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**REGIONAL DEVELOPMENT,
SPATIAL PLANNING AND
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KEYNOTE PAPERS

INTEGRATION, SPATIAL DYNAMICS AND REGIONAL POLICY DILEMMAS IN THE EUROPEAN UNION

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This paper presents a critical account of the process of integration and its implications for the future of European Union. It analyses the type, strength and direction of trade and factor flows among places and the emerging geography of development in Europe. It argues that integration is not a space neutral process, as its main drivers are characterized by spatial selectivity and diverging performances, generating an overall unfavorable environment for lagging-behind regions in the EU. The paper also discusses the current regional policy dilemmas in the EU, arguing that top-down uniformity in policy choices and a strict framework of policy directives should be avoided, as different places may have to choose a different mix of regional policy that will correspond better to their needs. The paper also examines why the persistently underperforming regions in Europe cannot learn and benefit from best-case examples and the success stories of other regions. Although factors affecting economic potential are usually different in advanced and less advanced regions, cohesion policies attempt to solve the underdevelopment problems of the lagging regions, only informed by the experience of the successful ones. The paper concludes that regional policy has to change in important ways. The new territorial approach requires policy to become more flexible and more adaptive to local and regional needs. This means that uniformity in policy priorities and mix should be avoided and the proposed 'pan-European approach' should leave enough room for bottom up and place based approaches, as the experience shows that no single path or an a priori mix of policy tools exists for every place.

Key words: Integration, cohesion, inequalities, regional policy, EU

TOWARDS METROPOLITAN GOVERNANCE IN EUROPEAN URBAN AREAS

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European metropolitan areas, the influence territories of the most important cities, are of key importance for our future: they concentrate a large share of European population and their role is even bigger regarding economic development. Yet, the current model of urban government of the metropolitan areas is in crisis, due to the large mismatch between administrative borders and functional areas of cities which is further aggravated by the serious democracy deficit of government.

After highlighting the problems of metropolitan areas the keynote presentation will focus on the potential solutions. Relevant results will be shown from a number of URBACT projects, a EUROCITIES survey, ESPON and FP6 research on attempts (good and less successful) to create metropolitan cooperation – with innovative forms of governance and with planning approaches.

The final part of the presentation will outline the planned new 2014-2020 Cohesion Policy instruments which aim to foster urban development, with special regard on better functioning of functional urban areas. The Integrated Territorial Investment (ITI) will be available for the metropolitan area level, while the Community-Led Local Development (CLLD) for the smaller neighbourhoods. Compared to these functional urban area level tools the innovation partnerships under Horizon2020 may be suited to broader metropolitan areas.

The big question of the future is how these new tools (and their background institutional, financial structures) can be coordinated with each other within the metropolitan areas.

Key words: metropolitan areas, urban governance, functional geographies, EU Cohesion Policy

The presentation is based on research carried out within the framework of URBACT, Eurocities, ESPON and FP6 projects.

THE UNSPOKEN PRE-CONDITION TO SUSTAINABILITY: A CROSS-NATIONAL PERSPECTIVE ON DEGREES OF COMPLIANCE WITH PLANNING LAWS

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Planning laws to control urban and regional land use and construction exist in almost all the countries of the globe. Without planning laws, the discussion of “sustainability” in urban and regional issues and land management is an empty one. Indeed, the entire enterprise of land-use and development control is predicated on the assumption that the public will comply with the regulations, yet planners, lawyers and social scientists have not devoted much attention to researching the factors that contribute to the differences in compliance across the world. Illegal development occurs in most countries, to a lesser or greater extent. Among advanced-economy countries as a group, violations tend to be smaller in scale than among poor countries. Yet among the advanced economies too, there are major differences. For example, Western European countries fall into two groups: Southern countries including Greece, Italy, Turkey, southern France and Portugal, and central and northern European countries. East-European post-Communist countries too are struggling with a relatively high level of infringements of planning laws. Most of the research on illegal development published to date deals with “informal” or “irregular” communities in developing countries. In these, poor people build makeshift housing on land that is often not theirs. By contract, in advanced economies, as well as in the “transition countries” such as Serbia, noncompliance occurs largely on people's privately owned land rather than through squatting on others' property and is not motivated by stark physical or economic needs. This type of illegal development sometimes harbors a clash between the perception of property rights and the willingness to comply with planning regulations. In some countries, such as Greece and Cyprus, this clash is exacerbated by the existence of laws – usually of historic derivation – which embed some limited development rights – typically a home on a large lot - within the property rights themselves. I will argue that the structure of planning laws is not a “given” and that macro similarities often overshadow important differences. After all, in legal issues, “the devil is in the detail”. My recent comparative research has shown significant differences in planning laws among countries, even neighboring ones. The structure of planning laws may have much to do with the degrees of infringements of planning laws. I distinguish among types and degrees of noncompliance with planning and building regulations and present a framework for identifying the underlying factors that may help to explain the unspoken north-south divide between North and South, West and East. Post-Communist countries, which mostly did not have functioning planning laws under Communism, are today in process of enacting (or revising) planning laws, usually imported from Western countries. These countries therefore have the opportunity to take a new look at the relationship between the structure of planning laws and the propensity for non-compliance.

Keywords: planning law, sustainable development, illegal building, informal development, land ownership, enforcement

REGIONAL ADAPTATION TO CLIMATE CHANGE - NEW CHALLENGES FOR SPATIAL PLANNING AND REGIONAL GOVERNANCE

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Climate change has become a major topic in urban-regional development in many countries. For a long time, policy makers have mainly concentrated on climate change mitigation, e.g. by reducing CO₂ and other greenhouse gas emissions. Meanwhile the attention is slowly moving towards developing adequate adaptation strategies. These may pursue different objectives, e.g. to be better prepared for envisaged consequences of climate change, to better protect sensitive areas and sectors against negative impacts of climate change or to gain competitive advantages in regional, national and world markets by developing new technologies related to the challenges of climate change.

On this background, the paper will review international approaches regarding regional adaptation strategies to climate change, and discuss challenges for spatial planning and regional governance. The German Adaptation Strategy and some pilot projects to elaborate regional adaptation programmes will be taken as references. Within the framework of national competitions organized by the Federal Ministry of Education and Research, and the Federal Ministry of Transport, Building and Urban Development, several regional model projects are currently under way with the objective to gain experience in how to develop adequate adaptation strategies in city regions. In most of the projects, urban-regional planning and management as well as aspects of regional governance play an important role.

The paper will (1) provide an overview over climate change adaptation approaches on the background of the international discussion, (2) discuss options to develop adaptation strategies and their potential bottlenecks, (3) discuss the role of spatial planning and regional management and their instruments which can be useful tools for developing adaptation strategies, and (4) finally provide some insight into challenges for regional governance and the cooperation between research and policy making. In its final parts, the paper will especially focus on the Dresden Region in Eastern Germany.

Key words: urban and regional development, adaptation to climate change, adaptation programmes, spatial planning, strategic approaches

SESSION A

**EUROPEAN DEVELOPMENT INITIATIVES AND
DOCUMENTS AND THEIR IMPACT ON
SUSTAINABLE SPATIAL DEVELOPMENT**

RENEWAL OF STRATEGIC RESEARCH, THINKING AND GOVERNANCE IN SPATIAL DEVELOPMENT OF SERBIA: MID-TERM PRIORITIES

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There has been a crisis of strategic thinking, research and governance (STRG) in Serbia for more than two decades, resulting in its more recent development impasse, and paralleled by an 'institutional sclerosis' with regard to new generation of spatial and other strategic documents. A large number of existing documents do not suffice to that, particularly vis-à-vis available implementation devices. Their re-elaboration is now of necessity, especially regarding new institutional and organizational arrangements needed for the renewal of STRG. Serbia is facing 'Europeanization outside the European Union and with its limited support', under the condition of predictable prolonged crises and bleak development prospects, implying that a new set of priorities should be defined to that end, viz.: new instruments for regional and territorial integration of general and sectoral policies; a re-evaluation of recently introduced mechanisms and arrangements; new research programs to support the new generation of spatial development policies; strengthening an innovative milieu for new development ideas and approaches; developing new implementation devices; harmonization of the EU requests regarding the integration of Serbia into European institutions and networks with the development givens, fixities and prospects of Serbia; defining mid-term priorities, analytical concepts of sustainable development and operative targets; etc.

Keywords: crisis of strategic thinking, research and governance and its renewal; territorial capital of Serbia; spatial strategic framework; integration of general and sector policies

In this paper some results have been presented and interpreted from the Research Project "The role and implementation of the national spatial plan and regional development documents in renewal of strategic research, thinking and governance in Serbia" (no. 47014), financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia in the period 2011-2014.

REGIONAL SPATIAL PLANNING IN SERBIA IN THE CONTEXT OF DYNAMIC CHANGES IN REGIONAL SPATIAL PLANNING IN THE EU

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In the last decade, a series of development plan documents have been adopted in the European Union, as well as several pan-European initiatives. These documents are a new generation of strategic documents and also a strategic framework for governance and planning of regional development. Parallel to that process, in the Republic of Serbia the strategic spatial plans at regional level have been elaborated, following the establishment of the new legislative framework on planning and construction, territorial organization of the Republic of Serbia and regional development, as well as adoption of the Spatial Plan of the Republic of Serbia 2010-2020 (SPRS). Over the last few years, the total of 10 regional spatial plans (RSP) have been either adopted or in final stage of elaboration. The paper discusses the role and spatial coverage of the regional spatial plans, as well as compliance of regional spatial plans and other plans/strategies at regional and local level of governance in Serbia in comparison to European countries. Based on the comparison of the selected examples of the latest generation of regional spatial plans in Serbia with analyzed plans in two EU countries, the paper indicates main similarities and differences with regard to tasks, objectives, key issues, level of detail (LOD) of planning statements and rules for their implementation. It refers to several key issues related to sustainable territorial development of analyzed regions. Due to insufficiently developed regional policy, absence of regional level of governance and slowness in choosing an adequate form of regionalization, the practice in elaborating and, particularly, in implementing the regional spatial plans (RSP) in Serbia has not been sufficiently developed. The purpose of this paper is to discuss the possibilities and challenges for improving regional spatial planning in Serbia in relation to dynamic changes in regional spatial planning in the EU countries. The main hypothesis is that regional spatial planning in Serbia has still to redefine its role, tasks and implementation in planning and governance system in Serbia.

Key words: regional spatial planning; role and methodology, concepts and models, implementation, sustainable territorial development.

The paper represents the result of research carried out on projects III 47014 „The role and implementation of the National spatial plan and regional development in renewal of strategic research, thinking and governance in Serbia“, and TR36036 “Sustainable development of Danube area in Serbia” financed by the Ministry of Education and Science of the Republic of Serbia.

MUNICIPALITIES AND RESILIENCE: STRATEGIC GOVERNANCE AND BUILDING COMMUNITY CAPITAL IN AN UNCERTAIN FUTURE

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Urban areas and regions face multiple challenges, for example in relation to climate change adaptation and mitigation, natural resources shortage, and unsustainable urban growth. The concept of urban resilience is increasingly discussed as a response to these challenges. Municipalities are uniquely placed to provide strategic governance, for example through planning processes, and support community capital at all scales. This requires innovative solutions and collaboration with communities to build resilience in an uncertain future. However, few cities or regions have embraced the concept of resilience and the engagement of communities is often underdeveloped.

This paper briefly explores the origins and usage of the terms resilience, resilience thinking and sustainability in relation to urban planning. The paper examines the existing strategies and policies relating to resilience through the results of a questionnaire survey. This has been carried out in the cities and urban regions participating in the FP7 project “TURAS - Transitioning towards Urban Resilience and Sustainability”. In doing so, the challenges are identified that TURAS must overcome in order to generate effective visions, feasible strategies, spatial scenarios and guidance tools for the future. Particular attention is given to the topic of urban regeneration and re-use of abandoned land and empty buildings that can help to build resilience in urban communities. The paper illustrates that the adoption of resilience thinking into strategic planning requires a flexible, cross-disciplinary and joined-up approach at all scales, with potentially transformative implications for communities, planning practice, policy and education.

Key words: concept of urban resilience, concept of resilience thinking, strategic planning, municipalities, community capital, multi-disciplinarity, trans-disciplinarity

This paper presents first results from the on-going project “TURAS - Transitioning towards Urban Resilience and Sustainability” which is financed by the EU FP7, Theme Env. 2011.2.1.5-1: Sustainable and Green Cities.

BORDERLAND DEVELOPMENT POLICY COMPARISON BETWEEN CENTRAL EUROPE AND BALKAN REGION COUNTRIES

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The Borderland regionalization as a social-economical process has recently become a wide-spread phenomena, which is not only related within the EU border region development policy but also in all Europe, including former socialist countries in Eastern and Central Europe. Borders and borderlands are related for determination different geographical borderland development, which means promote exchanges of experience and information with a view to identifying and coordinating common interests among the diverse range of cross-border problems and opportunities, and to propose possible solution after collapse of socialism in Central Europe and especially in former Yugoslavia.

In this research is identified three border regions 1) Visegrad group, 2) Balkan countries and 3) Ukraine, Moldova and Belarus group. For Central Europe countries (EU members) the main strategy is development vision „Europe 2020”, where is stressed region convergence and social cohesion. Between Visegrad group and Balkan region the partnerships aim is to support the Western Balkans efforts to implement the stabilisation and association process and to meet the accession criteria (Copenhagen criteria) with a view to their eventual EU membership.

In development vision is included the point of supportance for the convergence regions. Even within an ostensibly borderless European Union (EU), national borders are again seen as central to the organisation of political community and the protection of group interests. Clear symptoms of re-bordering tendencies within various nation-states in the EU can be recognised in discussion on neo-nationalism, protectionism and illegal migrants crossing the EU's external borders.

The political influence over border agencies presents two challenges to cooperation. Social cohesion and convergence policy for Balkan region especially for Macedonia and Albania are weak from the aspect of borderland and peripheral region development. In this research is used comparative method between institutional documents. For this research data is compile from Eurostat, Visegrad group statistics, OECD statistics and six national statistical bureau data (Serbia, Croatia, Bosnia & Herzegovina, Bulgaria, Macedonia and Romania).

Key words: Borderlands development policy, Balkan region, clusters, integral boederlands management, social cohesion

PROCEDURAL JUSTICE: TOWARDS NEW APPROACHES TO PUBLIC PARTICIPATION IN DECISION MAKING PROCESSES

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Public participation in decision making is in the spotlight of the planner's debate and is connected to modern planning and progressive planning theories. Public participation is also a part of the debate of promotion of democratic human and moral values.

In recent years, there is increased recognition of the importance for managing a just process of public participation that is adjusted to values and norms of the public. This recognition requires finding new comprehensive approaches that provide integrative solutions for the process which is appropriate and equitable for the public, especially for disadvantaged groups, like Arabs in Israel who comprise 20% of the State's total population.

The research focuses on two levels: (1) the collective property and participation rights in decision making of Arabs; and (2) social-cultural characteristics of the Arab society. These two levels, in addition to procedural justice principles, will be the criteria for examining public participation of Arabs in the planning decision-making process. This study focuses on procedural justice, which has theoretical and practical implications for regional planning.

Formal planning in Israel includes limited opportunities for Arabs to affect planning decisions that meet their needs. This highlights the importance of public participation in planning, which plays a critical role in empowering the local community and implementing justice principles in a democratic state like Israel.

The main research objective is to examine public participation procedures in the preparation process of local master plans for Arab townships. The examination will focus on implementation of procedural justice rules, both general and contextual. The research focuses on public participation procedures that the planning law does not identify.

This research will significantly contribute to the field by suggesting development to the procedural justice theory, with relationship to public participation as a normative basic for the process in decision making and implementation.

Key words: procedural justice, public participation, minority and indigenous rights, Arab Palestinians in Israel, decision making

INFORMATION TECHNOLOGY SYSTEMS AND THE EUROPEAN UNION REGIONAL DEVELOPMENT POLICY: PAST, PRESENT AND WHAT THE FUTURE HAS IN STORE

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Starting with the 2007-2013 programming period, the European Commission (EC) has made an important step in the field of using information technology (IT) systems in the implementation and monitoring of EU funds for regional development by introducing the electronic exchange of information between the EC and the Member States regarding the operational programmes and financial transactions, transposing in this manner the concept of paperless administration across the national borders. National authorities continue to have the responsibility of recording and storing in computerised form accounting records for each operation under the operational programmes and of collecting financial and technical data on implementation, similarly to what they did in 2000-2006, but the newly proposed regulations for the 2014-2020 programming period take a step further in the use of IT systems in the field of regional development by asking these authorities to set up systems that will enable beneficiaries of EU funds to submit the required information by way of electronic data exchange (e-cohesion).

The purpose of this article is to analyze how the different EC regulations have so far shaped the IT monitoring systems in the field of the EU regional development policy and the use Member States and the EC make of such systems, exploring also the practical opportunities that these IT systems could offer in areas such as complementarity of interventions, funding transparency and efficiency of implementation.

Key words: regional development, monitoring systems, regional policy, e-cohesion, structural instruments, complementarity

HOW TO TECHNOLOGIZE URBAN PLANNING PROCEDURES IN ORDER TO BOOST URBAN DEVELOPMENT

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Current worldwide trends of accelerating globalization and the ensuing dispersion of production, hypermobility of capital and overall redefinition of physical space, have become major premises for the competitiveness of cities on a global scale. This paper examines the potential of urban planning procedures to be semi-dynamically programmed using information and communication technology (ICT) in order to not only comply with the trends and demands of a global information society, but also to better correspond to real environmental circumstances and the overall context.

Dominated by economic globalization and information flows, our modern era has influenced the perception of reality, and its structure, for “cyber space” has emerged as a venue for social encounters, decision making and change. This context thus introduced ICTs as a major catalyst for change, and technological innovation became both the cause and the effect of urban development. Put differently, cities are not rendered obsolete. Instead, the possibility of tracking various scenarios of urban development worldwide by means of ICTs has actually increased the importance of place, local culture and social participation, enabling the incorporation of dynamics and relativism into modern urban planning procedures and practice.

This paper will carry out an analysis of appropriate ICT instruments to trace dynamic and diverse urban development scenarios in cities. The networks of cause and effect which exist in relationships among actors, social practices and space, will be presented as a set of dynamic parameters for the application of software processing in urban planning.

The overall objective of this paper is to elaborate on the fact that cities can shape their autonomous and innovative future by using ICTs. Thus, cities in their incompleteness and indeterminacy become prosperous venues where an active knowledge transfer between urban theory and practice is forged and the most up-to-date technology is applied.

Key words: urban planning, urban development, ICT, e-planning, GIS, globalization, cyber space, dataspace

EDUCATION FOR SUSTAINABLE DEVELOPMENT IN LEARNING REGIONS - AN INTERDISCIPLINARY CHALLENGE

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This presentation is an interdisciplinary literature review with practical implications regarding the following question: How can out-of-school education initiatives contribute to sustainable regional development? Seeking for an appropriate research framework, this paper reaches out for an “outward-looking” view on out-of-school education, i.e. an integrated investigation of both education practice and regional socio-economic structures. The presentation will scrutinize two fields of research both predestined to provide the intended framework due to a shared focus on learning in regions: education for sustainable development (ESD) and the debate on the notion of “learning regions”. The literature review will illustrate how both fields each bear shortcomings as well as complementary findings and blind spots regarding two cornerstones of outward-looking research, the notions of learning and regions. On the one hand, ESD scholars primarily employ a case-specific and prescriptive view on education in regions, in which spatial contexts usually feature as mere reference points for education practice aiming at regional identity, problem-orientedness or participation. The learning regions literature on the other hand may compensate ESD’s blind spots due to its emphasis on learning as spatially embedded knowledge processes among heterogeneous agents. Just recently, however, the learning regions literature has been criticized for its disregard towards those learning processes, which concern the level of individual action and transcend the notion of innovation. Respective insights from ESD may counterbalance these shortcomings. Finally, the presentation will forward a preliminary attempt to integrate both disciplines by means of a cultural political economy approach on regional imaginaries of socio-economic development and needs of education. This proposal is informed by both fields, ESD and learning regions, and each their understanding of learning in regions.

Key words: sustainable regional development, learning regions, education for sustainable development, regional learning, out-of-school education

The presented paper is part of a three-year PhD-project by the author funded by a EU-program of regional development at Leuphana University Lüneburg, the so-called ‘Innovations-Inkubator’. The project will assess strategic pathways between education and sustainable regional development by means of a transdisciplinary case study on an emerging out-of-school science education center, the so-called called ‘Zukunftswerkstatt Buchholz’ near Hamburg, Germany (<http://www.zukunftswerkstatt-buchholz.de/>).

RELATION TOWARDS BROWNFIELD SITES IN THE URBAN PLANNING STRATEGIES

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Today, at a time when investors do not primarily choose urban locations any more, the strategic priorities of most local governments in Europe are to create conditions for local economic development through more efficient use of land in order to achieve a better quality of life for all users. Extensive practice of taking free areas in developing cities around the world makes discontinuity in the spatial structure which becomes more pronounced influencing to the health of people and the identity protection.

Faced with this problem, European cities are heavily involved in the creation of innovation approaches to the revitalization of brownfield sites, while countries in transition have created a number of projects that improve the access and promote sustainable urban development as one of the keys for entry into the European community. It is believed that the reuse or rehabilitation of brownfield brings huge economic, environmental and social benefits, and therefore can help create a sustainable urban environment, prevention of the expansion of cities and emigration from urban areas.

This paper presents the initiatives and strategies for the development of urban planning with special emphasis on the use of brownfield sites in Serbia. It shows some mistakes in process of forming those strategies, relation between greenfield and brownfield in Serbia and the importance of classification and identifying brownfield sites. Contribution of this paper is in determination of the economic viability of brownfield revitalization and priority aspects of the site according to A-B-C model, then in creation of conceptual model - the principle aspects of the assessment, and finally in the establishment of instruments for incitement of investors.

Key words: brownfield, urban development, revitalization, A-B-C model, economic viability

This paper is done as an integral part of two research projects: TR 36034 - Research and systematization of housing development in Serbia in the context of globalization and European integrations for the purpose of improving housing quality and standards, which is realized by Faculty of Architecture, University of Belgrade and TR 36035 - Spatial, Ecological, Energy and Social aspects of the Development of Settlements and Climate Changes – Mutual Influences, which is realized by the Institute of Architecture and Urban & Spatial Planning of Serbia, both funded by Ministry of Education and Science, Republic of Serbia.

FACTORS OF URBAN SPRAWL IN BULGARIA

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Urban sprawl has become a topical urban issue first in North America and later in Western Europe. It turned into a major challenge to urban sustainability. However, sprawl in Western Europe has displayed many specific features different than that in North America and these features are related to the concrete circumstances in the two continents. The social, economic and urban situation in the new European democracies is also quite different and this inevitably has its impact on the forms of sprawl.

One of the main characteristics of sprawl is that it is considered to be particularly market-led and closely related to the capability of the market players to determine the use of their plots in suburban locations with little reference to the public interests and issues of sustainability. As the countries in Eastern and South-eastern Europe have already made certain progress on their way to market society the problems of sprawl were faced in these countries too.

The goal of the paper is to apply widely accepted definitions of sprawl to the processes in the suburbs of Sofia and, thus, to assess whether these are processes of sprawl. It also aims to study the specific traditions and residential preferences of Sofia's population in order to identify specific characteristics and aspects of the Bulgarian model.

The findings of the paper confirm that Bulgaria's capital Sofia is experiencing processes of urban sprawl, particularly in its southern suburban areas – in the foot of Vitosha Mountain. Next, these processes display strong regional characteristics. So far sprawl in Bulgaria is less intensive than that in Western Europe, but also than that in the post-socialist countries in Central Europe and in Baltic states. Next, the urban forms of Bulgarian sprawl tend to be denser and with mix of single-family and multi-family residential types and mix of land uses.

Key words: sprawl, urban market processes, EC urban policy, sustainability, resilience

The paper is the result of research carried out within the scientific project “Transition towards Urban Resilience and Sustainability”(TURAS) funded by the Seventh Framework Programme of the EC.

ARCHITECTURAL POLICY OF REPUBLIC OF SERBIA

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This paper discusses the introduction of architectural policy in architectural discourse of Republic of Serbia. Broader theme of this research examines how the introduction of architectural policy affects the overall spatial development of a country. Authors tend to investigate the non-institutional architectural documentation, which is created in European countries and its position in the process of establishing a comprehensive architectural policy.

The initiative for this analyses lies in the fact that in the process of becoming a part of EU it is necessary to adapt and adjust official documents (laws, regulations, recommendations, etc.) and also documentation of professional initiatives in order to facilitate communication within the profession itself (architectural and urban planning profession). In this process, it is required to examine the documents on which local professional organizations rely, and to deal with issues of their statutes and regulations. It is also necessary to establish systematization of different architectural policies of European countries, which would then be classified in specific subject areas. European and national documents are analysed by method of comparative analysis in order to determine which areas remain unexplored due to the lack of comprehensive architectural policy in Serbia. Finally, there is the case study that concerns development of post-socialist countries, which have already adopted their own architectural policies in the process of becoming a part of the EU.

In addition to introduction of architectural policy, authors explore the broader issue of sustainable spatial development in relation to architectural policies in European countries. Finally, the goal of this research is to consider the platform that would serve as the initial precondition for researching and establishing architectural policy, which is a prerequisite for non-institutional communication and networking of architectural initiatives and organizations on local and global level.

Key words: Architectural policy, professional associations, spatial development, implementation of strategies, EU guidelines, sustainable spatial planning

The paper is the result of research carried out within the scientific projects "Research and systematization of housing construction in Serbia in the context of globalization and of European integration in order to improve the quality and standard of living" TR-36 034 and "Studying climate change and its influence on the environment: impacts, adaptation and mitigation" TR- 43007, both financed by the Ministry of Education and Science, Republic of Serbia within the framework of integrated and interdisciplinary research for the period 2011-2014.

URBAN SPRAWL IN THE BRASOV METROPOLITAN AREA, ROMANIA – ENVIRONMENTAL IMPACT ASSESSMENT AND SOLUTIONS FOR A SUSTAINABLE METROPOLITAN DEVELOPMENT

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Metropolitan areas are often described nowadays as a society's engine of social, economic and cultural development. However, the development of these areas is strongly linked with urban sprawl, a phenomenon illustrated in Romania by urban development along the main transportation axes and by an increase in residential area surfaces outside the main cities.

The objective of this paper is to identify the critical areas regarding land use changes in the Brasov Metropolitan area and stress the importance of growth management policies in inverting this trend. Urban sprawl patterns have been tracked through historical map analysis of the area since the beginning of the 20th century, while recent trends were identified through comparison between the 1981 Topographical Map and 2005 satellite images. The data regarding the increase of built surfaces and the decline of natural and agricultural land, obtained through GIS techniques, has been used as an indicator of environmental impact, along with statistical data such as number of dwellings dynamic or increase in population.

The results show a significant increase in built area, especially along the main national roads that enter the city of Brasov. While many residential projects have been realized in the area (especially in the municipalities situated north of Brasov), there are also new industrial parks and commercial facilities which have drastically changed the landscape, leading to environmental quality degradation.

Consequently, the environmental impact assessment suggests the need to include in future developments the former industrial platforms which are already situated inside the city of Brasov, as well as the urgency to implement different planning instruments and land use policies in order to contain urban sprawl in the metropolitan area.

Key words: environmental impact assessment, urban sprawl, metropolitan areas, land use change, land use policies

REVISITING COMMUN THE ONLINE-DATABASE ON EUROPEAN SPATIAL PLANNING SYSTEMS AS AN EXAMPLE FOR THE LONG- TERM DEVELOPMENT OF PROCESS-ORIENTED INNOVATIONS

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The paper is based on the results of the EU-funded INTERREG project COMMUN. From 2004–2007 it gathered information about spatial planning systems of countries around the Baltic Sea. These were made available on a website including national glossaries with key terms for 11 countries (www.commin.org; www.arl-net.de/commin). The expectations for the future of the project were, after EU-funding ended, to include more countries and update existing information on a regular basis. This proved to be difficult.

In an effort of self-reflection and learning from other similar examples this paper therefore wants to:

- (1) give an overview over the reasons why it is difficult to consolidate a former EU-funded project in the sense that results are kept up to date and
- (2) show how taking a step back and looking at the initial ideas behind the concept can help to revive the dynamics of innovations made.

This is a preliminary report of work in progress that the former lead partner – the ARL, Academy for Spatial Research and Planning in Germany – is undertaking since 2011. A short evaluation was carried out to identify those tasks still remaining to keep working on the online-database. The evaluation focused on COMMUN's online-glossary comparing it with three other online-glossaries on spatial planning, also contrasting them with the very different but highly successful example Wikipedia.

With this paper we – the project's team at the ARL – hope to share an important lesson learned. It is one kind of ability to successfully coordinate a transnational project. It is quite another ability to keep working with the results – especially if they are process-oriented, meaning that they were created for continual use.

Key words: European spatial planning systems, online glossary and database, evaluation, INTERREG, transnational cooperation, project management

URBAN SPRAWL IN ITALY: ISSUES, CAUSES AND LAND POLICIES WITH A SPECIAL FOCUS ON THE MILAN AND LOMBARDY AREAS

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Over the last few decades, urban sprawl has reached alarming levels in Italy. While in the second postwar period the abandoning of the little centres in the less developed areas of the country led to a centripetal growth of the most industrialised towns, since the 1990s the Italian territory has been developed not only *around* the big cities but *between* them. A sort of germination of buildings occurred on the territory that, especially in the most productive areas and along the coasts, significantly reduced the rural and natural areas thus prejudicing landscape resulting from age-long sedimentation in few years.

The causes of this phenomenon are varied. Generally speaking, over the last few decades, the Italian financial system – and the international one as well – encouraged widespread investments in the real estate sector that were often unlinked with real needs. At the same time, land rent mechanisms brought about pressure to develop areas increasingly farther from the main urban nuclei. Municipalities, that should have safeguarded the community interest, have instead been induced – as a result of some regulations concerning the use of local funds and because of a progressive reduction in government funds – to allow their own regions to be developed. Not to mention the phenomenon of unauthorised building that – especially in some areas of the country – led to further worsening of the situation. All this had a serious impact on landscape, environment and the community.

The paper aims to concisely describe extent and features of the phenomenon in Italy with a special focus on the Milan and Lombardy areas. Furthermore, it intends to briefly reflect on causes, consequences and policies needed to oppose it.

Key words: urban sprawl; land consumption; land policies; Lombardy; Italy

BEYOND COMPACTNESS: TRANSITIONS TOWARDS SUSTAINABLE NEIGHBOURHOODS OF PERI-URBAN ATHENS

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Following the World Commission on Environment and Development Report (1987), urban experts have promoted compact city forms as befitting models for sustainable urban development and a panacea against sprawl. However, the phenomenon of urban sprawl, although antithetical to sustainability agendas and climate change policies, still produces settlements in the urban periphery that do attract residents.

In analogy to Amartya Sen's (2002) re-definition of sustainable development as "enhancing human freedoms on a sustainable basis", we propose expanding the search for sustainable urban form beyond compactness. Aiming at establishing climate change resilient urban forms that would meet urban sustainability criteria, we have carried out eight case studies of urban typologies in mostly residential parts of the sprawling periphery of Athens widely varying in socio-economical and environmental terms.

A comparative analysis of their fundamental typo-morphological features focusing on the neighbourhood and building block scale has been performed referring to street patterns, urban block and building geometry, area densities, public and private open space attributes, densities and mean distances of building entrances and street intersections, alternative routes, pedestrian and resident visibility etc. Subsequently, the eight case studies have been evaluated with an eye to resilience in terms of sustainability criteria, such as connectivity, walkability, neighbourly interactivity, land economy, adaptability and spaciousness/compactness equity. Strengths and weaknesses of low-density urban forms have been revealed as to their preparedness and adaptive transformation capacity to sustainable and resilient urban entities.

The conclusions reached suggest the imperative for urban planning and design theory to further elaborate on the dichotomy between low density and urban sustainability and rethink suburbs as to their adaptability for climate change.

Key words: urban sustainability, urban resilience, urban sprawl, adaptation to climate change, neighborhood design, compactness/spaciousness equity.

CITIES IN TRANSCONTINENTAL CONTEXT: A COMPARISON OF MEGA URBAN PROJECTS IN SHANGHAI AND BELGRADE

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In recent years, there has been an upsurge of debate on comparative urban research. Much of the discussion has been undertaken from a theoretical standpoint, making the case for comparative work in order to pull urban studies out of an excessively Northern and more specifically Anglo-American framework. In this paper, I extend these theoretical discussions by setting out a typological framework for comparative urban research. I apply one category of comparative research to the ostensibly contrasting cases of Belgrade and Shanghai, arguing that this type of 'strategic' transcontinental comparative work can contribute to an understanding of underlying urban trends.

Within the broader context of urban restructuring in Shanghai and Belgrade, I focus on mega urban projects in the two cities, and in particular on Pudong and Hongqiao in Shanghai, which I set against ongoing work in New Belgrade. I argue that despite their very different histories and scales of operation, both are examples of a state-based but market-led approach to urbanisation. While many of the contrasts between these sites in East Asia and East Europe are evident, I argue here that attention needs to be paid to certain similarities in land ownership regimes and property development patterns. In both the urban terrains of Shanghai and New Belgrade, land is owned by the state and rights of use are auctioned off to developers. While this model of urban development originates in a recent socialist past that Belgrade has moved away from, it nevertheless continues to shape the nature and pace of urban development in Belgrade and Shanghai and suggests a need for policy discussion.

Key words: comparative urbanism, urban restructuring, mega urban projects, Shanghai, Pudong and Hongqiao, New Belgrade

REGIONAL ACTIONS TO PROTECT THE ACCESSIBILITY RIGHT IN ACCORDANCE WITH EUROPEAN LEGISLATION

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The right of access to public space for all has become broadly discussed at international level since 1980's. It led to adoption of supporting laws and regulations by the end of XX century in many countries, including Serbia.

Social groups with reduced mobility (children, elderly, disabled and handicapped) have a significant share in the total population. In Serbia, approximately one third of the population does not fit into the social average, set forth by architecture and urban design norms, which implies that they have reduced access and impaired quality of life to certain extent. Nowadays, European legislation protects the right to equal access to all social groups, which is initially based in Universal Declaration of Human rights by United Nations in 1948. Approximately, one third of the population does not fit into the social average, determined by architecture and urban design norms, and that implicates reduced accessibility and impaired quality of life. Main reason for the spread social involvement stems from connections between accessibility, social inclusion and poverty. European Commission significantly contributed this issue by adoption of European disability strategy 2010-2020. This research is limited to the physical aspect of accessibility, based on variety of reasons. The scope of activities and adoption of supporting laws that standardize public spaces, among member states, neighboring countries and Serbia are taken into consideration.

The question is to which extent countries in the region have been engaged in the protection of the right to equal access for all to ensure integration into social and economic life.

Key words: access for all, legislation, public space

SESSION B

**SUSTAINABLE REGIONAL AND SPATIAL
DEVELOPMENT AND STRATEGIC
MANAGEMENT**

SOCIALIST LEGACY AND SOME CURRENT ISSUES OF ENVIRONMENT PROTECTION IN A EUROPEAN TRANSITIONAL SOCIETY: SERBIAN EXAMPLE

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Post-socialist societies are increasingly concerned with environmental and natural resources management issues. The main reason lies in their historical background, i.e. in their former, “state-regulated economy” practice, which cared more about fulfilling production goals and targets than about negative effects on the environment that such actions may have imposed. This legacy of ignorant attitudes by politicians and governing bodies left behind environmental consequences that are often hard to mend. In spite of that, Serbia as a constituent part of SFR Yugoslavia (the single country with self-governing socialist system), was less environmentally degraded in comparison to other European countries, and also during that – socialist period, some key foundations for nature and environment protection had been laid in Serbia.

Today, (post-socialist) transition countries strive to solve a three-fold challenge: a better environment, good economic performances and poverty reduction, but in this “triangle” the most neglected part is still the struggle for better environment.

This paper will discuss the relationship between political system and environmentalism; nature of new national environmental policies, environmental consequences of recent economic change, emerging environmental awareness; and will draw conclusions towards new approaches, instruments and tools required in order to provide more environmentally conscious development of the country which fully incorporates the principles of environment protection, either on the path of EU accession country or in its own development trajectory.

Key words: environment protection, environment management, socialism, transition, Serbia

The paper is the result of research on the projects “The role and implementation of the national spatial plan and regional development documents in renewal of strategic research, thinking and governance in Serbia”, No. 47014, and “Sustainable spatial development of Danubian Serbia”, No. 36036, which are financed by the Serbian Ministry of Education, Science and Technological Development in the period 2011-2014.

KEY ISSUES OF LAND POLICY IN SERBIA IN THE CONTEXT OF SPATIAL DEVELOPMENT – – CASE STUDY OF DANUBE BASIN AREA

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Land policy aims to achieve certain objectives relating to sustainable land management and access to land, including the forms of tenure under which it is held. Sound land policy is prerequisite for efficient, participatory and integrated, iterative process of **land-use planning** which seek to regulate land use among different sectors of the economy in an optimal manner that prevent land use conflicts and make a significant contribution to sustainable territorial development.

Respecting the FAO recommendation to address land issues by *Resource Management Domains* as *spatial (landscape) units for identification and application of resource management options to address specific issues*, the authors have chosen **Danube basin area** in Serbia, i.e. its main landscape units (area of intensive agriculture, urban and peri-urban zone and protected areas of high nature values) as the case study areas for: **land resource assessment** (land capability, land use and land use change inventory, and land degradation analysis), and **land tenure** and **land-use planning** analysis (with emphasis on *tenure rights transfers* in the area of intensive agriculture, *urban sprawl and brownfields recycling* in urban and peri-urban zone, and *controlled access and land use rights* in protected areas).

Particular attention will be given to the need for advancing an integrated and multi-level approach to land management which is now in Serbia regulated by several different laws, strategies and programmes, with unsatisfying inter-sectoral coordination and poor developed local resource management groups. Associations have a decisive role in empowerment of local stakeholders to jointly address mutually relevant land resource issues and it is necessary to encourage their establishment and functioning.

Key words: land, land policy, land-use planning, sustainable land management, sustainable spatial development, Danube basin area in Serbia.

The paper is prepared as a result within the scientific projects: "Sustainable agriculture and rural development in the function of accomplishing strategic objectives of the Republic of Serbia in the Danube region" (III 46006) and "Sustainable spatial development of the Danube region in Serbia (TR 36036), financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia in the period 2011-2014.

IDENTIFICATION OF TOURISM DESTINATIONS AND THEIR POTENTIALS IN THE ĐERDAP NATIONAL PARK

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Abstract: In this paper, we consider the role and significance of tourism destinations' potentials, identify and analyze principles, goals, positive experience, problems and perspectives of tourism development within national parks. Contemporary tourism demands unspoilt nature that has not been altered or ruined by people. Tourism destinations, such as national parks, face both numerous challenges and possibilities for rapid growth, competitiveness and sustainability. National park is an area of exceptional beauty with specific morphological characteristics and presents national treasure for today and future generations. Đerdap, with an array of specific features, distinguishes itself among the five national parks in Serbia. The largest number of tourist attractions on the entire course of the river Danube is in this region. Natural beauties, archeological sites, remains of Roman buildings, sacral structures, the lake, dams, hydropower plants, villages and towns, populations and their manifestations, all emphasize significant attributes of tourist attractiveness of this destination, thus enabling all - year- round tourism with rich and various offer. National parks, as separate areas, demand continual planned and normative activities of the society. Moreover, it is necessary to organize them and provide adequate facilities, find new market possibilities, use their potentials purposefully, define their socio-economic goals, with the efforts to indicate the positive and negative impacts of tourism.

Key words: Đerdap national park, tourism destinations, nature, tourism, archeological heritage, culture

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THE INFLUENCE STRUCTURING OF PRODUCTION – ORGANIZATIONAL SYSTEM ON REGIONAL DEVELOPMENT – CASE OF SERBIA

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The focus of this paper is to review the link between regionalization, strategy of (balanced) spatial development and implementation models of endogenization of technological progress into the institutional structure. The basic methodological approach is based on the thesis that the key for solution is in establishing the optimal dynamic combination of three basic production-organizational model of modern industry (clusters, industrial districts, poles of generic growth, in terms of their treatment, as a key economic and social institutions for the socio-economic organization of export production of material goods and services on the sectoral or spatial principle) in accordance with socio-economic characteristics and resources of specific spatial units (regions, sub-regions, cities, local self-governments, urban or rural environment).

The key result is that the base of (economic) regionalization of Serbia should represent the success in establishing the proper network of generic growth poles. The development of (regional) generic growth poles, by forming an internationally competent staff and generating innovation, in the next step should open a space for rehabilitation of developmental functions of related industrial districts and medium and small-sized industrial centres.

Keywords: balanced spatial development, regionalization as a factor of economic development, production-organizational system, European concept of regional and local endogenous, auto-propulsive and self-sustained development, poles of generic growth

EVALUATION AND EVALUATING THE COMMUNITY INITIATIVE “URBAN”

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The relevance of the relationship between evaluation and learning is widely acknowledged; as well as the importance of this learning process to support policy decision making and to judge the value of “what was done”, “how” and “with what results”. Although the activity of evaluation is not something new, but a field of knowledge with its own theories and practices, it is important to notice that there is great variability in the tradition and cultures of evaluation between countries.

At the European level this issue gained a greater prominence with the publication of the Guide MEANS “Means for Evaluating Actions of a Structural Nature”, that in 1999 presented the main guidelines, standards and recommendations of the European Commission for the assessment of socio-economic development programs involving Community funding. Several were the changes proposed by this guide, among others, a greater focus on a more open and democratic process of evaluation.

This paper presents and compares different conceptual and methodological frameworks created for the assessment of the European initiative Urban II, including the one that was used by the author in the context of an academic evaluation in the city of Porto. The comparative analysis of the results leads us to the recommendation for more democratic processes of evaluation and intervention, in order to improve their quality and accountability and promote the important goal of learning with this type of experimental initiatives.

Key words: evaluation, urban, initiatives, EU URBAN, Porto, Portugal

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SERBIAN AND BULGARIAN VILLAGE AS A JOINT TOURISM BRAND OF “STARA PLANINA” MOUNTAIN

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The real effects of the total potential of the Stara Planina will be visible only after Serbia becomes part of the European Union, and when the border between Serbia and Bulgaria loses today significance, because Stara Planina should be viewed as a whole, as a natural phenomenon unique to the specific characteristics of the social and cultural identity.

On the Stara Planina are living indigenous people for centuries, known as Torlac's, which are related, on both sides of the state border. Various political doctrine (and ideology) that were current in Serbia and Bulgaria, had a decisive impact on the size, composition, shape and other characteristics of rural settlements. While the Serbian side of the village maintained the visual identity and characteristics of the pre-industrial era, the Bulgarian side were completely transformed into a "regulated rural social-realist type." The obvious (noticeable) difference can be interesting in the future as a tourist offer for visitors from Western Europe and beyond.

Key words: Stara Planina, Serbian village, Bulgarian village, transformation, cultural diversity, sustainable tourism

SUPPORT OF LOCAL ENTREPRENEURSHIP: AN EMPIRICAL INVESTIGATION FOR SERRES-GREECE

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This paper is divided into two parts, one theoretical and one empirical. The research deals with entrepreneurs that received loans from National Fund for Entrepreneurship and Development (ETEAN in Greek language). ETEAN provided enterprises with non interest or low interest loans based on state guarantees. The main objective of this research is to examine the project's effectiveness and its contribution into local development on Regional Unity of Serres, Central Macedonia and Greece.

The first part is divided into two sections. A comparative analysis of guarantees to small and medium enterprises (SMEs) is presented in the first part to the European Union and in the second part to Greece. Particularly, in the first section of our paper presented data concerning guarantees provided in the EU. At the second section presented data which indicate the role of ETEAN's programs into the contribution of local development in Greece and the moral hazards due to state provided guarantees. Furthermore, obstacles entrepreneurs face when they applied for guarantee loans are analysed in this part. Our data were extracted during the last three years by the extensive use of web links on the internet. Most data were taken from the websites of above mentioned ETEAN, the Pan-European Gateway to Business and Innovation Financing, the Gateway to European Research and Development and B.I.S.

At the second part presented the results of our research on 200 entrepreneurs in Serres who receive loans from ETEAN. The results analysed with the use of descriptive statistical methods and correlations. It is noticeable that businessmen's answers are similar to those deduced from the results of the researches that have been referred to in bibliography.

In the final part of this paper the main conclusion is pointed out that programs

Key words: loan providing funds, state guarantees, local entrepreneurship, regional development, Regional Unity of Serres

THE APPLICATION OF GENETIC ALGORITHMS AS A TOOL FOR SUPPORTING THE PROCESSES OF ANALYSIS AND PREDICTING URBAN DEVELOPMENT

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Genetic algorithm is a method which is applicable primarily in the optimization and predicting issues. Analysis of the literature related to this issue, and knowledge of issues related to the development of urban space made it possible to attempt to create a method based largely on genetic algorithm, and to be applied in the process of forecasting changes in the urban space.

The paper presents an attempt to apply a genetic algorithm as a tool for supporting the process of forecasting. Based on the example of the developing areas of the transition zone of the city investigated the usefulness of this instrument to a retrospective analysis of changes in use of space. Have identified three groups of the characteristics that determine the development of the space and on the basis of these groups we traced changes of the use of the space.

We made the prediction for three time points, for 2005, 2008 and 2011. Based on the geodatabase which built on the basis of identified groups of spatial information, respectively for 2002, 2005 and 2008. This prediction gives the opportunity to evaluate the advisability of the use of genetic algorithms in the forecasting process. The method constructed in the research part of the studies was used to formulate the prognosis for urban space development in the selected area for 2008-2011. Based on the data from 2008, the areas which met the criteria of development potential were selected. The final result of the study is the cartographic compilation "Prognosis for urban space development in 2008-2011". Our research helps to understand transformation of urban systems and peripheral areas.

Key words: genetic algorithms, urban development, Area Investment Potential, geoinformation, predicting

CULTURAL AND HISTORICAL HERITAGE – AN ASSET FOR CITY BRANDING

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Achieving wider recognition is part of the development agenda of contemporary cities, which are all confronted with the need to compete and stand out against one another. City branding reads as and plays an important role in this struggle for recognition. The identity of a city is generated over a long period, as it undergoes historical change, resulting in cultural diversity as the product of a specific environment.

This paper discusses the possibility of using the cultural and historical heritage of Trebinje and its identity as an asset to create its city brand. Trebinje is a small city situated in the vicinity of Dubrovnik, a major tourist destination with a rich cultural and historical heritage and an excellent city brand. Dubrovnik may be seen as jeopardising the development of Trebinje's authentic identity; on the other hand, the strong historical ties between the two cities can actually be used as an asset to develop Trebinje's city brand.

The material and non-material heritage which helped the formation of Trebinje's identity, is analysed. The Mediterranean region in which it is located, its rich history, authentic architecture and different cultural influences, including the national poet Jovan Dučić, have all helped create Trebinje's *genius loci*. The same factors may be used to communicate its new image.

After that, the paper outlines models of the possible use of the recognised assets to brand the city and emphasise the importance of the effective presentation of these assets for creating a recognisable city image. It also proposes specific actions and interventions that may contribute to branding the city.

Keywords: identity, brand image, city branding, Trebinje, asset, *genius loci*, cultural and historical heritage

URBAN-RURAL FUNCTIONS AND RELATIONSHIPS AT THE REGIONAL LEVEL – EXAMPLE OF THE CITY OF VALJEVO, MIONICA AND OSEČINA MUNICIPALITY

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A topic of urban-rural relationship is consistent part of diverse European documents. The first common spatial plan for EU members – the *European Spatial Development Perspectives* (1999) – is one of these, subsequently followed by the *Guiding Principles for Sustainable Spatial Development of the European Continent* (2000), the *Territorial Agenda* (2007 and 2011), etc. Embracing EU’s spatial development principles and practice, the leading documents of spatial development in Serbia - the *Spatial Development Strategy* (2009) and the *Spatial Plan* (2010) - have determined functional urban areas [FUA] based on daily migrations and settlements’ economic functions - relevant for obtaining a balanced polycentric settlement network. The determined FUAs have shown that municipalities of the same region differentiate by strength of functional relationships to a city (measured by percentage of daily migrants). Therefore, this paper deals with the difference between functionally dependent and functionally independent municipalities on a regional centre, taking as the case subjects regional centre Valjevo and two to it neighbouring municipalities – Mionica and Osečina.

Assuming that weak dependency comes whether from physical isolation of villages/towns (lack of transportation infrastructure) or from inhabitants’ redundancy to commute due to services provided quantitative and qualitative analysis was conducted. This was expected to show difference between functionally dependant and independent municipalities, regarding economic (e.g. working places, agricultural production), social (e.g. education, culture) and physical (infrastructure) functions.

The expected outcomes should contribute to the understanding of relationships on a regional level and show why and how some municipalities are functionally more related to a regional centre. This knowledge can be applied for the improvement of functional interdependences on a regional level, thus bettering polycentricity and hierarchy within the settlement network.

Key words: urban-rural relationship, functional urban areas, settlement functions, regional development, Serbia

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STUDY ON THE ROLE OF PLANNERS IN PROPELLING COLLABORATIVE PLANNING FROM THEORY TO PRACTICE CASE STUDY: CDS PLAN OF ANZALI CITY IN IRAN

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Nowadays, Public Participation is one of the most important factors to achieve sustainable development. In Iran, lack of basic infrastructures in the political, social and economic sections, has brought about an inefficiently people's participation. This paper aims to review existing theories of collaborative planning and providing practical strategies for collaborative urban planning in Iran's conditions. Also through it answering questions such as: What is the role of planners to achieve a successful collaborative planning?

Fundamental belief of this paper is that executing collaborative planning in the theoretical framework of theorists such as Paul Michel Foucault and Jürgen Habermas and putting these ideas together as a complementary, can be a useful step towards collaborative planning.

In this regard we are looking for achieving the conceptual model with a comparative analysis methodology. In this way, we investigate the Habermas' theory of "communicative action" and the Foucault's theory of "power" and after identifying the strengths and weaknesses of each theory we put these together as a complementary role. Subsequently, conceptual model of collaborative planning will be presented. At the end, in order to examine this claim in real life world, the process of CDS plan (City Development Strategy) of the city of Anzali in Iran will be analyzed. The results of the investigations show that the changing role of urban planner from elite to facilitator can improve the quality and legitimacy of urban plans in Iran. Also this paper shows that the local decisions cannot be taken without realizing of local people's real demands and it is a real task of planners.

Key words: Collaborative planning, Paul Michel Foucault, Jürgen Habermas, communicative action, power.

COMPARATIVE ANALYSIS OF DIFFERENT METHODS AND OBTAINED RESULTS FOR DELINEATION OF FUNCTIONAL URBAN AREAS

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European Spatial Planning Observation Network (ESPON) recognizes Potential Urban Strategic Horizons (PUSH) and Potential Polycentric Integration Areas (PIA) as territory of one or more neighboring Functional Urban Areas (FUA).

Delineation of FUA territory can be done by using general ESPON methodology, based on a 45-minute car travel time from the center of respective FUAs. This approach is based on network proximity by using shortest path in road network between two nodes. Later, results are approximated on administrative or statistical territorial units, so that PUSH areas are determined. However, other methods for delineation of FUA territory can be used.

This paper deals with other methods that can be used for delineation of FUA territory. Some of those methods are based on machine learning, a branch of artificial intelligence which develops algorithms that take as input empirical data, such as that from sensors or databases. Created algorithms identify complex relationships thought to be features of the underlying mechanism that generated the data, and engage these identified patterns to make predictions based on new data. Clustering and artificial neural networks are some of approaches that can be undoubtedly used for delineation of FUAs territory, based on unsupervised learning and statistical data analysis. This is statistical approach, which clusters administrative or statistical territorial units based on statistical data, and not by network proximity. Such methods involve usage of Self Organizing Maps (SOM) which implies usage of neighborhood function to preserve the topological properties, or using k-means clustering, which partition observations into clusters by dividing space into Voronoi cells. Results obtained from both approaches will be analyzed in order to define the most appropriate method for FUAs territory delineation in Serbia.

Key words: Functional Urban Areas (FUA); Potential Urban Strategic Horizons (PUSH); Self Organizing Maps (SOM); k-means clustering; Serbia

RELATIONS DESIGN SPACES: VILLORESI CANAL AS OPPORTUNITY OF REDEVELOPMENT AND RECONNECTION OF OPEN PUBLIC SPACES

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According to many urbanists, public spaces could be generated by a prior and unitary order, result of a planned design. The scarcity of public spaces forces architects and urbanists to look deeply at what the environment provides. Requalification is the way to act, the new *therapy of spaces*, focused on connecting and linking more than building. Through the case study of Villoresi Canal this paper wants to explain how new networks of relations generate new spaces for the community. The north of Milan is characterized by the presence, often forgotten, of this canal that links the Ticino river to the Adda river, developing itself for 86 km. The canal, sited out of Milan-city, where we have the most populous and urbanized territory of the entire region -in this part of the region we can find a density of 4.000 pop./km² instead of 415 pop./km², the regional average- is the opportunity, the resource, that all the cities in the north should exploit designing a new greenway, an ecological corridor. In this scarcity of free land and public spaces, where all the cities were expanding, the Regione Lombardia in 2001 started to give indications and rules to cities in order to preserve the landscape that is disappearing with time. Every water course, natural or man made, is considered a common heritage, according to the regional decree, and so is the Villoresi canal, water infrastructure built originally in the countryside with the only purpose of irrigation. Nowadays, the cities moved forward, surrounding the canal without it becoming a feature of the city-life. The 2001 law gives to the canal 10 meters on each side of free unbuilt space and promotes in an area of 200 meters roughly, green connections, pedestrian and cycle paths and ecological corridors. Thanks to these new attitudes the canal will become the more important thread of the net that can link all the cities in the north of Milan: a network of relations that can generate new public spaces.

Key words: urban waterfront, open public space, requalification, urban regulation, Villoresi Canal.

The paper is the result of the research being carrying out within Ph.D program under the supervision of Prof. Michele Ugolini, who teaches the course Progetto e Arredo degli Spazi Aperti - Design and Furnishing of Open Spaces (Polytechnic of Milan, School of Civil Architecture) with whom I collaborate in the analysis and design of the Villoresi canal. The didactic work for the Open Spaces course, to which reference is made within the paper, starts from the academic year 2010-2011 and will be completed during 2012-2013.

A METHODOLOGY TO STUDY THE RELATIONSHIP BETWEEN URBAN ACTIVITIES AND MORPHOLOGY IN THE CASE OF A TWENTIETH CENTURY SUBURB IN MADRID (SPAIN)

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On this paper is exposed a methodology that allow to study the relationship between urban morphology and urban activities.

Previous works on this topic were based on data collection by the own researchers. However, on this paper is exposed a methodology which is using existing statistical data that allow to expand the study. A new possibility is opened to analyze and compare the evolution of the urban activities, their intensity and diversity, not only for singular study cases where the researcher collect their own data, but for a whole range of cities.

Two key points make able the developing of this methodology:

- The parametrization of urban morphology according with objective measures. The spacematrix diagram developed by BERGHAUSER and PONT (2009) was an effective tool to classify different urban fragments.
- The existing data from “Population and housing census” from the Spanish National Statistical Institute (INE), which sample is the whole national territory at years 1991 and 2001, give a view of the urban activities.

At the end of this paper would be showed a set of results for the chosen study case, the district of Puente de Vallecas of Madrid, mainly built along the twentieth century. For this case, the urban activities were evaluate through population and commercial indicators which show the appeal for the citizen and the diversity as a factor that helps the stability of the area for the future.

Key words: urban form, empirical urbanism, peripheries, urban resilience, typomorphology.

THE IMPACT OF COPY-PASTE PLANNING: THE CASE OF THE STRATEGY FOR REGIONAL DEVELOPMENT OF REPUBLIC OF MACEDONIA 2009-2019

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In the last twenty years, the spatial development of Macedonia was focused strictly on one area - the Skopje Region. With its center in Skopje (the capital of the country), this small urban region accumulates one-third of the total population, two-thirds of the total GDP and one-third of the total national profit. As a result of this concentrated urban growth, the rest of the country remains spatially and economically underdeveloped. One of the reasons for the misbalanced spatial development of Macedonia is the inconsistency of the spatial planning processes in the last twenty years.

In 2002, along with the beginning of the decentralization processes, *The Spatial plan of Republic of Macedonia 2002-2020* was adopted presenting a long-term strategy for balanced and equal regional and economic development of the country. In the years that followed, this plan failed to be accomplished, and consequentially, the spatial structure of Macedonia grew into opposite direction - it became even more centralized than before. In 2009, a new planning document was introduced in order to supplement the existing spatial plan with a solution for overcoming the alarming monocentricity - *The Strategy for Regional Development of Republic of Macedonia 2009-2019*. But instead of offering a solid and clear agenda, the new plan presented a copy of the European Union policy for polycentric development without making any adaptation to the current spatial structure of Macedonia.

The paper will explore the implementation of the model for polycentric development in *The Strategy for Regional Development of Republic of Macedonia 2009-2019* in order to trace and predict the possible impact it could have on the spatial planning system and practice. On a more general note, it will discuss how this copy-paste planning could affect the future regional development of the country.

Key words: spatial planning, spatial development, Macedonia, spatial plan, polycentric development, copy-paste.

EFFECTS OF THE PROCESS OF DEINDUSTRIALISATION AND THE CONCEPT OF A REINDUSTRIALISATION STRATEGY OF SERBIA

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The paper proposed has threefold aim: firstly, to analyze the process of deindustrialization in Serbia, the causes and consequences; secondly, to review current development documents from the point of view of potential strategies of reindustrialization; and thirdly, to define elements of the possible strategy of reindustrialization in accordance with new European industrial policy. The collapse of the territorial development of the industry and the lack of effective development policies represent "Achilles heel" of the Serbian economy. The development crisis of the 1990s, combined with the neoliberal concept of development during the transition period, since 2000, resulted in catastrophic degree of development of the domestic industry. While industrial production in the developed countries of Central Europe doubled in the last two decades, in Serbia dropped 40-70%. Trend of deindustrialization is reflected in a reduction of total employment in the sector as well as a drastic reduction in the share of industry in GDP. The consequences of deindustrialization are catastrophic to sustainable economic development, especially during the period of extended current crisis. The reindustrialization, which is seen as one of the key points in an aim to overcome the crisis, involves upgrading the industrial policy and development policies and overcoming deficits of strategic planning, management, implementation, evaluation, monitoring. If we want to implement reindustrialization there are two lines of activities: first, the offensive one – to create new companies and new jobs, and second, the defensive one – to recover production in existing companies. The global crisis and deep structural crisis of the domestic economy and industry requires finding a new concept of reindustrialisation and the renewal of strategic research, planning and management as well as intellectual and pragmatic construct that makes the *condition sine qua non* for the survival of inhabitants and companies in Serbia in the broader competitive environment.

Key words: Deindustrialization, reindustrialization, industrial policy, global crisis, Serbia.

The paper is a result of research which represents part of the project „The role and implementation of the national spatial plan and regional development documents in renewal of strategic research, thinking and governance in Serbia” III 47014 financed by Ministry of Education, Science and Technological Development of Serbia.

ROLE OF INDIAN LAWS TO CONTROL ENVIRONMENTAL POLLUTION

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Environmental Pollution has caused a great concern not only to our country but to the world at large. Environmental law is a complex and interlocking body of international treaties (conventions), statutes, regulations, and common law or national legislation (where applicable) that operates to regulate the interaction of humanity and the natural environment, toward the purpose of reducing the impacts of human activity. The word environment includes the air, water and land, their interrelationship with human beings, other living creatures, plants, micro organism and property. The environment pollution means the presence of pollutants in the environment.

To tackle this global problem of environmental pollution in India the following specific legislations has been made so far:

- (1) The Forest act 1927;
- (2) The forest conservation act 1980;
- (3) The water (Prevention and control of pollution) act 1974;
- (4) The Air (Prevention and control of pollution) act 1981;
- (5) The Environment (protection) act 1986.

The topic may be divided into two major subjects: pollution control and remediation, and resource conservation, individual exhaustion. The limitations and expenses that such laws may impose on commerce, and the often unquantifiable (non-monetized) benefit of environmental protection, have generated and continue to generate significant controversy.

The Asian Environmental Compliance and Enforcement Network (AECEN) is an agreement between 16 Asian countries dedicated to improving cooperation with environmental laws in Asia. These countries include Cambodia, China, Indonesia, India, Maldives, Japan, Korea, Malaysia, Nepal, Philippines, Pakistan, Singapore, Sri Lanka, Thailand, Vietnam, and Lao PDR. (AECEN Retrieved October 18,2012)

Key words: Environment, Pollution, Pollutant, Act, Treaties

THE ROLE OF AGRICULTURE IN ECONOMIC GROWTH AND REGIONAL DEVELOPMENT IN GREECE

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This paper focuses on analyzing the contribution of agriculture to both economic growth and regional development in Greece from 1970 until today. Therefore, it explores the relationship of agriculture with the main economic sectors, and its contribution to the most important economic fundamentals such as, domestic and regional income, value added, and etc.

For that purpose data collected for the period from 1970 (a decade before Greece's accession in the E.U.) until today. The processing of these data confirmed the declining contribution of the Greek agriculture to the most important economic fundamentals. Agriculture was marginalized despite the subsidization policies that sector benefited with after Greece became a full member of E.U.

As a matter of fact, it could be argued that Greek primary sector deteriorated its economic position as a result of the application of these policies. In addition, the role of agriculture to the Greek regional development is examined. It is evident that the development model dominated in Greece after World War II, neglected agriculture and emphasized industrialization.

Agriculture in Greece seems to have followed its own path quite independent from the nonagricultural sectors of the economy without utilizing or creating intersectoral linkages. However, the implementation of the model did not achieve to create a strong industrial sector but it destroyed agriculture and over inflated services until the recent economic crisis that stroked Greece's economy.

Regional development was also uneven. In the paper, the use of proper econometric and statistical techniques utilizing time series data collected for the period 1970 up to date establishes the growth effect of agriculture on both the national and regional level. A particular research question is the contribution of agriculture to the proclamation of regional imbalances between the Greek regions.

Key words: Agriculture, Economic Growth, Economic Fundamentals, Regional Development, Greece

SUSTAINABLE RURAL DEVELOPMENT IN THE MOUNTAIN AREAS OF BOSNIA AND HERZEGOVINA

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Economic globalization is constantly testing the ability of regional economies to adapt and exploit or, at least maintain, their comparative advantages. In this difficult and volatile environment, mountain – disadvantaged areas are faced with multiple developmental difficulties.

The purpose of the research, which is based upon a primary measurement, is to detect and evaluate the main factors that determine the viability of the development in mountainous regions. The object of the research is to measure the village's sustainable development, in other words to measure its economic, social and environmental sustainability and to audit the extent to which sustainability in the area is maintained.

Development possibilities are based on size of high-mountain territory, nature protection regimes, infrastructural equipment, provided conditions for leisure and recreation as well as involvement of local population in processes of development and protection. The conclusions of the study are mapping and managing sustainability of the mountain – disadvantaged areas. Common determinants of cohesion between nature protection and mountain tourism development, national development policies, applied models and concepts and importance of trans-border cooperation are indicated.

Balkan countries do not have specific policies supporting sustainable agriculture and rural development in mountain areas. The survey shows, however, the existence of a wide range of policies that are affecting mountain environment and communities as well. They concern policies for infrastructure development, employment, education, services access and provision, environmental protection, natural resources management, poverty reduction, decentralization and local development, etc. In Bosnia and Herzegovina, a framework supportive to sustainable development of mountain areas at the local level does exist - even if a governmental initiative on sustainable development is missing. It is reported that some municipalities with mountain profiles are adopting local development strategies according to Agenda 21 principles.

Key words: mountain – disadvantaged areas, regional development

MODERN ARCHITECTURE AND ITS SOCIAL AND REGIONAL ASPECTS AS TOOLS FOR MAKING STRATEGY FOR THE PRESENTATION OF CULTURAL AND HISTORICAL HERITAGE OF SERBIA

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Architectural structures and compositions in modern Serbian architecture in the period between the two World Wars and nineteen fifties and sixties have specific regional characteristics, although postulates of modern architecture are the same as or similar to those in other European and neighboring Balkan countries. Increasing interest in and insufficient research findings about this period with recognizable characteristics not only in Belgrade, but also in all bigger cities and small towns in Serbia, make this period an important layer of Serbian cultural heritage that is comparable with European development trends of that time. It is necessary to discern, evaluate and present it in an appropriate way.

This paper presents basic types of buildings and architectural compositions with their specificities by emphasizing examples of buildings and projects within the social housing and worker colony programs typical for both mentioned periods, which contain common specificities although they emerged at different times and in divergent socio-political contexts.

Through evaluation of modern architecture of this period and its presentation, the Serbian cultural space is linked to the European heritage in a clear way, thus contributing to the overall cultural offer of Serbia, whereby modern architectural layer becomes a sustainable segment and part of strategic policy and management.

Key words: Modern architecture, regional, characteristics, strategy, management

TRAININGS AS A TOOL FOR CHANGE IN URBAN REGENERATION PRACTICE

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Urban regeneration has been traditionally related to quality improvements in housing areas. The approach was implemented using urban design and urban planning blue prints. The development of approach to urban regeneration moved towards sustainable principles of place making. Place making integrates different dimensions of sustainability as well as multiple dimensions of urban design process. This integration involves rethinking of urban development in general as well as educational system and system of governance. As rethinking process is by nature in the area of academic teaching the changes towards practice are possible only if the faculties and intellectual clusters are involved. The hypothesis is that academic education is a driving force for urban regeneration change. This means that the level of faculties' curricula development towards practice is related to quality changes in urban regeneration. Therefore, the aim of the paper is to discuss training success in different urban regeneration contexts. Expected results of the paper are definition of training characteristics that should enable this kind of change. Methodological approach is based on multiple case studies and questionnaires among stakeholders that were involved in trainings.

Key words: urban regeneration, sustainability, creative clusters, faculties, trainings

The paper is the result of research carried out within the scientific project "Spatial, Environmental, Energy and Social Aspects of Developing Settlements and Climate Change – Mutual Impacts" TR 36035 which is financed by the Ministry of Science and Technological Development of Serbia.

GEOGRAPHICAL ANALYSIS OF RUIDP FOR REGIONAL DEVELOPMENT OF THE CITIES OF RAJASTHAN STATE, INDIA

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The Urban population of India constitutes 285 million people and, in some quarters, it is estimated to double by 2025. Over one fourth of this population lives in urban slums under poor and unsatisfactory environmental conditions, with high levels of susceptibility to disease and ill health. (SUHR, 2006) Urbanization is a natural consequence of socio-economic change. Urban centers have long been considered as engines of economic growth and key centers for employment generation. As an economy moves from being primarily agriculture driven to an industrial or service driven economy, it experiences high rate of urbanization. On the world scenario, the urban areas are becoming centers of economic growth. Because of the rapid growth and urbanization, there has been an increased pressure on the urban infrastructure facilities. Citing this growth, the Government of Rajasthan took Rajasthan Urban Infrastructure Development Project (RUIDP) with the assistance from Asian Development Bank (ADB), to provide major urban infrastructure works under water supply, waste water management, solid waste management, urban drainage system, urban transport, social infrastructure etc. Based on the success of RUIDP-phase-I, Rajasthan Urban Sector Development & Investment Program (RUSDIP) with the Multi tranche financing facility for the RUIDP phase-II was approved by ADB in 2009. The project aims to improve the living conditions & urban environment, optimize social and economic development of 15 urban centres of Rajasthan, viz., Alwar, Baran, Barmer, Bharatpur, Bundi, Chittorgarh, Churu, Dholpur, Jaisalmer, Jhalawar, Karauli, Nagaur, Raj Samand, Sawai Madhapur and Sikar. Rajasthan state is situated in the western part of India. There are 33 districts, 39753 inhabited villages and 216 towns in the state. The total population of the state is 6.86 crore as per census 2011. Out of this there are 24.89 percent population lives in urban areas and 75.11 percent population lives in rural areas. The present paper deals with the future possible regional development after introduction of the RUIDP scheme.

Key words: Regional development, Urbanisation, RUIDP, ADB, Urban Infrastructure

THE ROLE OF SMALL TOWNS IN REGIONAL AND RURAL DEVELOPMENT IN ROMANIA

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The economic growth of large urban centers have repercussions on rural areas through attracting capital, labor force, raw materials and entrepreneurs from surrounding rural areas. Thus, it can be considered that urban and rural development are closely related, cities having an important catalytic role in the development of rural areas and a system of intermediate cities may be important to achieve the objective of economic growth and social equity of a region. The role of small towns in the promotion of regional and intraregional development is analyzed and discussed in relation with their influence on adjacent rural areas, focusing on the impact that they have in development of surrounding rural areas. Present paper answers to several general questions, related to the studied issues. If small towns have the ability to induce development in their hinterland? If towns can generate growth for rural areas? If small towns are able to play a role in the modernization of rural areas?

The response to these general questions is given by the particular cases analyzed through the perspective of uniqueness of small towns and specificity of regions where they are located. Development of small towns can influence the attraction of rural population from surrounding countryside by providing jobs in non-agricultural activities having in this way an important role to reduce the migration pressure on larger cities. Encouraging small towns with potential to become local development poles allows a balanced territorial development and reducing intra-regional disparities. The case study was conducted on small towns from Bihor County, of the Nord-Vest region, Romania.

Key words: small towns, attractivity, regional development, rural development, intra-regional disparities.

FUNCTIONAL URBAN REGION-THE INSTRUMENT OF POLYCENTRIC SPATIAL DEVELOPMENT OF SERBIA

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In this paper is analysed the importance of functional urban regions in the polycentric spatial development of Serbia and emphasized their role in the European integration processes. In the regional development and spatial planning theoretical approaches, functional urban region represents a complex system of interconnected spatial elements conditioned by the configuration of networks and relationships between them.

On the basis of relevant indicators, this paper provides a synthesis representation of the Serbian regional structure (degree of regional differentiation and integration), determines the functional urban systems' varieties (territorial distribution, functional development, hierarchical relations and territorial jurisdictions), and highlights their importance in the present and future spatial organization of the State. It was determined that two basic types of functional urban regions are developed in Serbia: monocentric and polycentric. Belgrade (and its functional urban region) is still the dominant pole of development. Its zones of influence will continue to expand and it will be further centralized. The situation is similar in Niš, Kragujevac and the centers in western Pomoravlje region, etc.

For the most suitable instrument for polycentric spatial development of Serbia was proposed a model of functional urban region that may represent a promising basis for a functional regionalization, defining national policy of balanced regional development and refinement of the principles of long-term effects on the area that remains outside the influence of a larger urban center, so that underdeveloped settlements within the region can have a viable position in the future.

Key words: functional urban region, polycentric development, networking, functional regionalization, decentralization.

The paper is the result of the scientific project "Problems and development trends of geospatial system of Serbia" TR 176017, which was realized by the Faculty of Geography, University of Belgrade and financed by the Ministry of Science and Technological Development of Serbia.

PROBLEMS IN THE IMPLEMENTATION OF PLANNING DOCUMENTS IN SERBIA

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The established system of planning documents is the result of the growing tendency for achieving a more balanced development of the territory, according to the local conditions. Preparation of the plans from the largest to the smallest areas is governed by law, and the biggest problem occurs in the implementation phase. There is a small number of plans that show fully experienced implementation. Some of the causes of poor plan implementation are incompatibility and incompleteness of regulations, incompleted and outdated data, which are leading to the creation of irrational planning solutions, then, vaguely defined process of implementation in the law, and in relation to this there is the misunderstanding of the planning process and plan implementation by local authorities.

It is possible to overcome these problems and achieve better implementations of planning documents only by a strong intervention of the State through various policies and programs of professional development, as well as by increased penalties.

Greater participation of all local participants in influencing on local development policies, as well as better informing citizens about the concept and importance of spatial and urban planning could be a factor of the better implementation of planning documents. Forming a good database that is permanently updated and usage of GIS allow the systematic monitoring of changes in one territory and also overall consideration of all factors that affect a particular territory in one place. It is difficult to achieve all mentioned things if the plan and other documents are used exclusively in analog form, but if it would be different, it could contribute to better implementation of planning documents.

Key words: implementation, spatial and urban planning, local government, positive regulations, development

A SURVEY OF BULGARIAN (NATIONAL) PLANNING AND REGULATION ACTS AND DOCUMENTS CONCERNING URBAN SPRAWL

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Urban sprawl is widely defined as unplanned and uncontrolled urban expansion. A key point in the process of urbanization is the conversion of unurbanized land (mostly agricultural, in some cases - forest) in urbanized.

In the last 20 years, the built-up areas of Europe have increased by 20%, while the population increased by 6% only. Given the fact that urban sprawl occurs when the rate of land-use conversion exceeds the rate of population growth, we can now talk about the existence of urban sprawl in Europe. In Bulgaria, during the period 2004-2012, the developers' interest in agricultural and forest lands located outside the development zones of different settlements increased in parallel with the construction development of urban areas, mainly around larger towns, resort and holiday areas. The low price of agricultural lands can be seen as one of the main reasons in this regard. The issues of the utilization of agricultural lands, their conversion into urban (construction) lands, and zoning have been defined by a number of national and local legal acts, which were passed and subsequently renewed/modified in a more recent period. The main act regulating the spatial planning and construction on the territory of the Republic of Bulgaria is The Spatial Planning Act. The Agricultural Lands Protection Act and its corresponding regulations provide an appropriate legal basis for the protection of agricultural lands and their yield. Overall, as different acts and regulations concerning issues related to the conversion of agricultural, forest, and protected areas are not in conflict, they may be said to have been harmonized. There are, however, some points which leave possibilities for uncontrolled urban growth.

Keywords : Bulgaria, urban sprawl, agricultural land, land conversion, laws and regulation

This paper is part of the research work carried out by the team of Varna Free University within the Work Package 5 of the international project TURAS, supported by the Seventh Framework Programme of the EU.

A NOVEL METHOD FOR FEASIBILITY TESTING URBAN SUSTAINABLE DEVELOPMENT POLICIES

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Policy making to promote more sustainable development is a complex task due in part to the large number of both stakeholders and potential policies. Policy feasibility testing provides a guide to the viability and practicality of policy implementation and forms an important part of an evidence based policy making process. An extensive literature review has identified no standardised approach to feasibility testing. This paper addresses this knowledge gap by describing a novel method using Multi-Criteria Decision Analysis (MCDA) for feasibility testing of policies aimed at increasing the sustainability of towns and villages in Ireland. Feasibility results are provided for 40 frequently cited policy interventions tested for 18 settlements in Ireland. Policies were selected in the arenas of transport, food, housing and urban form, energy, waste and water. Policies are feasibility tested through analysis of operational evidence from both quantitative and qualitative data sources. Following testing, policies are ranked in terms of feasibility. This research examines the effectiveness of local and national level policies and the importance of both local community involvement and central government regulation in policy success. The inter-settlement variation in feasibility testing scores prioritises policy selection and aims to reduce cherry-picking of policies to support the viewpoints of the decision maker. Although developed for an Irish urban context the methods described here may have applicability elsewhere.

Key words: feasibility testing, sustainable development, evidence based policy making, integrated assessment modelling

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THE EXTRACTIVE INDUSTRIES AND ‘SHARED, INCLUSIVE AND SUSTAINABLE DEVELOPMENT’ IN SOUTH AFRICA

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In the 140-odd years after the first diamond was found in South Africa in 1866, mining catapulted the country from a predominantly agrarian society into a modern industrial nation. For the biggest part of this period, mining drove and human development followed. This ‘order of importance’ was largely the result of the huge wealth and influence of the mining houses, the (perceived) importance of the sector for the development of the country, and the broader skewed power dynamics of colonial and apartheid rule.

Over the last decade, national government enacted new legislation by which it attempted to ensure that mining is made more serviceable to the post-1994 objectives of (1) broad-based societal reconstruction; (2) shared and inclusive growth; and (3) regional and rural development. A key component of this new legislation has been a provision to ensure that mining companies make tangible contributions to regional and rural development and human settlement in ‘mining areas’.

Recent events, such as widespread strikes, the tragic loss of many lives, and continuing harsh living conditions, have raised, what has been a nagging question since the introduction of the new legislation, i.e.: Has the new legal framework (really) assisted in (1) ensuring that communities in mining areas enjoy a greater of the wealth created by the industry; (2) enhancing regional and rural development in mining areas; and (3) establishing a more symbiotic relationship between mining, regional and rural development planning and human development?

In this paper, research in a mining area during the course of 2011 and 2012 is used to explore this question. Use is made of documented evidence and interviews with key role-players in the mining industry, municipal and provincial government, the private sector, traditional leadership structures and communities.

Key words: mining, inclusive growth, societal reconstruction, sustainable regional and rural development, South Africa

INSTITUTIONAL COLLABORATION AS THE PILLAR OF SUSTAINABLE BROWNFIELD REGENERATION IN THE DANUBE MACRO-REGION

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The subject of the research is a critical analysis of the brownfield development in the Danube macro-region as one of the most complex European regions. In the narrow sense, the emphasis of the research is on the institutional framework - the main actors, their competences and responsibilities regarding brownfield regeneration. It is interesting to overview the way of spatial planning policy-making and how these policies tend to sustainable land use. It can be presumed that stronger collaboration among the institutions in charge of making spatial policies aims at brownfield regeneration. The main goal of the research is to determine the form (“horizontal” or “vertical”) and the extent of collaboration between different sectors, disciplines, and institutions.

The result of this study refers to a concise survey of planning system in the selected countries - Austria, Hungary, and Serbia. The most important actors in this research are in general defined as: government (national level), regional and local municipalities, as well as the experts within public sector. The focus of the analysis is on the main planning representatives within public sector who are responsible for brownfield regeneration in the mentioned examples. In order to gain more general conclusions by analysing empirical data, a multiple case study as an appropriate method is chosen. The most important technique contained within the case study method is the content analysis of primary and secondary sources with regard to institutional support for brownfield regeneration.

The insights gained in this analysis toward more effective adjustment of planning policies to specific political and socio-economic contexts are outlined in the last part of the paper. Some guidelines should be particularly implemented in the spatial development of Serbia, as a country which can contribute to cross-border cooperation in the Danube region.

Key words: brownfields, planning institutions, planning instruments, Austria, Hungary, Serbia

STATISTICAL APPROACH IN LAND-USE SUITABILITY ANALYSIS OF THE BELGRADE CITY SUBURBS

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The paper addresses the problem of suburb development potential in the City of Belgrade. Suburbanization problem is particularly pronounced due to the rapid spreading of the city, and there is a strong initiative for extending the existing Master Plan for these suburb areas. One of the important points in that context is determination of the Land-Use suitability, as one of the foremost planning references. Herein, a statistical model is proposed for modeling of the Land-Use suitability relying on the available thematic data, including the following sources: Land-Cover, Geological, Topographic and Protected areas maps and some synthetic maps derived from these sources in a GIS environment. For the modeling purposes, the Conditional Probability approach has been implemented, using Weight of Evidence technique, in particular. Two modeling schemes have been involved: (i) model is being built and correlated in the extents of the known Land-Use suitability (training area) (ii) model is being extrapolated to the areas with partly known Land-Use suitability (by having only two particular suitability classes at disposal). Such strategy enabled optimization of classification scale, crucial for the actual comparison of the actual state and the final model, as a combination of (i) and (ii). The results were convincing and by reaching more nearly 80% of accuracy, they parallel the results of the earlier work based on different methodology. Finally, a practical applicability of the model has been also discussed.

Key words: Land-Use suitability, GIS, City of Belgrade, Suburbanization, Conditional Probability

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REVITALIZATION OF THE GOLUBAC FORTRESS IN ORDER TO ENSURE SUSTAINABLE USE OF THE NATURAL AND CULTURAL RESOURCES IN THE FUNCTION OF SOCIO- ECONOMIC VALORIZATION

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The medieval fortification Golubac undoubtedly has extraordinary cultural resources and tourist potentials. However, Golubac fortress today represents unused potential because the resources have not been appropriately researched, protected, presented and arranged, and therefore not economically valorized. "Strategy of Tourism Development of Serbia", adopted by the Government of the Republic of Serbia in 2006, recognized the potential of the Lower Danube Basin as one of the most significant tourist zones, and Master Plan of Tourist destination of Lower Danube Basin, created in 2007, included the Golubac fortress in the crucial investment projects, with a conclusion that it is necessary to focus at the fortification revitalization and the creation of the theme, natural, cultural and historical centre Golubacki grad. The cultural and natural basis of the area Golubacki grad (fortress, forecourt and the entrance of the national park Djerdap) are suitable for the development of a variety of extremely attractive tourist products which can be offered and thus ensure an additional value of tourist stay in the municipality of Golubac and in the area of the national park. This paper will define main objectives of revitalization project in order to ensure the preservation of the natural landscape and cultural heritage, including the archaeological remains and to bring economic, social and environmental benefits to Golubac and the neighboring areas through the promotion and development of sustainable tourism and community activities linked with the natural and cultural heritage. The paper relays on analysis and comparison of the three proposed concepts: concept 1 – "Multifunctional fortress"; concept 2 – "Distributed attractions" and concept 3 – "Cultural heritage destination". Also, the paper will refer on selected concept 1 "Multifunctional fortress", its proposed financing, critical activities in implementation proces and wider socio-economic impacts.

Key words: Danube, tourism, sustainable development, cultural-environmental protection, investments

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REGIONAL DEVELOPMENT BASED ON DIFFERENT TYPES OF VALUE CREATION AND BUSINESS MODELS

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Large-scale regional development where real estate makes the conservation and development of nature possible is increasingly replaced in the Netherlands by new types of regional development: *sustainable regional development* with much attention to other economic drivers and *organic regional development* with much attention to citizens and consumers as end users. This paper shows how business models are introduced into regional development and how these business models, manners of value creation and types of regional development change over time. The theoretical framework focuses on one hand on value creation and business models and on the other hand on planning theory. Dutch practices show which types of regional development are present and how the economic crisis and regional demographic shrinkage incite reforms of regional development. Introduction of business models leads to financial equalization or swap of revenues between planning functions and between regions. This has to increase spatial quality. In Dutch practices is making money more important than spatial quality. Business models are black boxes, which do not enlarge transparency. Business models influence thinking about planning theory. Rational planning and communicative planning are based on theoretical wishful thinking: implementation of plans and coordination by communication. Dutch planning practices of business models in regional development show path dependency: early experiences, market factors and negotiations determine the planning process. So rational planning and communicative planning are exchanged for a more heuristically approach: a way that truths and rules can be found by themselves on the basis of past experience. Path dependency of developments in practices is thus more important than theories are lagging behind the practice. These insights can inspire planners and planning practices in other countries.

Key words: value creation, business models, types of regional development, swap, path dependency, spatial quality, transparency

The paper is the result of research carried out within the scientific thesis project "Transitions in spatial planning by Public Private Partnerships", which was realized within the programme 'Transition, innovation and behaviour' and financed by the Ministry of Economic Affairs of The Netherlands.

MONITORING IN THE FUNCTION OF OPEN (FLEXIBLE) PLANNING

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We are in time of overall changes, where the context of complex and constant changes requires equivalent complex process of creating complex urban sections. Therefore urban profession, has been tasked to respond to the “needs” of surrounding (market’s pluralistic, market...), with development of new “roads” (methods, techniques, models...) of forming wide range, operative acting on the principle of timeliness, effectiveness and constant balancing of urban development. In contrast to the pursuit of designing and planning an ideal solution, it is necessary to point the way towards reaching achievable solutions, where instead of a determined plan or project requires an open time model of regulation dynamically achievable development model, or an open (flexible) plan, which forms abroad scale features of urban development and tracing different trajectories of management development. So it is necessary to redirect to the concept of managerial – publicity action in the activation of resources, or to redirect the promotion, planning and development, rather than passive “expectations” of changes. Managerial – publicity modeling is based on multiple scale model basis, such as a model of sustainable development, which aims to bind to reality of all aspects of environmental, technological, economics, social and cultural, then the concept of achievable vision, which carries a connecting of creative future and pragmatic reality, as well on the model of disclosure “step by step” which allows the maximum use of available resources. With this approach and constant monitoring would be pursued to achieve the reliable effect, then much better solution, which includes, from the beginning of planning to the implementation of the plan, continuous coordination, assessment, monitoring implementation, timely operationally redirection of the whole process and faster achievement of planned proposals.

Key words: monitoring, open (flexible) planning, open (flexible) plan, managerial-publicity modeling, sustainable development, achievable vision

THE ROLE OF FORESTRY IN TRANSBORDER GOVERNANCE PROCESSES

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With a total length of 1,252 km, the border between Germany and Czech Republic as well as Germany and Poland is Germany's longest external border; characterised by a high dynamic in economic, cultural and socio-economic matters. At the same time, border areas are often dominated by structural weakness, which increases the significance of the forestry's role as an important economic factor in laggard regions. To minimize risks (e.g. forest fires or beetle calamities), but also to identify potentials to improve the sector's performance, transborder cooperation becomes an increasingly important issue.

The paper is structured into six main parts, while the first part gives a short introduction to the subject of transborder cooperation in a more general view. The second part presents a short description of the doctoral research project, which deals with transborder forest governance. In the third part, two hypotheses are presented referring to both the thematic scope of forest-related transborder activities and the complexity resulting from organisational framework conditions, namely forest ownership structures, within the border regions. Then, theoretical considerations based on the border concept of Ratti (1993) are illustrated, followed subsequently by a synthesis of theoretical aspects with real world conditions applied for the Euroregion Neisse-Nisa-Nysa and the relevance of framework conditions on transborder cooperation. Finally, it is concluded that complex ownership structures in terms of ownership category and organisation make cooperation activities more difficult. Furthermore, a content-related shift from retrograde problem-orientation towards an orientation based on potentials and challenges can be recognized in the Euroregion Neisse-Nisa-Nysa.

Key words: Transborder forest governance, transborder cooperation, forestry, European Union, multi-level governance

STRENGTHENING THE TERRITORIAL POSITION OF VALLADOLID THROUGH PLANNING STRATEGIES: NETWORKS, PATTERNS, CENTRALITIES

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In the new Masterplan of Valladolid (E) -a medium, historical and industrial city, capital of Castilla y León, the region in the centre of the continental Spanish plateau- we are designing new urban strategies for both the contemporary city and the emerging metropolitan area, facing their urban problems in a singular context of crisis.

Due to its geographical position and its historical development Valladolid is a well-connected city, located in a cross of several axes (three rivers, a European east-west corridor, a structured industrial corridor, the HC railway, etc.). Both the high connectivity and the clear centrality are a great opportunity and a creative factor in the plan, which strengthen the positional values of the city and take vantage of them.

In order to achieve this goal, we propose three integrated planning strategies: integrating the industrial tradition of the city with several logistics projects, forcing its role of regional capital with the condition of well-served city and the systematic improvement of the environmental quality (for example: the project of the new park system).

In our work sustainability is a vector of change: a strategy to improve the city through concrete actions. Studying three interrelated systems (public open spaces, transit and transport, centers and neighborhoods) we are reading the local landscape and re-designing the urban structure.

The most important result of our work is a new approach toward the future of Valladolid that provides a clear urban structure in the Masterplan, which relates on one hand what the city wants to be and on the other its real role in both the local and regional spatial system. Other benefits are the focus on urban regeneration of deprived areas, the integration between nature and city and the combination between the Masterplan and other planning tools (all of them simultaneously at different scales).

Keywords: Central position, corridors, connectivity, strategies, networks, patterns, regeneration, sustainability

LOST CENTRALITY IN THE STRATEGIC PLANNING OF THE VALLADOLID REGION, SPAIN

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Usually, the notion of "city without a center" or "loss of centrality" has been linked to the theory of the Grosstadt or metropolis as a huge and dense accumulation of goods which cannot be submitted to an order based on the paradigm of centrality. In order to deal with this fact, some alternatives have focused on the notion of new poly-centric urban developments or on the growth of suburbs. In any case, this kind of urban planning alternative was initially conceived and planned in a context of high population urban areas.

However, the main aim of the current proposal is to provide a new approach to the notion of the "loss of centrality," based on the case of medium size cities. I will specifically refer to the regional-scale strategic planning over the last half century in the Spanish city of Valladolid—a historic city of national importance whose core has been the nucleus of concentric growth from its very beginning. Through an analysis of the city's main Master Plans and urban interventions from the beginning of the second half of the twentieth century to the present, three different growth strategies have been identified that were developed by urban planners in order to conceptualize and direct the growth of the city. This article studies the effect that these growth strategies had on the notion of "urban centrality," and concludes that the loss of urban centrality not only affects huge metropolises (as a result of their physical extension) but is also a factor in the strategic management of the understanding of a city at a regional scale, whatever its size.

Key words: Centrality, biopolitics, growth strategies, medium size cities, Valladolid

THE APPLICATION OF DIFFERENT KAPPA STATISTICS INDICES IN THE ASSESSMENT OF SIMILARITY BETWEEN PLANNED AND ACTUAL LAND USE MAPS

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Urban growth represents complex spatial process, dependent on many different factors (socio-economic conditions, demography, relief, infrastructure, planning constraints etc.) and often it does not come about according to urban plans and expected framework. By comparison of categorical planned land use maps and observed actual land use one can make the assessment of urban plan realization. The development of high-resolution spatial modeling techniques, geographical information systems and more accessible remote sensing data has increased the need for map-comparison methods. One of the most frequently used methods in geospatial applications is the standard kappa index. Over the past decade new kappa indices have been introduced: kappa locations – a measure of similarities in the spatial allocation of categories in the two compared maps, kappa histo – a measure of the quantity similarity of the two maps and kappa simulation – a measure of similarities of two maps but taking into account only the cells in which land use change has occurred, regarding to the initial map. This paper will present the use of recently introduced kappa statistics indices, for evaluation of Master Plan of Belgrade implementation, in several Belgrade municipalities with different urban characteristics. The actual Master Plan of Belgrade of year 2021 was done in 2003, so the plan implementation analysis for the time period of the seven years was done in 2010, based upon observed land use data. The aim was to determine whether the urban growth differs from the planned one in the period 2003-2010 and to evaluate the extent to which it was implemented.

Key words: kappa statistics, land use map, urban planning, Master Plan of Belgrade, similarity assessment

The paper represents the result of research carried out on projects No. III 47014 „The role and implementation of the National spatial plan and regional development in renewal of strategic research, thinking and governance in Serbia“.

A TRANSPORT-URBANISM STRATEGY BASED ON A NEW APPROACH OF CENTRALITY: AREAS OF MULTI- COMMUNE COHESION APPLIED TO THE GIRONDE'S COUNTY

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In order to identify centrality, we develop an original method - i.e. Areas of Multi-commune Cohesion - based on concentration and attraction indicators. It underlines several stylised facts which characterise the morphological and relational evolution of urban organisation in the Gironde's county over the last twenty five years: urban areas are expanding strongly, existing sub-centres are strengthened, new sub-centres have appeared, long distance commuting have become the norm, radial and centripetal flows do relatively decrease, lateral and centrifugal flows are developing increasingly. Therefore, the CBD becomes a net commuter exporter whereas the main sub-centres are bypassed to the benefit of outer-centres. This study shows that the commuting flows are becoming more integrated. However, central places are not diluted in the larger urban area, but are rather concentrated in specific places.

We suggest to look at Bordeaux agglomeration's growth within this new context, where both economic and employment dynamics are integrated at the county scale. This approach seems to be more appropriate than the current one which aims at planning Bordeaux as a "Métropole Millionaire", thus favouring urban sprawl and extensive land use. Relying on public transport network, the urban development of the Gironde's county could be developed around existing or emerging sub-centre networks. Whilst loosening land constraints of the main centrality, this strategy would support the on going multi-polar process. This Transport/Urbanism co-development would limit the habitat dispersal and the increasing use of car, in particular for commuting.

Key words: centrality, commuting, Areas of Multi-commune Cohesion, multi-polar, Gironde county

NEW TRENDS OF SUBURBANIZATION PROCESSES IN THE BUDAPEST METROPOLITAN REGION

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The paper aims were to present the main social and spatial characteristics of the (residential) suburbanization processes in the Budapest Metropolitan Region between the last two decades. During this period - similarly to the current Western European urban development trends - we can observe suburbanisation in the Budapest Metropolitan Region as well. This urban development phenomenon was characterized by a strong outmigration of the economy and a certain part of the citizens from the city centre to the outskirts of Budapest. The causes of the outmigration were numerous, but we can mention for example the physical, and social decline of certain part of Budapest city centre, and also the well-known problems of the global city centre (noises, lack of green areas, air pollution, homeless).

Furthermore we can state also that this urban development process affected a very different way of the suburban settlements. The „winners” of the suburbanization are the settlements, who have a good accessibility, moreover nice environmental conditions. They are characterized by great population growth, and they are also popular for the actors of economy. They concentrate a population of the middle and a higher class, who can afford them the highest real estate prices. The less popular settlements are characterized by a not so good accessibility with the capital and lack of the nice environmental conditions and investments. They are popular within the less affluent people. Based on the newest statistical database the population of Budapest is started to grow again after a 25 years decline.

Key words: Budapest, suburbanisation, migration, gentrification, metropolitan area

REHABILITATION OF URBAN IDENTITY OF CITIES IN THE BANJALUKA REGION THROUGH URBAN FORM REGULATION

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This paper points to the possibility of codifying urban planning and applying physical regulation standards in urban form design to establish such instruments of guidance as will ensure the recognition, appreciation and development of local urban identity. The purpose of establishing general principles and making quality recommendations that would aim at urban form design regulation and be implemented as qualitative criteria and regulation standards is to propose a methodology for the rehabilitation of Banja Luka City's identity applicable to similar cities in the region, with due adjustments to allow for contextual specificity.

The discontinuity in the urban development of Banja Luka and other cities in the region has jeopardized the inherent characteristics of their identities and resulted in reduced recognisability and impaired integrity. Answers to the question about the possibility of rehabilitating Banja Luka City's urban identity are to provide a methodological framework for related research concerning other cities in the region and for building a theoretical platform for strategic investigation into the possibility of coordinated regional city development. This study covers the period since the beginning of Banja Luka's guided urban development (Austro-Hungarian administration, 1880), which should allow reviewing its urban morphogenesis and understanding its key elements, as well as identifying the general principles and rules of urban form regulation as laid down in the local ordinance and planning legacy.

Key words: urban form, identity, renewal, regulation, principles, regional development

The paper is the result of research carried out within the PhD-dissertation "Research into possibilities of renewal and improvement of urban identity of Banja Luka City through urban form regulation", at the University of Banja Luka, Banjaluka, Republic of Srpska.

PROTECTION AND THE SUSTAINABLE USE OF THE ENVIRONMENT IN RURAL AREAS

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Serbia is a highly rural country. Approximately three quarters of its territory is made up of a rural landscape where nearly half of the population lives. They differ from urban regions mostly because of different density housing, economic activities as well as the psychological and social characteristics of their inhabitants. Rural planning in Serbia took off in the last decade of the 20th century due to a total disregard for villages and intolerant relation to them in general.

Rural planning was also stimulated by the European regional politics oriented towards rural space, rural space development, agriculture and its alternative activities. One of the main conditions for joining the EU is environment protection and the implementation of the LEADER programme related to rural development. Environment protection refers to a group of different processes and protection measures whose aim is to preserve biological balance, which is one of the top priorities in space planning. However, the uncontrolled rural development in Serbia in previous years is a big issue that needs to be tackled.

Therefore, it was more than necessary to carry out an assessment of opportunities and potentials in this area, as well as to create agricultural and environment protection politics, the next step of which would be to ensure their best integration. The state of environment in villages and the exploration of opportunities for overcoming the problems is very important. Its purpose is to show the goals and measures needed to improve Serbia's rural environment.

Key words: the environment, rural development, the LEADER programme, sustainability, Serbia

DETERMINATION AND DELINEATION OF FUNCTIONAL URBAN AREAS IN SERBIA

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Functional Urban Areas (FUA) are basic building blocks of the concept of polycentrism, which represent one of spatial development principles established in the European territory throughout many documents.

Methods for delineation of FUAs territory are different from country to country. Some use commuting areas, others use areas attracted by urban pole, or areas attracted to labor market center etc. European Spatial Planning Observation Network (ESPON) throughout its projects gave territorial context to the FUAs by introducing two additional concepts: Potential Urban Strategic Horizon (PUSH) and Potential Polycentric Integration Areas (PIA). These two concepts give approximate territorial limits of cities and define spatial basis for integration and interaction of neighboring cities. ESPON has provided general method for delineation of PUSH area as zones within which travel-to-work daily migration is most likely to occur, and are based on a 45-minute car travel time from the center of respective FUAs. The resulting areas have been approximated to administrative or statistical territorial units of Serbia, so PUSH and PIA areas limits have been delimited.

The main goal of this research is to determine territory of FUA in Serbia using ESPON methodology, to investigate relations between FUAs territories and to determine type of polycentricity occurring in urban network of Serbia. Obtained results are reviewed in order to evaluate usage of this ESPON method in Serbia.

Key words: Functional Urban Areas; Potential Urban Strategic Horizon; Potential Polycentric Integration Areas; polycentricity; territorial context; Serbia

EMERGENCE OF A NEW URBAN DEVELOPMENT MODEL? TRANSITION AND GLOBALISATION IN THE HUNGARIAN NEW TOWNS AND THEIR REGIONS

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The aims of the paper are to introduce the impacts of the politico-economic transition and the effects of globalisation on former socialist new towns, and to reveal the social characteristics and physical patterns of Hungarian new town regions. The so-called new ('artificial') town development was a high priority for socialist regimes all around Eastern Europe. The socialist ideology's endeavour was to create new cities with monofunctional economic functions (primarily based on heavy industry), and homogenous social and physical structure. In Hungary, 11 artificial cities were planned during the 1950-60s, becoming the most prosperous settlements over the subsequent decades. Problems only appeared after 1990, with the collapse of the previous regime, the decrease of the industrial sector, the appearance of market economy and privatisation, causing several negative effects in these towns. As a consequence, although in a regionally differentiated manner, these became some of the most disadvantaged regions of Hungary.

Based on our initial hypotheses and the international literature on new towns, we raised the following question; do these cities represent a specific development model after 1990 compared to historical cities? The answer might help us in creating new development directions in the future.

The paper focuses on 3 main topics; socio-spatial development processes, the changing relations between cities and their surrounding regions, and finally, on social conflicts. Research methods were based on statistical data and the analysis of development plans, and 100 structured in-depth interviews were conducted with local leaders and elites.

Key words: Hungary, socialist city, new urban development, social polarisation, transition,

The paper is part of a three-year scientific research project (2010-2012), entitled „Formation of a New Urban Development Model? Transition and Globalization in Hungarian New Town Regions” supported by the Hungarian Scientific Research Fund, reference number: K 81547. The leader of the project: Prof. Dr. Viktória Szirmai, DSc. Institute for Sociology, Centre for Social Sciences, Hungarian Academy of Sciences.

STRATEGIC SPATIAL PLANNING IN THE ERA OF CRISIS: CURRENT TRENDS AND EVIDENCE FROM THE METROPOLITAN AREA OF THESSALONIKI

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Strategic spatial planning has been accentuated as a key planning instrument in recent years, finding a preferential field of application in city regions and metropolitan areas. When it had re-emerged in the mid-1990s, it mostly responded to new challenges facing urban and metropolitan areas, especially challenges stemming from intensified competition in the context of globalization as well as the challenge of enhancing sustainable urban development. A variety of strategic plans have been elaborated with the focus being on promoting entrepreneurship, innovation, creativity, sustainability, and so on, the aim being to orientate spatial organization and spatial development according to an ambitious vision. This model has been transferred to peripheral urban areas and metropolises, like those in SE Europe, which seek to improve their relative position in the global terrain.

However, since 2008, some areas have been exposed to the impact of economic crisis which makes them vulnerable to threats of a socioeconomic character. This is particularly true for urban and metropolitan areas in which the bulk of employment and productive activities is concentrated. This in turn necessitates a new role for strategic planning capable of addressing these new challenges. It is then worth questioning which should be the characteristics of strategic planning so that it could better respond to current threats. The paper examines this question with a focus on the case of the Thessaloniki area which is one out of the two metropolitan areas of Greece, in SE Europe. The paper draws evidence from the process of updating the strategic planning document for the area, which is currently in progress, and goes on to identify weaknesses and strengths of this type of planning in the era of crisis.

Key words: Strategic spatial planning, spatial planning in Greece, planning for resilience, regional vulnerability

The paper is based on a research project which is funded by the Research Committee of the Aristotle University of Thessaloniki (AUT)–Greece in the context of the action “Supporting Research Activity at the AUT-2012”.

HISTORIC PARKS AND GARDENS OF FRIULI VENEZIA GIULIA: CENSUS, CATALOGUING, PERSPECTIVE OF DEVELOPMENT IN THE REGIONAL SPATIAL PLANNING

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The Regional Centre for the Cataloguing and Restoration of Cultural Heritage and the local associations of Rotary in 2009 launched a multiyear project that included an inventory of the historical parks and gardens in the territory of Friuli Venezia Giulia. Therefore, there have been identified some heritage properties, public and private, worthy of consideration. From the collected data, there will be compiled for each one, a cataloguing card inserted in a database dedicated to the regional cultural heritage, which can be viewed in SIRPAC, the Regional Information System for Cultural Heritage. In addition to sites of great importance such as the parks of Villa Manin (Passariano) and Miramare (Trieste), will be taken into account even others far the persistence of certain other historical typologies or other aspects of interest. Knowledge and documentation achieved with the cataloging process is preparatory to the conservation and enhancement of sites placed in the network. The collection of information and the network of relationships that will be created will also acquire useful elements in relation to the actions of protection and restoration that these properties constantly require. The project also aims to encourage contact and exchange of experience between owners, managers and architects who work in favour of this heritage.

The project, completed at the end of 2012, has made possible the cataloguing of 178 parks and gardens judged to be particularly significant out of the more than 340 included in one census. In spring 2013 the project will culminate in the publication of a catalog of this activity, highlighting the synergy achieved between public and private entities. The project also has some reflections and consequences for the regional territorial planning. After the adoption of the new regional Plan of Government of the Territory (PGT) in October 2012, the information database system SIRPAC, adopted in 2005 by the Regional Centre, is become a necessary tool for the preparation of spatial and regional landscape plans.

Key words: Parks and gardens, historical typologies, cataloguing, protection and restoration, regional spatial planning.

The work reported in this paper is a synthesis of the research within the scientific project «Historic parks and gardens of Friuli Venezia Giulia. Census and cataloguing». Working Group: Franca Merluzzi (coordinator), Emiliana De Paulis, Giorgia Gemo, Paolo Tomasella. The publication of scientific results was supported by the Region, Press Office of the Presidency.

TOWARDS INTERACTIVE FLOOD GOVERNANCE: CHANGING APPROACHES IN DUTCH FLOOD POLICY

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Flooding of urban areas can have disastrous effects, both for people and infrastructure. Cities that are vulnerable to flooding continuously search for ways to reduce flood risks. During last decades of raising awareness about climate change, thinking about dealing with flood risks changed considerably, not in the last place in the low lands of the Netherlands. The conceptual turnover, change of paradigm or transition, suits in a broader development towards integrated, interactive and adaptive water management. The change in perspectives on urban flood management is the central theme of this paper. The analysis is based on theoretical insights from public administration, transition management and evolutionary thinking on changes in system equilibrium.

Objective is to contribute to the understanding of developments in urban flood governance. Results are based on theoretical perspective in contemporary literature, underpinned by an analysis of Dutch policy documents on water and flood management and in-depth interviews with decision-makers and professional water managers. It appears that the time is there now for a transition towards sustainable urban flood governance.

Key words: flood governance, sustainable water management, urban flood management, integrated water management, interactive water management, adaptive water management.

POTENTIALS, CONSTRAINTS AND CONFLICTS BETWEEN KAZINCBARCIKA AND GYÖNGYÖS, A HUNGARIAN NEW AND HISTORICAL TOWN AND THEIR SURROUNDINGS

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During the socialist era, several new industrial towns have been planned around enormous investments throughout Hungary, becoming utterly privileged by the government's centralised redistribution system. After the politico-economic transition of 1990, however, these settlements faced serious challenges to be dealt with, both economically and in terms of their social structure.

The aim of the case studies with special emphasis on Kazincbarcika and Gyöngyös (as part of the entire research) is to present the most crucial changes concerning the potentials, constraints and conflicts, focusing on the similarities and differences between a typical historical town and the newly constructed (industrial) town.

In order to prepare interdisciplinary research, statistic data analyses and in-depth interviews have been carried out, and regional and urban planning documents were examined. Due to the emergence of the post-industrial era, the former roles and functions of the Hungarian urban network have undergone fundamental changes. Within the confines of my paper, I aim to shed light on the most important economic, social, and environmental changes, furthermore to evaluate the priorities appearing in recent spatial development documents, with a particular emphasis on their suggestions to resolve the aforementioned problem of the two town regions. Moreover, owing to the effects of the current financial crisis, it is essential to carry out profound comparisational analyses focusing on the shift of hierarchical roles and city functions. It is necessary to create future development prognoses, both for historical town (Gyöngyös), and for formerly socialist (now post-industrial) settlement (Kazincbarcika).

Key words: transition, post-industrial era, urban and regional development, future scenarios, conflicts, segregation

The paper is part of a three-year scientific research project (2010-2012), entitled „Formation of a New Urban Development Model? Transition and Globalization in Hungarian New Town Regions” supported by the Hungarian Scientific Research Fund, reference number: K 81547. The leader of the project: Prof. Dr. Viktória Szirmai, DSc. Institute for Sociology, Centre for Social Sciences, Hungarian Academy of Sciences.

ANALYSIS OF THE DEVELOPMENT REGULATION IN CHINESE REGULATORY PLANNING TOWARDS THE MAIN FUNCTION ZONING STRATEGY

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China is in a process of rapid urbanization. However, along with the dramatic economic growth, there are constantly emerging environmental and social constraints which may be great challenges of China's future sustainable development. In order to optimize the developmental mode, the latest national plan, "The 12th National Economic and Social Development Plan (2011-2015)", is establishing "the Main Function Zoning Strategy", which could be considered a new prototype of national spatial plan and may cover all Chinese territories.

In China, the regulatory plan, which is the urban detailed plan and zoning code, is the main legal basis for building permission. According to relevant laws and regulations at national level, the paper is intend to analyze regulation capabilities of regulatory plan factors, which may be functional in realizing the Main Function Zoning, in order to clarify the regulatory planning approaches to implementing the Main Function Zoning Strategy. Both qualitative and quantitative methods are applied to accomplish the study.

Firstly, the paper introduces the latest "the Main Function Zoning Strategy" stipulated in "The 12th National Economic and Social Development Plan (2011-2015)" and finds main interlinks between the spatial development strategy and urban regulatory planning. Secondly, regulation factors in Chinese regulatory planning, which may achieve the goal of main function zoning, will be clarified and categorized. For each regulation factor, its regulation capability can be determined by relevant laws and regulations. Regulation capabilities of relevant factors are defined by applying a coding method developed by the author. Finally, according to the output of the study, the spatial regulation approaches to implementing "the Main Function Zoning Strategy" in Chinese regulatory planning are analysed.

Key words: China, main function zoning strategy, urban planning, development regulation

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INNER URBAN AREA OF BELGRADE

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Concept of functional or nodal regions defines region upon a relation between urban core and its surroundings. One of major indicators of this relation is daily commuting, which are a base for zoning of an influential area of the centre. Although different on a national level, definition of an urban region/area is based on functional and economic role of three primary constitutive elements: the urban core, inner ring (corresponds to the areas that are adjacent to the urban core) and outer ring (corresponds to the outer limits of the urban region). According to above mentioned facts, the major task of this paper is delimitation of the second constitutive element of urban area of Belgrade, or inner ring which may be considered a inner urban area or an area of direct, significant influence of primary development centre in urban settlement network of Serbia. In this paper, fundamental features of the defined area were also analyzed. A relation between the urban core and the surrounding territory was especially taken into consideration.

Key words: urban area, the inner ring, Belgrade, commuting, influence

The paper is the result of research carried out within the scientific project "Researching Demographic Phenomena for the Purpose of Public Policies in Serbia" TR 47006, which was realized by the Institute of social sciences and financed by the Ministry of Science and Technological Development of Serbia.

SESSION C

**PAN-EUROPEAN CORRIDORS AND THEIR
IMPACT ON SPATIAL DEVELOPMENT**

ENHANCEMENT IN TOURISM AND PROTECTION OF THE LOWER DANUBE BASIN TOURISM AREA

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Abstract: In this paper, the authors indicate the importance of enhancement in tourism and protection of the Lower Danube Basin tourism area (Serbian: *Donje Podunavlje*). This part of eastern Serbia is a tourism eco-zone whose natural conditions as factors of tourism-relief development, climate, hydrographical potential, flora and fauna, will be analyzed. Advantages and potentials for tourism development, including almost all types of tourism products of the Lower Danube Basin, have been identified a long time ago, while some of them have been affirmed, and as such they enable an authentic tourism offer including nautical, eco, cultural, rural and other types of tourism. Diversity of this area is reflected in a number of cultural and historical monuments, fortresses, caves, hunting and fishing areas, as well as pedestrian and bike paths. Over the last few years, a dramatic increase in the number of visitors who visit this area as an attractive tourism destination has been recorded. Ever-increasing flow of domestic and foreign tourist is a result of growing cultural and recreational needs. The “Djerdap” National Park with the Djerdap Gorge and historical sites located in the area of Lower Danube Basin is one of the most important tourist destinations and the backbone of tourism development in the Serbian part of the Danube River. As for transport connectivity, the state roads of category II (regional roads) can be singled out. They provide connectivity to Corridor 10 and, via border crossings, and also the connectivity to Corridor 4 in the Republic of Romania. The contribution of tourism to economic growth can create a number of constraints and cause conflicts, degradation and exhaustion of potentials and values. An appropriate and optimal tourism development should be strived for, which indicates a possible conflict (constraint) relativization for achieving sustainable development. Therefore, contemporary tourism development requires an adequate protection, enhancement, organization, planning, etc. The protection of an area, defining of different protection regimes, as well as conflict relativization, must have a planning and scientific basis and must be an integral part of tourism planning at local, regional, national and international levels.

Key words: Lower Danube Basin, enhancement in tourism and protection of area, protection regime

The paper is a part of the Scientific Project “Sustainable Spatial Development of the Danube Region in Serbia” (TR 36036), funded by the Ministry of Science and Technological Development of the Republic of Serbia.

METHODOLOGY FOR THE DEVELOPMENT OF AN INTEGRATED TRANSPORT ACCESSIBILITY MODEL FOR THE WIDER BALKAN REGION

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Transport infrastructure is a decisive factor of accessibility to socio-economic activity. At the regional level, accessibility expresses the ability of a region to attract or approach the activities conducted in other regions and it is considered to be one of the region's main competitive advantages. The role of transport infrastructure in terms of regional accessibility is the integration of intra-regional socio-economic activity and the provision of access towards inter-regional and international destinations. Thus, in the midst of the global economic recession, the contribution of transport infrastructure towards regional accessibility emerges as a major priority for the strengthening of a region's cohesion and competitiveness.

In the above context, the present paper aims at the presentation of the methodological approach and the main components for the development of an integrated transport accessibility model in the Balkans. The methodology is based on the overview of the European experience in the implementation of accessibility models as well as on the analysis of the specific features of interaction between transport accessibility and regional development in the Balkans.

The main contribution of the present paper comprises the formulation of a concrete methodology for the development of an integrated transport accessibility model with the flexibility of adaptation for the examination of various transport modes and scenarios. The advantages of the proposed methodology are the interdisciplinary approach and the focus on the examined region. Finally, the paper aims to establish a common ground for future cross-scientific cooperative initiatives and to highlight the importance of integrating the development strategies of the transport system in the wider Balkan region.

Key words: methodological framework, transport accessibility, regional development, integration, competitiveness, Balkan region

TRANS-EUROPEAN RAIL FREIGHT TRANSPORT CORRIDORS: ANALYSIS, MODELLING AND EVALUATION OF PERFORMANCES

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This paper deals with the analysis, modelling, comparison and evaluation of performances of the Trans-European rail freight transport corridors. The infrastructural (spatial), technical/technological, operational, economic, environmental, social and policy performances are considered. An analysis requires the close examination of the current and prospective performances of the rail infrastructure and services (operations). Modelling includes the development of the indicator system (consisting of indicators and their measures) for quantifying and assessing particular performances. Comparison deals with the identification of type and scale of similarities and differences in particular performances. Evaluation involves an assessment of the contribution of performances to the specified objectives.

Two RFCs (Rail Freight Corridors) stretching from the north-west to the south-east of Europe, both named according to the related EU funded projects (6th FMP (Framework Programme)), are considered: CREAM (Customer-driven Rail-Freight Services on a European Mega-Corridor Based on Advanced Business and Operating Models) and RETARCK (REorganization of Transport networks by advanced RAil freight Concepts). The results obtained through evaluation of their performances indicate to what extent they both could bring about a modal shift from road to rail transport and consequently contribute to increased sustainability of the European freight transport sector in accordance with the EC (European Commission) long-term transport policy objectives.

Key words: Freight transport corridors, rail, performances, analysis, modelling, evaluation, modal shift, sustainability

The paper is a part of the results of research carried out in two EC (European Commission) funded projects (6th Framework Programme): CREAM (Customer-driven Rail-Freight Services on a European Mega-Corridor Based on Advanced Business and Operating Models)(2008), and RETRAC (REorganization of Transport Networks by Advanced RAil Freight Concepts) (2012)

MONITORING INTERNATIONAL COOPERATION IN PAN-EUROPEAN TRANSPORTATION CORRIDOR 10

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This paper analyzes strategies of international development cooperation and political economy in the area of land transport infrastructure- road and highway networks. The main donor observed is the World Bank, and the recipient country of interest is Serbia. A summary of Serbian national strategies to promote transport investment and development from official governmental documents is opposed to the opinions from academia and independent research institutes. The necessities of a holistic vision and ex-ante impact evaluations of capital development projects are elaborated. The same methodology is applied to examine narratives and policies advocated by the World Bank, with a particular focus on the Country Partnership Strategy for the Republic of Serbia. Consequently, an overview of the statistical data available is provided, retrieved from international online development dataset. A specific synthetic index is established, referring to the key measured variables related to road transport infrastructure development, in order to depict the situation in Serbia in comparison with the relevant neighbouring countries. Finally, a specific project of Serbian Corridor 10 investment is analyzed in the context of the aforementioned framework. The aim of this analysis is to investigate and illustrate the coherency of actions implemented with the policies promoted by both parties- the World Bank as an international donor, and the Serbian Government as the recipient, at both macro and micro levels. The main contribution of the paper is enhancement of the monitoring approach which requires confirmation and validation of the ongoing development strategies and policies through empirical evidences and data analysis, aiming at more responsible spatial and regional planning and development practice.

Key words: Pan-European Corridors, National Transport Plan, International cooperation, Data analysis, Spatial development, Monitoring & evaluation

WATER MANAGEMENT, ENVIRONMENTAL PROTECTION AND SPATIAL PLANNING RECONCILIATION - “ACCOMMODATING” THE DANUBE AND THE TISA RIVER IN SERBIA

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Water management in Serbia has been mostly operating in a framework of public companies and institutions focused on strictly sectorial and technical expertise on hydraulic engineering, environmental protection and navigable traffic engineering within the highly autonomous legislative framework. On the cross-point of spatial planning and water management there is a growing debate on the important discourses of the policy domains. Seeing rivers as an “accommodated” generator of opportunities is a statement which is opposing the traditional consideration of strict separation of water from the land. Spatial planning as a framework for regulating the land use has an important function in integrating the water management and landscape more closely. In Serbian spatial planning practice there is growing practice of area-specific development planning (reflected through the Spatial plans for the special-purpose areas) which are considered to accommodate new ideas on spatiality better than the traditional, sectorial planning documents. The question is placed as to how these practices could direct new spatial arrangements of integrative collaborative spatial planning and not just merely reflect the framework of the existing planning order. This paper seeks the potential and actual role of spatial planning in addressing challenges related to particular river environments on the Tisa and the Danube rivers. The research is based on the analysis of two Spatial plans for the special-purpose areas which are still in conceptual phase – The Cultural landscape of Bač and Multifunctional ecological corridor of the Tisa river.

Key words: integrated spatial planning, water management, strategic actions

DANUBE STRATEGY IN SERBIA: EDUCATION-BASED RESEARCH OF THE POTENTIALS OF SERBIAN TOWNS ON THE DANUBE

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The Strategy of Danube Region of European Union (EU) is one of new European development initiatives and documents on regional development. Its central element is the Danube, which is the main European river and one of the key transport corridors of Europe. This is the reason why it is unavoidable element of future development of the EU. The strategy is strongly connected with implementation and it offers the integral approach of priorities of the development.

Serbia is one of central states in the Danube region with long flow of the Danube. Because of that, the importance of Serbian cities and towns on the Danube is visible for its future development and competitiveness of state and its integration in the region and EU. All these towns have extraordinary position as a potential, but they also have many local characteristics and differ notably in numerous fields. Therefore, the implementation of the “global” actions and priorities of the strategy can be the challenge in local level in Serbia. Finally, it is questionable how the strategically proclaimed integral approach can be used in so different cases in Serbia.

These questions were the fundament for education-based research in the course at the Faculty of Architecture, the University of Belgrade. The theory of regional and urban planning was the keystone for the structuring of the course aims and process. The phases were organized to achieve the permanent relation between global/regional and local/urban level. Accordingly, course participants had two roles; all of them had one Danube town as a research field and everyone was the part of the team with responsibility of the making networks between towns. The result of the course was the set of actions, options and scenarios of both development of the towns separately and the development of the whole region in Serbia.

Key words: Danube region, European corridors, development strategy, integration, competitiveness

The paper is the result of research carried out within the scientific project “Research and systematization of housing development in Serbia, in the context of globalization and European integrations, with the aim of housing quality and standard improvement” TR 036034, which was financed by the Ministry of Science and Technological Development of Serbia.

DANUBE AREA SPATIAL INTEGRATION BY STIMULATING THE ROMANIAN PORT CITIES REGENERATION

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Romania is crossed through by the Danube, the main European river course, the Romanian port cities being an important item of the European river network. Ports as Galati, Tulcea, Giurgiu are part of the Pan-European Corridor IV, assuring the Eastern link for the merchandises entering Europe through some of the main ports as Rotterdam, Wien, Mainz or Strasbourg. Their strategic location is offering the Romanian ports the opportunity of becoming the main gate for the water traffic between Asia and Occident.

The paper is developing the concept of urban regeneration of the port cities and their spatial integration within the Danube influence area. The objective is to propose an analyze frame for the port – city system, to identify the possible strategies and actions for promoting the local development and port – cities regeneration supporting.

The paper process has the following approaches: the assessment of the economic development, tourist opportunities, culture and nature resources as a support for tourism development and strengthening into the port cities. Population relationships, opportunities within the crossing border area these port cities are having in view are analyzed. The intended purpose of the paper is to highlight the functional particularities of port cities and to elaborate a scenario of planning approach to their study implications promoted regeneration of socio-economic and ecological assessments.

Key words: Danube, port cities, urban regeneration, spatial development, urban policies

SESSION D

**SUSTAINABLE SPATIAL DEVELOPMENT
UNDER CLIMATE CHANGE CONDITIONS**

VULNERABILITY OF NATURAL AND CULTURAL HERITAGE IN RELATION TO CLIMATE CHANGE - NEW CHALLENGE FOR SPATIAL AND URBAN PLANNING

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The conservation of natural and cultural heritage, initially, considers preservation of identity, uniqueness and distinctiveness. This is the basic premise on which contemporary planning principles are based, and among that are: the principle of integral protection of natural and cultural heritage, the controlled use of their resources with preservation of authenticity, minimum intervention and maintenance on permanent basis. The mentioned principles already express the sensitivity of the areas of natural and cultural heritage to changes.

The planning practice so far, already has experiences regarding many forms of damage and threat to natural and cultural heritage as a result of industrial and urban development, as well as problems of their protection, development and use. A new potential threat in the form of climate change represents further uncertainty for the maintenance of these areas and a new challenge for spatial and urban planning. Is it possible to identify the potential impacts of climate change on natural and cultural heritage? Can planning decisions contribute to reducing vulnerability of already sensitive areas? Would some protected areas lose status and mode as a result of climate change in the future? Would the changing climate conditions make some places interesting for protection? These are some of the issues that are discussed in this paper, with respect to the national and international experience, as well as the initiatives towards innovations in the approach within planning the areas of natural and cultural heritage challenged by climate changes.

Key words: natural and cultural heritage, climate change, spatial and urban planning

The paper is the result of research carried out within scientific projects "The Role and Implementation of the National Spatial Plan and Regional Development Documents in Renewal of Strategic Research, Thinking and Governance in Serbia" (III-47014), "Studying climate change and its influence on the environment: impacts, adaptation and mitigation" (43007) and "Spatial, environmental, energy and social aspects of developing settlements and climate change – mutual impacts" (TR 36035), financed by the Ministry of Science and Technological Development of Serbia for the period 2011-2014.

ENHANCEMENT OF URBAN STRUCTURE WITH THE AIM OF REDUCING THE IMPACTS OF CLIMATE CHANGE ON THE EXAMPLE OF BELGRADE

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The enhancement of the existing urban structure aiming at reducing the impacts on climate change is a time consuming and complex task associated with planning, technology, building construction, economic mechanisms, education and modalities of the application through implementation. Belgrade is an exception model suitable for investigating this issue because it has diverse urban tissue typology, from the city of 19th century through modern patterns to unplanned construction. On the other hand, its topography is very diverse, from plains to hills. Its microclimate is also diverse with relation to morphology and biological and hydrological characteristics.

The analysis of urban tissue and physical structure, with a view of the current strategies and planning documentation, was a research starting point which was followed by the valorization of different possibilities of implementing the instruments and technologies on typical parts of urban tissue of Belgrade. The outcome is a set of urban and planning, as well as production rules which could serve as a starting criteria for future plans for the urban tissue redevelopment, but also for the development of new parts of the city.

Key words: improvement of urban structure, climate change, building rules, Belgrade

This paper has resulted from research within the scientific project: "Spatial, Environmental, Energy and Social Aspects of Developing Settlements and Climate Change – Mutual Impacts", which was financed within the program Technological Development by the Ministry of Education and Science of the Republic of Serbia from 2011 to 2014.

KEY ISSUES OF ENVIRONMENTALLY SUSTAINABLE URBAN AND SPATIAL DEVELOPMENT UNDER CLIMATE CHANGE CONDITIONS

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In recent years the world has experienced the largest urban growth in history. Total urban population is expected to double from two to four billion over the next 30 to 35 years. Climate change, dramatic increases in urbanization and threats to the sustainability of natural environment are trends likely to define this century. This gives a whole new context to the comprehension of the relations between architectural and urban planning professions towards such important global challenges.

Urban growth came with visible implications, both in the global use of resources, environmental pollution and in human living conditions. In this context, the following key issues need to be addressed – change of urban climate / microclimate, light, ventilation, noise and waste problems, energy demand, energy efficiency and use of renewable energy sources. Sustainability assessment systems and evaluation of urban and spatial re/development proposals need to be addressed, pinpointing relevant issues including absence of agreed targets, lack of capacity, lack of demand and policy problems.

The paper reflects on the current situation in Serbia regarding the adaptation of plans and strategies key to climate change mitigation, awareness of environmental issues, energy efficiency, country's renewable energy sources and potential for improved waste management in the climate change-context. It reviews how the key issues could be addressed and what the future steps should be. Also, the paper emphasizes the importance of institutional and legislative aspects in the current Serbian planning and design practices in the light of climate change.

Key words: sustainable development, climate change, municipal solid waste, assessment systems, energy efficiency, renewable energy sources, Serbia

This work has resulted from research within the scientific project: "Spatial, Environmental, Energy and Social Aspects of Developing Settlements and Climate Change – Mutual Impacts" (TR 36035), which is financed within the program Technological Development by the Ministry of Education, Science and Tehnological Development of the Republic of Serbia from 2011 to 2014.

„BLUE-GREEN“ CORRIDORS AS A TOOL FOR MITIGATION OF NATURAL HAZARDS AND RESTORATION OF URBANIZED AREAS: A CASE STUDY OF BELGRADE CITY

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Highly urbanized areas constantly need new surfaces for building of commercial, residential or infrastructure facilities. Belgrade, the capital of Serbia and a big regional center, with 2.000.000 inhabitants, covers a territory of 3500 km². Decreasing of surfaces under forest vegetation, urbanisation and inadequate agricultural measures have caused intensive erosion and more frequent torrential floods. For the last hundred years, residuals of former forests have been fragmented and numerous streams have been covered and introduced into a sewer system. The territory of Belgrade is divided into 187 torrential watersheds that are mostly rural in higher parts and urbanized or highly urbanized in lower parts. Torrential floods that once occurred rarely, during the pre-development period, have now become more frequent and destructive due to the transformation of the watersheds from rural to urban land uses. Authorities in Belgrade have defined a new strategy for land use and urban planning in order to decrease the risk from destructive erosion processes and torrential floods and help the establishment of new recreational areas, preservation of biodiversity and mitigation of the „heat island“ effect. The strategy is based on the restoration of „blue-green“ corridors (residuals of open streams and fragments of forest vegetation). The restoration of „blue-green“ corridors is presented at the experimental watersheds of the streams Kaljavi and Jelezovac.

Key words: „blue-green“ corridors, natural hazards, watershed restoration, land use, urban planning

SUSTAINABLE SPATIAL DEVELOPMENT UNDER THE CONDITIONS OF DRY, HUMID AND MIXED CLIMATE ON THE EXAMPLES OF SOME TROPICAL COUNTRIES

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The towns in the tropical climate zone are characterized by their bioclimatic factors, which are repeated around the world in the function of geographical features and climate dependent differences among the large regional areas. In these regions, the space in its synthetic form, through its vastness, warmth, sandstorms and the shortage of drinking water, at present represents a unique determinant dictating the structure and shape of these settlements, architecture of buildings, the shaping of open spaces, and consequently people's behaviour.

Certain spatial occurrences can unwillingly provoke some changes which can establish new systems of physical relationships. Hence, climate has to be taken into account before the conceptualization of a project as a whole, as well as in its elements. The example of Calcutta, which is in a warm humid zone, shows the sustainable development characteristics. However, there are examples which do not comply with the requirements of climate, such as the case of Islamabad.

Having this problem in mind, the authors of a project are faced with the question: how to start with regard to climate? The transformation of the climatic data into the specifications for buildings is relatively easy if the weather is invariably dry or wet. However, a large number of settlements have a mixed climate requiring an adequate approach. An irresponsible designer makes his decisions on the basis of his intuition and thus transfers the risk to the client. In order to eliminate these difficulties Carl Mahoney has developed a simple set of tables for showing climate information. In that context, the steps needed for completion of these tables are shown. Geoffrey Bawa shows a good example of the adaptation of architecture to the bioclimatic conditions. Finally, the concrete benefit of these analyses is shown on the examples such as: 1- Layout of buildings for warm and humid climate and 2 - Layout of buildings for warm and dry climate.

Key words: sustainable, spatial development, climate, conditions, dry, humid

This paper has resulted from research within the scientific project: "Spatial, Environmental, Energy and Social Aspects of Developing Settlements and Climate Change – Mutual Impacts", which was financed within the program Technological Development by the Ministry of Education and Science of the Republic of Serbia from 2011 to 2014.

REGIONS IN TRANSITION TO A LOW CARBON ECONOMY: SOME FINDINGS FROM ESPON SIESTA PROJECT

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Cities are “energivorous” entities which require and consume a large amount of energy because host about three quarters of the total European population. Their energy-related emissions account for almost 80% of the EU’s total GHG emissions, although a great amount of individuals living in urban areas have per-capita GHG emissions rates lower than other individuals living in the countryside and suburbs and commuting to urban areas each day for work (Dodman, 2009).

European regions are facing the crucial challenge to shift towards a low carbon economy cutting greenhouse gas emissions by introducing energy efficiency, supporting renewables, modernizing the transport sector and encouraging greener lifestyles.

EU policies are clear with regard to climate and energy related objectives. It is believed that the Europe 2020 Strategy headline target of 20% consumption reduction through energy efficiency measures is the target that can potentially have the wider impacts on cities, city users and behaviours of households and people in general. The EU2020 Strategy is Europe’s blueprint for a smart, sustainable and inclusive future, providing a ten year roadmap for growth and jobs. EU2020S was designed as a European exit strategy from the global economic and financial crisis in view of new European economic governance.

The purpose of this paper is to present the findings of the Espon Siesta Project focused on the territorial dimension of the EU2020 strategy. It does so through the discussion of the targets and indicators of the sustainable growth pillar able to show the performances of European regions towards a greener and more sustainable economy, focusing on energy intensity of the economy, reduction of GHG and share of renewable sources. Over 50 indicators have been elaborated at different territorial levels in order to determine a clear territorial picture of the EU-27 in many sectors (energy, waste, transport, ICT investment and many more).

Key words: green cities; climate change; Espon Siesta Project; Europe 2020 strategy; indicators.

The paper is the result of research carried out within the scientific project SIESTA “Spatial Indicators for a “Europe 2020 Strategy Territorial Analysis” (www.siestaproject.eu) financed by the European Union in the framework of ESPON, the European Observation Network for Territorial Development and Cohesion.

SMART SOLUTIONS FOR URBAN DEVELOPMENT: POTENTIAL FOR APPLICATION IN SERBIA

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IT smart solutions can extensively benefit urban planning and development on many levels. This paper will explore how technologies that link environment, public and planning—such as Ecobus in Pančevo, System48 in Inđija, Real Time Rome and similar projects—can be used as tools to aid planning practice especially in the area of monitoring environmental parameters, thus extending the information base necessary for planning and helping planners define priorities and steer developmental decisions in the right direction.

Following the short overview of such systems, this paper will illustrate the potential implications of such tools for planners i.e. urban development, and also on public and local communities. The benefits—such as enhanced data gathering, provision of the most current and up-to-date data, very specific and detailed spatial information, enhancement of public participation and rising of environmental awareness—as well as the shortcomings will be described and summarized.

In particular, the paper will explore the current situation and potential for adapting such technologies in Serbia, taking into accounts National development strategies, internet and e-government penetration, local initiatives and development. As in many other spheres of urban development, local initiative is of great importance here and can contribute greatly to facing the challenge successfully. Further on, the paper will review the expected benefits if such tools are to be implemented, and suggest how these smart solutions could be further employed.

Key words: Smart solutions, Environment, Urban development, Serbia

Research and writing of this paper was done under the project: Spatial, environmental, energy and social aspects of urban development and climate change – mutual influence; PPI: Climate change as a factor of spatial development of settlements, natural scenery and landscape; Project no. TP36035 funded by the Ministry of Education and Science, Government of the Republic of Serbia.

IMPROVING ADAPTABILITY OF CLIMATE CHANGE – URBAN ECOLOGICAL DEVELOPMENT STRATEGY

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As the urban system lead to climate change, and take its negative effects. To improve the adaptability of the urban system is the important way as coping with climate change issues. Through the implementation of adaptative way to relieve urban vulnerability and improve urban restoring force.

Tianjin is located in China's north plain, east is near Bohai sea. The urban is undergoing crisis that it includes three aspects with affected by global climate change and influence of fast development of the urbanization. The first, the urban is susceptible with sea-level rise and the storm tide. The people's life, property and urban infrastructure had brought unprecedented threat. The second, natural wetland is occupied by build using land. The third, urban heat island effect leads to make the city more intense heat. The fourth, the urban is drought and water shortage of extreme.

Therefore put forward four aspects of ecological measures to adapt to climate change impact. The first, to prepare the flood control planning as improving measures of urban drainage. The second, green growth inhibits city spread as improving measure of the urban space form, and suppresses the fast disappearance of natural wetland. The third, to encourage low carbon traffic mode as alleviating urban heat island effect. The fourth, to compile ecological drought plan in view of ecotope basic situation, this plan divides drought grade and puts forward emergency diversion scheme and early warning response mechanism of different ecological drought levels.

Key words: adaptability measures, urban vulnerability, urban restoring force, the flood control plan, green growth, low carbon traffic mode, ecological drought plan

KNOWLEDGE ON CLIMATE CHANGES IN THE SEE REGION - INTEGRATION IN THE KNOWLEDGE BASE SUPPORTING THE PROJECT TR36035

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This study empirically examines the presence and the nature of the knowledge on climate changes related to the region of SEE (South East Europe) and the Western Balkans, integrated in the Knowledge Base supporting the Technological research project No 36035, titled: Spatial, Environmental, Energy and Social Aspects of Developing Settlements and Climate Change – Mutual Impacts (available at <http://e-science.amres.ac.rs/TP36035/>). After briefly introducing the project, its main parts and the knowledge structure represented by the supporting Knowledge Base, we highlight the importance of positioning the knowledge produced within the project, in a wider external knowledge base related to climate changes. In this context we identify a regional approach to aggregating knowledge on climate changes as very important and examine this particular part of knowledge context.

The methodology is based on the content analysis in which we track the references to the regional knowledge on climate changes within the selected documents included in the Knowledge Base of the Project TP36035.

The results indicate a lack of knowledge resources related to the SEE and the Western Balkans region comparing with the ones related to wider areas, particularly in domain of urban planning, and suggest considering an activity towards the knowledge integration in the resources accessible and available to interested institutions from the countries in the region.

Key words: climate, change, regional, SEE, Balkans, knowledge, urban, integration

The presented study has been completed within the Technological Research Project TP36035, titled: SPATIAL, ENVIRONMENTAL, ENERGY AND SOCIAL ASPECTS OF DEVELOPING SETTLEMENTS AND CLIMATE CHANGE – MUTUAL IMPACTS, funded by the Ministry of Education, Science and Technology of the Republic of Serbia, 2011- 2014.

TOWARDS THE INTEGRATION OF SUSTAINABLE INFRASTRUCTURE INTO THE EXISTING BUILT ENVIRONMENT

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The construction sector in the United Kingdom is dominated by small and medium size enterprises (SMEs) which have less than 250 employees and usually do not have research capacities to develop a range of low carbon innovations applicable in the construction sector. Various European and national funding programmes have addressed this problem by providing funding for research collaboration between universities and SMEs. The paper provides a selection of the outputs of academic/industry research, undertaken by seven Scottish universities through the project CIC Start Online from September 2012 until February 2013, related to low carbon planning, building design, technologies, construction, refurbishment and performance.

Along with the low carbon building products and technologies, new low carbon infrastructure is being planned and developed in order to provide connections and services for energy generation from renewables, energy storage and decentralised distribution, water management (harvesting, saving and reuse), waste management (reduction, reuse and to-energy), transport (electric vehicles, cycling and walking) and information communication technology (ICT) for monitoring and managing infrastructure systems. The second part of the paper outlines how innovations for integration of sustainable infrastructure into the existing built environment will be supported through the follow-on joint project of nine Scottish universities, named Mainstreaming Innovation.

Key words: sustainable infrastructure, innovations, reduction of carbon emissions

The CIC Start Online project was funded by European Regional Development Fund and Scottish Government through SEEKIT programme and Scottish Funding Council. Scottish Enterprise provided funding for academic consultancy. The project Mainstreaming Innovation is funded by Scottish Government.

IMPROVING THE PEDESTRIAN AND BICYCLING NETWORKS TOWARD CLIMATE FRIENDLY URBAN ENVIRONMENT. CASE STUDY: NEW BELGRADE

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Climate change is an internationally recognized problem. The transport sector is responsible for a large percent of CO₂ (carbon dioxide) emissions in Serbia and the proportion is still growing. In the last two decades, the number of private car users in Belgrade evidently increased, as opposed to the number of users of environmental friendly modes of transport.

The purpose of this paper is to present an overview of approaches for improving the quality of the open public spaces, which aim to increase the number of users of climate friendly modes of transport, with a focus on walking and bicycling.

Research was done using three methods: observation of the intensity of pedestrian movement in relation to different periods during the day, direct surveys of citizens and the evaluation of immediate pedestrian and bicycle surroundings as well as existing networks. Three kinds of results were obtained: the trends and concentration of pedestrian movement; the attitude of citizens pertaining to reliable pedestrian and bicycle movement and elements which contribute to their commitment; and the quality of open public and communal spaces and existing pedestrian and bicycling networks.

The contribution of the study is in combining different research methods. Interpretation of results forms the basis for directing future research toward climate friendly modes of transport in urban areas. Substantial increases in bicycling and walking require an integrated package of many different, complementary interventions, including infrastructure provision, improving the quality of open public and communal spaces, supportive urban design, and restrictions on car use.

Key words: CO₂ emission, walking, bicycling, quality of public space, New Belgrade

The study was done within research projects TR36035: Spatial, Ecological, Energy and Social Aspects of Urban Development and Climate Change – Interactions, and 177009: Modernization of Western Balkans, which were funded by Ministry of Science and Technology of the Republic of Serbia.

THE EARLY WARNING APPLICATION ROLE IN FACING THE ENVIRONMENTAL CRISES AND DISASTERS. "PRELIMINARILY RISK MANAGEMENT STRATEGY FOR THE GREATER CITY OF CAIRO"

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Natural disasters are inevitable and it is almost impossible to fully recoup the damage caused by the disasters. But it is possible to minimize the potential risk by developing disaster early warning strategies, methods using the new technology applications which play a crucial role in efficient mitigation and management of disasters.

This paper describes the importance of the remote sensing and Geographical Information System (GIS) in evolving a suitable strategy for disaster, crises and risk management using these technologies.

The main objective of this paper is to make a Preliminary risk management plan (it is a logical and systematic method of identifying, analyzing, treating and monitoring the risks involved in any activity or process. This process helps Administrations to focus on priorities and in decisions on deploying limited resources to deal with the highest risks) using the Environmental risk map of the greater city of Cairo demonstrating the most high-risk administrative areas in the city, supported by field evidence and different sources of information. to reduce the loss of life and property and protect the Nation from all hazards, including natural disasters and other man-made disasters, by leading and supporting the Nation in a risk-based, comprehensive emergency management system of preparedness, protection, response, recovery, and mitigation.

This study has shown that how can the early warning Applications can be useful in analyzing, Integrating and managing different datasets for predicting the environmental crises and disasters that may affect the urbanism inside the city and help in the preparation of the Risk management plan.

Key words: Early warning, Disasters, management, risk analysis, mitigation, Cairo.

THE ESA SENTINEL-2 MISSION VEGETATION VARIABLES FOR REMOTE SENSING OF PLANT MONITORING

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Remote sensing is a convenient method for plant monitoring by employing vegetation variables which is changed dynamically in time and space. Furthermore, in the last few decades the number and quality of information that can be derived from remotely sensed images is rapidly increased. The widespread usage of information from satellite-born sensors provides a new tool for studying the biophysical properties of vegetation by mapping vegetation resources and changes that arise over extended periods of time.

The European Space Agency (ESA) Sentinel-2 mission, as a part of the European Global Monitoring for Environment (GMES) initiative, is a polar-orbiting, superspectral high resolution imaging mission that envisaged flying a pair of satellites; the first planned to launch in 2013. The Sentinel-2 mission combine a large swath, frequent revisit and systematic acquisition of high-spatial resolution land surfaces imagery with a large number of spectral bands; that will provide accurate and easily accessible data for the environmental management. The most important impact of Sentinel-2 for plant monitoring is expected to be the improved plant parameters: Fraction of Vegetation Cover (FVC), Leaf Area Index (LAI), Leaf Chlorophyll Content (Cab), Fraction of Absorbed Photosynthetically Active Radiation (FAPAR) and Leaf Water Content (C_w); by incorporating three new spectral bands in the red-edge region, which are centered at 705, 740 and 783 nm. The goal is to improve site-specific plant management by the retrieving different plant parameters as an input for management measures aimed to non-destructive monitoring of plant development and the detection of many environmental stresses, which can limit plant productivity.

Key words: Remote sensing, ESA, Sentinel-2, Vegetation variables, Plant monitoring

The paper is the result of research carried out within the scientific projects "Impact of soil quality and irrigation water quality on agricultural production and environmental protection" (TR 37006) and "Studying climate change and its influence on the environment: impacts, adaptation and mitigation" (43007); financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia for the period 2011-2014.

RESIDENTIAL BUILDINGS TYPOLOGY IN SERBIA AND STRATEGIC ASPECTS OF SUSTAINABLE DEVELOPMENT

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Faculty of Architecture University of Belgrade has taken an active part in the process triggered by 2009 Law on Planning and Construction and inherent changes in energy performance of buildings, capitalizing on accumulated knowledge gained from the former scientific research projects, through definition of new strategies and approaches towards the development of adequate sustainable development procedures.

Serbian existing building fund is estimated to contribute more than 60% to national energy balance. In the mixture of non defined ownership relations followed by the limited individual financial resources, absence of appropriate financing models and condition of existing buildings defined by the years of negligence it is very important to distinguish the procedures and priorities for action, both on private and government level. We have analysed and structured the building fund, identified typical building types and their representatives. Energy performance of these buildings is being calculated (measured) and improvement strategies and procedures defined, with calculation of potential savings. Building typology is positioned in such way to enable multiple data cross-referencing, providing the information on frequency of certain building types, material and systems quantities and multi-level estimations of expected energy savings.

Apart from providing information on potential of energy savings on national level and, the research provides guidelines for homeowners, local authorities, developers and individuals. Transparency and availability of research results should enable all stakeholders to form appropriate strategies with highest possible level of applicability in local conditions. The research involves various parties: academic, governmental, non-profit organisations, local authorities, building industry companies, aiming for high level of public response and strong implementation paths.

Key words: building typology, energy efficiency, energy improvements, single family housing, multi family housing, energy passports for buildings

The paper is the result of research carried out within the scientific project "Survey of buildings, catalogue of building types and energy consumption properties, catalogue of energy efficiency improvement modes" – PHASE B (2011) and PHASE C (2012), which was realized by the expert team coordinated by Faculty of Architecture University of Belgrade and financed by GIZ - Deutsche Gesellschaft für Internationale Zusammenarbeit.

A METHODOLOGY FOR MITIGATING THE EFFECTS OF THE MICROCLIMATE CHANGES RELATED TO THE URBANIZATION INSIDE DEVELOPING COUNTRIES MAIN CITIES "CAIRO AS A CASE STUDY"

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The rapid urbanization in the last decades and the progress in the national economy in many developing countries have emerged many environmental problems, which had a significant impact on their local environment and at the same time affected the global environment, the city of Cairo has begun to suffer of the microclimate changes such as the urban heat island, urban dust dome, etc.

The goal of the research is to set a guideline for the criteria of the microclimate changes mitigation solutions inside the developing countries main cities, therefore the study hypothesis was that the suitable solutions to mitigate the microclimate changes in developing countries cities are the simple urban solutions based on the concept of simplifying the common mitigation solutions in addition to applying indirect solutions, these indirect solutions solve prior local problems and at the same time mitigate the microclimate changes.

An analytical study was done on the causes of the phenomenon and how it's related to the rapid urbanization, and why there is a need to study the developing countries main cities case in general and the city of Cairo as a special case study.

The study found that the mitigating of the effects of the micro climate changes which are related to the urbanization didn't require high-tech solutions, but sustainable advanced creative ideas with high urban impact especially in the case of developing countries main cities where the issue of the environmental problems are not the priority.

Key words: mitigating, microclimate changes, Urbanization, Developing countries, Main Cities, Cairo.

STRATEGY FOR PROTECTION OF CULTURAL HERITAGE EXPOSED TO THE NATURAL AND MAN-MADE ACTIVITY DISASTERS IN SERBIA

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The current heritage policy is much more than a technical consultation on how to conserve our built heritage. In the SWOT analysis done throughout preparations for the actual Spatial Plan of the Republic of Serbia it was concluded that one of the most obvious weak points within the cultural heritage is the lack of global strategy in the conservation, development and use of the built heritage. One portion of up to the present omissions was eliminated by the guidelines provided in the new Spatial Plan of the Republic of Serbia. However, the opportunity was omitted to introduce into respective strategy the commitment to produce the standardization processes that should be applied to built heritage endangered by natural and man/made disasters.

In view of the experience of unpleasant surprises thus far occurred by natural and man-made disasters endangering the cultural heritage, it is obvious that particular care should be taken of it, complying with the standard procedure, and excluding the ad hoc decisions. Through governmental documents it may be observed that the listed built heritage is rarely separated from other buildings by any priority in the sense of preventive protection nor by making them safe after occurrence of natural or man/made disaster. In laying down the standardization of preventive measures and actions plans being the integral part of the Management Plans for emergency situations in protecting the cultural heritage there is a series of problems such as the similarity or uniformity of damages occurring by natural and man-made disasters. Based on the needs herein indicated as well as similar plans existing in other countries, the paper offers the proposition of the Management and Action Plan for the protecting the cultural property undertaken in emergency situations, which are conditioned by natural and man-made actions disasters.

Key words: Built heritage, Natural hazards, Man-made disasters, Emergency situations, Strategic plan of actions

The work reported in this paper is a part of the research within the scientific project TR 36042 supported by the Ministry of Education, Science and Technological Development, Republic of Serbia.

CLIMATE CHANGE ADAPTATION STRATEGIES: URBAN PLANNING IN POST-SOCIALIST TRANSITION COUNTRIES IN BETWEEN VALUES AND INTERESTS

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Although in recent years Serbia has seen significant efforts in setting up legislative and institutional frameworks aimed at tackling climate change, they still lack operationalisation that would make them effective at the local level. While democratic changes in Serbia have set in motion transformation of the social system, the socialist practice of top-down implementation of decisions is still widely present. What is lacking is an appropriate institutional and procedural framework in which the position of a responsible individual would substitute for that of a powerful decision maker. In circumstances when political decision makers are pressed by the demands to pursue development goals of economic policy, the issue of public intervention is caught somewhere in between interest and value domains. It is therefore unrealistic to expect efficient operationalisation of national climate change response policies at the local level.

Protection of common values can be best ensured through regulations. While the existing planning framework in Serbia recognizes climate change issues in documents adopted at the top, national level, specific measures needed for implementation are still lacking. This paper explores the possibilities for development of urban planning regulations tailored to climate change response. The emphasis is on reexamination of the relationship between values and interests within current strategies and policies on climate change adaptation and legislative framework. Shifting the emphasis to regulations will make the urban planning system more resilient to particularised interests and ensure the realisation of the agreed value framework.

Key words: regulations, local government, decision making

This paper was developed as part of the project "Studying climate change and its influence on the environment: impacts, adaptation and mitigation" (43007) financed by the Ministry of Education and Science of the Republic of Serbia within the framework of integrated and interdisciplinary research for the period 2011-2014.

RIVER FLOODS IN THE URBAN AREA, RESULT OF CHANGING CLIMATE - OBSERVATIONS

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River flood damages, worldwide, have increased dynamically in the last few decades, so that it is necessary to interpret this change. River flooding is a complex phenomenon which can be affected by changes coupled to terrestrial, socio-economic and climate systems. The climate track in the observed changes is likely, even if human encroaching into the harm's way and increase in the damage potential in floodplains can be the dominating factors in many river basins. Increase in intense precipitation has already been observed, with consequences to increasing risk of rain-induced flooding. Projections for the future, based on climate model simulations, indicate increase of flood risks in many areas, globally. Over large areas, a 100-year flood in the control period is projected to become much more frequent in the future time horizon. Despite the fact that the degree of uncertainty in model-based projections is considerable and difficult to quantify, the change in design flood frequency has obvious relevance to flood risk management practice. The number of flood-affected people is projected to increase with the amount of warming. For a 4°C warming the number of flood-affected people is over 2.5 times higher than for a 2°C warming. The present contribution addresses the climate track in an integrated way, tackling issues related to multiple factors, change detection, projections, and adaptation to floods. In this paper, the existing problems will be examined from the perspective of struggle and adaptation to climate change, taking into consideration the guidelines of the responsible climate planning, as well as possible results of their application. The necessity of finding new solutions, as well as the responsible climate change planning application are the reality of today. Such processes have been initiated and have been ongoing in many cities in the world, while they are inevitable on our land and will be a huge opportunity for the final development of the coastal areas, the prosperity of the towns on the river as a whole, as well as for the improvement of planning practice in Serbia.

Key words: river flooding, climate change, responsible climate change planning, adaptation, guidelines, waterfront development

The paper is the result of research carried out within the scientific project "SPATIAL, ENVIRONMENTAL, ENERGY AND SOCIAL ASPECTS OF DEVELOPING SETTLEMENTS AND CLIMATE CHANGE – MUTUAL IMPACTS" TR 36035, which was realized by the IAUS and financed by the Ministry of Science and Technological Development of Serbia.

ANALYSING THE QUALITIES OF BEING ON FOOT: COMPARATIVE PILOT STUDY IN VRAČAR AND NEW BELGRADE

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This paper presents a pilot study, based on the exploratory field work, conducted in order to evaluate and contribute in improving the quality of urban life for the citizens. The goal is in developing a methodological tool for improving the quality of urban environment and sustainable transport, with priority given to pedestrian movement. This is achieved through active participation of non-governmental organizations directed towards the citizens and local government to raise awareness about the importance of implementing the sustainable development principles in the area. One of the key activities and objectives of the pilot study was the involvement of citizens in a process, which specificity lies in the fact that the actual professional apparatus for evaluation and quality improvement of pedestrian environment was used in creating the questionnaire. In addition, this method allowed citizens to be in the experts' position.

The study consists of two phases. The first phase presents research in the historical city centre Vračar, Belgrade municipality identified as an area that is pedestrian manageable (built according to the 5km/h approach). The second phase was conducted in New Belgrade, planned and constructed as a modern, functional city (built on the modern design principles according to the 60km/h approach). New Belgrade is also often perceived as space constructed in accordance with automobile's dimension and thus unfriendly with pedestrian. Having that in mind, the aim of the research was to determine the potentials and disadvantages of these polygons from the aspect of pedestrian movement. It also represents the specific pre-testing of a particular research instrument (questionnaire), as an introduction for (major) project, aimed to develop a methodological tool for evaluation and inclusion of participants in future strategic documents.

Key words: pedestrian environment, pilot study, pedestrian movement, sustainable transport, Novi Beograd, Vračar

The paper is the result of research carried out within the scientific project "Spatial, Environmental, Energy and Social Aspects of Developing Settlements and Climate Change – Mutual Impacts" (project number TP36035), PPI: "Climate change as a factor of spatial development of settlements, natural areas and landscapes", and the project "Modernization of Western Balkans" (project number 177009), both financed by the Ministry of Education and Science of the Republic of Serbia (from 2011 to 2014).

MEASURES AIMED AT IMPROVING THE ENERGY EFFICIENCY OF STATE PROTECTED BUILDINGS APPLYING INNOVATIVE MATERIALS ON BUILDING FRONTS

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Given the current situation when it comes to protecting the environment, energy conserving and CO₂ reducing efforts have become the leading elements and criteria in modern research.

This paper is focused on a building in an urban location; its front is state-protected. Therefore, the front cannot be covered from the outside.

The subject of this paper is to discuss the application of innovative sheathings as new thermal insulation materials on state-protected building fronts in order to improve the energy efficiency of heating and cooling the building

The paper is structurally divided into several parts. The first part analyzes the thermal sheathing of the building and explains its condition in terms of energy. There is an explanation of thermal sheathing and its transparent and non-transparent parts. The second part is focused on the analysis of innovative sheathings – several new thermal insulation materials – providing the possible means of improving the energy-efficiency of the same building, whereby the building's external appearance is prevented from being impaired, the internal living space is prevented from being reduced, while the building's energy-efficiency has improved to a significant degree. Materials mentioned in the paper are in the group of light construction and insulation materials, coatings and multifunctional materials; these are neopor and VIP panels, aerogels, coatings like Nansulate shields and phase change materials that are multifunctional. All of these are very new and all of their properties and possibilities are to be discovered.

Key words: facades of state protected buildings, energy efficiency, innovative thermal insulation materials

SMART ENERGY REGIONS AS A SUSTAINABLE DEVELOPMENT STRATEGY UNDER CLIMATE CHANGE CONDITIONS

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Under severe climate change and natural resource depletion witnessed today, governmental policies across countries and continents advocate low-carbon societies, aiming at technological and behavioural shifts in built environments. This paper presents research cooperation initiatives aiming at improved energy-efficiency on a regional level, through a shift in planning methodology which allows capitalizing on technological advancements and collaborative approach.

Innovative participatory planning measures, such as Charette or Enquiry-by-Design workshops and Future Search methodology, promote an inclusive framework that engages policy makers and planning agencies together with civil society and business stakeholders. The procedure is applied on a wide geographical area and at different levels of government, to develop a common vision of future development.

Moreover, technological progress allows for development and testing of e-service delivery, interoperable 3D Urban Information Models (UIM) based on urban pattern and its morphology, and long term collaboration for adopting User Driven Open Innovation. Achievements of this research should improve decision-making on issues related to urban planning, city management, environmental protection and energy.

These planning techniques are widely investigated and deployed through diverse initiatives, programmes and projects funded by the European Commission. The overall goal is to ensure easier and more efficient transfer of people, services, ideas, knowledge and technologies within and between regions, and on the long run to overcome barriers for creation of low-carbon regions in Europe. These initiatives have been addressing both energy efficient construction of new and retrofit of existing buildings, as well as sustainable transport planning integrated with the land-use management, and energy infrastructure.

Such complex processes require a holistic, cross-sectoral and multidisciplinary approach and competent and devoted experts. This research testifies about the state of the art of the relevant research projects and programmes, providing a benchmark for further deployment and transformation of the strategies for sustainable regional development.

Key words: Low-carbon societies, Smart Cities and Communities, Regional development, Technological progress, Energy-efficiency, Participatory Planning.

TREATMENT OF CONSTRUCTION WASTE IN SERBIA AND THE LIFE CYCLE OF BUILDINGS

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One of the main problems of modern society is the issue of waste that a community produces in its everyday life. Therefore, various waste management strategies have been developed and implemented in the developed world, aimed to reduce the amount of waste that is disposed of in landfills to a minimum. Taking into account that being a special type of waste material, construction waste is generated at the end of the life cycle of a building, it becomes important to examine the possibility of applying certain strategy to this type of waste material, which would mean the introduction of new concepts of design and construction of buildings, based on the principles of reuse and recycling.

In contrast to the aforementioned trends in the world, in the case of Serbia, it is typical that the question of total waste management, including construction waste, is still at the very beginning. This fact reflects the construction waste in a way that it mostly ends up in a city landfill, although the practice of other countries has shown that possible efficiency of its utilization could be greater than 80%. This paper aims to present the current status and treatment of construction waste in Serbia, and in the light of recognized and proven waste management strategies, to indicate the potentials for its more responsible management, related both to the development of recycling industry, as well as to the application of new design and construction concepts that would transform a linear lifecycle concept of a building, typical for Serbia at this moment, into a progressive, cyclic one.

Key words: management, construction waste, building life cycle, recycling, reuse.

(RE)CREATING URBAN LANDSCAPE: NEW BELGRADE RIVERFRONT

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Climate change is probably the defining issue of the twenty-first century, and it is undoubtedly one of the supreme challenges when regenerating cities is questioned. On the other hand, we shall always be interested in how people intersect with a place, and therefore are committed to framing a discourse that is anthropocentric, because it acts with imagination and alter course.

Revealed through oppositions and time-lapses, the life of the New Belgrade riverfront is seen as a landscape of diversities, a sort of productive landscape which could become a viable resource for (re)creating society and nature. In an attempt to meet this complex and contradictory challenge, we will try to discuss possibilities of implementing the "eco-matrix", a sort of productive landscape as a viable, somewhat "alternative", typology for public spaces. This new "eco-matrix" is essentially seen as alternative "eco-infrastructure" for a new future urbanity. The aim is to create a site where nature and society are fused which will protect an urban structure against the abandonment and in the same time (re)create the lost relationship between city and river.

Key words: climate change, urban landscape, Belgrade riverfront

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SUSTAINABILITY OF TEMPORARY STRUCTURE MODELS DESIGNED FOR HOUSING

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Natural disasters, climate changes, global environmental and energy crisis, wars and the use of inefficient technologies represent some of the biggest problems of modern society. As a consequence of this, a number of users who have lost their habitats and need some form of temporary housing is growing. Specific characteristic for all temporary structures is a *moral life* - a period of time during which these structures fulfill their purpose. Because of their temporary life, in the context of sustainability, temporary housing structures are frequently criticized as unsustainable form of housing, mainly because of large investments in the units that will be used only for a limited period of time. Apart from the economical aspect, from a sociological aspect abandoned locations for temporary housing become the meeting places for delinquent social groups and, also, from environmental aspect those locations can be a source of contamination. What happens to the temporary housing facilities after they stop being used? What are the most sustainable strategies, particularly in terms of addressing the housing needs and rational urban planning? What design approach should be used? The purpose of this research is to point out the possible outcomes, to identify principles that affect the sustainability of temporary housing units, and implement them into possible strategies to address these issues. It is necessary to emphasize the importance of the sustainability aspects of temporary structure models designed for housing, since they are certainly a valuable resource for the recovering community. It is important to note that despite of their temporary character, these structures may represent many contemporary efforts in architecture and urbanism.

Key words: sustainability, temporary structures, housing, moral life, urgent solutions

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SUSTAINABLE TECHNOLOGY AESTHETICS

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This paper has an aim to address the needs of special reflection on sustainable activities within the creative architectural practices and their following theories. In constant aspiration for sustainable principles implementation, the contemporary architectural practice very often neglects aesthetics as an important critique of its final product. In fact, it is important to emphasize that aspect of sustainable actions would be formulated as complete if within the same aesthetic principles are respected.

Eco-design survives within the constant integration of environmentally conscious technology as well as renewable energy sources in a unique aesthetic form. The absence of these components will not result in real lasting and sustainable architecture. This paper will open some questions regarding the use of strategic, conceptual and formal potential of architecture and its environmentally enlightened actions which are in permanent bracing of aesthetic principles. The issues here discussed are conceptual and principal overviews of the use of strategies, formal and morphological parameters from which we may conclude that any future architectural action will be unified within energy responsibility aesthetics.

Key words: aesthetics, sustainability, eco-design, technology, energy efficiency

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INDICATORS OF SPATIAL SUSTAINABLE DEVELOPMENT AND CRITERIA OF LEED ND CERTIFICATION

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Serbia has defined as one of its national priorities the achievement of sustainable development by protecting and improving the environment and rational use of natural resources. This implies the integration and compliance of objectives and measures of all sectoral policies, harmonization of national regulations with EU legislation and its full implementation. For monitoring the realization of the planned strategic sustainability goals, a set of indicators of sustainable development is specified and harmonized with international criteria. The key criteria of sustainability are: energy use, waste production and management, energy intensity of traffic, air quality and atmospheric pollution, land use patterns, water use, condition of ecosystems.

This paper offers an overview of the sustainability indicators specified in the strategic documentation of EU and Serbia. An overview of the indicators prescribed for monitoring the realization and goals of Serbia's spatial development defined by the Spatial plan is given and analyzed. On the other hand, the criteria of the international standard LEED ND, which is intended for urban planning design, have been analyzed; and it was attempted to establish a correlation between these criteria and indicators of spatial sustainable development.

It is concluded that the development of the LEED ND standard contributes to the development of urban sustainability quantification, because it can be implemented on a wider neighborhood of the building and it can be modularly applied to greater surface areas. Given the progressive trend of urbanization that is increasing the population in urban settlements, the implementation of the LEED ND requirements in view of location selection, its linkage to the surroundings and green concept would facilitate the achievement of social, environmental and economic sustainability goals.

Key words: sustainable development, spatial planning, natural resources, environment, sustainability indicators, certification of sustainable settlements.

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THE RISK OF NATURAL DISASTERS IN THE ECONOMY: THE CASE OF ALBANIA

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Natural disasters cause major impacts on the economic performance of developing countries and on the livelihoods of millions of poor people around the world. With economic development and growing investment (especially in coastal regions and agriculture), along with growing risk of extreme weather events, disaster and insurance costs are projected to increase rapidly over the decades. Albania is affected by a considerable number of natural disasters. With a changing climate, the frequency of extreme weather events is expected to increase seriously. This article presents an analysis of the sensitivity level of the Albanian economy in relation to natural disasters. Ways to finance the costs imposed by natural disasters and the chances of the Albanian economy to recover from disasters will be discussed. The different categories of costs related to natural disasters, and the way they affect macroeconomic indicators will be identified, in addition to the means available in financial markets for managing the risk from natural disasters, before and after the event. The article identifies the main extreme events that affect Albania, the main damages caused by each of them, and the main institutions responsible for disaster managing. Based on past experiences, the efficiency and effectiveness of disaster management in Albania is analyzed. Finally, some approaches to finance the aftermath of a disaster, which could be adopted in Albania, are considered.

Key words: natural disasters, climate change, public policies, developing countries, Albania

CLIMATE CHANGE IMPACTS ON GERMAN CITIES AND ACTIONS FOR PRESERVING QUALITY OF LIFE

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Also German cities –as many other cities worldwide- will be affected by impacts of climate change. Starting from the German Adaptation Strategy to climate change, the paper presents a short literature review on impacts of climate change and on fields of action for German municipalities and urban planners to adapt to it.

The literature review shows that main negative impacts of climate change in Germany are due to rising temperatures and cities will also need to cope with altered precipitation regimes. But also positive impacts such as reduced heating costs are reported.

Additionally, the paper highlights a second phenomenon, which also causes specific demands for urban planners regarding human health and quality of life in German cities: demographic change. Altering demographic patterns within the society will lead to altered demands for healthy living conditions.

Moreover, findings from the literature show that specific groups of the society – such as the elderly – are especially vulnerable towards impacts of climate change. A concrete sensitivity towards overheating or bad air is reported.

Both phenomena may simultaneously impact on German urban structures and will demand closer attention now and in the future. Consequently, specific fields of action to adapt to climate change will be presented highlighting their possible contribution sustaining quality of life in cities.

Keywords: climate change adaptation, Germany, cities, demographic change, quality of life

GREEN AND BLUE SPACES: INTEGRAL URBAN DESIGN AS A TOOLKIT FOR CLIMATE CHANGE ADAPTATION IN THE CASE OF SMALLER SETTLEMENTS IN VOJVODINA REGION

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The urban environment which we inhabit is not built with the intention of being environmentally sustainable and climate responsible. Rather, it facilitates most of the activities that cause climate change. Suburbanization and urban sprawl have resulted in a stimulation of activities such as car-dependent transportation, pollution and the disturbance of natural ecosystems. Therefore, integrated urban design takes an increasingly important role in the strategies and actions of climate change adaptation in the built environment. Urban form characteristics such as density, mixed use, public transport accessibility, urban patterns and application of sustainable materials are shaped by urban design, which is becoming an important tool for the sustainable development strategies and climate change adaptation actions. This paper deals with the special importance and role of green and blue infrastructure as an integral part of the urban design toolkit for climate change adaptation. Sustainable urban design integrates green and blue spaces into a living environment and utilizes them for cooling, protection against solar radiation, maintaining the water supply and the collection of surface water. The main task of the paper is to identify the ways of using green and blue infrastructure when adapting the different elements of urban form (neighborhood, public space, house and lot) to climate change. As part of the research presented in the paper we used a method of case studies of several smaller settlements in Vojvodina, because of their inherited plan-based urban layout and specific infrastructure related to rural ecosystems which have the potential to be successfully 'remodeled'. The result is presented in the form of an urban design toolkit with guidelines for urban form adaptation in the context of solutions that integrate green and blue infrastructure at three levels: neighborhood, public space, and house and lot.

Key words: Green and Blue infrastructure, integral urban design, adaptation strategies, smaller settlements, Vojvodina region

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CONTEMPORARY APPROACH TO STORMWATER MANAGEMENT: POTENTIAL FOR APPLICATION IN SERBIA

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Contemporary approach linking stormwater management, urban planning and design is based on the premise that open small-scale systems for rainwater collection, use and treatment can also be used to create new amenities (aesthetic, recreation, education, etc.) and improve the qualities of the site. It advocates the integration of stormwater management systems into the urban landscape, using either the present landscape or creating new systems that mimic natural processes. This contrasts the conventional treatment of stormwater runoff that has been driven by the attitude “out of sight out of mind”, where the most important goal has been to drain the runoff from cities as fast as possible by means of underground culverts. Today, stormwater runoff is regarded as a value and a useful resource that can considerably enhance the urban environment.

In the last few decades this shift in perspective occurred simultaneously in various places, especially in the developed counties such as USA, Australia, West and North Europe. In each case it was a result of bottom-up approach, initiated on local-level projects by forward-thinking experts. In common to all of them is that they merged urban planning and design with stormwater management.

This shift is still in its inception in Serbia. Several projects were created in the last few decades, successfully employing systems that imitate natural processes, such as the project for the rainwater system of the Kumodraž stream basin in Belgrade, and the Wastewater treatment plant Sokobanja. This paper will present these cases and their outcomes, and assess both the benefits and the shortcomings of the contemporary approach to stormwater management. Further on, it will examine the potential to use this approach in other places in Serbia, and provide the guidelines and recommendation for planning and design of these systems.

Key words: stormwater management, urban design, environment, Serbia

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SUSTAINABILITY ASSESSMENT SYSTEMS – THE ISSUE OF SCALE IN SUSTAINABLE DESIGN

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Significant discussion has been raised over the past decade on the application of ‘green’ building practices and the improvement in buildings environmental performance through the introduction of assessment systems. A considerable amount of research and applied expertise now exists regarding the application of those systems, primarily starting with the building scale and more recently extending to neighbourhood and urban scale. It is increasingly recognized that while the improvement of individual buildings is important, a potentially greater set of performance gains lies in evaluating synergies between buildings and looking at larger scales.

This paper examines the expanding role of ‘shifting’ scales of environmental assessment systems, by evaluating their criteria under the scope of integrated sustainable design. More specifically, several assessment systems used worldwide with applications on both neighbourhood and building scales are examined through an evaluation of their criteria under different design stages and against the context of sustainable development. The review is directed at identifying and exploring which scale can better provide the necessary context to establish an integrated design that will incorporate environmental, social and economic aspects of sustainability. The aim of the paper is to shift the focus of the currently buildings-centred environmental assessment debate to larger scales. The review remains within the boundaries of neighbourhood scale, as no city can be considered sustainable if its components are found not to be.

Key words: building environmental assessment systems, neighbourhood sustainability assessment, integrated design, building performance, sustainable development

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ANALYSIS OF EXISTING CAPACITIES AND DEVELOPMENTAL NEEDS OF INDOOR SPORT FACILITIES IN THE AREA OF THE CITY OF NIŠ

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The presence of indoor sports facilities intended for sports and commercial activities determine the quality of life in the city. The aim of this paper is, for the area of the largest city of southeast Serbia - the city of Niš, viewed through the prism of urban settings and needs of urban planning, to present the existing capacity indoor sports facilities, their utilization, and the projection of future development. The paper analyzes quantitatively the presence of the existing facilities intended for sports and sports activities, the area with regard to population, traffic facilities annually through various events and sporting events.

The first criterion is the analysis of the level of use of the indoor facilities (more) annually and their economic viability. The second norm concerns the standard or the required minimum size of closed facilities and related facilities for the purpose of urban planning. The paper makes a comparative analysis of indoor sports facilities in relation to the population of the city of Niš and other European cities with approximately the same population. All these parameters determine the quality and quantity of development and affect the functioning of the social and educational life. The aim is to determine whether the existing contents and indoor sports facilities areas in the city of Niš meet the needs of residents, and the standards required for the areas of urban planning, whether they need additional facilities of this type and to what extent. The future development of the city is reflected, among other things, in the increase of the required facilities intended for indoor sports, sports activities and possible commercial needs. The paper provides guidelines for the development of urban planning and design of indoor sports facilities in the city of Niš.

Key words: indoor sports facilities, urban parameters, capacity, urban planning

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