



Book of Abstracts

RIBA President's Awards for Research 2020-21 - Book of Abstracts
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Foreword

In my view good Practice is Research.

You meet a client or come across an opportunity or a need. You formulate an understanding of the physical, cultural, political and financial context. The synthesis of an understanding of these defines a definition of a problem as an opportunity. You solve it with design. The design is often a building - or at least the proposal for one. But it can take many different forms. Indeed it can be a re programming of activity or space to avoid construction: the great iconoclast Cedric Price once advised a husband and wife that they had no need of the house extension for which he was commissioned and would be better served by a Divorce!

Of course, practices cannot just assume research happens. You need to design your practice to ensure there is a continuous feedback loop. That an approach to design from concept to detail is captured, tested and shared. Shared from architect to architect, from project to project. In my own practice we look to define in each project, at inception, the key drivers that define the ambitions: spatial, constructional and operational that we will focus upon. We then ensure that all projects are documented on completion. Of course, much is lost or changed between initial inception and completion of construction. That is inevitable. But regardless this

is the way we ensure, as much as we can, that lessons are captured and then shared with the next project. We then carry out Post Occupation Evaluations, formally, and both generally and specifically (currently our focus is on embodied and operational carbon - design versus reality - all monitored against RIBA's 2030 Climate Challenge). This is design and research as one design project called practice. We carry it out to ensure there is a feedback loop to the design and use of the next series of projects. This is a research project that enables innovation by iteration; and that is important as design is about the careful offsetting of risk and ambition.

My call for the reconstruction of the RIBA as a House of Architecture is essentially a call for a return to our Learned Society roots in research into our discipline. The reinvention of RIBA as a global Institute of Ideas that collects and shares best practice models from around the world. The President's Awards for Research are vital as they highlight the benefits of taking time to capture, document and share. Making architecture in a competitive industry can be all consuming. But this publication illustrates how capturing project research actually frees up time to pursue ambitions. Research liberates architects and architecture: Research pays!

Simon Allford,
RIBA President 2021-23

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The RIBA President's Awards for Research

The RIBA President's Awards for Research were introduced in 2006 with the intention of recognising and celebrating the best of Architectural and Built Environment Research from across the profession.

The Book of Abstracts was first published in 2016 and has since provided an informative snapshot of the breadth of the research being undertaken in the field of architecture and the built environment. Architecture is perhaps unique as a discipline in the diversity of subjects open to investigation, making this production all the more engaging. This year's Book of Abstracts is a combination of submissions from 2020 and 2021 with the Covid pandemic having delayed the 2020 production.

The winners of the RIBA President's Awards for Research have their work featured in the RIBA Journal, the RIBA peer-reviewed Journal of Architecture and on www.architecture.com. The best of the winners from the four categories is also awarded the President's Medal for Research.

Research continues to push the boundaries of the profession, challenging existing narratives and developing new knowledge, both within academia and practice and in between. It is imperative that we continue to promote and support this all-important activity.



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These abstracts demonstrate an incredible breadth of knowledge and insight, including contemporary challenges ... the Covid-19 pandemic, climate change and social inequalities



Chair's Observations

One of the defining characteristics of the architectural profession is the range of subject expertise and insight that it encompasses. This is clearly demonstrated in the scope of projects submitted for the 2021 RIBA President's Awards for Research. This year's entries include work from a broad spectrum including practice, academic research and education, and showcases research activity across a range of different disciplines. These abstracts demonstrate an incredible breadth of knowledge and insight, including contemporary challenges driven by issues embracing the Covid-19 pandemic, climate change and social inequalities, along with investigations into ways of designing, new materials and systems, insights into how we use homes and schools, understanding planning and urbanism, and new understanding of historical and social movements. Scales range from individual components through to cities and have UK, European and global reach.

This makes the work of the judging panel both very difficult but also very rewarding. I would like to thank the panel for their expert knowledge and insight; and on behalf of the judging panel, I would like to thank the RIBA for the opportunity to see this cross section across the discipline at first hand. I hope you will find these abstracts equally engaging. Clearly this year has been a year like no other and this has impacted on this year's entries. Both practice and education have grappled with the effects of a global pandemic, which has changed our ways of working and living. However, this period has also demonstrated the importance of robust research to maintain and improve our lives and society, and serves to underline the importance of nurturing and supporting research in architecture.

Professor Tim Sharpe
Head of the Department, Architecture, University of Strathclyde
Chair of the President's Awards for Research 2021 Judging Panel



Tim has both practice and research expertise in low energy and sustainable architecture, in particularly ventilation, health and indoor air quality in housing. He was previously Director of the Mackintosh Environmental Architecture Research Unit and is now Head of the Department of Architecture at the University of Strathclyde. He has been PI and CI on a range of projects investigating low energy and sustainable design with a value of over £6.5m. He was a member of the National Institute of Health and Care Excellence (NICE) Public Health Advisory Committee on Indoor Air Quality, and the Royal College of Paediatrics and Child Health working Group on IAQ and children's health. He is currently a member of the Scientific Advisory Group for Emergencies, Environment and Modelling Group and has extensive experience of monitoring indoor environments. He has led on a several projects for Scottish Government Building Standards Division. He is chair of the NHBC Scotland Technical Standards group and member of the NHBC Construction Quality Expert Panel.

Judging Panel 2021



Julia Roberts

Partner, Education & Research
Sector Lead
Hawkins\Brown

Julia is a Partner and Education and Research Sector lead at Hawkins\Brown. She has led high-profile, award-winning projects for clients including the Royal College of Surgeons, Cardiff University, University of Hong Kong and Royal Veterinary College. Her rigorous understanding of the standards and detailing of technical facilities enables her to play a key role in advising clients on developing robust design briefs. She has extensive experience leading stakeholder engagement and brief development sessions that form the basis of an effective brief, which in turn evolves into successful design solutions. She currently leads the development of Hawkins\Brown's first net zero whole life carbon education building for Nottingham Trent University, working closely with in-house sustainability advisors to optimise the design. Julia is a member of Higher Education Design Quality Forum (HEDQF) and Designers for Science; she has contributed to and spoken at education and lab conferences in Europe and the US.



Fran Bradshaw

Partner
Anne Thorne Architects

Fran has been a partner at Anne Thorne Architects since 1995. There she has focussed on how women's lives shape and are shaped by buildings and the city, on participatory design, on large scale regeneration as well as smaller community projects, on low energy and ecological building design including the passivhaus standard. She has contributed through practice based research, lectures, articles and seminars to developing and forwarding sustainable design and construction, and has been Trustee of the Association for Environment Conscious Building since 2012. Fran studied architecture and trained as a bricklayer. In 1980 she was a founder member of Matrix, the feminist design collective, worked on various feminist and community projects, then for a local authority direct labour organisation as a bricklayer, and in construction at Collective Building Design. She was joint author and editor of 'Making Space - Women and the man made environment' 1984 reprint Versodue 2022.



Dr Deljana Iossifova

Associate Professor of Urban
Studies
University of Manchester

Deljana is Chair of the Board of the Urban Studies Foundation and the principal investigator and international lead on a diverse £1.3 million portfolio of transdisciplinary research around urban transformation and urban infrastructural transitions. She is interested in the situated and relational aspects of practices of everyday life. Her work has been funded by NERC, ESRC, Royal Society and the Daiwa Foundation, among others. Geographically, her main research focus is on the Global East and South, including China, Japan, Bulgaria, India and Brazil. Trained as an architect at ETH Zurich, she practiced in Germany, China, Japan and the USA. Deljana is the author of Translocal Ageing in the Global East (Palgrave, 2020) and lead editor of Urban Infrastructuring (Springer Nature, 2022) and Defining the Urban (Routledge, 2018).



Tumpa Husna Yasmin Fellows

Architect & Co-founder of Our
Building Design and Mannan
Foundation Trust,
Founder of FAME collective,
London School of Architecture

Tumpa is an architect, architectural design researcher and a tutor (lecturer). Tumpa is a PhD candidate, exploring a design-based research on architectural responses to the confluence of changing monsoon in Bangladesh. Her research, pedagogy and practice emphasis on the collective engagement, improvised community participatory and adaptive architectural response to social and ecological entanglement. Her current design research explores methods of decolonising climate responsive design by integrating indigenous knowledge from communities. She is the co-founder of the practice Our Building Design and the charity Mannan Foundation Trust. She was named a RIBA-J Rising Star in 2017, she was the winner of SEED / Pacific Rim Community Design Network Award 2018, she has been awarded a commendation for the RIBA President's Award for Research in 2019, and she was recognised as a RIBA BAME award winner in 2019



Prof. Adam Sharr

Professor of Architecture
School of Architecture, Planning
and Landscape
Newcastle University

Adam is Professor of Architecture at the School of Architecture, Planning and Landscape at Newcastle University, UK. He is Editor-in-Chief of arq: Architectural Research Quarterly (Cambridge University Press) and Series Editor of Thinkers for Architects (Routledge). He practices with Design Office, listed in the AJ's 2020 40 Under 40 listing of the UK's 'most exciting emerging architectural talent'. His most recent book is Modern Architecture: A Very Short Introduction (Oxford University Press), and Creative Practice Research in Architecture, co-edited with Ashley Mason, will be published by Routledge later this year.



Dr Susie West

Senior Lecturer in Art History and
Heritage
Open University

Susie is an architectural historian at The Open University, and is finishing four years as the Education Officer for the Society of Architectural Historians of Great Britain (SAHGB). During this period, she has championed a new engagement with Equality, Diversity and Inclusion in the SAHGB's mission. The SAHGB makes annual awards for doctoral grants and has just launched a new Masters Bursary scheme, in support of its mission to promote an open discipline. Before joining The Open University, she worked for English Heritage as a Senior Properties Historian, caring for the portfolio of 411 historic buildings and communicating their value to visitors. Her research interests centre on the English country house, and the library room within, as well as heritage issues for the built environment. Her early training was in archaeology, which continues to inform her interests in how people and buildings interact and change together.



Annual Theme:

Education

Submissions are invited that examine the changing face of architectural education, particularly in line with the RIBA's new Themes and Values approach to education, focusing on the social purpose of architecture, protecting the end user and aligning with mandatory competencies. However, the theme is broadly conceived and submissions concerning the development of architectural education, pedagogy, CPD, the influence of architecture on education and vice-versa are encouraged.

- Adaption to climate change, ethics and/or health and safety.
- Significant developments/pathways (historical or current) that shape/d architectural education and the impact/implications.
- The gap between construction and architectural education.
- Teaching and assessment styles, methods, environments (inc. the 'Crit'), the impact of virtual/distance learning/teaching (in relation to Covid-19 or otherwise).
- Skills and knowledge development (inc. CPD), and effectiveness and new technology

Will I Cause Harm?: Practising Ethics Guides for Built Environment Research

Dr David Roberts, Prof Jane Rendell, Dr Yael Padan, Bartlett School of Architecture, UCL, UK
Ariana Markowitz, Dr Emmanuel Osuteye, Bartlett Development Planning Unit, UCL, UK



Practising Ethics Guide covers © Bartlett Ethics Commission

The latest RIBA Code of Professional Conduct, validation criteria and mandatory competences specify ethics and social purpose as key components of professional practice. 'Practising Ethics Guides' are a pioneering open-access educational tool for emerging and established built environment practitioners to teach themselves and others how to identify ethical dilemmas that may arise in research and practice, negotiate their ethical responsibilities, and rehearse strategies to navigate unpredictable environments with care and creativity.

Insightful and imaginative architectural practice encompasses a range of sites, contexts, and communities, and it is important to consider the benefits, risks, and harms to all connected with and affected by it. 'Practising Ethics Guides' are the result of an interdisciplinary collaboration between two long-term projects exploring ethical protocols for built environment practitioners and strengthening pathways to urban equality, with particular attention to the western-centric bias of ethical values which privilege the individual over the communal or collective.

Acknowledgements
Prof Caren Levy, Knowledge in Action for Urban Equality, Bartlett Development Planning Unit

Together, this work illuminates how the relationship between universal ethical principles and specific ethical processes is situated within particular contexts. These guides help navigate this relationship through generative questions as prompts to reflect on potential ethical considerations, guidelines that illuminate concerns, and actions that embody ethical principles.

'Practising Ethics Guides' offer insights from experienced built environment researchers. They are designed as an accessible point of reference at all stages of a project – from planning, to conducting activities in the field, to communicating and staging work. Rather than a regulatory hurdle, they consider ethics as an opportunity to enrich architectural practice through reflexive curiosity and critical investigation. Thinking through ethics compels us to grapple with ideas of enduring value, to question our position, and to expound what practitioners we want to be. The guides are shared via an open-access website and have already been embedded across international architectural education programmes.

Simple Solutions for Safer Schools

Chris Bryant, Gintare Kapociute, Jenny Lyon, Matt Pattenden, Roz Peebles, Caspar Rodgers, Adam Shapland, Yip Siu and Tristan Wigfall, alma-nac, UK

Simple Solutions for Safer Schools (SSFSS) is a design manual, interpreting and communicating government advice to provide design-orientated solutions for school operators to apply to safeguard the physical and mental health of their staff, pupils, and pupils' parents during the Covid pandemic.

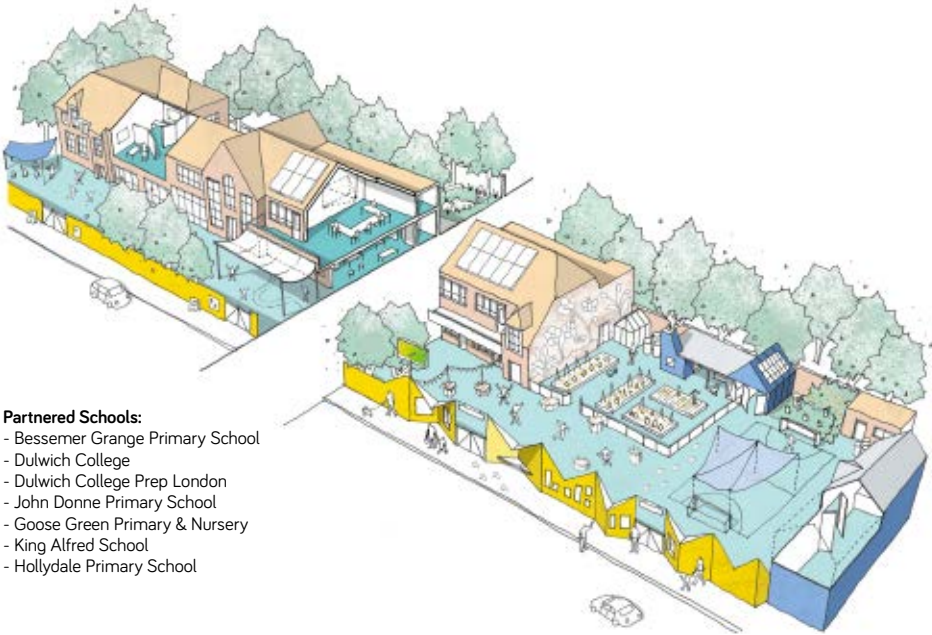
mental health of their staff or pupils. The wider intent of the project was to communicate the resulting ideas such that they may be transferrable to any school environment, then through the wider dissemination of the manual, allow for any school to incorporate and build-on these ideas.

This document was prepared in collaboration with 8 schools from a single London borough, in relation to the government published advice regarding the adaption of education settings. This manual was published twice. Once following the first period of lockdown in 2020, then adapted and re-published to accommodate new governmental advice and school knowledge following the third period of lockdown in 2021.

This was a real-time collaboration with school leaders to create clear, positive interpretations of architectural statutory requirements, relating to the real opportunities and limitations set by their physical environments. There was no available past research interpreting the Covid Safety requirements in school environments. Research was undertaken by interview with head teachers and teachers, physical assessments of school settings and desktop analysis of regulations.

The aim of the project was to assist school operators to understand the new guidelines, to adapt them to the specifics of their physical environments, to communicate the proposed changes to concerned pupils and parents, all the while ensuring that both the physical and organisational changes were both affordable, achievable, and non-detrimental to the

The document's success was reported anecdotally as hugely valuable. The report was subsequently downloaded hundreds of times across 15 countries, suggesting successful wider distribution and uptake of the content.



Partnered Schools:
- Bessemer Grange Primary School
- Dulwich College
- Dulwich College Prep London
- John Donne Primary School
- Goose Green Primary & Nursery
- King Alfred School
- Hollydale Primary School

Suggestions for incorporating the learnings from the pandemic in future school design © alma-nac



How Does the Built Environment of Schools Matter? Establishing the Characteristics of Learning-Sensitive Architectural Design Using a Bespoke Digital Participatory Tool

Dr Karolina Szynalska McAleavey, Faculty of Education, University of Cambridge, UK

Our understanding of school building design in relation to its effects on learning is surprisingly underdeveloped. This is due to the complex nature of the environments, the lack of consensus about the criteria for their pedagogical assessment, and attendant methodological challenges. By using theoretical concepts from developmental psychology and innovative approaches to both education and the perception of the physical environment, this study explored how the design of secondary school buildings affects pupils' appetites for learning and promotes innovative pedagogical practices. The principal purpose of this research was to establish the characteristics of a learning-sensitive architectural design.

The research tool employed the Experience Sampling Method (ESM) conducted through a digital app. It collected images of the pupil participants' surroundings and information about their school related experience in situ – by sampling the

participants' thoughts and feelings as they occurred and in the environment within which they occurred. Over a course of a week in each case study, a total of 79 Year 7 and 8 pupil participants in four urban secondary schools in England recorded 1091 momentary responses reporting their experience of their motivation, school activity, and their immediate physical environment. The procedure collected both quantitative and qualitative data recording the effect of the pupils' perception of the school environment on their momentary motivation, as well as an assessment of the congruence between the buildings and the pedagogies they host. The study found that the perceived quality of the school environment has a lasting impact on pupils' momentary motivation and that a significant amount of variation in intrinsic motivation is momentary and context specific. These findings have potential implications for architects and educators concerned with enhancing and supporting learning through the design of school buildings.

Acknowledgements

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SCABAL
Dr Bob Fields
Dr Andy Bardill
Faculty of Science
& Technology
Middlesex University



A classroom in an early twentieth century school.
© Karolina Szynalska McAleavey

Cross-Cultural Pedagogy: Rethinking Architectural Education as Ecological Design Research

Prof Murray Fraser, Bartlett School of Architecture, UCL, UK

Dr Nasser Golzari, Dr Yara Sharif, University of Westminster + Golzari-NG Architects

Michiko Sumi, Bartlett School of Architecture + KPF Architects, UK



'Gateway to the Casbah' as an imaginary occupation of the project as a twist on Orientalist representations of Algiers.
Courtesy of Neda Soltani

This essay argues for a more culturally inclusive and socially sensitive design pedagogy for architectural schools in Britain or elsewhere. Based upon the authors' long academic experience, it adopts an explicit cultural studies stance by focussing on the ordinary, everyday, diverse, and invisible within our contemporary cities/rural areas. Equally important is the emphasis on design research in terms of engagement by students with actual issues, and real places, in ways that could then be directly implemented as built projects; or at least, to arrive at projects that identify potential strategies for new ways of building.

What is described is a mode of teaching design research through projects for difficult contexts which do not treat those conditions as problems, but rather as fertile grounds for creativity. To offer some specific examples in what otherwise might seem a vast geographical and conceptual field, a trio of student projects are discussed that deal with the term 'ecology', as dissected by Felix Guattari in

his seminal 1989 book, *The Three Ecologies* – and which therefore embrace the linked tripartite concepts of environmental ecology ('nature'), social ecology ('socius'), and mental ecology ('psyche').

This transversal, interdisciplinary method is discussed through the chosen student projects, which are based respectively in Bangkok, Gaza City and Algiers. Taken together, these featured projects navigate – and indeed negotiate – alternative forms of practice that often fly in face of the logic of global capitalism by proposing the preservation of historic built fabric or landscapes. Each of the student projects suggests a social and cultural vision of architecture that reacts to the consequences of past colonialization in locales in the 'East'/'Global South' by fusing local factors with ideas originating from the 'West'/'Global North'. As such, the essay proposes a model for broader, cross-cultural educational methods and practices in architectural schools worldwide.

Acknowledgements

Michiko Sumi,
Bartlett School of
Architecture + KPF
Architects

Inequality in Architectural Education in India

Kanai Shah, School of Architecture, University of Sheffield, UK

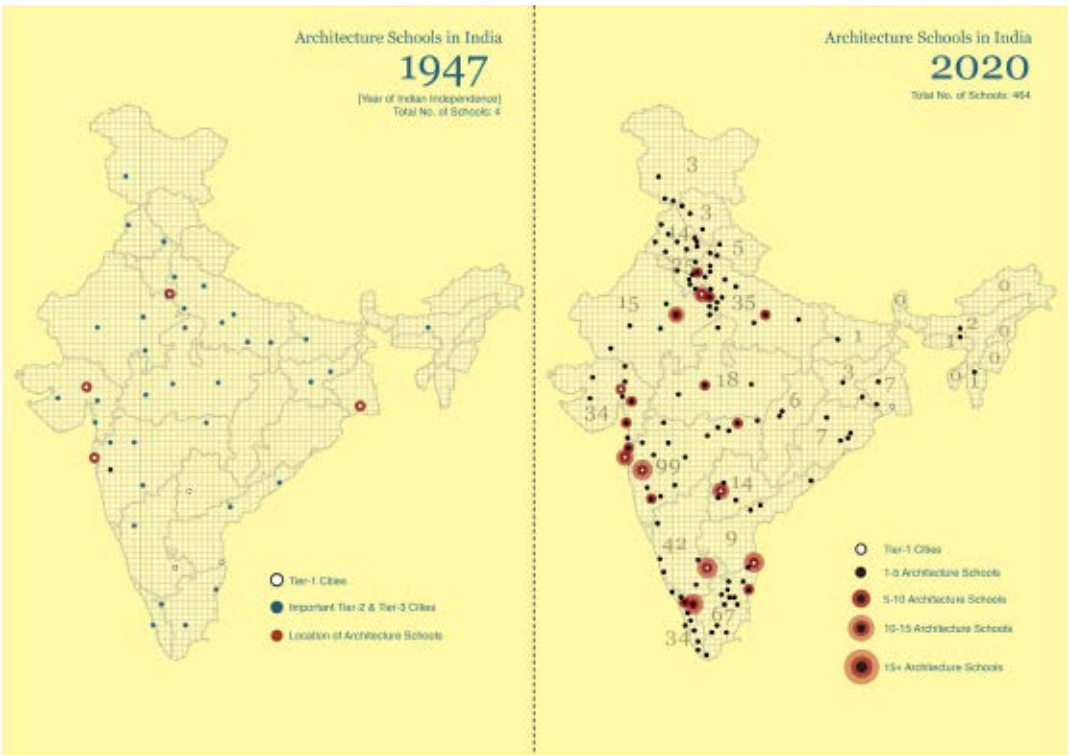
In India, 1% of the total population holds more than four times the wealth of 953 million people, which comprises the bottom 70%. Moreover, from merely 4 schools providing accredited courses in the field in 1947, the number rose to 117 in 2005, and then rapidly increased to reach the current 469 schools, across the nation. Over the years, interactive discussions on design, research and technological experimentation highlighted the inequalities within architectural education, especially in the Tier-2 and Tier-3 cities and towns of India. The lack of experienced faculty, a conservative design approach, absence of research-driven innovation and no exposure to modern technology or software seemed to be a ubiquitous issue. The understanding that there are other, substandard educational journeys, prompted this research and a greater inquiry into the subject.

Acknowledgements
Satwinder Samra,
University of
Sheffield

Thus, taking the world's largest democracy as the region of study, this research focuses on understanding the various prevalent inequalities that

exist within architectural education and how they can be improvised. The research is a mixture of a methodological approach of qualitative exploration of the issue coupled with a questionnaire sent out to participants.

The topic required multiple perspectives to be considered due to the vast complexities of the field, along with statistics and data analysis of the existing schools of architecture. Qualitative research methodology, with initial desk-based research followed by a subjective questionnaire, provided this holistic approach. Detailed analysis of the geographical location, type of dominion, tuition fees, infrastructure and year of establishment of schools was conducted. This data was then converted into maps and graphs. Reports and contemporary models being used globally, which could be incorporated within architectural education in India, were explored as a part of the final chapter.

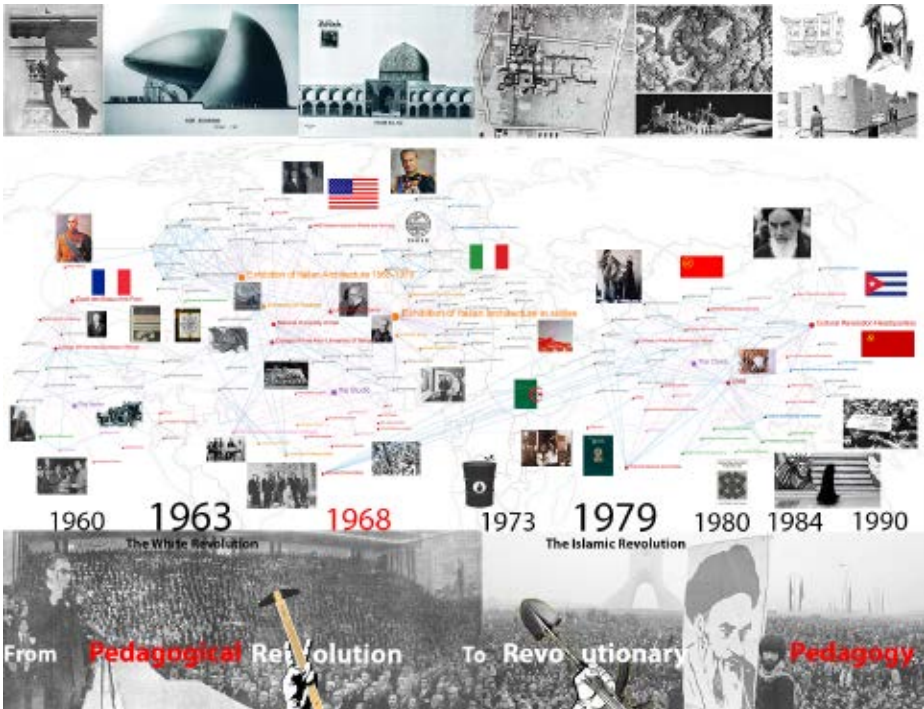


State-wise
mapping of the
growth, distribution
and number of
architectural
schools in India
© Kanai Shah

From “The Pedagogical revolution” to “The revolutionary Pedagogy”: Politics, pedagogy and global crises.

Ali Javid, Dr Nigel Westbrook University Western of Australia, School of Design, Australia

Dr Ali Mozaffari, Alfred Deakin Institute, Deakin University, Australia



Mapping the
Trajectory of the
actors-network
of architecture
pedagogy in Iran
from The White
Revolution (1963)
to The Islamic
Revolution (1979)
© Ali Javid

During the Cold War, the Middle East witnessed socio-political reforms or revolutions with different goals and slogans; From the USA-sponsored economic-social reforms, Program Four Plan; that was to modernize and develop the societies of the Middle Eastern countries, to the emergence of anti-colonial and anti-imperialist revolutions with the slogans of independence and Islamism. These radical changes coincided with the emergence of new architectural universities and modern pedagogy, which, along with the goals of reform or revolution, was one of the agents of change in society. The paper focuses on the interaction of the action of Revolutions and the reaction of architecture pedagogy in two contemporary revolutions in Iran, The White Revolution (1963) and The Islamic Revolution (1979). The paper assumes the design studio as a backbone of architecture pedagogy which is a socio-political assemblage to identify and translate the spatial network of connections between politics and pedagogy. Accordingly, design studios

consisting of human and non-human actors such as professor, student, curriculum, design brief, models, drawings, books, magazines, which are politically heterogeneous and shape controversial network. The curriculum is one of the actors in the studio which is a systematic agenda between pedagogy and politics, and which is changed and developed based on the socio-political aims. This paper draws a transformation of the structure and content of the architecture curriculum to adapt with the socio-political agenda of each revolution, The White Revolution (1963) and The Islamic Revolution (1979). The trajectory of the transformation of the curriculum has started from 1963 when a new system of architecture education, Italian pedagogy, was brought to Iran and decolonized the curriculum from the previous pedagogy system, Beaux-Arts, and it continued to the Cultural Revolution (1980-1984) when a new Islamic monarchy decided to detoxify the curriculum from Western influence to Islamize it.

Shutting the studio: architectural education in the post-pandemic age

Dr Robert Grover, Prof Alexander Wright, Department of Architecture & Civil Engineering, University of Bath, UK

The Covid-19 pandemic instigated a rapid shift to remote learning in schools of architecture in the United Kingdom. Through the largest survey of its kind of architectural students and tutors in the UK, this research compares experiences in the physical design studio and its remote equivalent. The context of the pandemic provided a unique opportunity to survey a range of cohorts, at different stages in their architectural education in order to compare these two modes of studio delivery. The findings show a fall in student satisfaction after the move to remote learning in every metric assessed. The findings also revealed the extent of the decline in designated studio provision within the UK. The paper suggests that the extent of this decline is such that, for the majority of students, architecture is no longer a full-time studio-based discipline.

The research suggests that despite the replication of teaching activities digitally, the role of the physical design studio is a critical component in successful design education. The findings reveal the shared values of staff and students with respect to studio learning and they suggest that these are key elements in establishing the studio culture central to the ethos of many schools of architecture. The research highlights the importance placed on cultural aspects of the studio experience and it suggests how the physical studio helps foster well-being and equality of opportunity across a student cohort. The paper makes a significant contribution to the available evidence base which demonstrates the value of architecture's signature pedagogy. In so doing it can be employed to support, and potentially extend, the use of studio-based teaching.



The design studio before the global pandemic
© University of Bath

Teaching Space in Architecture: experimentation at VKhUTEMAS, Moscow (1923–1926)

Dr Marco Iuliano, School of Architecture, University of Liverpool, UK
Dr Matthew Armitt, Birmingham School of Architecture and Design, Birmingham City University, UK



Students during a 'Space' lesson exercise on the "Revelation and Expression of Mass and Weight" in the lecture hall of the Basic Department during VKhUTEMAS (1925).
<https://www.vkhutemas.ru/en/structure-eng/faculties-eng/main-course>

Following the 1917 October Revolution VKhUTEMAS, the school of architectural teaching active in Moscow between 1920 and 1926, implemented a novel educational model for Russian society. From its inception, it encompassed eight art and production departments – Architecture, Painting, Sculpture, Graphics, Textiles, Ceramics, Wood and Metalworking – whose interaction was later enhanced through the so-called Core Division, a two-year mandatory course established in 1923 that consisted of four modules: Graphics, Colour, Volume and Space. This paper investigates the pedagogy of the most experimental of these four, 'Space', during the period 1923–1926. Over the past forty years, the academic Selim

Omarovich Khan–Magomedov (1928–2011) has been the main source of historical information concerning VKhUTEMAS. More recently, three scholars – Anna Bokov, Luka Skansi and Alla Vronskaya – have analysed several aspects of the School, making a significant contribution to our understanding of its functioning, but without addressing its educational approach to 'Space' in detail. Drawing on over 1000 documents – predominantly, photographs belonging to public and private collections around the world – this paper analyses the fascinating avant-garde teaching methodology of 'Space' which, one hundred years after VKhUTEMAS's foundation, can still inspire contemporary architectural pedagogy.

A Case for Practice Incubation

Chris Johnson, Hugo Gallucci & Jack Ingham, School of Architecture, Planning and Landscape, Newcastle University, UK

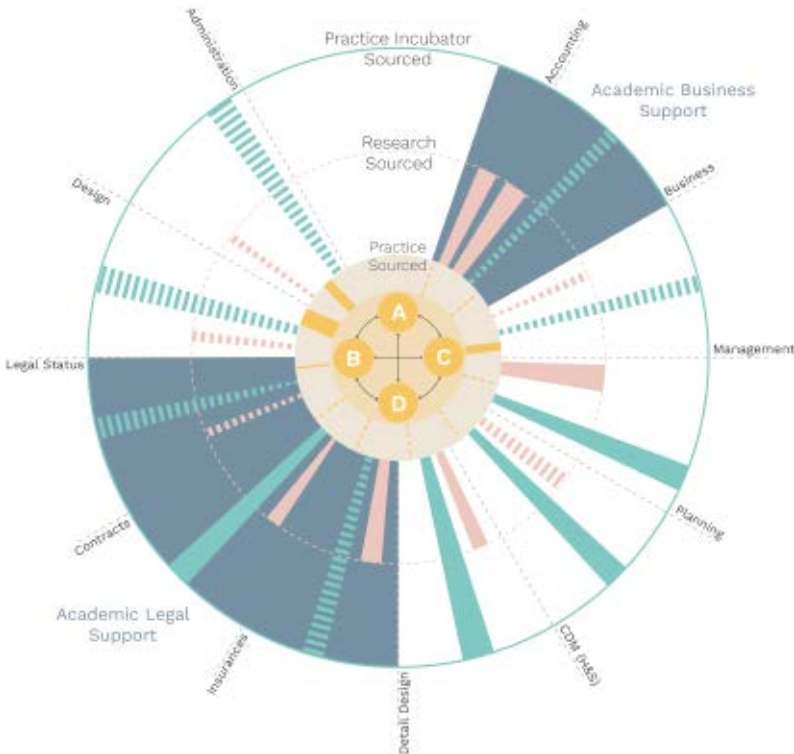
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In July 2018, the introduction of Architectural Apprenticeships across three universities in England was announced, marking the first major shift in architectural education for over 50 years. It re-ignites an ongoing pedagogical debate about the relationship between academic and practice-based education, at a time of increased focus on the qualitative output of a fee-paying university system, which draws great pride from its entrepreneurial alumni. In this culture, a group of Part I qualified students tested the application of practice-based pedagogy through entrepreneurship to challenge existing knowledge and to transform their professional skills outside of ordinary academic structures. In forming a Student Practice, the authors of this paper reflect on the context of proto-practice pathways and tacit knowledge they gained in their entrepreneurial experience to speculate on a radical new pedagogical pathway.

The intention of the research is to speculate on a new entrepreneurial mode of architectural education,

through primary fieldwork research and critical academic reflection. Its methodology falls into three stages; firstly in documenting UK based fieldwork focused on identifying and mapping the core alternative pathways at Part II level. The process looks to critically identify pedagogical tools utilised within the broader course structures and individual modules to enable unique learning opportunities. The second stage commences a case study-led reflection on common methodologies of the live project and live build programmes, primarily focused on the Rural Studio programmes. Finally, the research critically reflects on the Student Practice as it occupies a period identified as 'Practice Formation' within the context of the traditional pathway. Finally, these findings will be utilised to speculate on the nature of a radical pathway proposal which is capable of generating unique pedagogical opportunities, through an extensive network of stakeholders and tutors, which can prepare a new generation of entrepreneurially enabled practitioners.



Practice
Incubation
Knowledge Circles
© Chris Johnson,
Hugo Gallucci,
Jack Ingham

Architectural Design Research: Drivers of Practice

Dr Ayse Zeynep Aydemir, Prof Sam Jacoby, School of Architecture, Royal College of Art, UK



Work in Progress
Show, Royal
College of Art,
2020
© Ayse Zeynep
Aydemir

Research, professional practice, and learning in architecture are becoming increasingly integrated as the understanding of research and practice is transforming and research assessment criteria are expanding. This changing research landscape has created more diverse iterative and cyclical design research processes and opened new areas of exploration and experimentation in architecture. Building on existing tripartite design research models, such as Frayling's (1993) "into", "for", and "through" approach or Till's (2005) and Fraser's (2013) distinction of research stages according to notions of

"processes", "products/outcome", and "performances/impact", this paper uses the concepts of "process-driven", "output-driven", and "impact" to analyse and classify current architectural design research practices. This framework is used to clarify how research criteria are differently understood in academia and practice, explore the challenges arising from translation between them, and analyse the methods commonly used. While focusing on the UK context, the paper offers transferable insights while using some international case studies.

Cities and Community

Submissions were invited from those investigating the relationship between the built environment and the people who live in it. Distinct from the historical category below, submissions here were to focus on contemporary city and rural environs, their challenges and communities and could include, but were not limited to:

- The role of the architect and architecture in social, cultural and economic sustainability
- Analysis and contextual studies of architecture in the cityscape
- Tall buildings and impacts on cities and the community
- Community focused projects including pro bono work
- Community engagement in projects
- Health, wellbeing and sustainability in the city



Partially damaged housing units in a four-storey apartment building that is still inhabited by an extended family despite being targeted in the Gaza Strip.
© Salem Al Oudwa

As Found Houses: Experiments from Self-builders in Rural China

John Lin & Sony Devabhaktuni, Department of Architecture, University of Hong Kong, Hong Kong



Highway House,
Wooden House
© John Lin

The research addresses the tendency toward vernacular obsolescence in rural China by identifying unique cases of previously overlooked vernacular dwellings that have been informally adapted by villagers. Instead of abandoning their traditional dwellings in favour of generic concrete frame and brick constructions, these self-builders have developed intelligent solutions for updating their old houses. The results are fresh ideas for sustainable living that contain spatial nuances related to deep rooted social structures— relevant for professional and informal builders and designers alike.

A systematic documentation of these innovative houses has produced a design guidebook for adaptation, while also providing architectural evidence for the social, economic and cultural imperatives motivating transformations of the rural environment. By cataloguing and redrawing the houses, the spontaneity of their designs can be understood as clear and imitable spatial strategies. In this way, design innovation is found, recorded and disseminated back into the community also laying the groundwork for more formal solutions by designers – calling for a new role for the architect in what formerly were sites without architects.

Ethical Implications of Experimental Design on Affected Communities in the Gaza Strip, Palestine

Dr Salem Al Qudwa, School of Architecture, Oxford Brookes, UK

Annihilation in Gaza has become so frequent that houses are being built, destroyed and reconstructed all at the same time. The inconsistencies between how the home is viewed as an ideal and as a lived experience affect how people in conflictual surroundings define it. Regarding housing, Gaza's on-going emergency situation has attracted more experimental structures, built by international aid organisations. The combination of Israeli military events and the construction of temporary makeshift shelters have resulted in substantial demographic and social changes, especially for low-income extended families.

This research examines experimental architectural technologies and transitional design for communities in Gaza. Three key questions inform this research: What is the social role of architects and international aid organisations in addressing Gaza's housing challenges and struggles? What are the ethical implications of experimental architectural technology and design on behalf of the affected communities in Gaza? And, what is the appropriate housing design

for marginalized communities that will respect their cultural understandings and engage them over time? The research further draws on my architectural background, linking emergency and architectural site-work to fieldwork research and thus exploring the potential of social and physical mapping as research tools. To identify the fundamental reconstruction constraints for low-income extended families in rural and marginalized areas, a design-based case study of the Rehabilitation of Damaged Houses project is featured as a critical appraisal of one of my related projects undertaken in Gaza.

This research is a contribution towards the reconstruction process in Gaza and making a qualitative change that lays the foundation for future efforts by Gazans themselves. Although the focus of this research is on Gaza, its findings will benefit reconstruction efforts in other conflict zones in the Middle East where human displacement is a defining problem and post-conflict reconstruction of the built environment is an urgent need.



Sketch notebook
and concrete
were the media of
communication at
site (2010).
© Salem Al
Qudwa

London in 2050: The future of the city's social housing, property price and gentrification

Zoe Lord, School of Architecture, University of Sheffield, UK

The Black Lives Matter movement has erupted into global calls for racial justice, penetrating the architectural profession. However, while demands to diversify the architectural curriculum and workforce are important, the relationship between race and the built environment has been overlooked. The Grenfell tragedy and the Covid-19 pandemic have underlined the interconnected nature of race, housing, and quality of life, but this continues to be unacknowledged. This study examines the UK's housing crisis through a critical racial lens, highlighting how contemporary issues disproportionately affect ethnic minorities. Using a combination of literature research and primary interview data with professionals from BAME housing associations, the study outlines historical processes affecting housing. Reframing the mainstream narrative, it identifies housing as intrinsically linked to quality of life, and therefore to wider relationships of equality. Taking a novel approach, the research crafts projections of the city of London in 2050, which are used as a tool to expose present-day mechanisms.

Firstly, the study focuses on social housing and the working class, critiquing a history of governmental attitudes and policies as grounded in racial discourse. Social housing supply is rapidly diminishing, homeownership has been idolised and in turn, social housing is stigmatised. The study then examines property price, aligning its accelerating upwards trajectory with processes of financialization and commodification. It juxtaposes the presence of poverty and homelessness with the super-rich, set on a backdrop of gated communities, shanty towns and dire private-rental conditions. Finally, the study demystifies the processes of displacement and gentrification, theorising them as contemporary evolutions of 'slum clearance' and 'inner city' policies. The discussed issues are rooted in racism, despite presenting a more covert exterior in the present day, they continue to disadvantage ethnic minorities. The study concludes by recommending radical reform, identifying changes necessary to dismantle racial inequalities in the UK's housing system.



Eades, J., (2020),
Black Lives Matter
Protest, London,
UK.
Unsplash
<https://unsplash.com/photos/IMMMxZ1I2ZO->

Symbiont: flora and fauna as inhabitants of architecture

Adrián Cebrià, Universidad Veritas, Costa Rica



Collage one:
Symbiotic space.
Conceptual Idea
for Dwelling
Typology
© Adrián Cebrià

When discussing the role of nature in architecture, reference is often made either to its uses in solving energy consumption problems, or to its formal and functional repertoire for architectural design. However, the rapidly expanding built environment is replacing the natural environment; dwelling places supposedly reserved for biodiversity within the city, are disappearing – along with the presence of vegetation – which leads to a negative impact on the quality of human life. The present paper aims to bring to the table a discussion as to how to consider flora and fauna as inhabitants of architecture at the building

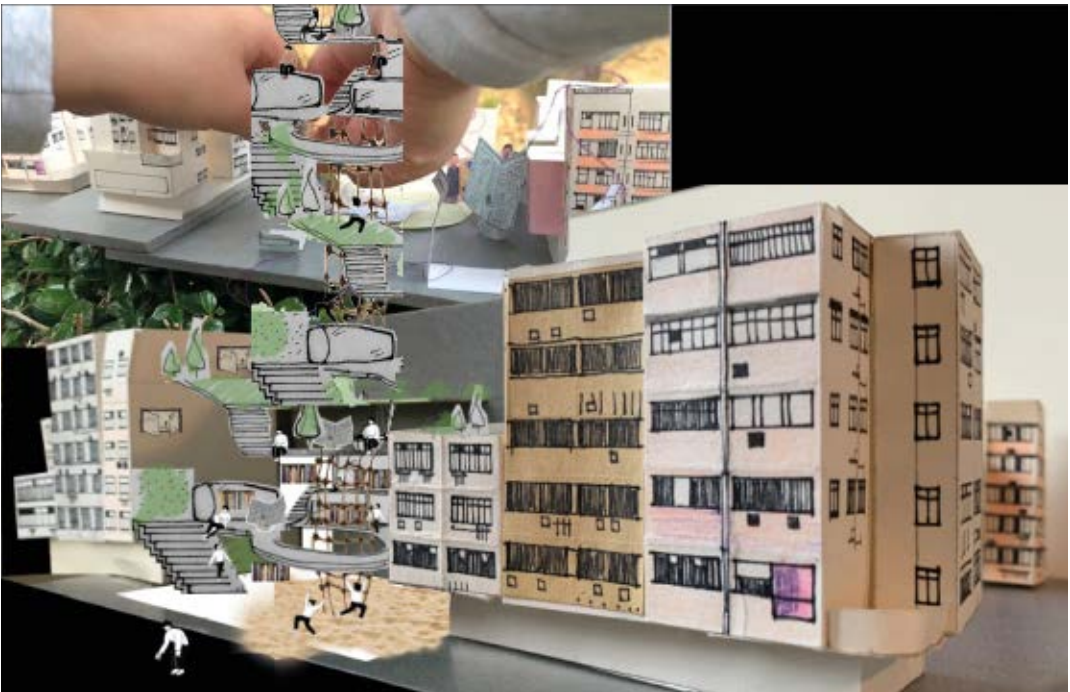
scale, and to approach a conversation where these two elements – flora and fauna – are more than a utility, without any intention of anthropomorphizing them, where human beings and nature are equal partners, without a dominance of one as opposed to the other. At the same time, this paper focuses on the effects on the quality of life of the human being when entering into a relationship of such nature. With this idea in mind, a habitation typology named “Symbiotic Space” is proposed in the hope that it will serve as a habitation model for vegetation in architecture.

Urban Space for Urban Childhood

Veronica Wong, Manchester School of Architecture, UK

Do you remember childhood? Adults tell of memories and individual stories connected to neighbourhood places; the architecture of cities has been marking its mark on us. This research established sequential steps of direct engagement with children to investigate neighbourhood experience, and revealed their straightforward approach to child-friendly urban scenes. Valuable attempts were made to interact with children to propose open navigation in the urban

environment, by considering children's experience of a third space to complete their urban experience. The process stands for empowering children's voices to be heard, ideas to be seen; and support their right to city. 140+ children from different backgrounds "participated" in this research demonstrated positively in the discussion of involving children's perspective in urbanism.



Designing with Children - Their interpretation of space on paper model with contextual explanation
© Veronica Wong

Social Housing and Crime: Assessing the role of council estates in the rise of knife crimes by analysing the spatial qualities of the Orchard Estate, South East London

Yeside Sobowale, Manchester School of Architecture, UK



Poster shows stairs leading to the communal outdoor gym, encouraging residents to take ownership of the space
© Yeside Sobowale

Not many positive characteristics are associated with council estates within London. The rise in knife crime and the glorification of telling these stories in mainstream media has highlighted the estate as the backdrop for these stories told with black male youth at the forefront. Being Black-British, stigmatised by coming from a single parent household and living on an estate, I resonate with this circumstance.

This study observes the practices of the residents of the Orchard Estate, an estate that is also my home. The recent awareness that I have gained regarding the criminal activity taking place within the construct I call home, has impelled me to deal with this matter by first looking at the space I operate within. It is concerning because an environment that is supposed to bring safety, does the opposite. I will show how ideas that theorists associate as beneficial characteristics of a community to reduce criminal activity, have been adopted to aid the occurrence of crime.

I aim not to problem solve but alternatively provoke a conversation on how 'power', a concept elaborated on by Foucault, can be put into the hands of the residents not engaged in criminal activity. As Newman discusses the role of inhabitants in ensuring their security within their neighbourhood, how can forgotten communities be empowered whilst also interrogating the relationship between politics and architecture. Derived from my experience of living there as well as observations, I will, through a series of activities, reveal how the consequential spaces created by the architectural design of the estate affect human behaviour. And therefore create territorial attitudes through a methodology I have defined as Transformative Embedded Practice.

These facts are drawing lines for a new kind of thinking within architecture, where those affected are included in the conversation about that which concerns them.

Taste Untold: Critical Performance Practice and Contemporary Public Space

Dr Adriana Cobo Corey, Central Saint Martins School of Art and Design, UAL, UK



The Disappearing Garden, 2016-18. Cleaning and Drawing Granary Square, King's Cross. Performance collaboration with maintenance staff from King's Cross Estate Services and Architecture Students from CSM-UAL © Catarina Heeckt

This practice-based investigation studies the codes and practices characteristic of contemporary public space, focusing on how they impact the lived experiences of specific communities in the context of urban regeneration. Situated on Granary Square, arguably the most successful Privately Owned Public Space made in London in recent years, the thesis underscores the dependent correlation between research and existing urban sites. The study argues that, within architecture and urban design fields, high regard for specific redevelopment projects with POPS at their heart often overlooks their inherently divisive social impact, and strengthens the seemingly legitimised belief that analysing, questioning and re-aligning such impact falls outside the realm of these professions. The investigation addresses some of the reasons behind such overlooking, and articulates research-practice that critically approaches some of the effects contemporary public spaces have on the unfolding of urban life, including on dominant aesthetic narratives often communicated through pseudo-public environments. Aiming to counter-balance social divisiveness in the

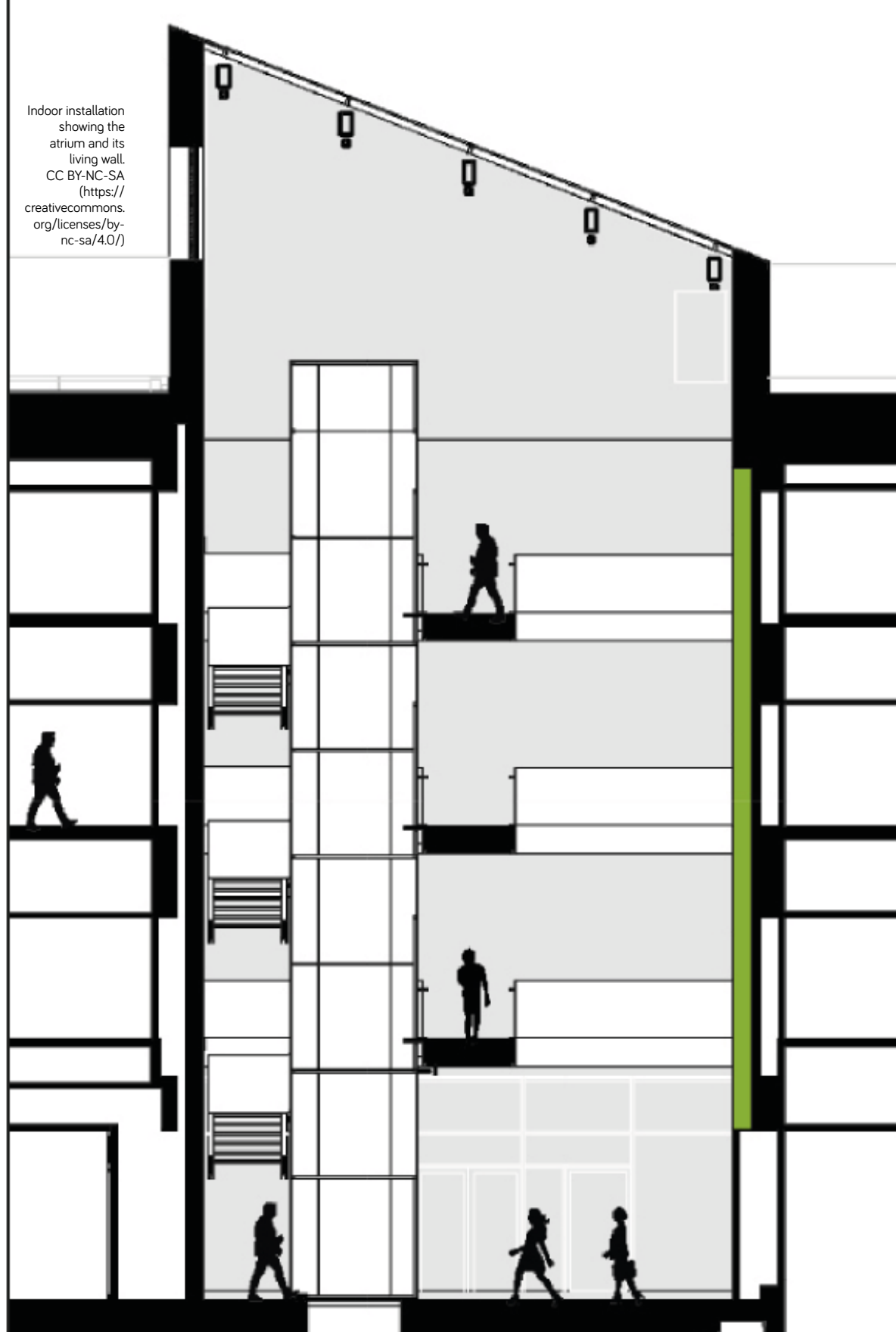
context of urban regeneration, the study tests the agency of spatial practices post-occupancy, with collaborative performance interventions designed to inspect active maintenance practices specific to Granary Square and the King's Cross Estate, in connection to those characteristic of architecture and urban design more broadly.

The study's methodology is shaped by a feedback loop between Performance Practice, which produces performance interventions through medium to long-term engagement with specific local groups, and Theory Building through reading and writing. The wealth of visual, written and spoken material produced overall, provides valuable insight on how use and everyday practices are conditioned by specific maintenance strategies. It's analysis allows to test how codes and practices of public space can be temporarily re-codified and/or translated into more open modes of practice, including the writing of untold stories of taste for design professionals, educators, students and the wider public.

Granny Square Project, 2018-Present. Crocheting Somers Town's History into Granary Square. Collaboration with We are Ageing Better - Somers Town & Saint Pancras with the Stitch and Knit Club. ©Catarina Heeckt



Indoor installation
showing the
atrium and its
living wall.
CC BY-NC-SA
([https://
creativecommons.
org/licenses/by-
nc-sa/4.0/](https://creativecommons.org/licenses/by-nc-sa/4.0/))



Design and Technical

Submissions were invited under the headings of Design and/or Technical. Research was to concern the influence or impact of design, form and/or technology on the use, quality and/or performance of a space or building(s). Topics could concentrate on the holistic or focus on a specific element, addressing, but not limited to:

- Materials, detailing and/or construction methods
- Design quality and/or project management
- Computational Design and BIM
- Spatial integration
- Sustainability, low carbon solutions and/or 'systems' performance

Stuff and Space in the Home: Space for Storage as the forgotten design and well-being dimension in standardised housing

Prof Elena Marco, University of The West of England, UK

In the field of architecture, there has been scarce research on how the accumulation of material possessions impacts on space in the home. There has been little understanding of what households own, collect, store and dispose of, nor the implications this might have for domestic space design, especially that for storage. The 'stuff' that inhabitants own is largely overlooked in current debates on housing policy and design. Yet, householders can have their quality of life, well-being and happiness negatively affected by the 'stuff' they keep in their homes. This study presents a critical, exploratory and reflective enquiry into the relationship between stuff and housing design, using a multi-methodological approach that combines design research and a visual / sensory ethnography. The research engaged practising architects to propose innovative storage-focus housing design solutions, by using architectural probes to enable them to think about housing design from an untested perspective. The findings present a unique exploration of how

domestic space has changed overtime, capturing the intellectual agenda of the house as a 'container' and the household contents, the 'stuff', as the 'contained'. The study finds how multi-method explorative methodologies are a helpful analytical mechanism to creatively consider architectural design challenges that need to include diverse, and often overlooked perspectives. Its main output is a new conceptual framework of material possessions, that identifies universal characteristics and categories to be used in housing design, and proposes innovative housing design solutions for the UK standardised house type. The study concludes that the design of future homes could better support inhabitants' quality of life and well-being if space for storage was better understood. It argues for a more informed approach to housing design, where storage is valued and the space provided is flexible, so the reality of inhabitants' 'stuff', and the associated well-being implications, are considered.

Acknowledgements
Prof Katie Williams,
Dr Danielle Sinnott,
Dr Sonja Oliveira,
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West of England



Not-at-present-
in-use-maybe-
never-again: DEAD
STORAGE.
© Elena Marco

Coupling vertical greening influence in building energy simulations

Kanchane Gunawardena, Prof Koen Steemers, Department of Architecture, University of Cambridge, UK



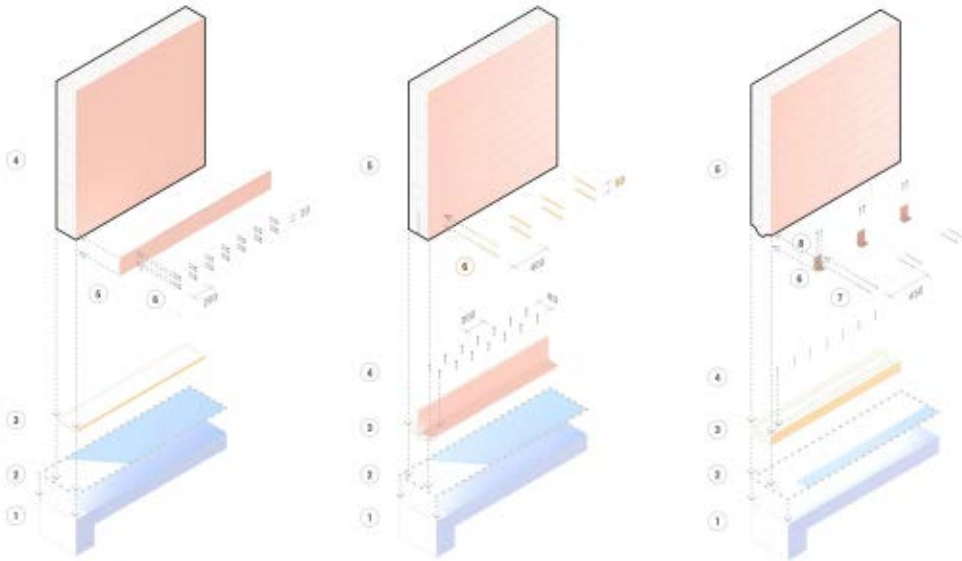
Diagram of an
indoor installation,
with the case
study building
section showing
the atrium and its
living wall (above);
and a diagram of
a semi-outdoor
courtyard installation,
with the case
study courtyard
(below).
CC BY-NC-SA
Kanchane
Gunawardena

Environmental thermal loading on urban buildings is expected to increase resulting from the combined influence of a warming climate, increasing frequency and severity of extreme heat events, and the heat island effect. As means to address such urban heat-related risks, green infrastructure enhancements have been widely supported by an expanding body of research findings, which in turn has informed the development of planning policies encouraging greater implementation. The challenge of realising enhancements in densely built cities however has necessitated the consideration of alternative approaches such as surface greening. Early efforts promoted horizontal greening (commonly referred to as 'green-roofing'), although in recent years 'vertical greening' (VG) has gained increased prominence in efforts to exploit the underutilised and abundant vertical façades of urban buildings. This paper examines the hypothesis that the latter typology of vertical greening and its categories serve to enhance climate resilience in urban built environments. To assess this hypothesis, the study developed a

novel one-dimensional model (VGM) that can be coupled with the TRNSYS building energy modelling framework to obtain reasonable estimates of microclimate modification and energy use implications of VG addition. The application of this coupling at an indoor case study highlighted vertical greening addition to present a net annual space-conditioning energy consumption saving when air-conditioning was considered, while application at a semi-outdoor case study simulated surface flux reductions to highlight the prevalence of a thermally moderated microclimate. Although both these sheltered environments cannot be compared like-for-like, it is noteworthy that the greater influence of the novel living wall category simulated at the semi-outdoor study contrasted against the greater influence of the traditional green façade category simulated at the indoor study. This highlighted the complex significance of the substrate feature of the former living wall category's design, which in certain circumstances could present counterproductive influence in sheltered environments

How is CLT best assembled for deconstruction?

Noorislam Uddin, Christina Tantcheva, Desmond Su, Edinburgh School of Architecture and Landscape Architecture, University of Edinburgh



Study of various
CLT wall-to-
foundation
assembly
methods
CC BY-NC
Desmond Su

As a manifestation of our currently geological Anthropocene age, authoritative bodies, in the UK and beyond, have started formally declaring a 'climate emergency'. More significantly in the construction industry, the Royal Institute of British Architects (RIBA) Chief Executive Alan Vallance acknowledges a necessary behavioural shift in announcing, "We must all take action to voluntarily reduce operational emissions and embodied carbon significantly beyond regulation" Vallance's appeal is of significance for the purpose of this study into cross-laminated timber (CLT). Such research ultimately intends to update zero-waste deconstruction methods - as considered crucial in a functioning circular economy - yet with currently

little legislative support. Design for Deconstruction/ Disassembly (DfD) is an important philosophy in this regard. Climactic benefits in building material reuse are not only in reducing human need to expel emissions mining the earth, but also in use of ever depleting landfill space. Guidance on DfD particularly for CLT assemblies is however lacking. The reason for this may be simple: CLT building have not started coming down yet. Waugh Thistleton Architects, who themselves participated in the recent 2019 Global Climate Strike, only designed the world's first high-rise CLT building (Murray Grove, London) in 2009. In their recent showcase publication, they anticipate a growing future dependence on CLT as the material of choice in countering the unique energy crisis of our age.



Queen's Inclosure
Middle School,
Cowplain,
Waterlooville,
Hampshire: the
solar shields
producing a
partially shaded
zone between
inside and out

Architectural Press
Archive / RIBA
Collections.

History and Theory

Submissions were invited from historians, theorists and practitioners whose work has relevance to the history and theory of the practice, culture and profession of architecture most broadly conceived.

- Historical research of direct relevance to a project, e.g. conservation plans and reports
- Cultural studies relating to architecture, professionalism and the built environment
- Histories of construction, science and technology
- Historical and/or theoretical research on place, space and urban planning
- History and/or theory of practice and praxis, including professionalism, architectural education, procurement and non-design aspects of architectural practice

Juan Campos
Almanza, 15
span vault at
the, Ministry of
Construction,
Havana 1962.
© Juan de las
Cuevas Toraya,
Restaura

Beyond the National Art Schools: Thin-Tile Vaulting in Cuba after the Revolution

Dr Mohammad Wesam Al Asali & Dr Michael H. Ramage, Department of Architecture, University of Cambridge, UK

Dr Dania González Couret, Universidad Tecnológica de la Habana, José Antonio Echeverría, Cuba

The story of the rise and fall of thin-tile vaulting in Cuba after the revolution has always focused on the National Art Schools in Havana, which are typically presented by the scholarly literature as an anomaly in the history of modern Cuban construction. However, this research shows that from 1960 to 1965, a team of architects and engineers at the Ministry of Construction (MICONS), led by architect Juan Campos Almanza (1930–2007), built many experimental structures featuring thin-tile vaulting. These designs attest to an innovative architectural program that envisioned the systematic use of thin-tile vaulting at a national scale for houses, schools, recreational structures, and industrial buildings. If less monumental than those used at the National Art Schools, these other vaults were no less significant for three key reasons. First, the history of thin-tile vaults in these lesser-known buildings helps us to understand the context of the construction of the vaults at the National Art Schools.

Second, the institutional use of thin-tile vaulting by MICONS invalidates the conventional assumption of a divide between the architects of the National Art Schools and their counterparts at MICONS. Finally, by examining the history of a state-led initiative to investigate thin-tile vaults, we can begin to provide a more nuanced account of the history of construction in Cuba after the revolution, and in particular the tensions that supposedly emerged during this period between traditional and prefabricated architecture. Drawing on extensive research in the MICONS archives, as well as site visits, interviews, and digital modelling, this investigation provides a nuanced account of the history of architecture in postrevolutionary Cuba. Thin-tile vaulting in Cuba offered an ingenious and effective solution for a complex range of projects, balancing traditional craft with new technology, allowing for a wide range of different scales, and depending on only local, everyday materials.



Juan Campos Almanza, sail vault experimentation and training, Ministry of Construction, Havana 1961
© Juan de las Cuevas Toraya, Restaura

Gabriel Guevrekian: The Elusive Modernist

Hamed Khosravi, Architectural Association School of Architecture, UK



Gabriel Guevrekian among the students at the French Academy of Fine Arts, Saarbrücken School of Arts and Crafts, 1946–48. Courtesy of the University of Illinois Archives at Urbana-Champaign

The Elusive Modernist revisits the history of the modern movement and its pedagogical project through the legacy of one of its protagonists, Gabriel Guevrekian (1900–1970). Born in Istanbul, Guevrekian grew up in Tehran and then moved to Vienna to study architecture at the Kunstgewerbeschule. He later worked with Strnad, Hoffmann, Loos, Sauvage, and Mallet-Stevens. His famous designs include the Cubist garden for Villa Noailles in France and two houses for the Vienna Werkbund exhibition. Not yet thirty, Guevrekian was recognized as one of the protagonists of the European avant-garde in Paris. Later, after World War II, he assumed teaching responsibilities in Europe and America. All of his various pursuits, and the homes and nationalities he held in Iran, Europe, and the United States, led to a serial adoption of personae. By dint of his own very tangible engagement, Guevrekian made every discipline meaningful, every city central, and every period epochal. Nevertheless,

the project goes beyond a monographic research. It portrays Guevrekian as a contemporary figure whose work not only casts light on the inception of global modern architecture—in both theory and practice—but also offers ways of engaging with the social, political, and cultural strata of our societies today. Ultimately, the research critically reflects on the influence of the architect-educator as a nomadic figure: a practitioner, educator, writer, and curator. Guevrekian's legacy is an early contemporary example of how the traditional distinctions between education, practice, research, and curatorial work ceased to exist; a profile, known as academic-freelancer, that has become more common today. The publication is structured around series of micro-narratives that interpret the legacy of Gabriel Guevrekian through his multiple lives, each of which unfolds as related figures, projects, memories, letters, postcards, and drawings. All together they help capturing an image of such an elusive figure.

Epistemic Imposition: Architecture & Colonialism in Dutch East Indies (1901-1942)

David Hutama Setiadi, Architectural Association School of Architecture, UK

The enactment of the Ethical Policy in 1901 changed the dynamic between the Netherlands and the Netherlands Indies (now Indonesia). The proliferation of plantations and other industries increased the demand for technicians who were compliant with the Dutch regulations and standards. This consequent gap in the workforce initiated an unprecedented migration of skills and practices to the Netherlands Indies.

The paper investigates the scope of the interventions realized by the Dutch colonial agenda in relation to existing Javanese building practices through two main lines of investigation. The first examines the methods of dissemination of Dutch technical knowledge and skill across the archipelago. The second scrutinises its effects on the formation of architectural knowledge and practice within the colony.

This work relies upon extensive archival studies of Dutch accounts for its primary references, which inevitably sets up the narrative from the coloniser's lens. Nevertheless, this research method is not

intended in any sense to diminish the multifaceted realities of the Dutch East Indies at the time. In fact, by exploring conditions from a Dutch colonial perspective, it reveals for analyses the complexities of the involvement of each of the key agencies, whether colonising or colonised.

The paper comprises of four sections. The first section elaborates the 1883 colonial exposition and the advent of Javanese literatures both in the Netherlands and Java respectively that was effectively an agency for the dissemination of Dutch architectural knowledge and practice in the colony. The subsequent three chapters specifically discusses the three agencies – Education, Practice and Hygiene – to Javanese building practice as part of the endeavour to assert a new model of architectural practice in the colony.

Throughout this work, I argue that the following acts of disseminating building knowledge is one of epistemic imposition – an instrument of Dutch colonial power.



Workshop at a craft school in Tasikmalaya, West Java. Instruction in Dutch technical knowledge/ skills took place not only through theoretical pedagogy but also through working methods. The use of different new tools and standardised industrial workbench introduced a different logic and methodology for a craft education. CC BY 4.0 Special collection University Library – Leiden University

Planning a Town and a Country in a Hundred and Eighty Pages

Calvin Hin-Long Po, Architectural Association School of Architecture, UK



A walk through Hatfield and the legacy of the Uthwatt Report © Calvin Hin-Long Po

Behind canons of post-WW2 architects and how they redefined England's townscape, an invisible, parallel history made this possible: the legislative apparatus that made the state the final arbiter of all development. With recent governments questioning the 1947 Town and Country Planning Act's legacies, this paper traces modern planning powers' origins further to an embryonic moment: Uthwatt Committee's Report (1942). This paper interrogates the Report's role as an invisible 'architect' of the post-war English townscape

This paper interweaves two narratives: the Report's analysis, and a walk through Hatfield, a peripatetic reading of the Report's co-authorship over this Hertfordshire town.

Through analysing the Report's text and context, this paper reveals how Uthwatt exceeded its original mandate to fix a technical planning mechanism ('compensation and betterment', i.e. land value taxation). This paper deconstructs Uthwatt's arguments for radical solutions based on "total war" centralisation, post-Blitz urgency, failing laissez-faire markets, and post-Depression trends towards technocratic

rationalism. It examines impacts of Uthwatt's proposals: unprecedentedly extending planning controls nationwide, empowering compulsory purchase at capped prices, and critically, nationalising development rights of land. The latter fundamentally reformulated land ownership: from previously entitling landowners to develop land unless restricted by state, to having no rights to develop unless permitted. Even with today's proposals for 'first-principles' planning reform, this remains the foundational legitimacy of all planning legislation since, demarcating the line where individual property rights end and public (or state's) interest begins.

From wartime requisitioning of private (aristocratic) property in Hatfield House, suburban house extensions, to its New Town, Hatfield's urban fabric becomes a palimpsest of the Report's ideas, inscribed onto planning legislation, and onto England's town and country. This paper elucidates power relationships between legislating/governing and architecture, bureaucratic text and architectural experience, both in this paper's own text and its calligram-based typography, visualising textual interplay on this paper's pages

The Dartington Hall Nursery School and the missing case of C. Winifred Harley

Dr Kieran Mahon, Bartlett School of Architecture, UCL, UK

This study forms part of a completed doctoral thesis that contributes new, interdisciplinary knowledge on the architecture of twentieth-century progressive education by examining Dartington Hall School in Devon, England (1926-87). Founded by the philanthropists Dorothy and Leonard Elmhirst, the progressive independent, coeducational boarding school for learners aged two to eighteen was part of Dartington Hall Estate, a larger experiment in rural and social reconstruction. To date, the historiography of progressive education has not focused on educational architecture and if buildings or spaces are acknowledged they are dealt with descriptively.

The research redresses this by uncovering the story of Dartington's first nursery school building, completed in 1931 by US practice Delano & Aldrich, through the perspective of a young English educator, C. Winifred Harley (1896-1973), writing her agency into place. In doing so, it positions the building in its unique educational and architectural context, highlighting contemporary, transatlantic debates around emerging

forms of early childhood education, as well as the central role women educators played in developing new educational environments. The work also highlights tensions: despite its progressive outlook, Dartington could still be subject to hierarchal and patriarchal forms of control, rendering some voices louder than others.

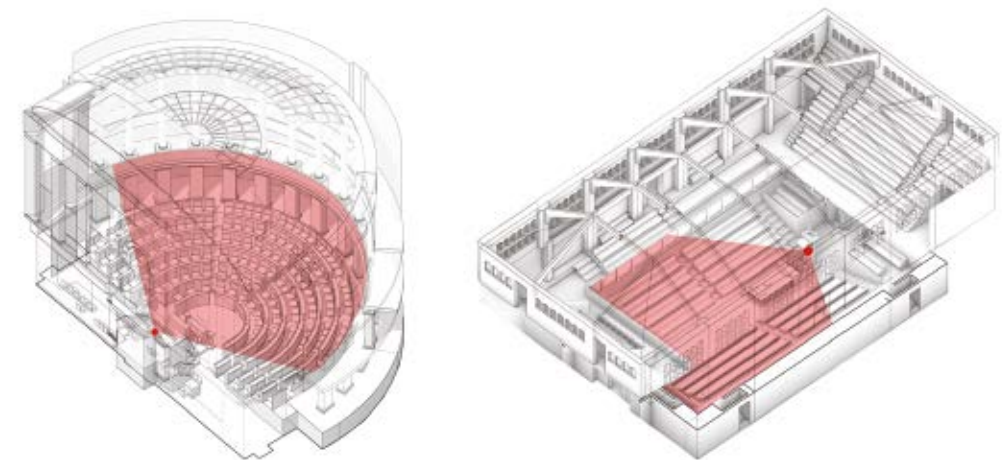
It presents a creative, layered writing approach for the microhistory of educational architecture that places marginalised voices – in this case a forgotten educator – alongside the traditionally more dominant of headmaster or architect. The method, drawn from the site, is a response to an embodied relationship with place, underpinned by site-based investigations, archival research, existing histories and oral history interviews. With reference to John Dewey's concept of transactional process, the term 'transactive environment' is deployed to offer a more nuanced and holistic understanding of the historical experience of progressive educational architecture and space.



The Dartington Hall Nursery School under construction, 1930
© The Dartington Hall Trust

The State(s) of Europe: An Architectural Study of Politics in the UK and EU States through Built Space and Lived Experience in Parliamentary Plenary Halls.

Naomi Gibson, Prof Sophia Psarra, Gustavo Maldonado, Bartlett School of Architecture, UCL, UK



Comparing the Views of the Chair in the UK and Belgian Chambers
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In his book 'Europe: a History' (1996), Norman Davies writes that Europe has often been taken as an unattainable ideal, a synonym for a harmony and unity which is lacking. As Jean Monnet, the 'father of Europe', admitted, 'one has genuinely to create Europe'. With the fallout of Brexit, the debt crisis and rise of nationalism, attention has again turned to the question of identity and European integration. If the history of Europe has been diverse in its rhythms of power and decline, and the European project a move to heal 20th century war wounds, the shared experiences and forms of Europe's states are thought to have more coherence than Europe itself. Few sites demonstrate this coherence more explicitly than parliament buildings. The rise of modern democracies in Europe found expression in the staged unity of the parliamentary seating plan, that the chambers themselves have partly helped to shape (Manow, 2010).

However, if similar typologies and forms were used for a variety of political systems (XML, 2016), the forms alone are not sufficient registers for differences in power dynamics. A closer look at parliamentary chambers reveals rich variety depending on where the legislature, the executive and the Chair sit; the customs around seating arrangements for MPs; the rituals and rules of parliamentary procedures. Based on an intense research programme funded by our University, this work addresses an obvious gap in architectural knowledge, and provides the first interdisciplinary study of 28 European parliament buildings as histories, morphologies and lived experiences, culminating in the examination of deliberative performances in the UK House of Commons and the Belgian Chamber of Representatives. The research adds context to the question of Europe through an architectural study of spatial practices of power and their manifestation through the built space of European plenary halls.

The Images of Institutions: The Border Gate Space of the Sino-Vietnamese Border Twin Towns since 1885

Dr Cheng Liao, Guangzhou Academy of Fine Arts, Guangdong, China

From 1885 to the present, three significant social transformations have taken places in the border areas between China and Vietnam. Firstly, France became a protectorate of Tonkin (Northern Vietnam) and delineated the Sino-Vietnamese border after the Sino-French war. Secondly, the People's Republic of China and the Democratic Republic of Vietnam were successively established and promoted Socialism. Finally, China implemented the Reform and Opening Up policy while Vietnam implemented Doi Moi and actively developed border trade after the Sino-Vietnamese border war. In this process, a special urban prototype emerged at the border which have been known as the border twin towns. They were two towns facing each other across the border, whose

urban space have been greatly influenced by the modernization of the neighboring countries. This research identifies a significant spatial typology of border gate space, which is unique to the border twin towns. It aims to explore how the border gate have emerged, developed, and evolved through the lenses of urban spatial structure and the meanings of spatial forms in different historic phases. The purpose of this research is to elucidate the spatial diversity and complexity of the Sino-Vietnamese border space through an objective and comprehensive historical research, and to understand the evolution of the urban space of the border towns from a continuous historical perspective and its social context.



He Kou border gate and port inspection building
© Cheng Liao

Staging Facts on the Ground: On the Historical Role of Built Objects as Markers of Imperial-Colonial Expansion

Lukas Pauer, Architectural Association School of Architecture, UK



A Front View of the Quarantine Facility's Main Building
Credit: Joseph Sims (US DoI NPS HABS), The Lazaretto, Delaware River Vicinity, Essington, Delaware County, PA: Photos from Survey HABS PA-125, 1933, photograph, HABS PA-415, 23-ESTO 1-3, P&P, US Congress House LoC, <http://www.loc.gov/item/pa0415/>

This research investigates built objects as evidence for the projection of power, authority, and influence. Specifically, how imperial-colonial expansion has been architecturally performed throughout history. Due to the widespread refusal to recognize imperial-colonial violence as a pervasive and ongoing reality around the world, we have lost the ability to see and understand its workings around us. In response, I seek to establish a working language by offering an account of architecture as a world-making device. I argue that throughout the history of imperial-colonial expansion sovereignty acquisition has depended on its practical realization on the ground. Structuring my research, I inventory and categorize material objects that have been key to the acquisition of authority and influence over people and land. The first chapter looks at ancient Hellenic scenic tents, sacred barriers, and Roman military standards. These built objects used scenographic techniques along ancient procession paths to lay claim to governance. Giving a description

of extraterritorial techniques along medieval trade routes, the second chapter analyses how Eastern traveller inns, nation houses, and Western trade factories legitimized power in medieval times. The third chapter examines modern French semaphore towers, timeball towers, and British telegraph poles. In order to lay claim to authority, these built objects employed geodetic techniques along modern signal lines. Offering an account of filtrational techniques along recent transit corridors, the fourth chapter analyses how US American quarantine facilities, detention facilities, and pre-screening facilities legitimized influence in recent times. Applying analytical and representational techniques, my research traces a shift from a symbolic approach to occupation, based on more formal claims to sovereignty by law, to an effective one, based on more actual claims to sovereignty in practice. I conclude that the political and theoretical concept of sovereignty cannot be separated from built means.

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Le Corbusier in the Antipodes: Art, Architecture and Urbanism

Dr Antony Moulis, School of Architecture, The University of Queensland, Australia

This study offers a new historical perspective on one of the most significant architects of the 20th century – the Swiss-French modern master, Le Corbusier. Its main aim is to test Le Corbusier's notion of modern architecture as a global project by studying the spread of his ideas to the distant periphery – the nations of Australia and New Zealand: Europe's so-called 'Antipodes'. In accounting for Le Corbusier's grand ambition to seed modern architecture as a global phenomenon through his work and personal travels, this study sets out to contend with a simple fact – that Australasia was the only inhabited continent on which the architect never set foot. This observation operates as the study's originating premise. How was it that Le Corbusier's ideas had impact in places he never visited? How were the key messages of his work received where the architect himself had no direct means to control their meaning? Who were the agents of his ideas, and his detractors, and what effects did

their reactions produce? In addressing these questions, the study goes beyond the detection of Le Corbusier's formal influence to understand the ways that Le Corbusier's ideas landed, circulated and were debated – taking up a broad investigation of the sources and media through which Le Corbusier's agendas spread, the institutional, professional and public reactions to them and its advocates. It closely tracks those instances of contact between Le Corbusier and architects active locally as well as cultural and government agencies. At the same time, the study's broader aim is to recast understanding of architecture's globality in the interwar and post-war periods, specifically regarding its networks and patterns of cultural dissemination – reconstituting a picture of the conduits through which the modernism exemplified by Le Corbusier was relayed and circulated to territories far beyond Europe.



Australian Institute of Aboriginal and Torres Strait Islander Studies building, ARM (Ashton, Raggatt, McDougall), 2001. © John Gollings

Manifesto of Interiors: Thinking in the Expanded Media

Dr Javier Fernandez Contreras, HEAD - Genève, Switzerland

Interior Architecture today operates at the intersection between physical and mediated spaces, such as those of mass communications, digital platforms or visual arts. Considering any form of representation as potentially architectural, from writing to photography, drawing to cinema, MANIFESTO OF INTERIORS traces the origins of this process of hybridisation between space and media back to the Renaissance

and addresses the role of interiors as an experimental laboratory of late modernity. Combining historic scholarship with bright hypotheses, this study explores contemporary interiors as platforms of 'expanded media', examining their belonging to different places and temporalities, whether physical or virtual, close or distant, ultimately reasserting the role of interior architecture in the construction of contemporaneity.



Dieric Bouts. The Last Supper. 1464-1468 CC BY-NC-ND 4.0 (<https://creativecommons.org/licenses/by-nc-nd/4.0/>) Museum M Leuven, www.artinflanders.be Photo: Hugo Maertens

“Esto no es una casa-casa”, Construction of Queer Domesticity in the Films of Pedro Almodóvar.

Daniel Ovalle Costal, Bartlett School of Architecture, UCL, UK

Pedro Almodóvar’s filmography is a rich and prominent example of queer representation in cinema. This essay analyses the spatialization of queer representation in his films as well as the use of camp sensibility to construct domestic interiors. Based on the analysis of camp interiors in Almodóvar’s mise-en-scène, his filmography can be read as a four-decade project of construction of queer alternatives to mainstream domesticity and systems of kinship

that has challenged both the reactionary and liberal sections of Spanish society, culture and public opinion that emerged after the country’s transition to parliamentary democracy in the 1970s and 80s. Ultimately this project demonstrates the potential of domesticity as a field of operations for radical queer politics and the versatility of camp as a tool to challenge mainstream ideology and validate dissident discourses and lifestyles.



Pepa
contemplating
the neoclassical
rooftops of the
Gran Vía in Madrid
from her roof
terrace
© EL DESEO, D.A.,
S.L.U.
Foto: Macusa
Cores

Re-discovering and re-evaluating Japanese public space: typological evolution of hiroba in the history and the changing notions of ‘public’ behind

Yang Yang, School of Architecture, University of Sheffield, UK



Interior hiroba
of Shibaura
House in Tokyo
as ‘community
meeting room’ for
people who work
or live nearby
© Yang Yang

This research gives a retrospective review of the typological evolution of the Japanese public space development in four different historical periods: Edo (1603-1867), Meiji to Showa (1868-1939), post-war years until the Osaka Exposition (1945-1970), after Osaka Exposition to today (1970-). It aims to understand Japanese public space development and its very concept –hiroba, which literally means open space and is usually regarded as functionally equal to the Western plaza but different from it as the prototype of local public space in Japan. Archive research was adopted as the primary research method to broadly collect literature related to the theories, histories, and design projects on ‘public’ and ‘public space’ in Japan. Based on Henri Lefebvre’s spatial triad of social production of space, through discovering of hiroba’s typologies as ‘representations of public space’ and people’s behaviour and activities

through spatial practice as ‘perceived public space’, the ‘representational space’ of Japanese public space (hiroba) and the changing notions of ‘public’ behind can be found, critiqued and evaluated. The research re-addressed the differences of public space in Japan and the West as well as the influences of the latter to the former, forming Japanese public space with hybridization of both local and foreign thoughts in-between. The study argues that different from the lament on the fall of public space in most of the Western cities, Japan as a country that lacks the notion of ‘public’ and spatial conditions to provide public space in the Western sense, from a long and historical overview, has made a considerable achievement today. Japan has developed its own interpretation of ‘public’ and unique form of public space inherited from hiroba, which adapted to the changing society.

Crafting History: Archiving and the Quest for Architectural Legacy

Prof Albena Yaneva, Manchester School of Architecture, University of Manchester, UK

During the 1990s a flurry of concurrent theoretical developments brought archives to the fore of scholarly limelight: the “archival fever” in the arts and philosophy (Derrida, 1996), the emergence of the trend of “archival ethnography” in anthropology (Sahlins, 1992) and the “empirical turn” in archival science (The American Archivist, 1996: 59/2). At the same time, the radical change in architectural practice triggered by computerization led to its own “archival turn,” prompting practitioners to reflect on the techniques of archivization, both traditional and novel. Architects became gradually more aware of the importance of taking care of their legacy and began appointing archivists to help them organize their archives. Several archival institutions with different mandates were established around the world.

All these developments point to the importance to study architectural archives as practice, and to question: What constitutes an archive in architecture today? What epistemology does it perform? What

kind of craft is archiving and how does it relate to designing? An Actor-Network Theory approach allows us to trace architectural archiving in its mundane, down-to-earth and practical course and to capture its moves in their situated context of practice. Basing its findings on ethnographic material collected at the Canadian Centre for Architecture (CCA) in Montreal, and interviews with a range of practitioners around the world, this study is the first to address the “invisible work” of all practitioners involved in the making of architectural collections – digital and paper archivists, museum technicians, cataloguers, librarians, curators and conservators.

Unravelling the multiple epistemic dimensions of archiving allows us to question some well-established myths of creativity and authorship in architecture as well as to reflect on the strategies employed by practicing architects to envisage an archive-based future. It also reveals the mechanics of crafting Architectural History.



Archiving – the conservation lab at the CCA, Montreal
© Albena Yaneva

Spaces of Absence in the European City: Stitching Urban Infrastructure to Contemporary Collective Life

Dr Alona Martinez Perez, Leicester School of Architecture, De Montfort University, UK



New PAU (Urban Action Plan) of Las Tablas in the Northern Periphery of Madrid.
© Dr Alona Martinez Perez

This paper examines spaces in the European City that are often defined as peripheral, empty and absent. “Spaces of absence” – as Koolhaas defined them in an interview with Hans Ulrich Obrist – can have a stronger presence as a consequence of their history and, like the Berlin wall, generate a unique condition. In an empty city centre or on city outskirts they often evolve organically. Focusing on Madrid and Rome, this paper first, proposes to re-visit the significance of

Stefano Boeri’s peripheral sites in L’anticitta (or The Anticity), “terrain vague” or waste ground (Ignasi de Sola-Morales) sites and Marc Auge’s Non-place(s). Second, it uses the visual essay to contemplate the critical role that these three types of spaces of absence can have in the European city and argues that the very attribute of absence that they contain can, conversely, create urban presence by stitching together urban infrastructure and everyday collective life.

Stásis: A Critique of Flexibility in Architecture

Dr Georgios Eftaxiopoulos, Architectural Association School of Architecture, UK

Flexibility nowadays constitutes the canon. In our ever-changing and uncertain context, it has become the 'magic wand' that architects widely employ to respond to our contemporary lifestyle. And yet, no matter its frequent use, its meaning still remains unclear. This research becomes the first systematic attempt to unpack the notion of flexibility in architecture. It problematizes flexibility's taken-for-granted positive reading as an instrument of user's empowerment and investigates how, along history, flexibility has operated as a technique of control and deskilling of the masses. Contrary to previous readings of flexibility as an architectural concept solely related to form and spatiality, this research claims that the only way to make final sense of the term is through its link to economy. Thus, it proposes an interdisciplinary approach to construct an archaeology of flexibility. It unveils how flexibility has been instrumentalized by institutions and corporations to manage risk and grow

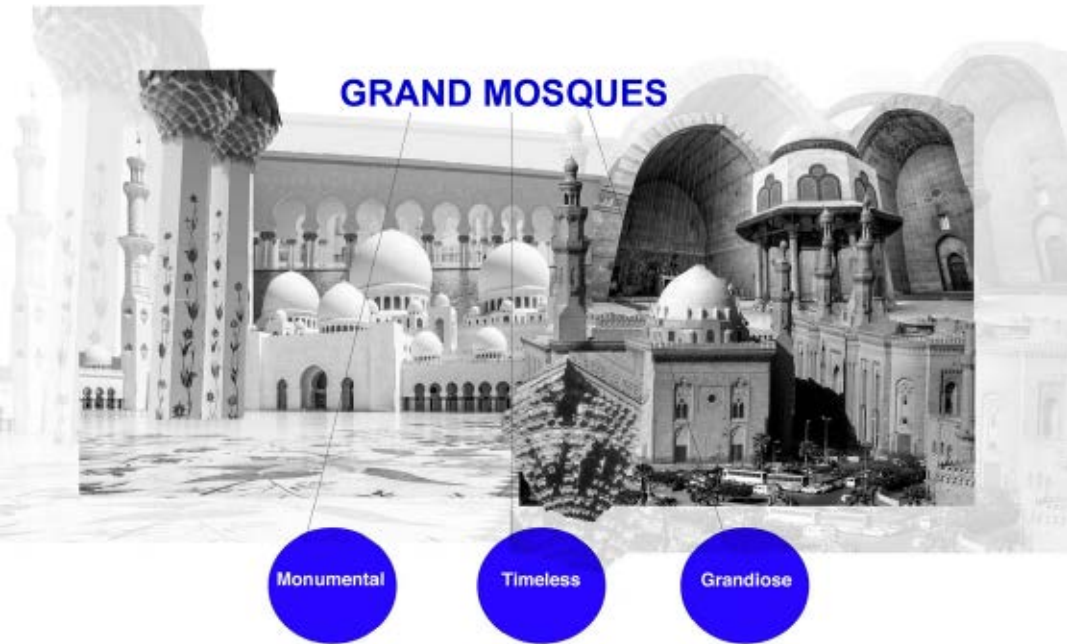
wealth. Dwelling on four paradigmatic case studies situated at the intersection of historical architectural and economic shifts—the West India Docks (1802), the Crystal Palace (1851), the Fun Palace (1964) and the MPK20 (2015)—, this research-by-design project brings together specific architectural artefacts with macropolitical economic scenarios. It draws on archives, interviews and fieldwork, and, by using drawing as a research tool of apprehension and close reading of architecture, exposes flexibility's ideology. It argues that capital has made use of the ambiguous understanding of flexibility and its capacity to cope with uncertainty to perpetuate its boundless growth and construct a condition of stability: a stasis. However, rather than a mere critique, this research sets forward an alternative, a new grammar, where flexibility's free and libertarian qualities may be re-appropriated towards a new moment of empowerment.



Flexibility Inverso
© Georgios Eftaxiopoulos

Humanizing Wall Experiences of Grand Mosques

Reem Shahin, Department of Architecture, American University in Cairo, Egypt



Collage by Reem Shahin
Images:
"Sultan Hassan Mosque" by Mo_ Shamma &
"Magnificent Sheikh Zayed Mosque" by ChildLight
CC BY 2.0

Grand mosques are characterized by their timeless and monumental qualities; however, they communicate different experiences through their walls. The notion of humanized wall experiences is expressed through the walls' character, which encompasses the physical and volumetric experiences created through geometry, scale, and texture. The complex character of the wall enables questioning the impact on users' experiences and dissecting the composition that creates humanized experiences. Existing literature has discussed the volumetric and physical surface of the walls' character; however, the research gaps include the missing relation between volumetric spaces and the physical surface of the walls' character; and the degree of integration of geometry, scale and, texture (Tonna, 1990). This paper aims to study the impact of the walls' character on experience through assessing the volumetric and physical aspects in a comparative study of the Sheikh Zayed and Sultan Hassan mosques.

Although both mosques are monumental and timeless, the Sultan Hassan mosque revealed a grandiose experience dominated by austere spatial volumes led by the scale and the volumetric integration of geometry and texture with different degrees. In comparison, the Sheikh Zayed mosque demonstrated a superfluous experience dominated by geometric aesthetics and texture that act as visual communicators and capitalize on geometry. The surveys conducted for this research reveal different experiences (emotions, perceptions and feelings) in both mosques and their varying use of geometry, scale and texture. Therefore, this paper acts as a future tool for connecting and humanizing experiences through walls as a spatial volumes and physical surfaces.

Keywords: Walls' character, experience, volumetric, physical character, texture, geometry, scale, monumental, timeless, visual, grand mosques, humanization, visitors.

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China-Annam
Boundary Tablet
No.17 erected in
the early 20th
Century
© Cheng Liao



Book of Abstracts 2020

Judging Panel 2020



Chair: Marylis Ramos
Director, PRP, London

Marylis is a Director with PRP's Development Consultancy, leading the Energy & Environmental team. She has been actively involved in high-profile projects, including technical & leadership roles on Chobham Manor in Queen Elizabeth Olympic Park, the High Path Regeneration Masterplan in Merton & most recently, the Clapham Park Masterplan. Her research projects include the Zero Carbon Compendium for the Zero Carbon Hub, The Business Case for Green Buildings for the World Green Building Council, the Optimising Thermal Efficiency in Existing Housing research project for the Energy Technologies Institute, the Red Lodge Climate Change Adaptation Study for JRF & investigating integrated city design as part of the Innovate UK funded THETTIS. She was the chair of the metrics workstream for the UKGBC's Health & Wellbeing in Homes report & is currently part of a team providing economic & analytical support to the MHCLG on aspects of building policy. Her current focus also includes design for health & wellbeing & addressing the performance gap between designed & as-built building performance



Dr Cristina Cerulli
Reader in Architecture
Sheffield Hallam University

Cerulli Cerulli is a Reader in Community-led Architecture and Urban Design at Sheffield Hallam University and a founding director of social enterprise architecture practice Studio Polpo. Cristina's work is underpinned by a strong commitment to facilitate a shift towards more just and equitable practices in the city, challenging the normative culture of the architectural profession and education. Cristina's approach to research is intrinsically collaborative, trans-disciplinary and co-operative. Much of her recent academic and practice based research is around community led housing development models, shared models of living and 'alternative' and creative forms of management and procurement. This includes work around user led housing and collective custom build as well as design and consultancy work around co-housing, community land trusts and collective models of funding such as community shares and civic crowdfunding.



Professor Chris Tweed
Head of School, Welsh School of Architecture, Cardiff University

Christopher Tweed is Head of the Welsh School of Architecture (WSA). His research interests and experience span architecture, anthropology, philosophy and technology. The main focus of his research is on how people interact with the designed world and how that knowledge can inform human-centred design. This has been pursued in projects ranging from studies of assistive technologies for the older people to tools for assessing public perception of cultural heritage. Other funded research includes EPSRC supported studies of thermal comfort conditions in people's homes, how older people adapt to new low carbon heating technologies, and methods for assessing low carbon building performance. Recently completed collaborative studies include a study of the impact of energy retrofits on health and wellbeing in housing, and a Global Innovation Initiative funded study of green/blue infrastructure with the University of Florida and University of Indonesia.



Professor Christine Wall
Professor of Architectural History
University of Westminster

Christine is a founder & Co-Director of the Centre for Research into the Production of the Built Environment at the University of Westminster. Over twenty years of grant-funded research & publications have enabled her to establish a distinctive, multidisciplinary method using oral histories, together with documentary & visual research, to reveal 'history from below' & 'hidden histories' of the built environment. She has published widely on architecture & the construction industry in the twentieth century, including the role of women as designers and builders & recently led the Leverhulme Trust funded oral history project, Constructing Post-War Britain. She is a Trustee of the Construction History Society, Co-Editor of the Construction History Journal & a member of the Editorial Board of the Oral History Journal. Publications include; An architecture of parts: architects, building workers and industrialisation in Britain 1940-70. Routledge, 2013 & 'Constructing Architectural Concrete in 1960s London' in Speaking of Buildings: oral history in architectural research, eds. Gosseye et.al. Princeton, 2019



Dr Tilo Amhoff
Senior Lecturer
University of Brighton

Tilo Amhoff is a Senior Lecturer in Architectural Humanities at the University of Brighton. His research explores the various labours and the social, economic, and political conditions of the social process of the production of architecture. Tilo Amhoff co-edited Produktionsbedingungen der Architektur (2018), together with Gernot Weckherlin and Henrik Hilbig, and Industries of Architecture (2015), together with Katie Lloyd Thomas and Nick Beech. He is the Chair of the Steering Committee of the Architectural Humanities Research Association (AHRA) and a founder member of Netzwerk Architekturwissenschaft, where he co-directs the "Architecture and Building" working group. His current book project, entitled The Making of Plans, investigates the beginnings of the architectural, urban, and economic plan as an instrument and product of regulation, organisation, and administration in Germany.



Typhoon of 1874 -
photograph by Lai
Afong
Wikimedia
Commons

Annual Theme:

Climate Change

Submissions are invited that examine the changing face of architectural education, particularly in line with the RIBA's new Themes and Values approach to education, focusing on the social purpose of architecture, protecting the end user and aligning with mandatory competencies. However, the theme is broadly conceived and submissions concerning the development of architectural education, pedagogy, CPD, the influence of architecture on education and vice-versa are encouraged.

- Adaption to climate change, ethics and/or health and safety.
- Significant developments/pathways (historical or current) that shape/d architectural education and the impact/implications.
- The gap between construction and architectural education.
- Teaching and assessment styles, methods, environments (inc. the 'Crit'), the impact of virtual/distance learning/teaching (in relation to Covid-19 or otherwise).
- Skills and knowledge development (inc. CPD), and effectiveness and new technology

The Hawkins\Brown Emission Reduction Tool: Providing a data visualisation tool to enable architects to make informed decisions on their projects' carbon emissions

Louisa Bowles, Jake Attwood-Harris, Raheela Khan-Fitzgerald, Ben Robinson
Hawkins\Brown Architects LLP, UK

The speed and severity of climate change is now globally accepted, signalled by the Paris agreement in 2015. In light of the UKGBC stating that the built environment accounts for 40% of total carbon emissions, the RIBA has set ambitious 2030 targets for buildings in the UK to reach Net Zero. Net Zero currently only refers to the operational energy over a building's lifetime. However, Whole Life Carbon and embodied carbon has historically suffered from a lack of understanding and measurement, largely due to the specialist nature of the field. This paper summarises the multi-phase development of a Revit and web-based carbon data visualisation tool, which started in 2012 with development ongoing. The tool helps architects understand the carbon emissions associated with their designs by adopting clear, graphic representations of their impact. It automates embodied carbon measurements from the BIM model and shows the balance of this against

operational energy. It distinguishes itself from the other tools available on the market by being designed for Architects, being visual and quick to use. The aim has been to enable significant carbon savings at the earliest design stages, when the most impact can be made. The v1 tool which focuses on embodied carbon visualisation has been disseminated widely: available free of charge, it has been downloaded 572 times by 237 architecture and design professionals as well as 48 students from 23 different universities. The outcome of this body of research has also made a significant contribution to the LETI Embodied Carbon Primer and the Climate Emergency Design Guide, which has been download 4,657 and 12,376 times respectively. This, in turn, impacted the GLA's Whole Life-Cycle Carbon Assessments guidance as part of the emerging London Plan, which is currently out for consultation.



City of London
Freemen's School
Swimming Pool
© Hawkins\Brown

Constructing Climate: The Hong Kong Observatory and Meteorological Networks within the British Imperial Sphere, 1842 – 1912

Dr Cole Roskam, Department of Architecture, University of Hong Kong, Hong Kong



South facade,
Hong Kong
Observatory
(1913)
Wikimedia
Commons

Meteorology emerged as an important science in late-nineteenth century colonial Hong Kong that deepened imperial knowledge concerning the environmental forces affecting the colony's economic, political, and social affairs and the region at large. This research examines the historical study of climate through the architecture that enabled it, namely, the design and construction of the Hong Kong Observatory, initiated in 1879 at the behest of the London-based Meteorological Society and eventually completed in 1883. Overlooked not only in the architectural history of colonial Hong Kong and Great Britain's imperial sphere, but in the architectural study of climate more generally, analysis of the observatory and attending controversy surrounding its materialization offers insight into the spaces, systems, and information that gave definition to the colony's climate and proved critical to Hong Kong's governance, commercial culture, and urban development over time. The observatory came to satisfy numerous local

needs while ensuring for Hong Kong a consequential position within the tangle of inter-imperial networks present in East and Southeast Asia and the global circulation of trade these networks enabled over the course of the late nineteenth and early twentieth centuries. Archival research in Hong Kong and Great Britain and on-site documentation reveals a facility of unique technical performance that proved essential to rationalizing claims of Great Britain's colonial authority and control over Chinese territory. The entwinement of environmental science and the built environment that took place in and through the observatory remains significant today not only because it productively blurs distinctions between so-called "human" and "natural" histories, but because it illuminates the power dynamics at work in such entanglement. It also reveals architecture to be a useful conceptual scaffolding within which our understanding of humankind's relationship to climate, and the world at large, may be reconsidered.

Fantasy Island: The other Amazon

Maria Paz Gutierrez, Department of Architecture, University of Cambridge, UK

Fantasy Island sits on the Amazonian Trapezium, where Brazil, Colombia, and Peru converge. A product of an anabranching river, this alluvial island, like many rapidly formed riverine terrains, is experiencing unprecedented flooding transformations. Recordings from the last decade point consistently towards Climate Change at the root of substantial shifts in inundation peaks and patterns. Traditionally, houses in the region were made of thatched palm, constituting diverse weaving roof-wall typologies and meanings while also providing climate comfort. However, the ideologies and funding introduced in the mid-twentieth century promoted the incorporation of industrial panels, notably galvanized zinc. Entrapped heat, toxicity, vulnerability, and cultural inadequacy are some of the multiple implications of this material culture supplantation. The widely spread loss of natural material-craft in flood-risk constructions in developing regions bears severe environmental, socioeconomic, and health implications demanding material reinvention. Fused Deposition Modeling (FDM), a 3D printing extrusion without UV exposure or chemical binders,

offers unique opportunities to reuse plant waste to make flood resilient enclosures and paths for material craft reclamation. But, are such digital products scalable and de facto resilient for inundations' increasing challenges? This flood resilience research establishes the first physical testing of FDM plant waste composites from the nano to the wall scale. The quantitative investigation is informed by an integrated qualitative typological and ethnographic analysis of Fantasy Island's enclosure technologies. To address scalability hurdles in FDM natural composites production, a multiscale model was developed to simply translate material value criteria into available open source software to control crucial printing parameters. The research contributes to transform our capacity to evaluate natural materials innovation for flood risk environments through the convergence of context, matter, and technology. Fantasy Island works as a scaffold to explore flood resilience through natural material culture reclamation and emerging craft scalability in search of the other Amazon.



Plant Residue Composite Preparation
– Dried Palm fibre (Attalea Butyracea)
from the western Amazon

Ball Milling and preparation
of agrowaste for filament
production

Scanning Electron Microscopy of Plant
Waste Composite post-Fused Deposition
Modelling (scale bar 500 µm) and FDM
panels with variable structure.
© Maria Paz Gutierrez

Climate Change Action in the UK - The Role of the UK Construction Industry in Emissions Reduction

David Carun, Cambridge Institute for Sustainability Leadership, University of Cambridge, UK

With an increasing awareness of the impact of climate change leading to the introduction of the extraordinary Climate Change Act 2008 (CCA) in the UK, the country was faced with a mandate to significantly reduce its Greenhouse gas (GHG) emissions over a period of time. One of the major fallouts from the CCA was the acknowledgement that the construction industry, by virtue of being a major contributor to climate change through the GHG emissions its assets generate, offers substantial and cost-effective opportunities for mitigation action. Despite an initial spurt of mitigation and action plans in response to the CCA, however, a paradigm shift that was anticipated in the design, development, and delivery of buildings and infrastructure in the UK did not materialize. This paper

discusses the reasons for this loss of momentum by superimposing the carbon-construction relationship and the emissions reduction target as formalized by the CCA on industry practice and behaviour. The research methodology adopted is an integrative approach to literature review. By integrating perspectives from various empirical findings, the paper concludes that the ability of the UK construction industry to be a vital player in climate change action is constrained by the industry's multi-actor network. It also suggests the measures that should be put in place for the UK construction industry to start accelerating its reduction of carbon emissions such as, to start with, defining "carbon" better and adopting a more interdisciplinary way of working.



London and the UK continue to inspire nations, but how many of the newbuild developments here are missed opportunities? Concrete jungles in Stratford, London, and similar projects in various cities in the UK are being constructed without a holistic understanding of embodied or emitted Carbon at a rate and in a manner that is unsustainable.
© David Carun.

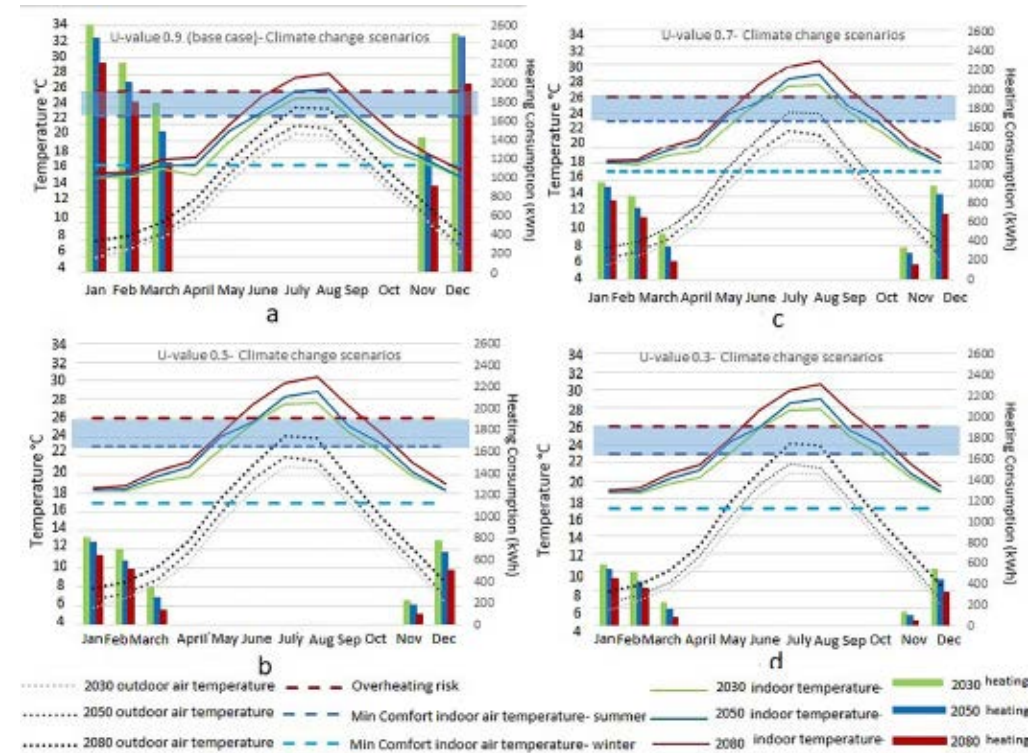
Retrofit of Buildings for Occupant's Comfort in a Changing Climate

Dr Heba Elsharkawy, School Architecture Computing Engineering, University of East London, UK

Dr Sahar Zahiri, School of Architecture, Oxford Brookes University, UK

Recently, retrofit of tower blocks has gained momentum particularly in the UK social housing sector due to the increasing rate of fuel poverty coupled with deteriorating indoor living conditions. However, the process of making improvements to the thermal performance of building envelopes can significantly impact on occupants' thermal comfort, increasing overheating risks with the changing climate and associated heat waves. The first phase of the study evaluated the building energy performance of a 1960s social housing tower block prototype in London, pre-retrofit, where the building simulation model was created and calibrated with monitored indoor data and occupants' interviews. The second research phase, used the model to further investigate the impact of improved thermal insulation of the building envelope, based on U-values prescribed by the UK Building Regulations (Part L1B), on the potential risk of overheating. The study investigated the impact of

retrofitting on occupants' thermal comfort and building energy performance in the current and future climate scenarios (2030, 2050 and 2080). Results confirmed that improving the U-value of external walls will significantly reduce the heating energy use by 70% under future climate scenarios while the operative temperature increases by 15–17% with U-value of 0.5 W/m²K and 0.3 W/m²K in comparison to the base case (0.9 W/m²K). The study demonstrates the significance of occupancy patterns in predicting building energy performance, and hence overheating risks as well as heating energy demand. The findings show that if thermal performance and airtightness level of the building fabric improve without considering multiple occupancy scenarios for different households, this may lead to inaccurate predictions of overheating risks, and hence retrofit interventions that may potentially cause complications in climate change scenarios.



Indoor air temperature and heating energy use in a typical middle floor of the 1960s tower block under the climate change scenarios (2030, 2050, 2080) using TM59-SAP patterns and U-values of a. 0.9 W/m²K, b. 0.7 W/m²K, c. 0.5 W/m²K and d. 0.3 W/m²K © Heba Elsharkawy and Sahar Zahiri

Is Anyone in the Room

Prof Stephen Gage, Bartlett School of Architecture, UCL, UK



Exterior of the Active House at Corbyn Street, London, UK © Andy Stagg

This research relates to the theme of Designing for Climate Change and the Design and Technical general category. It extends our understanding of the way that building occupants might monitor their use of buildings in order to control active systems that enhance energy efficiency. Remote sensing and actuation are potentially extremely effective ways of addressing the energy lost through user behavior. But remote sensing raises problems of its own, both technical and ethical. The overarching aim of the work is to establish reliable techniques for occupancy detection that are sophisticated enough to reflect the dynamic and evolving ways in which we occupy spaces. In order to be successful, it is critical that sensors reliably monitor occupation in different conditions, for instance, in conjoined spaces where doors are mostly open

or spatially distinct where doors are mostly closed. Another equally pressing concern is how this can be done while respecting individual privacy, both in the way that a house or dwelling is used, and in the way the information about occupation can itself be kept secure at a time of growing concerns about digital privacy and management. The research thus proposes and tests a local and non-intrusive system for occupancy detection, using a combination of CO₂ and PIR sensing. As reported in the submitted paper, the results of this testing have been very promising and suggest a way forward for future occupancy monitoring. These results are of real significance as an accurate but secure mode of occupancy sensing is vital to achieving the long-term aim of creating energy efficient buildings.

The Tasty City: Democratic Life and the Education of Desire

Dr Tim Waterman, Bartlett School of Architecture, UCL, UK

Taste and appetite in the construction of everyday life and the public imagination provide a key for understanding how conceptions of utopia can be rescued from abstraction and be employed to effect real positive change in substantive landscapes. This essay explores the construction of the city as an landscape built of custom and desire, and how hopes for the sustainable city of the future must

be something for which we might have an appetite, rather than a grey, austere one in which sacrifice is the only remaining mode of survival. An awareness of taste and its place in organizing civil society has implications for both architectural form and spatial practice, and some initial suggestions are offered for how the already existing utopian fragments in today's cities may be knitted together



Students at work at The Bartlett School of Architecture UCL. Photograph by Richard Stonehouse © The Bartlett School of Architecture



Staircase © Andy Stagg

Cities and Community

Submissions were invited from those investigating the relationship between the built environment and the people who live in it. Distinct from the historical category below, submissions here were to focus on contemporary city and rural environs, their challenges and communities and could include, but were not limited to:

- The role of the architect and architecture in social, cultural and economic sustainability
- Analysis and contextual studies of architecture in the cityscape
- Tall buildings and impacts on cities and the community
- Community focused projects including pro bono work
- Community engagement in projects
- Health, wellbeing and sustainability in the city



Yugok-ri
Unification Village
shortly after its
completion in
1973.
© Republic of
Korea National
Archives, 1973.

Mapping Social Values

Eli Hatleskog, Prof. Flora Samuel, School of Architecture, University of Reading, UK



The physical results of a mapmaking workshop with a local Scout troop © Eli Hatleskog

Social value is high on policy agendas in the UK but there is little agreement on the definition of social value in the context of the built environment or on how the gathering of social value data might be spatialised. This document gives an account of a research project which developed a pragmatic methodology for collecting social value data with local communities. The research explored how practitioners working in the urban environment can, through the co-design of maps with communities, capture and share attributes of a place which typically remain undervalued or hidden. Through a novel asset-based spatial approach to social value the project demonstrated the agency of mapping methods which can generate co-produced urban knowledge, develop capacity and make arguments for value-responsive improvements and development. Mapmaking supported negotiations across different points of view and contested interests and the research project created and tested methods for inclusive

architectural research which included not only local voices and interpretations, but also evolved in relation to some of the real challenges and barriers faced by the local authority. In response to rich information collected through workshops, a practice-based approach was taken, whereby 14 handmade community maps were drawn and overlaid digitally. The resultant multi-layered vector maps gathered and collated different interpretations of value and converted them into an accessible visual format. This supported dissemination, feedback and visual analysis with both participants and the Local Authority. In turn, the research sought to position mapping as a strategic tool for revealing common values and communicating potential in the built environment, with the aim of developing value-based knowledge particularly useful to early design, and decision-making, processes around strategic land management."

Constructing Frontier Villages: Human Habitation in the South Korean Borderlands after the Korean War

Dr Alex Young Il Seo, Department of Architecture, University of Cambridge, UK

The inter-Korean border is often considered to be purely a politico-militaristic problem which renders the space of the border static, homogeneous, and empty of human habitation. However, a closer examination reveals a highly dynamic border full of discrepancies which is, in fact, inhabited by people from both sides of North and South Korea. The 65 years of military division has, despite the ongoing hostility, spawned distinctive forms of architecture and village planning in the South Korean borderlands called the frontier village. Constructed within visible proximity from North Korea, the frontier villages have become an image of the state, portraying South Korea's political aspirations across the length of its border. This paper examines how the frontier village is used by the state and at the same time by the villagers as a critical instrument to

achieve, administer and negotiate certain outcomes. Focusing on the Yugok-ri Unification Village in Cheorwon, the paper analyses spatial changes in the village's architecture as a lens to study how its residents cope with the highly hostile border. It reveals a highly intricate and discrete ways the residents use the space of the frontier village as a platform for their struggles against the authoritarian vision by developing, augmenting and enhancing their houses and spaces around them in their everyday life. I argue, under particular circumstances, even the state-led architecture imposed with high levels of control play no less significant a role for the villagers as a critical instrument to achieve, administer and negotiate certain outcomes.



An armed group of subokmin by the border working to turn what is a paddy-field, circa 1963. © Republic of Korea National Archives.

A Learning Architecture: Developing a collective design pedagogy in Mumbai with Muktangan School children and the Mariamma Nagar community

Dr Nicola Antaki, The Bartlett Development Planning Unit, UCL, UK



Map of Mariamma Nagar Settlement in Mumbai, made by schoolchildren at Muktangan Love Grove School, 3x3m, cloth, photographs and felt tip pen, 2014
© Nicola Antaki

This interdisciplinary research investigates architecture (an activity and a setting) as an educator. It proposes a collective design pedagogy, an idea for a socio-spatial learning practice that involves schoolchildren in the production of their city, to encourage multiple intelligences, and develop practices of responsible citizenship. This project is situated in Mumbai, a global city in which the changing population and environment has encouraged child-centred learning and a context for pedagogical innovation. In collaboration with the education NGO Muktangan, it includes a series of pedagogic urban experiments investigating the city's potential to house active citizenship practices by children, between 2012 and 2017. Four yearly series of workshops with the same class of schoolchildren ran during an incremental, experiential and reflective project to observe, assess and then transform their environment. The schoolchildren live in informal settlement Mariamma Nagar, that is also home to a variety of craftspeople and makers. Using activities borrowed from architectural practice, the

children transform their school and neighbourhood, by designing interventions. Combining critical pedagogical praxis and constructivist theory of education, the development of a collective design practice fuses learning with the city: facilitated by designers, children become active citizens through design and work with local craft as a political design tool. They identify wellbeing as the overarching itinerary for their projects, designing responses to social and environmental problems such as open gutters, mosquitoes, fighting and bad language, lack of green spaces and insufficient waste management. The research argues children's role as architects is pedagogical: they can be involved in the production of their current environment, facilitate their political identity, and foster their ability to communicate ideas. Design allows children to develop empathy, think critically and learn how to learn. Architects role as facilitators is pedagogical too: learning is reciprocal through a sustainable balancing of architecture, citizenship and participation.

Witnessing the Refugee Camp: Feminist Positions, Practices, and Pedagogies

Dr Aya Musmar, School of Architecture, University of Sheffield, UK

Since the 20th century, political unrest within postcolonial Arab states has produced refugee camps as spatial phenomena that feature within the Middle East and beyond. The most recent of refugee camps are those established to accommodate refugees fleeing the war that followed Arab uprisings in Syria, 2011. For researchers from humanities and social sciences, the refugee camp's significance is found in its blatant embodiment of forced migration as an emblem of the crisis of our time. Encountering the refugee camp invokes many questions about our humanitarian responsibility towards the injustices that refugees undergo as well as towards the world in which we live and which we should maintain. While research is assumed as a political undertaking that should bear testimony to the course of events that shape refugees' experiences, often, it is performed through the same 'refugee regime complex' that produces the injustices which research, paradoxically, aims to address. This study thinks of the refugee camp

encounter beyond the colonized, classed, and racialized hierarchies that conventional modes of research-encounters in refugee camps imply. It ponders the refugee camp encounter as an architectural encounter and it offers a (postcolonial) feminist methodology that reclaims the position of the architect in a refugee camp research as a "witness".

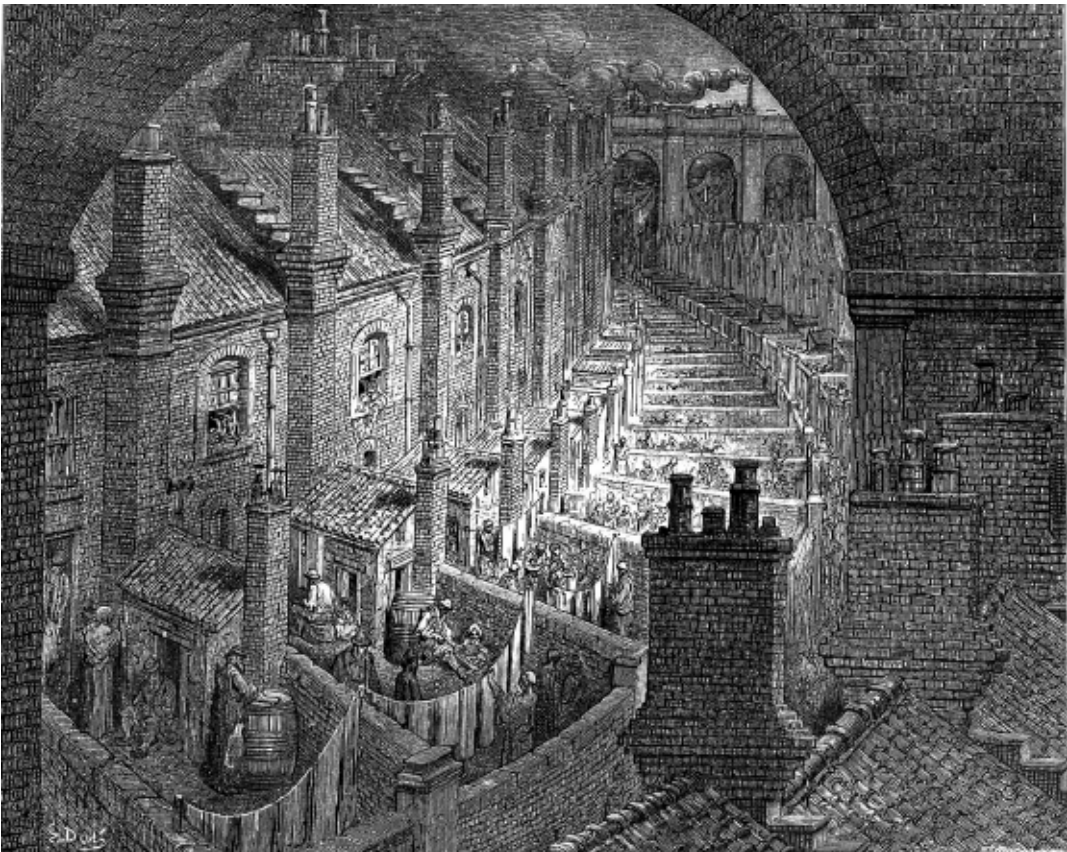
This research takes place in Za'atri refugee camp which was established by the state government and the UNHCR in 2012 in response to the Syrian crisis in Jordan. While thinking of architecture as a feminist undertaking that is grounded in an assemblage of positions, practices, and pedagogies; this research mobilizes the relationalities and materialities of the milieu of Za'atri refugee camp to critique the anthropocentric approach attended by the humanitarian NGO paradigm. Alternatively, it suggests other modes of "address" and "response" that account for the ethical complexities of the refugee camp.



A photograph captured and reproduced showing the Madafah space in the camp.
© Aya Musmar

Life in the projects: ways to improve the design and affordability of low-cost housing

Bashir Aminu, School of Architecture and the Built Environment, University of Wolverhampton, UK



Gustave Doré's famous engraving 'Over London - by Rail' depicting overcrowded tenements of Victorian London, 1872. Public Domain, Wellcome Collection

Housing is a basic human need which every individual should be entitled to, but unfortunately due to social, economic, political and constructional factors, it has not been so successful hitherto. The history of the housing crisis and housing policy in the UK can be traced back to Victorian Era following a high rate of rural-urban migration, unfit dwellings and poor sanitary facilities that led to outbreak of diseases. Deep exploration on the process of how housing policies failed to address the root causes of the housing crisis and the consequences of the failure to address the problem in a long-lasting manner by previous and current governments were identified. The problem had continued to persist and risks progressively becoming worse. An analysis of the main factors that predispose people to becoming victims of the housing crisis

has shown that they are problems highly linked with unemployment, inequality and poverty. Government's recent increase on the interest rate on cheap treasury loans and reduction in social housing fund allocations has made it almost impossible to reach its target of building 300,000 new affordable homes per annum. This paper argues that it is possible to achieve the goal despite the restrictions imposed by the government. This is in consideration of initiatives by local authorities that are coming up with innovative ways to source the funds for such projects and their willingness to build eco-friendly and high-quality social housing for future generations. Brewers Yard in Wolverhampton, United Kingdom was used as a site to test the viability of this approach.

Towards a productive urbanscape: The challenges and opportunities for UA and alternative agro-food networks in Manchester

Ariel Chesley, Manchester School of Architecture, UK

This research paper will explore the challenges and opportunities for food production, distribution and consumption through Urban Agriculture (UA) and alternative agro-food networks in the urban context. UA is an alternative to the large-scale, monoculture-driven global food system which dominates the current food economy aimed at production rather than accessibility. UA has the potential to be site-specific and address the social, economic and political issues of a place. Although the scale and outreach varies, UA has the capability to provide fresh produce for a city's inhabitants, thereby increasing biodiversity, access and transparency of the process of food production, distribution and consumption. Wider questions of resilience in the context of climate change demands reducing food miles, waste and the carbon footprint by evaluating the complexities of the food production

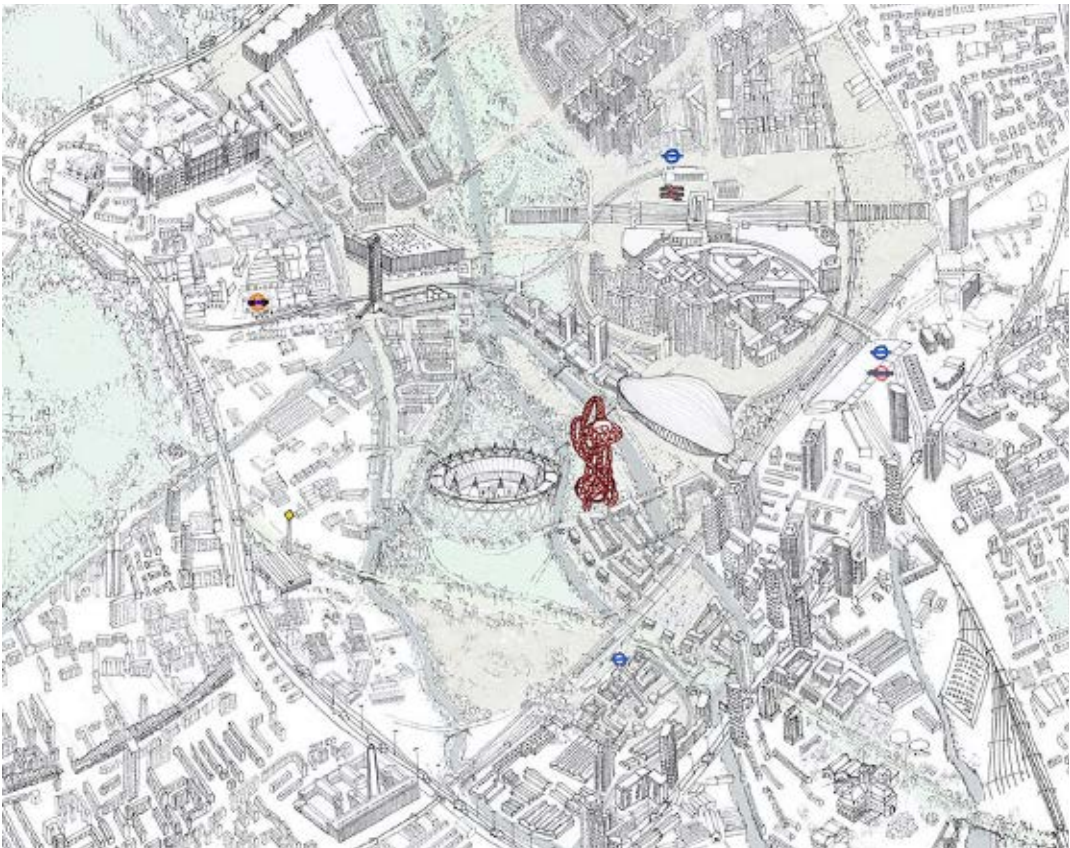
system. For Manchester specifically, a lack of sufficient greenspace in the city centre means that the city, communities and individuals must begin to creatively reuse spaces into productive urban landscapes. Through fieldwork and interviews, a comparison between UA sites in Manchester will reveal their main challenges and successes. The aims of this research paper are to understand food production on three scales: from a historic perspective (between the early 20th century to present-day) to understand the current global food economy, from a socio-economic perspective with examples of alternative agri-food responses to political and cultural issues in a city, and from an urban perspective, in this case Manchester, to explore the current UA projects and alternative agro-food networks, planning policies and resources which support accessibility of food in the urban context.



'No-dig' farming beds
© Ariel Chesley

Citymakers: Exploring Models of Urban Development

Daniel Elsea, Lionel Eid, Antje Saunders & Emad Sleiby, Allies and Morrison, UK



As a practice involved in the design of major masterplans, which have far-reaching implications on shaping London's evolution as a city, we undertook a one-year interrogation to 're-visit' three major sites of regeneration. Using a critical lens, we invited actors and observers in the process, holding a series of debates and commissioning a series of written essays and commentary which studied these. To understand how new pieces of city emerge (or how existing ones evolve), we felt that we must consider a few issues. First, what are the primary catalysts driving urban development? Second, to what extent do neighbourhoods emerge organically, of their own accord? Finally, is it possible to curate and control the quality of such places in the long-term through planning and design? Each of these questions imply distinct yet interrelated approaches to city making. We identified these

as the catalytic, organic and curated models of urban development, exemplified by three different masterplans in London: the Olympic Park, Bankside and King's Cross respectively. These three distinct examples across a global city also illustrate that in each case, the process of urban change is unique. No two masterplans are the same. Different forces are at play. Different actors. Different conditions. These questions were explored by a selection of key 'city makers' over three evening discussions investigating these alternative models of urban development. Each event explored the values, concerns and principles that guide approaches to urbanism and creating a long-lasting piece of urban fabric. From these three discussions a body of work was developed and curated into a collection of perspective essays and a series of commentaries around each model of urban development and masterplan.

Adaptability of Urban Form: Analysing incremental changes in buildings, plots, and streets

Dr Fani Kostourou, Bartlett School of Architecture, UCL, UK

How do cities and houses grow and adapt over time? We assume that if our built environment is not adaptable enough to effectively accommodate changes of form and function over time, it will become obsolete as it will fail to remain fit for its users for the long-term. This research explores this idea by tracing the incremental transformation of the 19th century working-class housing scheme of Cité Ouvrière in Mulhouse, eastern France. In particular, it investigates how buildings, plots, and streets change in relation to each other and to concurrent socio-economic conditions, and which characteristics contribute to their capacity to adapt. It also examines the effect of their change on urban movement patterns and density. Such knowledge can be useful for architects and planners to address issues of resilience and sustainability in the built environment. The study creates an original dataset of 17 Mulhouse street network models, one for each decade from 1850s to 2010s. The models are compared to identify

small configurational adaptations from one decade to the next. They are analysed through the Space Syntax method to reveal the potential of the changing grid to accommodate movement at different times. Using historical planning applications and images, the study also reconstructs, in 3D, the 165-year trajectory of the 1,253 single-family houses of Cité Ouvrière. Statistical computing is used to measure their volumetric growth, while the Spacematrix method helps understand the impact of this growth on open space consumption at both the individual and the aggregate level. Results show the successful transformation of a planned and monotonous suburban settlement to a dense and morphologically diverse city quarter. They highlight different types of changes, their agents, causes, and constraints. Ultimately, they allow for clearer definitions of morphological adaptability and lay the foundations for a theory of dynamic change in urban form.



Detail from the transformation of a planned and monotonous suburban settlement to a denser and morphologically diverse city quarter. View of the northern part of Cité Ouvrière in Mulhouse (1853-present). Its recent extension, Cité Manifeste, can be seen in grey at the left side
© Fani Kostourou

Redefining cities and architecture for adapting to change

Dr Izis Salvador Pinto, University of Westminster, UK
Honorary Professor Julian Francis Vincent, Heriot-Watt University, UK



Building with
patios integrated
in the landscape
© Izis Salvador
Pinto

The world is changing, so cities must change. Urbanism is as important as architecture to create healthy spaces for wellbeing, and communities engaged with their cities. Recently, our world's demand for changes has been more dramatic than we had faced before due to the Global Warming and the Coronavirus Pandemic. Our cities and buildings must be redefined. This research study how cities and architecture could adapt to the current world challenges. As a strategy to reduce the spread of the coronavirus, governments implemented a lockdown. The lockdown implies staying at home, social distancing and self-isolating, which can be psychologically disturbing. The paper proposes new and existing strategies to achieve wellbeing in architecture. On the other hand, because of the lockdown, air pollution has reduced with fewer associated deaths due to it, and there are less CO₂ emissions. This proves that a more sustainable way of living is possible. Neighbourhoods should be self-sufficient fomenting

access to services by walkable distances, so we need poly-centric cities. The research follows an interdisciplinary approach, with input from different fields to adapt our cities and architecture to our current challenges. Biomimetics, which is the inspiration in nature, is suggested as a strategy to obtain optimisation of materials and resources, the reduction of waste, and resilient cities and buildings. The importance of the social value of urbanism and the non-adversarial relationships of the construction team is discussed. Lightweight structures, pneumatic structures, timber, new materials, and kinetic structures are suggested to adapt to change. The creation of the 'Hygienic Design Certification' (HDC) as the world's leading hygienic assessment method for masterplanning projects, infrastructure, and buildings is proposed. The objective is achieving hygienic levels by design strategies. Some Hygienic Design Principles for this certification are established.

A Design Decision Support System for Affordable and Sustainable Housing Design and Delivery in Least Developed Countries (LDC's)

John Bruen, School of Natural and Built Environment, Queens University Belfast, UK

Housing shortages in least developed countries (LDC's) continue to escalate beyond previous records and current trends project this to increase significantly in coming decades. The resulting homelessness and poverty, often as a result of population growth and disasters, affect large populations in many LDC's. The challenge of how best to engage with communities and respect their culture and heritage while simultaneously addressing these shortages in a sustainable manner and also build resilience against future disasters has been a central debate in many LDC's. This research explores the design decision making process of architects in the complex area of the design and delivery of sustainable and affordable housing in LDC's contexts. The often neglected cultural and economic aspects of the triple bottom line of sustainability are given equal attention to the environmental aspects which many studies often tend to focus on only. Community focussed case studies with various levels of community engagement were

selected from international organisations that take local and wider cultural and contextual aspects in to consideration to inform their design and delivery process. This research is international in nature and bridges the domains of architecture and design management and in particular, the aspect of decision support for architects and designers. A multi case study approach with nine leading international housing organisations operating in LDC's is undertaken. The study identifies key barriers and challenges faced in the design and delivery of sustainable housing in LDC's as well as key drivers for improvement. Key themes and considerations in the architects design decision making and delivery process are identified. A Decision Support System tool for the design and delivery of sustainable housing in LDC contexts is developed which can be applied in practice and freely disseminated to other relevant shareholders e.g. communities, NGO's, donors, Governmental bodies and decision makers.

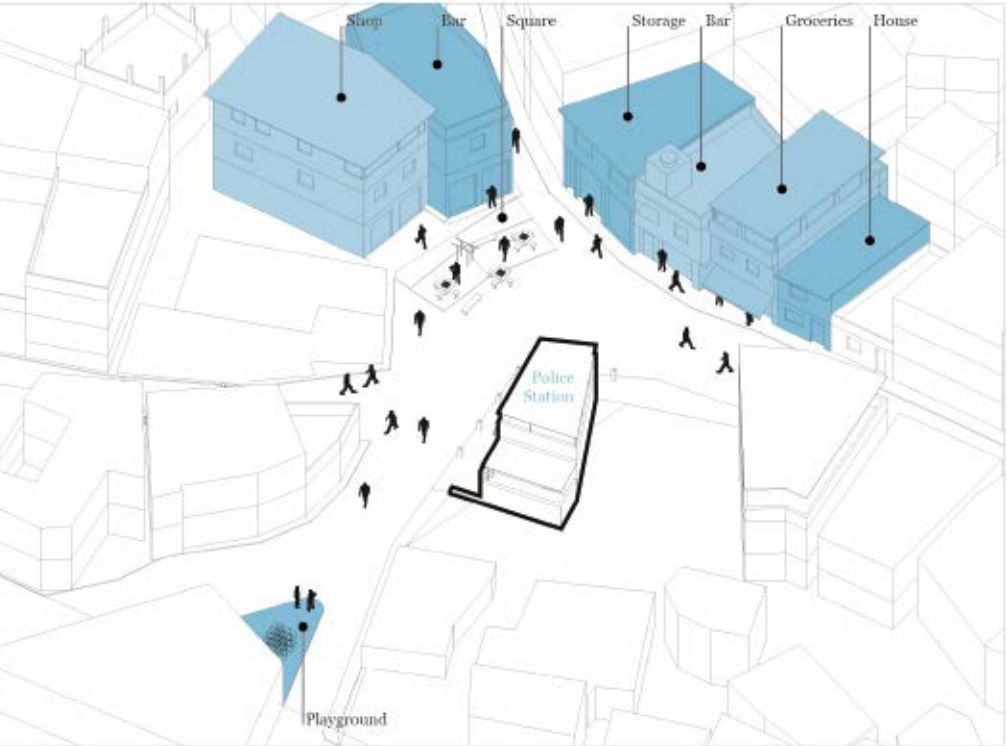


Example of
traditional home
studied during
field research data
collection
© John Bruen

Rio, city of ghettos: A study on the impact of violence on the urban form

Thiago Tavares Abranches de Soveral, Architectural Association School of Architecture, UK

Functions and activities surrounding the "blind" police station



Bunker as Police Station. Study on the immediate surroundings of a police station built in Favela do Alemão, which, instead of windows, the unit has only 3 small loopholes at waist height. And, within its range, houses, shops and squares.
© Thiago T. A. de Soveral

This research focuses on the impact of violence on urban form in Rio de Janeiro, showing how violence is spatialised. It shows how urban design reinforces segregation and how this segregation reinforces and distorts urban violence.

The analysis of case studies discusses the growing ghettoization that emerges from the spatial strategies adopted by the urban planning secretariat, administrative decisions and, finally, urban planning plans, which reinforce a ghetto logic. This research identifies a convergence between the gated community model (ghettos of security) and the favelas (ghettos of violence). The comparative analysis of these territories with opposing characteristics reveals the structural limitations that reinforce their transformation into ghettos, following a logic of segregation, both created irregularly, in the margin of the current regulations. Both show an accelerated growth process in the last

decades, contributing to the fragmentation of the common urban space into closed spaces, inhabited by socio-cultural and economically homogeneous social groups, losing the form of a city.

This research shows that the concept of gated communities has been changing in Rio, and today, gated communities require a redefinition. Fortified enclaves are proliferating in the city, driven by a culture of fear. This urban ghettoization is therefore a concern for architects, urban planners, policymakers and inhabitants, especially in the context of Rio—a city defined by urban violence for more than half a century. The research shows the need for urgent intervention through urban design for the city of Rio. However, these transformations will only happen through the redesign of regulatory frameworks.



Embroidered tapestry depicting the Muktangan schoolchildren's map of Mariamma Nagar Settlement in Mumbai, made by neighbourhood craftspeople. 3x3m, cloth and yarn, 2014.
© Nicola Antaki

Design and Technical

Submissions were invited under the headings of Design and/or Technical. Research was to concern the influence or impact of design, form and/or technology on the use, quality and/or performance of a space or building(s). Topics could concentrate on the holistic or focus on a specific element, addressing, but not limited to:

- Materials, detailing and/or construction methods
- Design quality and/or project management
- Computational Design and BIM
- Spatial integration
- Sustainability, low carbon solutions and/or 'systems' performance

Lattice, Montreal,
2017. Aerial view
of the paper
construction in full
on Day 7
© Yeoryia
Manolopoulou and
UQAM

Probiotic Design

Richard Beckett, Bartlett School of Architecture UCL, UK



Surface details of probiotic tile showing the textural, porous surface of the probiotic zone
© Richard Beckett

In response to advances in medical fields that now understand the integral role that bacteria play towards human health, this research proposes a novel probiotic design approach towards designing healthy buildings in relation to beneficial microbes.

This research fundamentally challenges modern approaches to healthy buildings that assume fewer microbes as the default healthy condition. Human attempts to eradicate all microbial presence from buildings and cities have resulted in built environments completely degraded of the diverse environmental microbes from soils and plants that are integral to our health. Evidence suggests that separation of the human from the non-human has gone too far and that missing microbes are playing a role in the emergence of chronic autoimmune illnesses observed in developed cities.

Probiotic design builds on the contemporary understanding of the microbiome and the need for re-introducing environmental microbial diversity in

to buildings. The research uses an interdisciplinary approach between microbiology and architecture which aims to develop living materials embedded with beneficial bacteria for buildings to directly shape the indoor microbiome towards a healthier microbial condition. It explores this through a range of scales from the micro scale of the material and microbe up the macro scale of indoor environment and the body. This approach utilises a mix of in vitro and in silico methodologies to explore the design, fabrication and survival of living probiotic materials which are then scaled up to the building scale as a series of probiotic tile surfaces and installed in a test space to monitor their effect on the indoor microbiome.

The research demonstrates evidence of a successful methodology for integrating viable bacteria into ceramic and concrete materials which are then proved to inhibit the growth of pathogens and in their ability to directly increase environmental microbial presence in the indoor microbiome of the test space.

When Buildings Are Wrapped In Screens: Does This Affect The Fire Resilience Of The Building Envelope?

Dr Xiaolei Chen, Department of Technology, California State University, Los Angeles, USA

Large LED video screens have been adopted on building facades worldwide for information-delivering, advertising and story-telling. They convert buildings into live showpieces on urban stage and bring remarkable visual appeal to urban occupants. Media facade now becomes a new fantasy in urban landscape. However, potential fire hazards associated with the technology have not been widely made aware. Consisting of hundreds and thousands of pixel modules made of polymeric materials, LED video cladding may pose severe fire hazards to the built environment due to high combustibility. Currently few guidelines/regulations in codes and standards mention the fire challenges of large video cladding as part of a building façade system, leaving a vast knowledge gap in design and construction practice. It is essential to understand how the system performs in fire and how it might pose threats to the building envelope as well as occupants inside the building so future editions of

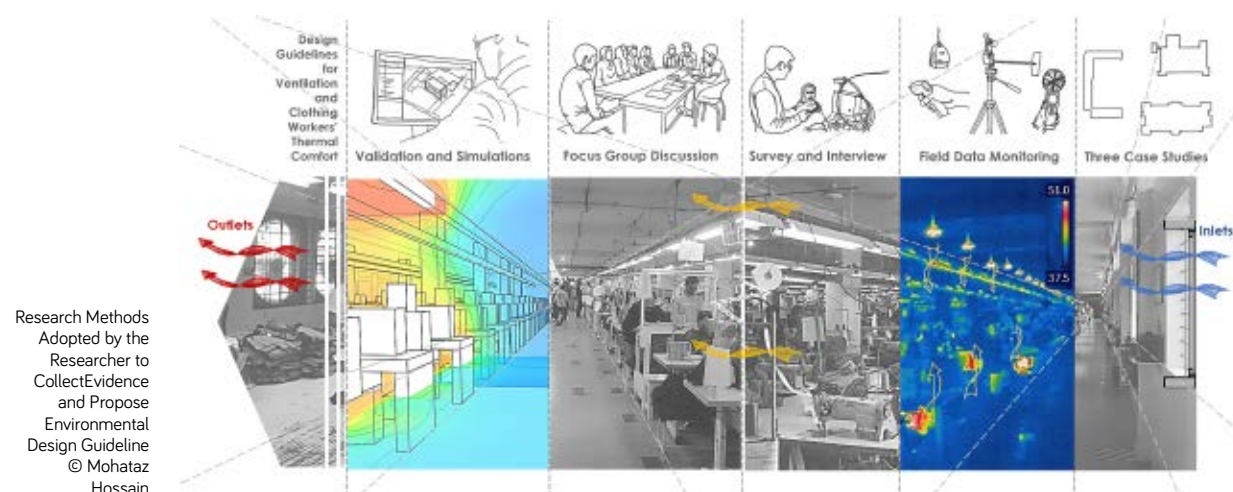
codes/standards will be amended to provide specific guidelines regulating the design/use of this technology. This pilot project performed a fire hazard study for exterior video cladding. A computational fluid dynamics (CFD) tool, Fire Dynamic Simulator (FDS), was used to simulate a number of video cladding fire scenarios based on combustion data retrieved from lab tests. It was discovered that a burning video cladding could break exterior glazing nearby, rapidly making effected rooms untenable (as short as 10-20 seconds) and hence leaving limited response/evacuation time to occupants inside those rooms. Furthermore, this study examined the actual flame propagation rates and patterns over the video cladding surface in a real-world fire scenario. It was found that the overall pattern of flame spread exhibits a trend like a tree. As such, the building facade around the centerline of the first ignited pixel(s) and upper portion of the video cladding is affected more severely.



Media façade on high-rise building in Los Angeles
© Xiaolei Chen

Improving Workspace Environment for Garment Factories in Bangladesh: Design Guidelines for Clothing Workers' Thermal Comfort

Dr Mohataz Hossain, Department of the Natural and Built Environment, Sheffield Hallam University, UK



This research aims to identify viable design strategies that can improve the indoor thermal comfort within the workplaces of existing multi-storey ready-made garment (RMG) factories in the tropical climate of Bangladesh. The research framework was initially developed through literature reviews and a feasibility study on the applicability of a passive design approach within an existing RMG factory. The principal research follows the empirical case study approach collecting environmental data for three types of workspaces (i.e. cutting, sewing and finishing sections) and subjective responses from the workers, designer and owners of three multi-storey case study buildings during the three main climatic seasons (i.e. cool-dry, hot-dry and warm-humid seasons) of Bangladesh. In addition to field studies, a validated simulation study is also completed in one of the case study buildings. Analyses of the subjective votes established garment workers' preferred thermal comfort range for temporal varieties of the climate and suggested that the distance between their workstation and ventilation-

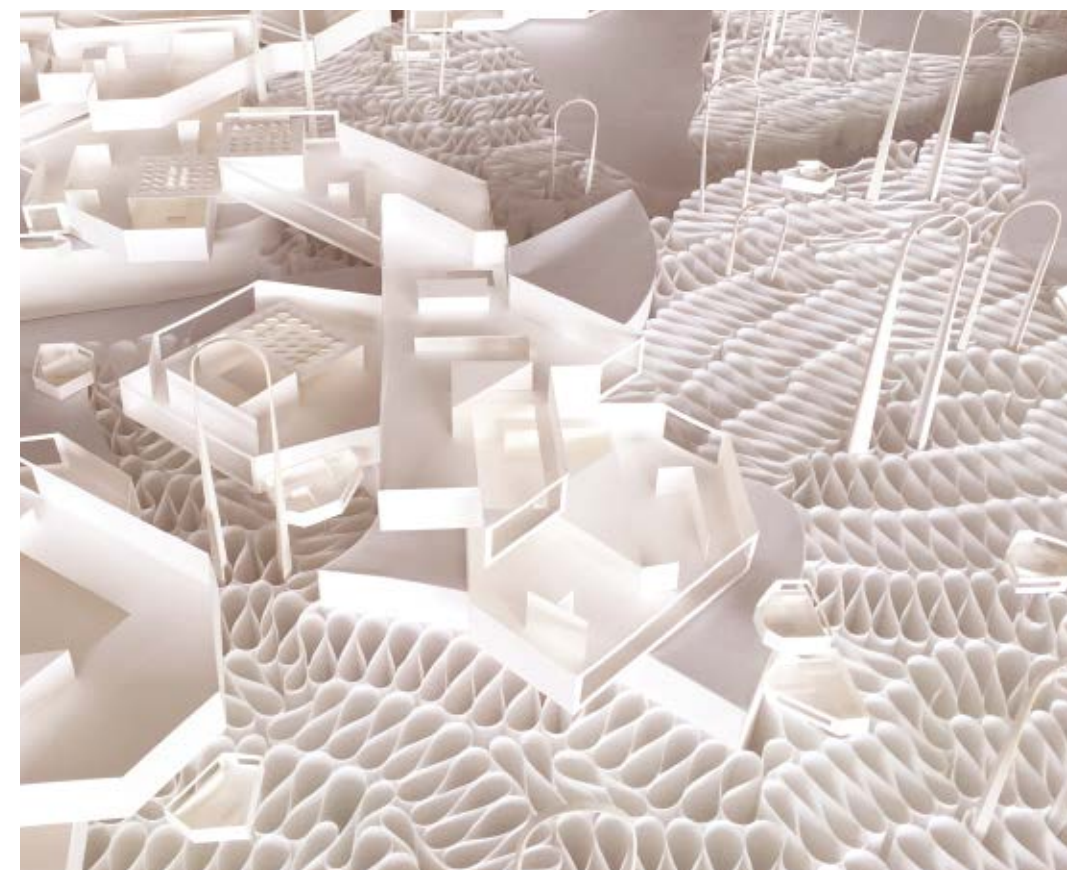
inlets should be maintained within 12m to 18m for more personalised control on their comfort avoiding the ceiling fans. Analyses of the environmental data from all case study buildings indicated that the limited effective openings of the existing windows and the ventilation strategy being limited to only occupied hours influence the thermal environment of RMG workspaces. Building owners saw value in implementing two solutions (i.e. altering existing window type to one with a higher effective opening area and utilising a night-time ventilation strategy with thermal mass) immediately in their existing buildings as well as new buildings. Simulation results confirmed that these two interventions can provide reductions of up to 23% of working hours when a high temperature is experienced. Moreover, designing stack induced ventilation through shafts and changing functional arrangement can provide additional air speed (increase of up to 0.45 m/sec) improving workers' thermal comfort.

Open Scoring in Architecture

Prof Yeoryia Manolopoulou, Bartlett School of Architecture, UCL, UK

This project draws on research in chance-aided design, expanding the field of inquiry from the individual to the collective. It focuses on the complex cognitive and productive possibilities that emerge within a group of designers who welcome plurality and performance in their practice via the use of an architectural score. Scores use textual, pictorial or numeric notations to describe and structure a process that occurs over time. Whilst linear scores specify an ordered sequence of events, open scores are less-hierarchical and can allow participants to invent and adapt the units and relations of an ensemble temporally and spatially. What is the creative and social potential of the score in architectural practice and pedagogy? Through an examination of an architectural score and workshop that I developed for the Université du Québec à Montréal, named Lattice, and an exploration of the

ideas underpinning it, I will show that one of the advantages of open scoring in architecture is the way in which it encourages both autonomy and collaboration, increasing the range of ideas, experiences and opportunities available to designers. The work invents and proposes a pedagogic method that grounds design on a condition of social experience and shared authorship. By foregrounding the process rather than the outcome in architectural design; by opening up this process to a social embodiment of time between actors, materials and tools; and by deliberately acknowledging its production within a collective, open scoring in architecture has the capacity to fundamentally change the ways in which architecture is taught and practiced as a social activity and understood as a social artefact.



Lattice, Montreal, 2017. Detail view of the paper construction
© Yeoryia Manolopoulou and UQAM

Mediated visualities and the end of the perspectival image

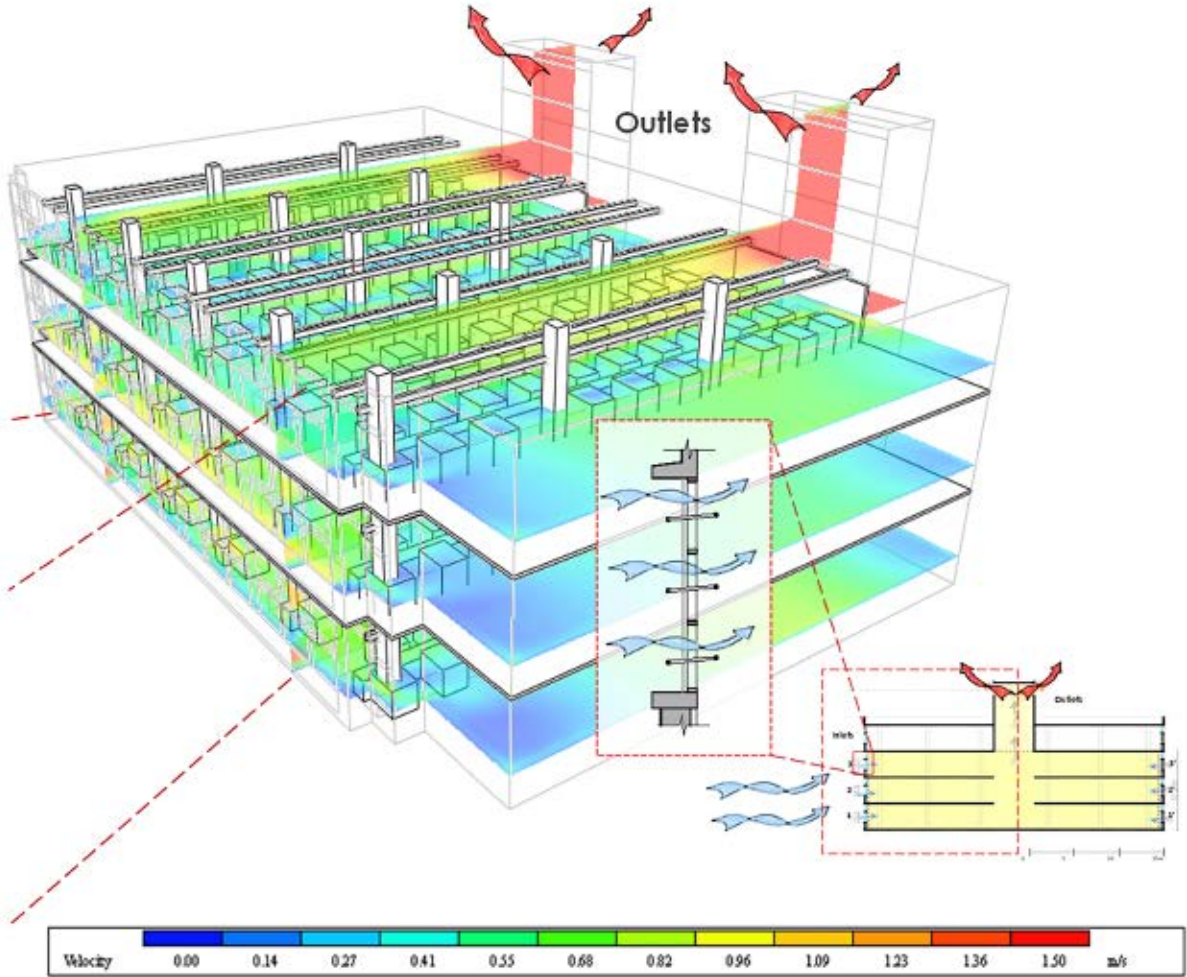
Dr George Themistokleous, De Montfort University, UK

View of the corridor behind a two way mirror - from the camera's perception
© George Themistokleous, photograph: George Athanasios



This study attempts to question the role of architectural representation after the digitization of bodies and spaces. The established visuality in architecture from the past has been usurped by the new mediated and intertwined visualities of body, machine and space of today. The hegemonic representational system of linear perspective and the monocular space that it produces are revisited and revised in order to mark them obsolete and propose a new framework to describe and create architecture in today's hyper-mediated environments. Through a critical combination of theoretical and practice-based investigations, this study interrogates the history of photographic, cinematic and stereoscopic images, which form the basis of subsequent examinations of their hybridization in current digital processes, assemblies and implications in the new mediated visuality. Diplorasis, an analog-digital media installation of my own making, translates theoretical enquiries into actual, corporeal, visual and sensory experiences to show how new constellations of visual technologies and emerging digital media are affecting

the sensory-cognitive body, its multi-presences and spaces they occupy. The article further demonstrates how new representational formats are becoming increasingly inhabitable and immersive, challenging the boundaries between the established object-subject relation in representation, and representation itself. Emerging architectures of such contemporary mediated visualities are increasingly positioned within multiple intervals, i.e. between oscillating actualities and virtualities. The contemporary subject is simultaneously positioned within disparate intervals through telepresence, and a-synchronicity of multiple, incommensurable times, and between multiple selves and self-images through autoscopia. The co-habitation of synthetic and actual environments perceptually de-habituates the subject and dislocates the body-image from the body. The new architectural modus operandi must digitally stitch and prostheticize vision in order to deal with these emerging conditions. These speculative mediated visualities inform the new e-topia that marks the end of the image and propels architecture to new modes of operation.



Passive Ventilation Design Proposal for New Garment Factories, showing air velocity in metres per second
© Mohataz Hossain

History and Theory

Submissions were invited from historians, theorists and practitioners whose work has relevance to the history and theory of the practice, culture and profession of architecture most broadly conceived.

- Historical research of direct relevance to a project, e.g. conservation plans and reports
- Cultural studies relating to architecture, professionalism and the built environment
- Histories of construction, science and technology
- Historical and/or theoretical research on place, space and urban planning
- History and/or theory of practice and praxis, including professionalism, architectural education, procurement and non-design aspects of architectural practice



Architecture in Global Socialism. Eastern Europe, West Africa, and the Middle East in the Cold War

Dr Lukasz Stanek, Manchester School of Architecture, UK

In the course of the Cold War, architects, planners, and construction companies from socialist Eastern Europe collaborated with those in West Africa and the Middle East in order to bring modernisation to the developing world. This research is the first to study their work, and to show how it was mobilised within global networks of cooperation established by socialist countries, or what I call “socialist worldmaking”. The resulting monograph (2020) shows how the collaboration between socialist and postcolonial countries reshaped five cities: Accra, Lagos, Baghdad, Abu Dhabi, and Kuwait City between the 1950s and the 1980s. Local authorities in these cities drew on Soviet prefabrication systems, Hungarian and Polish planning methods, Yugoslav and Bulgarian construction materials, Romanian and East German standard designs, as well as professionals from across Eastern Europe. In some countries, including Ghana in the 1960s, modern architecture from Eastern Europe was instrumental in the adaptation of the socialist development model to tropical conditions. Other

countries, such as 1970s Nigeria, invited state-socialist companies to stimulate competition between foreign enterprises. In North Africa and the Middle East, governments and architects exploited the differences between socialist foreign trade and the emerging global construction market during the closing decades of the Cold War. By focusing on their work, this study inscribes socialist worldmaking into a more complex and antagonistic genealogy of architecture’s globalisation. Carried out between 2009 and 2019, this research draws on public and private archives on four continents, interviews, and fieldwork. It combines close readings of case studies with distant readings of large collections of data, studied and evidenced by means of digital tools. This research challenges inherited visions of global urbanisation and its architecture, and offers their new understanding for historians of architecture, planning, and construction, historians of the Cold War, as well as practitioners and educators.



Africa Hall
(Women's Hall 6),
Kumasi (Ghana),
d. 1964-5.
Architect's Office
KNUST, John
Owusu-Addo/
Miro Marasović
(chief university
architect), Niksa
Ciko (architect in
charge).
© L. Stanek
(2018)



Alternative Modernism: The Architecture of China’s People’s Commune

Dr Jingru (Cyan) Cheng, School of Architecture, Royal College of Art, UK



Poster of the
Hongqi people's
commune, 1958,
entitled 'People's
Communes are
Good.' Designer:
Guangting
Rui, Publisher:
© Shanghai
Educational
Publishing House

The people's commune, an all-encompassing socio-political, economic and spatial model of China's collectivisation during the 1950s-80s, played a fundamental role in the process of the then newly established nation-state to transform an agrarian economy into an industrialised socialist society. While synthesising the political economy and socio-cultural transformations of the commune system, this research aims to provide the first systematic account of the architecture of China's people's commune across scales of territory, settlement and housing. By employing an architectural case study method, the research revisits pilot commune proposals and exemplary propaganda posters, and, through multi-year fieldwork, has documented one of the few still existing commune settlements today, including oral histories with the then commune leaders and members. The architecture of the people's commune articulated and enforced the construct of collective subjectivities. The coupling of public canteens with the abolishment of family kitchens formalised a practice of everyday life that aimed to collectivise the socio-economic

functions of dwelling. The spatialisation of a systematic arrangement of social roles in household management, service provision and agricultural production destabilised social ties formed in the extended family and the patriarchal clan system. Instrumental to the restructuring of social relationships, architecture and planning are, in this sense, political disciplines. Revisiting the people's commune is crucial, not only for a better, contextualised understanding of the social realities and spaces it has produced in relation to contemporary issues in China's rural and urban transformations, but also for a critical examination of the core of China's governmentality at its early formation: the correlation between the spatial, social and political units, particularly at the neighbourhood scale. Moreover, constitutive to the non-canonical architectural histories, the people's commune challenges preconceptions of Western modernism that is based on the construct of the individual and the nuclear family and their relationships with the civil society.

Global Perspectives on Architectural History: Reformulating Banister Fletcher for the 21st Century

Professor Murray Fraser, Bartlett School of Architecture, UCL, UK
Catherine Gregg, Royal Institute of British Architectures, UK

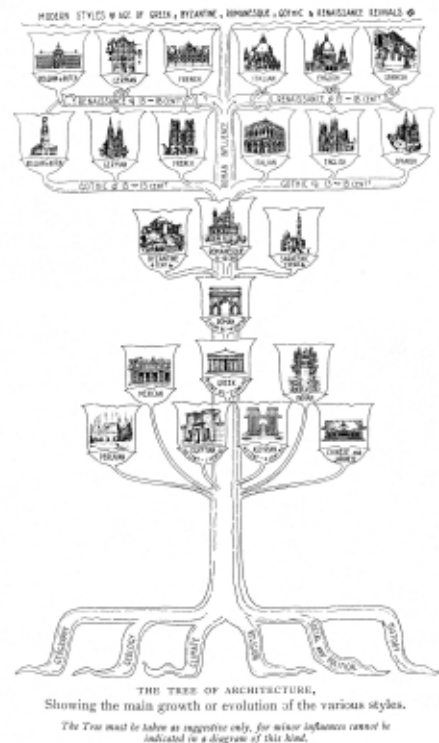
This essay describes the research project resulting in the 21st Edition of Sir Banister Fletcher's *Global History of Architecture*, published by Bloomsbury and available digitally as the centrepiece of the Bloomsbury Architectural Library, a major online resource. The task of overseeing/funding the project fell to the Banister Fletcher Project Board, as co-managed by the trustees of Fletcher's will, Royal Institute of British Architects and University of London.

First published back in 1896, what is widely referred to as a Banister Fletcher proved the longest-lived and most successful of global architectural history surveys. Yet it came with its ideological problems, which therefore frame the essay's text. Over the decades Banister Fletcher was tweaked by Banister Flight Fletcher himself, or by subsequent General Editors after his death in 1953. However, the book had never before been thoroughly rethought and rewritten, making it increasingly anachronistic.

How therefore should we treat an inherited artefact

like Banister Fletcher today, and how might it be reconceived for a globalized age? This essay outlines the ways in which the research team reshaped Banister Fletcher for an age of globalisation – dealing with inherited problems of cultural bias, tendentious illustrations, and falsely unitary authorial voice. With the first-ever incorporation of ‘global history’ within the book’s title, and with text entirely rewritten by a team of 88 leading experts and amounting to 1 million words plus 2500 illustrations (including some classic Banister Fletcher drawings), and also being available and searchable online, the 21st Edition sets a new benchmark for intellectual rigour and ambition for global architectural history surveys.

As the largest research project to date in architectural history, it also makes the case for a diverse, globally balanced, open-sourced and networked mode of scholarship that employs technologies like the Internet for more collaborative, trans-spatial methods of thinking, researching and disseminating.



Original version
of Banister Flight
Fletcher's 'Tree of
Architecture' from
the book's 5th
Edition (1905) ©
RIBA Collections

Shantytowns, housing and state order: the Plan de Emergencia in 1950s Argentina

Dr Adriana Laura Massidda, Leicester School of Architecture, De Montfort University,
UK



Aerial view of Barrio Derqui, one of the neighbourhoods built as part of the Plan de Emergencia, shortly before its opening. Buenos Aires, Tres de Febrero district, 1958. Banco Hipotecario Nacional, "Plan de Emergencia"

In September 1955 in Argentina a coup d'état backed by a heterogeneous coalition of military and civil actors overthrew the elected government of Juan Domingo Perón and set out to profoundly alter most of his policies. One key aspect to be addressed was that of housing and, by extension, the role of shantytowns in the urban landscape. Indeed, after a decade of significant social and economic change, urban employment had grown faster than housing provision and shantytowns had expanded rapidly, gaining sudden visibility.

This research analyses the first shantytown eradication programme launched in Argentina, the Plan de

Emergencia (1956), to uncover the conceptions of housing sustained by the state at a crucial historical juncture. It will be argued that the Plan re-cast earlier ideas on housing and planning, updating them in line with the new political context. In doing so, it reflected the contradictions of the historical moment, for example by recommending state-sponsored clearance alongside state withdrawal from housing funding. Furthermore, the Plan intertwined local concerns with inter-American discussions, engaging with emerging professional networks in the Cold War Americas and setting a key antecedent for forthcoming housing and urban plans during the 1960s and 1970s.

Robotic Building: Architecture in the Age of Automation

Mollie Claypool, Manuel Jimenex Garcia & Gilles Retsin, Bartlett School of Architecture, UCL, UK

Automation, presented as synonymous in this work with the term robotic building, is problematised through a critique of the consequences of existing incompatibilities between digital design and digital fabrication; and the adoption of automation into existing construction practices, on the architectural discipline. The research presents this through two main concepts, that of the assembly problem, or the inability of existing approaches to automated design strategies to reconcile effectively with existing building practices, and the automation gap, or the lack of innovative solutions in construction automation around social practices in architecture and construction. This research challenges architectural production to think more imaginatively about issues regarding labour, technology and production when faced with increasing automation. It does this by arguing that modernist architectural syntax is unable to cope with increasing automation without a radical, creative rethinking of the assembly problem and automation gap, centred on how the core elements of architecture – its parts – intersect with automation.

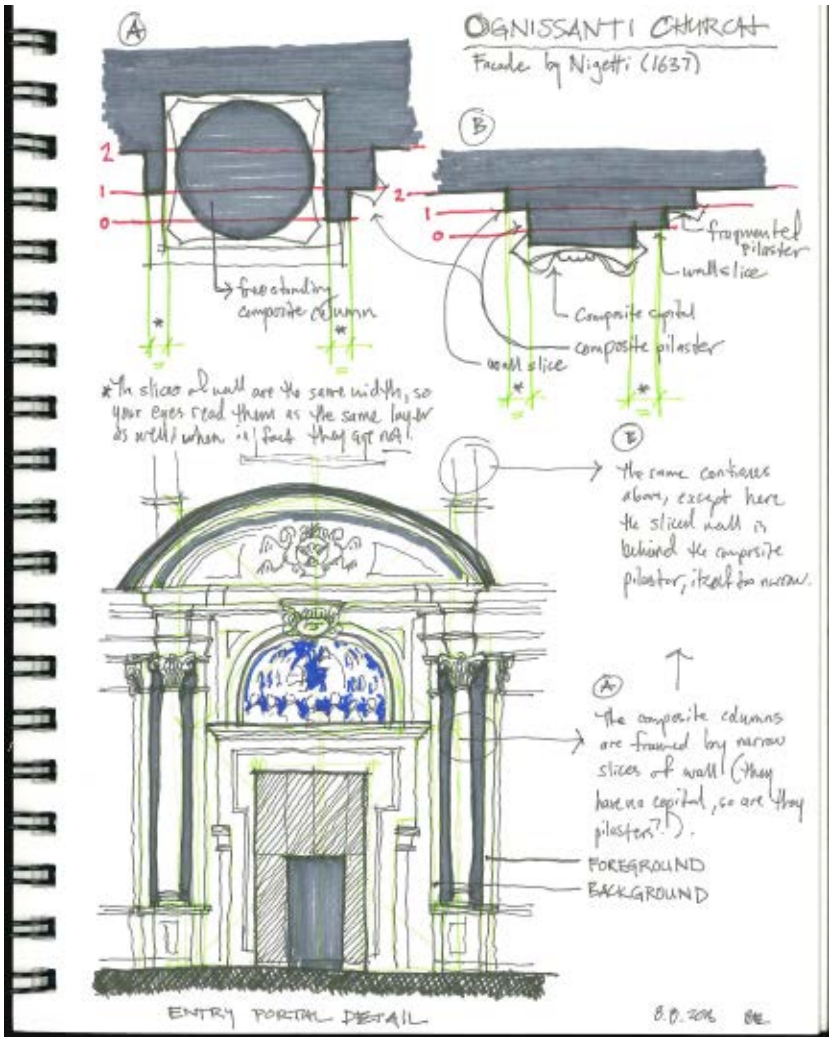
The research then asks: what is the architecture that is suitable for an age of automation? Drawing multi-disciplinary work across computer science, mechanical engineering, architecture, construction and the social sciences from the mid-twentieth century onwards, the research adopts the concept of digital materials from mechanical engineering, integrating serialised combinatorial logics in order to articulate a new architecture syntax for automation based on discrete part-to-whole relationships. This is expanded upon through historical and contemporary design precedents framed through three main themes – Assemble, Many and Diffuse – and by incorporating the author's design research in the Design Computation Lab at Bartlett School of Architecture, UCL. The research demonstrates how the integration of automation into architectural production – at the intersection of technology, tectonics and culture – could liberate both architecture and construction from existing insufficiencies in their social practices for design and building.



Tallinn
Architecture
Pavilion,
Gilles Retsin
Architecture, 2018
© Gilles Retsin
Architecture

The Gospel According to Colin: Rowe, and Modern Architecture in Postmodern Education

Dr Braden R. Engel, School of Architecture, Leeds Beckett University, UK



Depth analysis
of the Ognissanti
façade
© Braden Engel

Colin Rowe (1920-1999) is recognized as one of the most influential architecture teachers of the twentieth century. This study investigates the methods that made him so influential, and the lessons his strategies teach us about the pedagogy of uncovering meaning in the built environment. I argue that Rowe was a successful teacher because he understood the value of engaging students with modernity's gift of free invention. This is the Gospel according to Rowe. Paralleling the promises of modern architecture to faith in Hebraic-Christian salvation, Rowe led his students into the temptations

of modernism through historical analyses in order to test their convictions in architectural design. His use of the Bible is the key that unlocks both the value of his teaching and our interpretation of his ambichronous historiography. Rowe produced students proficient in curiosity and criticality through his unique use of four postmodern devices – irony, paradox, ambiguity, and refutations – which serve to focus each chapter. This research enables a more balanced appreciation of Colin Rowe while rethinking attitudes to design education and historiography.

Architecture of Oratorian Missionary churches in Sri Lanka: Origin, contextualisation, destruction and reconstruction

Sagara Jayasinghe, Faculty of Architecture, University of Moratuwa

In 2009, the end of the 30-year long civil war finally allowed more scholars to revisit the northern regions of Sri Lanka, allowing for the rediscovery of a set of humble church buildings unique to the region. These religious constructions originated by Goan Oratorian missionaries from the Congregação do Oratório de Santa Cruz dos Milagres in Portuguese India, played a crucial role in the maintenance and restoration of the building programme of Catholic Church in Sri Lanka during and after the anti-Catholic Dutch persecutions in the 18th and 19th centuries. They present a very coherent architectural typology, the only "Oratorian model" church known in the whole world. However, currently, these churches are rapidly disappearing and are being rebuilt with new religious zeal under the financial cares of the Sri Lankan Tamil Catholic diaspora. Therefore, this research intends to study the origins, typologies and destruction and reconstruction process of the Oratorian Missionary

churches in the northern regions in Sri Lanka, as well as its contextualization from the later Portuguese period until nowadays. Moreover, the study will help to communicate the architectural significance and to raise awareness among local communities and relevant authorities to preserve and restore this unique cultural heritage. In addition to the scholarship of historiographical sources, architectural measured drawings and photographic data of over twenty remaining churches in the old Oratorian Mission stations in the northern and north-western provinces of Sri Lanka are systematically analysed in within the context of their spatial programme and typological models. They range from small chapels built in clay or stick to larger churches built in brick or stone. These edifices portray significant indigenous and tropical characteristics which are radically different from other models of Christian churches of the same era, in Sri Lanka.



Interior view of the church of St. Joseph's in Kanthankulam, Mannar © Sagara Jayasinghe

Mary and David Medd's work: domesticity in Post-war British school design (1949-72). A gendered approach to the Development Projects.

Dr Paula Lacomba Montes, Department of Architecture-Technical University of Valencia

Dr Alejandro Campos Uribe, TU Delft Faculty of Architecture, Netherlands



Barry Parker and Raymond Unwin in *The Art of Building a Home*, 1901 (left), Finmere Primary School by Mary and David Medd, Ministry of Education, 1958-9 (right) © David and Mary Medd Collection at the Archives of the Institute of Education, (left) University College London (right)

What do they have in common the Red House by Baillie Scott and Finmere Primary school, designed and built between 1958-59 by the Ministry of Education? How did the bay windows or dining recesses, from the Arts and Crafts' houses by Scott, Shaw or Pugin, come to Post-war British school design to create homely environments? How do these foster an intimate and safe atmosphere that assists belongingness? This research tries to answer these questions by focusing on the schools developed by (specially) Mary and David Medd within the Ministry of Education in Great Britain, 1949-1976. As we will demonstrate, their main contribution to the field of Educational Architecture was the definition of a design strategy known as Built-in variety, where the self-contained classrooms (empty-box-school) disappeared in favour of a variety of dissimilar places. Indeed, the Medds sustained a very innovative view from which primary educational architecture was profoundly reconceptualized, getting closer to a

home than to an institution. Actually, we argue that it was precisely that driving principle—school as a home—what was responsible for the dismantlement of the traditional school types. By following Michael Baxandall's inferential criticism, the writing proposes a close look into the design process as an object of study in its own right, in search for the underlying ((un)conscious) principles. The acknowledgement of some features of the English house has been a good means for coming to understand the Medds' strategy and its domestic aura, for the schools' spatial hierarchy recalls the internal spatial structure of Arts and Crafts houses of the late 19th century.

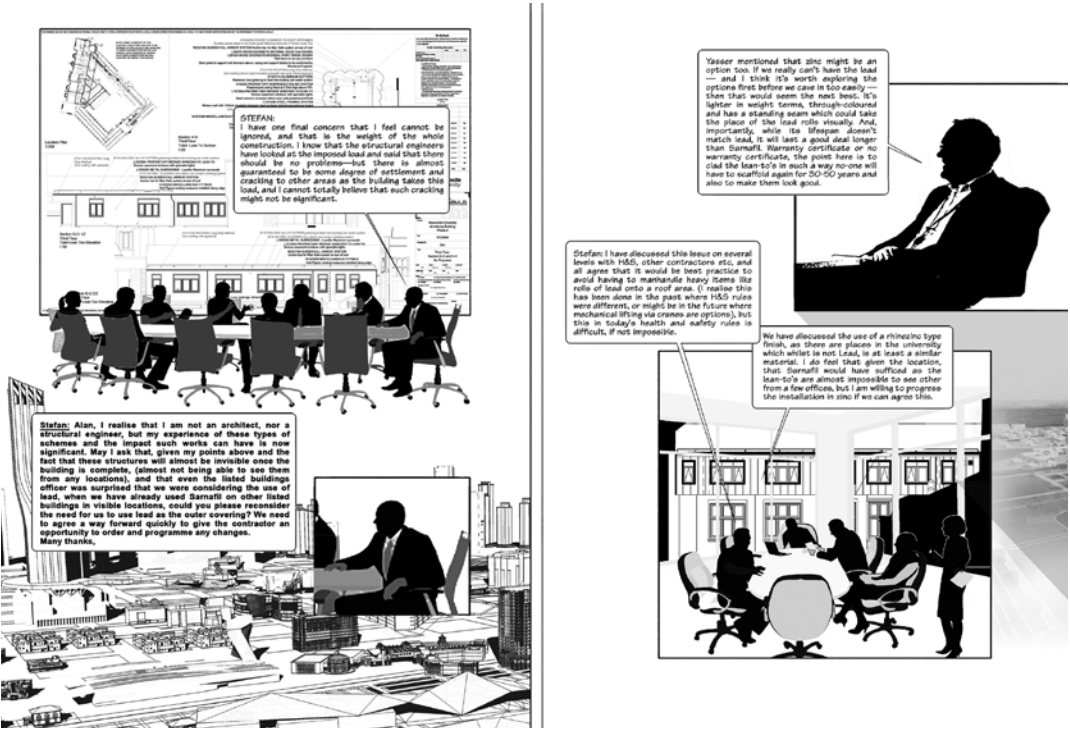
This research, focusing on the domestic aspect of Educational Architecture, could constitute a key to reformulate school design principles, particularly under current circumstances, promoting the definition of small specific and safe areas, adapted to particular educational needs.

Dramatising Conflicts in Architectural Production: Using an Architecturally-themed Graphic Novel to Examine Competing Ideologies at Work among Actors of the Construction Industry

Dr Yasser Megahed, Leicester School of Architecture, De Montfort University, UK

With the growing technical and technological specialisation in contemporary building production, decisions typically paired with the specialist knowledge of the architect have become implicated by the values of the multiple actors of the building industry with whom it cooperates. The agendas of those actors tend to follow what can be broadly described as a technical-rational ideology. The term refers to a set of values related to practicality, audit, and performance and risk management that have dominated building production from the second half of the 20th century. The growing domination of the technical-rational values on the building process raises critical questions about certain priorities of architectural profession and its role in the construction industry. Setting this out, this research investigates the complex intersection of values between the architectural profession and other members of the construction industry under the domination of the technical-rational ideology over building production. The research focuses on the entangled relationships found in the

records of projects' design, construction progress, and value-engineering meetings, where disparate views of key actors in the building process manifest, interact and clash. Using methods of practice-based research, storytelling, design fiction and cartoon, the author has produced an architecturally-themed graphic novel to reflect upon a live architectural project in the UK; in which the author was the appointed concept and executive architect. The novel exposes different ideologies operating at work among architects and other members of the construction industry, their varied disciplinary positions to professional situations, and the largely tacit assumptions which inform these positions. The research concludes with speculations about the shape of the future of the architectural profession and how its contemporary position in the industry may indicate some certain scenarios about its prospect trajectory. It ends with a reflection on graphic novels as a promising tool for communicating practice-based research in architecture.



Excerpts from the graphic novel dramatising competing ideologies at work among actors of the contemporary construction industry. © Yasser Megahed

Invisible Cartography: The favela in the cartographic production of Rio de Janeiro

Thiago Tavares Abranches de Soveral, Architectural Association School of Architecture, UK



Illegal power supply connections. Alguem Sabe Como Funciona Gato de Energia?, Fórum UOL, 2016 <http://forum.jogos.uol.com.br/alguem-sabe-como-funciona-gato-de-energia-_t_3805654> [accessed 28 September 2017]

The favelas of Rio de Janeiro have existed for over 100 years. However, its existence in official documents, maps and plans throughout this period is scarce and inconsistent. The issue of favelas versus cartography is the focus of this research. Its registration or absence in the city maps influenced the way in which the city was imagined and drawn. The fact that the irregular settlements were not registered or mapped, and thus recognised as urban territory, has meant that these vast areas within the city did not receive infrastructure. Non-mapping resulted in administrative abandonment. Therefore, in order to understand the rational of the urban form of Rio, it becomes necessary to understand the presence of the favela phenomenon in the

cartography throughout the city's history. The argument that I seek to defend is that the cartographic production kept the favela as an invisible part of the city, and especially in recent years, this invisibility was a political option. Today, an urban form of the city of Rio is a by-product of this policy of invisibility, which allowed and stimulated a specific type of fragmented urban territory that can be found throughout the city. This study was based on extensive archival research. For this I used several sources, from municipal and federal archives, focussing mainly on official documents, but also relevant commemorative or touristic cartographic records.

Casa Sperimentale – uncovering fractured (hi)stories

Prof Patrick Weber, Prof Sabine Storp, Bartlett School of Architecture, UCL, UK

The Casa Sperimentale is a largely unknown house built by Giuseppe Perugini, his wife Uga de Plaissant and their son Raynaldo between 1968 and 1977. Sitting in a pine growth in Fregene, a coastal town near Rome, the house was conceived as a 1:1 testbed for ideas the Perugini family experimented with responding to concepts developed in collaboration with the Italian historian Bruno Zevi. Starting with not much more than an idea for a concrete treehouse, an open-ended budget, and no time limit the family embarked on a decade long journey. Not many drawings were made, the project echoes ideas of Umberto Eco's Open Work. After the death of both Giuseppe and Uga the house has been abandoned and is now at risk of catastrophic collapse. Our research has been a journey of discovery. Staring out of a curious interest of what has happened and

why it was abandoned, we have been trying to work with the owner of the building to determine how the building can be saved. Over the last five years this process has developed many facets – starting with uncovering the historical context that led to the creation of the building, placing it in the correct canon of post-war Italian architecture, understanding the collaboration of the three architects. We started with a detailed 3D scanning survey of the building – creating a digital facsimile that can be virtually visited, leading into a scale model that has been used as a tool to demonstrate the modular structure and construction of the building. We uncovered Perugini's passion for baroque number sequences and his application of these through early computing onto an architectural process. In addition to this, we documented the oral history of the building through interviews.



Casa Sperimentale, June 2019 © Patrick Weber, Andy Tye

June 2022

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