



Editors

Manuel Couceiro da Costa Filipa Roseta Joana Pestana Lages Susana Couceiro da Costa



ARCHITECTURAL RESEARCH ADDRESSING SOCIETAL CHALLENGES



Architectural Research Addressing Societal Challenges

Editors

Manuel Couceiro da Costa, Filipa Roseta, Joana Pestana Lages & Susana Couceiro da Costa Faculdade de Arquitetura, Universidade de Lisboa, Lisboa, Portugal

VOLUME 1

Changing society
In transit – global migration
Renaturalization of the city



Back cover photo information Faculty of Architecture of the University of Lisbon













CRC Press/Balkema is an imprint of the Taylor & Francis Group, an informa business

© 2017 Taylor & Francis Group, London, UK

Typeset by MPS Limited, Chennai, India Printed and bound in Great Britain by CPI Group (UK) Ltd, Croydon, CR0 4YY

All rights reserved. No part of this publication or the information contained herein may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, by photocopying, recording or otherwise, without written prior permission from the publishers.

Although all care is taken to ensure integrity and the quality of this publication and the information herein, no responsibility is assumed by the publishers nor the author for any damage to the property or persons as a result of operation or use of this publication and/or the information contained herein.

Published by: CRC Press/Balkema

P.O. Box 11320, 2301 EH Leiden, The Netherlands

e-mail: Pub.NL@taylorandfrancis.com

www.crcpress.com - www.taylorandfrancis.com

ISBN: 978-1-138-02966-8 (set of two volumes)

ISBN: 978-1-138-05680-0 (Volume 1) ISBN: 978-1-138-05681-7 (Volume 2) ISBN: 978-1-315-22625-5 (eBook)

Table of contents

Committees Sponsors Foreword Keynote Speakers Moderators Reviewers	XV XVII XIX XXIII XXV XXVII
VOLUME 1 Changing against. In transit alobal migration. Paraturalization of the city.	
Changing society – In transit-global migration – Renaturalization of the city	
Changing society	
Urban transformation	
Change agents in urban transformation: The case of Helsinki <i>M. Louekari</i>	3
Urban regeneration of former industrial cities. A cure or a curse? The case of Ancoats conservation area in Manchester, England <i>T. Chatzi Rodopoulou & J. Hunt</i>	11
Transporting transformations: A case study of built environment changed by transportation in rural China <i>X. Lin, B. Jia & M. Zhou</i>	19
Emerging patterns of change for tomorrow's cities <i>D.P. Henriques</i>	27
Transformation of Chinese traditional mountain village in contemporary era: The study case of Tangdu Village in Guizhou Province <i>Q. Du</i>	33
Smart solutions in urban development: The medium-sized cities of Bydgoszcz and Rzeszow, Poland <i>O. Gazińska</i>	41
Africa: The urban challenge F. Ronco & A. Perino	47
Adaptable structures for emerging socio-cultural changes in Africa D. Donath, B. Rudolf & A. Haile	55
Temporary commercial spaces: Celebrating the 'right to the city' <i>A. Allegri</i>	63
South Africa's new challenges: Planning inclusive connection spaces <i>M. Bodino</i>	69
Smartphone application for long-term urban lifestyle and mobility monitoring <i>L. Sobková & H.H. Achten</i>	77
Neighborhood design and children's active travel to/from school <i>J.S. Lee, R. Moore & O. Demir</i>	81

Construction of a synthetic index for the implementation of the mobility plan M. Borghi, G. Ferri & A.S. Pavesi	87
Public space and the contemporary city	
Austerity, subverted C. Chatzichristou & G. Makridis	95
The Guggenheim effect and failed public investment in architecture <i>M. Baptista-Bastos & A. Lau</i>	101
The "Iron Curtain" as urban observatory of the contemporary social contradictions <i>C. Toscani</i>	107
The social [il]logic of [sub]urban exodus: The rise and fall of Nasr City and the evolution of the Egyptian middle class <i>A. elBahrawy</i>	113
Social and political agency of architecture: Performativity and the contemporary global city J. Vela Castillo & M.O. del Santo Mora	121
Twin cities as urban laboratory of the contemporary social contradictions <i>C. Toscani</i>	129
Lines, pipelines, and the contested space of transcontinental fossil fuel transport <i>E.E. Moore & I.M. Volynets</i>	135
Unknown knowns of architecture: Reconstitution of vitality in Boston City Hall Plaza <i>E. Sheikholharam</i>	141
Indian (public) spaces. Transitions and cycles <i>G. Setti</i>	149
The squares in Portugal inventory and the creation of contemporary spaces <i>C.D. Coelho, S.B. Proença & S.P. Fernandes</i>	155
Evaluating sense of community in the public spaces of residential neighborhoods in Tehran, Iran <i>H.H. Molana</i>	161
The new roof spaces. The legacy of Le Corbusier in the contemporary city <i>A. Como & L. Smeragliuolo Perrotta</i>	169
Sustainable habitat	
NmeeTon: Self-sustainable habitat for new social challenges E. Aparo, L. Soares & M. Ribeiro	179
Real estate, residency, design and sustainability: Reconsidering innovation and efficacy in development <i>S. Rajan & B.R. Sinclair</i>	187
Shell performativity as a tool for urban action <i>S. Vyzoviti</i>	195
Machinic approaches_new methodologies for responsive environments <i>B. Uçar</i>	201
T.E.S.S. – An interactive sustainability lab <i>D.A. Kratzer</i>	207
Rethinking heritage	
Life-cycle assessment of historical building reuse: Is the existing building the greenest building? <i>M. Hu</i>	217
Culture, context + environmental design: Reconsidering vernacular in modern Islamic urbanism <i>S. bin Zayyad & B.R. Sinclair</i>	223
Beyond the passage: Analytical probe into the emancipatory potential of space D. Ćorović & M. Milinković	231

Sustainability and design in heritage rehabilitation A.P. Pinheiro	239
From monument to embodiment: A social case for a more expansive representational strategy for architectural heritage <i>S. Erdoğan Ford</i>	247
Participation, social changes and inclusive design	
Towards an adaptive urbanism beyond hard control: The theories of Johnson and Lefebvre N. Abbasabadi & M. Ashayeri Jahan Khanemloo	257
IEP sites: Combining planning tools to address planning uncertainty <i>M. Bylemans, N. Vallet & M. Van Acker</i>	263
Social challenges meet architecture – from participation to digital fabrication <i>S. Neves & A. Paio</i>	271
Lifelong learning in the context of socialization and sustainable development <i>H. Melkonyan, O. Turchanina & A. Castelbranco</i>	279
Measuring urban ageing. Città Giardino Torino: A resilient archipelago for the elderly D. Vero & B. Giardino	285
Social sustainability in urban context: Concepts, definitions, and principles A. Mehan & F. Soflaei	293
Mind the GAPs: Are urban planners defined by generational mindsets? M. Del C. Vera	301
Red light at night to enhance cognitive functioning for society's special needs groups E.V. Ellis, D.L. McEachron, E.W. Gonzalez & D.A. Kratzer	307
Classroom design for children on the autistic spectrum A. Mokhov & E.H. Steinfeld	315
The impact of patient room design on airborne hospital-acquired infections <i>A. Copeland & A. Sharag-Eldin</i>	323
Housing	
Quality of life by design: Study of space usage for affordable housing in Harbin, China M. Wang, H. Mei & X. Zhu	331
Permanence to allow change. The archetypal room: The persistence of the 4×4 room <i>G. Ledent</i>	339
Versions of collectivity in housing architecture: From the modern to the post-human <i>C. Pantelidou</i>	345
A more versatile and adaptable dwelling, for a changing society <i>H. Farias</i>	353
Dutch experiment in co-creation in a collectively commissioned housing project <i>T.T. Veeger & S.J.E. Maussen</i>	361
The sun for all: Social equity and the debate on best solar orientation of high modernist housing <i>U. Poerschke</i>	367
Neighbourhoods with single-family houses growing old <i>H. Müller</i>	375
Dwelling and family diversity: Analysis of housing units and households in Lisbon A.S. Moreira & H. Farias	383
Equality of energy efficiency for low-income housing in the Mississippi Delta E.M. McGlohn & E. Roush-Elliott	389

Housing of prime social need – Polish traditions of socially engaged architecture N. Przesmycka	397
In transit-global migration	
Vietnamese workforce housing research and design D. Rockwood & T. Duc Quang	405
Knowledge management in post-disaster resettlement housing <i>B. Ballinger & K.D. Silva</i>	413
Jewish neighbourhoods in prewar Poland – an attempt at typology <i>M. Hanzl</i>	425
Refugee shelter: Cheap, fast, lightweight and sustainable <i>O. Chamel</i>	433
"Hospitality now!" from meeting migrant needs to rethinking contemporary urban dwelling. A critical review of two studio experiments J. Kent Fitzsimons	439
Integration of Turkish migrants in Germany: A case study in polarities <i>İ. Öz & A. Staub</i>	447
Architecture "with the other 90%" – An African story <i>M.L. Khoury</i>	455
Regeneration of barrack complexes as means to sustainable development <i>M.M. Rudnicka-Bogusz</i>	463
Lisbon and Brasilia: Cities and cultural facilities in the face of globalization <i>S. Guimarães, R. de Castro Almeida & P. Pereira</i>	471
Renaturalization of the city	
Concepts	
Toward a sustainable city-territory in a diffused context: The potential of internal limits <i>G. Vanneste</i>	479
Imbricate ecologies: Rethinking the city-nature relational challenge <i>W. Mansour</i>	487
Urban biophilic environments-a novel lexicon for trans-disciplinary practice D.S. Nicholas, R. Truoncgao, W. Char & S. Anandan	495
Out in the open S. Morgado	501
From structures to landscapes – towards re-conceptualization of the urban condition $L.\ Nyka$	509
Sustainable environment	
Transdisciplinary design framework and a NZE future for the city <i>C.C. Bodurow</i>	519
Regenerative design for achieving net-zero energy commercial buildings in different climate types <i>A. Aksamija & Y. Wang</i>	527
Tall buildings, high expectations, towering responsibilities: Critically considering skyscrapers, urbanism and sustainability <i>F. Alotaibi & B.R. Sinclair</i>	535
Sustainable design and performance of architecture and landscape architecture in urban areas <i>C. Albrecht & U. Poerschke</i>	543

An autopsy of an environmental tragedy: 1995 Chicago heat wave A. Sharag-Eldin, K. Atchison, C.B. Heller, S. Gharehgozlou, H. Haji Molana & W. Lucak	551
Waterfront, urban and landscape design	
The people's park: A study of the relationship between design and conviviality in Superkilen <i>M. Beltran-Rodriguez & M. Simon</i>	561
Evidence-based design of outdoor learning spaces in winter: Behavioral mapping in a 'Forest School' <i>A. Rout & P. Galpern</i>	567
Re-naturalization of post-war housing estates in Poland. The value of residential green space <i>E. Przesmycka & Z. Napieralska</i>	575
Industrial ruins. A re-cycling approach in researches for dismissed areas <i>A. Massarente</i>	581
The ripple effect: How saving Yamuna river will save Delhi <i>G.I.S. Keith</i>	589
Bartram's bringing boating back: Reviving Philadelphia's Schuylkill River <i>E.V. Ellis</i>	597
Learning from ancient Anatolia: Strategies of naturalization in metropolitan Istanbul <i>T. Frank</i>	605
A city for the eyes of the future – children's visions of the city R. Pelayo, P. Leal & I. Machado	613
A bio-socio integrative approach for future development of waterbodies in Alexandria <i>R.E. Abdel Galil</i>	619
Bottom-up initiatives and urban acupuncture	
Urban acupuncture as a tool for today's re-naturalization of the city: The non-constructible parcels of municipal Beirut through the case study of the Saifi district <i>D.R. Aouad</i>	629
Neighborhood regeneration and vulnerable youth engagement through micro-level gardening interventions <i>L.M. Farah, C. Li & B. Tardif</i>	637
Constructing urban habitats: Investigating the ecological potential of integrating natural environments into buildings and landscapes in urban areas <i>G. Mangone</i>	643
Camouflage: Design innovation for "Grey Infrastructures" in the city of the future O.E. Bellini	651
Green infrastructure in New York City: Top down and bottom up initiatives to improve environmental quality <i>K. Perini</i>	659
Author index	667
VOLUME 2	
Emerging fields of architectural practice – Research on architectural education	
Emerging fields of architectural practice	
The changing role of the architect	
Thinking + making: Digital craft as social project S.E. Doyle	671
Emerging research: The architect's personal research through design competitions <i>P. Guilherme & S. Salema</i>	677

Modern architecture Kuwait: The role of the architect R. Camacho	685
The architect and interactive buildings: From builder to composer and conductor? <i>H.H. Achten</i>	693
The emerging role of the architect as systems designer <i>Z. Oztoprak</i>	701
Mapping the expanding and fracturing field of architecture <i>S.M. Golden</i>	705
Designing for a sustainable environment	
On the ground and into the air – Research & Development for an eco-friendly habitat on rural commune named Ambert O. Balaÿ & G. Mai	715
Exploration of multiple zone daylighting and energy performance for senior housing <i>Y. Fang & S. Cho</i>	721
Forms of the Earth and elements of the city in Muratori's urban projects <i>G. Tupputi</i>	729
Landscape design and restoration as an educational hub: An experience from Costa Rica <i>J. Cancela & A. Orozco</i>	735
Urban species F. Afonso & K. Jedenov	741
Revisiting forgotten energy technologies – a comparative performance history of a residence with an underfloor air plenum and ground-coupled water-source heat pump <i>L.O. Degelman</i>	749
Evaluating the energy performance under the LEED-ND criteria by using EnergyPlus O. Demir & S. Mirianhosseinabadi	757
Urban glare and death ray potentials from glass towers <i>K.H. Kim & SH. Han</i>	763
Statistical analysis of academic performance in Ohio's Green Schools C.B. Heller & A. Sharag-Eldin	769
A framework for commissioning and energy performance measurement and verification in buildings <i>S. Mirianhosseinabadi, S. Cho & S. Song</i>	777
The digital challenge	
Design and praxis in the post-digital era A.P.C. Buccellato, C.F. Vardeman & H.T. Ferguson	787
Refund Brunelleschi: The redefined role of representation for an integrated building process <i>M. Lo Turco</i>	795
Model as machine/machine as model: Emerging representational devices in stereotomic practice <i>S. Fernando & M. Mindrup</i>	803
Additive architecture: 3D printed architecture B. Peters	811
Laser scanning: The transformation of architectural practice through 3D imaging S. Kim & M. Hylton III	817
Japan, from modernity to today	
Study on Japanese Art Museums since the Second World War: Graphic analysis and typology <i>H. Machin & J. Almazán</i>	825

architecture + open building B.R. Sinclair	833
The urban persistences and social traditions in the (re)creation of the Japanese urban modernity <i>J.M. Silva</i>	841
Top-down and bottom-up approaches in Tokyo's recent urban re-development projects <i>L. Alessio</i>	849
Research on architectural education	
Tendencies	
New schools of thought – an investigation on tendencies in architectural education <i>V. Kaps, C. Martinez-Cañavate, J. De Walsche & J. Soolep</i>	859
Ancient architecture and new meaning in the New World. Current tendencies in the USA <i>C. Giannattasio & A. Pinna</i>	867
Future studio: Preparing students for practice in the global context <i>M. Simon</i>	875
Architectural education circa 2030: Results of master planning research <i>M. Sattler</i>	881
Teaching architecture in the 21st century: The role of research and extension in a transdisciplinary view <i>M.C.P. Tavares & M. Costa Pereira</i>	889
Research by design	
Case study strategies for designers: Teaching integrative data evaluation <i>M. Sarvimäki</i>	899
From design to research by design: Experimenting pedagogies to face territorial issues <i>JP. De Visscher & N. Willemet</i>	905
The European Quarter of Brussels: From district to neighbourhood. The difference between study and research by design <i>G. Ledent & JP. De Visscher</i>	913
Design as research: A new trend in architectural design in the United States <i>F. Lian & Y. Song</i>	921
Designing a life-world for designers: A phenomenological inquiry into Weiss/Manfredi's Center for Architecture and Environmental Design building <i>W.T. Willoughby</i>	925
Sustainable design	
Transition space and the image of contemporary city <i>P. Haupt</i>	935
Between research and teaching: Green infrastructure for dense urban areas <i>A. Magliocco & K. Perini</i>	941
A passive-first artificial sky: An educational tool <i>B.T. Haglund, D. Gilbert & M. Payne</i>	947
A solar Decathlon House intentionally designed to increase teaching opportunities V.Y. Blouin, D. Albright, D. Harding, U. Heine & D. Pastre	953
The digital challenge	
A contemplative pause on the integration of digital computational thinking into architectural education <i>R. Ajlouni</i>	963

Decode: Reverse engineering abstract art a method for teaching computer programming to architects I. Vukorep	971
Exploring learning objectives for digital design in architectural education S.E. Doyle & N. Senske	977
The vertical lateral: A model for social impact design education <i>F. Gandhi</i>	983
Designing education in the digitally preformatted age S. Yeshayahu & P. Zawarus	991
How CAAD is changing society's role in architecture <i>T. Maver</i>	997
Evaluating the veridicality of two-dimensional representations of three-dimensional architectural space through physiological response <i>J.A.E. Shields, J.S. Gero & R. Yu</i>	1001
Regenerative design – new role for the built environment <i>B.D. Dias</i>	1009
Building blocks: Abstraction and iteration <i>B. Shields & J.A.E. Shields</i>	1015
Introducing digital soft skills: Bridging the gaps in architectural education <i>S.E. Doyle & N. Senske</i>	1021
Participation	
Architectural synergies: Participatory design and construction of a pavilion prototype <i>A. Michael, O. Kontovourkis & M.C. Phocas</i>	1031
FAjúnior – Architectural games M. Louro, F. Oliveira & M. Baptista-Bastos	1039
Community-driven design aspects of architecture education in Hungary S. Portschy	1045
Applying a blended learning methodology to the study of housing <i>L. Madrazo, C. Sentieri & N. Charalambous</i>	1051
Trouble in Happy Valley. The documentation of a research through design collaborative project between a postgraduate Atelier at the Manchester School of Architecture and the local community of a small town <i>S. Stone & L. Sanderson</i>	1059
Methods	
Ethics in architecture: Introducing concepts of power and empowerment <i>A. Staub</i>	1069
In search of meaningful interdisciplinary work in architectural education <i>T.R. Rider</i>	1077
Spatial imagination and representation, a method for integrating the theory and practice of spatial analysis in architectural education <i>J.C.T. Voorthuis & H.M.T. Aarts</i>	1085
Displacements and notes on searching the architecture of the placeless <i>E. Komez Daglioglu & N. Sanaan Bensi</i>	1093
Architecture as interface: A constructive method for spatial articulation in architectural education <i>A.P. Baltazar</i>	1099
The role of representations in architectural design learning A.Z. Aydemir, B. Pak & K. Scheerlinck	1107

Curating and exhibiting architecture: Pedagogy in the gallery context <i>D.L.C. Hennebury</i>	1115
An investigation of building systems education in architecture <i>R. Liu & P.V. Marks</i>	1121
Structure in architecture – A definition in the poetic tectonic age <i>F.X. Oliveira</i>	1129
Architectural responses to societal challenges via design-build programs in architectural education <i>A. Şahin</i>	1137
Modeling architecture design studio on practice-based integrated "ways of working" <i>T. Collins & T. Hegli</i>	1145
Quest for "openness" in architectural pedagogy from 60's onwards S. Türkkan	1153
Trading our ivory towers for ones made of wood: Models for solid timber research and education in the US <i>M.K. Donofrio</i>	1161
Intermediate landscape regeneration. Implications on architectural education <i>P. Vall-Casas, M. Benages-Albert, A. Cuéllar & P. Elinbaum</i>	1167
Typo-morphology: From research to architectural education <i>J. Leite & R. Justo</i>	1175
Unveiling the city_the case of Aeolou street K. Karvountzi, M. Papavasiliou & E. Konstantinidou	1183
The changing academy: Case studies	
The place of architectural design studios in Portugal in response to the Bologna agreement <i>P.L. Pinto</i>	1193
The drawing school in Christiania – architecture education into modern times <i>M. Sprovin</i>	1201
Transforming architectural education at the cross roads of the world $A.K. Ali$	1207
The EAAE and the Lisbon School of Architecture—A common history between 1976 and 1986 <i>L. Matos Silva</i>	1215
A changing academic community: The faculty of architecture of the University of Lisbon <i>F. Roseta & J. Sousa Morais</i>	1223
Renaturalizing urban campus case study: integrated-design, placemaking, and ecology <i>A. Kamal</i>	1229
Author index	1237



Committees

ORGANIZING COMMITTEE

CHAIRMAN

Manuel Couceiro da Costa EAAE – Faculty of Architecture, University of Lisbon, Porugal

CO-CHAIRS

Leonard Bachman ARCC – University of Houston, USA
Adalberto Del Bo EAAE – Politecnico di Milano, Italy

Filipa Roseta Faculty of Architecture, University of Lisbon, Portugal

COMMITTEE MEMBERS

Miguel Baptista Bastos
João Brandão
Faculty of Architecture, University of Lisbon, Portugal

CONFERENCE COMMUNICATION DESIGNER

Catarina Aguiso Pereira

SCIENTIFIC COMMITTEE

ARCC

Hazem Rashed-Ali University of Texas at Santo Antonio, USA Michelle Rinehart Georgia Tech College of Architecture, USA

Julia Robinson University of Minnesota, USA

EAAE

Koenraad Van Cleempoel University of Hasselt, Belgium
Karl Otto Ellefsen Oslo School of Architecture, Norway

Johan Verbeke KU Leuven – Faculty of Architecture, Belgium

FAUL

Manuel Couceiro da Costa

Jorge Cruz Pinto

Faculty of Architecture, University of Lisbon, Portugal
Faculty of Architecture, University of Lisbon, Portugal
Faculty of Architecture, University of Lisbon, Portugal



Sponsors







EAAE

ARCC

Faculdade de Arquitectura





Fundação para a Ciência e a Tecnologia

CIAUD

Universidade de Lisboa

FCT



Foreword

EAAE/ARCC International Conferences

The EAAE/ARCC International Conferences are held under the aegis of the EAAE (European Association for Architectural Education) and of the ARCC (Architectural Research Centers Consortium). The conferences are organized every other year, in collaboration with one of the member schools / universities of those associations, either in North America or in Europe.

The EAAE/ARCC Conferences began at the North Carolina State University College of Design, Raleigh / 1998 with a conference on Research in Design Education; followed by conferences in Paris / 2000, Montreal / 2002, Dublin / 2004, Philadelphia / 2006, Copenhagen / 2008, Washington / 2010, Milan / 2012, Honolulu / 2014 and Lisbon / 2016.

The conference discussions focus on research experiences in the field of architecture and architectural education, providing a critical forum for the dissemination and engagement of current ideas from around the world.

The issues are progressively refined and detailed, always open to general issues and the international dimension is expanding with a growing presence of researchers from other continents, what has been occurring since Copenhagen / 2008, with scholars and teachers from Australia, Africa or the Far East.

EAAE/ARCC International Conference - Lisbon 2016

Following an application process, the proposal of the FAUL (Faculty of Architecture of the University of Lisbon) for the hosting and organizing of the EAAE/ARCC International Conference 2016, in Lisbon, was accepted by the EAAE Council, during the Meeting in Prague (January 2014) and launched during the EAAE/ARCC International Conference – Honolulu 2014.

FAUL represents the newest link in an institutional chain, related to architectural teaching in Portugal, founded in the XVIth century with the "Paços da Ribeira Architecture Class". We regard 1881 as a critical year, when, through the creation of the "Civil Architecture Course of the Royal Academy of Fine Arts of Lisbon", the public teaching of architecture began, later followed by the establishment of the "Fine Arts High School of Lisbon".

In 1979, the Faculty of Architecture of the Technical University of Lisbon (FAUTL) was created, by the integration of the Department of Architecture of the Fine Arts High School of Lisbon, into the university. With the fusion of Technical University of Lisbon with the (classical) University of Lisbon, in 2012, renamed as FAUL, our faculty become an organic unit of the renewed University of Lisbon (~45.000 students) – the aim is the construction of a powerful research university, engaged with education, innovation and technology transfer, focused on people, where the value of knowledge, merit and participation is raised and which is engaged with Portuguese society and the Lisbon region, but also with European dimension and open to the world.

According to the EAAE/ARCC International Conferences principles, the 10th edition/Lisbon 2016 whose theme was "Architectural Research Addressing Societal Challenges", was attended by architects, professors, researchers and students from all over the world. Overall there were about 280 participants and 182 accepted paper submissions, representing 107 universities, 33 countries and 5 continents, so enlarging the geographic reach and strengthening the potential of these conferences.

More than numbers, the scientific and social qualities of the event were also recognised, which was reflected in the many complimentary emails from the participants and now reinforced with the publication of the proceedings – we believe the quality of the conference is related to the evidence of a strong local identity together with broad global partnership.

By this we mean that representatives of EAAE, ARCC and FAUL, so from a large array of universities, were involved in every aspect of her conference including establishing the constitution of the conference committees (organizing and scientific committees), the boards of reviewers and moderators as well as participants.

Other partner organizations, related to the world of architecture, also contributed and were determining factors in that achievement, namely CIAUD (FAUL Architecture, Urbanism and Design Research Center), AEAULP (Academy of Architecture and Urbanism Schools of Portuguese Speaking Countries) and TRIENAL (Lisbon Architecture Triennial). As well as the organizations mentioned above, some individuals, the keynote speakers,

who came from different countries, China, USA, Belgium and Portugal, also presented high quality lectures related to the sub-themes of the conference.

Last but not least, we must acknowledge Lisbon, the city itself, including its people, history, culture, architectural patrimony, urban landscape, cuisine and climate, as a major contributor towards the success of the conference ...

THEME

Since architectural research is at the core of EAAE/ARCC International Conferences, the scientific aspects to develop must be framed and specified.

Looking at the major issues of our era, we stressed (in 2014), the escalating interdependency of nations, that drives global geopolitics to shift ever more quickly and that societies seem unable to control any change that affects their cities, whether positive or negative. Challenges are global, but solutions need to be implemented locally. How can architectural research contribute to the future of our changing society? How has it contributed in the past? The chosen title "Architectural Research Addressing Societal Challenges", synthesizes all this, framing the call for papers. Papers were further divided into the following five sub-themes:

1. A changing society

Modernism and the quest for an industrialized welfare-society established a new standard of equality pursued by architects. Today, extreme wealth and urban poverty coexist, at times, within the same city. Worldwide, some nations are dealing with an ageing population, while others are concerned with overpopulation and birth control. Can architects find new standards for such extreme differences? How did the role of the architect evolve from the modernist period to today? We are looking for research that reflects the imprints of societal changes on architecture.

2. In transit - Global migration

A increasing number of people are on a global quest for work, knowledge, protection, adventure and a better life. The number of migrants worldwide reached 250 million in 2014. World Tourism is booming. How does this global mobility affect cities and cultures? How does the traveller from the past differ from the migrant today? We are looking for research on how architecture interacts with and deals with these questions. We are also looking for historical studies of situations that might mirror the present condition.

3. Renaturalization of the city

The urban areas are conceptualised in new ways. Urban and rural conditions overlap. Built areas merge with landscape and nature. How can research reconceptualize the urban condition? What will the city of the future look like? What was the presence of Nature in the urban fabric of the past? We are looking for research that focuses on this transformation process, past or present, and points to possible ideals for future urban development.

4. Emerging fields of architectural practice

The context within which architecture operates is drastically changing and new practices are emerging. The challenge of Climate Change sets a revised scientific and political agenda. Moreover, economic and socio-cultural changes challenge the role of both the architect and architectural practice. Furthermore, new conceptual methodologies, facilitated by emerging computer-aided technologies, expand the possibilities of the design and construction process. This leads us to question how the role of the architect will be affected by this changing context? What are the future possibilities suggested by new fields of development? What kind of new practices are emerging? There is a need for knowledge as to how architecture will answer, redefine or adapt.

5. Research on architectural education

Education in the discipline of Architecture has evolved, mirroring societal challenges and conditions. Architectural Education can also be considered as a multitude of traditions with different national flavours. New social challenges address architectural education. How can architectural education respond to the changing role of the architect? How should the ideal biotope for architectural education look like? How is it related to research or practice? Which didactics prepare students to take position and face future societal challenges? We are looking for contributions on the emerging field of research on Architectural Education.

Those were the questions.

In the next part of these proceedings we will present the papers, or in other words the answers, which were organized according to the sub-themes above. When we received the submissions, we found that it was possible to further sub-divide those sub-themes, which we did for a better understanding of the global approach towards Architectural Research Addressing Societal Challenges.

Hope to see you in the next EAAE/ARCC International Conference 2018, in the United States of America, in the city of Philadelphia.

Lisbon, 30 September 2016 Manuel Couceiro da Costa/Chairman EAAE/ARCC International Conference – Lisbon 2016



Keynote Speakers

Galen Cranz

*University of Chicago, USA*Lecture: *Renaturalizing the City*

Pedro Gadanho

EDP – MAAT/Museum of Art, Architecture and Technology, Lisbon, Portugal

Lecture: Emergent Practices in the Face of Social Change

João Luís Carrilho da Graça

Faculty of Architecture, University of Lisbon, Portugal

Carrilho da Graça/arquitectos

Lecture: Terra

Jan Masschelein

University of Leuven, Belgium

Lecture: Addressing societal challenges: reclaiming and designing (in) "school/university"

Wang Shu / Lu Wenyu

Architectural School at China Academy of Art, Hangzhou, China

Amateur Architecture Studio

Lecture: The possibility of co-existence of the urban and rural areas



Moderators

Ajla Aksamija University of Massachusetts Amherst, USA

Paulo Almeida Faculty of Architecture, University of Lisbon, Portugal

Leonard Bachman University of Houston, USA

Miguel Baptista-Bastos Faculty of Architecture, University of Lisbon, Portugal

Maria Beltran University of Maryland, College Park, USA

Jorge Cancela Faculty of Architecture, University of Lisbon, Portugal

Koenrad Van Cleempoel University of Hasselt, Belgium

Luís Conceição Faculty of Architecture, University of Lisbon, Portugal João Pedro Costa Faculty of Architecture, University of Lisbon, Portugal

Ivan Cabrera I Fausto Polytechnic University of Valencia, Spain

Oya Atalay Franck
Nur Çağlar

ZHAW Department A, School of Architecture, Switzerland
TOBB – University of Economics and Technology, Turkey

Bruce Haglund University of Idaho, USA

Ming Hu Catholic University of America, Washington DC, USA

Saif Haq Texas Tech University, USA Susane Komossa TU Delft, The Netherlands

Margarida Louro Faculty of Architecture, University of Lisbon, Portugal Luís Mateus Faculty of Architecture, University of Lisbon, Portugal

Valerian Miranda Texas A&M University, USA Erin Moore University of Oregon, USA

Diana Nicholas Drexel University, Philadelphia, Pennsylvania, USA

Lucyna NykaGdansk University of Technology, PolandUte PoerschkeThe Pennsylvania State University, USAHazem Rashed-AliUniversity of Texas at Santo Antonio, USAMichelle RinehartGeorgia Tech College of Architecture, USA

Luís Romão Faculty of Architecture, University of Lisbon, Portugal Luís Rosmaninho Faculty of Architecture, University of Lisbon, Portugal

Meredith Sattler Cal Poly San Luis Obispo, USA
Madlen Simon University of Maryland, USA

Brian Sinclair University of Calgary & Sinclair Studio Inc, Canada

Aron Temkin Norwich University, USA

Maria Vera University of Nevada Las Vegas, USA

Johan Verbeke KU Leuven – Faculty of Architecture, Belgium

Johan De Walsche University of Antwerp, Belgium



Reviewers

Rima Ajlouni University of Utah, USA

Paulo Almeida Faculty of Architecture, University of Lisbon, Portugal

Antonieta Angulo Ball State University, USA

Craig Anz Southern Illinois University Carbondale, USA

Balint Bachmann University of Pecs, Faculty of Engineering and IT Institute of Architecture, Hungary

Leonard Bachman University of Houston, USA

Miguel Baptista-Bastos Faculty of Architecture, University of Lisbon, Portugal

Julio Bermudez Catholic University of America, USA

Adalberto Del Bo
Politecnico de Milano, Italy
Terri Boake
University of Waterloo, Canada
University of Notre Dame, USA

Nur Çağlar

TOBB — University of Economics and Technology, Turkey

Luís Conceição

José Correia

Nuno Dinis Cortiços

João Pedro Costa

Manuel Couceiro da Costa

TOBB — University of Economics and Technology, Turkey

Faculty of Architecture, University of Lisbon, Portugal

Koenrad Van Cleempoel University of Hasselt, Belgium

Ozgur Dincyurek Eastern Mediterranean University, Cyprus

Neslihan Dostoglu Istanbul Kultur University, Turkey
Katl Otto Ellefsen Oslo School of Architecture, Norway
Daniel Faoro Lawrence Tech. University, USA

Carlos Henriques Ferreira Faculty of Architecture, University of Lisbon, Portugal

Esra Fidanoglu Istanbul Kultur University, Turkey

Maria Teresa FonsecaFaculty of Architecture, University of Oporto, PortugalOya Atalay FranckZHAW Department A, School of Architecture, SwitzerlandPedro GasparFaculty of Architecture, University of Lisbon, Portugal

Saul Golden Ulster University, UK Elizabeth Grant Virginia Tech, USA

Maria Rosália Guerreiro ISCTE-IUL, Lisbon University Institute, Portugal

Pedro Guilherme CHAIA | Sofia Salema & Pedro Guilherme, Arquitectos Lda., Portugal

Bruce Haglund University of Idaho, USA

Greg Hall

Mississippi State University, USA

Deirdre Hennebury

Dalibor Hlavacek

Simi Hoque

Mississippi State University, USA

Lawrence Technological University, USA

CTU, Faculty of Architecture, Czech Republic

University of Massachusetts-Amherst, USA

Pedro Gomes Januário Faculty of Architecture, University of Lisbon, Portugal

Azza Kamal The University of Texas at San Antonio, USA Kyounghee Kim University of North Carolina Charlotte, USA

Carlos Lameiro Faculty of Architecture, University of Lisbon, Portugal Margarida Louro Faculty of Architecture, University of Lisbon, Portugal

Khaled Mansy Oklahoma State University, USA

Luís Mateus Faculty of Architecture, University of Lisbon, Portugal Gabriella Medvegy University of Pécs Faculty of Engineering, Hungary

Erin Moore University of Oregon, USA Keith Diaz Moore University of Utah, USA

Sofia Morgado Faculty of Architecture, University of Lisbon, Portugal

Lucyna Nyka Gdansk University of Technology, Poland Edward Orlowski Lawrence Technological University, USA

Gunnar Parelius NTNU, Norway

Ulrike Passe Iowa State University, USA

Patrícia Santos Pedrosa ULHT / Labart, Portugal

Jorge Cruz Pinto Faculty of Architecture, University of Lisbon, Portugal Amilear Gil Pires Faculty of Architecture, University of Lisbon, Portugal

Philip Plowright Lawrence Technological University, USA
Ute Poerschke The Pennsylvania State University, USA

Alexandra Ai Quintas Faculty of Architecture, University of Lisbon, Portugal

Hazem Rashed-Ali University of Texas at Santo Antonio, USA

Vasco Rato ISCTE-IUL, Lisbon University Institute, Portugal

Fatih Rifki Montana State University, USA
Clare Robinson University of Arizona, USA

Julia Williams Robinson

School of Architecture, University of Minnesota, USA

Luís Romão

Faculty of Architecture, University of Lisbon, Portugal

Faculty of Architecture, University of Lisbon, Portugal

Murat Sahin Özyeğin University, Turkey Sofia Salema University of Évora, Portugal

João Rafael Santos Faculty of Architecture, University of Lisbon, Portugal

Paola Sassi Oxford Brookes University, UK
Meredith Sattler Cal Poly San Luis Obispo, USA
Nick Senske Iowa State University, USA
Adil Sharag-Eldin Kent State University, USA
Madlen Simon University of Maryland, USA

Brian Sinclair University of Calgary & Sinclair Studio Inc, Canada

Edgar Stach Philadelphia University, USA

John Stallmeyer University of Illinois at Urbana Champaign, USA

Alexandra Staub Penn State University, USA

Sally Stewart The Glasgow School of Art, Mackintosh School of Architecture, UK

Aron Temkin Norwich University, USA
Vaso Trova University of Thessaly, Greece

Johan Verbeke KU Leuven – Faculty of Architecture, Belgium

Johan De Walsche University of Antwerp, Belgium

Kate Wingert-Playdon Temple University, USA

Shai Yeshayahu UNLV, USA

Zdenek Zavrel Faculty of Architecture, CTU in Prague, Czech Republic

Emerging fields of architectural practice

The changing role of the architect

Emerging research: The architect's personal research through design competitions

P. Guilherme & S. Salema CHAIA, Universidade de Évora, Évora, Portugal

ABSTRACT: Architectural Design Competitions is a growing field of research in architecture theory and provide a laboratory view over the dynamics of the production of environmental design quality and the renewing process of culture and knowledge. Design competitions connect academia and praxis, can bring out the best out of architects and is a way to achieve excellence in design. Our argument, following previous research, is that architectural design competitions reflect a procedure of research (derived from the academia but in the praxis), develop personal and field competences, values and abilities, and foster innovation in architecture. In fact, there is evidence that during their professional practice, licensed architects, outside the academia and in praxis, use design competitions as fundamental research opportunities. These facts sustain the importance of the role of architectural design competitions as an important social, cultural and professional field of research that challenge the way we currently see the practice and the education of the architect. Recent research gives relevance to the way design competitions could also contribute to and stimulate Continuing Professional Development (CPD) and should be accepted as such.

1 INTRODUCTION

Architectural Design Competitions is a growing field of research in architecture theory (Rön et all 2010, 2013, Tostrup 1999) and generally provide a laboratory view over the dynamics of the production of environmental design quality, design quality and the renewing process of culture and knowledge.

Design competitions exist for a very long time (Lipstadt 1989, 2000, 2010). There are records of Greek competitions as early as 448bC, they flourished in Renaissance Italy (e.g. Brunelleschi's design for the cupola of Florence Cathedral) and are now major architectural procuring events to achieve the best design service (Kostoff 2000).

Design competition serve as a way to address an architectural or urban problem and to find its best answer. The debate about the value of competition is not only about the equitable distribution of design commissions but also about its important theoretical, ideological and ethical foundations. The openness in the distribution of public funds, the understanding of design process, and the participation in the shaping of the built environment may be better obtained with design competitions (Strong 1996, Spreiregen 1979, Collyer 2004, Chupin et all 2015, Rönn et all 2010, 2013). Other may argue that there are other ways of achieving this (Nasar 2006).

Nonetheless, it constitutes an opportunity for all parties involved (promoters, architects, public) to improve the quality of the built environment.

In this paper we will focus on the architect's point of view and in particular in the way competitions serve as

stimulus to researching and improving one's abilities and competences as an architect.

Previous research (Guilherme and Rocha 2013, Guilherme 2014, 2016) has connected the importance and theoretical background of design competitions to the core curriculum of the academia (Malacrida 2010) (at its birth in the Beaux-Arts in Paris) and to the practice (praxis) of the licensed architect. The connection between academia and praxis that occurs during design competitions seem to be a proof of Donald Schön's (2003) "research-in-action" and Jeremy Till's (2012) evidence of "architecture [as] a form of knowledge that can [, is] and should be developed through research".

Present research takes into consideration previous data (Guilherme 2016) in order to further link design research and competitions with professional development, thus illustrating the importance of design competitions in design research. It also takes into consideration recent studies and surveys (Van Alen Institute 2015a, 2015b, 2015c, Forlati and Isopp 2011) that further describe and give credit to design competitions as being part of a research activity within practice. We will present, discuss and recommend the possible use of design competitions as part of Continuing Professional Development (CPD).

2 ANALYSIS

The education of an architect (Brady 1996, Schön 2003) is not a static endeavor that can be easily defined by fixed and precise characteristics; it evolves with the

demands and developments of society. It must therefore encompass both continuity and change to prepare students to meet the demands of the profession. Given the dynamic and complex nature of architecture, the education of an architect involves not only what constitutes a course of study, but how an architect is educated

Education is seen as a continuous progression of knowledge, beyond any age limit, and during the working life span of the architect (e.g. Oscar Niemeyer died with 105 and is said to have worked until he died).

To some formal extent (taking a holistic view of the working life span of the architect) it may encompasses three levels (layers) of education (using the Architects' Council of Europe structure):

- An initial formal academic education period with the basic principles of architectural culture and the design process. It may be different according to countries education policies, but may constitute a Bachelor of Architecture, a License Degree in Architecture or a Master Degree. More specific skills can be pursued by post graduations or doctoral programs in architecture;
- A second level of professional experience in contact with the core practice (praxis) of architecture;
- A third level of Continuing Professional Development.

We will elaborate on how architectural design competitions in practice (in the second level of education) may constitute a proof of architectural research thus providing a valuable contribution to continuous education (third level of education).

2.1 Continuing Professional Development (CPD)

The Royal Institute of British Architects (RIBA), established in 1838, oversees "the advancement of architecture and the promotion of the acquirement of the knowledge of the Arts and Sciences connected therewith" (RIBA 2009). RIBA has helped to develop and apply research-based knowledge of RIBA members, chartered practices and schools of architecture in order to promote links between practice and academia. In order to do so, it has defined key work areas, annual research themes. The objective is to "raise awareness among practitioners of the benefits, both intellectual and economic, of research in practice" (Anon. 2016).

Continuing Professional Development is beneficial for you as an individual, as well as to the profession as a whole, as it offers an assurance to the public the professional is up-to-date with the latest industry developments and innovations (Tyler 2016a). CPD enlarges the already acquired academic competences with other newer, recent and potentially more creative knowledge.

To the Architect's Council of Europe "Continuing Professional Development (CPD) for architects is, at European level, of professional and public interest. Its necessity has been affirmed in directives of the European Union and its relevance is even greater in the enlarged European Union. As the diversity of training and practice has increased, CPD has become a necessary obligation for practicing architects and for the organizations that represent them." (ACE 2006)

CPD is mandatory for all AIA (US) and RIBA (GB) members and is described by Joni Tyler (Head of CPD at RIBA) as being "any learning you do under your own initiative, whether structured or informal. It's CPD you arrange, rather than CPD we bring you." (Tyler 2016b) As a chartered member, architects are obliged each year to:

- Undertake at least 35 hours of CPD. These are the minimum amount of time you need to spend each year maintaining your competence;
- Undertake at least 20 of the required 35 hours from the ten topics in the RIBA CPD Core Curriculum (around two hours per topic per year). This is considered formal CPD;
- Award at least 100 learning points to the individual CPD activities you carry out. Assigning points represents your assessment of what you got out of the CPD activity, and will be the result of the time you spent reflecting on relevant subjects.
- Gain at least half of your CPD from structured learning activities, unless your circumstances prevent it;
- Record CPD activities.

CPD is considered to be a creative learning tool, and any activity from which you can learn – as long as it's relevant to the practice or business of architecture and contributes towards maintaining practice's competence – could count as CPD (Tyler, 2016c). As long one learns from the activity and it influences your professionalism and competence, despite the medium, you may be doing your CPD.

This is a recent profound change over the strict way of formal learning and is linked to professional ethics and to the diversity of competences, attitudes and knowledges needed for the architect. It is the architect's responsibility to attend to its needs for continuing professional development in order to honor its social commitments to the common good and to the profession or art itself.

According to ACE (2006) "CPD aims to deliver to architects a means to maintain and improve their personal culture, practice and competence and to update their knowledge regarding arts, science and technology, where there is permanent evolution, with due regard for the aesthetic, social and legal regulation of their activities." According to Joni Taylor (20161, 2016c) unformal learning (outside the minimum 20 hours formal learning and up to 35 hours) can be found in:

- Doing some online or distance learning;
- Working towards an additional relevant qualification;
- Attending local or community courses;
- Bringing CPD or training expertise in house;
- Attending a conference or workshop;
- Listening to podcasts or watch webcasts;

- Engaging in knowledge transfer;
- Attending industry trade shows and exhibitions;
- Undertaking research: informal self-directed research, formal research, or research in practice;
- Or any other informal activities, such as: reading, going on study tours, volunteering, siting on committees, blogging, having discussions on social media, mentoring, visiting exhibitions, learning from colleagues, being a school governor, engaging in reconstruction or disaster relief.

The most important question is in fact how you reflect on learning from your experiences and increase your professional knowledge and skills to your benefit, as well as that of your staff, business, clients and future.

This subject is deeply covered by Donald Schön (2003) with the notions of reflection-in-action, and reflection-on-action. First it involves looking at the experiences, connecting them with our feelings and attending to our theories in use. It entails building new understandings to inform the actions in the situation that is unfolding. Then testing out the theories or leading ideas and allowing to developing further responses and moves. The act of reflecting-on-action enables spending time exploring why one acted as one did, what was happening in a group and so on. In so doing new sets of questions and ideas are developed about the activities and the practice.

Thus learning, reflection and change appear to provide opportunities for professional development in praxis, to both ACE, RIBA and AIA.

2.2 Architectural research

Jeremy Till's position paper on *What is architectural research?* for RIBA Research Committee (2005) has become theoretically inspiring for those discussing whether by architectural research we mean *research about architecture*, *research through architecture* or *research for architecture*. These three categories, borrowed from the least known Christopher Frayling's pamphlet on *Research in Art and Design* (1993), describe a general theory of design in which the task of solving the problems involves conceptualization and explicit knowledge adaptation to individual design experience.

Ken Friedmen (2008) discusses experience and inquiry stating that "tacit knowledge is valuable" and "central to all human activity, and the background of embodied individual and social knowledge provides the existential foundation of all activities, including intellectual inquiry." (2008, p. 157) Even though ancient sciences, that have successfully linked empirical observation with inventing theorizing (e.g. Copernicus, Galileo, Newton and others) thru hypothetical and deductive thinking, apparently seem to be less useful in providing useful theories and end up by being scorned by modern science, they constitute the fundamentals of tacit knowledge. Friedman states that "all knowledge, science and practice rely on rich

cycles of knowledge management moving from tacit knowledge to explicit and back again. While the craft tradition of design has relied more on tacit knowledge than on explicit knowledge, it is time to consider the explicit ways in which we can build design theory." (2008, p. 158).

Some authors (Groat and Wang 2013, Salama 2015) argument that we are familiar with forms of historical and theoretical research about architecture and with the improvement of architectural and design practice as the focus of design research by design practitioners and theorists. However, research through architecture presents us systemic doubts about its methods and legitimacy.

Also Albena Yaneva (2005), following OMA's Whitney project presents the hypothesis of research in practice and with the project at hand.

Current practices at a research PhD program in architecture in the University of Évora (Salema et all 2014) sustain the possibility that the "project (as a methodology, a process of knowledge or simulation of a 'hypothesis') could be part of an advanced research in architecture" (p. 471) in academia doctoral programs. The project is the subject and the result of the research thesis, and the opportunity of the project is motivating and nurturing the academic scientific research.

2.3 Design competitions

Design Competitions are one of the oldest forms for selecting one architect or one project amongst others. "Architectural design competitions are quality-based, project-orient selection procedures to procure architectural services. Quality based means that the decisions are made on basis of the quality of the submitted proposal. It is the opposite of a quantity-based, or even solely price-based, decision. Project-oriented means that the decisions are based on expectations for the future, as the basis is the upcoming project, and not on past achievements (as in the case of a teambased selection procedure)." (Forlati and Isopp 2011, p.274).

The submitted entry is part of an educated hypothesis to the solution of the problem posed by the competition brief by the author. It is an individual research (Guilherme & Rocha 2013), sometimes pursued over several design competitions or projects (e.g. Souto de Moura's Salzburg Hotel (1987/89) The Bank (1993), and *The Burgo Tower* (1991/95 Phase 1; 2003/04 Phase 2; 2007 Construction)) but using the supposed scientific method of the academic atelier competition first seen at the Beaux-Arts (Malacrida 2010), never deeply refuted as the atelier's way to teach architecture between the enlightened teacher/celebrated master architect and the apprentice (Guilherme 2014). The jury system, and the concurrent projects from others challenge the commitment and ideas reaffirming that architecture is not practiced in isolation, but a public art, with public and social responsibilities.

Competitions "are favored by professionals mainly by its symbolic (social, cultural and professional) capital (Stevens, 1998) as they reflect one's opportunity to prove one's abilities and ascend to those whose dominancy in profession is unquestioned. The main architectural universities (academia) function is to produce professional architects (Stevens, 1995), and to do so it has to reproduce the ways of an architect, and the consecrated privileges of the class. The parallel discussion at universities is the production of knowledge and ways to relate with the profession (praxis). Competitions provide a place and a time when both worlds unite, were the student is expected to learn an important lesson on the status of the architect and learning at the same time, and were the professional reunites, once again, his practice with research." (Guilherme 2014).

Competitions have been the base pedagogic process for the transmission of symbolic capital by masters to pupils under an organized system of implicit professional knowledge. Competitions ensure that the fundamental hierarchy of the members of the academia (the teachers and juries: who defined what good art and architecture was) and those that would ascend to it (the students: who were prized and hence were the good artists and architects) and perpetuated a secular way to ascend to stardom. We believe architectural competitions provide an opportunity to research in architecture in order to present (using predetermined models and mediums) one's research and its conclusions (statements). Each personal architectural research is in fact subjected to an *informal* (unstated) merit competition (were the teachers take the part of clients, sponsors and juries), to a peer evaluation, in order to prove its author's right to, step by step, become a graduated architect. The research is validated by the competition and assures the originality of the research, its significance and rigor.

Therefore, as previously argued, competitions are opportunities for research (Guilherme & Rocha 2013) and have been used by the academia to foster development in knowledge (Guilherme 2014), thus we firmly believe design competitions may also constitute research in architecture outside the academia.

2.4 The wonderland manual for emerging architects

Wonderland – platform for European architecture is a Vienna (Austria) based network for young Europeoriented architecture practices aiming experience, information and knowledge exchange.

Wonderland takes part in collaboration projects with international teams to foster inter-European exchange, organizes *Project Spaces*, *Blind Dates* and Symposiums, conducts research on current challenges and approaches in the field of architecture as well as urban planning and shares results with members and the public by means of exhibitions and publications. It is an expanding network and is strengthening their presence in Europe.

Wonderland published in collaboration with A10 three thematic numbers previous to the Manual for Emerging Architects: How to Establish and Run an Architecture Practice in Europe in 2012. This "accelerating [of] the exchange of information among young architects in Europe" (Forlati and Isopp 2011) is a speculative manual for reaching to a higher degree of social status within architectural symbolic capital. This manual explains the profession to the young professionals. It includes a coherent amount of information and poll-based surveys on how to conceive, establish, develop and run an architectural practice today.

After addressing how to *get started*, and *making mistakes* – an important part of being creative, of accidental innovation and by stating *trial and error* as a fundamental method of solving problems – the authors affirm the importance of *being public*, *being specialized* or *making competitions (Forlati and Isopp 2011*, p.269–328). Forlatti further develops:

"Taking part in a competition is about testing one's abilities outside a predefined setting of personal connections, nationality, office size, or gender. It is about experimenting and developing a personal vision much more directly than in the usual architect-client relationship. And winning a competition is much more than just getting a job! It is about the possibility of growing big in a day, of shortcutting years of slow growth, or of jumping scale in the size of projects the practice deals with, of getting a footing in a different national context, of specializing. And finally it is about publicity and recognition in and beyond the professional context – from colleagues to the general public." (Forlati and Isopp 2011, p.271)

According to *Wonderlands*' pole-based surveys, an average practice in Europe does around 3 competitions and invests around 2000 hours per year. It achieves a ratio of 4 out of 10 returns of some kind, 2 wins and 2 other prizes, but only one gets realized. In fact, it takes about 8.4 years to realize 2.5 projects won in competitions.

According to *Wonderland* survey: 83% of the respondents sees competitions as a way to develop the architectural thinking in practice; 84% sees competitions as a necessity for clients who want new ideas; 50% uses models to test ideas; 74% has collaborators specialized in competitions in the office; 71% is not so interested in the first-prize money when choosing a competition; and 76% sees the relation between work required and compensation as problematic.

This data confirms the relevance of competitions to research about practice to European architects and its relevance as architectonic events for acquiring (or enlarging) its own symbolic capital.

2.5 RIBA competitions task group report

The RIBA Council approved in June 2014 the findings of the RIBA Task Group Review of architectural

competitions (RIBA 2014). The group comprised clients, client advisers, architects and RIBA executives, and was set up by the RIBA in 2013 to review the use of competitions in the UK.

Key recommendations of the review included the promotion of best practice guidance and the celebration and promotion of the benefits of competitions for all types of buildings, which should lead to an increase in the quantity of well-run and well-managed competitions.

Other task group recommendations approved by RIBA Council include improved processes to reduce waste such as design charrettes, standardized prequalification templates and additional services including client mentoring for less experienced clients. These recommendations are intended to challenge both the quantity and the quality of competitions run in England. RIBA has extensive experience in delivering high quality and significant competitions and competitive selection processes. By doing so, it also manages to impose architects as those best suited and responsible for obtaining high architectural quality among the profession.

RIBA Competitions standards include principles of openness, fairness and transparency, as well as protection of copyright, honoraria payments to reflect the amount of design work required, efficient processes including use of digital entry, judging composition, involvement of independent client adviser, and feedback to competitors. These standards are consolidated with a service to approve and promote qualifying third-party competitions. The main recommendations from the task group were (RIBA 2014, pp.14–16):

- Celebrate and promote the benefits of competitions;
- Increase the quantity of well-managed, well-regulated competitions;
- Provide best practice guidance and support to clients;
- Promote best practice and continuous improvement to processes;
- Influence the standards of other competition providers.

During a wider consultation a majority (11/3) responses (RIBA 2014, p. 27) led the Task Group to recommend that "Competition entries should count towards an architect's CPD requirement". In fact, there was an overall idea that competitions could be part or research or training, in particular when new knowledge could be obtained. However, when competitions were only seen as a repeated procuring tool, respondents felt no development could arise, giving credit to the idea of design competitions being directed to major events or uncommon problems and not to ordinary problems.

This relevance is quite clear in relation to key professional development supplementing CPD Core Curriculum, which is the main CPD Study Guide, and is comprised of 10 subjects: (1) Being safe health and safety; (2) Climate: sustainable architecture; (3) External management: clients, users and delivery

of services; (4) Internal management: professionalism, practice, business + management; (5) Compliance: legal, regulatory and statutory frameworks and processes; (6) Procurement and contracts; (7) Designing and building it: design, construction, technology and engineering; (8) Where people live: communities, urban + rural design and the planning process; (9) Context: the historic environment and its setting; and (10) Access for all: universal/inclusive design.

By including competitions as unformal CPD the Task Group would be providing a place where all could be tested in the form of a research hypothesis, thus enabling a potential research.

The competition would then become a research experience and therefore would constitute an even greater place for providing the public service RIBA wishes architects could do. By including or selecting competitions as an unformal CPD, British architects would have to work not only to win the commission (and therefore use design competitions as procurement), but also make competitions a place to research (therefore making competitions more innovative oriented).

2.6 The Van Alen survey

More recently Architectural Record and Van Alen Institute (2015a, 2015b, 2016), with support from the Graham Foundation, systematically gathered input on what motivates designers to enter competitions, what they love and hate about the process, and their suggestions for how to make them work better. They released the results with more than 1,400 participations from 65 nations worldwide.

Key findings (Van Alen Institute 2015a) from the anonymous responses highlight some of the most interesting headlines from the survey:

- Designers enter competitions so they can work more creatively than they would be able to in everyday practice, and explore new topics, ideas, collaborations, and skill sets outside of typical constraints. Respondents indicated that the top three reasons for entering competitions are 1) the opportunity to experiment (57,0% of survey entrants); 2) an interesting issue (54,9%); and 3) an opportunity to gain publicity (39,0%).
- The lack of compensation for time and resources spent is a primary limitation to designers participating in competitions. Respondents indicated that the top three limitations to participating in competitions are 1) lack of compensation for time/resources spent (78,6%); 2) low probability of winning (29,4%); and 3) no or low chance of implementation (28,6%).
- Respondents indicated a desire for more feedback (48%). This is especially crucial among students: 65% said it would make entering competitions more appealing. Students were also particularly interested in collaborating with people outside of the design fields.

These key findings support the idea that competitions are fundamentally an optimistic praxis of architecture. It is the most recent and relevant raw data analysis (Van Alen Institute 2015b) proving competitions are fundamental for students and licensed architects as research into practice.

In April 2015 a Design Competition Conference took place, sponsored by the Harvard Graduate School of Design and Van Alen Institute, co-chaired by Jerold S. Kayden and David van der Leer, in order to "review the state of design competitions today and their impact on competitors, sponsors, design, and the public interest. Using the lens of professional, ethical, business, legal, aesthetic, and public policy perspectives" (Van Alen Institute 2016d). The conference (Anon. 2015) is a testimony of the pros and cons of making competitions and a vivid story of some competition entries.

Some of the respondents assured that "competition allows to work on otherwise impossible issues or subjects usually reserved for the 50 architects that are known worldwide... It is the best format for architectural research and learning through investigating." In addition, some spoke how specific competitions more appealing to young architects (less than 40 years old) could be described like being "[Europan] a catalyst of Urban and Architectural Research".

The survey is an unexpected view over the preconceived ideas on competitions, challenging their supposed hierarchy and importance.

3 CONCLUSIONS

We gathered evidence from different sources that present the importance of design competitions to architects and to the public realm. In 2011 Wonderlands conducted a European survey and launched a Manual for Emerging architects sustaining the value of competitions to the development of the architect. Four years later the Van Alen Institute has produced a worldwide survey about design competitions which ended with a major conference with Harvard University over the fundaments, the theory, the advantages and hazards of design competitions. Both surveys sustain that competitions are seen and used as research opportunities by architects. These researches are evaluated thru their merit by a jury taking into consideration the promoter or public interest. These surveys show that design competitions can be much more than just a way to gain a commission and enlarge the possibility of their use over other subjects of knowledge. No matter whether competition projects are built or not, and despite all waste of time, human or financial resources, the prizes increase the winners' symbolic capital within the architectural field, and the public attention given to competitions raises the prestige of the architectural profession in general.

There seems to exist a link between design competitions and architectural research at the academia and there is a new theoretical corpus of authors sustaining

the hypothesis of being able to research thru the design. There is evidence that competitions are potentially research oriented procedures in praxis, and should be taken into account as similar, to some account, to scientific research.

We acknowledge there is evidence of the relevance of continuing professional development in relation to the initial education of the architect and to the practice (praxis) of architecture. Some countries have been updating their vision of what can constitute CPD and have included unformal ways of acquiring new knowledge. RIBA competitions task group has further stated that competitions should be considered as unformal CPD as long as it would influence the professionalism and competence of the architect.

We are convinced that the by doing competitions an architect is researching or *reflecting-in-action* thru design projects which can benefit and influence the way that architect works. Thus design competitions ought to be considered as opportunities for continuing professional development and should become part of CPD core curriculum.

REFERENCES

Ace, 2006. Guidelines on CPD Systems – Document noted by the Second General Assembly in 2006. Brussels: Architect's Council of Europe.

Anon., 2015. Design Competition Conference. In: Youtube [viewed 10 December 2015]. Available from URL: https://www.youtube.com/playlist?list=PLqxr4aBubkPbsqGXu_bH_JqnMommKX0y9

Anon., 2016. Research and Innovation. In: Architecture.com [viewed 10 February 2016]. Available from URL: https://www.architecture.com/RIBA/Professionalsupport/Researchandinnovation/Researchandinnovation.aspx.

Brady, D. A., 1996. The education of an architect: continuity and change. In: Journal of Architectural Education, 50 (1), pp. 198–202.

Chupin, J.-P., Cucuzzella, C., Helal, B. (eds), 2015. Architecture competitions and the production of culture, quality and knowledge: an international inquiry. Montreal: Potential Architecture Books.

Collyer, G.S., 2004. Competing globally in architecture competitions. Chichester: Wiley-Academy.

Forlati, S., & Isopp, A., 2011. Wonderland Manual for Emerging Architects: How to Establish and Run an Architecture Practice in Europe. Wien: Springer Vienna Architecture.

Frayling, C., 1993. Monograph, Research in Art and Design. Royal College of Art Research Papers, Vol 1, No 1, 1993/4. London: Royal College of Art.

Friedman, K., 2008. Research into, by and for design. Journal of Visual Arts Practice 7: 2, pp. 153–160.

Groat, L. N., WANG, D., 2013. Architectural research methods. 2Ed. New Jersey: John Wiley & Sons.

Guilherme, P., 2014. Competitions serve a larger purpose in architectural knowledge. In: Lusofona Journal of Architecture and Education, 0(11), pp. 425–451.

Guilherme, P., 2016. O Concurso Internacional de Arquitectura como processo de Internacionalização e Investigação na Arquitectura de Álvaro Siza Vieira e Eduardo Souto de Moura. PhD Thesis, Faculdade de Arquitectura, Universidade de Lisboa, Lisboa.

Guilherme, P., Rocha, J., 2013. Architectural competition as a lab: A study on Souto de Moura's competitions

- entries. In: Rönn, M., Andersson, J.E., Zettersten, G.B. (eds). Architectural competitions: Histories and practice. Hamburgsund: The Royal Institute of Technology and Rio Kulturkooperativ, pp. 159–192.
- Kostof, S., 2000. The architect. Berkley: University of California Press.
- Lipstadt, H., & Bergdoll, B., 1989. The Experimental tradition: essays on competitions in architecture. New York: Princeton Architectural Press.
- Lipstadt, H., 2000. Theorizing the Competition. Thresholds.
 Lipstadt, H., 2010. Experimenting with the Experimental Tradition, 1989–2009: On Competitions and Architectural Research. In: Rönn, M., Andersson, J.E., Zettersten, G.B. (eds), Architectural competitions: Histories and practice. Rio Kulturkooperativ, pp. 36–75. Hamburgsund: The Royal Institute of Technology and Rio Kulturkooperativ.
- Malacrida, S.A., 2010. O sistema de Ensino Belas-Artes no Curso de Arquitectura da École des Beaux-Arts de Paris em sua transição e ruptura: legado de saber e de poder. Universidade Federal de São Carlos, Centro de Educação e Ciências Humanas, Programa de Pós-Graduação em Fundamentos da Educação, São Paulo
- Nasar, J.L., (2006). Design by competition. 2nd Edition. Cambridge: Cambridge University Press.
- Riba, 2009. Charter and Byelaws: The Charter 1837 Supplemental Charter 1971 and Byelaws. London: Royal Institute of British Architects.
- Riba, 2014. A Review of Architectural Design Competitions and other Competitive Processes by the RIBA Competitions Task Group. London, Royal Institute of British Architects, London.
- Rönn, M., Andersson, J.E., Zettersten, G.B. (eds), 2013. Architectural Competitions – Histories and Practice. Rio Kulturkooperativ, Hamburgsund: The Royal Institute of Technology and Rio Kulturkooperativ.
- Rönn, M., Kazemian, R., Andersson, J.E. (eds), 2010. The architectural competition: research inquiries and experiences. Stockholm: Axel Books.
- Salama, A. M., 2015. Spatial design education: new directions for pedagogy in architecture and beyond. Surrey: Ashgate.
- Salema, S., Soares, J., Rivera, J. C., 2014. The Experience of a Pioneer Research Program in Architecture in Évora. In: Lusofona Journal of Architecture and Education, 0(11), pp. 471–485.
- Schön, D. A., 2003. The reflective practitioner: how professionals think in action. Aldershot: Ashgate.

- Spreiregen, P.D., 1979. Design competitions. New York: McGraw-Hill.
- Strong, J., 1996. Winning by design: architectural competitions. Oxford: Butterworth Architecture.
- Till, J., 2005. Three Myths of Architectural Research. In: First research position paper. Architectural Research Futures. Edinburgh: RIBA.
- Till, J., 2012. Is doing architecture doing research? In: 4IAU 4^a Jornadas Internacionales sobre Investigación en Arquitectura y Urbanismo. Escuela Técnica Superior ee Arquitectura Universitat Politècnica De València, Valencia.
- Tostrup, E., 1999. Architecture and Rhetoric. Text and design in architectural competitions, Oslo 1939-90. London: Andreas Papadakis Publisher.
- Tyler, J., 2016a. Including Design Competitions as CPD strategy and core curriculum. e-mail, 27 February 2016.
- Tyler, J., 2016b. What is "you CPD"? In: LinkedIn [viewed 24 February 2016]. Available from URL: https://www.linkedin.com/pulse/20140901135131-41696073-what-is-you-cpd?trk=mp-reader-card.
- Tyler, J., 2016c. How to learn from study tours. In: LinkedIn [viewed 24 February 2016]. Available from URL: https://www.linkedin.com/pulse/how-learn-fromstudy-tours-joni-tyler?trk=mp-reader-card
- Van Alen Institute, 2015a. Design Competition Survey Key Findings and 10 Propositions. In: Vanalen.org [viewed 10 December 2015]. Available from URL: https://vanalen.org/projects/architectural-record-van-alen-institute-competition-survey/#
- Van Alen Institute, 2015b. Design Competition Survey Report on Frequencies. In: Vanalen.org [viewed 10 December 2015]. Available from URL: https://vanalen. org/content/uploads/2015/04/15.03.03_Comp-Survey_ Report-on-Frequencies.pdf
- Van Alen Institute, 2015c. Architectural Record / Van Alen Institute Design Competition Survey. In: Vanalen.org [viewed 10 December 2015]. Available from URL: https://www.vanalen.org/projects/architectural-record-van-alen-institute-competition-survey/
- Van Alen Institute, 2015d. The Design Competition Conference. New York: Architectural Record and Van Alen Institute. Available from URL: https://www.vanalen.org/events/the-design-competition/ [Accessed 29 Feb. 2016].
- Yaneva, A., 2005. Scaling Up and Down: Extraction Trials in Architectural Design. In: Social Studies of Science, 35(6), pp.867–894.



Author index

Aarts, H.M.T. 1085	Costa Pereira, M. 889	Heller, C.B. 551, 769
Abbasabadi, N. 257	Cuéllar, A. 1167	Hennebury, D.L.C. 1115
Abdel Galil, R.E. 619		Henriques, D.P. 27
Achten, H.H. 77, 693	de Castro Almeida, R. 471	Hu, M. 217
Afonso, F. 741	De Visscher, JP. 905, 913	Hunt, J. 11
Ajlouni, R. 963	De Walsche, J. 859	Hylton III, M. 817
Aksamija, A. 527	Degelman, L.O. 749	,,,,,,,,,
Albrecht, C. 543	del Santo Mora, M.O. 121	Jedenov, K. 741
Albright, D. 953	Demir, O. 81, 757	Jia, B. 19
Alessio, L. 849	Dias, B.D. 1009	Justo, R. 1175
Ali, A.K. 1207	Donath, D. 55	T. 1 4 1000
Allegri, A. 63	Donofrio, M.K. 1161	Kamal, A. 1229
Almazán, J. 825	Doyle, S.E. 671, 977, 1021	Kaps, V. 859
Alotaibi, F. 535	Du, Q. 33	Karvountzi, K. 1183
Anandan, S. 495	Duc Quang, T. 405	Keith, G.I.S. 589
Aouad, D.R. 629	<i>C,</i>	Kent Fitzsimons, J. 439
Aparo, E. 179	elBahrawy, A. 113	Khoury, M.L. 455
Ashayeri Jahan Khanemloo, M.	Elinbaum, P. 1167	Kim, K.H. 763
257	Ellis, E.V. 307, 597	Kim, S. 817
Atchison, K. 551	Erdoğan Ford, S. 247	Komez Daglioglu, E. 1093
Aydemir, A.Z. 1107		Konstantinidou, E. 1183
	Fang, Y. 721	Kontovourkis, O. 1031
Balaÿ, O. 715	Farah, L.M. 637	Kratzer, D.A. 207, 307
Ballinger, B. 413	Farias, H. 353, 383	Lau, A. 101
Baltazar, A.P. 1099	Ferguson, H.T. 787	Leal, P. 613
Baptista-Bastos, M. 101,	Fernandes, S.P. 155	Ledent, G. 339, 913
1039	Fernando, S. 803	Lee, J.S. 81
Bellini, O.E. 651	Ferri, G. 87	Leite, J. 1175
Beltran-Rodriguez, M. 561	Frank, T. 605	Li, C. 637
Benages-Albert, M. 1167		Lian, F. 921
bin Zayyad, S. 223	Galpern, P. 567	Lin, X. 19
Blouin, V.Y. 953	Gandhi, F. 983	Liu, R. 1121
Bodino, M. 69	Gazińska, O. 41	Lo Turco, M. 795
Bodurow, C.C. 519	Gero, J.S. 1001	Louekari, M. 3
Borghi, M. 87	Gharehgozlou, S. 551	Louro, M. 1039
Buccellato, A.P.C. 787	Giannattasio, C. 867	Lucak, W. 551
Bylemans, M. 263	Giardino, B. 285	
C 1 . D . 605	Gilbert, D. 947	Machado, I. 613
Camacho, R. 685	Golden, S.M. 705	Machín, H. 825
Cancela, J. 735	Gonzalez, E.W. 307	Madrazo, L. 1051
Castelbranco, A. 279	Guilherme, P. 677	Magliocco, A. 941
Char W 405	Guimarães, S. 471	Mai, G. 715
Char, W. 495 Charalambous, N. 1051	H. 1 . 1 D.T. 047	Makridis, G. 95
Chatzi Rodopoulou, T. 11	Haglund, B.T. 947	Mangone, G. 643
Chatzichristou, C. 95	Haile, A. 55	Mansour, W. 487
Cho, S. 721, 777	Haji Molana, H. 551	Marks, P.V. 1121
Coelho, C.D. 155	Han, SH. 763	Martinez-Cañavate, C. 859 Massarente, A. 581
Collins, T. 1145	Hanzl, M. 425 Harding, D. 953	Matos Silva, L. 1215
Como, A. 169	Haupt, P. 935	Maussen, S.J.E. 361
Copeland, A. 323	Hegli, T. 1145	Maver, T. 997
Ćorović, D. 231	Heine, U. 953	McEachron, D.L. 307
2010110, 21		

McGlohn, E.M. 389 Mehan, A. 293 Mei, H. 331 Melkonyan, H. 279 Michael, A. 1031 Milinković, M. 231 Mindrup, M. 803	Pinto, P.L. 1193 Poerschke, U. 367, 543 Portschy, S. 1045 Proença, S.B. 155 Przesmycka, E. 575 Przesmycka, N. 397	Soolep, J. 859 Sousa Morais, J. 1223 Sprovin, M. 1201 Staub, A. 447, 1069 Steinfeld, E.H. 315 Stone, S. 1059
Mirianhosseinabadi, S. 757, 777	Rajan, S. 187	Tardif, B. 637
Mokhov, A. 315	Ribeiro, M. 179	Tavares, M.C.P. 889
Molana, H.H. 161	Rider, T.R. 1077	Toscani, C. 107, 129
Moore, E.E. 135	Rockwood, D. 405	Truonegao, R. 495
Moore, R. 81	Ronco, F. 47	Tupputi, G. 729
Moreira, A.S. 383	Roseta, F. 1223	Turchanina, O. 279
Morgado, S. 501	Roush-Elliott, E. 389	Türkkan, S. 1153
Müller, H. 375	Rout, A. 567	1 011111111, 21 1100
	Rudnicka-Bogusz, M.M. 463	Uçar, B. 201
Napieralska, Z. 575	Rudolf, B. 55	- , ,
Neves, S. 271	,	Vall-Casas, P. 1167
Nicholas, D.S. 495	Şahin, A. 1137	Vallet, N. 263
Nyka, L. 509	Salema, S. 677	Van Acker, M. 263
•	Sanaan Bensi, N. 1093	Vanneste, G. 479
Oliveira, F. 1039	Sanderson, L. 1059	Vardeman, C.F. 787
Oliveira, F.X. 1129	Sarvimäki, M. 899	Veeger, T.T. 361
Orozco, A. 735	Sattler, M. 881	Vela Castillo, J. 121
Öz, İ. 447	Scheerlinck, K. 1107	Vera, M. Del C. 301
Oztoprak, Z. 701	Senske, N. 977, 1021	Vero, D. 285
	Sentieri, C. 1051	Volynets, I.M. 135
Paio, A. 271	Setti, G. 149	Voorthuis, J.C.T. 1085
Pak, B. 1107	Sharag-Eldin, A. 323, 551, 769	Vukorep, I. 971
Pantelidou, C. 345	Sheikholharam, E. 141	Vyzoviti, S. 195
Papavasiliou, M. 1183	Shields, B. 1015	
Pastre, D. 953	Shields, J.A.E. 1001, 1015	Wang, M. 331
Pavesi, A.S. 87	Silva, J.M. 841	Wang, Y. 527
Payne, M. 947	Silva, K.D. 413	Willemet, N. 905
Pelayo, R. 613	Simon, M. 561, 875	Willoughby, W.T. 925
Pereira, P. 471	Sinclair, B.R. 187, 223, 535, 833	
Perini, K. 659, 941	Smeragliuolo Perrotta, L. 169	Yeshayahu, S. 991
Perino, A. 47	Soares, L. 179	Yu, R. 1001
Peters, B. 811	Sobková, L. 77	
Phocas, M.C. 1031	Soflaei, F. 293	Zawarus, P. 991
Pinheiro, A.P. 239	Song, S. 777	Zhou, M. 19
Pinna, A. 867	Song, Y. 921	Zhu, X. 331