EAEA16

Kreutzberg, Anette; Hermund, Anders

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EAEA16: Envisioning Architectural Scales in the Analogue and Virtual Representation of Architecture

Introduction

This monograph is the result of the 16th European Architectural Envisioning Association Conference, entitled 'Envisioning Architectural Scales in the Analogue and Virtual Representation of Architecture' hosted by the Department of Architecture and Design, Royal Danish Academy, Copenhagen, Denmark, August 30st to September 1st 2023.

Following the mission of the European Architectural Envisioning Association, the conference was intended as a platform for communication and exchange of experience, experimentation, research and collaboration in the field of envisioning architecture, and for this 16th edition with a special focus on architectural scales.

We were particularly pleased to host the bianual conference this year with Copenhagen designated the World Capital of Architecture by UNESCO and hosting the UIA World Congress of Architects.

The EAEA16 theme

The theme 'Envisioning Architectural Scales in the Analogue and Virtual Representation of Architecture' addresses both the broad theoretical and the applied use of the term 'scale' within the architecture and related fields. Understanding the many aspects of scale within architecture will provide a foundation for understanding scale and its impact in architecture and its representations. Scale is widely used both as a measure of geometrical space in relation to buildings and landscape in the physical and virtual world, but also as a measurement of sound, colour, light, and time. With a focus on the architectural scales in relation to all aspects of scale, the conference aims at expanding the knowledge of the use of scale in architecture.

The importance of scale as an analytical awareness on size and its relations is a phenomenon within architecture that can be addressed in numerous ways. The human scale, the scalelessness of virtual or digital models, or the scaling up and down through a variety of parameters in a representational architectural model, just to mention a few. But how can the concept of scale be used to clarify and operationalize the vast number of possible inputs influencing the creation of architecture and relate them to our physical world of living people and architecture users?

EAEA 2023 provided an opportunity to explore and discuss architectural scale and its multifaceted definitions, uses, and impacts in manifestations of virtual or analogue architectural representations and models.

Considering the multiple applications of scale in architecture, the EAEA2023 Conference sessions were organized in three different topics/areas of investigation, which addressed several research questions. The emphasis was on envisioning architectural scales in the analogue and virtual representation of architecture. Interdisciplinary and cross-disciplinary approaches which include architecture and related disciplines were also encouraged.

Scale and theory

Definitions of architectural scale are important to ensure a common language in addressing the build environment both in its physical, geometrical shape, but also as an aesthetic terminology that can be used to determine relation between varied sizes and their relational impact. What are we talking about with the term architectural scale? Why are the definitions important and how can they be applied effectively?

Scale and the senses

Many of the fundamental tangible traits of architecture can be measured and evoked through different uses of the term scale. How does the scalability of architectural height, width, depth, color, and light inflict the ways of thinking and working with design and research within the field? What are the key features of a scalability through the senses?

Scale and representation

The scale and scalability as applied and used in the architectural models of representation has always been a means of communicating design ideas before the full-scale architecture can be built. The representation models operate through a conceptually defined use of scale, but what happens in the digital regime? Is scale and its inherent scalability in the digital realm indeed scaleless, and to what extent, and by what terms, can we address and discuss the scalability within digital and analogue architecture?

The monograph

The layout of this book has been designed following the requirements for a multi-authored monograph. The monograph is composed of three parts reflecting the three main tracks of the EAEA16 Conference. Accepted papers have been adapted to chapters within each part.

The papers published in this monograph were selected through two double-blind peer review processes, one for the abstracts and a second one for the full papers. With the great help of the EAEA16 International Scientific Review Committee, each submission was double-blind reviewed by two members independently. Then, submitted papers went through the second stage of the assessing process, and finally, the book was reviewed by an independent reviewer.

Acknowledgements

We would like to thank the former EAEA conference chairs Danilo de Mascio and Anetta Kępczyńska-Walczak for their support, and we would also like to thank the DCA and eCAADe associations for the dissemination of information and giving opportunity to promote this conference. We thank the reviewers for the care taken in selecting the articles and giving constructive feedback to the authors.

Keynote Speakers

It was an honour to have as confirmed keynote speakers at the conference a group of locally based architects and designers with diverse and multifaceted work approaches to architectural scales.

Phil Ayres

Professor, Chair for Biohybrid Architecture, Centre for Information Technology and Architecture (CITA), Royal Danish Academy

Professor Phil Ayres holds the Chair for Biohybrid Architecture, which is located within the Centre for Information Technology and Architecture (CITA) at the Institute for Architecture and Technology (IBT), Royal Danish Academy.

Phil's research focuses on the design and production of novel bio-hybrid architectural systems that aim to symbiotically couple technical and living complexes, together with the development of complimentary design environments. This research has been pursued in the context of the EU projects flora robotica, Fungal Architectures and the newly funded EIC Pathfinder project, Fungateria.

Kjeld Kjeldsen

Curator, Louisiana Museum of Modern Art

Kjeld Kjeldsen graduated from the School of Architecture in Aarhus in 1971. He started curating exhibitions at the Louisiana Museum in 1973. Since 1984, he has had special responsibility for culture, architecture and design exhibitions at the Museum.

Kjeld is also a member of the Artists Association, a member of the Board of Danish Art Museums 1998 – 2004, editor of Louisiana Revy between 1991 – 2000 and acted as censor at the Department of Art History at the Universities of Copenhagen and Aarhus. He has received various awards for communication about architecture.

Arthur Steijn

Freelance Designer & Artist (MFA), Part time Associate professor at Royal Danish Academy, Institute of Visual Design.

Arthur Steijn has a background in electronics from Technical School in The Hague as well as in Installation Art and Design in Spatial Context from the Academy of Fine Arts, Rotterdam, Holland. He designs and delivers animation & motion graphics for online use & video projections for opera-, dance- and theatre performances. He works with spatial design for scenography and exhibitions, as well as concept design for games.

Special presentation

We were also pleased to welcome Professor Peili Wang for a special presentation on Rapid Watercolor Visualization & Full Detail 3D Walk-through Realization.

Peili Wang

Peili Wang is a Professor of Interior Design Department, School of Building Arts, Savannah College of Art and Design. He has received numerous awards and recognitions, including the Award of Excellence International Competition of Architecture Illustration (AIP). He was awarded the exhibition "Visualizing Architectural Design Exhibition (VAD)" at UIA2011, The 24th World Congress of Architecture, Tokyo, Japan; he received the excellence award in both observation and design drawings for the professional category at the 2018 Design Communication Association Conference (DCA) at Cornell University. He hosted some workshops.

About EAEA

The EAEA was founded in 1993 in Tampere, Finland, and has reconvened every two years since then. What had originally started as a platform for European academic institutes making active use of optical endoscopy instrumentation, gradually but steadily evolved into a wider range of design visualisation and simulation interests.

The founding meeting, hosted by the department of Architecture of Tampere University of Technology in Finland, was the first international meeting of experts in the field of architectural endoscopy, coming from fifteen universities.

The association was intended to become “a platform for communication and exchange of experiences, experimentation, research and collaboration in the field of endoscopy and environmental simulation.” Initially, the focus of the European Architectural Endoscopy Association lay exclusively upon the visual simulation of the effects of environmental interventions using optical instruments: ‘capturing’ photographic or analogue (video) images using physical scale models, generally using a viewing pipe.

Essentially, the first meeting was a gathering of academic professionals in this field, with the delegates representing institutes with some form of ‘endoscopic’ apparatus. During the conference the participants took part in a workshop session, using the facilities of the Tampere laboratory.

From the first session onward the exclusive focus on optical endoscopy began to shift, first gradually, then more and more steadily towards other environmental visualization opportunities, notably using digital media.

This clearly proved to be the case during the presentations of the second EAEA conference in 1995, hosted by the department of Spatial Simulation at the Vienna University of Technology. In particular, the interdisciplinary conference workshop – ‘the (in)visible city’ – stimulated the integration and comparison of analogue and emerging digital technologies.

For this workshop initiative participating institutes were sent a study model via the post and asked to prepare environmental simulations using their institute’s facilities. The varied results were presented and evaluated during the conference.

Similarly, an important element of the third meeting, held at the Architecture

faculty at Delft University of Technology in 1997, was formed by a creative study initiative: the 'Imaging Imagination' workshop. Essentially, conceived as a professional confrontation between 'Optical' and 'Digital' Endoscopy. In this case study, the participants were free to choose between a physical modelling package and a digital file, incorporating texture mapped 'facades'. Some fifteen visualisation proposals were prepared, brought to the conference and viewed and discussed during a special Imaging Imagination conference session.

Apart from the quality and content of visualization, the aspect of the Modelling as such also became a recurring theme. This was particularly the case during the fourth conference, at the Architecture faculty of the Dresden Technical University of 1999, whereby participants took part in an impromptu hands-on modelling exercise using an interior-scale model.

During the subsequent conferences (the 5th conference at the Institute of Urban Design and Planning at the University of Essen, the 6th conference at the faculty of Architecture at the Slovak University of Technology in Bratislava, the 7th conference at the faculty of Architecture at the University of Applied Sciences Dortmund and the 8th conference at the Moscow Institute of Architecture) the shift from 'straightforward' optical endoscopy towards new techniques and topical issues became more and more evident. Noteworthy developments included the increasingly adaptable, distinctive and indeed elegant modes of digital representation, but also the use of digital photography and film, the opportunities of combined media and graphics, but also the introduction of disciplines such as Experimental Aesthetics and Virtual Archaeology.

This led to recurring discussions concerning the association's name. To what extent should endoscopy be considered a fitting 'identity' for the increasingly diverse enterprises of architectural imaging and environmental visualization addressed at the meetings?

Generally, the sentiment tended to be to uphold the established 'label' and to keep the EAEA fraternity relatively exclusive and small-scale in comparison to other, more computer-oriented academic and professional platforms.

During the 2009 Cottbus conference, the thematic differentiation of architectural visualisation approaches and interests once again became manifest during the varied presentations, leading to renewed discussions concerning the EAEA's meaning and role.

What might be an appropriate name that would do justice to the reputation and tradition of (optical and digital) Endoscopy, whilst at the same time giving expression to the steadily unfolding of fields of interest?

Rather than Endoscopy, Envisioning was eventually agreed upon, as it was felt that this fittingly evokes the shared ambitions for a dynamic architectural visualisation practice and the continued exchange of ideas concerning the imaginative conception of future environments.

The EAEA – the European Architectural Envisioning Association

It was hoped that this small, but significant, name change would broaden the appeal of the association on an international level, amongst academics involved with architectural visualisation in the broadest sense, researchers and teachers, whilst at the same time stimulating the deepening of the intellectual discourse.

Previous conferences

15 EAEA Conference | 2021 | Huddersfield | University of Huddersfield (virtually)
14 EAEA Conference | 2019 | Nantes | Graduate School of Architecture of Nantes
13 EAEA Conference | 2017 | Glasgow | Glasgow School of Art
12 EAEA Conference | 2015 | Lodz | Lodz University of Technology
11 EAEA Conference | 2013 | Milan | Politecnico di Milano
10 EAEA Conference | 2011 | Delft | Delft University of Technology
09 EAEA Conference | 2009 | Cottbus | Brandenburg University of Technology
08 EAEA Conference | 2007 | Moscow | Moscow Institute of Architecture (MARCHI)
07 EAEA Conference | 2005 | Dortmund | University of Applied Sciences
06 EAEA Conference | 2003 | Bratislava | Slovak University of Technology
05 EAEA Conference | 2001 | Essen | University of Essen
04 EAEA Conference | 1999 | Dresden | Dresden University of Technology
03 EAEA Conference | 1997 | Delft | Delft University of Technology
02 EAEA Conference | 1995 | Vienna | Vienna University of Technology
01 EAEA Conference | 1993 | Tampere | Tampere University of Technology

Anette Kreutzberg & Anders Hermund
EAEA16 Conference Chairs

EAEA16 Scientific Committee

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Anders Hermund, Royal Danish Academy, Denmark
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Nick Webb, University of Liverpool, United Kingdom