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OIKONET A global multidisciplinary network on housing research and learning



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# **Journals and Conferences**

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### 1 EXECUTIVE SUMMARY

This is a report of the publications produced by OIKONET partners, published in journals, external conferences and conferences organized within the project.

3 articles have been published in the following journals:

- Croatian Journal Sociology and Space
- Global Journal of Engineering Education (GJEE) (2 articles)

11 papers have been presented in these external conferences:

- 7th International Conference of Education, Research and Innovation (ICERI), which was held in Seville (Spain), 17-19 November 2014.
- Housing a critical perspective: Liverpool, 8-9 April 2015,
- World Renewable Energy Congress (WREC), Bucharest, 8-12 June 2015
- Changing Cities: Spatial, Design, Landscape & Socio-economic Dimensions, Porto Heli, Greece, 22-26 June 2015
- HEAD'15 1st International Conference on Higher Education Advances, Valencia, 24-26 June 2015
- EDULEARN international conference, Barcelona, 6-8 July 2015
- Global Learn 2016 Global Conference on Learning and Technology, Limerick, Ireland, 28-29 April 2016
- EAAE ARCC International Conference, Lisbon, Portugal, 15-18 June 2016
- European Network for Housing Research, Belfast, UK, 28 June to 1 July 2016
- DOCOMOMO conference, Lisbon, Portugal, 6-9 September 2016
- JIDA'16, IV Jornadas sobre innovación docente en arquitectura, Valencia, 20-21 October 2016

In addition, 40 papers have been presented by partners in the three international conferences on the theme "Global Dwelling" organized within the project (see Appendix).

# 2 Introduction

### 2.1 Purpose and target group

The purpose of the publications in journals and specialized conferences was to disseminate the work done in the OIKONET project among the scientific and academic communities. The topics addressed in these publications broadly covered two areas: contemporary housing research issues and pedagogical innovation. They were addressed to academics involved in housing studies, both research and teaching; teachers in schools of architecture and planning, and learning designers concerned with pedagogical innovation.

### 2.2 Contribution of partners

- P1 LA SALLE- School of Architecture La Salle, Barcelona, Spain (6 papers in external conferences; 1 paper in OIKONET conferences)
- P2 ETSA-UPV- School of Architecture of Valencia, Spain (4 papers external conferences; 1 paper OIKONET conferences)
- P3 FASTU- Faculty of Architecture, Slovak Technical University, Bratislava, Slovakia (2 journal articles, 1 paper in external conferences; 1 paper OIKONET conferences)
- P4 KUL- Faculty of Architecture, KU Leuven, Gent/Brussels, Belgium (2 papers in OIKONET conference)
- P7 CHALMERS University of Chalmers, Sweden (1 paper in OIKONET conference)
- P8 IHS- Institute for Housing and Urban Development Studies, The Netherlands (1 paper OIKONET conference)
- P10 UKIM- Faculty of Architecture, University "Ss. Cyril and Methodius", Macedonia (4 papers in OIKONET conferences)
- P12 UL- Faculty of Mechanical Engineering, University of Ljubljana, Slovenia (1 paper in external conference; 2 papers in OIKONET conferences)
- P13 AAU- School of Architecture, Design and Planning, Aalborg University, Denmark (1 paper in OIKONET conference)
- P14 RTU Faculty of Architecture and Urban Planning at Riga Technical University, Latvia (2 papers in OIKONET conferences)
- P15 UCY- Faculty of Architecture, University of Cyprus, Cyprus (3 paper external conferences; 1 paper OIKONET conferences)
- P16 UCLAN- Grenfell-Baines Institute of Architecture, University of Central Lancashire, UK (1 paper in external conferences; 4 papers in OIKONET conferences)
- P17 ISP- Faculty of Law, University of Zagreb, Croatia (1 journal article; 1 paper OIKONET conferences))
- P18 UGA- Institut d'Urbanisme de Grenoble, Université Grenoble Alpes, France (3 papers OIKONET conferences)
- P20 GTU- Faculty of Architecture, Gebze Technical University, Turkey (1 paper OIKONET conferences)
- P21 SOSTRE CIVIC, Barcelona (1 paper OIKONET conferences)

- P25 ISCTE-IUL University Institute of Lisbon, Portugal (1 paper extermal conferences; 3 papers in OIKONET conferences)
- P26 AF BELGRADE- Faculty of Architecture, University of Belgrade, Serbia (2 paper external conferences; 1 paper OIKONET conferences)
- P27 BUT- Faculty of Architecture, Bialystok University of Technology, Poland (1 paper OIKONET conference)
- P28 ELTE- Faculty of Social Sciences, Eötvös Loránd University, Hungary (1 paper external conference; 1 paper in OIKONET conference)
- P29 DIT- School of Architecture, Dublin Institute of Technology, Ireland (2 paper external conferences; 1 paper in OIKONET conference)
- P30 ITU- Faculty of Architecture, İstanbul Technical University, Turkey (2 papers OIKONET conferences)
- P31 VSUACE-Volgograd State University of Architecture and Civil Engineering, Russia (1 paper external conferences; 2 papers in OIKONET conferences)
- P32 FAU- Facultad de Arquitectura y Urbanismo, Universidad de Chile, Chile (3 paper in OIKONET conferences)
- P33 UPPR- School of Architecture, Polytechnic University of Puerto Rico (1 paper OIKONET conferences)
- P34 HSUB- UN Habitat, Kenya (1 paper OIKONET conferences)

In total, 26 out of 34 partners have contributed with publications in external conferences and journals, and in the three OIKONET conferences.

# 2.3 Relations to other activities in the project

Some of the publications are direct reflections of activities carried out in the project, such as research topics discussed within the housing research subnetwork (WP2 "Housing research"), results of the collaborative learning spaces and workshops (WP4 "Pedagogical activities") and of the participatory actions (WP3 "Community participation").

# 3 Publications in Journals

# 3.1 Scientific study on contradictions of housing policies in EU

The article of Josip Pandžić (PFZ), published in the Croatian journal Sociology and Space, deals with the paradigms of housing in West-European countries. The divergence paradigm in which various "middle range theories" are included is the most developed paradigm in comparative housing studies to date and it will be used for a preliminary description of the differences and similarities among European countries with regards to housing. Despite the marginalised research status of the housing convergence paradigm, the goal of this paper is to revitalize housing studies by conducting a comparative analysis of the contradictions of the converging trends of housing policy liberalization and Europeanization, which directly or indirectly relate to housing changes in developed member states of the EU. The article is based on the housing research inspired by the OIKONET project.

Abstract: see appendix.

Full text online (Croatian language): <a href="http://hrcak.srce.hr/file/252947">http://hrcak.srce.hr/file/252947</a>

Pandžić, Josip. Proturječnosti stambenih politika u razvijenim državama EU-a (Contradictions of Housing Policies in Developed EU States). Sociologija i prostor: časopis za istraživanje prostornoga i sociokulturnog razvoja, Vol.54 No.3, pp. 219-246. Dec. 2016.

### 3.2 Sustainability of small dwellings

One of the branches of housing research of the Faculty of Architecture STU focuses on the problem of small houses from the point of view of sustainability. It was inspired by the "Global Dwelling" approaches of the OIKONET project. Some of the first results of this research were presented on a poster at the third OIKONET international conference "Global Dwelling" in Manchester and more detailed outcomes were later published in the Australian scientific journal GJEE (SCOPUS indexed). The focus of the study of Henrich Pifko, Veronika Trnovská and Robert Špaček (FASTU) was on the sustainability of small houses and their integration into the educational process. From a sustainability perspective, smaller size indicates lower consumption of materials, energy, building plot and goods, and it also brings about a change in lifestyle as dwellers become more sustainable one.

Abstract: see Appendix.

Full text online: http://www.wiete.com.au/journals/GJEE/Publish/vol18no3/01-Spacek-R.pdf

Pifko, Henrich - Špaček, Robert - Trnovská, Veronika. Teaching sustainable architecture - small as a paradigm. Global Journal of Engineering Education. Vol. 18, No. 3, 2016, pp. 148-153.

# 3.3 Innovation in architectural education - OIKONET experience

Viera Joklova and Henrich Pifko (FASTU) presented the paper "Innovation in architectural education – OIKONET experience" at the 4th World Conference on Technology and Engineering Education (WCTEE) under the theme Innovative Design and Education, which was on 2-5 September 2015 in Bratislava, Slovakia. This paper was published in the GJEE journal.

Joklová, Viera -Pifko, Henrich. Innovation in architectural education -OIKONET experience. Global journal of engineering education: The 4th World Conference on Technology and Engineering Education, Bratislava, 2-5 September 2015, 17. s. 124--131. ISSN 1328-3154.

http://www.oikonet.org/admin controller/getDataElement/854/Papers/a

http://conference.fa.stuba.sk/wctee.html

Abstract: see Appendix.

# innovative design and education

on Technology and Engineering Education (WCTEE) education

innovative design and education the theme

Innovative Design and Education and education

Figure 6. Fragment of the conference home page

### **4 CONFERENCE PAPERS**

In this section the papers presented by OIKONET partners in external conferences are included. Papers presented in the three international OIKONET conferences are not included in this report.

### 4.1 OIKONET: pedagogic innovation in housing studies

A paper describing the work about the pedagogic innovation carried out in OIKONET was presented by Leandro Madrazo (LA SALLE) at the 7th International Conference of Education, Research and Innovation (ICERI), which was held in Seville (Spain), on the 17th, 18th and 19th of November, 2014.

Abstract: see Appendix.

The paper was published in conference proceedings:

Madrazo, Leandro. *OIKONET: Pedagogic Innovation in Housing Studies*. In: ICERI2014 Proceedings, 7th International Conference of Education, Research and Innovation. Seville, Spain. 17-19 November, 2014. ISBN: 978-84-617-2484-0 / ISSN: 2340-1095; Publisher: IATED; pp. 1098-1108

Information on the conference:

http://iated.org/concrete3/paper\_detail.php?paper\_id=39867 http://www.oikonet.org//admin\_controller/getDataElement/853/Papers/a



Figure 1. Cover page of the iCERI 2014 proceedings and image of the conference

# 4.2 A critical analysis of urban regeneration programs in Europe

A paper on urban regeneration programs in Europe and the activities carried out in OIKONET around this theme was presented by Karim Hadjri (UCLan) at the conference that took place at the University of Liverpool on the 8th and 9th of April 2015. The paper was co-authored by Gábor Csanádi, Adrienne Csizmady (ELTE); Gergely Olt, Mirjana Devetakovic; (AF BELGRADE); Viera Joklova (FASTU); Leandro Madrazo (LA SALLE); Elina Krasilnikova and Larisa Kuzina (VSUACE). The presentation took place on the 8th of April during the first session on Housing and Urbanism. The session was well attended with a very positive response to the presented papers which led to a lively and interesting debate. Some questions were raised about the OIKONET presentation concerning the tools and methods used to engage stakeholders in the pedagogic activities. Additionally, participants from Germany presented

studies on shrinking cities (Leipzig) which could benefit from the OIKONET workshop in Cottbus. The interdisciplinary conference, "Housing – A Critical Perspective", was organised by the Sociology Department of Liverpool University, the Architecture Department of Liverpool John Moores University, and the Architecture\_MPS.

Abstract: see Appendix.

http://architecturemps.com/housing-critical-perspective/ http://www.oikonet.org/admin\_controller/getDataElement/846/Papers/a



Figure 2. Conference Housing – A Critical Perspective

Hadjri, Karim - Durosaiye, Isaiah Oluremi - Csanádj, Gábor - Czismady, Adrienne - Olt, Gergely - Devetakovic, Mirjana - Mrdjenovic, Tatjana - Joklová, Viera - Madrazo, Leandro - Krasilnikova, Elina - Kuzina, Larisa. *A critical analysis of urban regeneration programmes in Europe*. Conference: Housing - a critical perspective: Liverpool, 8-9 April 2015.

# 4.3 Evaluating the potential of local urban heat island mitigation

A paper on mitigation in urban environment was presented by Sašo Medved and Boris Vidrih (UL) at the conference World Renewable Energy Congress (WREC) XIV, that took place at the University Politehnica of Bucharest, from the 8th to the 12th of June 2015. The paper presents a study on the mitigation of local urban heat islands (LUHI) that occurs in urban settlements. Three different shapes of urban settlements (row type, chessboard type and atrium type) were analysed. For each of the settlement type three ratio of building height to street width were analysed. The LUHI was determined as differences between daily maximum average outdoor temperature in pedestrian zone and reference outdoor temperature at the settlement boundary

for reference settlements having albedo of the average modern city (0.35), settlements with increased albedo of all surfaces (0.65), settlement with green ground surface areas and settlements with fully green surface areas including facades and roofs of the buildings regarding to range of reference wind speeds. Conference webpage: http://www.wrec.ro

Sašo Medved and Boris Vidrih. Evaluating the potential of local urban heat island mitigation by the whitening and greening of the settlement surfaces. World Renewable Energy Congress WREC XIV, University POLITEHNICA of Bucharest, Romania, June 8 – 12, 2015.

Abstract: see Appendix.

The paper was published in the conference proceedings.

# 4.4 IPI methodology in habitat regeneration strategies using OIKONET platform

A paper titled "IPI methodology in habitat regeneration strategies using OIKONET platform" was presented by Tatjana Mrdjenovic, from the Faculty of Architecture, University of Belgrade, at the international conference "Changing Cities: Spatial, Design, Landscape & Socioeconomic Dimensions", which took place in Porto Heli, Greece, on 22-26 June 2015. The authors of the paper are Tatjana Mrdjenovic, Mirjana Devetakovic, Viera Joklova, and Elina Krasilnikova (AF BELGRADE, FASTU, VSUACE). The paper describes the experience of the collaboration of the schools from three countries (Serbia, Slovakia and Russia) in the learning space "Housing Regeneration Strategies".

Abstract: see Appendix.

http://www.oikonet.org/admin\_controller/getDataElement/838/Papers/ahttp://changingcities.prd.uth.gr/

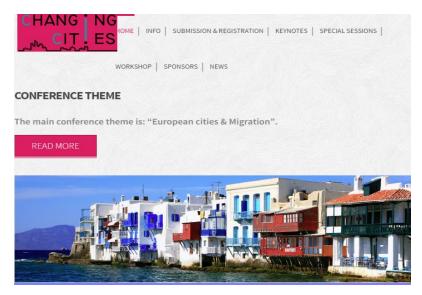


Figure 3. Screenshot of the conference homepage

Mrdjenovic, Tatjana - Devetaković, Mirjan - Joklová, Viera - Krasilnikova, Elina. *IPI methodology for designing resilience habitat regeneration strategies using OIKONET platform*. In GOSPODINI, A. Proceedings of the International Conference on Changing Cities II, Spatial, Design, Landscape & Socio-economic Dimensions [elektronický zdroj]: 2nd International Conference on Changing Cities II: Spatial, Design, Landscape & Socio-economic Dimensions, 22.-26. June, 2015, Porto Heli, Greece. 1. ed. Thessaloniki, Greece: Grafima Publications, 2015, p. 770--782. ISBN 978-960-6865-88-6.

# 4.5 Collaborative web-based learning spaces: Introduction to Housing

A paper of Nadia Charalambous (UCY) and Carla Sentieri (ETSA-UPV) exploring a collaborative web-based learning space named "Introduction to Housing" was presented at the HEAd'15 - 1st International Conference on Higher Education Advances – on 24-26 June 2015 in Valencia, Spain. This paper discusses mainly the curriculum of the design studios in the Polytechnic University of Valencia and the University of Cyprus and includes work from a 3D Visual Communication course at the University of Belgrade. The transformation of the traditional design studio learning into a "blended" learning environment is then discussed through the presentation of the web-based learning space. Participating students were exposed to different contexts being able to experience learning through the virtual campus. Conference web-page: <a href="http://www.headconf.org/">http://www.headconf.org/</a>.

Abstract: see Appendix.



Figure 4. HEAd'15 conference

# 4.6 Designing and implementing a collaborative learning space to introduce students to housing

Carla Sentieri (ETSA-UPV), Nadia Charalambous (UCY) and Leandro Madrazo (LA SALLE) presented the paper "Designing and Implementing a Collaborative Learning Space to Introduce Students to Housing", to the 7th EDULEARN 15 international conference on 6-8 July 2015 in Barcelona, Spain. The paper reflected the work done in the design of the learning space "Introduction to Housing".

https://iated.org/edulearn/ http://www.oikonet.org/admin\_controller/getDataElement/851/Papers/a



Figure 5. Conference and cover page of the proceedings

Abstract: see Appendix. Published in EDULEARN15 Proceedings:

Sentieri, Carla - Charalambous, Nadia - Madrazo, Leandro. *Designing and implementing a collaborative learning space to introduce students to housing*. In: 7th International Conference on Education and New Learning Technologies. Barcelona, Spain. 6-8 July, 2015. Barcelona: IATED 2015, pp. 5175-5184. ISBN: 978-84-606-8243-1 / ISSN: 2340-1117

# 4.7 Enhancing a housing technical design studio with a collaborative on-line learning space

Jim Roche (DIT) presented a paper - written with Leandro Madrazo (LA SALLE)- which described the experience of the learning space "Urban Housing Regeneration" on the conference Global Learn 2016 - Global Conference on Learning and Technology - on 28-29 April 2016 in Limerick, Ireland. A blended-learning approach was adopted to create learning spaces that encompass a variety of course typologies (seminars, design studios) carried out both on-site and on-line following a blended-learning philosophy. The activities have been designed and implemented in the learning environment OIKODOMOS Workspaces. This blended-learning approach has contributed to enlarge the educational space of the on-site design studio. Students had to learn the skills to communicate their design ideas in this blended-learning environment in an effective manner.

Abstract: see Appendix.

The full paper was published in the conference proceedings:

Roche, Jim - Madrazo, Leandro. *Enhancing a housing design studio with a collaborative learning space*. In Proceedings of Global Learn 2016. Association for the Advancement of Computing in Education (AACE), 2016, pp. 220-229.

http://www.oikonet.org/admin\_controller/getDataElement/903/Papers/a

http://www.learntechlib.org/p/172796

https://www.aace.org/conf/glearn/



Figure 7. Global Leran 2016 conference

# 4.8 Applying a blended learning methodology to the study of housing

Leandro Madrazo (LA SALLE) presented this paper co-authored by with Carla Sentieri (ETSA-UPV) and Nadia Charalambous (UCY) on the EAAE ARCC International Conference on 15-18 June 2016 in Lisbon, Portugal. The paper describes the work done in the learning space "Introduction to Housing" applying the blended-learning methodology devised for the OIKODOMOS Virtual Campus. Students and teachers of partner schools in Spain, Cyprus, Turkey and Serbia have participated in the activities of this learning space.

Abstract: see Appendix.

 $\frac{http://www.oikonet.org/admin\_controller/getDataElement/897/Papers/a}{http://www.eaae.be/eaaearcc-2016/}$ 



Figure 8. One of the slides of the presentation in the conference

Madrazo, L., Sentieri, C., & Charalambous, N. (2017). Applying a blended learning methodology to the study of housing. In M. J. Rodrigues Couceiro da Costa, F. Roseta, J. Pestana Lages, & S. Couceiro da Costa (Eds.), *Proceedings of the EAAE ARCC 10th International Conference (EAAE ARCC 2016)*. CRC Press, Taylor and Francis Group.

### 4.9 Developing strategies for sustainable neighborhoods

Leandro Madrazo and Angel Martin (LA SALLE) presented the paper "Developing Strategies for Sustainable Neighborhoods" at the conference of the European Network for Housing Research, which was from 28 June to 1 July 2016 in Belfast. The paper summarizes the work done in the learning space "Housing Systems" which was dedicated to the analysis of the superblock model implemented in some areas of the city of Barcelona to improve the city's liveability.

Abstract: see Appendix.

http://enhr2016.com/

http://www.oikonet.org/admin\_controller/getDataElement/980/Papers/a



Figure 9. ENHR 2016 conference

Madrazo, Leandro – Martin, Angel. *Developing strategies for sustainable neighborhoods*. In: Proceedings of the European Network for Housing Research (ENHR) conference, 28 June - 1 July 2016, Belfast. ENHR, 2016.

# 4.10 Across disciplinary and national borders: a pedagogical tool for re-use

Sandra Marques Pereira, from the University Institute of Lisbon (ISCTE), and Jim Roche, from the Dublin School of Architecture (DIT), presented the paper "Across Disciplinary and National Borders: a pedagogical tool for re-use" at the Docomomo conference, which took place in Lisbon, Portugal, from 6th to 9th September 2016. The paper contains a reflection on the work done at the first international OIKONET workshop, dedicated to analysing formal and informal settlements in Lisbon.

http://www.oikonet.org/admin\_controller/getDataElement/979/Papers/a

http://www.docomomo2016.com

 $\underline{https://www.docomomo.com/shop/node/92}$ 





Figure 10. Docomomo 2016 conference and the proceedings cover page.

# 4.11 Pedagogical innovation in learning space "Introduction to Housing".

Carla Sentieri (ETSA-UPV) presented a paper to the conference "JIDA'16. IV Jornadas sobre innovación docente en arquitectura" which has took place in Valencia, Spain, on 20th and 21st October, 2016. The paper titled "The integration of a collaborative platform with the design studio: a reflection about the participation in the OIKONET project" summarizes the experience of the participation of the School of Architecture of Valencia in OIKONET, in particular, the work done in the learning space "Introduction to Housing", which was led by the school.

Abstract: see Appendix.

http://iala.udc.es/2016/11/iv-jornadas-sobre-innovacion-docente-en.html

# **5 CONCLUSIONS**

The vast majority of partners (26 from 34) have been actively involved in writing the articles and papers which have been presented in international conferences. In total, 3 articles and 11 papers have been published. In addition, 40 papers have been presented at the three international conferences and published in the conference proceedings which are available in the project web portal and in a book published by WIT Press (proceedings of the Manchester conference).

The publications cover issues related to contemporary housing research addressed from a multidisciplinary perspective: housing policies, sustainability, energy efficiency, and urban and housing regeneration. A substantial number of publications (1 article, 8 papers) were dedicated to discussing the pedagogical innovation carried out in the project activities.

# **APPENDIX A: EXTERNAL PUBLICATIONS**

Abstracts of the publications in scientific journals and papers presented in external conferences.

### Scientific journals

#### **Contradictions of Housing Policies in Developed EU States**

Pandžić, Josip. Contradictions of Housing Policies in Developed EU States. Sociologija i prostor : časopis za istraživanje prostornoga i sociokulturnog razvoja, Vol.54 No.3 (206), pp. 219-246. Dec. 2016.

Full text online (Croatian language): <a href="http://hrcak.srce.hr/file/252947">http://hrcak.srce.hr/file/252947</a>

#### Abstract:

In the last half century of comparative research, the development of housing has manifested itself as an ambivalent and empirically hard-to-measure object of study. In time, researchers' labour resulted in a threefold division between juxtapositional, convergence and divergence paradigms. The divergence paradigm in which various "middle range theories" are included is the most developed paradigm in comparative housing studies at the moment and it will be used for a preliminary description of differences and similarities among European countries with regards to housing. Despite the housing convergence paradigm's marginalised research status, the goal of this paper is its revitalisation in housing studies by way of conducting a comparative analysis of contradictions of convergence trends of housing policy liberalization and Europeanization which directly or indirectly relate to housing changes in developed member states of the EU. The contradictions of convergence housing policies' trends have been problematized separately using the example of the 2008 global financial crisis, the consequential crisis in the EU and their impact on housing.

#### Teaching sustainable architecture - small as a paradigm.

Pifko, Henrich - Špaček, Robert - Trnovská, Veronika. Teaching sustainable architecture - small as a paradigm. Global Journal of Engineering Education. Vol. 18, No. 3, 2016, pp. 148-153.

Full text online: <a href="http://www.wiete.com.au/journals/GJEE/Publish/vol18no3/01-Spacek-R.pdf">http://www.wiete.com.au/journals/GJEE/Publish/vol18no3/01-Spacek-R.pdf</a>

#### Abstract:

Small dwellings have started to receive more attention. Partly, it is caused by their extraordinariness in the context of standard dwellings; however, one should not overlook their sustainability potential. Moreover, the houses, small in size, but carefully designed, offer great use. In this sense, small houses are efficient in offering life quality by minimising economic and environmental costs. The study follows previous research on this topic at the Institute of Ecological and Experimental Architecture, where the potential of small scale architecture is researched in a theoretical way, as well as through studio assignments. The focus of the study is on the sustainability of small houses and their integration into the educational process. From a sustainability perspective, smaller size indicates lower consumption of materials, energy, building plot and goods, and it also comes with a change of a lifestyle to a more sustainable one. The minimax principle plays a key role. In architectural education, the small house presents a challenging task in space organisation, and it also connects building design with lifestyle, which is where the sustainability of the small houses lies.

#### Innovation in Architectural Education – OIKONET Experience

Joklová, Viera -Pifko, Henrich. Innovation in architectural education -OIKONET experience. Global journal of engineering education: The 4th World Conference on Technology and Engineering Education, Bratislava, 2-5 September 2015, 17. s. 124--131. ISSN 1328-3154.

#### Abstract:

In architectural education, possible innovation fields include collaborative learning processes. International research projects OIKODOMOS and OIKONET look for tools enabling wide international collaboration and enhancement of education methods with focus on support of blended-learning pedagogical model: the "Virtual Campus".

To implement this Virtual Campus to architectural education on several universities three environments were developed: Workspaces, Case Repository and Oikopedia. Workspaces support project-based learning activities, e.g. development of an architectural (or urban) project in collaborative manner in multiple "Learning Spaces". This environment facilitates the collaboration among distant learners, carrying joint learning activities in different settings, physical and virtual: design studios, lectures, seminars and courses. Case Repository is a digital repository of housing case studies, which is constructed collaboratively by learners, Oikopedia is the knowledge base containing the topics and concepts studied in the Virtual Campus, semantic tools facilitate integrated access and data querying of the Virtual Campus databases. Our effort is focused on the problem of innovative housing learning and on different aspects of contemporary global dwelling: participation, sustainability and energy efficiency, informal architecture, digital fabrication, integrated and parametric design approach – results of student workshops bring new ideas. The learning space "Habitat Regeneration Strategies" is aimed to support learning activities in examining actual experience in regeneration of cities, with a particular interest in the issues of livability, housing and resilience. Its main Learning Activities are "Urban Habitat Regeneration and Integrative Urban Design in Sustainable Development", "Creating Habitat Regeneration Strategies", and "Habitat Regeneration Action"- each consisting of several Learning Tasks.

Parallel to the enhancements of architecture study on our universities we deal with implementation of MOOC (Massive Online Open Course) approach to architectural problems, we prepare course "From Concept to Fabrication" in Canvas environment.

### **Conference Papers**

#### **OIKONET: Pedagogic Innovation in Housing Studies**

Madrazo, L.: OIKONET: Pedagogic Innovation in Housing Studies. In: ICERI2014 Proceedings; 7th International Conference of Education, Research and Innovation; Seville, Spain. 17-19 November, 2014. ISBN: 978-84-617-2484-0 / ISSN: 2340-1095; Publisher: IATED; pp. 1098-1108.

#### Abstract:

This paper introduces the OIKONET network, a project co-funded by the Life Long Learning Programme of the European Union, 2011-14. Thirty-four institutions representing twenty-five countries in and outside Europe are part of the network. Partners are higher education institutions—architecture, urban planning, engineering, social and economic studies—research groups, local administrations and professional organizations. The network is structured in three areas—research, community participation and pedagogy—which will become inter-related over the process of the network construction. During the first year of the project, some learning activities have been collaboratively designed and implemented which involve partners from higher-education institutions, researchers and non-academic stakeholders. The preliminary results of these activities are presented and discussed.

#### A critical analysis of urban regeneration programmes in Europe

Hadjri, Karim - Durosaiye, Isaiah Oluremi - Csanádj, Gábor - Czismady, Adrienne - Olt, Gergely - Devetakovic, Mirjana - Mrdjenovic, Tatjana - Joklová, Viera - Madrazo, Leandro - Krasilnikova, Elina - Kuzina, Larisa. A critical analysis of urban regeneration programmes in Europe. Conference: Housing - A critical perspective: Liverpool, 8-9 April 2015, 7. p. 2015.

#### Abstract:

Urban regeneration is informed and driven by the causes and effects of globalization, climate change, the global economic crisis, and lifestyle changes. In Europe, there is currently a pressing demand to redevelop brownfields areas, inner-city heritage sites, post-conflict and post-disaster areas, and large-housing estates. Housing regeneration tools range from large-scale to micro-scale interventions that lead to a complete change to the physical features of neighbourhoods and the life of their residents.

This study presents a joint activity within the OIKONET Erasmus Lifelong Learning Project, by highlighting that regeneration is an important issue driving the production of contemporary housing in Europe. The presented research is part of a wider research activity aimed at identifying significant contextual changes producing a regeneration demand, that need further investigation. This paper seeks to demonstrate and compare the physical and social effects of urban regeneration programmes on different types of neighbourhoods in selected European countries, i.e. the UK, Serbia, Slovakia, Russia and Hungary.

It will identify issues emerging from regeneration processes due the planned versus unforeseen changes in the physical circumstances. It will also investigate the role of local authorities and their policies to handle the social change and its impact on affected residents. It will test how policy measures could change the symbolic meaning of the area, and analyse the social and economic sustainability of these new emerging parts of important cities. Finally, it will identify common patterns of change and draw conclusions for future research and pedagogical content that will inform existing learning activities of OIKONET and the wider educational and professional communities. The paper argues a need to rethink the actual housing conditions according to diverse contextual changes driven by globalisation, climate change, economic

crisis, living styles, social issues, post-conflict and post-disaster recovery.

# Evaluating the potential of local urban heat island mitigation by the whitening and greening of the settlement surfaces

Sašo Medved and Boris Vidrih. Evaluating the potential of local urban heat island mitigation by the whitening and greening of the settlement surfaces. World Renewable Energy Congress WREC XIV, University POLITEHNICA of Bucharest, Romania, June 8 - 12, 2015.

#### Abstract:

The paper presents study on mitigation of local urban heat island (LUHI) that occurs in urban settlements which are the core elements of the build environment. Three different shapes of urban settlements (row type, chessboard type and atrium type) were analysed. For each of the settlement type three ratio of building height to street width (H/W) were analysed. The LUHI was determined as differences between daily maximum average outdoor temperature in pedestrian zone and reference outdoor temperature at the settlement boundary for reference settlements having albedo of the average modern city (0.35), settlements with increased albedo of all surfaces (0.65), settlement with green ground surface areas and settlements with fully green surface areas including facades and roofs of the buildings regarding to range of reference wind speeds (0.1 to 4.5 m/s). Numerical procedure combining thermal and airflow computer code was developed to speedup numerical calculations. It was found out that LUHI can be significantly lowered (up to 2.8 K) and that wind velocity has significant influence on LUHI if reference velocity is lower than 1 to 2 m/s. Results show that there are large differences in LUHI regarding to the type of the settlement. Such conclusions can be used in phase of urban planning.

#### IPI methodology in habitat regeneration strategies using OIKONET platform

Mrdjenovic, Tatjana - Devetaković, Mirjan -- Joklová, Viera - Krasilnikova, Elina. IPI methodology for designing resilience habitat regeneration strategies using OIKONET platform. In GOSPODINI, A. Proceedings of the International Conference on Changing Cities II, Spatial, Design, Landscape & Socio-economic Dimensions [elektronický zdroj]: 2nd International Conference on Changing Cities II: Spatial, Design, Landscape & Socio-economic Dimensions, 22.-26. June, 2015, Porto Heli, Greece. 1. ed. Thessaloniki, Greece: Grafima Publications, 2015, p. 770--782. ISBN 978-960-6865-88-6.

#### Abstract:

Habitat regeneration is a process of re-creating values into consensual identity framing strategies for its achievement. Considering sustainability, globalization, bounded rationality, these strategies must be resilience, inclusive, participatory, adaptive, developmental, context based. Positivistic thought need to be widened with social knowledge, meaning we have to innovate new methodologies for each context based habitat regeneration.

Relatively broad scale of problems connected with urban regeneration determines the choice of appropriate approaches, methods and instruments depending not only on the problem specificity, but on the specific frame situation of regeneration process determined by political, institutional, financial, and other condition. In spite of this, the logics of settlement development processes allows defining the frame of urban regeneration in the form of a flow of main steps/phases whit specific tasks, approaches, methods and instruments creating the parts of an integrative system.

The paper will discuss pros and cons of using OIKONET web based platform for developing new methodological approach, called IPI, in achieving greater participation. The research assumes that the Integrative Participatory Interdisciplinary – IPI methodology has greater potentiality for sustainable and resilience habitat regeneration strategies using various ways of communication among stakeholders through web oriented platform. This potentiality will be measured through criteria that are related to providing adequate information in developing knowledge and cognition about reality and future regeneration directions The aim of the research is to present and discuss main principles of OIKONET platform towards achieving greater potentiality of IPI, especially in the virtual international seminar called Habitat Regeneration Strategies. Expected results will define main guidelines in habitat regeneration strategies using IPI.

#### Collaborative web-based learning spaces: Introduction to Housing

Nadia Charalambous, Carla Sentieri. Collaborative web-based learning spaces: Introduction to Housing. HEAd'15 - 1st International Conference on Higher Education Advances; June 24-26 2015 Valencia, Spain.

#### Abstract:

This paper explores a collaborative web-based learning space named "Introduction to Housing" created in the context of the Erasmus Lifelong Learning Project OIKONET. The learning space mainly draws on the curriculum of the design studios in the Polytechnic University of Valencia and the University of Cyprus and includes work from a 3D Visual Communication course at the University of Belgrade. All learning activities developed in this learning space aim at the introduction of students to housing studies through a collaborative learning environment that cuts across traditional and institutional boundaries. The paper starts with a brief discussion on design studio teaching, its importance in architectural education and recent impacts of emerging information technologies on traditional teaching methods. The transformation of the traditional design studio learning into a "blended" learning environment is then discussed through the presentation of the web-based learning space. The paper concludes with a discussion of the participants' experience which renders the proposed learning space as a fruitful and potentially innovative learning environment. Tutors had the opportunity to incorporate blended learning in their teaching and get familiar with different and diverse teaching methods and learning resources in different academic environments. Participating students were exposed to different cultural and academic contexts being able to experience different methods of learning through the virtual campus.

# Designing and implementing a collaborative learning space to introduce students to housing

Sentieri, Carla - Charalambous, Nadia - Madrazo, Leandro. Designing and implementing a collaborative learning space to introduce students to housing. In: 7th International Conference on Education and New Learning Technologies. Barcelona, Spain. 6-8 July, 2015. Barcelona: IATED 2015, pp. 5175-5184. ISBN: 978-84-606-8243-1 / ISSN: 2340-1117

#### Abstract:

This paper presents the results obtained in design and implementation of a collaborative web-based learning space named "Introduction to Housing" created in the context of the Erasmus Lifelong Learning Project OIKONET. The learning space mainly draws on the curriculum of the existing curriculum of design studios at the School of Architecture from the Polytechnic

University of Valencia and the University of Cyprus and includes work from a 3D Visual Communication course at the University of Belgrade. The aim of the learning space is to introduce students of architecture to housing studies in a learning environment that supports collaboration with students and teachers of other schools. The learning activities have been structured as sequences of tasks which can be carried out synchronously or asynchronously by the participating schools. Creating a shared learning structure, which encompasses different courses from various schools, represents a big challenge for the learning designers. Likewise, implementing the activities at each school while building a collaborative learning space requires flexible learning strategies. The paper will describe the design of the learning structure and the process to implement them. It will discuss to which extend the learning structure and the strategies to implement it can be replicated at different schools. Also, a discussion about the evaluation of the feedback of the participating students will be included in the paper.

#### Enhancing a housing design studio with a collaborative learning space

Roche, Jim - Madrazo, Leandro. Enhancing a housing design studio with a collaborative learning space. In Proceedings of Global Learn 2016. Association for the Advancement of Computing in Education (AACE), 2016, pp. 220-229.

#### Abstract:

This paper presents the experience in participating in collaborative learning environments involving different academic programs from various schools of architecture and urban planning. A blended-learning approach was adopted to create learning spaces that encompass a variety of course typologies (seminars, design studios) carried out on-site and on-line following a blended-learning philosophy. The activities have been designed and implemented in the learning environment OIKODOMOS Workspaces. The student work presented in this environment has been evaluated by teachers from other schools. This blended-learning approach has contributed to enlarge the educational space of the on-site design studio. Students had to learn the skills to communicate their design ideas in this blended-learning environment in an effective manner.

#### Applying a Blended Learning Methodology to the Study of Housing

Leandro Madrazo, Carla Sentieri, Nadia Charalambous EAAE ARCC International Conference, Lisbon, 15-18 June 2016

#### Abstract:

A blended-learning approach was adopted to create a learning space to introduce architecture students to be basics of architectural design through the study of housing. Components of different courses from three European schools of architecture, in Spain, Cyprus and Serbia, were combined in a joint learning structure. The learning activities were structured as sequences which were carried out synchronously or asynchronously by students from the three schools. The main supporting technology was OIKODOMOS Work-spaces, an on-line learning environment specifically created to support the design and implementation of learning activities in collaboration based on a constructivist philosophy of learning.

#### Developing strategies for sustainable neighbourhoods

Madrazo, Leandro – Martin, Angel. Developing strategies for sustainable neighborhoods. In: Proceedings of the European Network for Housing Research (ENHR) conference, 28 June - 1 July 2016, Belfast. ENHR, 2016.

#### Abstract:

In an elective course carried out at the School of Architecture La Salle in the winter semester of the academic year 2015/16, we applied a systemic approach to urban planning to develop sustainable strategies for the development of a superblock in the city of Barcelona. The course program was the result of the joint collaboration between teachers of architecture and researchers from different European institutions participating in the OIKONET project as well as representatives of a local planning office. The theoretical framework of the course was built upon three interconnected concepts: urban system, compact city and superblock.

# The integration of a collaborative platform with the design studio: a reflection about the participation in the OIKONET project

Sentieri, Carla - The integration of a collaborative platform with the design studio: a reflection about the participation in the OIKONET project JIDA'16. IV Jornadas de Innovación Docente en Arquitectura, Valencia, ETSAV-UPV, 20-21 October, 2016

#### Abstract:

This article reflects on the participation process of the Technical School of Architecture of Valencia (ETSA) in the collaborative learning platform created in the context of "Erasmus Lifelong Learning Project OIKONET". It will analyze the process of implementation and development of a course called "Introduction to housing" that aimed to introduce students to the architecture of housing in a collaborative environment with students and tutors from other schools, and the collaborative process to organize and develop three international workshops focused on the analysis of collective housing and the development of cities. The creation of a shared learning structure that accompanies different courses or workshops of different schools represents a great change for the future architects. On the other hand, implementing these activities in each school, while constructing the collaboration platform requires flexible learning strategies that are described in the article.

# **APPENDIX B: OIKONET CONFERENCES**

In this section are listed the contributions of partners to the series of three international conferences on the theme "Global Dwelling" organized by the project.

#### First international conference "Global Dwelling" (Barcelona)

The first OIKONET "Global Dwelling" conference took place on 25-26 September 2014 in Barcelona, organized by the School of Architecture La Salle.

OIKONET partners presented the following papers:

Drivers of contemporary housing research. Karim Hadjri, Isaiah Oluremi Durosaiye, *The Grenfell-Baines School of Architecture, Construction and Environment, University of Central Lancashire, United Kingdom* 

Advanced free cooling and free heating systems for nZEB. Sašo Medved, Faculty of Mechanical Engineering, University of Ljubljana, Slovenia \_

Challenges of housing policy in Chile. Viviana Fernández, Facultad de Arquitectura y Urbanismo, Universidad de Chile

Social sustainability and local housing policy. Adrienne Csizmady, Gábor Csanádi, Faculty of Social Sciences, ELTE University of Budapest, Hungary

The effect of resettlement on upward mobility and inclusion of the urban poor in India. Maria Zwanenburg, Maartje van Eerd, *Institute for Housing and Urban Development Studies, The Netherlands* 

Civic Housing: Empowering dwellers to shape their living environments. Leandro Madrazo, Angel Martin, La Salle School of Architecture, Ramon Llull University, Barcelona, Spain; Raül Robert, SostreCivic, Barcelona, Spain

Introduction to Housing: A collaborative learning space on the fundamentals of housing design and representation. Carla Sentieri, School of Architecture, Universidad Politécnica de Valencia, Spain; Nadia Charalambous, University of Cyprus; Mirjana Devetakovic, University of Belgrade, Faculty of Architecture, Serbia

A collaborative learning space to study mass housing in Europe. Adriana Diaconu, *Université Pierre Mendès-France. France* 

Contemporary living patterns in mass housing in Europe workshop: From collaborative design to digital fabrication. Alexandra Paio, *ISCTE-Lisbon University Institute, Portugal* 

Designing and constructing for a sustainable future - community urban housing in timber: Projects by 4th year architecture students at DIT. Jim Roche, *Dublin Institute of Technology-Dublin School of Architecture, Ireland* 

Teaching parametric urban design in a blended learning format: Entering the pocket university. Nicolai Steinø, *Department of Architecture, Design and Media Technology, Aalborg University, Denmark* 

Resilient and sustainable housing: Examples of student projects. Larisa Kuzina, *Volgograd State University of Architecture and Civil Engineering, Russia* 

Guidelines for community participation in the design of collective housing. Omayra Rivera, School of Architecture at the Polytechnic University of Puerto Rico

Co-operation in Urban Renewal Projects: Students' Participation in Transformation Process of

Large-Scale Housing Areas. Sandra Treija, Edgars Bondars, Uģis Bratuškins, *Riga Technical University, Faculty of Architecture and Urban Planning, Latvia* 

Catalogue of urban initiatives in Skopje: Mapping the civic society. Ognen Marina, Ss. Cyril and Methodius University, Faculty of Architecture, Macedonia

Community Participation on public space: The case of the municipalities of Santiago, Providencia and Recoleta in the Metropolitan Area of Santiago. Viviana Fernández, *Facultad de Arquitectura y Urbanismo, Universidad de Chile* 

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### Second international conference "Global Dwelling" (Bratislava)

The second OIKONET conference "Global Dwelling – Housing Regeneration Strategies" took place on 25 September 2015 in Bratislava, hosted by the Faculty of Architecture STU.

OIKONET partners presented the following papers:

Impacts on the Social Representations of Urban and Architectural Transformations in Renewed Districts in France and Elsewhere. Karin Schaeffer, *Research Laboratory PACTE at Pierre Mendes France University in Grenoble, France.* 

Transformation of Mass Housing in Slovakia, Actual Problems and Perspectives. L'ubica Vitková, Karol Görner and Pavlína Kolcunová, Faculty of Architecture, Slovak University of Technology in Bratislava, Slovakia.

Global Dwelling, Local Interpretation. Violeta Bakalchev, Faculty of Architecture and Design, UACS, Skopje, and Saša Tasić, Mitko Hadzi Pulja, Minas Bakalchev, Faculty of Architecture, "Ss. Cyril and Methodius" University, Skopje, Republic of Macedonia.

What is the Added Value of Public Rental Housing Programme as Social Innovation? Gojko Bežovan, Josip Pandžić, Faculty of Law, University of Zagreb, Croatia.

The Role of the Architect in Participatory Design Process. A contribution to alternative dwelling methodologies. Cristina Romão and Alexandra Paio, *ISCTE-IUL*, *Lisbon*, *Portugal*.

Participation and gender dimension in the Neighbourhood Regeneration Programme, Chile. Viviana Fernández Prajoux, School of Architecture, Faculty of Architecture and Urbanism, University of Chile, Santiago, Chile.

Standards of Housing for Rent Built by Municipal Social Building Society in Bialystok (Poland) after 1996, Andrzej Tokajuk, *Bialystok University of Technology, Faculty of Architecture, Bialystok, Poland.* 

From Narratives to Strategies: Regeneration Through Urban Border Conditions in Skopje. Ognen Marina, Marija Mano Velevska and Slobodan Velevski, *Faculty of Architecture, University Ss. Cyril and Methodius in Skopje, Macedonia.* 

The "Housing at the Centre" Approach. Gregor Herda, UN-Habitat Housing Unit, Nairobi, Kenya.

#### Third international conference "Global Dwelling" (Manchester)

The third OIKONET conference "Global Dwelling – Sustainability - Design - Participation" took place on 23 September 2016 in Manchester, hosted by the University of Central Lancashire, UK.

OIKONET partners presented the following papers:

Citizen codesign leads to a vision of social intensification. Jenny Stenberg, Liane Thuvander,

Jaan-Henrik Kain, Marco Adelfio, Chalmers University of Technology, Sweden

The Liveability of Historical Cities: Current State and Prospects for Habitation. Sandra Treija, Ugis Bratuskins, Edgard Bondars & Sarmite Barvika, *Riga Technical University, Latvia*.

Evaluation of Squatter Settlement Transformations in Istanbul in the Context of Sustainability: A Case Study of Fikirtepe. Yasemin Alkiser Bregger, *Istanbul Technical University, Turkey*.

Permanent transience: the identity crisis within representations of new urban housing. Adam Evans, *University of Central Lancashire, UK*.

Sustaining Environmental Qualities in Middle-Upper Class Residential Areas: A Studio Experience on Bagdat Avenue in Istanbul. Yasemin Alkiser Bregger, *Faculty of Architecture, Istanbul Technical University, Turkey*.

Designing the dwell care environment as a network: Alternative formats for collective living in an ageing society. Tomas Ooms, CONIX RDBM Architects, *KU Leuven, Belgium*.

Urban Tomography: Graphically Exploring the Urban Realm: A Form of Augmented Sectioning. Tomas Ooms, Johan Verbeke, *KU Leuven, Belgium*.

The Development and Validation of an Ontology of Intelligent Buildings. Tulika Gadakari & Sabah Musharat, *University of Central Lancashire*, *UK*.

Performance-based Selection of Sustainable Construction Solutions for External Walls. Sofia Veludo & Vasco Rota, *Instituto Universitario de Lisboa, Portugal*.

Teaching 'to dwell' via Concepts Ground, Wall and Canopy: A Fragmented Application in Dwelling Design. Sedef Ozcelik Guney, *Gebze Technical University, Turkey*.

Computer-aided Decision Supporting Tool for Nearly Zero Energy Building Renovation. Sašo Medved, Susan Domjan & C. Arkar, *Univeristy of Ljubljana*.

Design Principles of Hybrid Spaces in Terms of the Urban Planning Regeneration. Elina Krasilnikova & Dimitri Klimov, *Volgograd State University of Architectural and Civil Engineering, Russia.* 

Urban renewal as a lever for action in urban policy to make social housing districts more attractive. Karin Schaeffer, *Laboratory PACTE* (Politiques publiques, Action politique, Territoires) Pierre Mendès France University in Grenoble, France.

Living-dwelling | the importance of half-private spaces in the neighbourhoods on the city border line. Stefani Solarska, Mihaljo Zinoski, Igor Medarski & Ognen Marina, Ss. Cyril and Methodius University, Republic of Macedonia.

The Role of Cohousing in Social Communication and Sustainable Living Environments. Amy Jingjing Wang, Karim Hadjri, Steve Bennett & David Morris, *University of Central Lancashire*, *UK*.