

AR 2011/2

---

Arhitektura, raziskave  
*Architecture, Research*

ISSN 1580-5573

# AR

---

**Arhitektura, raziskave**  
*Architecture, Research*  
**2011/2**



Fakulteta za arhitekturo  
Inštitut za arhitekturo in prostor  
Ljubljana 2011

---

Fakulteta za arhitekturo  
Inštitut za arhitekturo in prostor

ISSN 1580-5573  
ISSN 1581-6974 (internet)  
<http://www.fa.uni-lj.si/ar/>

revija izhaja trikrat letno / published three times a year  
urednik / editor  
prof dr Borut Juvanec

regionalna urednika / regional editors  
prof dr Grigor Doytchinov, Avstrija  
prof dr Lenko Pleština, Hrvaška

uredniški odbor / editorial board  
prof dr Vladimir Brezar  
prof dr Peter Fister  
prof dr Borut Juvanec  
prof dr Igor Kalčič  
doc dr Ljubo Lah

znanstveni svet / scientific council  
prof dr Paul Oliver, Oxford  
prof Christian Lassure, Pariz  
prof Enzo d'Angelo, Firenze

recenzentski svet / supervising council  
prof dr Kaliopa Dimitrovska Andrews  
akademik dr Igor Grabec  
prof dr Hasso Hohmann, Gradec  
prof mag Peter Gabrijelčič, dekan FA

tehnični urednik / technical editor  
doc dr Domen Zupančič

prelom / setting  
Astroni d.o.o.

lektoriranje, slovenščina / proofreading, Slovenian  
Karmen Sluga

prevodi, angleščina / translations, English  
Milan Stepanovič, Studio PHI d.o.o.

klasifikacija / classification  
mag Doris Dekleva-Smrekar, CTK UL

uredništvo AR / AR editing  
Fakulteta za arhitekturo  
Zoisova 12  
1000 Ljubljana  
Slovenija

naročanje / subscription  
cena številke je 17,60 EUR / price per issue 17,60 EUR  
za študente 10,60 EUR / student price 10,60 EUR  
[dekanat@fa.uni-lj.si](mailto:dekanat@fa.uni-lj.si)

revija je vpisana v razvid medijev pri MK pod številko 50  
revija je dosegljiva in ali indeksirana na naslednjih mestih:  
Cobiss, ICONDA, MIT digital library, CEEOL, DLib, UL FA AR

za vsebino člankov odgovarjajo avtorji / authors are responsible for their articles

revija sofinancirata / cofinanced

JAK, Javna agencija za knjigo RS  
MŠŠ, Ministrstvo za šolstvo in šport

tisk / printing  
Tiskarna Bograf

© AR, Arhitektura raziskave, Architecture Research  
Ljubljana 2011

Revija AR Arhitektura, raziskave izdaja Univerza v Ljubljani, Fakulteta za arhitekturo, Inštitut za arhitekturo in prostor, Ljubljana. Revija izide trikrat letno in objavlja predvsem znanstvene članke. Objavljena besedila so s področja arhitekture, urbanizma, oblikovanja, arhitekturne dediščine in z drugih področij, ki so povezana z oblikovanjem prostora. **Besedila prispevkov so praviloma v slovenskem jeziku in enem od svetovnih jezikov.** Vaše prispevke lahko oddajate čez vse leto. Avtorji se z oddajo besedil in slikovnega gradiva strinjajo z uredniško politiko revije in s postopkom recenziranja. Objavljeni prispevki niso honorirani. Uredništvo ne vrača prejetega gradiva.

AR Architecture, research magazine is published by the University of Ljubljana, Faculty of Architecture, Institute for Architecture and Space. The magazine publishes scholarly, reviews of research work at the school, news and views on teachers' activities at congresses etc. AR Architecture, research is interdisciplinary scholarly magazine of research in architecture, urban design and architectural heritage. Authors are constantly invited to submit their papers. For more information about the magazine and details on how to submit a paper please refer to the author guidelines. AR magazine is academic and refereed. Papers may be published in Slovene, English or other language.

**Uvodnik / Editorial 1****Članki / Articles**

Srđan Nađ 5  
 MIES VAN DER ROHE IN NJEGOV VPLIV NA  
 VEČSTANOVANJSKO ARHITEKTURO V CHICAGU /  
 MIES VAN DER ROHE'S INFLUENCE ON MULTI-DWELLING  
 ARCHITECTURE IN CHICAGO

Boštjan Kerbler 15  
 PAMETNI DOM ZA SAMOSTOJNO IN KAKOVOSTNO  
 BIVANJE STAREJŠIH LJUDI /  
 SMART HOMES FOR INDEPENDENCE AND QUALITY OF  
 LIFE FOR THE ELDERLY

Brankica Stojnić, Tomaž Novljan 23  
 NOVA OPREDELITEV LOČNICE MED ZASEBNIM IN  
 JAVNIM V SODOBNI ARHITEKTURI /  
 REDEFINING THE BOUNDARY: MULTIPLE REALMS OF  
 THE PRIVATE AND PUBLIC IN MODERN ARCHITECTURE

Miha Praznik, Martina Zbašnik-Senegačnik 29  
 ANALIZA KVALITATIVNIH PARAMETROV ZA  
 ENERGIJSKO UČINKOVITE HIŠE /  
 ANALYSIS OF QUALITATIVE PARAMETERS FOR ENERGY-  
 EFFICIENT HOUSES

Mateja Dovjak, Roman Kunič 39  
 REŠEVANJE PROBLEMOV URBANEGA TOPLOTNEGA  
 OTOKA IN VELIKE RABE ENERGIJE Z OZELENJENIMI  
 KONSTRUKCIJSKIMI SKLOPI STAVB /  
 GREEN BUILDING ELEMENTS AND THE URBAN HEAT-  
 ISLAND EFFECT

Sabina Jordan, Martina Zbašnik-Senegačnik 47  
 ANALIZE IN VPLIVI ZASTEKLENEGA STAVBNEGA  
 OVOJA /  
 ANALYSES AND INFLUENCES OF GLAZED BUILDING  
 ENVELOPES

Mojca Furman Oman, Peter Gabrijelčič 55  
 PREPOZNAVANJE RAZPRŠENE GRADNJE PRI PRIPRAVI  
 OBČINSKIH PROSTORSKIH AKTOV /  
 IDENTIFYING DISPERSED DEVELOPMENT IN PREPARING  
 MUNICIPAL AND COMMUNAL SPATIAL PLANS

Luka Jančič, Fedja Košir 67  
 MAKETA V DIGITALNEM PROCESU NAČRTOVANJA /  
 MODELS IN THE DIGITAL DESIGN PROCESS

Maša Pahor 75  
 ENERGETSKO UČINKOVITA PRENOVA  
 VEČSTANOVANJSKIH OBJEKTOV /  
 ENERGY-EFFICIENT RENOVATION OF MULTI-DWELLING  
 STRUCTURES

**Problematika / Problematics**

Vladimir Brezar 85  
 PRAGMATIČNO GRADITELJSTVO ALI SINDROM 4  
 METROV /  
 PRAGMATIC CONSTRUCTION OR A 4-METER SYNDROME

**Navodila avtorjem / Author guidelines 91**

This year, there have been three issues of AR: the additional one will be a thematic issue dealing with 'stone'. But the present issue also offers a number of interesting reflections.

Professor **Vladimir Brezar** deals with the interesting theme of selecting the length of construction elements. In the article Pragmatic construction, or the 4-metre syndrome he discusses the history of architecture, which is a history of continuing efforts to bridge ever-increasing spans and, accordingly, ever-increasing spaces. More than two thousand years of such development can be found in any history of architecture treating monumental buildings made from solid and durable materials. The 4-metre syndrome is a very special phenomenon within this context.

It is worth reading.

A young colleague, **Srdan Nad**, returned from the U.S. with a number of interesting items of information. He has collected his reflections in the paper Mies van der Rohe's influence on multi-dwelling architecture in Chicago, pondering on the works of the great architect. He claims that a quick sight-seeing tour of the city quickly reveals that many Chicago architects adopted the concept of the façade, or merely the visual appearance of a structure, following the model of Mies's architecture. Some even emulated the whole design of Mies's residential structure.

An issue which some of us are increasingly becoming aware of, and which has been dealt with on several occasions, is old age. Slovenia is getting old; this is a fact. Has architecture been following this development? **Boštjan Kerbler** presents a number of estimates and suggestions in his article Smart homes for independence and quality of life for the elderly. He claims that due to the rising costs of health and social services, the ageing population is becoming an increasing challenge for all developed societies. Therefore, achieving financial sustainability increasingly requires that these services be rationalised. One of the responses of society to these problems is the idea that services should be 'transferred' to the residences of older people, which also means changing in architecture in response to this development.

**Brankica Stojnić**, a PhD student, ponders the re-evaluation of boundaries between the public and the private. The article Redefining the boundary: multiple realms of the private and public in modern architecture raises the problems of some key elements blurring the distinctions between these two categories. She says that an insightful understanding of these problems is essential for addressing the problems of changing physical boundaries.

**Miha Praznik** and **Martina Zbašnik-Senegačnik** are concerned with the regulation of energy consumption in houses. The article Analysis of qualitative parameters for energy-efficient houses analyses many buildings having varying degrees of efficiency depending on their size, number of occupants, location in space, shape factor and materials.

It seems that highly energy-efficient family homes emerged in Slovenia around 2005, and were becoming more numerous in 2008. Since energy efficiencies vary, thoughtful consideration when making a choice is increasingly important.

**Mateja Dovjak**, a colleague from the Faculty of Civil Engineering and Geodesy, and a practice expert, Dr Roman Kunič, try to shed light on an issue already discussed in AR some years ago: greening. The paper Green building

elements and the urban heat-island effect broadens and updates the issue. It reports on green roofs, exterior walls and building envelopes. The authors claim that green building elements have become increasingly popular in the last few years. They are passive technologies employed to solve modern city problems and thereby contribute to the sustained development of the urban environment. The authors investigate the contribution of green building elements to solving the heat-island effect issue and huge energy consumption in buildings. Above all, this is a great architectural challenge.

This is not the last of the papers by PhD students, which dominate this issue. A young colleague, **Sabina Jordan**, along with her mentor Prof **Martina Zbašnik-Senegačnik**, presents analyses and the influence of glazing on two different yet interacting levels - the building as a whole and glazing as a building element. The authors focus on glazing as such, which in today's architecture too often constitutes a problem. The paper Analyses and influences of glazed building envelopes contains quite a lot of critical reflection. At the building level, analyses were performed on a sample of high-rise commercial buildings in Slovenia. These reflections are especially relevant when decisions about this type of building are being made.

One of the better articles is Identifying dispersed development in preparing municipal and communal spatial plans which deals with a policy about which there is much discussion but with which we are far too unfamiliar. Therefore a response from the practical field is much more important. **Mojca Furman Oman** writes about the absence of methods for determining dispersed housing, which thus leads to a lack of standardisation and confusing municipal and communal spatial plans, which take completely different approaches to settlements in rural areas.

The model is one of the oldest types of representation in architecture. In the course of history, it has not changed much, but the last few years have seen a turning point in its evolution: it appears as a physical model and as a virtual space that we may discover as circumstances require, verifying details which once remained concealed until the final realisation. In their article Models in the digital design process, **Luka Jančič** and **Fedja Košir** discuss the use of models in the design process and highlight the changes introduced to this field by new digital modes of design and implementation.

**Maša Pahor**, a PhD student and researcher from the economic sector, deals with renovation. She claims that in Slovenia there is a considerable divergence between wishes and goals respectively and the actual situation regarding the renovation of multi-dwelling structures. The implementation of comprehensive renovations - due to the great share of private property share and financial incapacity of owners - is extremely difficult, a judgement with which we can fully agree.

The third issue will then be devoted to stone; in the first issue of 2012, we will also publish conference proceedings as well as research reports from 2011; these are quite numerous and concern the response to our scholarly work, which is a necessity for this area of research.

The Editor

Letos bo AR izšel v treh številkah: pridružila se mu bo tematska številka na temo 'kamen'. Ampak že pričujoča vsebina kaže kar nekaj zanimivih razmišljanj.

Profesor **Vladimir Brezar** razkriva zanimivo tematiko izbora dolžine konstrukcijskih elementov. V članku Pragmatično graditeljstvo ali sindrom 4 metrov govori o zgodovini arhitekture, ki spremlja neprestane napore za premostitev vedno večjih razpetin in s tem vedno večjih prostorov. Več kot dvatisoč let takega razvoja je najti v vsaki zgodovini arhitekture, ki obravnava monumentalne zgradbe, narejene iz trdnjših in trajnejših materialov. Sindrom štirih metrov je pri tem prav poseben fenomen.

Se ga izplača prebrati.

Mladi kolega **Srdan Nad** je z obiska v Združenih državah prinesel kar nekaj zanimivih podatkov. Razmišljanje je združil v članku Mies van der Rohe in njegov vpliv na večstanovanjsko arhitekturo v Chicagu kjer razmišlja o delih velikega arhitekta. Trdi, da je že s samim hitrim ogledom mesta možno ugotoviti, da so mnogi čičaški arhitekti povzemali idejo fasade ali zgolj vizualni videz objekta po vzoru Miesove arhitekture. Nekateri so po njem posnemali kar celotno zasnovo stanovanjskega objekta.

Tematika, ki se je - nekateri - vse bolj zavedamo in je bila že večkrat obdelovana, je starost. Slovenija se stara, to je dejstvo. Ali arhitektura temu razvoju sledi? **Boštjan Kerbler** postavlja kar nekaj ocen in predlogov v članku Pametni dom za samostojno in kakovostno bivanje starejših ljudi. Pravi, da postaja staranje prebivalstva zaradi naraščajočih stroškov za zdravstvene in socialne storitve vse večji izziv vseh razvitih družb. Vse bolj se zato pojavljajo zahteve, da bo treba za doseganje finančne vzdržnosti te storitve čim bolj racionalizirati. Eden od odzivov družbe na te probleme je zamisel, da bi bilo treba storitve prenesti v kraj bivanja starejših ljudi. S tem se spreminja tudi arhitektura, ki temu razvoju sledi.

Doktorantka **Brankica Stojnić** razmišlja o prevrednotenju meja med javnim in zasebnim. Članek Redefining the Boundary: Multiple Realms of the Private and Public in Modern Architecture odpira problematiko nekaterih ključnih elementov, ki zamegljujejo razlike med tema dvema kategorijama. Pravi, da je za problematiko spreminjanja fizičnih mej ključnega pomena prav njeno razumevanje.

**Miha Praznik** in **Martina Zbašnik-Senegačnik** se ukvarjata z ureditvijo izrabe energije in energij v hiši kot taki. Članek Analiza kvalitativnih parametrov za energijsko učinkovite hiše analizira mnoge primere zgradb različnih učinkovitosti, ki zavisijo od velikosti, števila prebivalcev, umeščenosti v prostor, od oblike in materialov. Pravi, da so se energijsko visoko učinkovite družinske hiše v Sloveniji pojavile okrog leta 2005, bolj množično so začele nastajati šele leta 2008. Njihova energijska učinkovitost je različna, zato je preudarek pri izboru zanjo vse pomembnejši.

Kolegica z Gradbene fakultete **Mateja Dovjak** in strokovnjak iz prakse dr **Roman Kunič** skušata osvetliti problematiko, ki smo jo v reviji AR imeli že pred leti: ozelenitev. Članek Reševanje problemov urbanega toplotnega otoka in velike

rabe energije z ozelenjenimi konstrukcijskimi sklopi stavb obstoječo problematiko razširja in jo nadgrajuje. Govori o ozelenjenih strehah, o zunanjih stenah in o stavbnih ovojih. Pravi, da ozelenjeni konstrukcijski sklopi stavb v zadnjih letih pridobivajo na popularnosti. Predstavljajo pasivne tehnologije, s katerimi rešujemo probleme modernih mest in s tem pripomoremo k trajnostnem razvoju urbanega okolja. Preučujeta prispevek ozelenjenih konstrukcijskih sklopov stavb na reševanje urbanega toplotnega otoka in (pre)velike rabe energije v stavbah. To je predvsem za arhitekturo velik izziv.

Člankov doktorantov še ni konec, v tej številki kar prevladujejo. Mlada kolegica **Sabina Jordan** z mentorico, prof **Martino Zbašnik-Senegačnik** predstavljata analize in vplive zasteklitev na dveh različnih, medsebojno povezanih nivojih, stavbi in stavbnem elementu. Govorita predvsem o zasteklitvi, ki je v današnji arhitekturi vse prevečkrat problem. V članku Analize in vplivi zasteklenega stavbnega ovoja je kar nekaj analitičnega razmišljanja. Analize na nivoju stavbe so izdelane na vzorcu visokih poslovnih stavb v Sloveniji. Razmišljanje je pomembno predvsem za odločanje za nove tovrstne gradnje.

Eden boljših člankov je na vsak način Prepoznavanje razpršene gradnje pri pripravi občinskih prostorskih aktov, ki se ukvarja s politiko, o kateri mnogo govorimo, a problematiko vse premalo zares poznamo. Zato je odziv prakse toliko pomembnejši. **Mojca Furman Oman** piše o odsotnost metodologije določanja razpršene gradnje, ki zato povzroča neenotnost in konfuznost novih občinskih prostorskih načrtih, ki povsem različno obravnavajo poselitev podeželskega prostora.

Maketa je ena najstarejših predstavitenih tehnik arhitekture. V zgodovini se maketa ni dosti spreminjala, v zadnjih letih pa doživlja prelomne spremembe: nastopa kot klasična maketa in kot navidezni prostor, ki ga lahko odkrivamo po potrebi in preverjamo detajle, ki so bili nekdanj skriti vse do končne finalizacije. **Luka Jančič** in **Fedja Košir** v članku Maketa v digitalnem procesu načrtovanja obravnavata uporabo maket v projektantskem procesu in osvetlujeta spremembe, ki jih v to polje vnašajo novi digitalni načini zasnove in izvedbe.

Doktorantka, raziskovalka iz gospodarstva, **Maša Pahor**, se ukvarja s prenovo. Trdi, da v Sloveniji prihaja do velikega razkoraka med željami oziroma cilji in dejanskim stanjem na področju prenavljanja večstanovanjskih objektov. Izvedba celovitih prenov je, zaradi visokega zasebnega lastniškega deleža in finančne nezmožnosti lastnikov izredno problematična. Temu lahko pritrdimo.

Tretja številka bo torej kamnita, v letu 2012 pa bomo v prvi objavili tudi nastope na kongresih ter poročila o raziskavah v letu 2011. Kar nekaj jih je in govorijo o odmevnosti našega znanstvenega dela, ki je za raziskovalno področje nujno.

Urednik