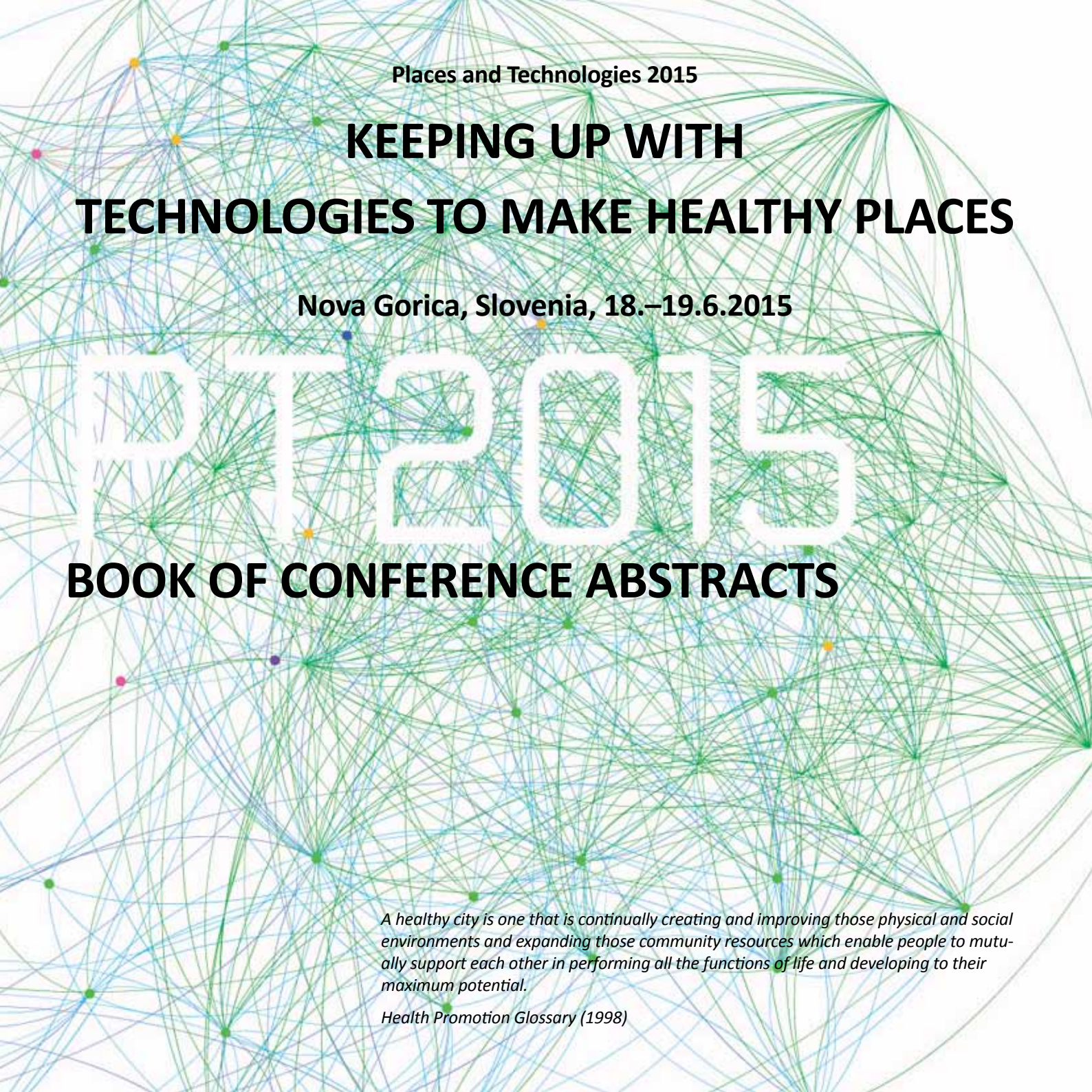




Places and Technologies 2015

KEEPING UP WITH TECHNOLOGIES TO MAKE HEALTHY PLACES

Nova Gorica, Slovenia, 18.–19.6.2015

PT2015

BOOK OF CONFERENCE ABSTRACTS

A healthy city is one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and developing to their maximum potential.

Health Promotion Glossary (1998)

Places and Technologies 2015

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BOOK OF CONFERENCE ABSTRACTS

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CONTENTS

ABOUT	15	5
KEYNOTE SPEAKERS	17	
SCIENTIFIC COMMITTEE	20	
PROGRAMME OF THE CONFERENCE		
THURSDAY, 18 JUNE 2015_PINTA CONFERENCE HALL	23	
FRIDAY, 19 JUNE 2015_PINTA 1, PINTA 2 AND PINTA 3 CONFERENCE ROOMS	25	
FRIDAY, 19 JUNE 2015_FRANCE BEVK PUBLIC LIBRARY_NOVA GORICA	27	
SATURDAY, 20 JUNE 2015_EXTRAS – REGIONAL EXCURSION	28	
INTRODUCTION		
HEALTHY CITY - TECHNOLOGY AND URBAN RESILIENCE	39	
Eva Vaništa Lazarević		
A PLACE FOR PLACES: LIVE AND STAY	41	
Nataša Fikfak		
NOVA GORICA	43	
Matej Arčon		
HEALTHY CITY - TECHNOLOGY AND URBAN RESILIENCE	45	
Ružica Bozović Stamenović		
INNOVATING AT LISBON'S WATERFRONT PLACE, THE "TAGUS PLATFORM" PROJECT	46	
Pedro Ressano Garcia		
TOPIC I: ARCHITECTURE AND HEALTH		
HEALTHY BUILDINGS: THE ICF CLASSIFICATION AS A DESIGNING TOOL	50	
Alberto Arengi, Daniele Malgrati, Michele Scarazzato		
THE HEALTH ASPECTS OF SUSTAINABLE ARCHITECTURE	51	
Kosara Kujundžić		
UNIVERSITY AND DWELLERS' ASSOCIATIONS TOGETHER FOR CREATING SUSTAINABLE AND HEALTHY URBAN ENVIRONMENTS	52	
Lucia Martincigh, Francesco Bianchi, Cecilia De Marinis, Marina Di Guida, Giovanni Perrucci		

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

6	“VERTICAL” CITY	54
	Damjana Lojaničič	
	HEALTHY WORKPLACE: UTOPIA OR REALITY OF MODERN ARCHITECTURAL DESIGN IN BOSNIA AND HERZEGOVINA	55
	Tijana Vujičić, Tanja Trkulja	
	SUSTAINABLE DESIGN FOR IMPROVEMENT OF HEALTHY BUILT ENVIRONMENT	56
	Aleksandar Petrovski, Ognjen Marina, Georgi Dimkov, Dimitar Papasterevski	
	HEALTHCARE DESIGN REVISITED – NEW APPROACHES TO USER – CENTRIC, EFFICIENT AND EFFECTIVE DESIGN EXPERIENCES OF MILITARY MEDICAL ACADEMY (MMA) IN BELGRADE - 3 DECADES AFTER ITS FAMOUS DESIGN	57
	Eva Vaništa Lazarević, Jelena Marić, Milena Vukmirović, Goran Radović	
	BUILDING MATERIALS AND HUMAN HEALTH: DESIGNERS’ PERSPECTIVE	59
	Saja Kosanović, Alenka Fikfak, Mirko Grbić	
	TOWARDS A NEW UNDERSTANDING OF HEALTHY PLACE	60
	Saja Kosanović, Eva Vaništa Lazarević, Slađan Timotijević	
	ENVIRONMENTAL FEATURES OF BUILDING MATERIALS OF TRADITIONAL OHRID HOUSE AND THEIR CONTRIBUTION TO ITS HUMAN DESIGN	61
	Radmila Tomovska, Ana Radivojević	
	HEALTHY ARCHITECTURE AS A RESULT OF BALANCED INTEGRATION OF ARTIFICIAL AND NATURAL RULES	63
	Dženana Bijedić, Rada Čahtarević, Senaida Halilović	
	HEALTHY ARCHITECTURE FOR CHILDREN	64
	Julija Aleksić	
	MEDICINE AND ARCHITECTURE IN THE CONTEMPORARY SOCIETY	65
	Ilka Čerpes	
	MARGINALISATION OF LOCAL COMMUNITIES ALONG THE STRAIT OF SINGAPORE	66
	Magnus Nickl, Verena Stecher	
	THE SCALE OF ACUTE CARE HOSPITALS IN SERBIA - THE NEED FOR RETHINKING	67
	Marko Matejić	
	ARCHITECTURE AND HEALTHY LIVING SPACE	68
	Goran Radović	



CONTENTS

TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE	7
DEVELOPMENT DIRECTIONS OF URBAN STRUCTURE THROUGH REGISTRATION OF CHANGES OF SEGMENTS OF URBAN COMPLEX	70
Velimir Stojanović	
THE TRANSFORMATION OF THE SQUARE CARICA MILICA IN NOVI SAD (SERBIA)	71
Ivana Sentić Ksenija Hiel	
VARESE FIGURE: AN ITALIAN RURAL MUNICIPALITY WHICH HAS IMPLEMENTED AN EXEMPLARY MODEL OF SUSTAINABLE DEVELOPMENT	72
Giovanni Sergi, Carlo Berio, Giulia Canton, Giacomo Crovo	
CYBERPARKS CHALLENGES - NEW DIGITAL MEDIA FOR ATTRACTIVE URBAN OPEN SPACES	74
Ina Šuklje Erjavec, Carlos Smaniotto Costa	
MEDIA ARCHITECTURE AND SUSTAINABLE ENVIRONMENT	75
Jasna Čikić-Tovarović, Jelena Ivanović-Šekularac, Nenad Šekularac	
IMPLEMENTATION OF NORWEGIAN EXPERIENCE TO SLOVENIAN HOSPITAL SECTOR	76
Alenka Temeljotov-Salaj, Svein Bjoerberg, Simon Vrhunec, Andrej Baričič	
TOWARDS OPEN, THERMODYNAMIC CITY P&T 2015	78
Marija Bojović, Irena Rajković, Sanja Paunović Žarić	
INTERWEAVING OF BANJALUKA'S URBAN AND RURAL LANDSCAPES	79
Dijana Simonović	
AN APPLICATION OF THE "ENVIRONMENTAL ISLAND": A PRESCRIPTIVE TOOL TO CREATE HEALTHIER URBAN ENVIRONMENTS	80
Lucia Martincigh, Cecilia De Marinis, Janet Hetman	
DEVELOPMENT OF PUBLIC SQUARES IN NORTH WESTERN EUROPEAN CITY CENTRES	82
Bob Giddings, James Charlton	
MUSIC AND SOUND AS A TOOL INTO DESIGNING HEALTHIER ENVIRONMENT	83
Anja Kostanjšak, Morana Pap, Tena Lazarević	
UNFOLDING THE URBAN FRAGMENTS: WALKING/RUNNING THE CITY	84
Sasa Tasic, Mitko Hadzi Pulja, Minas Bakalchev	

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

8	DESIGNING PARKING STRUCTURES IN SERVICE OF PUBLIC HEALTH	85
	Tanja Trkulja, Tijana Vujičić	
	DESIGNING THE WORKING ENVIRONMENT WHEN PLANNING BUSINESS ZONES	86
	Gregor Čok	
	FOUR PARADIGMS FOR THE VENETO REGION'S CENTRAL AREA	87
	Enrico Anguillari	
	MUNICIPALITY POLICY AS KEY FACTOR FOR THE ROLE OF ARCHITECTURE AND TECHNOLOGY IN PUBLIC HEALTH	88
	Dejan Vasović, Nataša Ćuković Ignjatović, Dušan Ignjatović	
	INDUSTRIAL HERITAGE IN ALBANIA AND THE OPPORTUNITIES FOR REGENERATION AND ADAPTIVE RE-USE	89
	Florian Nepravishhta	
	THE POSSIBILITIES OF THE APPLICATION OF THE CONCEPT OF HEALTHY CITY IN ILLEGAL SETTLEMENTS IN SERBIA	90
	Branislav Antonić, Biserka Mitrović	
	URBAN REGENERATION AS A TOOL FOR POPULATION HEALTH IMPROVEMENT	91
	Filip Petrović	
	URBANIZATION OF METROPOLITAN AREAS – THE IMPORTANCE OF NEW SPATIAL DATA ANALYSIS TOOLS	92
	Hanna Obracht-Prondzynska	
	AQUAPONICS BASED ARTIFICIAL BIOSPHERE INCLUDED IN ARCHITECTURE: FROM MITIGATION OF NEGATIVE IMPACTS TO POSITIVE ADDED VALUES OF URBAN SPATIAL STRUCTURES ON LOCAL, REGIONAL AND GLOBAL SCALE	93
	Piotr Marek Smolnicki	
	INSTITUTIONAL CHALLENGES IN THE URBAN PLANNING WATER SENSITIVE PLACES	94
	Višnja Sretović Brković, Matija Brković	

TOPIC III: LIFETIME COMMUNITIES AND PARTICIPATION

	COHOUSING FOR BUILDING REUSE	96
	Adolfo Baratta, Fabrizio Finucci, Annalisa Metta, Luca Montuori	
	HOW TO DESIGN HEALTHY BUILDING FOR HEALTHY LIVING? COMPLEX NETWORK OF HEALTH	97
	Anja Jutraž, Sanja Štimac	
	PARTICIPATORY URBAN PLANNING AND PUBLIC POLICY	98
	Višnja Kukoč	



CONTENTS

TOPIC IV: CULTURAL PATTERNS AND SENSITIVITY

9

SENSE OF PLACE IN ARCHITECTURAL DESIGN: TOWARDS HEALTHY PLACES P&T 2015 100

Eglė Navickienė

HOLIDAY HOMES IN THE VICINITY OF SPLIT, CROATIA, DESIGNED BY FRANO GOTOVAC – CONTINUITY OF ARCHITECTURAL HERITAGE 101

Vesna Perković Jović

ARCHITECTURE AND ITS AFTERLIFE; GREEN URBANITY 102

Gabriella Medvegý, Gábor Veres

INVESTIGATION OF RELATIONSHIP BETWEEN CULTURE OF THE INHABITANTS AND QUALITY OF HOUSING 103

Ana Špirić, Sanja Trivić

UTOPIAN PROJECTS DRAWINGS AS INDICATORS OF MODERN SOCIETY NEEDS 104

Vladimir Kovač

YOUTH AND THE FEELING OF SAFETY IN PUBLIC SPACES 105

Svetlana Stanarević, Stevan Tatalović

TOPIC V: HEALTH INTENSIVE CARE

OPTICAL COHERENCE TOMOGRAPHY - GUIDED PRIMARY PERCUTANEOUS CORONARY INTERVENTION IN ACUTE MYOCARDIAL INFARCTION 108

Igor Kranjec

FRACTAL ARCHITECTURE OF THE CORONARY ARTERY TREE 109

Matjaž Klemenc

HUMANIZATION OF DIALYSIS: GREEN AND COZY 110

Jadranka Buturović-Ponikvar

CONTEMPORARY CHALLENGES OF PUBLIC HEALTH AND AN ACTIVE APPROACH TO OVERCOME THEM 112

Marko Vudrag

ANALYSIS AND CONTEMPORARY APPROACH OF SPACE DESIGN OF INTESIVE PSYCHIATRIC CARE UNIT 113

Nevena Dutina, Aleksandra Dutina

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

10 TOPIC VI: INCLUSIVE AND ACCESSIBLE ENVIRONMENT

TOWARDS INCLUSIVE FIRE SAFETY DESIGN	116
Valeria Tatano, Elisabetta Carattin	
INCLUSIVE AND THERAPEUTIC URBAN ENVIRONMENT: INVOLVING USERS IN THE DESIGN PROCESS	117
Ilaria Garofolo, Barbara Chiarelli	
DEVELOPING INNOVATIVE SOCIAL HOUSING TO FOSTER INCLUSIVE COMMUNITIES	118
Silvia Grion, Paola Coloni	
URBAN PUBLIC SPACES ACCESSIBLE FOR ALL: A CASE STUDY IN A HISTORICAL DISTRICT OF ROME	119
Lucia Martincigh, Cecilia De Marinis	
ECOLOGICAL LANDSCAPE, PHYTODEPURATION AND MANMADE WETLANDS IN MAGOK LAKE PARK, SEOUL	120
Cristian Suau, Carmelo Zappulla	
ADVANCED SYSTEMS FOR IMPROVING COMMON HEALTH	122
Urška Kalčič, Janez Peter Grom	
INCLUSIVE AND ACCESSIBLE ENVIRONMENT: PLANNING FOR THE FUTURE	123
Sankalp Shukla, Apoorva Gangrade, Anshula Gumber	
FACTS4STOPS – USER NEEDS REGARDING PUBLIC TRANSPORT STATIONS AND ENVIRONMENT	124
Christine Chaloupka-Risser, Daniel Bell	

TOPIC VII: ENVIRONMENTALLY FRIENDLY TRANSPORT

SHIFTING TO MORE ENVIRONMENTALLY FRIENDLY MODES IN LONG-DISTANCE TRANSPORT	126
Aleksandra Nešić, Ivana Čavka, Olja Čokorilo	
ASSESSING PUBLIC TRANSPORT EFFICIENCY IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT	127
Evgenia Yosifova	
THE ROLE OF PUBLIC TRANSPORT PRIORITY IN SUSTAINABLE URBAN MOBILITY	128
Dino Šojat, Davor Brčić, Marko Slavulj	
APPLICATION OF PV MODULES ON NOISE BARRIERS	129
Budimir Sudimac, Andjela Dubljević	



CONTENTS

PLANNING OF ELECTRIC TRANSPORTATION IN THE KRŠKO REGION 130 ||

Ana Tivadar, Stanko Manojlović, Simon Podkoritnik

INTELLIGENT TRANSPORT SYSTEMS FOR SMART CITIES 131

Bia Mandžuka, Ljupko Šimunović, Mario Ćosić

TOPIC VIII: BUILDING TECHNOLOGIES

RETROFITTING OF MULTI-FAMILY BUILDINGS TOWARDS HEALTHIER SETTLEMENTS 134

Aleksandra Krstić-Furundžić, Aleksandra Đukić

FERROCEMENT ARCHITECTURAL STRUCTURES FROM THE ASPECT OF SOCIAL WELL-BEING 135

Aleksandra Nenadović

DAYLIGHT ANALYSES OF “READY-MADE” FAÇADES WITH MODULAR OPENINGS - CASE STUDY LOCATION IN PODGORICA 136

Sanja Paunović Žarić, Irena Rajković, Marija Bojović

ACTIVE SOLAR SYSTEMS – STUDY OF POTENTIAL FOR APPLICATION IN THE MATERIALIZATION OF TOURIST FACILITIES IN MONTENEGRO 138

Irena Rajković, Sanja Paunović Žarić, Marija Bojović

PREFABRICATED PASSIVE HOUSE VENTILATED FAÇADE PANEL SYSTEM WITH RECYCLED CONCRETE 139

Ljubomir Mišćević, Ivana Banjad Pečur, Bojan Milovanović

TOPIC IX: ADAPTIVE REUSE AND URBAN RENEWAL

COMPARISON OF THE SUSTAINABILITY OF DIFFERENT TECHNIQUES FOR THE STRENGTHENING OF REINFORCED CONCRETE SLABS 142

Tanya Chardakova, Marina Traykova

SYSTEMS FOR THE REQUALIFICATION OF NON-LISTED ARCHITECTURE: THE “ADAPTIVE EXOSKELETON” 143

Francesca Guidolin

RECONSTRUCTION AND REVITALIZATION OF THE COMPLEX SENARA, WITHIN THE MONASTERY HILANDAR, IN ORDER TO ADAPT TO MODERN TRENDS AND SOCIAL CHANGES 144

Jelena Ivanović-Šekularac, Jasna Čikić-Tovaročić, Nenad Šekularac

RENEWAL OF JUGOMONT PREFABRICATED RESIDENTIAL BUILDINGS JU-61 146

Ivan Mlinar, Lea Petrović Krajnik, Tamara Marić

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

12	BROWNFIELDS AS PLACES AND RENEWABLE ENERGY SYSTEMS AS TECHNOLOGIES: POTENTIALS AND RISKS IN CASE OF SERBIA	147
----	---	-----

Anita Stoilkov-Koneski, Zoran Koneski

	LANDFILL JAKUŠEVAC IN ZAGREB – POTENTIAL FOR NEW SPACE IDENTITY AND ENHANCEMENT OF QUALITY OF LIFE	148
--	---	-----

Lea Petrović Krajnik, Damir Krajnik, Ivan Mlinar

TOPIC X: ACTIVE LIVING AND HEALTH

	OPEN PUBLIC SPACES FOR HEALTHIER CITIES	150
--	--	-----

Aleksandra Stupar, Aleksandra Đukić

	RESPONSIBILITY TO THE EMPLOYEES' HEALTH UNAVOIDABLE IN THE CREATIVE AND INNOVATIVE DESIGN OF OFFICE SPACES	151
--	---	-----

Nikola Z. Furundžić, Dijana P. Furundžić, Aleksandra Krstić-Furundžić

	HEALTHY PLACES, ACTIVE PEOPLE	152
--	--------------------------------------	-----

Katarina Ana Lestan, Ivan Eržen, Mojca Golobič

	THE IMPACT OF QUALITY OF PEDESTRIAN SPACES ON WALKING AS A MODERATE PHYSICAL ACTIVITY	153
--	--	-----

Milena Vukmirović, Eva Vaništa Lazarević

TOPIC XI: HEALTH PROMOTION, PROTECTION AND PREVENTION

	OUTDOOR GYMS: "NO MORE EXCUSES FOR PEOPLE WHO CANNOT AFFORD MEMBERSHIPS. GET OUT AND GET IN SHAPE!"	156
--	--	-----

Anne-Kathrin Will

	STUDENT PHYSICAL EDUCATION FOR HEALTHY LIFESTYLE	157
--	---	-----

Aleš Golja

	KEY POINTS OF HUMAN AWARENESS AND EMERGENCY PLANNING. SCHOOLS AS A CASE STUDY	158
--	--	-----

Maddalena Coccagna

	ANOTHER SIDE OF THE COMFORT OF LIVING – ELECTROMAGNETIC POLLUTION	159
--	--	-----

Nebojša Arsić, Jordan Radosavljević, Nataša Fikfak, Saša Štatkić

	RECOMMENDATIONS FOR UNIVERSAL DESIGN OF OUTDOOR LEISURE AND RECREATIONAL AREAS	160
--	---	-----

Lara Slivnik



CONTENTS

TOPIC XII: SOCIAL NETWORKS AND HUMAN BASIC NEEDS 13

VISUAL REPRESENTATION AND EXPERIENCE OF PLACE: CASE STUDY ALHAMBRA IN GRANADA 162

Isidora Karan, Vedrana Ikalović

BEYOND THE QUANTIFIED SELF: A LOOK AT THE SOCIAL DIMENSION OF HEALTH 163

Svea Heinemann

SKYSCRAPER'S PUBLIC AREAS: THE IMPACT ON SPACE AND SOCIAL LIFE 164

Alicja Stefańska

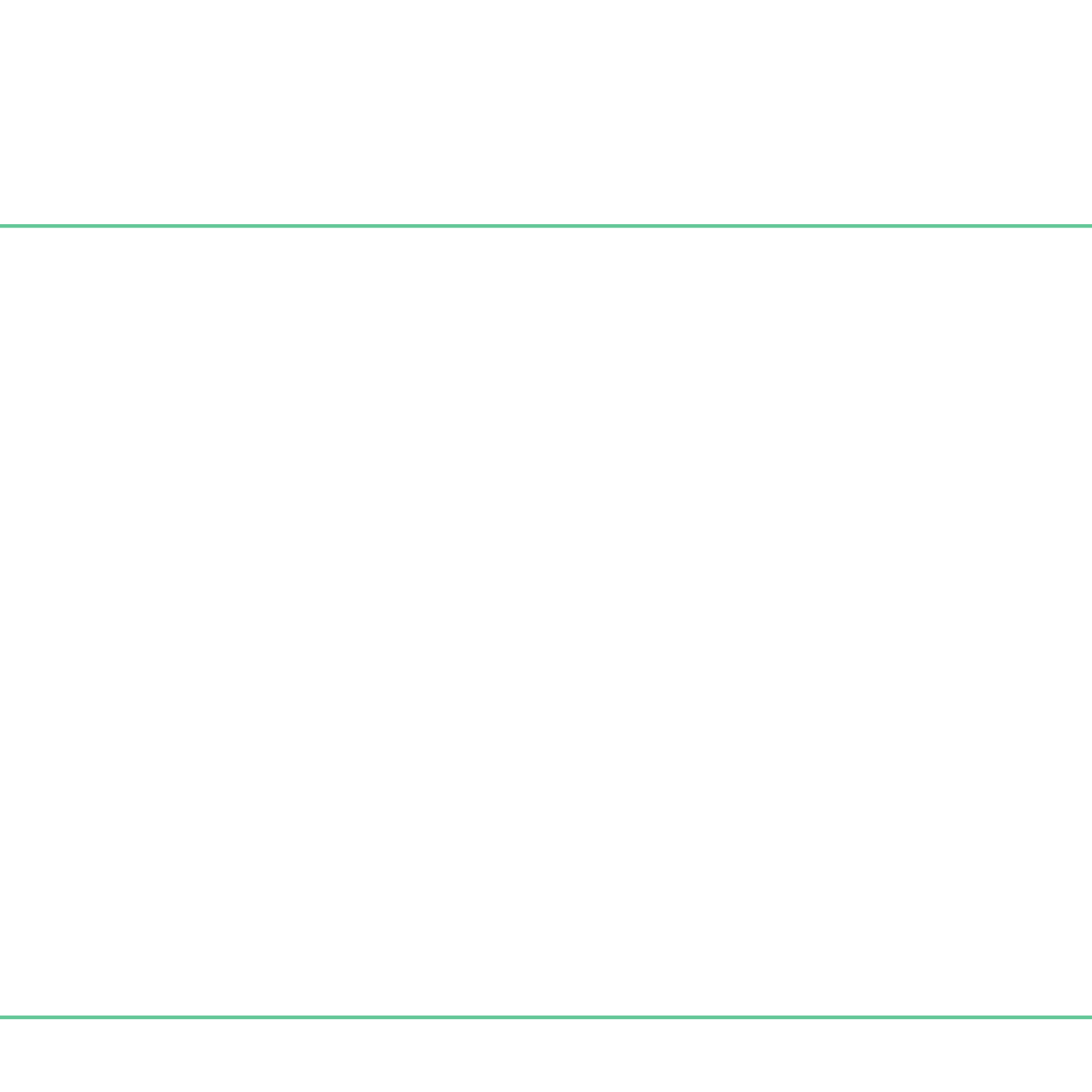
THE IMPACT OF SOCIAL NETWORKS USE ON REDUCTION OF DEPRESSION IN CANCER PATIENTS 165

Leila Habibi, Hamid Reza Farpour

REVIEWERS 168

ORGANIZERS 169

PLACES AND TECHNOLOGIES 2015 - KEEPING UP WITH TECHNOLOGIES TO MAKE HEALTHY PLACES 170



PLACES & TECHNOLOGIES 2015

15

KEEPING UP WITH TECHNOLOGIES TO MAKE HEALTHY PLACES

2nd International Academic Conference

Organizers:

University of Belgrade, Faculty of Architecture, Serbia

University of Ljubljana, Faculty of Architecture, Slovenia

Professional Association, Urban Laboratory, Serbia

General Hospital, »Dr Franca Derganca« Nova Gorica, Slovenia

Dr Vladan Đokić

University of Belgrade, Faculty of Architecture, Belgrade, Serbia

MSc Peter Gabrijelčič

University of Ljubljana, Faculty of Architecture, Ljubljana, Slovenia

Organizing Committee:

Dr Eva Vaništa Lazarević, Conference Director, University of Belgrade, Faculty of Architecture, Belgrade, Serbia

Dr Alenka Fikfak, Regional Conference Director, University of Ljubljana, Faculty of Architecture, Ljubljana, Slovenia

Dr Milena Vukmirović, Conference Executive Coordinator, University of Belgrade, Faculty of Architecture, Belgrade, Serbia

Prim. Nataša Fikfak, General hospital "Dr Franca Derganca", Nova Gorica, Slovenia

Dr Aleksandra Krstić - Furundžić, University of Belgrade, Faculty of Architecture, Belgrade, Serbia

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KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

16 ABOUT

The conference examines the formation and presentation of knowledge on technologies and the environment, as well as ethical considerations and potential risks, developing solutions, expertise and discussions with respect to one of the most important strategic issues – **public health**. The stated objective point to the necessity of a multidisciplinary approach to this matter, identification and establishment of relationships between issues of technological development, environmental protection and social change. Consequently the conference program and research are based on the knowledge of several academic disciplines: engineering and technical sciences, medical sciences, humanities and social sciences.

The main tasks of the conference are defined in order to discuss the issues related to:

- (1) the future of society and places,
- (2) design of healthy places, facilities and infrastructure in line with needs of inhabitants,
- (3) development of institutions and regulations with an aim of creating healthy-supportive environment, and
- (4) creation of favourable conditions for the advancement of innovation and business to achieve a good quality of life.

Having in mind the conference goals and objectives, we wish to research and understand from the critical aspect the importance and role of technology in design and creation of healthy places through:

- (1) built environment perspective,
- (2) medical perspective,
- (3) technological perspective,
- (4) government perspective,
- (5) social perspective.

TOPICS

- | | |
|---|---|
| 1. Architecture and Health | 7. Environmental Friendly Transport |
| 2. Physical Planning and Quality of Place | 8. Building Technologies |
| 3. Lifetime Communities and Participation | 9. Adaptive Reuse and Urban Renewal |
| 4. Cultural Patterns and Sensitivity | 10. Active Living and Health |
| 5. Health Intensive Care | 11. Health Promotion, Protection and Prevention |
| 6. Inclusive and accessible environment | 12. Social Networks and Human Basic Needs2 |

Info: <http://placesandtechnologies2015.org/>

OFFICIAL LANGUAGE OF THE CONFERENCE - English



KEYNOTE SPEAKERS

17

Dr Ružica Božović Stamenović, *University of Belgrade, Faculty of Architecture, Belgrade, Serbia and National University of Singapore, Singapore*

Associate Professor, specialized in Danish housing at the Royal Danish Academy of Fine Arts, Copenhagen. Dr Božović-Stamenović has joined the University of Belgrade in 1989 and the National University of Singapore NUS from 2000-2011. Since 2011, she works as a full time Associate Professor in Belgrade and visiting academic lecturing in semester 2 in NUS, Singapore. Faculty Fellow at TAMU Center for Health Systems and Design, Texas A&M University, USA and Member of Executive Board of the UIA Public Health Group and GUPHA-Global University Programs in Healthcare Architecture. Her research interest is in Human Ecology-space and health, healthful architecture for mega-mature societies and health restoring design processes. Author of two books, a number of book chapters, peer reviewed journal articles and conference papers and a frequent speaker and invited lecturer at scientific conferences worldwide (USA, Australia, France, Germany, Denmark, Greece, Singapore, Malaysia, Korea, etc.). Dr Božović Stamenović is awarded with the 2014 Berkeley Prize Teaching Fellowship, endorsed by the University of California, Berkeley, Department of Architecture, College of Environment Design, for the academic course curricula titled: "Teaching Healthful Architecture". For her design work Dr Božović-Stamenović won major national architectural awards: October Salon (1998), Salon of Architecture (1998, 1991, 1991), Borba (1992), and a number of national and international competition prizes including the prestigious Aldo Rossi's Selection for the 2nd Biennale of Architecture Venice, Italy in 1985 and the national selection for the 8th Biennale of Venice Exhibition NEXT- Destruction & Construction in 2002.

Dr Cor Wagenaar, *Delft University of Technology, Delft, The Netherlands*

Associate Professor. He studied History at the University of Groningen and he was awarded a PhD in 1993 for a thesis entitled "Welvaartsstad in wording". De wederopbouw van Rotterdam 1940-1952 (about the rebuilding programme in the city of Rotterdam after Second World War). In his role as academic advisor, Wagenaar was closely involved in writing a book and organizing a conference entitled 'Architecture of Hospitals', which was held at the UMCG in 2005. He has been working as an associate professor in the chair History of Architecture and Urban Planning of the Faculty of Architecture and the Built Environment of Delft University of Technology. From 1st January 2014, Dr Cor Wagenaar has been appointed professor by special appointment in Architecture, Urbanism and Health at the Faculty of Arts of the University of Groningen. The Chair has been established by the Thomassen à Thuessink Foundation. Which fits into the Healthy Ageing strategic focus area of the University of Groningen and the UMCG. Dr Cor Wagenaar teaching and research mandate thus includes a study of the built environment, as well as research into architectural and urban planning designed to benefit the health of the urban population. In this way, he links the history of architecture and urban planning with current social-societal, policy-based and spatial developments in healthcare.

PLACES AND
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TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

18 **Prof. Roger Riewe**, *Graz University of Technology, Institute of Architecture Technology, Austria*

Roger Riewe was trained at the RWTH Aachen. He then founded Riegler Riewe Architekten in Graz in 1987. Further offices were founded in Cologne in 2008 and in Katowice in 2010. The office has become an internationally renowned, with projects in Austria, Germany, Poland, Croatia, Korea, Switzerland and USA. The focus is on public buildings, infrastructure projects and urban design. The realized projects have received numerous international awards and distinctions. Roger Riewe has been guest professor in Prague, Houston, Barcelona, Aachen, Calgary and Graz. He has lectured worldwide with a specific focus on structure, space and technology. In 2001 he was appointed professor at the Graz University of Technology, where he is since then head of the Institute of Architecture Technology.

Dr Pedro Ressano Garcia, *Universidade Lusófona, Lisbon, Portugal*

Professor and Senior Architect in charge at Ressano Garcia Arquitectos. For the last years he has been researching the transformation of port cities and waterfront regeneration under the frame of ecology and healthy city. In his office in Lisbon, theory and practice are combined in projects of architecture, urban design and participation in international competitions. He started teaching at U.C. Berkeley, since 1997 to the present teaches in Lisbon at Universidade Lusófona and is a visiting teacher at International Workshops. Since 2010 is the coordinator of the European Workshop on Waterfront Urban Design. Awarded with Calouste Gulbenkian and Fundação Ciência e Tecnologia grants. He has published widely in books, magazines and international conferences. In 2010 received the Pancho Guedes Architecture Award.

Dr Ilka Čerpes, *University of Ljubljana, Faculty of Architecture, Ljubljana, Slovenia*

Architect, Doctor of Science and Assistant Professor in Urban Planning. She is the author of the monograph *Urbanistično načrtovanje* ('Urban Planning'), of the collection of papers *O urbanizmu* ('On Urban Planning') and co-author of several professional monographs. As part of teaching staff exchange, she was a visiting professor at five renowned European schools of architecture in France, Germany, Great Britain and Switzerland. She is Area Editor for Urban Planning at the international scientific journal *Igra ustvarjalnosti/The Creativity Game* and member of the Scientific Committee of the scientific conference *Pametni urbanizem*. At the Faculty of Architecture she carries out the tasks of Deputy Head of the Chair of Urbanism and works as tutor coordinator. She is the author of many architecture and urban design studies and projects, which have been recognised by the national and international professional community. She is a co-author of two retrospective exhibitions of architecture in the Kresija Gallery in Ljubljana and associated with renowned associations of architects. She was president of the Association of Architects of Ljubljana (DAL) for two terms of office, member of the commission for awarding the prestigious architecture award conferred by the Jože Plečnik Fund, member of several domestic and European competition panels and member of the Slovenian committee of the European association European.



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Hosting Rector

Prof. Dr Ivan Svetlik, *University of Ljubljana, Ljubljana, Slovenia*

Prof. Dr Danilo Zavrtanik, *University of Nova Gorica, Nova Gorica, Slovenia*

In Alphabetical order

Prof. Dr Nebojša Arsić, *Faculty of Technical Sciences, Department of Archi-itecture, Kosovska Mitrovica, Kosovo*

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Prof. Dr Dušan Šuput, *University of Ljubljana, Faculty of Medicine, Ljubljana, Slovenia*

Guest deans

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Prof. Stephan Mader, *Zürich University of Applied Sciences and Arts, School of Architecture, Design, and Civil Engineering, Winterthur, Switzerland*

20 SCIENTIFIC COMMITTEE

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Dr Alenka Fikfak (Regional Conference Director), University of Ljubljana, Faculty of Architecture, Ljubljana, Slovenia

Dr Milena Vukmirovic (Executive coordinator), University of Belgrade Faculty of Architecture and Urban Laboratory, Belgrade, Serbia

Prim. Nataša Fikfak, General hospital "Dr Franca Derganca", Nova Gorica, Slovenia

In Alphabetical order

Enrico Anguillari, Independent Researcher, Venice, Italy; **MSc Petar Arsić**, University of Belgrade Faculty of Architecture, Belgrade, Serbia; **Dr Milica Bajić Brković**, ISOCARP - The International Society of City and Regional Planners, The Hague, Netherlands;

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Prof. Janez Koželj, University of Ljubljana, Faculty of Architecture, Ljubljana, Slovenia; **Dr Aleksandra Krstić – Furundžić**, University of Belgrade Faculty of Architecture, Belgrade, Serbia; **Dr Višnja Kukoč**, University of Split, Faculty of Civil Engineering, Architecture and Geodesy, Split, Croatia; **Prof. Vladimir Lojanica**, University of Belgrade, Faculty of Architecture, Belgrade, Serbia; **Dr Piotr Lorens**, Faculty of Architecture, Gdansk University of Technology, Gdansk, Poland; **Prof. Lucia Martincigh**, Faculty of Architecture, University of Roma Tre, Rome, Italy; **Dr Marja Maruna**, University of Belgrade, Faculty of Architecture, Belgrade, Serbia; **Dr Vladimir Milenković**, University of Belgrade, Faculty of Architecture, Belgrade, Serbia; **Prof. Ljubomir Mišćević**, University of Zagreb Faculty of Architecture, Zagreb, Croatia;

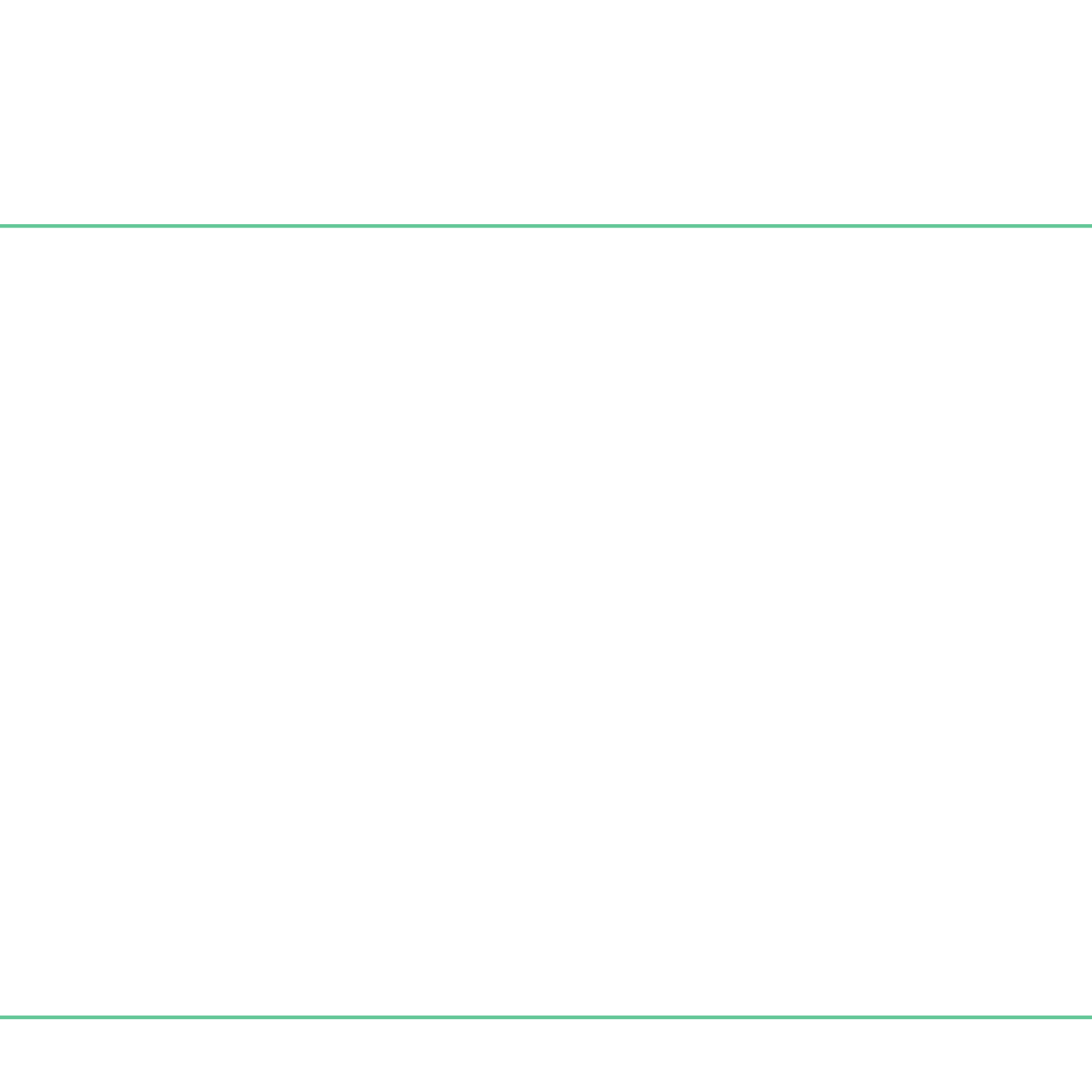
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Dr Marija Pfeifer, *University of Ljubljana, Medical Faculty, Ljubljana, Slovenia*; **Dr Gabriel Pascariu**, *“Ion Mincu” University of Architecture and Urban Planning, Bucharest, Romania*; **Tomaž Pipan**, *London Metropolitan University, The CASS, London, United Kingdom*;
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TECHNICAL COMMITTEE:

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Mojca Potočnik Kogovšek, *University of Ljubljana, Faculty of Architecture, Ljubljana, Slovenia*
Assist. Janez P. Grom, *University of Ljubljana, Faculty of Architecture, Ljubljana, Slovenia*
Urša Kalčič, *University of Ljubljana, Faculty of Architecture, Ljubljana, Slovenia*
Lea Obreza, *University of Ljubljana, Faculty of Architecture, Ljubljana, Slovenia*
Nejc Koradin, *Društvo primorskih Arhitektov, Nova Gorica, Slovenia*
Mija Rijavec, *Konference center Perla, Nova Gorica, Slovenia*
Aleksandra Torbica, *City municipality of Nova Gorica, Nova Gorica, Slovenia*



PROGRAMME

PROGRAMME OF THE CONFERENCE

23

THURSDAY, 18 JUNE 2015_PINTA CONFERENCE HALL

8:30–9:00 a.m. Registration

9:00–10:00 a.m. Welcome speeches and Introduction

Matej ARČON, Mayor, City municipality of Nova Gorica, Slovenia

Prof. Dr Ivan SVETLIK, Rector, University of Ljubljana, Ljubljana, Slovenia

Prof. MSc Peter GABRIJELČIČ, Dean, University of Ljubljana, Faculty of Architecture, Ljubljana, Slovenia

Prof. Dr Eva VANIŠTA LAZAREVIĆ, Conference Director, University of Belgrade, Faculty of Architecture, Belgrade, Serbia

10:00–12:00 a.m. Session 1_ ARCHITECTURE AND MEDICINE FOR TOMORROW

Session chair: MSc Tadej GLAŽAR

keynote speaker Roger RIEWE: “DESIGNING THE FUTURE” – MEDICAL R & D LABS IN AUSTRIA AND GERMANY*keynote speaker* Dr Ilka ČERPES: MEDICINE AND ARCHITECTURE IN THE CONTEMPORARY SOCIETY

Stephan MAEDER: NO TECH - DON'T EXPECT FROM TECHNOLOGY WHAT YOU CAN HAVE FOR FREE

Dr Jadranka BUTUROVIĆ-PONIKVAR: HUMANIZATION OF DIALYSIS: GREEN AND COZY

Dr Matjaž KLEMENC: FRACTAL ARCHITECTURE OF THE CORONARY ARTERY TREE

12:00 a.m.–1:30 p.m. Lunch break

1:30 –3:30 p.m. Session 2_HEALTHY PLACES – FROM VISIONS TO PRACTICES

Session chair: Dr Alenka FIKFAK, Prim Nataša FIKFAK

keynote speaker Dr Cor WAGENAAR: THE URBANIZATION OF PUBLIC HEALTH*keynote speaker* Dr Ružica BOŽOVIĆ STAMENOVIĆ: HEALTHY CITY - TECHNOLOGY AND URBAN RESILIENCE

MSc Peter GABRIJELČIČ: A HEALTHY AND WELL DESIGNED ENVIRONMENT AS PART OF HUMAN RIGHTS AND ECONOMIC VALUE

MSc Albert KOROŠEC: CO-CREATING HEALTHY PUBLIC PLACES WITH RESIDENTS

Dr Marko VUDRAG: CONTEMPORARY CHALLENGES OF PUBLIC HEALTH AND AN ACTIVE APPROACH TO OVERCOME THEM

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

24

3:30–4:00 p.m. Coffee break

4:00–4:45 p.m. **Session 3_THE WAY TO A HEALTHY FUTURE**

Session chair: **Dr Eva VANIŠTA LAZAREVIĆ**

keynote speaker_ Dr Pedro RESSANO GARCIA: INNOVATING AT LISBON'S WATERFRONT PLACE,
THE "TAGUS PLATFORM" PROJECT

Robert GOLOB, Prim Nataša FIKFAK: REFLECTIONS ON THE PROGRAMME OF EZTS

4:45–6:00 p.m. **ISOCARP event**

Dr Eva VANIŠTA LAZAREVIĆ, Dr Piotr LORENS, Manfred SCHRENK: SHORT DISCUSSION ON KEY ISSUES

8:00 p.m. Gala Dinner



PROGRAMME

PROGRAMME OF THE CONFERENCE

25

FRIDAY, 19 JUNE 2015_PINTA 1, PINTA 2 AND PINTA 3 CONFERENCE ROOMS

8:30–9:00 a.m. Registration

9:00–10:30 a.m. PARALLEL Sessions 5, 6 and 7

5. Architecture and Health I.
_Session chair: **Dr Saja KOSANOVIĆ**_Special guest lecturer: **Dunja SAVNIK WINKLER**
6. Physical Planning and Quality of Place I.
_Session chair: **Dimitrij KLANČIČ**_Special guest lecturer: **Prim Dr Vlasta VODOPIVEC**
7. Health Promotion, Protection and Prevention; Health Intensive Care; Active Living and Health
_Session chair: **Dr Milena VUKMIROVIĆ**_Special guest lecturer: **Simon BITEŽNIK**
_Special presentation_book: *Planning Capital Cities: Belgrade, Bucharest, Sofia*

10:30–11:00 a.m. Coffee break

11:00–12:30 p.m. PARALLEL Sessions 8, 9 and 10

8. Architecture and Health II.
_Session chair: **Dr Alenka FIKFAK**_Special guest lecturer: **Prim Dr Krunoslav MARGIČ**
9. Physical Planning and Quality of Place II.
_Session chair: **Sanja PAUNOVIĆ ŽARIĆ and MSc Irena RAJKOVIĆ**_Special guest lecturer: **Prim Franci KOGLOT**
10. Inclusive and Accessible Environment; Lifetime Communities and Participation
_Session chair: **Ilaria GAROFOLO**_Special guest lecturer: **Dr Alberto ARENGHI**

12:30 a.m.–2:00 p.m. Lunch break

2:00–3:30 p.m. PARALLEL Sessions 11, 12 and 13

11. Adaptive Reuse and Urban Renewal
_Session chair: **Dr Anja JUTRAŽ and Sanja ŠTIMAC**_Special guest lecturer: **Mojca HUMAR**

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

26

12. Cultural Patterns and Sensitivity; Social Networks and Human Basic Needs
_Session chair: **Miha KONJAR**_Special guest lecturer: **Dr Matevž GORENŠEK**
13. Environmentally Friendly Transport; Building Technologies
_Session chair: **Janez P. GROM**_Special guest lecturer: **Dr Igor KRANJEC**

3:30–4:00 p.m. Coffee break

4:00–5:30 p.m. **FINAL DISCUSSION and CLOSURE OF THE CONFERENCE**
Dr Milena VUKMIROVIĆ: NEW NETWORKING IN EU PROGRAMMES



PROGRAMME

PROGRAMME OF THE CONFERENCE

27

FRIDAY, 19 JUNE 2015_France BEVK Public Library Nova Gorica

Regional and guest deans' workshop

10:00–10:30 a.m. Welcome speeches and Introduction

Matej ARČON, Mayor of City municipality of Nova Gorica

MSc Peter GABRIJELČIČ, Dean, University of Ljubljana, Faculty of Architecture, Ljubljana, Slovenia

Irena ŠKVARČ, Director, France Bevk Public Library

10:30–11:00 a.m. Tour of France Bevk Public Library

11:00 a.m.–1:30 p.m. Regional and guest deans workshop

Session chair: **MSc Tadej GLAŽAR and Prim. Nataša FIKFAK**

Visions for the future. Presentations and Discussions.

1:30 –3:00 p.m. Lunch

4:30 p.m. Visiting locations

Regional excursion - Goriška Brda for a guests of Regional deans workshop.

FRANCE BEVK PUBLIC LIBRARY

Trg Edvarda Kardelja 4

5000 Nova Gorica, Slovenia

<http://www.ng.sik.si/en/>

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

28 PROGRAMME OF THE CONFERENCE

SATURDAY, 20 JUNE 2015_EXTRAS - REGIONAL EXCURSION

Regional excursion

10:00 a.m.–5:00 p.m. **URBAN WALK TOUR Nova Gorica_Gorizia**

Janez P. GROM, *University of Ljubljana, Faculty of Architecture*

Sqaure Europa, Museum of the border, Gorizia castle, monastery Kostanjevica, Trgovski dom - Fabiani exhibition

Lecture about M. Fabiani: **Nataša KOLENC**

Lecture and guide: **Igor DEVETAK**

Aljoša SOSOL, EGTC

The Urban walking tour will be 20 eur/person (including lunch).

Other options, individual excursion in the near surrounding (connected with a free public transport)

The organiser will offer a guide if the group will be more then 10 persons. Registration on 1st day of the conference.

The tour with a guide will be 5 eur/person (without lunch).

11:00 a.m.–5:00 p.m. **Castle KROMBERK Nova Gorica_Vrtojba**

Castle Kromberk, Ajševica, Šempeter, Nova Gorica center: libraby, cultural home, municipality building, Eda center, monument of Edvard Rusjan, new architecture,...

11:00 a.m.–5:00 p.m. **ADRENALIN TOUR Solkan**

Adrenalin park - Soča Fun park (entrance fee), Solkan, bridge Solkan*

**www.socafunpark.si/en/price-list*



PROGRAMME

5_8_SESSIONS_TOPIC_ARCHITECTURE AND HEALTH

29

Session chair 5: **Dr Saja KOSANOVIĆ**
Special guest lecture: **Dunja SAVNIK WINKLER: DISABILITY OF HEARING**
9:00–10:30 a.m.

Session chair 8: **Dr Alenka FIKFAK**
Special guest lecture: **Prim Dr Krunoslav MARGIČ: ARCHITECTURE OF THE HAND**
11:00–12:30 p.m.

Session 5

Lucia MARTINCIGH, Francesco BIANCHI, Dr Cecilia DE MARINIS, Marina DI GUIDA, Giovanni PERRUCCI:

UNIVERSITY AND DWELLERS' ASSOCIATIONS TOGETHER FOR CREATING SUSTAINABLE AND HEALTHY URBAN ENVIRONMENTS

Dr Eva VANIŠTA LAZAREVIĆ, Jelena MARIĆ, Dr Milena VUKMIROVIĆ, Dr Goran RADOVIĆ:

HEALTH CARE DESIGN REVISITED – NEW APPROACHES TO USER – CENTRIC, EFFICIENT AND EFFECTIVE DESIGN: EXPERIENCES OF MILITARY MEDICAL ACADEMY (MMA) IN BELGRADE – 3 DECADES AFTER ITS FAMOUS DESIGN

Dr Saja KOSANOVIĆ, Dr Alenka FIKFAK, Dr Mirko GRBIĆ: BUILDING MATERIALS AND HUMAN HEALTH: DESIGNERS' PERSPECTIVE

Dr Saja KOSANOVIĆ, Dr Eva VANIŠTA LAZAREVIĆ, Dr Slađan TIMOTIJEVIĆ: TOWARDS A NEW UNDERSTANDING OF HEALTHY PLACE

Session 8

Dr Dženana BIJEDIĆ, Dr Rada ČAHTAREVIĆ, Senaida HALILOVIĆ: HEALTHY ARCHITECTURE

AS A RESULT OF THE BALANCED INTEGRATION OF ARTIFICIAL AND NATURAL RULES

Dr Julija ALEKSIĆ: HEALTHY ARCHITECTURE FOR CHILDREN

MSc Magnus NICK, MSc Verena STECHER: MARGINALISATION OF LOCAL COMMUNITIES ALONG THE STRAIT OF SINGAPORE

Marko MATEJIĆ: THE SCALE OF ACUTE CARE HOSPITALS IN SERBIA – THE NEED FOR RETHINKING

Dr Goran RADOVIĆ: ARCHITECTURE AND HEALTHY LIVING SPACE

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

30 6_9_SESSIONS_TOPIC_ PHYSICAL PLANNING AND QUALITY OF PLACE

Session chair 6: **Dimitrij KLANČIČ**

Special guest lecture: **Prim Dr Vlasta VODOPIVEC: THE CHALLENGE OF CARDIOVASCULAR DISEASE PREVENTION: IS HEALTHY LIFESTYLE THE ANSWER?**

9:00–10:30 a.m.

Session chair 9: **Sanja PAUNOVIĆ ŽARIĆ and MSc Irena RAJKOVIĆ**

Special guest lecture: **Prim Franci KOGLLOT: SPORT INJURIES-TEHNOLOGIES-HEALTHY PLACES**

11:00–12:30 p.m.

Session 6

Dr Velimir STOJANOVIĆ: DEVELOPMENT DIRECTIONS OF URBAN STRUCTURE THROUGH REGISTRATION OF CHANGES OF SEGMENTS OF URBAN COMPLEX

MSc Ivana SENTIĆ, Dr Ksenija HIEL: THE TRANSFORMATION OF THE SQUARE CARICA MILICA IN NOVI SAD (SERBIA)

Giovani SERGI, Carlo BERIO, Giulia CANTON, Giacomo CROVO: “VARESE LIGURE: AN ITALIAN RURAL MUNICIPALITY WHICH HAS IMPLEMENTED AN EXEMPLARY MODEL OF SUSTAINABLE DEVELOPMENT”

MSc Ina ŠUKLJE ERJAVEC, Dr Carlos SMANIOTTO COSTA: CYBERPARKS CHALLENGES - NEW DIGITAL MEDIA FOR ATTRACTIVE URBAN OPEN SPACES

Dr Jasna ČIKIĆ TOVAROVIĆ, Dr Jelena IVANOVIĆ ŠEKULARAC, Dr Nenad ŠEKULARAC: MEDIA ARCHITECTURE AND SUSTAINABLE ENVIRONMENTS

Dr Alenka TEMELJOTOV SALAJ, Svein BJØRBERG, Simon VRHUNEC, Dr Andrej BARIČIČ: IMPLEMENTATION OF NORWEGIAN EXPERIENCE TO SLOVENIAN HOSPITAL SECTOR

Dr Dijana SIMONOVIĆ: INTERWEAVING OF BANJALUKA’S URBAN AND RURAL LANDSCAPES

Dr Bob GIDDING, Dr James CHARLTON: DEVELOPMENT OF PUBLIC SQUARES IN NORTH WESTERN EUROPEAN CITIES CENTRES

Session 9

Lucia MARTINCIGH, Dr Cecilia DE MARINIS, Janet HETMAN: AN APPLICATION OF THE “ENVIRONMENTAL ISLAND”: A PRESCRIPTIVE TOOL TO CREATE HEALTHIER URBAN ENVIRONMENTS

Anja KOSTANJŠAK, Morana PAP, Tena LAZAREVIĆ: MUSIC AND SOUND AS A TOOL INTO DESIGNING HEALTHIER ENVIRONMENT



PROGRAMME

Dr Enrico ANGUILLARI: FOUR PARADIGMS FOR VENETO REGION'S CENTRAL AREA

Dejan VASOVIĆ, Nataša ČUKOVIC-IGNJATOVIĆ, Dušan IGNJATOVIĆ: MUNICIPALITY POLICY AS A KEY FACTOR FOR THE
ROLE OF ARCHITECTURE AND TECHNOLOGY IN PUBLIC HEALTH

Dr Florian NEPRAVISHTA: INDUSTRIAL HERITAGE IN ALBANIA AND THE OPPORTUNITIES FOR REGENERATION
AND ADAPTIVE RE-USE

Branislav ANTONIĆ, Biserka MITROVIĆ: THE POSSIBILITIES OF THE APPLICATION OF THE CONCEPT OF HEALTHY CITY
IN ILLEGAL SETTLEMENTS IN SERBIA

Filip PETROVIĆ: URBAN REGENERATION AS A TOOL FOR POPULATION HEALTH IMPROVEMENT

Hanna OBRACHT-PRONDZYNSKA: URBANIZATION OF METROPOLITAN AREAS – THE IMPORTANCE OF NEW SPATIAL
DATA ANALYSIS TOOLS

Piotr Marek SMOLNICKI: AQUAPONICS BASED ARTIFICIAL BIOSPHERE INCLUDED IN ARCHITECTURE:
FROM MITIGATION OF NEGATIVE IMPACTS TO POSITIVE ADDED VALUES OF URBAN SPATIAL
STRUCTURES ON LOCAL , REGIONAL AND GLOBAL SCALE

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

32 7_SESSION_TOPIC_HEALTH PROMOTION, PROTECTION AND PREVENTION

Session chair 7: **Dr Milena VUKMIROVIĆ**

Special guest lecture: **Simon BITEŽNIK: REUMATIC DISEASES - DISABILITIES AND FUTURE PERSPECTIVE
WITH NEW BIOLOGIC DRUGS**

Special presentation_book: Planning Capital Cities: Belgrade, Bucharest, Sofia

Editors: Doytchinov, Grigor/Djukic, Aleksandra/Ionita, Catalina

Publisher: Verlag der Technischen Universität Graz

Authors (alphabetic): Alexandru, M., Djukic, A., Doytchinov, G., Duda, M., Ganchev, H., Heppner, H., Ionita, C., Lazarevic, E.V., Roter-Blagojevic, M., Samardzic, N., Sebestyen, M., Stan, A., Stroe, M., Swoboda, H., Udrea, A., Valkanov, Y., Vukmirovic, M.

Dr Anne-Kathrin WILL: OUTDOOR GYMS: "NO MORE EXCUSES FOR PEOPLE WHO CANNOT AFFORD MEMBERSHIPS.
GET OUT AND GET IN SHAPE!"

Dr Maddalena COCCAGNA: KEY POINTS OF HUMAN AWARENESS AND EMERGENCY PLANNING. SCHOOLS AS A CASE STUDY

Dr Nebojša ARSIĆ, Dr Jordan RADOSAVLJEVIĆ, Prim Nataša FIKFAK, Dr Saša ŠTATKIĆ: ANOTHER SIDE OF THE
COMFORT OF LIVING – ELECTROMAGNETIC POLLUTION

Dr Lara SLIVNIK: RECOMMENDATIONS FOR UNIVERSAL DESIGN OF OUTDOOR LEISURE AND RECREATIONAL AREAS

7_SESSION_TOPIC_HEALTH INTENSIVE CARE

Nevena DUTINA, Aleksandra DUTINA; ANALYSIS AND CONTEMPORARY APPROACH OF SPACE DESIGN OF INTESIVE
PSYCHIATRIC CARE UNIT

7_SESSION_TOPIC_ACTIVE LIVING AND HEALTH

Dr Aleksandra ĐUKIĆ, Dr Aleksandra STUPAR: OPEN PUBLIC SPACES FOR HEALTHIER CITIES

Nikola Z. FURUNDŽIĆ, Dijana P. FURUNDŽIĆ, Dr Aleksandra KRSTIĆ FURUNDŽIĆ: RESPONSIBILITY TO THE
EMPLOYEES' HEALTH UNAVOIDABLE IN THE CREATIVE AND INNOVATIVE DESIGN OF OFFICE SPACES

Katarina Ana LESTAN, Dr Ivan Eržen, Dr Mojca GOLOBIĆ: HEALTHY PLACES, ACTIVE PEOPLE

Dr Milena VUKMIROVIĆ, Dr Eva VANIŠTA LAZAREVIĆ: THE IMPACT OF QUALITY OF PEDESTRIAN SPACES ON WALKING
AS A MODERATE PHYSICAL ACTIVITY



PROGRAMME

10_SESSION_TOPIC_INCLUSIVE AND ACCESSIBLE ENVIRONMENT

33

Session chair 10: **Ilaria GAROFOLO**
 Special guest lecture: **Alberto ARENGHI, MD Daniele MALGRATI, MD Michele SCARAZZATO:**
11:00–12:30 p.m. HEALTHY BUILDINGS: THE ICF CLASSIFICATION AS A DESIGNING TOOL

Ilaria GAROFOLO, Barbara CHIARELLI: INCLUSIVE AND THERAPEUTIC URBAN ENVIRONMENT: INVOLVING USERS
 IN THE DESIGN PROCESS

Silvia GRION, Paola COLONI: DEVELOPING INNOVATIVE SOCIAL HOUSING TO FOSTER INCLUSIVE COMMUNITIES

Lucia MARTINCIGH, Dr Cecilia DE MARINIS: URBAN PUBLIC SPACES ACCESSIBLE FOR ALL: A CASE STUDY IN A
 HISTORICAL DISTRICT OF ROME

Dr Christian SUAU, Dr Carmelo ZAPPULLA: ECOLOGICAL LANDSCAPE, PHYTODEPURATION AND MANMADE
 WETLANDS IN MAGOK LAKE PARK, SEOUL

Urša KALČIČ, Janez P. GROM: ADVANCED SYSTEMS FOR IMPROVING COMMON HEALTH

Dr Christine CHALOUPKA- RISSER, Daniel BELL: FACTS4Stops – USER NEEDS REGARDING PUBLIC TRANSPORT
 STATIONS AND ENVIRONMENT

10_SESSION_TOPIC_LIFETIME COMMUNITIES AND PARTICIPATION

Adolfo BARATTA, Fabrizio FINUCCI, Annalisa METTA, Luca MONTUORI: COHOUSING FOR BUILDING REUSE

Dr Anja JUTRAZ, Sanja STIMAC: HOW TO DESIGN HEALTHY BUILDING FOR HEALTHY LIVING?
 COMPLEX NETWORK OF HEALTH

Dr Višnja KUKOČ: PARTICIPATORY URBAN PLANNING AND PUBLIC POLICY

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

34 11_SESSION_TOPIC_ADAPTIVE REUSE AND URBAN RENEWAL

Session chair 11: **Dr Anja JUTRAŽ and Sanja ŠTIMAC**

Special guest lecture: **Mojca HUMAR: ONCOLOGY DAY HOSPITAL: OUR EXPERIENCE**

2:00–3:30 p.m.

Francesca GUIDOLIN: SYSTEMS FOR THE REQUALIFICATION OF NON-LISTED ARCHITECTURE:

THE “ADAPTIVE EXOSKELETON”

Dr Jelena IVANOVIĆ ŠEKULARAC, Dr Jasna ČIKIĆ TOVAROVIĆ, Dr Nenad ŠEKULARAC: RECONSTRUCTION AND REVITALIZATION OF THE COMPLEX SENARA, WITHIN THE MONASTERY HILANDAR, IN ORDER TO ADAPT TO MODERN TRENDS AND SOCIAL CHANGES

Anita STOILKOV-KONESKI, Zoran KONESKI: BROWNFIELDS AS PLACES AND RENEWABLE ENERGY SYSTEMS AS TECHNOLOGIES : POTENTIALS AND RISKS IN CASE OF SERBIA

Dr Lea PETROVIĆ-KRAJNIK, Dr Damir KRAJNIK, Dr Ivan MLINAR: LANDFILL JAKUŠEVEC IN ZAGREB – POTENTIAL FOR NEW SPACE IDENTITY AND ENHANCEMENT OF QUALITY OF LIFE



PROGRAMME

12_SESSION_TOPIC_CULTURAL PATTERNS AND SENSITIVITY

35

Session chair 12: **Miha KONJAR**

Special guest lecture: **Dr Matevž GORENŠEK: ARCHITECTS AND ORTHOPEDICS**

2:00–3:30 p.m.

Dr Egle NAVICKIENE: SENSE OF PLACE IN ARCHITECTURAL DESIGN: TOWARDS HEALTHY PLACES P&T 2015

Dr Gabriella MEDVEGY, Dr Gabor VERES: ARCHITECTURE AND ITS AFTERLIFE; GREEN URBANITY

Ana ŠPIRIĆ, Sanja TRIVIĆ: INVESTIGATION OF RELATIONSHIP BETWEEN CULTURE OF THE INHABITANTS AND
QUALITY OF HOUSING

Vladimir KOVAČ: UTOPIAN PROJECTS DRAWINGS AS INDICATORS OF MODERN SOCIETY NEEDS

Svetlana STANAREVIĆ, Stevan TATALOVIĆ: YOUTH AND THE FEELING OF SAFETY IN PUBLIC SPACES

12_SESSION_TOPIC_SOCIAL NETWORKS AND HUMAN BASIC NEEDS

Svea HEINEMANN: BEYOND THE QUANTIFIED SELF: A LOOK AT THE SOCIAL DIMENSION OF HEALTH

Alicja STEFANSKA: SKYSCRAPER'S PUBLIC AREAS: THE IMPACT ON SPACE AND SOCIAL LIFE

Dr Leila HABIBI, Hamid Reza FARPOUR: THE IMPACT OF SOCIAL NETWORKS USE ON REDUCTION OF DEPRESSION IN
CANCER PATIENTS

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

36 13_SESSION_TOPIC_ENVIRONMENTAL FRIENDLY TRANSPORT

Session chair 13: **Janez P. GROM**

Special guest lecture: **Dr Igor KRANJEC: OPTICAL COHERENCE TOMOGRAPHY - GUIDED PRIMARY PERCUTANEOUS CORONARY INTERVENTION IN ACUTE MYOCARDIAL INFARCTION**
2:00–3:30 p.m.

Aleksandra ĐORĐEVIĆ, Ivana ČAVKA, Dr Olja ČOKORILO: SHIFTING TO MORE ENVIRONMENTALLY FRIENDLY MODES IN LONG-DISTANCE TRANSPORT

Evgenia NIKOLAEVA YOSIFOVA: ASSESSING PUBLIC TRANSPORT EFFICIENCY IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Dr Dino ŠOJAT, Dr Davor BRČIĆ, Dr Marko SLAVULJ: THE ROLE OF PUBLIC TRANSPORT PRIORITY IN SUSTAINABLE URBAN MOBILITY

Budimir SUDIMAC, Andjela DUBLJEVIĆ: APPLICATION OF PV MODULES ON NOISE BARRIERS

Ana TIVADAR, Stanko MANOJLOVIĆ, Simon PODKORITNIK: PLANNING OF ELECTRIC TRANSPORTATION IN THE KRŠKO REGION

Bia MANDŽUKA, Dr Ljupko ŠIMUNOVIĆ, Mario ČOSIĆ: INTELLIGENT TRANSPORT SYSTEMS FOR SMART CITIES

13_SESSION_TOPIC_BUILDING TECHNOLOGIES

Dr Aleksandra KRSTIĆ-FURUNDŽIĆ, Dr Aleksandra ĐUKIĆ: RETROFITTING OF MULTI-FAMILY BUILDINGS TOWARDS HEALTHIER SETTLEMENTS

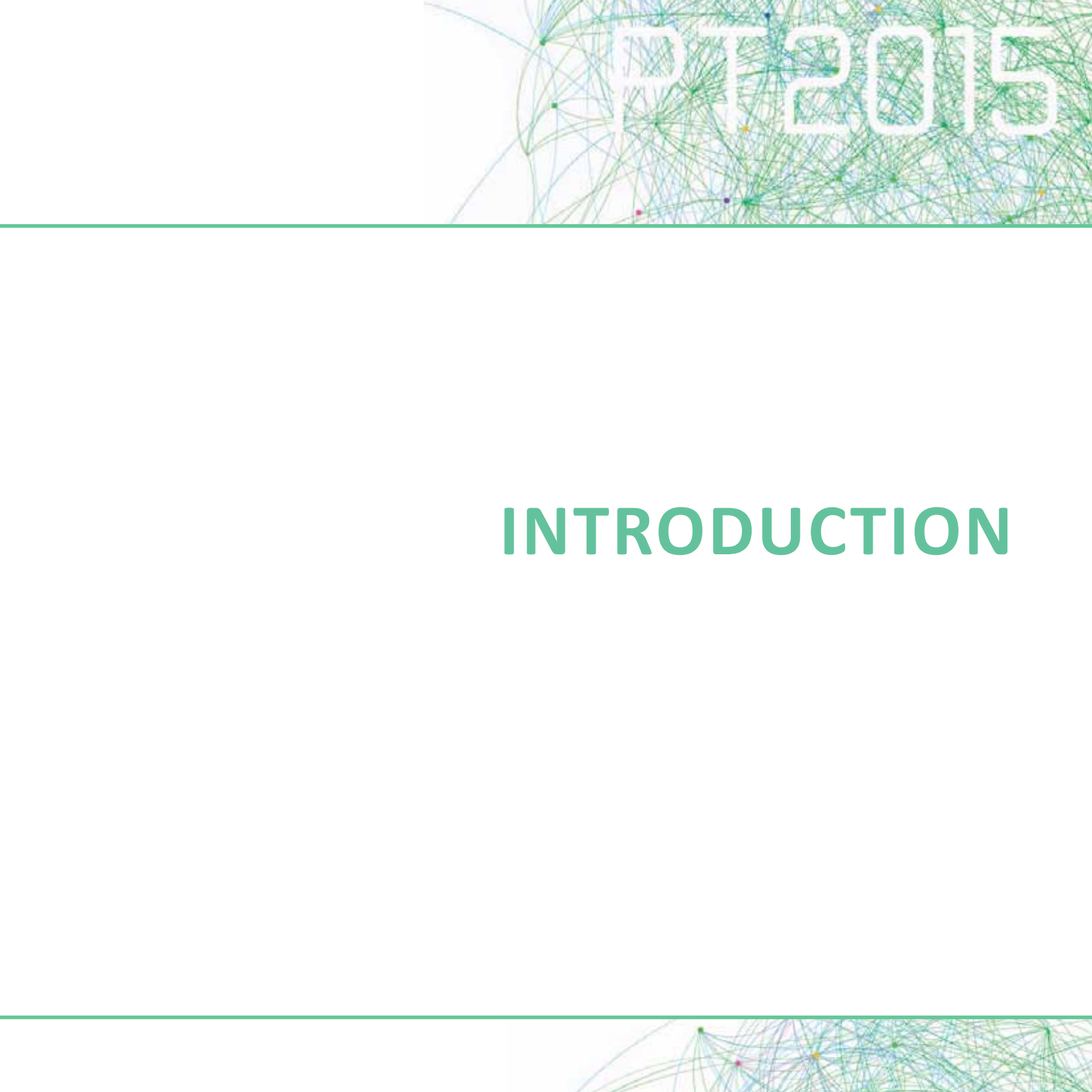
Dr Aleksandra NENADOVIĆ: FERROCEMENT ARCHITECTURAL STRUCTURES FROM THE ASPECT OF SOCIAL WELL-BEING

Sanja PAUNOVIĆ ŽARIĆ, MSc Irena RAJKOVIĆ, Marija BOJOVIĆ: DAYLIGHT ANALYSES OF “READY-MADE” FAÇADES WITH MODULAR OPENINGS - CASE STUDY LOCATION IN PODGORICA

MSc Irena RAJKOVIĆ, Sanja PAUNOVIĆ ŽARIĆ, Marija BOJOVIĆ: ACTIVE SOLAR SYSTEMS – STUDY OF POTENTIAL FOR APPLICATION IN THE MATERIALIZATION OF TOURIST FACILITIES IN MONTENEGRO

Dr Ljubomir MIŠČEVIĆ, Dr Ivana BANJAD PEČUR, Dr Bojan MILOVANOVIĆ: PREFABRICATED PASSIVE HOUSE VENTILATED FAÇADE PANEL SYSTEM WITH RECYCLED CONCRETE



A complex network graph with numerous nodes and edges, primarily in shades of green and blue, forming a dense web-like structure. The text "PT2015" is overlaid on the top right portion of this graph.

PT2015

INTRODUCTION

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS



INTRODUCTION

HEALTHY CITY - TECHNOLOGY AND URBAN RESILIENCE

39

Eva Vaništa Lazarević

Director of The P&T Conference, PhD, Professor, University of Belgrade, Faculty of Architecture, Belgrade, Serbia

At the time when advanced technologies reached accomplishments like human & heart regeneration through new types of proteins or the discovery of rejuvenating elements for time reverse or a New Graal of the 21.st. Century; it is more than obvious that architecture has to stand closely related and concerned of health-care of today. That is why the significance of health-care's field of research is fully underlined as the new focus of the 2nd International Scientific Conference "Places and Technologies" 2015.

Belgrade's based Academic International Conference organized by the Faculty of Architecture, University of Belgrade and "Urban Lab" gathered, after a long period of rough times, the Deans of Faculties of Architecture from the region of South East Europe. In the enthusiastic tone of afresh meeting the Deans and the Organizers agree that the Conference should be spreaded around the region each two years and be back to Belgrade's home as the axis - under the scope of new technologies research. The main goal was, of course, to maintain the fragile scientific links back together and become more banded and recognized with EU colleagues and friends.

In that sense, our kind Slovenian partners of this 2015 placed the Conference in the first Modern planned city in Slovenia after the II world war: Nova Gorica. Young PhD researchers, and professors will meet together from both architecture and health-care sectors in order to hear each other's needs. P&T Conference participants, already friends, from FYR of Macedonia, Albania, Greece, Serbia, Montenegro, Bosnia and Herzegovina, Republic of Srpska, Romania, Bulgaria, Hungary, Croatia, Austria, Italy and Slovenia but also from all over Europe from UK and The Netherlands to Poland and Portugal will meet again hoping that this event should overcome poor economic times, becoming an annual tradition. This year, our Slovenian hosts will include their own partners and colleagues from all over Europe and the synergy circle will become more powerful and spread further, to Switzerland, Russia and Latvia.

I would like to thank to my reliable partner and spiritus movens of this Conference: Dr Milena Vukmirović as well as my colleagues from The organizing Committee - The Regional Director Assist. Prof. Dr Alenka Fikfak, fully in charge for this year's event. The 2015 Conference would not be possible without the support, enthusiasm and persistence of our main host and my long-standing friend: Prof. MSc Peter Gabrijelčič, the Dean of the Faculty of Architecture University of Ljubljana.

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

40 Our keynote speakers of this year's Conference are well known and reputable names from our profession and I am so proud and grateful to have them on our side. Ninety research papers developing diverse thesis on architecture's new technologies interlaced with health-care - will be published openly in order to enlighten and improve previously conceived field of knowledge. New scientific contacts and friendships will be established in Slovenia in hopefully nice early summer's month of June.

From the professors and scientist's prospective through glasses what could be of bigger importance then the assignment of organizing such a Conference?



INTRODUCTION

A PLACE FOR PLACES: LIVE AND STAY

41

Nataša Fikfak

Prim., General Hospital, 'Dr Franca Derganca' Nova Gorica, Slovenia

From the times of Hippocrates, medical knowledge concerning diseases has not changed much. We know much more about the causes of diseases – that much is true – and we are aware of the many successful ways of prevention and treatment, because there is always somebody taking a shortcut to discover the causes of disabilities and how to prevent them. And there is a place for technology: man discovered machines, tools and other equipment to shorten the time for making diagnosis, which means earlier treatment or a possible cure. And there is a place for places: a healthy place to live in and stay there during treatment means as much as the right diagnosis and treatment. What do they have in common – medicine and architecture? Is it the technological development and solutions in search of a better place and living? Or is it the art of wellbeing?

This meeting is the result of the art of looking, looking for news, wondering, and communicating with each other. We would like to share our experiences and find the solutions to please the healthy and the sick. And more, we want to build bridges among ourselves and make this experience useful in everyday activities – and also build bridges between different countries, languages, and cultures. We want to make boundaries disappear and speak the same language used in everyday life.

I wish you a wonderful experience, joy in working and spending time together – with a promise to meet again very soon.

4.2 NOVA GORICA

Matej Arčon

Mayor, City Municipality of Nova Gorica, Slovenia

Nova Gorica cannot simply be regarded as one of smaller cities in Slovenia, even though it is classified as such on a national scale, in accordance with the population statistics (17,084). It can only be understood in the cross-border context of a multi-cultural urban conurbation consisting of Nova Gorica (“New Gorizia”), Šempeter-Vrtojba and Gorizia (in Italy). On a Slovenian statistical scale, it comes right after Ljubljana and Maribor. Hence, in the Slovenian Spatial Development Strategy Nova Gorica is placed among urban centres of national significance.

This cross-border centre is also a regional centre. The Province of Gorizia (Provincia di Gorizia, Italy) and the Goriška statistical region (Slovenia) together cover a very diverse and economically interesting area. They are connected by the Soča/Isonzo river that extends from the Alpine region, flows across the Karst Plateau and the plains until it finally meets the sea. This territory comprises hilly, sparsely populated areas, with exceptional natural qualities, extending to Monfalcone, the northernmost port of the Adriatic Sea.

In the past, Gorizia was among the biggest promoters of Slovenian economy and culture (e.g. the “Trgovski dom” building in Gorizia, designed by the architect Max Fabiani). It was also one of the central leisure and recreation areas of the Austro-Hungarian Empire, also known for its cultural diversity (the languages used were Italian, Slovenian, German, and Friulian). Due to a combination of natural, cultural, and, not least, economic reasons, the need to connect was always present, and collaboration was always there, despite the so-called iron curtain. Nowadays, the Slovenian minority in Gorizia is one of the main drivers of territorial integration and cultural dialogue.

For historical reasons, the areas of Gorizia, Nova Gorica, and Šempeter-Vrtojba had double infrastructure (sport centres, regional hospital, public utilities, transport infrastructure, etc.). Despite its generally negative connotations, the border was, in fact, a powerful generator of economic development (price differences, logistics platform of the customs area, different regulatory framework regarding gambling services, excise duties, etc.). Following the elimination of the border, the city faced major development challenges in the sense of the so-called “sewing” of the urban fabric, i.e. in the light of the development objectives pursued.

Over the years, the co-operation progressively took on a central role in the economic, social, and infrastructural redevelopment of the area.



INTRODUCTION

43

The collaboration was formalised after Slovenia's declaration of independence, and even more after the accession of Slovenia to the EU. This was followed by the initiatives to establish a cross-border office and the project involving the collaboration of three administrations. The establishment of the European Grouping for Territorial Cooperation (EGTC) builds on all the efforts invested so far, on the fundamentals brought about by the new European legislation. The Convention on the establishment of the European Grouping for Territorial Cooperation was officially signed by the mayors of the founding municipalities on 19th February 2010 in Gorizia. The Slovenian Government approved the establishment of the EGTC in June 2010, and the Italian Government in May 2011. The EGTC was registered as a legal entity on 15th September 2011. The first Assembly meeting of the newly established EGTC was held on 3rd February 2012.

The cooperation in the culturally and administratively diverse environment calls for great efforts of the administrations, and a subtle understanding of the cultural character of the area. It is difficult to maintain appropriate relationships in the representation of the various cultures, which must be able to recognise themselves in all the activities connected with the management of the area. This is also a question of promoting equality within diversities, which are definitely regarded as beneficial; however, the process is very demanding in the sense of finding and developing solutions in all areas.

Area of spatial planning

For the conurbation, the multi-cultural aspect of architecture is highly important, and also one of the key generators of spatial identity. Indeed, we must not forget how and why Nova Gorica, as a separate entity, was created and the importance of the preservation of the diversity in identity of the common conurbation in a globalising world.

The importance of architecture and urban design was recognised by the City Municipality of Nova Gorica in its Annual Culture Programme adopted by the City Council in July 2014.

The questions that the conference PLACES AND TECHNOLOGIES 2015 addresses are the central focus of the conurbation in the framework of the EGTC; indeed, in the next period, the conurbation must take the basic steps towards a joint spatial management. Human health, ecology and innovation are key topics of the EGTC GO strategic document, and are developed in three thematic interdisciplinary projects:

- THE SOČA/ISONZO – establishment of the Soča/Isonzo Cross-border Park (tourism, recreation, drainage, green areas of the conurbation)
- CROSS-BORDER HEALTHCARE SERVICES
- The restructuring of the customs border area into a REGIONAL LOGISTIC CENTRE.

PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS

4.4 The first two projects will be financially supported by the Cross-border Cooperation Program Italy – Slovenia 2014-2020.

The envisaged operation and the strategic goals of the EGTC fully coincide with the central themes of the PLACES AND TECHNOLOGIES 2015 conference, which represent an opportunity to upgrade the current approach, building on the knowledge of other environments and the exchange of good practices. This is a great opportunity for us to extend our knowledge and establish a wider context of co-operation with the institutions that are the generators of development in individual fields and, as such, are of key importance for the conurbation area. At the same time, the conference participants are given the opportunity to see how relevant problems are addressed on a concrete example, and to develop guidelines for the continued operation of the EGTC GO.

The conference will be part of the activities organised on the occasion of the 150th anniversary of birth of the architect, innovator, philosopher, and multicultural humanist Max Fabiani (in the framework of the conurbation), who distinguished himself in the post-war reconstruction projects of the devastated area of Goriška, and the Posočje region (the area along the Isonzo river), in the aftermath of the Isonzo Front (the year 2015 marks the 100th anniversary of Italy's entry into the war with the Austro-Hungarian Monarchy and the beginning of the Isonzo Front). His designs (Gorizia, Šempeter, Vrtojba and Solkan, directly in the conurbation) technologically modernised the town planning in the region.



INTRODUCTION

HEALTHY CITY - TECHNOLOGY AND URBAN RESILIENCE

45

Ružica Božović Stamenović

PhD, Professor, University of Belgrade, Faculty of Architecture, Belgrade, Serbia and National University of Singapore, Singapore

Endemic challenges of rapid urbanization are not generated by growth per se but by multidimensional facets of urban living under the pressing conditions. Although sanitation, safety and efficiency of urban services and systems still defines public health, the imminent future of city as a healthy place transcends dependency on system provisions and relies on urban resilience. The city resources are becoming increasingly scarce, outdated, inefficient and inflexible. At the same time urban population is steadily getting older, self-centered, stressed and socially and economically poorer. Therefore, technology and design strategies for enhancing the well-being of urbanites will increasingly depend on their relevance regarding social cohesiveness, social capital values, food and water provisions, productivity and possibilities for recuperation.

The resilient city relies on robustness of all urban processes and participating parties engaged in preservation, reuse and redevelopment of city resources. The new urban-scape recycled from the modernist urban heritage on premises of resilience will present itself as ecosystem, as a living entity composed on interdependent systems and agents. However, achieving these goals in practice is not an easy task and requires rethinking of the common design methods and strategies. The possible image of this resilient healthy city is already emerging with ideas of salutogenic health-care spaces, cohousing models for elderly and young urbanites, vertical villages, urban agriculture and integrative public spaces. Characteristic for all new ideas is their dependency on connectedness and mobility between micro, meso and macro urban levels. In that sense technology integrated in hybrid design models facilitates links between individuals and spaces while overcoming physical distance as an obstacle for integration.

Ultimately, the question is how public health would be redefined and managed within the new urban resilience framework and with already established habits of daily life? In that sense the main role of technology might be to facilitate the affective relations with urban spaces and help with putting forward the people-centered, holistic and socially sensitive public health model and respective design instead of the currently prevailing bureaucratic one. Or, as raised in many instances, the healthy city should not be just livable but loveable one to be resistant to predicaments of the future.

4.6 INNOVATING AT LISBON'S WATERFRONT PLACE, THE "TAGUS PLATFORM" PROJECT

Pedro Ressano Garcia

PhD, Professor, Universidade Lusófona, Lisbon, Portugal

At Lisbon waterfront, the project Tagus Platform presents a holistic perspective in which city and port are seen as part of the same system. It presents a new connection between the city of Lisbon, and the port. The project reshapes the morphology of the surface of the landfill built over the river with a new building.

The project makes use of the place to introduce new technologies merging disciplines that are often presented separately – architecture and public space – Tagus Platform challenges the current convention that public open spaces are located between buildings. Here public space stands over functions working below inside the building structure and reshape the morphology of the landfill surface.

The barrier of railway and/or heavy traffic is central to this project. It succeeds to remove the presence of the barrier and blur its effect with a low budget project. The fruitful dialogue between city and port is oriented to a specific project rather than general urban planning.

The sustainable development of ports cities challenge the present situation and offer a new paradigm with opportunities for both port and city, to successfully negotiate and work towards mutual improvements. New public space at the waterfront adds value to the urban environment when mixed with port related activities. Tagus Platform links both, urban environment and port atmosphere increasing port city's culture. The project brings value to urban life, to port, to city's image, to tourism and mainly, to people who uses, accesses and enjoys new facilities. The creation of new waterfront public spaces increases port city identity and consequently strengthen the public support for the port, the environment and the necessary use of green modes of transportation. The holistic transformation affects the heart of urban life and the idea citizens have of their own port city for tomorrow.



INTRODUCTION



PLACES AND TECHNOLOGIES 2015

KEEPING UP WITH TECHNOLOGIES
TO MAKE HEALTHY PLACES

18 & 19 JUNE 2015 | NOVA GORICA | SLOVENIA

BOOK OF ABSTRACTS





PT2015

TOPIC I: ARCHITECTURE AND HEALTH

50 HEALTHY BUILDINGS: THE ICF CLASSIFICATION AS A DESIGNING TOOL

Alberto Arenghi¹

Assistant Professor of Building Technology, University of Brescia, Via Branze 43 – 25123 Brescia – Italy, alberto.arenghi@unibs.it

Daniele Malgrati

Medical Doctor, San Francesco Clinical Hospital, Via IV Novembre 7 – 24128 Bergamo - Italy, daniele.malgrati@cdcsanfrancesco.it

Michele Scarazzato

Medical Doctor, Domus Salutis Clinical Hospital (Fondazione Teresa Camplani), Via Lazzaretto 3 – 25123 Brescia – Italy, michele.scarazzato@ancelle.it

ABSTRACT

In recent years, the issue of health has been increasingly linked to that of building design and urban planning. In fact, the expressions healthy buildings, healthy cities, healthy architectures and others are more and more recurrent in literature.

There are many and certainly different reasons: medical advances, the spread of the concepts related to sustainability, the studies on the toxicity of building materials, but also negative factors, such as the increase of pollution.

But what concept of health are we considering? How design can affect human health? What operational meaning the expressions above mentioned assume?

We will look for possible answers to the previous introduced questions through an interdisciplinary approach, starting from the etymology of the word “to design” (which in Latin is *pro jacere*, namely “to throw ahead”). If a project has to be intended as the realization of a “being there”, always projected forward, if a project entails the attention one has of himself and of other persons; then a project needs to take care of its surrounding world, and therefore of health.

As a result, health and environment come to be strictly intertwined. In 2001 the WHO proposed the ICF (International Classification of Functioning) offering the world of medical sciences the unique opportunity to interpreting “health” as a condition that affects and relates in a mutual way with social life, also through the environment. Following this perspective, design simply cannot leave aside an extensive analysis of “health”, supported or disadvantaged by the environment (built and not), and we suggest the ICF might become a valid operational tool useful for defining and building healthy and proactive environments.

Keywords: *healthy buildings, health, ICF, active design.*

¹ Corresponding author



TOPIC I: ARCHITECTURE AND HEALTH

THE HEALTH ASPECTS OF SUSTAINABLE ARCHITECTURE

51

Kosara Kujundžić

PhD student at University of Belgrade, Faculty of Architecture; private address: Njegoseva 171, Kotor, Montenegro;
kosarak@gmail.com

ABSTRACT

Sustainable architecture is defined as a careful and responsible artificial environment creation and management leading to the reduction of its negative impact on the natural environment. The sustainable design principles are deeply embedded in nature. The most influential aspects of the natural environment are: climate, land configuration, soil composition and vegetation. Sustainable architecture benefits from all these factors by using sunlight, wind, rain, natural local materials and autochthonous plants in order to provide healthy environment. Furthermore, water, earth, fire and air are the four basic, constitutive cosmic elements. All four are crucial for sustainability and for the health as well. Since the ancient times, the human body is considered to be a result of the combination of these four elements. The issue of health/illness referred to the influence of the environment on us and the balance of these four elements. Likewise, the sustainable architecture is successful only if it achieves the harmony of these four elements creating the artificial environment in synthesis with nature. The quality of the water (potable or surface water) and air (indoor and outdoor) directly reflects on our state of wellbeing. The sense of connection to the earth, "to the roots", gives one a sense of belonging and orientation. The usage of local, natural materials helps in achieving this. The cosmic element of fire relates to our body temperature and life energy, directly affected by sunlight and insolation. Solar energy is also crucial for sustainable architecture as essential way of providing thermal comfort for building occupants.

Keywords: *sustainable architecture, health, water, air, earth, fire.*

52 UNIVERSITY AND DWELLERS' ASSOCIATIONS TOGETHER FOR CREATING SUSTAINABLE AND HEALTHY URBAN ENVIRONMENTS

Lucia Martincigh¹

Professor, Architect, Roma Tre University, Department of Architecture, via Madonna dei Monti 40, Rome, Italy, lucia.martincigh@uniroma3.it

Francesco Bianchi

Professor, Architect, Roma Tre University, Department of Architecture, via Madonna dei Monti 40, Rome, Italy, fbianchi@alice.it

Cecilia De Marinis

PhD, Research Assistant, Architect, Roma Tre University, Department of Architecture, via Madonna dei Monti 40, Rome, Italy, arch.ceciliademarinis@gmail.com

Marina Di Guida

PhD student, Research Assistant, Architect, Roma Tre University, Department of Architecture, via Madonna dei Monti 40, Rome, Italy, marina.diguida@uniroma3.it

Giovanni Perrucci

PhD student, Research Assistant, Architect and Engineer, Roma Tre University, Department of Architecture, via Madonna dei Monti 40, Rome, Italy, giovanni.perrucci@uniroma3.it

ABSTRACT

It is widely proved the need to limit atmospheric pollution in urban areas and control the urban heat island effect, both strongly connected to building characteristics and use. The current challenge is to raise inhabitants' awareness of the actual intervention possibilities that are suitable for increasing the positive interaction of private living space with public urban space, and the coexistence of the exigencies of both those who live in and use them.

This paper presents a work carried out by scientists and students of the Master course in "Eco-sustainable Design", at Roma Tre University, in two consecutive years, in collaboration with an association representing the inhabitants of a historic working-class district in Rome: Testaccio. In some workshops of the master, students applied a specific methodology apt to answer, on the one hand, to the exigencies stated from the inhabitants of social housing blocks built in the twenties of the last century and, on the

¹ Corresponding author



TOPIC I: ARCHITECTURE AND HEALTH

other hand, to improve the buildings energy efficiency, reducing at the same time the negative effects on the public and common spaces, in order to improve their healthiness.

This methodology brings together technicians and inhabitants' delegates, both during the feasibility study and during seminars where various solutions are presented and selected and local politicians, dwellers and students are invited. The identified design proposals, concerning roofing, facades and courtyards, are environmentally conscious and of passive solar type; they focus on the use of natural materials (green roofs and walls, permeable paving) and renewable energies (photovoltaic and geothermal). The central idea of these proposals is the economical and technical feasibility of the interventions.

The whole process, aimed at defining shared targets, spawning initiatives that contribute both to increase the civic sense and to improve life and health conditions, create the preconditions for a real sustainability of the district.

Keywords: *public health, building renovation, energy efficiency, dwellers' association, bioclimatic architecture.*

54 “VERTICAL” CITY

Damjana Lojaničič

Bachelor of Architecture, Faculty of Architecture - University of Belgrade, Boulevard of King Alexander 73/II 11 000 Belgrade, Serbia,
damjana.lojanicic@yahoo.com

ABSTRACT

High-density cities are a regular occurrence today. The growth of urban population will not stop. As the available space is a constant and population is growing and growing, the question of quality of life “in this issue” and whether it is possible to determine the (only) optimum population capacity of given space arises. Cities high population density is forced to use every inch of available land. However, the question is how the given land is to be occupied and with what architecture. One of the consequences of poor design of high-density cities is their spatial congestion. This in itself is not a fact. It is rather an interpretation of space. As a consequence it creates a sense of stress. Spatial congestion is dealt with open public green spaces, whose presence positively impacts on human health. The problem is subjecting the land to a solely “green” purpose. If we look at the volume of a given area (not just the surface), the solution appears in the form of vertical designs. By which it is implied that the greenery and functions should be designed vertically.

The result of “bad” overpopulated city is a large number of cars. If every household owns a car, the produced negative effect is reflected through several aspects: environmental pollution, economically profitable, endangered human health. The negative effects are manifested on the principles of sustainability. We should strive to reduce the need for individual vehicles and actualization of urban public transport, especially cycling and pedestrian movement. Difficulties of realisation of this concept are the fact that these cities are characterized by large distances. Designing vertically the distance lessens, horizontally at least (examples: Singapore, Hong Kong...). “Good” high-density cities are “healthy” cities with a healthy population. Sustainability is no longer recommended, but obligations.

Keywords: *density, vertical, design, health, sustainability.*



TOPIC I: ARCHITECTURE AND HEALTH

HEALTHY WORKPLACE: UTOPIA OR REALITY OF MODERN ARCHITECTURAL DESIGN IN BOSNIA AND HERZEGOVINA 55

Tijana Vujičić¹

PhD student, University of Belgrade, Faculty of Architecture; Senior Teaching Assistant, University of Banja Luka, Faculty of Architecture, Civil Engineering and Geodesy, Stepe Stepanovića 77/III, 78000 Banja Luka, Bosnia and Herzegovina, tvujicic@aggfbl.org

Tanja Trkulja

PhD student, University of Belgrade, Faculty of Architecture; Senior Teaching Assistant, University of Banja Luka, Faculty of Architecture, Civil Engineering and Geodesy, Stepe Stepanovića 77/III, 78000 Banja Luka, Bosnia and Herzegovina, ttrkulja@aggfbl.org

ABSTRACT

Concept of business based on small and medium sized (SMS) enterprises which emphasises profit generation has led to radical degradation of workplaces in Bosnia and Herzegovina (B&H) where human aspect of industrial and business facility design is neglected or ignored. In response to the crisis of system in this field, the paper introduces a concept of a healthy workplace developed by World Health Organization (WHO). Elaborating some aspects of WHO concept, this paper considers human aspect of architectural design of industrial buildings through two examples of small and medium sized enterprises in B&H. Main focus is on the analysis of general organisational patterns of workplaces with the accent on presence and quality of social and service facilities.

Keywords: *healthy workplaces, WHO model, SMS enterprise, B&H.*

¹ Corresponding author

56 SUSTAINABLE DESIGN FOR IMPROVEMENT OF HEALTHY BUILT ENVIRONMENT

Aleksandar Petrovski¹

Assistant, Faculty of Architecture, Ss Cyril and Methodius University, bul Partizanski odredi 24, Skopje, R. of Macedonia,
petrovski.aleksandar@arh.ukim.edu.mk

Ognen Marina

Professor, Faculty of Architecture, Ss Cyril and Methodius University, bul Partizanski odredi 24, Skopje, R. of Macedonia,
ognen.marina@arh.ukim.edu.mk

Georgi Dimkov

Assistant, Faculty of Architecture, Ss Cyril and Methodius University, bul Partizanski odredi 24, Skopje, R. of Macedonia,
georgi_64@hotmail.com

Dimitar Papasterevski

Assistant, Faculty of Architecture, Ss Cyril and Methodius University, bul Partizanski odredi 24, Skopje, R. of Macedonia,
papasterevski@gmail.com

ABSTRACT

Buildings as main consumers of energy and resources are responsible for waste and greenhouse gasses creation for which they have caused serious implications to the environmental and human health. Sustainable architecture considers reasonable resource exploitation and improvement of the built environment, human wellbeing and health. Its implementation in a building's design is a demanding task due to multitude of aspects it grasps.

This paper proposes a design process, tested on a case-study, which integrates the projects participants and determines common indicators on the buildings environmental, social and economic performance. The chosen indicators are of various importance for the buildings design. Thus, for each of them respective weights are determined by the project team. During the design process three alternatives of the case-study are proposed and analysed.

The results have shown that supporting the design process with tools for decision making enables choosing the most sustainable design alternative for creation of a healthy built environment.

Keywords: *sustainable design, design process, health, analytic hierarchy process.*

¹ Corresponding author



TOPIC I: ARCHITECTURE AND HEALTH

HEALTHCARE DESIGN REVISITED – NEW APPROACHES TO USER – CENTRIC, EFFICIENT AND EFFECTIVE DESIGN

57

EXPERIENCES OF MILITARY MEDICAL ACADEMY (MMA) IN BELGRADE - 3 DECADES AFTER ITS FAMOUS DESIGN

Eva Vaništa Lazarević¹

PhD, Professor, University of Belgrade, Faculty of Architecture, Blvd. Kralja Aleksandra 73/II, eva.vanistalazarevic@gmail.com

Jelena Marić

Teaching Assistant, University of Belgrade, Faculty of Architecture, Blvd. Kralja Aleksandra 73/II, jelena.maric1989@yahoo.com

Milena Vukmirović

PhD, Research Associate, University of Belgrade, Faculty of Architecture, Blvd. Kralja Aleksandra 73/II, milena.vukmirovic@urbanlab.org.rs

Goran Radović

PhD, Professor, University of Podgorica, Faculty of Architecture, Blvd. George Washingtona bb, Podgorica, Montenegro, rgoran@ac.me

ABSTRACT

The purpose of this paper is to reflect on the paradigm change and different experiences of using the healthcare design guidelines in the last 3 decades, through the case study of the Belgrade's Military Medical Academy (VMA).

Designed in 1973 after a large national competition, when architects Osojnik and Nikolić won the first prize, an extraordinary leaf shaped volume was raised in 1982 as the biggest healthcare center in former Yugoslavia. The 14-story building is covering 180.000 square meters of space on 21 hectares of land of Belgrade quarter of Banjica, divided in 60 different technical-technological entities. It represents still today one of the landmark and recognizable mega-architectural structure of the City of Belgrade. The most contemporary "state of the art" healthcare design guidelines were incorporated along with the most unusual interior design conceived as an U boat. More than thirty years after, its functional organization has been over passed and needs rethinking and upgrading. Its voluminosity and compactness represent major obstacles that need to be re-thought. This paper

¹ Corresponding author

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- 58 presents an assessment of the healthcare design of the MMA. The paper has two parts. In the first part a specific set of criteria is defined based on theoretical research of strategies and documents, today's healthcare standards and norms. The second part provides a set of analysis through examining 3 types of users: patients, medical staff and experts: architects and engineers. Some conclusions and ideas in form of guidelines for regeneration and improvement will be presented at the end of the paper.

Keywords: *new standards for healthcare design; elements of psychological, physical, functional and aesthetic guidelines for today's healthcare design; user's satisfaction, change of paradigm.*



TOPIC I: ARCHITECTURE AND HEALTH

BUILDING MATERIALS AND HUMAN HEALTH: DESIGNERS' PERSPECTIVE

59

Saja Kosanović¹

PhD, Assistant Professor, Faculty of Technical Sciences, Kneza Miloša 7, 38220 Kosovska Mitrovica, Serbia, saja.kosanovic@pr.ac.rs

Alenka Fikfak

PhD, Assistant Professor, Faculty of Architecture, Zoisova 12, SI-1000 Ljubljana, Slovenia, alenka.fikfak@fa.uni-lj.si

Mirko Grbić

PhD, Assistant Professor, Faculty of Technical Sciences, Kneza Miloša 7, 38220 Kosovska Mitrovica, Serbia, mirko.grbic@pr.ac.rs

ABSTRACT

The materialisation of space has always been an important and challenging aspect of design. The demanding designer's task is additionally compounded in recent times by requirements in terms of achievement of overall satisfactory ecological quality and selection of building materials with acceptable ecological characteristics. By defining and proposing the methodology to studying the impact of building materials on human health from designer's perspective and demonstrating its application to various commonly used material categories, as well as by analysing the specific current conditions in the field, this paper aims to identify possible modes for including the health-related requirements and concerns into designing equation. The study showed that in current situation, characterised by many aggravating factors, the personal knowledge represents the first and the ultimate support on which a designer can rely on. On the basis of this conclusion, the possible ways for knowledge development were elaborated in the paper.

Keywords: health hazards, education, material selection, design.

¹ Corresponding author

60 TOWARDS A NEW UNDERSTANDING OF HEALTHY PLACE

Saja Kosanović¹

PhD Architect, Assistant Professor, Faculty of Technical Sciences, Kneza Miloša 7, 38220 Kosovska Mitrovica, Serbia,
saja.kosanovic@pr.ac.rs

Eva Vaništa Lazarević

PhD Architect, Full Professor, Faculty of Architecture, Bulevar Kralja Aleksandra 73, 11000 Belgrade, Serbia,
eva.vanistalazarevic@gmail.com

Sladjan Timotijević

PhD, Primarius Doctor of Medicine, Clinical Hospital Centre "Bežanijska kosa", Bežanijska kosa, bb, 11080 Belgrade, Serbia,
sladjant@open.telekom.rs

ABSTRACT

By adopting and applying medical approach to health and unhealth conditions, medical definitions and terminology, as well as the research methodology based on logical argumentation, comparative analyses, scientific description and comprehensive literature review, this paper investigates the impact of a place on individual user. In order to achieve the main research aim that is to propose a new understanding of healthy place, several specific objectives were set and fulfilled, such as the identification of determinants of place in regard to health and the identification of types of impact of a place on health potential. It was concluded that a healthy place, in order to be named as such, should at least prevent the occurrence of sickness, while health-promotive and healing places are characterised by additional, upgraded qualities.

Keywords: *health, unhealth, healthy, health-promotive and curative places.*

¹ Corresponding author



TOPIC I: ARCHITECTURE AND HEALTH

ENVIRONMENTAL FEATURES OF BUILDING MATERIALS OF TRADITIONAL OHRID HOUSE AND THEIR CONTRIBUTION TO ITS HUMAN DESIGN

61

Radmila Tomovska

PhD student, Teaching Assistant, Faculty of Architecture, MIT University, Bulevar Treta Makedonska Brigada 69, Skopje, Republic of Macedonia, radmila.tomovska@mit.edu.mk

Ana Radivojević¹

PhD, Associate Professor, Faculty of Architecture, University of Belgrade, Bulevar Kralja Aleksandra 73/II, Belgrade, Serbia, ana@arh.bg.ac.rs

ABSTRACT

Selection of materials for the construction of a house can significantly affect the extent to which it will be characterized as a “healthy home”. Having this in mind, the paper discusses the environmental impact of applied building materials in the case of a traditional Ohrid house which was selected as a representative of vernacular architecture in the Balkan region. Respecting the principle of relying on local resources which is a characteristic of vernacular architecture, materials used for the construction of Ohrid houses are natural, non-toxic, most of them are organic, and none of them causes environmental pollution during the deconstruction, i.e., does not threaten its natural course.

Consideration of the impact of building materials on the environment emphasizes the positive characteristics of selected natural materials as well as sustainable character of building principles of Ohrid masters. The following criteria were analysed: the amount of energy embodied in the particular material; the use of natural materials; locally produced building materials; use of durable materials; level of toxicity; recyclability; waste minimization; reuse of materials and the biodegradability of materials.

The aim of this paper is to point out that the principles of environmentally responsible construction applied on the case of the Ohrid vernacular architecture are timeless guidelines in construction of healthy and sustainable architecture. The established character of being ecologically friendly and healthy which is typical for applied materials on selected examples of vernacular architecture, offers the opportunity for a review of sustainable strategies that are used for several centuries, but still keep their significance in contemporary sustainable practices and environmental design.

Keywords: traditional Ohrid house, natural materials, non-toxic materials, low-embodied-energy materials, biodegradability.

¹ Corresponding author

62 HEALTHY ARCHITECTURE AS A RESULT OF BALANCED INTEGRATION OF ARTIFICIAL AND NATURAL RULES

Dženana Bijedić¹

PhD, Assistant Professor, University of Sarajevo, Faculty of Architecture, Patriotske lige 30, 71000 Sarajevo, Bosnia-Herzegovina, dzenanab@af.unsa.ba

Rada Čahtarević

PhD, Professor, University of Sarajevo, Faculty of Architecture, Patriotske lige 30, 71000 Sarajevo, Bosnia-Herzegovina, radac@af.unsa.ba

Senaida Halilović

PhD candidate, Assistant, University of Sarajevo, Faculty of Architecture, Patriotske lige 30, 71000 Sarajevo, Bosnia-Herzegovina, senidah@af.unsa.ba

ABSTRACT

The processes of formation of the built environment, buildings and supporting infrastructure of human settlements, have a very large impact on all aspects of the system stability of the entire biosphere. Relations between the human activities and the health of biosphere are closely related and increasingly dysfunctional. They are, among other factors, caused by an uncontrollable growth of built places and their disintegration with a natural environment and cultural background. Degradation of natural environment through increased consumption of natural resources is dealing with alienated identity and balance of human life, which inflicts diverse social and economic burdens to the entire human population, thus creating unhealthy living environment.

Architectural places and spaces are very complex, enveloping many different levels in mutual interconnections, from local to global scales. Solutions that could integrate artificial and natural dynamic processes are possible to reach by investigation and integration of different levels of their structural rules. Based on complex, dialectical dynamical loops between abstract and concrete levels, we could assume possible predictions and solutions to noticed problems. These include examining their efficiency and results at the concrete material level including complex dynamical processes of natural environment and life forms, human individual and social groups, alongside with artificial, manmade items and technological infrastructure.

The creation of sustainable human habitats is essential, for not only health, prosperity and well-being of people, but also for the state of the global environment, including all ecosystems and living species. Architectural design should integrate

¹ Corresponding author



TOPIC I: ARCHITECTURE AND HEALTH

abstract conceptualization and planning with unplanned processes, individual participation and complexity of natural environment. All of these measures have aim of providing adaptations required for the change of the current conditions, securing and supporting flexibility and sustainability of healthy human individual on the one hand, and well-being of the entire society on the other.

Keywords: *architecture, artificial and natural, balanced integration, health.*

64 HEALTHY ARCHITECTURE FOR CHILDREN

Julija Aleksić

PhD, Teaching Assistant, Faculty of Technical Sciences, Kneza Miloša 7, 38220 Kosovska Mitrovica, Serbia, julija.aleksic@pr.ac.rs

ABSTRACT

Kindergartens are places where spatial standards and quality of construction are adjusted to the interests of the individual - child and the community. The architecture for little people should be regarded as a city with indoor and outdoor surfaces, as a space which protects them from noise, sun, hail, views, as an ensemble composed of various transparent, multifunctional and affordable circuits. Spatial organization and sensory experiences about the kindergarten influence the physical and psychological development and prepare a child for future life among other people.

In line with the thesis that planning of a healthy environment represents one of the most important issues in provision of good quality of life, this paper explores design standards and concepts of facilities for children as well as their impact on physical, psychological and social growth and health. The analysis aims to define the principles of a healthy temporary care in kindergartens, while the results should open a new debate on the definition of the problem of designing a healthy architecture subordinated to a scale of the child.

Keywords: *kindergartens, healthy childhood, design standards, stimulation space.*



TOPIC I: ARCHITECTURE AND HEALTH

MEDICINE AND ARCHITECTURE IN THE CONTEMPORARY SOCIETY

65

Ilka Čerpes

PhD, Assistant professor, Faculty of Architecture, University in Ljubljana, Zoisova 12, 1000 Ljubljana, Slovenia,
ilka.cerpes@arh.uni-lj.si

ABSTRACT

In the time of crucial changes of human society on all levels and all around the world should architects and doctors play an important role because they both have a historically founded special responsibility to take care about people's safety and health which are the most important values for each individual and for the society as a whole. Despite a very high ranked formal status in everyday life both professions are faced with accelerated process of diminishing their reputation. Further we argue that the erosion of the reputation is a product of shifting the goals in both disciplines: from serving the man to developing themselves as market competitive services. While medicine and architecture are no longer disciplines with public mission people don't trust them anymore and consequently their leading position in contemporary society is disappearing despite enormous improvement of professional knowledge and skills based on development of new technologies. The history of 20th - Century architecture and city planning shows how destructive can be unlimited faith in power of technology. The leading personality of that period called Modern movement was Swiss-French architect and urban planner Le Corbusier. As an example of glorifying technology on account of human welfare we represent some of his famous ideas how to implement technology in building design which have great impact on architectural theory and praxis still today. One of the cities built in accordance to Le Corbusier's visions is also Nova Gorica. Nowadays the city seems still unfinished with underdeveloped public space and some social and health problems which are not to underestimate. Among others is Nova Gorica on the fourth place of all cities in Slovenia with highest rate of criminal offense connected to drugs.

At the end we conclude that the responsibility of both professions in the time of new sustainable paradigm which promote healthy and inclusive cities must be change of actual professional praxis on the way that the technology would help us to bring people in the centre of our interests again.

Keywords: *architecture, medicine, profession, technology, public mission.*

66 MARGINALISATION OF LOCAL COMMUNITIES ALONG THE STRAIT OF SINGAPORE

Magnus Nickl¹

MSc Arch ETH, TU Berlin, Architecture for Health, Technical University Berlin, Sekretariat A 42 , Straße des 17. Juni 152, 10623 Berlin, mnickl@student.ethz.ch

Verena Stecher

MSc Arch ETH, LSE City Design and Social Science; LSE Cities, The London School of Economics, Houghton Street, London WC2A 2AE, United Kingdom, V.Stecher@lse.ac.uk

ABSTRACT

The Strait of Singapore represents one of the world's most important shipping corridors and its adjacent coastlines in Indonesia, Malaysia and Singapore are increasingly taken over by water-related infrastructure serving global trade. Hence, urban development is being pushed inwards and the traditional relation of the region's inhabitants with the surrounding water space is being significantly impaired.

A rigid border system that criss-crosses the sea has been set in place to facilitate global trade while coexisting local layers of utilisation have been neglected and are increasingly being obliterated. Vernacular settlement structures, so called Kampongs, traditional fishing grounds and natural habitats are under constant threat of being marginalized by current trends of displacement and are increasingly being pushed back from the narrow waterway forming disconnected archipelagos in more quiet zones.

In order to counteract, public awareness of the remaining elements of cultural and natural importance needs to be raised. At the same time, social viability of local communities must be promoted through the enhancement of supporting infrastructures and a sustained environmental protection.

Keywords: *strait of Singapore, kampongs, urban development, social viability.*

¹ Corresponding author



TOPIC I: ARCHITECTURE AND HEALTH

THE SCALE OF ACUTE CARE HOSPITALS IN SERBIA - THE NEED FOR RETHINKING

67

Marko Matejić

PhD student, University of Belgrade – Faculty of Architecture, Bulevar kralja Aleksandra 73/2, marko.t.matejic@gmail.com

ABSTRACT

Results, discussion and conclusions presented here are the integral part of wider research at PhD studies at University of Belgrade - Faculty of Architecture. The subject and problem of this wider research is the strategic reconfiguration of architectural-urban patterns of acute care hospitals. Strategic reconfiguration is a model of development of healthcare infrastructure based on previous detailed analysis of existing hospital infrastructure resources, concepts of welfare promoted in existing healthcare and spatial development strategies at the national level in Serbia and the international level, as well as the concepts of contemporary planning and design of hospitals. The hospital capacity planning is a major element in the overall process of planning the healthcare system resources. In the previous decades the important question in hospital planning was the need for downsizing by reducing the number of hospital beds, alongside with reconfiguration of overall hospital capacities, hospital organisational and functional structure, as well as reconfiguration of hospital physical component - infrastructure. These are all elements of discussion which question what is the optimal scale of acute care hospitals. International discussion especially stresses the oversized hospital sector as one of the inherited characteristics from socialist period and one of the major challenges for healthcare reforms in post-socialist countries. The significance of this problem has not produced a large number of studies, in contrary, as far as this research goes, there are no researches analyzing what would be the optimal hospital scale in Serbia. The ambition of this paper is not to define the optimal hospital scale. Rather, the ambition is more modest - to analyze the existing hospital scale in Serbia, making questions and creating the platform for other researchers with similar or different knowledge to research this problem further, which would be of great significance for the future planning and development of currently devastated and inadequate hospital infrastructure in Serbia.

Keywords: *Serbia, acute care hospital, hospital planning, hospital scale and configuration.*

68 ARCHITECTURE AND HEALTHY LIVING SPACE

Goran Radović

PhD, Professor, University of Montenegro, Faculty of Architecture, Džordža Vašingtona b.b., Podgorica, Montenegro,
goran.radovic@ac.me

ABSTRACT

Since the very beginning of their life on Earth, people have been aware of their need to organize their living space. As early as in Neolithic period, people populated naturally protected spaces that were selected according the capacity to provide safety, ventilation and better heating which, at those times, were the conditions for a suitable place to live. That primordial need of a man to create a safe and healthy space has always been his ever-lasting basic need. To ensure a healthy living space it will be interesting to consider traditional ways of house placement and its orientation with respect to the sun and wind. In addition, a healthy terrain for house construction makes an important component. The selection of materials for house construction is the next important component for building a house as habitable space. Centuries-long human experience in the use of natural materials has proved that such materials are the healthiest for habitable space construction. The development of technology in 20 century has introduced many new artificial materials which have not stood the test of time. Some of the materials that were used in the past today are considered a health hazard, whereas some of them have high radiation levels. The application of unsuitable materials for the construction of houses in the second half of 20 century resulted in the term „Sick Building Syndrome“ in which people showed the same symptoms of illness. In view of that fact, today, many types of houses are constructed by using solely natural materials. These are: eco houses, eco hotels, ecotourist settlements etc. In addition, the use of natural energy resources, such as sun, wind, ground waters and the like are the main topics the humanity deals with today by improving technology for using these resources to build a healthy space for people.

Keywords: *healthy dwelling, architecture, materials, natur.*





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TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE



70 DEVELOPMENT DIRECTIONS OF URBAN STRUCTURE THROUGH REGISTRATION OF CHANGES OF SEGMENTS OF URBAN COMPLEX

Velimir Stojanović

PhD, Assistant Professor, University of Pristina in Kosovska Mitrovica, Faculty of Technical Sciences, Kneza Milosa No. 7, 38220 Kosovska Mitrovica, Serbia, velimir.stojanovic@pr.ac.rs

ABSTRACT

Urban structure is dynamic, unpredictable and uncompleted system which is, in spite of this, determined and recognizable at a given time – space moment. It has a characteristic to be used again but also to create completely new contents which apparently have no relations with the previous ones. The rules and laws of behaviour of complex assembly of the city have always been the essence of urban theory and practice. The final goal to subject to the order and predictable behaviour the urban structure, system and organization was never achieved because the arranged structure is disrupted by the new construction. That paradox is based on the fact that the law creates structure and the structure creates the law. The city is still perceived as a disrupted system where there is no order of events and where the future advancement cannot find the sustainable relationship with the past. The procedures of systematic theoretical process of urban planning correspond to the well defined systems, with the real city obviously not being that. The solution can be found in the development of urban computer expert systems based on the databases, synthesizing of urban ideas and methods of search in the depth, taken over from the theory of communication. This requests the access to the city as an urban complex divided into segment from which we would, by permanent analysis, obtain data which were until now hardly noticeable and which could not be followed clearly and in detail. The aim is the segment of urban complex as complicated but comprehensive category on the level of requested law and rules which leads to the appropriate quality of the city life.

Keywords: *structure, segment, development, rule, analysis.*



TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE

THE TRANSFORMATION OF THE SQUARE CARICA MILICA IN NOVI SAD (SERBIA)

71

Ivana Sentić¹

MSc, Teaching Assistant, Faculty of Agriculture, University in Novi Sad, Trg Dositeja Obradovića 8, e-mail ivanab@polj.uns.ac.rs

Ksenija Hiel

PhD, Assistant Professor, Faculty of Agriculture, University in Novi Sad, Trg Dositeja Obradovića 8, e-mail ksenija.hiel@gmail.com

ABSTRACT

Square represents one of the most important and oldest forms of urban public spaces. History emphasizes the great importance of squares. They were an essential element of the urban environment in the performance of the public life of the residents; places of mass holiday's gathering and assemblies; places of diverse cultural activities, trade, etc. In the past, the dominant feature of squares in Vojvodina, in Serbia, was development of various forms of socialization. However, at the beginning of the twentieth century there was modification in the ratio of the functional interpretation of the central town squares, by placing the road and rail traffic as integral part of the surface area. During this period, most of the squares were turned into the traffic roads, roundabouts and parking spaces. This image followed many of squares in the city of Novi Sad. One of them was the Square of carica Milica. In former period, the Square of carica Milica was located in front of the building „Dom železničara“ („Railway home“), today's Health centre. The first urban transformation, the square received in the last century at the end of the seventies, when the construction of the street Maksim Gorki started. The square lost a part of its surface, which was landscape arranged. Finally its identity as square was lost in early eighties, when the sport business centre SPENS was built up. The square got its new purpose, namely it became a parking space. The study in this paper is based on an analysis of the transformation of the existing urban form, transport elements and elements of landscape architecture, as well as on the impact of this transformation to the existing design space. The results showed low level of ambient values, and design of the space that does not meet criteria of squares in general.

Keywords: square, urban transformation, ambient values.

1 Corresponding author

72 VARESE LIGURE: AN ITALIAN RURAL MUNICIPALITY WHICH HAS IMPLEMENTED AN EXEMPLARY MODEL OF SUSTAINABLE DEVELOPMENT

Giovanni Sergi¹

Contract professor of Town Planning, DSA Polytechnic School - Genoa University, home and office strada del Cavallo 81 60019 Senigallia AN Italy, sergi.giovanni.pietro@gmail.com

Carlo Berio

Architect, Architectural and Town Planning Firm, distacco piazza Marsala 4/2 Genoa Italy, segreteria@studioberio.it

Giulia Canton

Junior Architect, via Piave 16 /1, 16040 Orero GE Italy, giulia_canton@yahoo.it

Giacomo Crovo

Junior Architect, piazza Roma 32/1, 16043 Chiavari GE Italy, giacomo.crovo@alice.it

ABSTRACT

The Municipality of Varese Ligure is located in Liguria with a territorial surface of 137 square kilometres and 2,091 inhabitants in 2013. Since the beginning of the 90s it has started a sustainable economic development and urban planning policy which has allowed to reach long-lasting goals as well as several acknowledgements at international level.

During the drafting of the new Master Plan in 1994 the Municipal Administration decided to give up a development programme focused on the protection and promotion of its environmental resources which cover one of the widest municipal areas in Liguria region and on a selected tourism.

The main results of this policy have been the following: stop of depopulation, independency through renewable energy, 1,800 ha of certified organic agriculture, the number of tourists has increased by three times, 140 new jobs, reduction of waste.

The sustainable economic development programme by the Municipal Administration is based on the support of certified organic agriculture and livestock farming, production of electricity without CO2 emissions. This production of clean energy takes place in a wind farm equipped with four wind turbines that produces 7 GWh/year, through the production of energy based on photovoltaic/solar systems and a hydroelectric plant built in 2006, which has produced 5 kWh/year. The production of electricity through biomasses is currently studied because of the rich forest heritage in the area.

¹ Corresponding author

TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE

Varese Ligure has been one of the first Municipalities in Europe to obtain the environmental certification Iso 14001. Moreover, it has been received an award in Berlin in 2004 as the most virtuous rural Municipality in Europe. It has obtained the European Energy Awards and in Italy, the WWF has acknowledged the implementation of a sustainable development model.

73

Keywords: *rural municipality, sustainable development model, production of electricity from renewable sources, certified organic agriculture, Master plan.*

74 CYBERPARKS CHALLENGES - NEW DIGITAL MEDIA FOR ATTRACTIVE URBAN OPEN SPACES

Ina Šuklje Erjavec¹MSc, landscape architecture, Urbanistični inštitut Republike Slovenije, Trnovski pristan 2, Ljubljana, Slovenija,
ina.suklje-erjavec@uirs.si

Carlos Smaniotto Costa

PhD, landscape architecture, Department of Urban Planning, Universidade Lusófona de Humanidades e Tecnologias, Lisbon,
Portugal, smaniotto.costa@ulusofona.pt**ABSTRACT**

In this paper we discuss how new digital media technologies (smart phones, tablets, Wi-Fi connections) are changing habits, expectations and motivations of urban open space users, why and how ICT development is challenging urban open space designers and vice versa, how new research, planning, and design approaches may challenge the future development of information and communication technologies. Presented information is based on first knowledge and experiences exchanges carried out within the European COST Action Project CyberParks (www.cost.eu/domains_actions/tud/Actions/TU1306) which provides a forum for cross-sector working with researchers, urban designers & developers, ICT experts, urban anthropologists and sociologists, creative industries experts and others, from 28 countries. The leading issue of CyberParks is how to use ICT to transform our cities into more human environment, rather than just more high-tech and to understand that “smartness” should be people friendly. Through the structure of the project work the importance of a comprehensive and trans-disciplinary development is introduced and justified. With examples from different cities key questions are discussed, such as: What are the aspects of quality and attractiveness of urban public space and what kind of added values and functions could new technologies provide? How could we use new ICT to enhance our understanding on the uses and users of urban public spaces?

Keywords: mobile technology & urban open space, public space users, multidisciplinary approach, people friendly cities, CyberParks project.

¹ Corresponding author



TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE

MEDIA ARCHITECTURE AND SUSTAINABLE ENVIRONMENT

75

Jasna Čikić-Tovarović¹

PhD, Assistant Professor, University of Belgrade, Faculty of Architecture, Belgrade, Bulevar kralja Aleksandra 73/II, Serbia, cikic.tovarovic@gmail.com

Jelena Ivanović-Šekularac

PhD, Associate Professor, University of Belgrade, Faculty of Architecture, Belgrade, Bulevar kralja Aleksandra 73/II, Serbia, jelenais@orion.rs

Nenad Šekularac

PhD, Associate Professor, University of Belgrade, Faculty of Architecture, Belgrade, Bulevar kralja Aleksandra 73/II, Serbia, nseki@orion.rs

ABSTRACT

Being the integral part of a building, street or infrastructure, media contents shape the appearance of modern cities and affect the way their inhabitants act. The objective of this paper is to analyze the forms of communication that make the media contents useful. The communication between mediafacades and their environment is achieved by applying various sources of artificial light and mechanical systems. There are numerous advantages regarding media facades and their impact on certain buildings, city areas and regions. However, these façades are regarded to be the result of great technological achievements in the field of architecture and other spheres; therefore, certain problems are inevitably come across. This paper deals with the challenges in the media architecture and its interaction with cities and people as well as the users of media objects. Sustainability, visual and light comfort, visual and light pollution in cities, exaggerated importance ascribed to the perception of information technologies and architectural marketing focused on 'healthy life in cities' are some of the topics included in this paper. One of the significant aspects that is to be considered carefully is appropriate 'positioning' of media contents within a city, since there is a potential problem of excessive application of media contents in urban environment. This paper explores the ways in which everyday functioning in a city (noise, street lights, etc.) can affect the audio-visual qualities of media facades. Also, this work presents the methods of integrating the principles of sustainable architecture in the field of media architecture. Whenever it is possible, the principle of energy efficiency should be included in media-architecture design of new structures and remodeling of some old structures. Environmentally-aware development and reductions in energy consumption are the most important goals to be achieved in the field of media façade designs, regarding the phases of construction and media structures.

Keywords: *media architecture, media facades, light pollution, healthy places.*

¹ Corresponding author

76 IMPLEMENTATION OF NORWEGIAN EXPERIENCE TO SLOVENIAN HOSPITAL SECTOR

Alenka Temeljotov-Salaj¹

PhD, Associate Professor, Evropska pravna fakulteta, Slovenia, alenka.temeljotov-salaj@evro-pf.si

Svein Bjoerberg

Professor, Norwegian University for Science and Technology, Multiconsult Norway, svein.bjorberg@ntnu.no

Simon Vrhunec

General director, University Medical Centre, Ljubljana Slovenia, simon.vrhunec@kclj.si

Andrej Baričič

PhD, Senior Lecturer, Evropska pravna fakulteta, Slovenia, andrej.baricic@siol.net

ABSTRACT

In Slovenia, as in all nations, the specialist health care services represent the most costly of public sectors. Due to rapid changes in health treatment caused by development within technical and medical equipment, new organizational models etc, it is an increasing demand for development of competence and a clear role of Facility Management (FM), as well as a need to upgrade the hospital buildings portfolio. Effective management and transformation of the building portfolio in line with the development of the health care services is necessary.

In Norway a method of assessing buildings performance is developed and used on approximately 30 mill sqm of public buildings. The main objective of looking into the experiences from Norway is to see if it is possible to implement similar methods in Slovenian health sector. This could contribute to a more cost effective resource allocation in building portfolio management and FM, as well as further development of theories, development of innovative and efficient methods and tools to support strategic planning and strategic FM.

Methods used are literature review, workshops and presentation of case studies where quantitative methods have been used.

Based on these preliminary studies and discussions it seems possible to implement the experiences from Norway regarding innovative methods and tools for strategic property analyses and building evaluation in Slovenian health sector. If correct, this will result in a good understanding of the buildings' viability, with a main focus on sustainability, usability and adaptability. Implementing the Norwegian tool 'MultiMap' into Slovenian hospital environment will give an overview of the performance of the

¹ Corresponding author



TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE

building portfolio regarding technical condition, usability and adaptability. This information, together with future demands in health care, will give the platform for further strategic planning of future needs.

77

Keywords: *health sector, facility management, hospital, Norway, Slovenia.*

78 TOWARDS OPEN, THERMODYNAMIC CITY P&T 2015

Marija Bojović¹

PhD student, Teaching Assistant, University of Montenegro, Faculty of Architecture, bul.DžordžaVašingtona bb, 81000 Podgorica, Montenegro, trashandvaudeville@gmail.com

Irena Rajković

PhD student, Teaching Assistant, University of Montenegro, Faculty of Architecture, bul.DžordžaVašingtona bb, 81000 Podgorica, Montenegro, irena_arhi@yahoo.com

Sanja Paunović Žarić

PhD student, Teaching Assistant, University of Montenegro, Faculty of Architecture, bul.DžordžaVašingtona bb, 81000 Podgorica, Montenegro, paunovicsanja@gmail.com

ABSTRACT

Today, the space and the city represent valid resources for profit accumulation. Capitalism and its representatives have dominantly impoverished all the complexity of space, bringing it down to the market goods - measured by the market and not utility value. The cities are now experiencing fatal outcome of profit-driven management.

The resource scarcity became evident at the end of the 20th century and it required optimization measures. Alarming climatic and demographic changes, fast economic cycles, and the profit-driven consumer society management require new solutions which would result with resilient cities, capable of surviving disturbing global transformations. Therefore it is necessary that 21st century urban planning reaches fundamental reform.

This paper argues necessity of the improved science of the city, which would consider the urban phenomenon in total, instead of limiting itself to particular, local studies. The city is complex, dynamic, self-adaptive entity. From a thermodynamic perspective, it represents open system, in constant exchange with its environment.

The primary objective of the following paper is to apply the logic of natural sciences and the theory of open systems in particular to the city, in order to try to define general framework for better understanding cities and their metabolism. The paper suggests possible pathways for achieving different, more sustainable, urban planning, which would eventually ensure better future of our cities and society in general.

Keywords: *city, open system, sustainable urban planning, thermodynamics.*

¹ Corresponding author



TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE

INTERWEAVING OF BANJALUKA'S URBAN AND RURAL LANDSCAPES

79

Dijana Simonović

PhD, Assistant Professor, Faculty of Architecture, Civil Engineering and Geodesy, University of Banja Luka; S. Stepanovića 77/3, Banja Luka, Republic of Srpska, Bosnia and Herzegovina, dsimonovic@aggfbl.org

ABSTRACT

This paper points out the changes observed in the rural surroundings of Banja Luka City (Republic of Srpska, Bosnia and Herzegovina), recognised as a form of 'spillover' of concrete features of place identity to the spatial identity of the adjacent villages, from urban to rural areas. Manifestations of these changes are 'readable' in the rural landscape encompassing the City of Banja Luka. The paper also considers a different type of change in the city suburbs, which has taken place through the territorial linkage of the city with the adjacent places, to form new linear urban-rural conurbations. It explores the underlying causes of these changes and research opportunities for rehabilitation and improvement of spatial identity through landscape regulation. Also examined are the effects on the landscape produced over the past twenty years and how they relate to the applied regulation strategies, as well as their impact on spatial identity, both rural and urban.

Keywords: *urban landscape, rural surroundings, urban-rural continuum, place identity, regulation strategies.*

80 AN APPLICATION OF THE “ENVIRONMENTAL ISLAND”: A PRESCRIPTIVE TOOL TO CREATE HEALTHIER URBAN ENVIRONMENTS

Lucia Martincigh¹

Professor, Architect, Department of Architecture, Roma Tre University, via Madonna dei Monti 40, Rome, Italy,
lucia.martincigh@uniroma3.it

Cecilia De Marinis

PhD, Research Assistant, Architect, Department of Architecture, Roma Tre University, via Madonna dei Monti 40, Rome, Italy,
arch.ceciliademarinis@gmail.com

Janet Hetman

PhD, Research Assistant, Architect, Department of Architecture, Roma Tre University, via Madonna dei Monti 40, Rome, Italy,
janet.hetman@uniroma3.it

ABSTRACT

The Department of Architecture of Roma Tre University and Piattaforma Testaccio, a group of inhabitant and stakeholder associations, both based in the same district: Testaccio, cooperate since 2013 in order to enhance its urban environment and quality of life. The main issue of this collaboration has been a study on the possibility of implementing a prescriptive tool applicable in residential areas: the “Environmental Island”, aimed at improving both sustainability and liveability of urban spaces. The students of the course “City & Environment”, together with their teaching staff, were called to identify problems and propose solutions, considering also the inhabitants’ expectations presented by the associations. It is important to underline that in this case the designers are also users, frequenting daily the area. Testaccio is a historical district characterized by an elderly population, due both to the aging phenomenon and the permanence of the early families.

To keep people in good health and decrease their stress, the World Health Organization recommends 30 minutes of walking per day and specific limits for acoustic levels, considering that in big cities noise is an important cause of stress as much as chaotic traffic. To keep older people mobile, it is important to create an urban environment that facilitates their walking, is comfortable and is not threatened by the heat island effect.

The analyses, run according to European methodologies, highlighted the areas with the highest level of air and noise pollution, mainly caused by vehicular through traffic but also by some night traffic, due to the presence of many activities.

¹ Corresponding author



TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE

Possible actions were identified in order to reduce traffic, noise and air pollution, featuring, on the one hand, the redesign of traffic patterns and streets, on the other hand, some technological devices reducing both particulate and noise.

8|

Keywords: *healthy places, environmental island, air and noise pollution, heat island, urban design.*

82 DEVELOPMENT OF PUBLIC SQUARES IN NORTH WESTERN EUROPEAN CITY CENTRES

Bob Giddings¹

PhD, Professor, Chair of Architecture and Urban Design, Department of Architecture and the Built Environment, Northumbria University, Ellison Building, Ellison Place, Newcastle upon Tyne, NE1 8ST, UK, bob.giddings@northumbria.ac.uk

James Charlton

PhD, Lecturer, Department of Architecture and the Built Environment, Northumbria University, Ellison Building, Ellison Place, Newcastle upon Tyne, NE1 8ST, UK, j.charlton@northumbria.ac.uk

ABSTRACT

Ever since cities became developed, public space has been a contested realm. As the 20th Century progressed, privatisation exacerbated this situation. As an urban form, squares had been at the apex of the public space hierarchy but as their traditional uses declined, city managements started to debate their purpose. As vehicles in cities increased, many just became car parks while others looked abandoned and unloved. Private enterprise was offering indoor shopping malls and entertainment venues, and local authorities were content to hand over large areas of their city centres for these developments. However, democratic communities need urban public space, if only as places of assembly that are not controlled by private interests. Fortunately, by the beginning of the 21st Century, central governments started to realise that cities were for people and not motor cars, and poor air quality due to exhaust fumes was particularly highlighted. The new policy was to return the city centre to the pedestrian. In the latter part of the 20th Century, the research for this paper, focussed on locational and geometric criteria for what appeared to be successful squares. However, the only way to test them was to actually build a square, but local authorities pointed to the potential lack of use and adverse climates. In 2008, work started on computer simulation of microclimates and pedestrian movement, which demonstrated that comfortable and useful squares could be created. Initially, it was intended to produce a design tool for practitioners, but the enormous computer power needed to run the software rendered this approach impractical. Research is now underway to combine the virtual city model and building information modelling to produce layers of data on the Newcastle City Model that will enable proposals for designs of buildings and spaces to be tested in terms of their effects on microclimate and pedestrian movement patterns.

Keywords: *urban public space, squares, microclimate, software.*

¹ Corresponding author



TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE

MUSIC AND SOUND AS A TOOL INTO DESIGNING HEALTHIER ENVIRONMENT

83

Anja Kostanjšak¹

PhD student, University of Zagreb, Faculty of Architecture, Kačićeva 26, 10000 Zagreb, anja.kostanjsak@gmail.com

Morana Pap

PhD student, University of Zagreb, Faculty of Architecture, Kačićeva 26, 10000 Zagreb, morana.pap@arhitekt.hr

Tena Lazarević

Master student, Studio for Immediate Spaces, Sandberg Instituut, Fred. Roeskestraat 98, 1076 ED Amsterdam, contact@tenalazarevic.net

ABSTRACT

Music reaches us, it touches us to the heart. To understand music, oneself should understand space, because without space, there is no sound, therefore no music, at least not as we perceive it.

In dependence of the surface, sound wave collides and reverberates from it, giving us more information than just sound itself. By the way sound echoes in the space we perceive it as cold, cosy, spacious, narrow, etc., and in that way it makes an impression on our subconscious level. We can feel anxious, happy, fearful, or even irritable.

It is well known that music may improve quality of life and wellbeing, but also has different effects on body functions, such as increase or decrease of heart rate, its variability. Music emphasis and rhythmic phrases can be tracked consistently by physiological variables.

In dependence of oneself and his belonging lifestyle, different sounds and music have different effect on individual wellbeing. Our brain autonomic responses (ABR) are synchronized with sounds and music surrounding us. Following the sound piece our brain corresponds within the changes inside the piece itself, and by the way sound travels through architectural space it enhances its experiences on perceiver.

Mental and physical wellbeing is affected by the places in which we live, work and play. We have to design spaces for all senses and be aware of new digital age in which we are living and presence of new available technologies. This technologies can be an add-on in design process and existing architecture. Our aim is to make architects become aware of influence of sound in the space they are designing, and its impact on health and wellbeing of beneficiary, and also on procreation of healthy environment.

Can architecture be a living organism, which changes following the atmosphere around beneficiary and sounds surrounding them?

Keywords: sound, healthy environment, new technologies, hearer, ABR (autonomic brain responses).

¹ Corresponding author

84 UNFOLDING THE URBAN FRAGMENTS: WALKING/RUNNING THE CITY

Sasa Tasic¹

M.Sc. Assistant Professor, Ss. Cyril and Methodius University, Faculty of Architecture, Skopje, sasatasic@gmail.com

Mitko Hadzi Pulja

Dr. Professor, Ss. Cyril and Methodius University, Faculty of Architecture, Skopje, mitkohadzipulja@gmail.com

Minas Bakalchev

Dr. Professor, Ss. Cyril and Methodius University, Faculty of Architecture, Skopje, minasbakalcev@gmail.com

ABSTRACT

The city is a living process and a physical artefact. However, contemporary cities are increasingly conceived and imagined as variable programmatic compositions and decreasingly as material artefacts. The physical structure of the city is undergoing a crisis. But, it is exactly the physical texture of the city that contains records of different uses and represents not only a historic-cultural artefact, but also a tool that has the potential to make the city a healthy supportive environment. So, former parts of the city which are presently its marginal zones are not only worthless/obsolete museum pieces, but also potential traces for a new way of conceiving the city and acting in the city. The modern narration starts from the city as a contradiction to nature. This concept still holds today. We are living in the city texture, but we are relaxing ourselves (walking, running) along the periphery or in empty and “green zones” of the city. Cities have become unsustainable hybrid polarized places: on one hand, we are increasing the development density; while on the other hand, we are widening the free zones. This paper will deal with the inner capacities of the city, its physical traces, and remaining fragments from the aspect of contemporary use in maintenance of the psychophysical condition of the contemporary citizens. The physical structure of the urban fragments is seen as a tool, entity, product of complex social and physical processes that brings numerous values particularly in respect to the most important strategic issues – public health. In the case of the urban fragments of the Skopje city, through morphological decomposition, we will explore the potentials of the different spatial systems of the city as healthy places.

Keywords: *Urban fragment, physical structure, spatial practice, running, walking.*

¹ Corresponding author



TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE

DESIGNING PARKING STRUCTURES IN SERVICE OF PUBLIC HEALTH

85

Tanja Trkulja¹

PhD student, University of Belgrade Faculty of Architecture; Senior Teaching Assistant, University of Banja Luka, Faculty of Architecture, Civil Engineering and Geodesy, Stepe Stepanovića 77/III, 78000 Banja Luka, Bosnia and Herzegovina, ttrkulja@aggfbl.org

Tijana Vujičić

PhD student, University of Belgrade Faculty of Architecture; Senior Teaching Assistant, University of Banja Luka, Faculty of Architecture, Civil Engineering and Geodesy, Stepe Stepanovića 77/III, 78000 Banja Luka, Bosnia and Herzegovina, tvujicic@aggfbl.org

ABSTRACT

Urban places and urban planning and architectural designing processes, which are influencing their forming process, are progressively taking part in defining of the public health level. Therefore, the context and characteristics of built and social environments, which are considered to be the key initiators of public well-being processes and not just their background, could be seen as central features of public health. It is evident that parking in the city invades the public space and its planning should be regulated by a parking distribution policy that would take improvement of public health and quality of life into account. However, in the absence of such policy, it is necessary to deliberate architectural and urban forms for modeling of public parking garages and associated facilities, i.e. to reflect on the relationship between parking areas and public open spaces. Therefore, this article explores urbanism and architectural models for development of parking zones on example of a parking lot located within the Banja Luka city (Bosnia and Herzegovina) central zone, which include organization of public city spaces at similar locations. The main goal is improvement of parking zones in terms of creating public spaces of higher quality. In that way parking zones would develop into public urban spaces that would improve the level of public health and quality of life.

Keywords: *parking structure, public open places, public health, social interaction.*

1 Corresponding author

86 DESIGNING THE WORKING ENVIRONMENT WHEN PLANNING BUSINESS ZONES

Gregor Čok

PhD, Assistant, University of Ljubljana, Faculty of Architecture, Zoisova 12, SI-1000 Ljubljana, Slovenia, gregor.cok@fa.uni-lj.si

ABSTRACT

In the past twenty years, within the framework of stimulating economic development, Slovenia formed numerous Business zones which guaranteed spatial condition for organizing modern entrepreneurship. Their planning principally went in two directions, firstly by modifying traditional small business and industrial parks, and other economic areas, and secondly by forming new zones in new locations. In both cases the managers of the zones – by forming and selling internal plots of land and buildings – predominantly followed the economic effects of the real estate investments.

With the purpose of guaranteeing the right conditions for placing a broad spectrum of economic entities in those zones, very flexible conditions were defined regarding the programme and spatial design of individual buildings. The regulation criteria for urban design and architectural solutions, and consequentially the conditions for forming the working environment as a complex visual and psychophysical environment, were reduced to a minimum in accordance with the applicable spatial legislation. The environments formed that way are not stimulating – not visually, organisationally, or programme wise – and do not contribute to the general productivity of employees. The overall appeal of the zone as a whole is reduced and does not attract new entrepreneurs.

By using a suitable alternative approach which includes planning the zone in a broader sense and stresses individual structural elements of the zone (internal public space, natural light in the work environment, green elements, programme diversity, quality building design etc.), it is possible to influence the psychophysical mood of the employees and consequentially increase their productivity. A quality designed Business zone (in all the parameters) has a greater economic effect, and its offer can be competitive in the current international market.

Keywords: *working environment, business zones, regulation criteria, quality design.*



TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE

FOUR PARADIGMS FOR THE VENETO REGION'S CENTRAL AREA

87

Enrico Anguillari

PhD, Architect, Venice-Italy, enrico.anguillari@gmail.com

ABSTRACT

Recent literature on the crisis that cities and territories are undergoing is rapidly on the rise, in reference to issues such as hydro-geological calamities, a “weariness of living”, the arrest of economic growth and social inequalities. This paper presents some of the current thinking on the central area of the Veneto Region. It focuses on the themes, issues, and spatial planning strategies that are useful to the construction of a possible “urban agenda” aimed at expanding prospects, in fields of planning and socially, on the future of the city-territory; and it questions some of the subject’s commonly accepted axioms.

Keywords: *urban sprawl, city-territory, isotropy, recycle, social cohesion.*

88 MUNICIPALITY POLICY AS KEY FACTOR FOR THE ROLE OF ARCHITECTURE AND TECHNOLOGY IN PUBLIC HEALTH

Dejan Vasović¹

PhD candidate, Assistant, University of Belgrade Faculty of Architecture, Bul. kralja Aleksandra 73/II, Belgrade, Serbia,
d.vasovic@arh.bg.ac.rs

Nataša Ćuković Ignjatović

PhD candidate, Assistant Professor, University of Belgrade Faculty of Architecture, Bul. kralja Aleksandra 73/II, Belgrade, Serbia,
natasa@arh.bg.ac.rs

Dušan Ignjatović

PhD candidate, Assistant Professor, University of Belgrade Faculty of Architecture, Bul. kralja Aleksandra 73/II, Belgrade, Serbia,
ignjatovic.dusan@arh.bg.ac.rs

ABSTRACT

The construction of the so-called “social infrastructure” (kindergartens, schools, health centres, hospitals), which is the basis for a “public health” in a broader sense, in many countries is led by the administration (state and municipal). The quality of the built environment largely depends on the quality of financier, in this case embodied in some kind of state/municipal authorities, committees and civil servants. In this paper, an example of the application of up to date high-tech design methods and technologies in the design and construction of public buildings is presented. Belgrade public buildings designed and constructed in the period 2009 – 2013, is shown. The first five projects for construction of energy efficient kindergartens (up to passive house standard) with the use of renewable energy sources and realised through architectural competition, were considered as a passing fad, but such a practice has become standard procedure for the design of the other public buildings, and even the only option for the construction project of 1400 social apartments in Borča. The paper presents these projects, and, in particular, highlights the necessary processes and procedures established to ensure that these projects would be implemented.

Keywords: *municipality policy, energy efficiency, architectural competition, healthy places.*

¹ Corresponding author



TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE

INDUSTRIAL HERITAGE IN ALBANIA AND THE OPPORTUNITIES FOR REGENERATION AND ADAPTIVE RE-USE 89

Florian Nepravishta

PhD, Associate Professor, Polytechnic University of Tirana, Faculty of Architecture and Urbanism, Albania,
florian.nepravishta@fau.edu.al

ABSTRACT

The industry as one of the sectors of economic development in Albania has been one of the main engines of growth in the period of communism. After the 1990s, industrial areas suffered major structural changes that were associated with the closure of many economic activities especially the industries that failed to resist to the new market economy. Inappropriate industrialization caused many environmental problems. Abandoned industrial heritage areas have been transformed into centers of urban degradation. These areas need sustainable regeneration to recall their importance for the community, but in a way not to lose their use. The purpose of this paper is to assess industrial heritage areas, to develop a clear picture of the existing situation, as well as the potentials and possibilities for their regeneration. It deals with the typological analysis and morphological development of industrial facilities, the extent of their damage and disconnection with the urban structure of the city. It analyzes three case study proposals of industrial brownfield regeneration and adaptive re-use that aim the protection of historical heritage, as well as the sustainable development of these areas. It is argued that regeneration and adaptive re-use of industrial facilities are seen as an opportunity and a new tendency to turn attraction to this heritage.

Keywords: *industrial heritage, brownfield regeneration, adaptive re-use, sustainable development.*

90 THE POSSIBILITIES OF THE APPLICATION OF THE CONCEPT OF HEALTHY CITY IN ILLEGAL SETTLEMENTS IN SERBIA

Branislav Antonić¹

Assistant scientific researcher and PhD student, Faculty of Architecture, University of Belgrade, Bulevar kralja Aleksandra 73/2, Belgrade, Serbia, antonic83@gmail.com

Biserka Mitrović

Assistant Professor, Faculty of Architecture, University of Belgrade, Bulevar kralja Aleksandra 73/2, Belgrade, Serbia, biserkamitrovic@gmail.com

ABSTRACT

The importance of healthy life has become important issue in cotemporary settlements in last decades. Thereby the meaning of “health” has been transformed from strictly sectorial view to a wider interpretation, being used in the context of local community and city development. This broader prospect has resulted in the creation of healthy city concept as a recognisable theoretical concept, based on the striving for healthy environment and good quality of life.

Globally, communities face pressing health challenges related to the built environment, so the awareness about the need to make the link between human health and development has grown, as well as the urge of establishing the concept for a healthy city. While the framework and general goals are being recognised internationally, the local adjustments and characteristics, related to the national and regional context, have not yet been made.

Further, special challenge is how to approach to less developed communities and areas in developing countries in transition, such as Serbia. Even bigger challenge is to examine and test the possibilities of the application of the healthy city concept for the illegal settlements in Serbia. In such settlements, which lack basic infrastructure, amenities and services, the need for improving the quality of life is even bigger. This paper aims to contribute to the advance of practice and policy for healthy places and cities, by defining a local sensitive approach for the informal areas in Serbia.²

Keywords: *healthy places, quality of life, illegal settlements, application.*

¹ Corresponding author

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TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE

URBAN REGENERATION AS A TOOL FOR POPULATION HEALTH IMPROVEMENT

91

Filip Petrović

PhD student, Teaching Assistant, University of Belgrade, Faculty of Architecture, Bulevar kralja Aleksandra 73/II, sevenarh@gmail.com

ABSTRACT

Poor health is associated with poorer living circumstances (Ellaway et al., 2012) and there is therefore, a logical expectation that housing improvements and area regeneration in disadvantaged urban areas will improve health and reduce social inequalities in health (Kearns et al., 2009; WHO Commission on Social Determinants of Health, 2008). Urban regeneration can thus be considered a public health intervention whereby improvements in health and wellbeing are stated as specific aims of regeneration strategies (Beck et al., 2010). Regeneration in most cases includes a range of activities that potentially may improve the interlinked realities of household, dwelling, community and neighbourhood environment in urban areas, thereby impacting on many of the social determinants of health (Dahlgren and Whitehead, 2007). However, to date the evidence that regeneration activities achieve these health benefits is limited or weak and any health effects are small (Jacobs et al., 2010). Evidence for long-term effects and the mechanisms by which different interventions or combinations of interventions might lead to positive health outcomes tend also to be rare (Jacobs et al., 2010). There are also concerns that regeneration activities may have unintended consequences of social disruption and displacement through gentrification (Lindberg et al., 2010). This paper therefore collects information and evidence of urban regeneration projects in a systematic way, both from historic urban regeneration projects and new modern models of regeneration, analysing and evaluating them from population health impact perspective. Paper concludes with recommendations of necessary future aims and methods to implement in urban regeneration projects as to achieve improvements in population health and health equality.

Keywords: *urban regeneration, population health, effect, improvement, gentrification.*

92 URBANIZATION OF METROPOLITAN AREAS – THE IMPORTANCE OF NEW SPATIAL DATA ANALYSIS TOOLS

Hanna Obracht-Prondzynska

PhD candidate, Gdansk University of Technology, Faculty of Architecture, Department of Urban Design and Regional Planning, G. Narutowicza 11/12, 80-233 Gdansk. Pomeranian Office for Regional Planning, Gradowa 11, 80-802 Gdansk, haniaop@gmail.com

ABSTRACT

Nowadays, a rapid development of metropolises is connected with the pressure on urbanizing, which leads to a sharp increase in developed areas as well as urbanized areas. As this trend becomes more dynamic, cities sprawl beyond their administrative boundaries, causing spatial disintegration and hindering sustainable development of a given area. Increased dispersion of residential area results in extensive and chaotic spatial development, stimulated by numerous real estate investments on buildable areas that are not adapted to the current demographic projections. Consequently, it is difficult to provide technical infrastructure systems and ensure an unlimited access to public services.

However, changes in law have led to the creation of national databases of topographic objects, under the EU provisions and the INSPIRE directive, which helped increase the scope and specificity of currently conducted spatial analyses, at the same time enabling a precise identification of areas that should be subject to further urbanization as well as areas which are characterized by the lack of access to technical infrastructure and basic social infrastructure – the two deciding factors when it comes to the quality of life and the costs borne by the country and the residents.

The aim of the following paper is to discuss new possibilities and ways of managing sustainable development of a metropolitan area, on the example of Gdańsk and its surrounding area, which is put under the pressure of urbanization, covers services of supra-regional importance and encompasses economic activity that is directly or indirectly connected with the sea. The analysis will be performed from the level of regional planning and current works on the Spatial Development Plan for Metropolitan Area.

Keywords: *Gdańsk, metropolitan area, suburbanization, spatial analyses.*



TOPIC II: PHYSICAL PLANNING AND QUALITY OF PLACE

AQUAPONICS BASED ARTIFICIAL BIOSPHERE INCLUDED IN ARCHITECTURE: FROM MITIGATION OF NEGATIVE IMPACTS TO POSITIVE ADDED VALUES OF URBAN SPATIAL STRUCTURES ON LOCAL, REGIONAL AND GLOBAL SCALE 93

Piotr Marek Smolnicki

PhD candidate, Gdansk University of Technology, Faculty of Architecture, Department of Urban and Regional Planning, Narutowicza 11/12 Gdansk, Poland, piotr.smolnicki@pg.gda.pl

ABSTRACT

Technologies may appear faster than spatial planning can afford it. Although applying new technologies solve particular problems, it may also create new ones. Many negative consequences of implementing new technologies are visible after years or decades – they accumulate until the need of solving them. According to The Hannover Principles (McDonough & Braungart 2013) one should, by example not think about reducing but about eliminating negative impacts. Did we learn life-cycle management from this since 1992, and implement it correctly? Can we predict and eliminate negative side effects? Could we add a positive value to the neighbourhood?

In this paper author will scrutinize selected applications of modern and contemporary techniques and technologies influencing shaping of spatial structures and will emphasize their side effects in terms of urban, regional and global “health”.

Author will propose contemporary local intervention and investment possibilities on creating self-sustaining neighbourhoods and buildings. Its background will be a new vision of architecture and spatial structures that include ideas inspired from biosphere, e.g.: retrieving and capturing or circulation of CO₂ and nutrients. Author will present a concept based on aquaponics gardening that could be adapted to existing buildings and new designs. The concept design will not only reduce and eliminate emissions but also could have a positive impact on citizens’ health and the whole city and its surrounding.

Keywords: *mitigation and eliminating of negative emissions, nutrient circulation in biosphere, urban aquaponics based food production, added value spatial structures.*

94 INSTITUTIONAL CHALLENGES IN THE URBAN PLANNING WATER SENSITIVE PLACES

Višnja Sretović Brković¹

PhD student, Research Assistant, Faculty of Architecture, University of Belgrade, Serbia; visnja_sretovic@yahoo.com

Matija Brković

PhD student, Researcher and Architect, Faculty of Architecture, University of Belgrade, Serbia; matija0brkovic@gmail.com

ABSTRACT

Last few years cities in Serbia witnessed a number of problems with small urban streams and an inappropriate sewer systems. Traditional approach of solving these problems, using underground pipes and concrete revetments, is inefficient and expensive. Instead, it is increasingly becoming common to use “soft” approach based on the natural processes and use of the existing landscape elements and plants for water treatment. Thus, water becomes the featured element in the urban landscape, the new resource for the creation of public green spaces and improvement of community health.

Planning the city zones surrounding small urban streams and old sewer systems became challenging, as the number of experts from different fields, stakeholders and citizens that should be involved grew. If such approach is to succeed, it is critical to create appropriate institutional framework.

In this paper we are exploring appropriate institutional arrangement for planning of these zones. We are basing our research on the already proven and successful examples from Europe. Finally, we are discussing the institutional constraints and opportunities for implementation of these arrangements in Serbia, taking into account the specific Serbian context, in order to make cities in Serbia more water sensitive.

Keywords: water, soft approach, institutional framework, urban planning, Serbia.

¹ Corresponding author





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TOPIC III: LIFETIME COMMUNITIES AND PARTICIPATION

96 COHOUSING FOR BUILDING REUSE

Adolfo Baratta

Associate Professor, Roma Tre University, Department of Architecture, Via Madonna dei Monti, 40 – 00184 Roma,
adolfo.baratta@uniroma3.it

Fabrizio Finucci¹

Assistant Professor, Roma Tre University, Department of Architecture, Via Madonna dei Monti, 40 – 00184 Roma,
fabrizio.finucci@uniroma3.it

Annalisa Metta

Assistant Professor, Roma Tre University, Department of Architecture, Via Madonna dei Monti, 40 – 00184 Roma,
annalisa.metta@uniroma3.it

Luca Montuori

Associate Professor, Roma Tre University, Department of Architecture, Via Madonna dei Monti, 40 – 00184 Roma,
luca.montuori@uniroma3.it

ABSTRACT

Many social structures in Western Societies are living a deep changing process because of the adaptation to changes imposed by new economic production conditions, by the new available technologies and by the tendencies of the sustainability paradigm. Complexity of life, alienation, an ageing population, temporary work conditions and migratory flows of vulnerable individuals, are just few example of the new trends. Among the innovative proposed answers, some are coming up from the past in order to join with current tendencies: this is the case of cohousing (born in North Europe during the '70s) associated with the reuse of the existing buildings, both of them are central issues to be considered for the sustainable development. The cohousing, seems to be an effective answer to different complex problems e.g. life organization and cost, alienation, new jobs opportunities; in facts cohousing offers residential functions together with common services, usually managed by the residents. Furthermore, cohousing represents an answer to the housing deprivation, recently worsened by the effects of the economic crisis. For many years in Italy the matter of housing has been faced up with just welfare rather than structural interventions; moreover, the topic of reuse is, at the same time, a problem to be addressed, a strategy to be pursued and an available resource, by virtue of the large entity of the heritage to be reconverted. The paper, based on the results of an ongoing research conducted by the authors with a multi-disciplinary approach, proposes a critical thinking over the themes of cohousing and heritage buildings focused on Italian realm, offering at the end a description of a virtuous Italian case study.

Keywords: cohousing, heritage buildings, reuse.

¹ Corresponding author



TOPIC III: LIFETIME COMMUNITIES AND PARTICIPATION

HOW TO DESIGN HEALTHY BUILDING FOR HEALTHY LIVING?

97

COMPLEX NETWORK OF HEALTH

Anja Jutraž

PhD, Assistant, University of Ljubljana, Zoisova 12, 1000 Ljubljana, anja.jutraz@fa.uni-lj.si

Sanja Štimac

Master student, University of Ljubljana, Zoisova 12, 1000 Ljubljana, sanjastimacri@gmail.com

ABSTRACT

The purpose of this article is to address the correlation between architecture and our health, more exactly *how the design of a building affects our well-being and health*. Life cycle of the building could be compared to the circle of life, where building could be seen as a person (*mechanical installation system vs. circulatory system*). On one side article describes the building, from its position in urban environment (urban planning and urban design, designing smart, social and green city), architecture design (construction of the building, sustainability, resiliency) to the interior design (furnishing, flexibility). On the other side the article explores the person, from its role in the community, and influence of work and living environment on health.

More specifically, this chapter will describe the case study Complex Network of Health, which was done as part of the AEC Global Teamwork course at Stanford University in 2014. Team Express has explored under the leadership of prof. Renate Fruchter and many other mentors the principles of designing healthy building (focusing on different scales, from urban design, architecture to interior design). The main idea was to design the engineering building for healthy living, which is part of wider network, where also building could help you to live healthier (the placement of the building in the urban environment, distribution of rooms and program in the building, materials etc.). Moreover the new types of technology for improving healthy living in direct connection to healthy building will be explored, focusing on mobile apps. The main aim of this article is to define guidelines for designing healthy building for healthy living, which will help lay public and professionals by making decisions in the design process. To conclude, the end goal of this article is to show the importance of designing the quality living and working environment for your health.

Keywords: *healthy building, healthy living, network, technology, urban space.*



98 PARTICIPATORY URBAN PLANNING AND PUBLIC POLICY

Višnja Kukoč

PhD, Senior Lecturer, University of Split, Faculty of Civil Engineering, Architecture & Geodesy, Urban Planning Department, Matice hrvatske 15, 21000 Split, Croatia, visnja.kukoc@gradst.hr

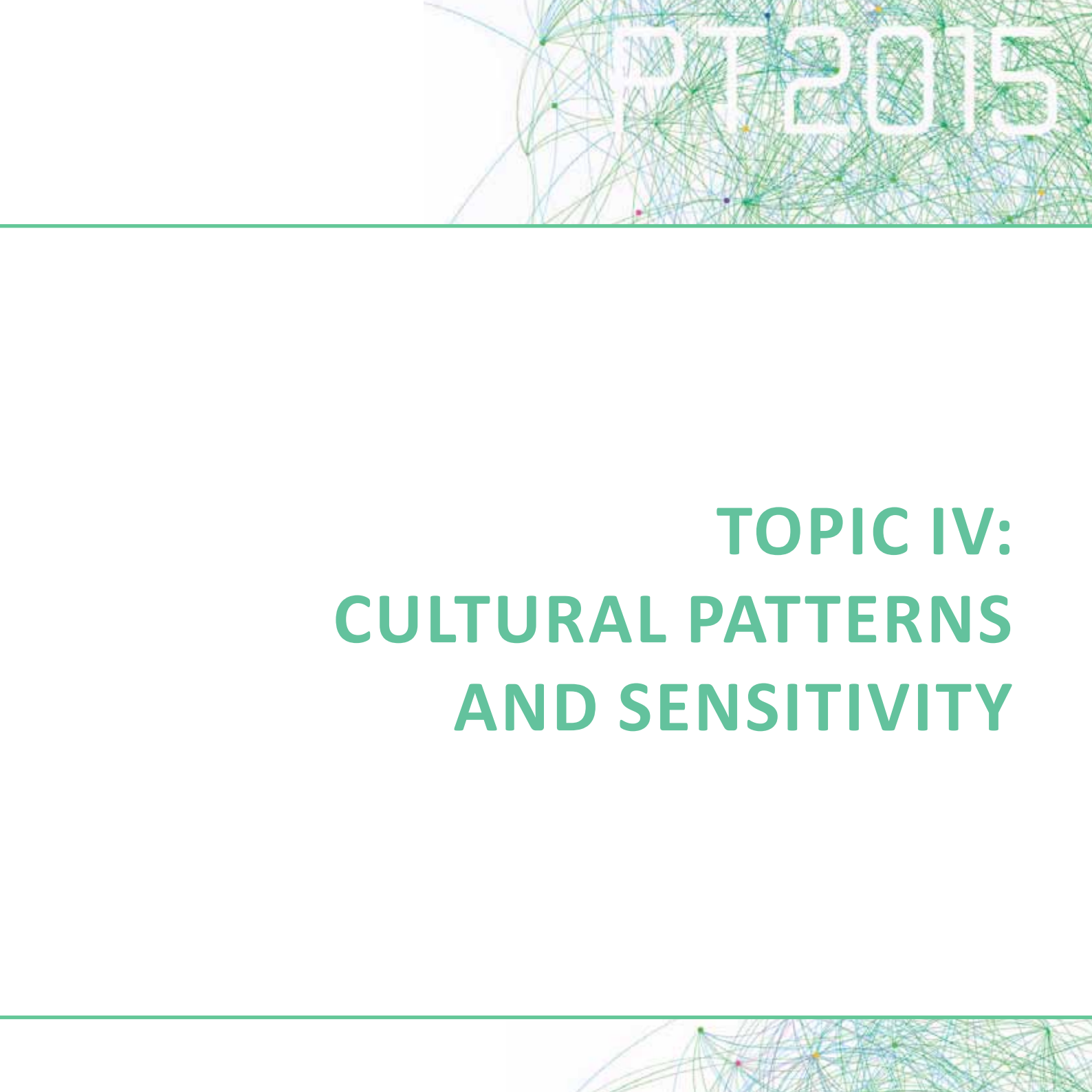
ABSTRACT

Public policy comprises the means, methods and ways used by authorities to achieve a desired objective. In this paper we analyse the urban planning as part of public policy and try to establish when public policy is considered the democratic process. In that regard we explore a general theory of urbanisation by highlighting the important stages of its development in a multi-party market economy in the US and a one-party economy in the former Yugoslavia. Later, we analyse the situation of public policy and urban planning in modern Croatia and Split, and compare it with the current situation in Europe. The emphasis is put on the following: democratic process of urban planning, acceptance of urban plans by the wider society, social balance of urban plans and increasing potential of the well-functioning of cities.

In the concluding part the development of contemporary services of participatory urban planning and community informatics is considered with an aim of improving the communication between city authorities and inhabitants at lower cost.

Keywords: *participatory urban planning, public policy.*



A complex network graph with numerous nodes and edges, primarily in shades of green and blue, with some yellow and purple nodes. The text "PT2015" is overlaid in white on the top right.

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TOPIC IV: CULTURAL PATTERNS AND SENSITIVITY

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100 SENSE OF PLACE IN ARCHITECTURAL DESIGN: TOWARDS HEALTHY PLACES P&T 2015

Eglė Navickienė

PhD, Associate Professor, Vilnius Gediminas Technical University, Faculty of Architecture, Pylimo g. 26/1, 03227 Vilnius, Lithuania, egle.navickiene@vgtu.lt

ABSTRACT

The paper deals with the link between the qualities of place and people's relation to it, and their mental health, or well-being. The aim of the paper is to identify the structure of sense of place, which may be applied as a guideline for architectural design heading towards creation of healthy places, based on place-bound architectural results that positively affect mental health. Composition of sense of place is laid out by benefiting from interdisciplinary conceptions of place and sense of place; three major components: physical setting, human activities and meanings, are identified. Analysis of Lithuanian place-sensitive buildings of high architectural quality, explores the link of architectural objects to people's well-being using the criteria set according the identified structure of sense of place.

Keywords: *place, sense of place, healthy places, mental health, Lithuanian architecture.*



TOPIC IV: CULTURAL PATTERNS AND SENSITIVITY

HOLIDAY HOMES IN THE VICINITY OF SPLIT, CROATIA, DESIGNED BY FRANO GOTOVAC – CONTINUITY OF ARCHITECTURAL HERITAGE

101

Vesna Perković Jović

PhD, Assistant Professor, University of Split, Faculty of Civil Engineering, Architecture and Geodesy, Croatia, Split, Matice hrvatske 15, vesna.perkovic@gradst.hr

ABSTRACT

Frano Gotovac, a Split architect, is known as a designer of residential areas and dwelling houses in Split and Omiš. In the course of his entire career Frano Gotovac also designed holiday homes for his friends, including some fifteen houses in the area of Split, characterised by the quality of architectural expression, specific spatial organisation, and well-thought-out plot utilisation. Gotovac drew inspiration from the rural settlements in Dalmatia. He modified some traditional architectural forms, such as the slanting roof and arched windows, adapting them to suit the modern architectural expression. He rarely used some traditional building materials – half-round tile and stone – only exceptionally heeding recommendations of urban plans concerning their use with a view to achieving a “satisfactory” look of a typical coastal house. The houses are rather small, like the historical ones, built with inexpensive building materials, in accordance with the modest finances of the investors. Following the historical examples of country-style residential architecture, Gotovac always strives to establish a contact between the houses’ interior and exterior, avoiding direct views of the neighbouring houses. It was not always easy with regard to weekend-cottages densely constructed on small plots and close to one another, unlike traditional summer residences owned by few wealthy individuals. The houses represent the author’s contribution to the humanisation of space in weekend cottage settlements frequently built without any urban plans, signifying the architect’s concept and his specific approach to the modern country-style architecture in the circumstances of socialist economy. Many areas in Dalmatia, bearing marks of year-long uncontrolled illegal construction, have been deprived of their identity. The question of how to re-establish the natural connection with the tradition and historical and cultural patterns, how to build in future without jeopardising the inherited values – these questions are still extremely relevant and pressing. Gotovac’s well-tried designing method, his concepts and aims, as well as the author’s valuable realisations, can all help in searching for answers and dealing with contemporary designing tasks in the areas rich in architectural tradition.

Keywords: *Dalmatia, modern architecture, Frano Gotovac, holiday homes.*

102 ARCHITECTURE AND ITS AFTERLIFE; GREEN URBANITY

Gabriella Medvegy¹

PhD, Associate Professor and Vice Dean, Faculty of Engineering & IT, Architectural Institute, University of Pécs, Hungary, 7624 Pécs, Boszorkány utca 2., Hungary, medvegygabriella@pmmik.pte.hu

Gábor Veres

PhD, Associate Professor, Faculty of Engineering & IT, Architectural Institute, University of Pécs, Hungary, 7624 Pécs, Boszorkány utca 2., Hungary

ABSTRACT

It seems that designers have to adopt a kind of polyhistor role in our depressed economic atmosphere. This is linked to the fact that architects are becoming increasingly sensitive to society's problems, and there are more and more architectural projects that react to social problems. Economic and ecological aspects are also given priority. Architects find it more and more important to consider the return of the invested capital or try to find answers to ecological questions. Is it just a passing fad? I'd rather call it a tendency.

Cities clearly have a fundamental wish for more greenery and it cannot be solved purely by applying structures with vegetation such as a green roof or a green wall. It is more inspiring and interesting when the architect integrates greenery into the design process, and it is harmonised with the newly built space in the process of creation. Obviously, the right Ecological Design Method works in a more complicated way, but it's worth thinking about the impact of a built element on its natural environment and vice-versa

Main statement: The definition of "green urbanism" has to be introduced into the glossary of architecture. It's not the same to speak about a semi-natural building or a building in nature, and it is important to define the role of vegetation in the process of creating built environment.

Keywords: *greenery, urbanity, architecture.*

1 Corresponding author





TOPIC IV: CULTURAL PATTERNS AND SENSITIVITY

INVESTIGATION OF RELATIONSHIP BETWEEN CULTURE OF THE INHABITANTS AND QUALITY OF HOUSING

103

Ana Špirić¹

BArch, PhD candidate, Institute for Intellectual Property of Bosnia and Herzegovina, Akademika Jovana Surutke 13, Banja Luka, a.spiric@yahoo.com

Sanja Trivić

BArch, PhD student, Projekt plus DOO, Brace Potkonjaka 8, Banja Luka, sanja_trivic@yahoo.com

ABSTRACT

The primary concern of this paper is to determine the extent to which planning practice through the creation of various qualities of housing affects the personal identity of the inhabitants. The personal identity has been explored through the culture of the inhabitants. Anthropological approach, the most adequate for the research topic, defines culture as a set of learned patterns of human behaviour and thinking. According to Edward Sapir's view, personality is taken as totality of all those aspects of behaviour which give the meaning to an individual in society and differentiate it from other members in the community and is explored through attitude towards oneself, the others and the world. Individuality is analysed as the indicator of quality of housing and is observed through the relation private-public, that is, individual-collective and imply introvert attitude towards urban surrounding. In order to determine the culture of the inhabitant dependence on the quality of housing, the research assumes that the higher the level of individuality of housing is the higher level of culture of the inhabitants of that space is. Considering the research tasks the survey has been selected as the most appropriate instrument of research. The survey was conducted in Banjaluka, on the sample of 300 respondents.

Keywords: *culture of the inhabitant, personal identity, quality of housing, individuality, Banja luka.*

¹ Corresponding author

104 UTOPIAN PROJECTS DRAWINGS AS INDICATORS OF MODERN SOCIETY NEEDS

Vladimir Kovač

University of Belgrade, Faculty of Architecture, Bulevar kralja Aleksandra 73/II, kovachshach@yahoo.com

ABSTRACT

The paper explores architectural drawing as a medium of representation of utopian visions, which aim to indicate needs and problems of modern society. Architectural drawing has always been a powerful tool for reviewing and representing the space, both material and mental – social space. Thus, drawings of utopian projects from the sixties and seventies of the last century had followed and generated significant social changes. Starting from that period until today, architectural drawing remained the model of detection and conceptualization of the problems each community faces and fights.

Unfortunately, modern cities are not the places that will provide a sustainable and humanized tomorrow for us. In such environment, drawings of futuristic projects and utopian visions are opening new topics and suggesting possible solutions. Also, in this process, architectural drawing is recognized as a model of creating a deflection from the recent social practices and anachronistic principles of urban development and, therefore, it is opening the possibilities of new concepts and alternatives. Hence, the aim of the paper relates to exploring and defining the parameters of the social context that caused the production of utopian projects, and thus established drawing as a medium of their presentation.

The study begins with an analysis of social conditions in the period of decades after the Second World War, which brought specific and avant-garde utopian projects. In those years, architectural drawing was recognized as a means of struggle against the repressive principles of post-war modernism. Finally, the study focuses on drawings of modern utopias and cities of tomorrow, and reviewing the characteristics of the social context in which these utopias were created.

Keywords: *architectural drawing, utopia, distopia, representation (of space), city of tomorrow, society.*



TOPIC IV: CULTURAL PATTERNS AND SENSITIVITY

YOUTH AND THE FEELING OF SAFETY IN PUBLIC SPACES

105

Svetlana Stanarević

PhD, Assistant Professor, University of Belgrade, Faculty of Security Studies, 50 Gospodara Vučića St. Belgrade, svetlana.stanarevic@yahoo.com , stanarevic@fb.bg.ac.rs

Stevan Tatalović¹

Master student, Teaching Assistant, University of Belgrade, Faculty of Security Studies, 50 Gospodara Vučića St., Belgrade, tatalovic.stevan@gmail.com

ABSTRACT

Current re-examinations and fresh perceptions of the notion defined as public space call for new approaches to the organization and design of public spaces and embracing the differentiated perspectives on the important role they play for certain social groups, each with their different needs for using and moving within those spaces. This text raises several issues, one being how to make a public space closer to young people, many of whom see it as the only place where they feel fully independent, where they can be integrated and reintegrated, and where fear and insecurity are mitigated by preserving differences, with freedom of movement in city streets, squares, parks, city transport and similar places. Another issue concerns attempts to reconcile the need for spontaneity, adventure, risk-taking, a chance to experience a sense of surprise in urban environments, which appeal to young people for these very reasons, with efforts to ensure greater safety and remove insecurity from city streets. The famous sociologist Zygmunt Bauman himself asked the following question: Is it possible to overcome fear at the same time avoiding boredom? (Bauman, 2009). Finally, is public surveillance, as a form of monitoring public spaces, sufficiently acceptable and understandable to young people, to what extent does it invade their privacy, to what extent does it create for them a feeling of safety, and to what extent does it really contribute to ensuring their safety and security in a public space?

Keywords: *youth, safety, public spaces, public surveillance, risk.*

¹ Corresponding author

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TOPIC V: HEALTH INTENSIVE CARE



108 OPTICAL COHERENCE TOMOGRAPHY - GUIDED PRIMARY PERCUTANEOUS CORONARY INTERVENTION IN ACUTE MYOCARDIAL INFARCTION

Igor Kranjec

MD, PhD, FESC, Associate Professor Medicine/Cardiology (retired), Dept Cardiology, University Medical Center Ljubljana, Zaloška 7, 1000 Ljubljana, igor.kranjec@gmail.com

ABSTRACT

Primary percutaneous coronary intervention (PCI) is associated with a certain risk of post-procedural ischemic complications. Therefore, stent implantation technique in the acute myocardial infarction settings should be optimal to improve short- and long-term clinical outcomes. Optical coherence tomography (OCT) is a light-based imaging modality with an excellent resolution that enables in vivo visualization of the coronary artery structures reported only by the patho-histological studies. Consequently, OCT should help the operator in decision-making throughout the whole primary PCI procedure. OCT seems particularly useful in evaluating culprit lesions, assessing thrombus burden, selecting a proper stent type and size, optimizing the post-implantation result and detecting stent-related vascular injuries. OCT is widely used in everyday clinical practice but has not been adequately tested in properly designed large clinical trials. However, its ease of use and safety is likely to promise its routine use during the primary PCI in the near future.

Keywords: *acute myocardial infarction, primary percutaneous coronary intervention (PCI), optical coherence tomography (OCT), OCT-guided primary PCI.*



TOPIC V: HEALTH INTENSIVE CARE

FRACTAL ARCHITECTURE OF THE CORONARY ARTERY TREE

109

Matjaž Klemenc

MD, PhD, Associate Professor of Internal Medicine, General hospital of Nova Gorica', Intensive care unit, Padlih borcev 13, 5290 Šempeter pri Gorici, Slovenia, klemenc.matjaz@gmail.com

ABSTRACT

The coronary artery tree is developed according to the hypothesis of minimum energy cost - the energy required to circulate blood is minimized. Coronary artery branching has fractal nature and act in accordance with most important properties of fractals: self-similarity and non-integer dimension. Murray was the first to describe mother/daughter vessel relations in vascular bifurcations according to the cost function: the cube of the radius of the mother vessel equals the sum of the cubes of the radii of the daughter vessels. Bifurcations of coronary arteries are anatomical - functional transitions within the coronary artery tree which implement a distributive function. Coronary bifurcations are by nature prone to development of atherosclerosis. Intra-coronary flow exerts friction on the vessel wall, named shear stress. A low shear stress, which is recognized as atherogenic factor occurs along the internal edge of a curve or behind obstacle and on the side opposite the carina in bifurcations. Pathological examinations and intravascular imaging techniques prove that atheroma is often present in bifurcations and develops in areas with low shear stress. Percutaneous coronary interventions (PCI) on bifurcations are technically demanding for operator and they are associated with higher rate of in-stent restenosis and thrombosis. The aim of PCI is to restore normal flow in each axis of bifurcation. Understanding haemodynamics based on fractal nature of bifurcations makes possible to calculate the diameter of diseased branch by measuring diameters of two angiographically normal or near-normal branches.

Keywords: *fractals, coronary artery bifurcations, percutaneous coronary interventions.*

110 HUMANIZATION OF DIALYSIS: GREEN AND COZY

Jadranka Buturović-Ponikvar

PhD, Professor, Department of Nephrology, University Medical Center Ljubljana, Zaloska 7, 1000 Ljubljana, Slovenia,
jadranka.buturovic@kclj

ABSTRACT

Dialysis was among the most important achievements of medicine of 20th century. It enabled millions of patients to survive acute or end-stage kidney failure. Today we are witnesses of increasing number of patients living with dialysis for more than 40 years. The longest dialysis survival in Slovenia is 42 years and 4 months (on June 1, 2015), the highest hemodialysis survival reported from Japan is 44 years and 9 months.

It is estimated that at the end of 2013 more than 2.5 million of patients were alive worldwide treated by maintenance dialysis, with annual growth estimated 6-7%. Treatment was delivered through 35.000 dialysis centers with an average number of 64 patients per center (estimated data are provided by Fresenius Medical Care).

In Slovenia there are 23 dialysis centers, 16 public (in-hospital) and 7 private, (either incorporated in small buildings providing also other services or as free-standing dialysis centers).

In the future we have to face several challenges in providing dialysis treatment: ecological and quality of life related.

Eco-practices within dialysis are already explored in some countries (Great Britain, Australia) and should be focus of further dialysis development: minimizing water usage and wastage, decreasing power consumption, optimal waste management and developing recycling programs for potentially reusable materials, designing smart buildings.

Quality of life in increasingly important focus of dialysis treatment. Survival is not enough. Coming 3 times a week in dialysis center for a session usually lasting 4-5 hours, the patients live a significant part of their life there, with a lot of social interactions. Our focus should be not only providing medical part of the treatment but also cozy and friendly atmosphere during the day or night. Such atmosphere may be provided with the help of dedicated architects and designers at acceptable cost. It may be especially important for in-hospital dialysis centers, to make often "threatening" hospital environment more pleasant, that may be of special importance for chronic hemodialysis patients.

Nocturnal dialysis represents a specific challenge. This is prolonged hemodialysis during the night (7-8 hours), with the patient sleeping during the treatment. It provides the best survival and may provide the best quality of life for the selected group of patients.



TOPIC V: HEALTH INTENSIVE CARE

In conclusion, dialysis in future should focus not only on medical treatment quality but in parallel with that on eco-practices and atmosphere during treatment. It seems there is a lot of room for improvement at acceptable cost. Close collaboration of health care workers, patients and experts from non-medical fields would be necessary to achieve these goals.

Keywords: *dialysis; hemodialysis; quality of life; health-related quality of life; green dialysis.*

112 CONTEMPORARY CHALLENGES OF PUBLIC HEALTH AND AN ACTIVE APPROACH TO OVERCOME THEM

Marko Vudrag

MD, PhD, Assistant Professor, National Institute of Public Health, Department of Nova Gorica, marko.vudrag@nijz.si

ABSTRACT

Socio-economic and life conditions as well as other circumstances (family, work, cultural and environmental) including social inclusion and life style are health determinants that have a powerful influence on one's health status. Considerable socio-economic, political and demographic changes generate public health problems. The current health status of the developed world is as follows: the population is growing old, cardio-vascular diseases, cancer, diabetes, obesity and mental disorders are on the rise. Only a »health to all policies« strategy will be able to solve these issues, as public health (PH) has to be a »mutual pursuit of permanent health improvement of the whole population«. Upgrade of the Health System – a Step Further is a document issued by the Ministry of Health of the Republic of Slovenia a few years ago. It tackles the establishing of such a system, since it includes solidarity, assessability, quality and efficacy and pinpoints the key functions of PH, which are: a) health monitoring and evaluation, b) acknowledgement of health problems / challenges and risk assessment, c) threats management and d) chronic disease prevention and health promotion. In this paper, the third function of PH as stated in the Upgrade is emphasised, since globalization sometimes erases boundaries set between the developed and underdeveloped world and at least two determinants typical of underdeveloped world overlap: high poverty rate and communicable diseases. The latter demand careful consideration and planning, particularly when it comes to threats management. The current communicable disease management programmes are in some segments insufficient and the credibility of the national immunization programme is being questioned in terms of its obligatory vs voluntary status. At least three communicable diseases and the related immunization programmes need a thorough re-consideration: measles, influenza and pneumococcal infections. Proven programmes will need to be critically considered and amended accordingly. The first and the third function of PH overlap and the population's health needs are being studied, also with a help of health economics.

Keywords: public health, health determinants, upgrade of health system, public health functions, immunization programme.



TOPIC V: HEALTH INTENSIVE CARE

ANALYSIS AND CONTEMPORARY APPROACH OF SPACE DESIGN OF INTENSIVE PSYCHIATRIC CARE UNIT

113

Nevena Dutina

MSc, Union Nikola Tesla University, Cara Dusana 62, Belgrade, nevena_d@live.com

Aleksandra Dutina

Doctor of Medicine, Clinic for Psychiatric Disorders 'Dr Laza Lazarevic', Visegradska 26, Belgrade, dutinaa@gmail.com

ABSTRACT

This paper presents a modern approach of designing the Intensive psychiatric care unit, where the space and current conditions at Intensive psychiatric care of Clinic for Psychiatric Disorders "Dr Laza Lazarevic" in Belgrade were analyzed. Emphasis is placed on the modern concept of designing space in terms of functionality and efficiency in order to fulfil adequately a set of activities in health care. Studying this case through comparative analyze, an optimal architectural solution was made for the specific conditions of psychiatric patients' care, in order to create human and functional space in the clinics of this type.

Keywords: *design, intensive care, psychiatry, functional space.*

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TOPIC VI: INCLUSIVE AND ACCESSIBLE ENVIRONMENT

116 TOWARDS INCLUSIVE FIRE SAFETY DESIGN

Valeria Tatano¹

Full professor, Università Iuav di Venezia, Department of Architecture and Arts, Dorsoduro 2196, 30123 Venezia, Italy,
valeria.tatano@iuav.it

Elisabetta Carattin

PhD, Università Iuav di Venezia, Department of Architecture and Arts, Dorsoduro 2196, 30123 Venice, Italy, carattin@iuav.it

ABSTRACT

Fire safety's main goal is to guarantee fire prevention and safety of all occupants in a building in the event of an emergency. The application of inclusive design to fire safety does not impact the approach to fire prevention and protection of buildings as regards plant and construction related aspects (e.g., structural fire resistance, compartmentation etc) yet it changes the approach to the design of egress systems. Just to give an example, it is not always possible to hypothesize immediate egress of persons with disabilities, in conformity with current procedures.

Italian building regulations, in accordance with the European ones, provide for the adoption of various solutions, like progressive horizontal evacuation, which consists of moving occupants from an area of the building that has become dangerous to a safe place, while waiting to be rescued: such places commonly include Areas of Refuge and emergency elevator systems, which operate like mechanical tools capable of functioning even during an emergency in order to let people egress safely from the building.

Such devices and approaches, although present for years by now in the building codes, are in fact still not particularly used and, especially, almost unknown by the end users, as demonstrated by recent research conducted in Italy and abroad.

Scientific literature actually focuses on the importance of letting everyone know what to do in case of fire and on being informed on the principles of the building's emergency and evacuation plans that should be designed for all buildings of medium and high complexity.

The purpose of this paper is to discuss the tools currently available to ensure inclusive fire safety, through the analysis of the latest international experiences on this issue, in order to contribute to a deeper understanding on the part of designers and the scientific community.

Keywords: *fire safety, inclusive design, evacuation strategy for disabled people, area of refuge.*

¹ Corresponding author



TOPIC VI: INCLUSIVE AND ACCESSIBLE ENVIRONMENT

INCLUSIVE AND THERAPEUTIC URBAN ENVIRONMENT: INVOLVING USERS IN THE DESIGN PROCESS

117

Ilaria Garofolo¹

Full professor, fUniversity of Trieste, Department of Engineering and Architecture, Piazzale Europa 1, Trieste, garofolo@units.it

Barbara Chiarelli

Research architect, University of Trieste, Department of Engineering and Architecture, Piazzale Europa 1, Trieste, barbarachiarelli@hotmail.it

ABSTRACT

Public open space can play a therapeutic role by ensuring its full accessibility and usability: that concerns the possibility of moving independently, safely and easily in a reliable and familiar environment that allow relationships and easy access to goods and services.

ICF, International Classification of Functioning, Disability and Health, officially entrust the environment the power to enable or disable people to develop their life, according to their temporary or permanent conditions.

All those involved into interventions on the built environment have a great responsibility: the concept of designing for “standard man” should be overcome and different requirements from a broader segment of population need to be considered, guaranteeing the possibility for all to take part actively to daily life, fostering social inclusion by means of the highest level of accessibility.

To adopt a methodological approach for a rethinking of the organization and functionality of open spaces and pathways and to establish a shared process to get effective and affordable solution in the frame of a wider plan for accessibility is the goal of the LabAc project, developed in Friuli Venezia Giulia Region - Italy and supported by the local community and Administrations. The paper will present the results of experiences developed within LabAc project in the case study of Trieste Municipality.

Keywords: *inclusive design, key actions, urban spaces, participation, accessibility.*

¹ Corresponding author

118 DEVELOPING INNOVATIVE SOCIAL HOUSING TO FOSTER INCLUSIVE COMMUNITIES

Silvia Grion¹

Research architect, University of Trieste, Department of Engineering and Architecture, Piazzale Europa, 1 - 34127 Trieste, grion.sil@gmail.com

Paola Coloni

Coordinator of "Trasporto Facile", Local Committee of People with Disabilities, via Cordaroli, 26 - 34135 Trieste, pcoloni@alice.it

ABSTRACT

Inclusive communities should enable people to carry out daily life at the best condition, regardless of their abilities, increasing the quality of housing conditions and creating the necessary means for an independent living.

Dealing with social housing, it should be a task to guarantee opportunities for the weaker categories of users (elderly, people with disabilities) to live in affordable and accessible houses, designed according to the principle of Universal Design: that is to ensure accessibility for all, and to enable people to live in their own homes even if limited in their functionality. Designing universally does not mean making special adjustments, but to ensure inclusion and good usability for all.

According to the ongoing regulations, social housing should meet the need of persons with disabilities, and guarantee at least a certain amount of estate to be "accessible" to allow an independent living. However, there is a gap between what should be and what it is in reality: several experiences show that the "accessibility" according to the law is far from the real requirements and very often what is considered an accessible flat is actually uncomfortable and unfit for the final users' needs, while creating discriminatory conditions.

What is the responsibility for that? What's the role of public Agencies to promote the culture of accessible and inclusive living, even through promoting innovative accommodation typologies and the use of technological equipment to help special users? Is it important to involve the users in the developing process to perform a multi-functional design to provide different options, offering opportunities for all and enhancing autonomy?

The paper will explore these issues, presenting the case study of the local Agency for Social Housing in Trieste (Italy), which experienced the question of allowing accessible new flats and developed some pilot projects in the field of therapeutic living environment.

Keywords: *accessibility, social housing, user involvement, multi-functional design, inclusive communities.*

¹ Corresponding author



TOPIC VI: INCLUSIVE AND ACCESSIBLE ENVIRONMENT

URBAN PUBLIC SPACES ACCESSIBLE FOR ALL: A CASE STUDY IN A HISTORICAL DISTRICT OF ROME

119

Lucia Martincigh¹

Professor, Architect, Department of Architecture, Roma Tre University, via Madonna dei Monti 40, Rome, Italy,
lucia.martincigh@uniroma3.it

Cecilia De Marinis

PhD, Research Assistant, Architect, Department of Architecture, Roma Tre University, via Madonna dei Monti 40, Rome, Italy,
arch.ceciliademarinis@gmail.com

ABSTRACT

The liveability of a city like Rome is endangered by vehicular traffic and, as consequence, urban spaces are generally not accessible to all users; this is a problem that is particularly felt in residential districts. The Department of Architecture of Roma Tre University has recently moved to Testaccio, a historical, famous, working class district of the city, where Piattaforma Testaccio, an association of dwellers, is very active.

A collaboration started between this association and University, with the aim to improve the urban environment where dwellers, teachers and students spend their everyday life. A study, involving academic staff and students of the course “City and Environment” together with some members of the association, was run with the aim of solving one of the most important problems highlighted by the association: the accessibility of public spaces. To this aim, it was used a prescriptive tool: “the Environmental Island” that can be applied in areas that are mainly residential.

Special methodologies, already tested in some European funded research, were applied to assess the level of accessibility of pavements, crossings and bus stops, the quantity of public space available to pedestrian and its fruition, the density and the continuity of the pedestrian network. Such assessment considers the exigencies of different categories of PRM (people with reduced mobility) as defined by the European Parliament, considering not only mobility or sight impaired people but also people affected by temporary problems. Solutions were proposed to create inclusive and accessible urban environments, considering also facilities to make easier and more comfortable walking and moving around, to facilitate orientation and the use of public services and without overlooking safety.

The next step of the process concerns a meeting with the Association members for the presentation of the identified solutions and for their evaluation by the dwellers.

Keywords: *inclusive design, accessible environment, assessment methodologies, urban design, environmental island.*

¹ Corresponding author

120 ECOLOGICAL LANDSCAPE, PHYTODEPURATION AND MANMADE WETLANDS IN MAGOK LAKE PARK, SEOUL

Cristian Suau

PhD, Senior Lecturer in Architecture & GPO Co-ordinator, University of Strathclyde, 75 Montrose street, G11XJ, Glasgow, UK,
cristian.suau@strath.ac.uk

Carmelo Zappulla

PhD, Lecturer, IAAC (Institute for Advanced Architecture of Catalonia), 102 Pujades street, 08005, Barcelona, Spain, GIRAS-TEC,
Research group Member, UPC (Barcelona School of Architecture), Av. Diagonal, 649-651, 08028 Barcelona, Spain,
carmelo@externalreference.com

ABSTRACT

The right to clean water is a vital resource in consolidated emerging urban economies. Alternative fresh water resources and public wastewater management represent one of the most valuable services. However fresh water requires an adequate and advanced depuration technique: the Integrated System of Phytodepuration (ISP).

The expansion of mega-cities worldwide has generated many derelict voids. The proliferation of highly polluted brownfields is a constant characteristic, which is likely to continue and increase in future. If left to fall into neglectfulness and urban inertia, these spaces will have a detrimental effect on local neighborhoods in terms of social health, wellbeing, local economies and environmental qualities.

The development of urban parks in urban voids has been generically implemented without environmental and ecological recovery strategies. Waterscape is not just an aesthetic feature but also a decisive element in the production of the space. The construction of manmade wetlands (bio-remediators) offers landscape, ecological and environmental qualities that heals polluted environments.

This study explores innovative waterscape systems in the brownfield of Magok basin, Seoul: http://issuu.com/cristiansuau/docs/urban_park_seoul

The landscape design scheme reproduces natural self-depurative processes in a controllable environment by taking into account both the strategic location and necessity for ecological remediation. An innovative water-terracing system (eco-formations) is proposed as water phytodepuration treatment. It consists of offsetting contaminants on wastewater surface, through the establishing of native plants and aeration. These terraces are dwelled by aquatic plants (macrophytes), which reproduce the natural purification processes frequently in humid climates.



TOPIC VI: INCLUSIVE AND ACCESSIBLE ENVIRONMENT

The development of this “artificial wetland scheme” is based on octagonal eco-formations. They aim to create a social catalyst as well as a healthy environment, providing recreation and amenities combined with the gray water biological and distillation treatments.

121

Keywords: *ecological landscape; eco-urban park; waste water treatment; integrated system phytodepuration; Magok Lake Park (Seoul).*

122 ADVANCED SYSTEMS FOR IMPROVING COMMON HEALTH

Urška Kalčič

Technical Assistant, University in Ljubljana, Faculty for architecture, Zoisova ulica 12, 1000 Ljubljana, Slovenia, ursa.kalcic@gmail.com

Janez Peter Grom

Assistant, University in Ljubljana, Faculty for architecture, Zoisova ulica 12, 1000 Ljubljana, Slovenia, grom.arch@gmail.com

ABSTRACT

One of the main problems in the future are the pressures on the planet, as a result of increase in population, increased consumption of energy and other natural resources. In parallel, there will be deterioration in the quality of the biotope (living environment) and for all biocoenosis (living organisms). Qualities of the ecosystems will drastically drop and consequently worsen the health of all living organisms. With the successful coordination of the needs of people, taking into account the requirements of the environment and sustainable development principles the new human interference can be placed unobtrusively, maintaining all the qualities of space without thereby affecting the ecosystem and the image of the environment.

The solution is to improve common health with keeping the environment potential full functioning. The thesis on how to achieve this final result is built on the education of future generations and investing into new technologies. The next step is to invest in environmental knowledge for all people, with an emphasis on the awareness of children. The future stands on objects that are technologically advanced and environmentally neutral, and in buildings which provide environmental learning. To be more precise, the future is to invest in the development of laboratories which can explore new technologies and later on provide the development of a system having zero impact on the environment.

Advanced technological systems that are progress friendly to the environment, seems to be the solution. One of such approaches imitates the natural cycles of the biosphere the so-called bio cybernetics laws described by Frederic Vester. It is an imitation of natural cycles, projected on anthropogenic processes. The modern term referred to the principles by the C2C - cradle-to-cradle cycle of circulation of substances, which is represented as a waste as food.

Keywords: *Frederic Vester, cradle to cradle, architecture of laboratory.*



TOPIC VI: INCLUSIVE AND ACCESSIBLE ENVIRONMENT

INCLUSIVE AND ACCESSIBLE ENVIRONMENT: PLANNING FOR THE FUTURE

123

Sankalp Shukla¹

Student, Maulana Azad National Institute of Technology, Bhopal, India – 462003 shuklasankalp2@gmail.com

Apoorva Gangrade

Student, Maulana Azad National Institute of Technology, Bhopal, India – 462003 apoorvagnrd48@gmail.com

Anshula Gumber

Student, Maulana Azad National Institute of Technology, Bhopal, India – 462003 anshulagumber376@yahoo.com

ABSTRACT

The dawn of the twenty-first century has been termed as the era of rapid urbanization and population growth. The population is escalating faster than ever before. With the populace reaching the mark of 6.9 billion, about 5% of this aggregate is formed by the persons with disabilities, of which more than 3% percent live in a developing country. It is noteworthy that only one of such fifty persons have access to rehabilitation and appropriate basic services.

Society is the basic requirement for all living beings, which originates from the people around us. Each and every organism possesses some unique characteristics, which comply together to form a society. As all parts are necessary for the human body to work, different sections of the society are also required. It is unfortunate that with the growing population, minorities get ignored.

The concept of inclusive environment can be considered as a 'unity in diversity'. It involves the creation of an urban structure, which supports the well-being of all the citizens, and gives birth to a sense of belonging in them. Inclusive planning is planning for all sections. It involves the provision of facilities along with their accessibility to the society.

The paper enquires about inclusive planning, its significance in the modern world, the need of inclusive planning in growing cities, and tries to analyze how ignorance of facilities can result in serious problems. It discusses about the various segments and practices adopted in them, undertaking cases of cities from across the world. Ultimately, impacts of these practices are evaluated, and suggestive inputs towards policy implications are mentioned.

Keywords: *inclusive planning, accessibility, inclusive environment, practices, policies.*

¹ Corresponding author

124 FACTS4STOPS – USER NEEDS REGARDING PUBLIC TRANSPORT STATIONS AND ENVIRONMENT

Christine Chaloupka-Risser¹

PhD, FACTUM OG, Danhausergasse 6/4, A-1040 Vienna, Austria, christine.chaloupka@factum.at

Daniel Bell

MSc, FACTUM OG, Danhausergasse 6/4, A-1040 Vienna, Austria, daniel.bell@factum.at

ABSTRACT

Within the project FACTS4Stops (Facility And ConnectiVity information Services for public transport Stops) an innovative planning tool was developed, which aims on increasing the demand-orientation of public transport stops. Therefore the needs of users within the environment of a stop as well as the local infrastructure (e.g. infrastructure, settlement structure and access paths) are integrated in the identification of measures. These criteria were linked systematically and assessed with Geoinformation-tools. Additionally, it was evaluated, which social media services could be suitable to detect the attractiveness of a stops' environment. Participatory solutions for a cost-efficient quality improvement of future traffic are pointed out.

Keywords: *public transport stops, barrier-free, demand-orientation, user needs.*

¹ Corresponding author





PT2015

TOPIC VII: ENVIRONMENTALLY FRIENDLY TRANSPORT



126 SHIFTING TO MORE ENVIRONMENTALLY FRIENDLY MODES IN LONG-DISTANCE TRANSPORT

Aleksandra Nešić

PhD student, University of Belgrade, Faculty for Transport and Traffic Engineering, Vojvode Stepe 305, 11000 Belgrade, Serbia, aleksandradjordj@gmail.com

Ivana Čavka

PhD student, Research and Project Assistant, University of Belgrade, Faculty for Transport and Traffic Engineering, Vojvode Stepe 305, 11000 Belgrade, Serbia, i.cavka@sf.bg.ac.rs

Olja Čokorilo¹

PhD, Assistant Professor, University of Belgrade, Faculty for Transport and Traffic Engineering, Vojvode Stepe 305, 11000 Belgrade, Serbia, oljav@sf.bg.ac.rs

ABSTRACT

This paper is focused on environmental pressures from long distance transport. Special attention is given on long distance passenger transport and specific emissions related to modal shares. The paper deals with air transport factors affecting long distance passenger volumes in Europe. Future measures for minimising the environmental pressures of air transport are considered based on ICAO recommendations and EASA regulations. Provided research is based on European improving policies with detailed explanation of three different approaches for measuring emissions in air transport sector. The results and conclusions for the final evaluation are obtained from different environmentally friendly modes.

Keywords: long-distance transport, air transport, modal shares, environmentally friendly.

¹ Corresponding author



TOPIC VII: ENVIRONMENTALLY FRIENDLY TRANSPORT

ASSESSING PUBLIC TRANSPORT EFFICIENCY IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

127

Evgenia Yosifova

BSc Urban Planning, Master student in Urban Planning at HafenCity University, Hamburg, Überseeallee 16,
evgenia.yosifova@hotmail.com

ABSTRACT

This paper is focused on the urban aspects of the organization of public transport systems and was defended as a Bachelor thesis in 2013 at the University of Architecture, Civil Engineering and Geodesy in Sofia, Bulgaria.

The negative impact of contemporary transport tendencies on the environment and human health requires taking immediate actions in the direction of sustainable development. Sustainable transport is part of the political agenda of all member states of the European Union and the development of public transport is recognized as an essential instrument for achieving sustainability. In this context appears the need for a methodological approach for assessing the efficiency of public transport systems.

Experts in the field of management claim that one cannot manage what cannot be measured. What is measured, how it is measured and how the results are presented affects the way in which problems are evaluated, prioritized and respectively what tools are applied to solve them.

Therefore, an initial evaluation of condition and efficiency becomes crucial for the management of public transport systems. The assessment of the public transport system within one of Sofia's districts (taken as a case study) included three main stages: clarifying the goals and objectives of sustainable transport in the context of the particular area, identifying appropriate quantitative indicators and setting benchmarks, measuring the progress of the given public transport system towards sustainability.

This methodological approach allows finding the weaknesses of the public transport system within the studied area. Thus, political instruments and financial resources can be directed more effectively towards achieving concrete, quantitatively measurable goals.

Keywords: *sustainable development, sustainable transport, public transport efficiency, quantitative indicators.*

128 THE ROLE OF PUBLIC TRANSPORT PRIORITY IN SUSTAINABLE URBAN MOBILITY

Dino Šojat¹

PhD, Research associate, University of Zagreb, Faculty of Transport and Traffic Sciences, Zagreb, Vukelićeva 4, dsojat@fpz.hr

Davor Brčić

PhD, Associate professor, University of Zagreb, Faculty of Transport and Traffic Sciences, Zagreb, Vukelićeva 4, dbrbic@fpz.hr

Marko Slavulj

PhD, Senior Assistant, University of Zagreb, Faculty of Transport and Traffic Sciences, Zagreb, Vukelićeva 4, mslavulj@fpz.hr

ABSTRACT

The continuous urbanisation process in the world has resulted in considering sustainable urban mobility as a top priority. Therefore, the public transport becomes the key element of sustainable urban mobility because of its advantages over the private car (space consumption, energy consumption, impact on the environment) and thus becomes the backbone of sustainable mobility in most cities. Operating speed in public transport is an important characteristic by which users decide whether to make a modal shift of their city trips to public transport. The operating speed is especially important in public surface transport (trams or buses) which is not separated from other traffic, and therefore it constantly interferes with other vehicles sharing the same urban network. Consequently, the influence of other vehicles leads to operating speed reductions and thus the attractiveness of public transport becomes significantly lower. The previous research on the subject concluded that the introduction of public transport priority can lead to a better transport process (considering travel times, network occupancy, and reliability) and other positive effects (considering energy savings, impact on the environment, and reduction of external costs) on the entire urban network. This paper presents an overview of research on the tram priority for the entire tram network in the City of Zagreb done by authors. The analysis of the research conducted in this paper provides conclusions about the significance of introducing priority in surface public transport through both the efficiency and the effectiveness of tram network in the City of Zagreb, which would result in increased attractiveness of public transport and the modal shift in favour of public transport.

Keywords: sustainable urban mobility, public transport, public transport priority, operating speed, City of Zagreb.

¹ Corresponding author



TOPIC VII: ENVIRONMENTALLY FRIENDLY TRANSPORT

APPLICATION OF PV MODULES ON NOISE BARRIERS

129

Budimir Sudimac¹

Assistant Professor, dipl.ing.arch, Faculty of Architecture, Bulevar kralja Aleksandra 73/II, Belgrade, Serbia, sudimac@arh.bg.ac.rs

Andjela Dubljević

Teaching Assistant, dipl.ing.arch, Faculty of Architecture, Bulevar kralja Aleksandra 73/II, Belgrade, Serbia, andjela.dubljevic@arh.bg.ac.rs

ABSTRACT

The aim of this research is to consider possibilities for improving the street lighting on the E75 highway, which passes through Serbia, using renewable sources of energy. In this paper, we analyzed the possibilities for installing sound barriers along the highway and integrating photovoltaic (PV) modules, which would generate electrical energy to power the lighting on the section of the highway running through Belgrade. Sound barriers are necessary along the highway running through populated areas, and they are identified as elements on which PV modules for power generation can be installed. The illumination of the highway powered by conventional sources of electricity is very expensive and has negative environmental impact, which is the reason why this paper investigates the connection between sound barriers and electricity generation from renewable energy sources. The paper seeks to show the hybridity of using sustainable technologies in solving environmental issues. This structure solves the problem of noise in populated areas and provides the electricity from renewable source.

Keywords: noise, PV modules, solar energy, sound barriers.

¹ Corresponding author

130 PLANNING OF ELECTRIC TRANSPORTATION IN THE KRŠKO REGION

Ana Tivadar

B.Sc.G., Geodetski zavod Celje, Ulica XIV. divizije 10, 3000 Celje, ana.tivadar@gz-ce.si

Stanko Manojlović

B.Sc.P, NPP Krško, Vrbina 12, 8270 Krško, stankoman@gmail.com

Simon Podkoritnik

B.Sc.E.E., Electroinstitute Milan Vidmar, Hajdrihova 2, 1000 Ljubljana, simon.podkoritnik@eimv.si

ABSTRACT

A low carbon future demands a drastic change in fossil fuel consumption. Currently the transport sector of light duty vehicles produces 15 % of all carbon emissions, while all transport generates an estimated 25 % of CO₂ produced in Europe. The EU commission estimated that by 2020 there will be 14 000 electric vehicles (EV) in Slovenia requiring at least 3000 charging stations. The increased electricity consumption must be compensated from carbon free sources, meaning power plants must be hydro-electric, nuclear, solar, wind ...

We will conceptually modernize the current Krško infrastructure and make it a more flexible and EV friendly region. Three different modes of transportation options will be presented and examined of which all can be implemented in parallel or sequentially. Additionally multiple municipality incentives will be presented.

Keywords: *electricity, vehicles, planning, Krško, infrastructure, etc.*



TOPIC VII: ENVIRONMENTALLY FRIENDLY TRANSPORT

INTELLIGENT TRANSPORT SYSTEMS FOR SMART CITIES

131

Bia Mandžuka¹

PhD student, University of Zagreb, Faculty of Transport and Traffic Sciences, Zagreb, Vukelićeva 4, 10000 Zagreb, Croatia, bia.mandzuka@gmail.com

Ljupko Šimunović

PhD, Associate Professor, University of Zagreb, Faculty of Transport and Traffic Sciences, Zagreb, Vukelićeva 4, 10000 Zagreb, Croatia, ljupko.simunovic@fpz.hr

Mario Ćosić

PhD student, Senior Assistant, University of Zagreb, Faculty of Transport and Traffic Sciences, Zagreb, Vukelićeva 4, 10000 Zagreb, Croatia, mario.cosic@fpz.hr

ABSTRACT

In recent times, the increased quality of life, work and education has forced many people to move from rural into urban areas. The population growth is accompanied by the increased mobility and the consumption of energy, water, food and raw materials – all this results in contamination of soil, water and air, high noise, greenhouse gas emissions, heavy traffic and traffic jams. In attempt to optimize the processes in urban areas, the so-called smart cities demand sustainable solutions in order to ensure economic prosperity and social well-being, and on the other hand, to protect the environment and to increase the quality of life. This kind of problem-solving approach demands both the individual and the mutual participation of creative people with their knowledge and ideas, country and city administration, businessman and scientists. In terms of technology solutions, the focus is put on the information and communication technology. The paper will analyse the Intelligent Transport Systems (ITS) and their possibilities to contribute to the smart city development. The application of information and communication technology in the field of transport ensures continuous traffic data collection, analysis and real-time distribution to every stakeholder interested. This also provides new solutions in mobility management, incident management, smart car parking, priority at intersections (ambulance, fire department, police, and public transport), real-time traffic information and others. Smart cities tend to decrease heavy traffic, decrease emissions of CO₂ and other greenhouse gasses, and to preserve resources, which in the end decreases costs, enabling other economy activities. The most important is the fact that the large amount of data collections is open-source, so the data is available for citizens, experts, companies, city administration, government, and even available for exchange between countries.

Keywords: *quality of life, smart cities, information and communication technology, intelligent transport systems (ITS), open-source data.*

¹ Corresponding author

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TOPIC VIII: BUILDING TECHNOLOGIES

134 RETROFITTING OF MULTI-FAMILY BUILDINGS TOWARDS HEALTHIER SETTLEMENTS

Aleksandra Krstić-Furundžić¹

PhD, Full Professor, University of Belgrade, Faculty of Architecture, Bulevar kralja Aleksandra 73/II, 11000 Belgrade, Serbia, akrstic@arh.bg.ac.rs

Aleksandra Đukić

PhD, Associate Professor, University of Belgrade, Faculty of Architecture, Bulevar kralja Aleksandra 73/II, 11000 Belgrade, Serbia, adjukic@afrodita.rcub.bg.ac.rs

ABSTRACT

The subject of the paper is retrofitting of suburban multifamily buildings built in the late fifties and early sixties at Karaburma, Belgrade. According to the data collected by Serbia Statistical Office, about 55 percent of the existing housing units in Belgrade were built during the sixties and seventies and they were designed without consideration of energy demands and consumption. The same problem is present in the case of Karaburma settlement. Buildings were in poor condition until the retrofitting in 2009.

The retrofitting was carried out on a significant number of buildings and still takes place in the settlement. The main retrofitting objectives are: the identification of housing typologies related to new user's needs, the complying with new technical regulations in terms of energy efficiency and accessibility for disables. The retrofitting concept was aimed to improve living comfort, especially thermal comfort, in order to achieve energy savings and healthier environments.

Solutions for the retrofitting are shown in the paper. The improvement of living comfort and building appearance was achieved by annex of attics, addition of balconies as new structures and organized closing (glazing) of balconies, as well as by laying of thermal insulation on the facade surface and it's painting in different colors resulting in housing diversity.

The benefits are in improving energy performances of the buildings and living conditions generally. The results show that significant energy savings and reduction of CO₂ emissions can be obtained with different and simple retrofitting measures.

Keywords: retrofitting, healthier environment, multi-family building.

¹ Corresponding author



TOPIC VIII: BUILDING TECHNOLOGIES

FERROCEMENT ARCHITECTURAL STRUCTURES FROM THE ASPECT OF SOCIAL WELL-BEING

135

Aleksandra Nenadović

PhD, Assistant Professor, University of Belgrade, Faculty of Architecture, Bulevar kralja Aleksandra 73/II, Belgrade,
aleksandra@arh.bg.ac.rs

ABSTRACT

The examples of use of ferrocement architectural structures are more numerous in recent years, with the aim to realize efficient and economically viable solutions. This paper analyzes the ferrocement architectural structures from the aspect of social well-being. The ferrocement structures are analyzed as subsystem of the building, whose behavior is directed towards the aim of system – building - ecological quality. The present analysis pointed to the advantages and disadvantages of ferrocement structures from the aspect of social well-being during the use phase of a building, that is, to the necessity of a complex and systemic approach to quality of building structures, in function of achieving the ecological quality of buildings.

Keywords: sustainable building, ecological quality of buildings, ferrocement structures, social well-being.

**136 DAYLIGHT ANALYSES OF “READY-MADE” FAÇADES WITH MODULAR OPENINGS -
CASE STUDY LOCATION IN PODGORICA****Sanja Paunović Žarić¹**

PhD student, Teaching Assistant, University of Montenegro – Faculty of Architecture, bul Džordža Vasiingtona bb 81000 Podgorica
Montenegro, sanja.paunovic@ac.me

Irena Rajković

PhD student, Teaching Assistant, University of Montenegro – Faculty of Architecture, bul Džordža Vasiingtona bb 81000 Podgorica
Montenegro, irena_arhi@yahoo.com

Marija Bojović

PhD student, Teaching Assistant, University of Montenegro – Faculty of Architecture, bul Džordža Vasiingtona bb 81000 Podgorica
Montenegro, trashandvaudeville@gmail.com

ABSTRACT

Requirements for energy efficiency in buildings become higher, as the consequence of the constant temperature increasing. Therefore, the prevention of overheating becomes determinate factor in the design of new buildings and the proper disposition of fenestration basic media, in order to create a productive and stimulating environment. Since facade represents the “face” of the object, proper treatment of openings and selection of the façade envelope should contribute to comfortable working environment.

It should be adequately exploited and prioritized in design with respect to artificial lighting. Daylighting as a design principle directly affects the orientation, shape and proportions of the building, interior characteristics and lighting comfort. The daylighting system strategy in buildings can be changed after the construction is completed, but such an adaptation would require significant investments. Therefore, it is very important to perform daylighting analyses in the initial phases of design.

In this paper, as a case study the Millennium Office building in Podgorica will be considered. It will be shown that modern, “ready-made” solutions for facades does not appear as a consequence of the study of natural illumination, and that the attractive appearance of the buildings was more in focus than the users comfort. As a consequence, during exploitation of the building it becomes obvious that the daylighting distribution was not taken into account by the design. Namely, since views to the environment and thermal comfort in general were not adequately considered, alternative, mainly expensive adaptations should



TOPIC VIII: BUILDING TECHNOLOGIES

be undertaken. All of these bioclimatic interventions for revitalization of the existing buildings represent a good approach for obtaining healthy places. Day light should be considered as a “gift of nature”, with numerous benefits for users. Sophisticated software tools that enable impact analysis of implementing external static systems for daylighting control were used.

137

Keywords: *daylight factor simulation, “ready-made” façade, perceiving the environment, modular openings, energy-efficiency.*

**138 ACTIVE SOLAR SYSTEMS – STUDY OF POTENTIAL FOR APPLICATION IN THE
MATERIALIZATION OF TOURIST FACILITIES IN MONTENEGRO****Irena Rajković¹**

PhD student, Teaching Assistant, University of Montenegro – Faculty of Architecture, bul Džordža Vasiingtona bb 81000 Podgorica
Montenegro, irena_arhi@yahoo.com

Sanja Paunović Žarić

PhD student, Teaching Assistant, University of Montenegro – Faculty of Architecture, bul Džordža Vasiingtona bb 81000 Podgorica
Montenegro, sanja.paunovic@ac.me

Marija Bojović

PhD student, Teaching Assistant, University of Montenegro – Faculty of Architecture, bul Džordža Vasiingtona bb 81000 Podgorica
Montenegro, trashandvaudeville@gmail.com

ABSTRACT

Solar energy, as a renewable energy resource has great potential for application related to achieving energy efficiency of buildings. Therefore, this paper studies the characteristics and applications of active solar systems: photovoltaic systems and solar collectors. In order to maximize the utilization of solar energy and to achieve energy efficiency in buildings, technical solutions for using these systems in buildings envelope materialization are considered.

Montenegro, with 1500 to 2000 hours of sunshine annually and the quantity of incoming solar radiation from 1600 to 1800 kWh/m² has exceptionally favourable climatic and geographic conditions for the exploitation of solar energy. Despite the existence of such conditions, solar energy has not been adequately exploited. Therefore, Montenegro as an ecological country should be more oriented to the use of solar energy, especially in the touristic industry, and that is what this paper aims to highlight.

In order to emphasize the importance and needs for the application of active solar systems in tourist facilities in Montenegro, climatic conditions and characteristics, electrical energy consumption and water heating energy requirements are analyzed. The paper examines the aspects relevant for the active solar systems usage in tourist facilities, both for construction of new buildings and the reconstruction of the existing ones, with respect of pre-serving the environment, energy-efficiency and sustainable development in general.

Keywords: *solar energy, active solar systems, materialization of building envelope, tourist facilities, energy-efficiency.*

¹ Corresponding author



TOPIC VIII: BUILDING TECHNOLOGIES

PREFABRICATED PASSIVE HOUSE VENTILATED FAÇADE PANEL SYSTEM WITH RECYCLED CONCRETE

139

Ljubomir Mišćević

PhD, Professor, University of Zagreb, Faculty of Architecture, Fra A. Kačića Miošića 26, HR-10000 Zagreb, Croatia, miscevic@arhitekt.hr

Ivana Banjad Pečur

PhD, Professor, University of Zagreb, Faculty of Civil Engineering, Fra A. Kačića Miošića 26, HR-10000 Zagreb, Croatia, banjadi@grad.hr

Bojan Milovanović

PhD, Mag.ing.aedif, University of Zagreb, Faculty of Civil Engineering, Fra A. Kačića Miošića 26, HR-10000 Zagreb, Croatia, bmilovanovic@grad.hr

ABSTRACT

Presented prefabricated façade system is possibility for affordable, cost effective, healthy and sustainable solution that is implemented on the three various architectural designs that are in different phases of design development. This ventilated prefabricated wall panel system that is called ECO-SANDWICH® is energy efficient, recycled concrete sandwich facade panel. It is R&D project that was funded by the European Commission within the framework of CIP-EIP-Eco-Innovation 2011 Programme. Encourage the re-use and recycling of construction and demolition waste (CDW) in order to shift CDW management from disposal to recycling and reduce utilisation of natural resources thus preventing landscape degradation. Three priorities of the EU Eco-innovation call are incorporated; it uses recycled material to create innovative sustainable building product which contributes to healthy building, it represents a significant improvement over the existing prefabricated wall panel products, aligning itself with the mandatory targets of EPBD, its Recast EPBD II and with EU Waste Framework Directive.

The system is affordable solution both for the new construction and renovation up to “factor 10” and it is marked as “the green revolution in construction”. The very first three projects designed by architect Lj. Mišćević based on this façade system are presented. The Central Building of the University Campus, the reuse renovation project for the University library and the type family house for social housing standard all in the town of Koprivnica. Energy concept for all of them is nearly zero energy building (nZEB). More precise, it is passive house energy standard (A+) with active renewable energy systems. It is affordable in social housing in Croatia as it is proved in the three realized multi-family buildings.

Keywords: prefabricated façade panels 1, eco-innovation 2, energy efficiency 3, nearly zero energy buildings 4, new buildings and efficient refurbishment 5.

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140





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TOPIC IX: ADAPTIVE REUSE AND URBAN RENEWAL



14.2 COMPARISON OF THE SUSTAINABILITY OF DIFFERENT TECHNIQUES FOR THE STRENGTHENING OF REINFORCED CONCRETE SLABS

Tanya Chardakova¹

PhD student, University of Architecture, Civil Engineering and Geodesy, Bulgaria, Sofia 1046, 1 Hristo Smirnenski Blvd., office 431, tanq_chardakova@abv.bg

Marina Traykova

PhD, Professor, University of Architecture, Civil Engineering and Geodesy, Bulgaria, Sofia 1046, 1 Hristo Smirnenski Blvd., office 431, marina5261@abv.bg

ABSTRACT

The comparison of the sustainability of different techniques for the strengthening of reinforced concrete slabs is made first qualitatively by discussing the pros and cons of the different techniques, and then quantitatively by a numerical example. Two slabs are considered in the example: a one-way rectangular slab and a two-way rectangular slab, both simply supported at all four sides. The considered strengthening techniques are: by adding concrete layer at the upper side of the slab, by shotcreting at the bottom side of the slab and by fibre reinforced polymer on the bottom side of the slab. The techniques are compared by their environmental impact and by the improvement of the comfort of occupation. For the environmental impact are considered: green house gasses, water consumption, energy consumption and self-weight of the strengthening (as this may cause additional strengthening of the substructure). For the improvement of the occupational comfort are considered the insulation properties of the slab, the deformation of the slab and the architectural impact of the strengthening. Based on the comparison of the results, some general conclusions are made.

Keywords: retrofitting, environmental impact, occupational comfort.

¹ Corresponding author



TOPIC IX: ADAPTIVE REUSE AND URBAN RENEWAL

SYSTEMS FOR THE REQUALIFICATION OF NON-LISTED ARCHITECTURE: THE “ADAPTIVE EXOSKELETON”

143

Francesca Guidolin

PhD Candidate, Università Iuav di Venezia, School of Doctorate Studies, Palazzo Badoer, San Polo 2468, 30125 Venezia,
arch.francesca.guidolin@gmail.com

ABSTRACT

The architecture developed starting from the 40s is obsolete from different points of view: energetic, structural but also functional and social. Therefore, the field of rehabilitation acquires a strategic relevance concerning future objectives (Directives 2002/91/CE, 2010/31/EU). Among the systems for an appropriate requalification of the non-listed buildings there is the addition of external independent structures, fragmented or continuous, that are identified with the term “adaptive exoskeleton”. This system consists in a three-dimensional structure, independent from the building it envelopes, which generates functional spaces as additions and/or elevations.

The analysis of the scientific literature and of case studies shows that the use of the exoskeleton implies as a regenerative practice. It allows:

- the installation of elevation systems which provide accessibility according to the principles of inclusive design, therefore appropriate for the evacuation in emergency situations;
- the enlargement of the housing units and the improvement of living spaces and of domestic work, even in terms of inclusive design;
- the addition of new, common, encounter spaces for the creation of a housing micro-unity;
- the improvement of the internal micro-climate (with the constitution of an internal/external buffer zone, spaces for the installation of new systems and devices;
- the anti-seismic requalification, by creating a structural grid.

Starting from the examination of the operational technological possibilities in the market, the aim of the paper is to analyse the role of the exoskeleton in renewal and functional architectural requalification of buildings. Said analysis shall be carried on not only from a technological point of view but also from a social one. As a socio-technical device, this system provides the application of participative practices for inclusion and appropriation of spaces by its own users. The intention is to suggest a classification of the exoskeleton types through the examination of case studies.

Keywords: *adaptive requalification, inclusive systems, exoskeleton, socio-technical devices.*

144 RECONSTRUCTION AND REVITALIZATION OF THE COMPLEX SENARA, WITHIN THE MONASTERY HILANDAR, IN ORDER TO ADAPT TO MODERN TRENDS AND SOCIAL CHANGES

Jelena Ivanović-Šekularac

PhD, Associate Professor, University of Belgrade, Faculty of Architecture, Belgrade, Bulevar kralja Aleksandra 73/II, Serbia, jelenais@orion.rs

Jasna Čikić-Tovarović¹

PhD, Assistant Professor, University of Belgrade, Faculty of Architecture, Belgrade, Bulevar kralja Aleksandra 73/II, Serbia, cikic.tovarovic@gmail.com

Nenad Šekularac

PhD, Associate Professor, University of Belgrade, Faculty of Architecture, Belgrade, Bulevar kralja Aleksandra 73/II, Serbia, nseki@orion.rs

ABSTRACT

The Holy Mount Athos is the cultural heritage of mankind. Until the mid-20th century the Holy Mount Athos had been visited only by rare pilgrims. Strict rules of monastic communities limited the number of potential followers. The monastery complex provided the accommodation for all visiting pilgrims. Modern life and significant social changes have increased the number of the people interested in visiting this monastic land. The endless flow of visitors and their frequent visits eventually began to disturb the lives of monks. That was one of the reasons that led to creating new accommodation capacities outside the monastery complex in order to provide the necessary peace for the monks.

The Monastery Hilandar, the fourth monastery in the hierarchy of the Holy Mount Athos monasteries and one of the most significant spiritual and cultural center of the Serbian people, was founded in 1198. In the immediate vicinity of the monastery of Hilandar walls there are abandoned and demolished facilities: stable, mulekeepers' house and haybarn. These facilities were built in the beginning of the 19th century. Ten years ago, the reconstruction of the facilities started in order to restore the buildings and provide them with additional accommodation space for potential visitors.

This paper presents the methods of reconstruction through a multidisciplinary approach based on architectural solutions and the aspects of comfort as well as the aspects of psychological and sociological mutual influence between two groups – the monks

¹ Corresponding author





TOPIC IX: ADAPTIVE REUSE AND URBAN RENEWAL

and the visitors. In this way, the carried out reconstruction revived the old facilities and gave them a new function that is adaptable to modern trends and social changes.

145

Keywords: *cultural heritage, reconstruction, revitalization, social changes*



146 RENEWAL OF JUGOMONT PREFABRICATED RESIDENTIAL BUILDINGS JU-61

Ivan Mlinar¹

PhD, Professor, University of Zagreb, Faculty of Architecture, Kačićeva 26, 10000 Zagreb, Croatia,, ivan.mlinar@arhitekt.hr

Lea Petrović Krajnik

PhD, Senior Teaching and Research Assistant, University of Zagreb, Faculty of Architecture, Kačićeva 26, 10000 Zagreb, Croatia, lpetrov@arhitekt.hr

Tamara Marić

Research and Teaching Assistant, University of Zagreb, Faculty of Architecture, Kačićeva 26, 10000 Zagreb, Croatia, tmarić@arhitekt.hr

ABSTRACT

Jugomont was company from Zagreb engaged in the construction of prefabricated buildings from 1955 until 1976. Jugomont developed and applied several systems of prefabrication, among which JU-61 stands out due to the architectural, structural and technological improvements and enhancements over its previous prefabricated systems. Jugomont prefabricated residential buildings JU-61 were built since 1961 in a series of housing developments in Zagreb and in other cities of the former state. The large number of unmaintained or partially and inadequately renovated residential buildings JU-61 reduces the urban and architectural value of housing developments and quality of housing for residents. Systematic renewal of residential buildings JU-61 would increase the quality of housing for numerous residents as well as actualized out the topic of economical construction of prefabricated housing buildings. The aim of this research is the affirmation of the applicable model for renovation of residential buildings JU-61, that corresponds with the applied prefabricated system and the contemporary living standards.

Keywords: Zagreb, prefabricated building, Jugomont, renewal.

¹ Corresponding author



TOPIC IX: ADAPTIVE REUSE AND URBAN RENEWAL

BROWNFIELDS AS PLACES AND RENEWABLE ENERGY SYSTEMS AS TECHNOLOGIES: POTENTIALS AND RISKS IN CASE OF SERBIA

147

Anita Stoilkov-Koneski¹

PhD student, University of Belgrade, Faculty of Architecture, anitastoilkov@gmail.com

Zoran Koneski

PhD student, University of Belgrade, Faculty of Civil Engineering, koneskizoran@gmail.com

ABSTRACT

Brownfields are often defined as derelict or underused areas causing problems in the urban renewal that many cities are facing with. In last few decades brownfields stopped being seen only as problems, but as potentials in modern urban planning. A great step toward solving brownfield problems has been made when brownfield regeneration has been recognized as one of the most important objective of sustainable urban development by science and many government policies. Many authors agree that the reason why brownfields happened are new technologies that left behind old ways of industrial production. The question we can ask is: what brownfield potentials would be if brownfields could cope with new technologies? The brownfield regeneration in that case does not necessary has to mean applying new technologies in industrial production; there are many ways of dealing with new technologies, especially with renewable energy systems, that could be applied in each brownfield case, depending on the context. The paper deals with brownfields as places, and renewable energy systems as technologies, especially solar energy generation, seen from the angle of sustainable urban development. A methodology for examinations of the potentials and risks of solar energy technologies installation on brownfield sites has been conducted in the context of Serbia, outlining basic steps for such brownfield regeneration activities.

Keywords: *brownfields, solar energy technologies, brownfields, Serbia.*

¹ Corresponding author

14.8 LANDFILL JAKUŠEVEC IN ZAGREB – POTENTIAL FOR NEW SPACE IDENTITY AND ENHANCEMENT OF QUALITY OF LIFE

Lea Petrović Krajnik¹

PhD, Senior Teaching and Research Assistant, University of Zagreb, Faculty of Architecture, Kačićeva 26, 10 000 Zagreb, Croatia, lea.petrovic@arhitekt.hr

Damir Krajnik

PhD, Professor, University of Zagreb, Faculty of Architecture, Kačićeva 26, 10 000 Zagreb, Croatia, damir.krajnik@arhitekt.hr

Ivan Mlinar

PhD, Professor, University of Zagreb, Faculty of Architecture, Kačićeva 26, 10 000 Zagreb, Croatia, ivan.mlinar@arhitekt.hr

ABSTRACT

We are witnesses of constant changes at all levels that occur in complex systems such as the city and its region. City as a complex urban fabric is gradually extending to its region occupying new areas. Over the time, facilities that once were planned and subsequently built on the very peripheral areas of the city due to their characteristics, are gradually becoming integral part of the urban fabric. The necessity for the gradual conversion and transformation of certain areas for the purpose of new needs of their users is becoming more obvious. Awareness of the consequences of insufficient or partially conceived actions in space led to the adoption of guidelines for planning and acting in accordance with sustainable development (taking into account environmental, economic and social aspects of sustainability) at the end of the 20th century. Considering potential areas of conversion in Zagreb which in the same time represent the environmental problem, the area of Jakuševac landfill was selected as one of the most interesting examples. For the purpose of this research the world examples of remediation and reuse of landfills were analysed. The aim of this paper is to point out the possibilities of landfill conversion from an area representing ecological, economic and social problem into an area with a new identity and new use which contributes to quality of life of the residents in wider context.²

Keywords: sustainable development, Zagreb, landfill Jakuševac, new identity, quality of life.

¹ Corresponding author

² This research is a part of the scientific project *Heritage Urbanism - Urban and Spatial Planning Models for Revival and Enhancement of Cultural Heritage (2032)* financed by Croatian Science Foundation, which is being carried out at the Faculty of Architecture, University of Zagreb, under the project leadership of academic Mladen Obad Šćitaroci.





PT2015

TOPIC X: ACTIVE LIVING AND HEALTH

150 OPEN PUBLIC SPACES FOR HEALTHIER CITIES

Aleksandra Stupar

PhD, Associate Professor, University of Belgrade, Faculty of Architecture, Bulevar kralja Aleksandra 73/II, 11000 Belgrade, Serbia, stupar@afrodita.rcub.bg.ac.rs

Aleksandra Đukić

PhD, Associate Professor, University of Belgrade, Faculty of Architecture, Bulevar kralja Aleksandra 73/II, 11000 Belgrade, Serbia, adjukic@afrodita.rcub.bg.ac.rs

ABSTRACT

Public spaces represent essential elements of healthy, functional, eco and smart cities. Being attractive, safe, comfortable, active and inclusive they play the main role in revitalizing communities, supporting their sense of identity and culture and triggering their economic development. The process of globalization, facilitated by the increasing number of ICT networks, imposes a number of new trends which should be followed by professionals. Their aim is to provide an updated setting for public life, which nowadays encompasses both private and public realms, material and virtual reality. Unfortunately, the contemporary lifestyle has caused numerous mental and physical health problems, including chronic diseases, toxic exposure and injuries resulting from uncontrolled violence. Therefore, well-conceived and managed public spaces can influence the health of citizens because their performances could encourage an intensive use of outdoor facilities. Public spaces where users feel safe to play and relax can relieve stress, especially when people live in multi-family apartments or in crowded parts of a city.

Considering all these trends and demands, the role of ICT becomes more important in the process of design and use of public spaces. This paper will present and analyse the connection which is established and intensified between users and open spaces via information networks. The emphasis will be on two main groups of applications aiming at (1) citizen participation (e.g. 'crowdsourcing' or 'participatory sensing' applications related to mapping and monitoring of pollution, health risks and patterns) or (2) individuals' health consciousness (e.g. applications enabling surveillance of urban spaces and personal life habits).

Keywords: open public spaces, ICT, health.



TOPIC X: ACTIVE LIVING AND HEALTH

RESPONSIBILITY TO THE EMPLOYEES' HEALTH UNAVOIDABLE IN THE CREATIVE AND INNOVATIVE DESIGN OF OFFICE SPACES

151

Nikola Z. Furundžić¹

Dentist, Dental practice "Furundzic ordinacija", Belgrade, Serbia, stomordinacija227@gmail.com

Dijana P. Furundžić

Dentist, Dental practice "Furundzic ordinacija", Belgrade, Serbia, diananikola@gmail.com

Aleksandra Krstić-Furundžić

PhD, Full professor, Faculty of Architecture, University of Belgrade, Bulevar kralja Aleksandra 73/II, 11000 Belgrade, Serbia, akrstic@arh.bg.ac.rs

ABSTRACT

Office space should be designed to provide better productivity and creativity of employees, while preserving their health. Majority of the employees spend most of the day in the office. Workspaces greatly affect the psychological well-being and activities and abilities of employees. Health of employees, which directly affects productivity, is conditioned by the office type. The main objective of this paper is to show the influence of innovative office space design on the employees' health and to highlight the harmful environmental factors that affect human health. The findings of this study show that office design is very vital in terms of causing or preventing physiological and psychological reactions. Functional features of various types of offices have a different effect on the employee's ability to perform the personal control. In the case of different types of offices, there are different perceptions of stress in men and women. Some negative health outcomes, like stress, decreasing ability of personal control and TMD-related symptoms are considered.

Keywords: office types, employees' health, office harmful environmental factors, TMD-related symptoms.

1 Corresponding author

152 HEALTHY PLACES, ACTIVE PEOPLE

Katarina Ana Lestan¹

u.d.i.k.a., Researcher, University of Ljubljana, Biotechnical Faculty, Department for Landscape Architecture, Jamnikarjeva 101, Ljubljana 1000, Slovenia, katarinaana.leston@bf.uni-lj.si

Ivan Eržen

MD, PhD, Professor, National Institute of Public Health, Trubarjeva 2, 1000 Ljubljana, Slovenia; Medical Faculty, University of Ljubljana, Vrazov trg 2, Ljubljana 1104, Slovenia, ivan.erzen@mf.uni-lj.si

Mojca Golobič

PhD, Professor, Head of department, University of Ljubljana, Biotechnical Faculty, Department for Landscape Architecture, Jamnikarjeva 101, Ljubljana 1000, Slovenia, mojca.golobic@bf.uni-lj.si

ABSTRACT

The research literature provides ample evidence that physical activity has an impact on human health and well-being. The “urban densification” paradigm, prevailing in urban planning policies since the beginning of the millennium resulted in poorly equipped open and green space in collective housing environments. The aim of this research was to explore the linkages between the outdoor space in contemporary collective housing areas in Ljubljana and the lifestyle adopted by the inhabitants. The research questions addressed the quality of residential area urban design, activities of inhabitants in the residential open spaces and their perception of their living environment. The study revealed that the relatively positive perception of the quality of their living environment is mainly related to the residents’ strong economic status, high level of completed education, and lower average age. User groups with such characteristics can compensate for poor outdoor space by using infrastructure elsewhere. On the other hand, the quality of life in new residential areas is inadequate for other users such as children and the elderly. The immediate environment of contemporary collective housing, which is not stimulating spending time outdoors, walking to services, playing and socializing, does not provide conditions for healthy childhood and active aging in the long term.

Keywords: health related lifestyle, urban planning, vulnerable user groups, green areas, neighborhoods.

¹ Corresponding author



TOPIC X: ACTIVE LIVING AND HEALTH

THE IMPACT OF QUALITY OF PEDESTRIAN SPACES ON WALKING AS A MODERATE PHYSICAL ACTIVITY

153

Milena Vukmirović¹

PhD, Research Associate, University of Belgrade, Faculty of Architecture, Blvd. Kralja Aleksandra 73/II,
milena.vukmirovic@urbanlab.org.rs

Eva Vaništa Lazarević

PhD, Professor, University of Belgrade, Faculty of Architecture, Blvd. Kralja Aleksandra 73/II, eva.vanistalazarevic@gmail.com

ABSTRACT

One of the objectives of quality of pedestrian spaces improvement is to encourage walking in the way to become a natural part of everyday patterns in urban activity. This would also have implications on the reduction of public health issues since the majority of urban population has become sedentary. The stated objectives and relationships were analysed through the interpretation of the results obtained in the direct survey of citizens in the central part of the City of Belgrade. Citizens were asked to assess the quality of the pedestrian environment of the research territory by using a specific questionnaire designed on the basis of the professional tool for the evaluation of the quality of pedestrian spaces. The results have shown that citizens of Belgrade still consider walking mainly as a recreational activity, but that they would walk more if the quality of pedestrian environment were improved.

Keywords: *quality of pedestrian spaces, walking, moderate physical activity, Belgrade.*

¹ Corresponding author

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TOPIC XI: HEALTH PROMOTION, PROTECTION AND PREVENTION

156 OUTDOOR GYMS: “NO MORE EXCUSES FOR PEOPLE WHO CANNOT AFFORD MEMBERSHIPS. GET OUT AND GET IN SHAPE!”

Anne-Kathrin Will

Dr. phil., InterVal GmbH, Habersaathstr. 58, 10117 Berlin, Germany, ankawill@hotmail.com

ABSTRACT

In public space outdoor fitness equipment is installed to offer training possibilities to a broad public. The new trend has its predecessors in the United States. Muscle Beach in California was by accident the first outdoor body building area, getting well known through its proximity to Hollywood. But it is probably the germ cell of outdoor fitness with workout devices. These “playgrounds for grown-ups” are seen as public investments in health prevention.

The article tracks firstly the societal changes that led to the setting up of fitness facilities in public space. It asks secondly for the demand of recreational motion as a part of technologies of self in the sense of Michel Foucault. Thirdly it tries to illustrate the targeted and reached groups of public investments.

Keywords: *outdoor gyms, workout in public space, technologies of self.*



TOPIC XI: HEALTH PROMOTION, PROTECTION AND PREVENTION

STUDENT PHYSICAL EDUCATION FOR HEALTHY LIFESTYLE

157

Aleš Golja

MSc, Senior Lecturer, University of Ljubljana, Faculty of Civil and Geodetic Engineering, Jamova 2, Ljubljana, ales.golja@fgg.uni-lj.si

ABSTRACT

Today, physical education is not just a transmission of sport knowledge and the development of motor abilities and physical characteristics, but also the process of motivation for healthy living and socialization. If we started with physical educational programs in kindergarten, it would be wise and correct to continue to the end of educational process at university.

University physical education program has additional aspects beside educational, recreational and competitive. Its basic mission is to educate students about sport. With quality university physical education programs students gain conceptual and practical understanding of health-related fitness, develop physical competence, self-esteem, and experience overall enjoyment in physical activity.

Course Physical education should be, because of its specific benefits, the essence and unique content of the university curriculum and should be integrated as obligatory course at each faculty and each study program. It is the only program that provides students during their study with opportunities to learn motor skills, develop fitness and understanding about physical activity, which influence disease prevention, safety and injury avoidance, decreased morbidity and premature mortality, and increased mental health. The faculty physical education course syllabus should provide contents about all of the benefits gained from being physically active as well as the skills, knowledge to incorporate safe and satisfying physical activity into their lives.

Today students are becoming increasingly independent as their daily lives become more complex and diversified. They are faced with situations that require decisions and choices and taking increased responsibility for themselves.

The benefits of student physical education can affect both academic learning and physical activity patterns of students. Physical education plays a vital part in helping students maintain and refine their skills and knowledge needed during their studies and for the future throughout their lives.

These experiences enable students to make informed decisions and choices about how to lead a healthy and active lifestyle, also after finished university studies.

Keywords: *physical education, health promotion, active lifestyle, university sport.*

158 KEY POINTS OF HUMAN AWARENESS AND EMERGENCY PLANNING. SCHOOLS AS A CASE STUDY

Maddalena Coccagna

PhD, Researcher, TekneHub, University of Ferrara, Dept of Architecture, via Quartieri 8, 44121 Ferrara, Italy, cnm@unife.it

ABSTRACT

Environmental, architectural and organizational issues may support or hinder planned emergency measures. Existing laws define a set of parameters that have to be implemented within the framework for disaster, in order to ensure the health and safety both for workers and guests. A recent study has been developed to test the response of individuals and the efficiency of emergency plans, analysing the response of people just after an earthquake. Educational institutions have been chosen as field of application, because these buildings represent a mix of staff, employees, students and families, anyone with different knowledge, behaviours and roles of emergency procedures as planned. The study of the emergency and post-emergency stages, as perceived by the 1,300 individuals who took part in the survey, have highlighted a preferred list of key points used later by educational teams, municipality offices and civil protection to strengthen the existing procedures. The scope is to organize a feasible defence in case of danger, based on a better building and urban evaluation, training people within a broader “civil based” emergency instruction.

Keywords: *emergency, earthquake, job safety, health, schools.*



TOPIC XI: HEALTH PROMOTION, PROTECTION AND PREVENTION

ANOTHER SIDE OF THE COMFORT OF LIVING – ELECTROMAGNETIC POLLUTION

159

Nebojša Arsić¹

PhD, Full Professor, Faculty of Technical Sciences, Kosovska Mitrovica, nebojsa.arsic@pr.ac.rs

Jordan Radosavljević

PhD, Associated Professor, Faculty of Technical Sciences, Kosovska Mitrovica, jordan.radosavljevic@pr.ac.rs

Nataša Fikfak

Prim. MD, General hospital »dr. Franca Derganca« Nova Gorica, Ulica padlih borcev 13A, 5290 Šempeter pri Gorici, fikfak.natasa@gmail.com

Saša Štatkić

PhD, Assistant Professor, Faculty of Technical Sciences, Kosovska Mitrovica, sasa.statkic@pr.ac.rs

ABSTRACT

Electricity is often taken for granted, as a commodity which is inseparable from an everyday life, offering to all of us unprecedented comfort of living. But such a comfort has its price we have to pay. Not only in relation with an exploitation of natural resources, devastation of land, risk of nuclear radiation, but also in relation with an invisible pollution – so-called electromagnetic pollution, or electromagnetic smog.

Smart or green buildings heavily rely on electrical devices and installations. It increases exposure of inhabitants to unwanted electromagnetic pollution. What are acceptable levels of such an exposure? How it influences human health? What are (if they exist) protective measures? There are strong disputes among manufacturers, ecologists and health practitioners about the harm this radiation can cause.

This paper describes actual situation and presents different views and facts in relation with this topic.

Keywords: *electromagnetic pollution, electromagnetic compatibility, health hazard.*

¹ Corresponding author

160 RECOMMENDATIONS FOR UNIVERSAL DESIGN OF OUTDOOR LEISURE AND RECREATIONAL AREAS

Lara Slivnik

PhD, Assistant Professor, University of Ljubljana, Faculty of Architecture, Zoisova 12 1000 Ljubljana, lara.slivnik@fa.uni-lj.si

ABSTRACT

This paper summarizes the recommendations for the universal design of outdoor leisure and recreational areas. These recommendations are the result of the author's personal everyday experience both as a person with motoric impairment as well as an architect. Universal design applies not only to buildings but includes the exterior of building sites, accesses to buildings, paths of travel, and outdoor leisure and recreational areas as well. Hence, barrier-free outdoor areas are very important for seniors, for people with impairments, for exceptionally short, tall or fat people, for children, and for persons with babies in prams or pushchairs. Besides designing parking areas and toilettes for people with disabilities, pedestrian crossings, curb ramps, pathways, and various kinds of street furniture in particular are important for barrier-free outdoor leisure and recreational areas. This paper provides some general recommendations for universal design of outdoor pedestrian routes and open spaces that include leisure areas. A special attention is paid to various solutions of the principal problems in the design of outdoor recreational areas. There are many variations and degrees of disabilities: motoric impairments, mental impairments, sensorial impairments, and cognitive impairments. Each of these may present different difficulties and should be addressed with different strategies. Hence, the problem of a single universal design for barrier-free outdoor leisure and recreational areas suitable for all kinds of different impairments is still not satisfactory resolved.

Keywords: *barrier-free design, outdoor leisure areas, outdoor recreational areas, people with disabilities, universal design.*





PT2015

TOPIC XII: SOCIAL NETWORKS AND HUMAN BASIC NEEDS



162 VISUAL REPRESENTATION AND EXPERIENCE OF PLACE: CASE STUDY ALHAMBRA IN GRANADA

Isidora Karan¹

University of Granada, Slobodana Dubocanina 1., 78 000 Banjaluka, isidora_karan@yahoo.com

Vedrana Ikalović

Graduate School of Science and Technology, Keio University, 3-14-1 Hiyoshi, Kohoku-ku, Yokohama-shi, Kanagawa 223-8522, Japan

ABSTRACT

Individuals recognize place, observed on the scale of an urban environment, not only through the direct experience of its “tangible” and “intangible” elements, but also from the preconceptions related to it. Those preconceptions, beside the cognition about place in general, derive from the different representational forms of the place. With the development of technology, information systems and networks, representational forms of place have become accessible and present more than ever. Hence, its higher level of accessibility doesn’t necessarily provoke its higher diversity. With the purpose of creating a recognizable brand of a place, its visual representation or images are even being reduced.

This research is questioning in what way and to what extent do visual presentations of a place, as the most suggestive and the dominant ones, influence immediate experience of a place. Case study is the complex of fortress and palace of Alhambra in Granada, one of the most visited and known cultural and historical sites in Spain and Europe. Perception of Alhambra in its urban environment, its visual representations available on internet and various types of promotion material, were analysed and compared with the impressions and experiences of the short-term residents, before and after moving to Granada.

The aim of this paper is to show whether the prior visual representations of the place enhance or reduce its real experience created in situ, in this particular case, and to what extent the images about the place and the place differ and overlap.

Keywords: *place, experience, visual representations.*

¹ Corresponding author



TOPIC XII: SOCIAL NETWORKS AND HUMAN BASIC NEEDS

BEYOND THE QUANTIFIED SELF: A LOOK AT THE SOCIAL DIMENSION OF HEALTH

163

Svea Heinemann

Dipl.-Ing. M.Sc., Berlin Institute of Technology, Straße des 17. Juni 152, 10623 Berlin, Germany, svea.heinemann@tu-berlin.de

ABSTRACT

The rise of the smart phone, apps and networked add-on devices has led to a major trend in the health and technology sector: the data-driven approach used by individuals to accurately read their body's inner workings such as heart rate or blood glucose levels or monitor behavior such as steps walked during the day to analyze, draw conclusions and suggest behavioral changes. Personal devices record information and send it to the data cloud for algorithms to analyze and propose lifestyle changes. Studies on telemedicine suggest that a data-driven approach if supervised by healthcare professionals might be useful to treat chronic conditions such as diabetes or recovering from substance abuse conditions such as alcoholism. However, self-tracking alone seems not to improve people's health in general. People don't lose weight because they accurately count calories with weight loss apps but because they connect with other people online who share similar goals.

Recent research into pockets of extreme longevity around the world – classified as Blue Zones – suggests that certain lifestyle characteristics such as not smoking, staying physically active, being socially engaged, cherishing family and friends, as well as eating a predominantly plant-based diet can contribute to a long and healthy life. Healthy lifestyles therefore do not solely rely on individual behavior but are also influenced by social and environmental determinants of health. Can places be designed to contribute to healthy lifestyles? How can social relationships help people to achieve their goals and how can they be fostered by public places? Can community-based technologies help to improve overall health and mitigate some of the drawbacks of contemporary life – a sedentary lifestyle, heightened stress and anxiety levels, consumption of highly processed food, environmental pollution, and challenges to build and sustain long-term positive human relationships across generations and diverse groups?

Keywords: *quantified self, computing, mobile apps, online communities, wearables.*

164 SKYSCRAPER'S PUBLIC AREAS: THE IMPACT ON SPACE AND SOCIAL LIFE

Alicja Stefańska

PhD student, Gdańsk University of Technology, ul. Narutowicza 11/12, 80-233 Gdańsk, Poland, stefanska.alicja@gmail.com

ABSTRACT

In recent years, more careful consideration is taken into social issues of designing skyscrapers by humanizing adherent internal and external public areas. Case studies of The Shard (London: 2012), 122 Leadenhall Street (London: 2014), 20 Fenchurch Street (London: 2014), Heron Tower (London: 2011), Tower 25 (Nicosia: 2013), Zoofenster (Berlin: 2012), DNB House (Oslo: 2012), Centrum Biurowe Neptun (Gdańsk, 2014), Skytower (Wrocław: 2012), Plac Unii (Warszawa: 2013) and JM Tower (Warszawa: 2011) investigate the emerging comprehension of social needs by examining how the skyscrapers public areas are designed and used. The result of the analysis establishes the connection of the skyscraper to the network of public spaces in the city and its designed continuation as interior public areas. The study aims to examine their influence on the level of comfort of the skyscraper's occupier, his perceptive scale of the building's structure and the newly created microclimate. Further subjects to consideration were: the impact of shared spaces on establishing social ties of skyscraper's community, the reason why are they used, the accessibility of recreational areas within the building, the supervision of them, its influence on the occupant, the level of safety of the building with pursued policies of openness or easy access to the interior spaces and utopia of recreational areas of the skyscraper. Greater fluidity of spatial perception is observed despite the property boundaries. While the most easily accessible places are still located around the ground floor, there is a tendency to localize significant recreational areas, such as gardens, inner squares and sport zones, not only on the top level of the skyscraper, but also interspersing this function towards the storeys. Public areas act as friendly environment for the conglomerate of occupants. Shared spaces influence personalized perceptive zonal division, which as a repercussion decreases homogeneous nature of the skyscraper.

Keywords: *architecture, skyscraper, public area, public space.*



TOPIC XII: SOCIAL NETWORKS AND HUMAN BASIC NEEDS

THE IMPACT OF SOCIAL NETWORKS USE ON REDUCTION OF DEPRESSION IN CANCER PATIENTS

165

Leila Habibi

PhD student, Management department, University of Tehran, Tehran, Iran, Leila.habibi@ut.ac.ir

Hamid Reza Farpour

MD, Physical Medicine and Rehabilitation clinic, Amir Al Momenin hospital, Gerash, Fars, Iran, farporh@gmail.com

ABSTRACT

As depression can has profound negative effects on the functional status, quality of life, duration of hospitalization and even medical outcome of cancer patients, so evaluation and treatment of this disorder is important.

Previous studies show that communication and social activities have a direct effect on the reduction of depression symptoms of the heart disease patients. This was a descriptive study aimed at assessing the prevalence of depression in cancer patients who used social network and those who did not. A total number of 316 patients participated in this study.

The Beck Depression Inventory (BDI) was applied to measure depression. Data were analysed using chi-square test running SPSS soft-ware.

The Result shows that using social network led to reduction in psychological symptoms in dimensions of Beck Depression Inventory (BDI) variables among patients.

Keywords: *social network, cancer, anxiety, depression.*



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