UC B, MYU, DLA UP**
**FORM AND ENERGY: INNOVATIONS IN METAL BUILDING FAÇADES ..... 53**
**Hachul, Helmut**
**ASSESSMENT AND REHABILITATION OF HERITAGE STRUCTURES HELPED BY COMBINED NON-DESTRUCTIVE TESTS ..... 64**
**Orbán Zoltán; Török Brigitta; Dormány András**
**SEARCHING THE RIGHT DISTANCE BETWEEN THE OBJECTIVITY OF THE HISTORY AND THE NEED OF THE CONTEMPORARY ..... 72**
**Stella, Antonello**

## PAPER 89

**HUMAN MIGRATION CRISIS ..... 90**
**Alwani, Omar; Borsos Ágnes**
**THE MULTIPLEX TYPOLOGIES OF SHRINKING CITIES ..... 100**
**Antonić, Branislav; Djukić, Aleksandra; Lojanica, Vladimir**
**MONASTERY CRKVINA AND MONASTERY TVRDOŠ, TREBINJE, FEDERATION BOSNIA AND HERZEGOVINA - COMPLEX RECONSTRUCTION AND DEVELOPMENT ..... 109**
**Arsić, Petar**
**COLLECTIVE REUSE – CO-HOUSING DEVELOPMENTS IN THE SERVICE OF PRESERVATION THE BUILT HERITAGE ..... 117**
**Babos Annamária**
**TEENAGERS' PERCEPTIONS OF PUBLIC OPEN SPACES: EXPERIENCES FROM A LIVING LAB IN LISBON, PORTUGAL ..... 124**
**Solipa Batista, Joana; Menezes, Marluci; Smaniotto Costa, Carlos; Almeida, Inês**
**THE PERCEPTION OF PUBLIC SPACE: IMAGES AND REPRESENTATIONS OF STREET FURNITURE ..... 132**
**Ben Dhaou, Ons; Vasváry-Nádor Norbert**
**THE DESIGN CONCEPT OF A PRE-FABRICATED APARTMENT BUILDING ..... 138**
**Borsos Ágnes; Kokas Balázs**

**PROTECTION AND TOURISM DEVELOPMENT OF ANCIENT VILLAGES FROM A SUSTAINABLE PERSPECTIVE - HOUGOU ANCIENT VILLAGE AS AN EXAMPLE ..... 146**
**Cao Hui**

**POP(O)S OF SHOPPING CENTRE - A NEW APPROACH TOWARDS URBAN DESIGN ..... 154**
**Cvetković, Marija; Radić, Tamara**

**TRANSCRIPTION OF FORMER ARCHITECTURE ..... 163**
**Zinoski, Mihajlo; Dimitrievski, Tome**

**THE LOCAL LEVEL OF GOVERNANCE IN THE EUROPEAN PROCESS OF ENERGY TRANSFORMATION: CHALLENGES AND EMPOWERMENT CHANCES IN BULGARIA ..... 171**
**Dimitrova, Elena; Tasheva – Petrova, Milena; Burov, Angel; Mutafchiiska, Irina**

**URBAN GROWTH PATTERNS AND ENVIRONMENTAL PERFORMANCE: A COMPARISON OF LATE 20TH CENTURY AMERICAN SUBURBAN PATTERNS TO THOSE OF LATE 19TH CENTURY CENTRAL EUROPEAN URBAN FABRIC ..... 180**
**Dougherty, James, AICP, CNU-A, ASAI**

**ENERGY CONSUMPTION INDICATORS DUE TO APPLIANCES USED IN RESIDENTIAL BUILDING, A CASE STUDY NEW MINIA, EGYPT ..... 188**
**Elhadad, Sara; Baranyai Bálint; Gyergyák János; Kistelegdi István**

**MANAGEMENT APPROACH FOR SUSTAINABLE URBAN OF EXISTING NEW CITIES IN THE DIFFERENT REGIONS OF EGYPT (COMPARATIVE STUDY) ..... 194**
**Elhadad, Sara; Baranyai Bálint; Gyergyák János; Kistelegdi István**

**INVESTMENT LOCATIONS MAPING: KIKINDA CITY CASE STUDY ..... 202**
**Furundžić, Danilo S.; Furundžić, Božidar S.; Borko Lj, Drašković**

**“VISIBLE” AND “INVISIBLE” TECHNOLOGIES FOR THE INCLUSION OF VULNERABLE USERS AND THE ENHANCEMENT OF MINOR ARCHITECTURAL HERITAGE ..... 211**
**Finucci, Fabrizio; Baratta, Adolfo F. L.; Calcagnini, Laura; Magarò, Antonio**

**DETAIL ASSEMBLAGES ..... 219**
**Gourdoukis, Dimitris**

**CONVERTIBLE UMBRELLA PT2016 ..... 227**
**Halada Miklós**

**BUILT HERITAGE PROTECTION STRATEGY OF GUANGZHOU HISTORIC DISTRICT BASED ON PUBLIC SPACE UPDATE .....235**
**He Honghao**
**THE FRENCH LEGACY IN ALGERIA : THE ARCHITECTURE OF A SHARED IDENTITY, THE CASE OF THE KASBAH: ALGIERS, AND THE COLONIAL CHECK BOARD: BISKRA .....244**
**Hiba, Barbara; Molnár Tamás**
**COMPLEX REHABILITATION OF BUILDINGS BUILT WITH INDUSTRIALIZED TECHNOLOGY .....253**
**Horkai András; Kiss Gyula**
**PRESERVING ARCHAEOLOGICAL ELEMENTS IN URBAN HERITAGE DYNAMIC STREET - THE MAKING OF PUBLIC STREET OPEN MUSEUM - CASE STUDY: THE STRAIGHT STREET OF THE ANCIENT CITY OF DAMASCUS .....261**
**Ibrahim, Sonia**
**FLUIDITY OF CONTEMPORARY CONTEXT AND THE POST-INDUSTRIAL PHASE OF THE FIRST INDUSTRIAL ZONE IN BELGRADE .....271**
**Jerković-Babović, Bojana; Fotirić, Nebojša**
**SEARCHING FOR THE CODE OF NEW BELGRADE'S OPEN SPACE: CASE STUDY OF BLOCK 37 .....279**
**Jovanović, Predrag; Vuković, Tamara; Mitrović, Biserka**
**HUNGARIAN ENERGY+ CUBE .....287**
**Kondor Tamás; Kósa Balázs; Baranyai Bálint; Kistelegdi István; Juhász Hajnalka; Szigony János; Zrena Zoltán**
**ACTIVITY BASED-MODELLING AS BASIS FOR SUSTAINABLE TRANSPORT POLICIES.....293**
**Jurak, Julijan; Šimunović, Ljupko; Radulović, Božo; Sikirić, Matija**
**THE ARCHITECT'S DESIGN IN THE RURAL STIMULATES THE VITALITY OF RURAL— XIAMUTANG CHILDREN'S LIBRARY.....299**
**Kang Xue; Medvegy Gabriella**
**THE TRANSFORMATION OF URBAN FORM BETWEEN MODERNITY AND TRADITION, WITH REFERENCE TO ERBIL CITY .....307**
**Khoshnaw, Rebaz**
**NEW FORMS OF TOWNSCAPE REGULATION IN HUNGARY.....315**
**Füleky Zsolt; Kolossa József**

**THE ISSUE OF PRESERVATION OF TRADITIONAL RAMMED EARTH HOUSES: CURRENT PRACTICE OF PRESENTATION IN SERBIA AND REGION.....322**
**Kontić Ana; Lukić, Nevena**
**APPLICATION OF MULTI-CRITERIA ANALYSIS IN THE PROCESS OF ENERGY RENEWAL OF RESIDENTIAL BUILDINGS.....331**
**Krstić-Furundžić, Aleksandra; Kosić, Tatjana**
**SUSTAINABLE DEVELOPMENT OF THE TOWN CENTER OF VISEGRÁD.....340**
**Kovács-Andor Krisztián; Tamás Anna Mária**
**SPECIAL REQUIREMENTS OF EDUCATIONAL BUILDINGS .....345**
**Kovács Péter; Kósa Balázs; Molnár Tamás**
**ASPECTS OF THE RELATIONSHIP BETWEEN THE ARCHITECTURAL HERITAGE AND NATURE FOR BETTER PLACES IN FUTURE .....353**
**Furundžić, Nikola Z.; Furundžić, Dijana P.; Krstić-Furundžić, Aleksandra**
**URBAN REGENERATION OF OPEN PUBLIC SPACES AS A TOOL FOR THE STRENGTHENING OF CULTURAL TOURISM: THE EXAMPLE OF THE HISTORIC CORE OF SMEDEREVO .....361**
**Lazarević, Milica; Djukić, Aleksandra; Antonić, Branislav**
**THE STATUS QUO OF HERITAGE BUILDING PROTECTION IN CONTEMPORARY CHINA .....371**
**Liu Sha Sha; Kovács-Andor Krisztián**
**RESIDENTIAL DESIGN PATTERNS UNDER HUTONG CULTRE.....379**
**Lu Chang**
**THE CONTRIBUTION OF INTERMODAL TRANSPORT NODES TO THE VITALITY OF PUBLIC SPACE .....386**
**Madzhirski, Vasil**
**POST-DISASTER URBAN PLANNING STRATEGIES DEVELOPMENT OVERVIEW .....395**
**Maiteh, Shaha Mazen; Zoltán Erzsébet Szeréna**
**FLOATING BUILDINGS AS NEW CONCEPT OF RESIDENCE IN BELGRADE FOR FUTURE SOCIAL REQUIREMENTS .....402**
**Jacovic Maksimovic, Tijana**
**VALORISATION AND REVITALIZATION OF HERITAGE ALONGSIDE DANUBE RIVER: CASE STUDY OF SMEDEREVO CASTLE .....410**
**Vanista Lazarevic, Eva; Komatina, Dragan; Maric, Jelena; Vucur, Aleksandar**

**PARTICIPATORY PROCESSES AND DESIGN METHODOLOGIES FOR IMPROVING LIVEABILITY: A COMBINATION USED IN SOME HISTORICAL DISTRICTS IN ROME ..... 420**
**Martincigh, Lucia; Di Guida, Marina**

**ANALYSING THE HOSPITAL PATIENT ROOM THROUGH SOCIAL REPRESENTATIONS..... 429**
**Marx, Fernanda**

**CEBU PROVINCIAL CAPITOL: BALANCING URBAN CONSERVATION AND DEVELOPMENT RIGHTS..... 437**
**Menjares, Neil Andrew Uy; Solis, Carmencita Mahinay**

**INCLUSIVE AND DEMOCRATIC METHODS FOR THE APPRAISAL AND THE EVALUATION OF URBAN INFRASTRUCTURES..... 446**
**Miccoli, Saverio; Finucci, Fabrizio; Murro, Rocco**

**THE INFLUENCE OF AN ELECTRONIC PAYMENT SYSTEM ON PASSENGER COMFORT IN VEHICLES OF URBAN PUBLIC PASSENGER TRANSPORT..... 455**
**Milenković, Ivana; Pitka, Pavle; Simeunović, Milan; Miličić, Milica; Savković, Tatjana**

**SENTIMENT ANALYSIS OF TWITTER DATA OF HISTORICAL SITES ..... 463**
**Raspopovic Milic, Miroslava; Banovic, Katarina; Vukmirovic, Milena**

**UPGRADING URBAN MOBILITY: THE APPLICABILITY OF CYCLING APPS IN BANJALUKA..... 472**
**Milaković, Mladen; Stupar, Aleksandra**

**DESIGN PRINCIPLES FOR BETTER OPEN SPACES AT UNIVERSITIES, DESIGN APPROACHES FOR UNIVERSITY OF PÉCS ..... 479**
**Paári Péter; Gyergyák János; Sebestyén Péter**

**THE IMPORTANCE OF STRATEGY IN THE DEVELOPMENT OF HUMANE CITY IN THE 21ST CENTURY – SYNERGIC ACTION FOR LOCAL IDENTITY IN THE GLOBAL CONTEXT: CASE OF NIKSIC (MONTENEGRO) ..... 488**
**Perović, Svetlana K.**

**CONCEPTUALIZING AN ACTIVE LEARNING TAXONOMY IN AN ARCHITECTURAL COURSE FOCUSED ON EVALUATION OF CLIMATE CHANGE EFFECTS ..... 495**
**Pesic, Nikola**

**MECHATRONICS IN ARCHITECTURE: DESIGN RESEARCH METHODOLOGY ..... 507**
**Petrović, Milica; Stojanović, Djordje**

**ANALYSIS OF THE WAITING TIME OF PASSENGERS ON PUBLIC TRANSPORT IN THE PERIOD MORNING PEAK HOURS.....516**
**Radivojev, Dejan; Simeunović, Milan; Pitka, Pavle; Lazarević, Milan**
**THE RELATIONSHIP BETWEEN SPACE QUALITY OF ADDICTION CENTRES AND PATIENT BEHAVIOUR.....524**
**Sadoud, Nesma; Zoltán Erzsébet Szeréna**
**HISTORICAL PRELUDES OF PARAMETRIC DESIGN TECHNIQUES .....533**
**Sárközi Réka; Iványi Péter; Széll Attila Béla**
**TEXTILE MEMBRANE STRUCTURES IN REFURBISHMENT OF BUILT HERITAGE .....538**
**Savanović, Dijana; Krstić-Furundžić, Aleksandra; Josifovski, Andrej**
**REBUILDING RURAL PUBLIC SPACE BY VERNACULAR AND ART METHOD IN CHONGQING CHINA.....547**
**Shi Yongting**
**IDENTIFYING PRIORITY INDICATORS FOR REUSE OF INDUSTRIAL BUILDINGS USING AHP METHOD - CASE STUDY OF ELECTRONIC INDUSTRY IN NIS, SERBIA .....555**
**Stanojević, Ana; Jevremović, Ljiljana; Milošević, Mimica; Turnšek, Branko AJ; Milošević, Dušan**
**ENERGETIC RETROFIT OF THE TRADITIONAL APARTMENT HOUSES .....564**
**Sugár Viktória**
**„UNITY IN THE MULTITUDE" .....572**
**Šutović, Anastasija**
**PARAMETRIC CURTAIN WALLS .....578**
**Katalin Szommer; Sárközi Réka**
**ALTERNATIVE COMMUNITY – PROMOTOR OR INHIBITOR OF SUSTAINABLE DEVELOPMENT .....582**
**Temeljotov Salaj, Alenka; Leuraers, Cato; van Dooren, Amber; Bjørberg, Svein**
**THE EFFECTS OF THE POPULATION DECLINE ON THE BUILT ENVIRONMENT AND DEVELOPMENT POSSIBILITIES FOR SMALL SETTLEMENTS – A CASE STUDY OF BARANYA COUNTY IN HUNGARY.....591**
**Tőke Máté**
**URBAN PARTICIPATION AS A TOOL ALL OVER THE WORLD .....598**
**Tommasoli, Lavinia; Luciani, Francesca Romana**
**EXPLORING THE SYMBOLISMS AND TECHNIQUES OF DAYLIGHT MANAGEMENT IN HISTORIC GREEK CONSTRUCTIONS .....605**
**Tsikaloudaki, Katerina; Tsoka, Stella; Theodosiou, Theodore; Tsirigoti, Dimitra**

**TECHNOLOGICAL SOLUTIONS FOR COVERING ARCHAEOLOGICAL SITES IN ORDER TO PRESENT MOSAICS IN SITU – CASE STUDIES** .....613
**Ugrinović, Aleksandra; Krstić-Furundžić, Aleksandra**
**THE RECONSTRUCTION OF TRADITIONAL PITCHED ROOF IN MOUNTAINOUS BUILDING** .....621
**Wu Mengyang; Bachmann Bálint**
**RETURN TO THE LOCALISM – TWO PROJECTS BASED ON LOCAL TRADITIONS**.....628
**Zhang Qian; Hutter Ákos**
**MEIXIAO VILLAGE YONGXING TOWN HAIKOU CITY PROTECTIVE RECONSTRUCTION DESIGN**.....635
**Zhao Liangyu; Kertész András Tibor**
**RELATIONSHIP BETWEEN URBAN REHABILITATION OF BUILT HERITAGE AND LOCAL INHABITANTS, CASE STUDY ON CHONGQING ROAD, TIANJIN**.....644
**Zhao Tianyu; Gyergyák János**
**LIVEABLE, MODULAR AND FLEXIBLE – NEW WAYS OF UPDATING AND UPGRADING POST WORLD WAR HOUSING ESTATES** .....652
**Zoltán Erzsébet Szeréna; Gyergyák János**

# THE ISSUE OF PRESERVATION OF TRADITIONAL RAMMED EARTH HOUSES: CURRENT PRACTICE OF PRESENTATION IN SERBIA AND REGION

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## ABSTRACT

Traditional buildings are of great significance for exploring the architectural heritage and cultural identity. Created in the local context, reflecting the attitude of people towards the environment, these houses are built with traditional techniques and locally available building materials. In Serbia, in Vojvodina region, and other regional flat land there is a rich history of use of earth as a building material and a large number of traditional rammed earth houses to be held until today. Most of these buildings are still in use, but often trumble-down and failing to fulfill current living standards and needs. Because of that the need for preservation and renovation of traditional buildings is recognised as an important step in the process of their recognition as an important part of the architectural heritage of today. The problem is that the majority of traditional architectural heritage has not been officially designated as a cultural asset or a part of the cultural and historical sites, therefore it does not enjoy an adequate form of protection which can cause degradation of buildings identity during preservation processes.
The main question of this research refers to appropriate ways of presentation of traditional architecture, in order to recognize and provide a better understanding of architectural heritage and cultural identity. Different approaches toward presentation of traditional buildings will be analysed trough current framework of protection practice and case studies both in Serbia and the region, pointing out possible problems and potentials in these actions as well as giving recommendations for future treatment of this type of buildings. This research aims to find solutions for adequate presentation of traditional buildings, pointing out their great significance of architectural heritage, and also it serves as an experience to improve our own relationship toward heritage in future work.

**Keywords:** traditional houses, rammed earth, architectural heritage, presentation

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## INTRODUCTION

Traditional houses are an important part of the cultural and built heritage, giving inhabited areas their uniqueness and identity. Presenting them and keeping them intact and alive is a priority of national strategies and regulations, but also a major challenge due to the special approach these buildings require. Since their construction, a number of these buildings have degraded over time and the way of living, conditions and building standards have changed significantly. Today a significant number of these buildings is still in use and they are facing the need to be included in the local community. Through cultural routes, tourism actions and local initiatives these buildings are finding their way in current time. Most of the buildings of traditional architecture have not been officially designated as a cultural asset or part of the cultural and historical sites. Because of that even though this type of facilities is of great significance for exploring the tradition and history, and evidence of historical use of traditional materials and techniques, it is often inadequately treated, and today it is recognized as one of the most vulnerable forms of cultural and architectural heritage in Serbia. In order to consider this issue it is crucial to analyze current legislation and strategies regarding heritage protection and presentation as well as building regulations and standards and relation of public and professionals to the issue of preserving traditional rammed earth buildings and techniques. In this paper, the treatment of these facilities will be analyzed through a review of current legislative practice, public attitude, and practices toward rammed earth buildings, as well as case studies of current presentation practices of this type of heritage in Serbia and region.

## ARCHITECTURAL HERITAGE - REGULATION AND STRATEGIES

Architectural Heritage has the undisputed importance for the tradition and identity of the country and as such it has become a matter of legislation both at the global and local level since the beginning of the XX century. Current legislative practice in most European countries, as well as in our region, relays on documents and conventions that are considering cultural heritage as an important part of our culture and emphasizing the importance of its preservation. These documents recognize the protection, promotion, and maintenance of cultural diversity and heritage as a fundamental prerequisite for sustainable development and benefit of present and future generations. Indicating the significance of cultural diversity and promoting the same through educational programs and programs to raise public awareness, signatory countries are trying to integrate matters regarding heritage into development policies at all levels and recognize and include architectural heritage in local communities. Traditional buildings are usually recognized as groups of buildings - separate or connected by their architecture, unity, and integration into local context and are of universal value form historical, archeological, artistic, social, cultural or scientific point of view. These buildings are considered an important part of local history, community and patrimony and participating countries are obligated to undertake adequate measures for the protection of this type of heritage and its well being. Each Party to the Convention undertakes to apply the measures for protection, and prevent desecration, deterioration, demolition of protected goods as well as encourage their restoration and reconstruction. It is important to raise awareness about preserving the architectural heritage and its importance as a source of inspiration and knowledge. To achieve this it is necessary to enable the presentation, promotion, and improvement of architectural heritage to become a prominent feature of cultural and environmental policies, encouraging the preservation and reuse of heritage and traditional building techniques and materials in accordance with the principles of heritage protection and conservation.

## TRADITIONAL ARCHITECTURE IN SERBIA - REGULATIONS AND PRACTICE

Regulations in Serbia define architectural heritage as immovable cultural asset - monuments, spatial cultural and historical sites of particular importance for the social, cultural and historical development of society. The level of protection of the asset required varies depending on the nature of the asset. Traditional buildings and heritage are recognized as building, spatial historical entity or urban or rural settlement of past of special cultural or historical significance. Regulations provide general guidelines for the treatment of the heritage, respecting basic principles of protection and all heritage must not be damaged, destroyed and its appearance, property or usage must not be changed. Beside regulations, the question of presentation of traditional buildings is also considered in local and tourism development strategies, that support the sustainable use of existing cultural goods, their effective and comprehensive protection as well as the achievement of rural and regional development. Recognizing the growing need of tourist for contact with nature and the local culture and environment, these studies indicate that the rich traditional architectural heritage in Serbia should be promoted through cultural routes, ethno and rural tourism. It is pointed out that numerous studies and investments are needed in order to promote and support this kind of development of rural areas, as well as investments in infrastructure and refurbishment of some of the assets. Since traditional buildings often do not meet the modern standards and needs of the occupants it is common that they require energy refurbishment. Regulations that address energy efficiency issues provide clear recommendations for the reconstruction of existing facilities in order to increase energy levels, enhance comfort and improve the living standard of the occupants. Buildings that are under protection are excluded from these requirements, but only a small number of traditional buildings are protected and defined and recognized as cultural properties . Since these objects are not identified and labeled as objects under the protection it is not required to treat them as cultural properties which can result in a more radical approach to these facilities, that is especially noticeable during the energy rehabilitation process. During the renovation, it is possible to use materials and techniques which are not compatible with traditional materials and building techniques, which can be harmful to the object itself and its users. As a consequence of such a treatment of traditional buildings, the loss of identity of these facilities is possible as well as the neglecting of traditional materials and tools, old crafts and construction techniques.

## RAMMED EARTH BUILDINGS - CULTURE AND SOCIETY

Earth as a material has been present since ancient times and has been used to build different assets all around the world. Nearly a third of the population in the world is believed to be living in houses that have been made of earth and 115 structures, partially or completely built by earth (20% of the world's heritage) are inscribed on UNESCO's World Heritage List. Local builders try to adapt to the familiar context and materials that they found on the spot, often creating innovative solutions. In Serbia, mainly in the Vojvodina region, there is a rich history of usage of the earth as a building material in different types of earth constructions and various techniques. A large part of building fund in Serbia consists of single-family housing, many of which are built over the previous two centuries in traditional building techniques. In Serbia, in Vojvodina region, the most common are single-story rammed earth buildings. Traditional buildings have been recognized as a field that significantly contributes to the development of the local community, both in a cultural and economic context. Traditionally, the process of building

a house gathered the local population, using local materials, and allowing the knowledge exchange and the preservation of old and autochthonous construction techniques. Passed from one generation to another building techniques became an important part of local culture. Today there is less and fewer people who are trained experts in the building and reparation of traditional buildings- they are mostly individuals, or small groups, mostly self-taught, or having their own facilities and recognizing their importance. In order to prevent the cessation of old crafts and construction techniques, these individuals, through the organization of professional meetings and workshops, educate interested of the importance of adequate treatment of these facilities and preservation of traditional construction knowledge. Traditional architecture in Serbia is in a large percentage located in rural areas, grouped into cultural and historical units. Some of the facilities are defined as protected and as such mapped on cultural and tourist maps, the other facilities usually remain invisible to the public and as such unrecognizable and potentially neglected. In order to avoid this problem, it is necessary to approach the objects of traditional construction more closely, to define their position and to define the legal and professional framework in which they can be protected and presented.

## CURRENT PRACTICE OF PRESERVATION IN SERBIA AND REGION

Through examples of rich architectural heritage, and presentation of possible solutions that could be applied to the preservation and improvement of this specific construction method, this research aims to highlight the importance of the earth as a material with exceptional characteristics that could be re-used in the conservation of modern buildings. According to this, three different approaches in process of preservation are described: restoration, rebuilding and mimesis.

### Restoration

Cambridge Dictionary defines ''restoration'' as act or process of returning something to its earlier good condition or position. In process of protecting the architectural heritage, the process of restoration is one of the possible approaches. This approach, according to national charters regarding heritage protection, is one of the most acceptable ones. Two case studies showing this approach in the context of preservation rammed earth houses, one, Moshorin house, and the second, ethno house SDAR, both near Pancevo, the city in Serbia.

### Moshorin house

Moshorin house is a project of Serbian architect Dragana Kojicic. This architect formed a center for earth architecture, the first center of its kind in Serbia. The idea to restore the rammed earth house is the consequence of author's recognition of the earth and its characteristics as a building material (Figure 1).
Its interesting that the house is restored part by part, through professional workshops organized by Dragana Kojicic. The renovation of the house lasts from 2010. All materials used, are located on the site itself or in its surrounding. In addition to earth as a building material, sand, wood, straw, lime and wax were also used. Therefore they applied various technical protection measures, from conservation, restoration, rehabilitation and adaptation (Figure 2).

**Figure 1:Moshorin House- source: https://www.serbianprivatetours.com/sr/prica-o-mosorinu-i-zemljanoj-arhitekturi/, March 1st, 2019.**

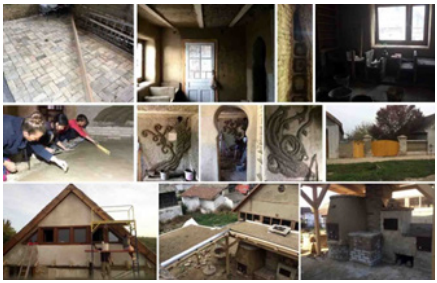

**Figure 2: Moshorin House- source: http://zemljanarhitektura.com/?p=12472&lang=sr, March 1st, 2019.**

## Ethno house SDAR

Ethno house SDAR was built near Pancevo city in the first half of XVIII century. It was built with rammed earth and covered with reeds. The fireplace is preserved today. The house was partly restored when reeds were replaced by tile in XIX century (Figure 3).
Inside, there are still authentic parts of the household. This restoration is based on the basic principles of heritage protection, defined by numerous international charters. By intervening on the original structure, the same or compatible materials were used, which did not endangered the original structure. Nevertheless, it is clear what is an intervention and what is an original structure, which is one of the basic principles of heritage protection. Today, this house is an example of traditional earth architecture which provides visitors with insight into traditional building techniques and space organization.

## Rebuilding

Rebuilding is one way of presenting traditional rammed earth houses. The concept of a presentation through rebuilding is an arguable way of presentation. Defined by international charters, clear definition of original and intervention has to exist. In this context, rebuilding referes to the use of the same techniques, but in a new form.

## Mud House

Mud House was built in Turkey. In central Anatolia and the east of Turkey, homes have traditionally been made from dried cerpic bricks, a mixture of earth, clay, sand and straw. The mixture can be molded into bricks and dried in the sun, after which the bricks are used to construct walls. These homes are cooler and more comfortable than cement houses which absorb the heat in

summer and the damp in winter. Also, Mud House is a place for new participants to take part in their workshops (Figure 4).

## Casa Verde

Casa Verde is situated in Romania. The concept of this project is all about healthy, cheap and sustainable way of building in natural areas, untouched by civilization. A material used straight from the backyard, is earth. Ileana Mavrodin, architect and natural builder, showed how to make a house from the scratch using cob. Cob is the result of mixing earth, sand and straw. The experience of using cob goes beyond and shows how you can freely use both hands and feet to model the house. This house is a place for different workshops Ileana made, when food is provided by local people from their own sustainable farms (Figure 5).

**Figure 3: Ethno house SDAR- source: https://vojvodinaonline.com/smestaj/etno-kuca-sdar-dolovo/, March 1st, 2019.**

**Figure 4: Mud House- source http://www.themudhome.com/, March 1st, 2019.**

## Mimesis

Nevertheless, one way of reviving traditional architecture refers to analysis of traditional architecture techniques, and awakening it through new buildings. In fact, old local earthen buildings inspired new projects regarding their orientation, morphology and use of local material.

## Mokrin House

Mokrin House is situated near Kikinda, small city in Serbia. Following the traditional strategies,

a patio is opened in the south. The passive solar design, combining big windows in the south face, little ones in the windows in the north and skylights with earth walls, ensures thermal comfort, natural light and cross ventilation. These passive design principles maximize sunlight access through the south facade improving benefits of earthen walls thermal mass. In winter, nowadays, Mokrin house represents rural coworking space. Its an urban point in the rural surrounding (Figure 6).

**Figure 5: Casa Verde source: http://about-eastern-europe.com/category/romania/page/5/, March 1st, 2019.**

**Figure 6: Mokrin House source: http://www.mokrinhouse.com/, March 1st, 2019.**

## CONCLUSIONS

Rammed earth houses represent a significant part of Serbian tradition. Nevertheless, this type of buildings is also one of the most endangered type of architectural heritage. Meeting the modern standards, this buildings require interventions in order to meet new standards. This problem is not recognized on the governance level, but through individuals who organize different workshops and remind us of the importance of this type of architectural heritage. Rammed earth houses are of extreme importance for identity of our past and civilization. Through examples of rich architectural heritage, and presenting possible solutions that could be applied to the preservation and improvement of this specific construction method, this research aimed to highlight the importance of the earth as a material with exceptional characteristics that could be reused in the construction of modern buildings.

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