

volume 13_2021
N°_1-2_part 1

S A J

serbian architectural journal

LESSONS FROM EXPERIENCE
AND PERSPECTIVES FOR EDUCATION
_2021_1-2_PART_1

Serbian Architectural Journal is published in Serbia by the University of Belgrade - Faculty of Architecture and distributed by the same institution / www.saj-journal.org

All rights reserved. No part of this journal may be reproduced or transmitted in any form or by any electronic or mechanical means [including photocopying, recording or information storage and retrieval] without permission in writing from the publisher.

This and other publisher's books may be purchased at special quantity discounts for business or sales promotional use.

For informations, please e-mail at saj@arh.bg.ac.rs or write to the following address.

Send editorial correspondence to:
Serbian Architectural Journal
Faculty of Architecture
Bulevar Kralja Aleksandra 73/II
11 000 Belgrade, Serbia

ISSN 1821-3952
e-ISSN 2787-1908

Cover photo:

The metamorphosis of my window at dusk using shuttering origami, 2021
Movie still by Cen Ma.

volume 13 _2021
N° _1-2 _part 1

S A J

serbian architectural journal

LESSONS FROM EXPERIENCE AND
PERSPECTIVES FOR EDUCATION

_2021_1-2_PART_1

s e r b i a n a r c h i t e c t u r a l j o u r n a l

EDITOR-IN-CHIEF:

Vladan Đokić

EDITORIAL BOARD:

Ajla Selenić, Ajla Selenić Architecture - Design - Art, Helsinki, Finland

Aleksandar Ignjatović, Faculty of Architecture, University of Belgrade, Belgrade, Serbia

Aleksandra Stupar, Faculty of Architecture, University of Belgrade, Serbia

Alenka Fikfak, Faculty of Architecture, University of Ljubljana, Slovenia

Ana Nikezić, Faculty of Architecture, University of Belgrade, Belgrade, Serbia

Anastasios Tellios (School of Architecture, Aristotle University of Thessaloniki)

Ashraf M. Salama, Department of Architecture, University of Strathclyde, Scotland

Branko Mitrović, Department of Architecture and Technology, Norwegian University of Science and Technology, Norway

Budimir Sudimac, Faculty of Architecture, University of Belgrade, Serbia

Đorđe Stojanović, Faculty of Architecture, University of Belgrade, Serbia

Ivor Samuels, School of Geography, Earth and Environmental Sciences, University of Birmingham, England

Jelena Atanacković-Jeličić, Faculty of Technical Sciences, Novi Sad, Serbia

Jelena Ristić-Trajković, Faculty of Architecture, University of Belgrade, Serbia

Jörg H. Gleiter, Institut für Architektur, Technical University Berlin, Germany

Julia Gatley, School of Architecture and Planning, CAI, University of Auckland, New Zealand

Konstantinos Sakantamis, Department of Architecture, Aristotle University Thessaloniki, Greece

Loukas Triantis, Faculty of Architecture Thymio Papayannis and Associates Inc., Athens, Greece

Luka Skansi, Department of Architecture and Urban Planning, Politecnico di Milano, Italy

Marija Maruna, Faculty of Architecture, University of Belgrade, Serbia

Mia Roth-Čerina, Faculty of Architecture, University of Zagreb, Croatia

Mina Petrović, Institute for Sociological Research, University of Belgrade, Serbia

Miodrag Šuvaković, Fakultet za medije i komunikacije, Univerzitet Singidunum, Serbia

Mirjana Lozanovska, School of Architecture and Built Environment, Deakin University, Australia

Renata Jadrešin Milić, Faculty of Architecture, UNITEC Institute of Technology, New Zealand

Ruth Ron, School of Architecture, University of Miami, USA

Ružica Bogdanović, Faculty of Transport and Traffic Engineering, University of Belgrade, Serbia

Uta Pottgiesser, Faculty of Architecture and Built Environment, Technical University Delft, Netherlands

Vasilije Gvozdrenović, Department of Psychology, Faculty of Philosophy, University of Belgrade, Serbia

Vítor Oliveira, International Seminar on Urban Form; Research Centre for Territory Transports and Environment (CITTA / FEUP), Portugal

Vladimir Mako, Faculty of Architecture, University of Belgrade, Serbia

Žaklina Gligorjević, Kontura Design and Consulting, Belgrade, Serbia

Zoran Lazović, Faculty of Architecture, University of Belgrade, Serbia

s e r b i a n a r c h i t e c t u r a l j o u r n a l

LIST OF REVIEWERS:

Aleksa Bijelović (School of Design and the Built Environment, Curtin University, Perth, Western Australia)
Anastasios Telliou (School of Architecture, Aristotle University of Thessaloniki, Greece)
Anna Karagianni (School of Architecture, Technical University of Crete, Greece)
Christiane Wagner (Contemporary Art Museum, University of São Paulo, Brasil)
Giannis Tsaras (School of Architecture, Technical University of Crete, Greece)
Leonidas Koutsoumpou (School of Architecture, National Technical University of Athens, Greece)
Milena Kordić (Faculty of Architecture, University of Belgrade, Serbia)
Miodrag Šuvaković (Fakultet za medije i komunikacije, Univerzitet Singidunum, Serbia)
Mladen Burazor (Faculty of Architecture, University of Sarajevo, Bosnia and Herzegovina)
Nina Ugljen Ademović (Faculty of Architecture, University of Sarajevo, Bosnia and Herzegovina)
Ruth Ron (School of Architecture, University of Miami, USA)
Theofanis Tasis (Alpen-Adria Universität Klagenfurt, Germany)
Vladimir Milenković (Faculty of Architecture, University of Belgrade, Serbia)

GENERAL INFORMATION



EXECUTIVE EDITOR:

Milica Mađanović

PUBLISHER:

University of Belgrade - Faculty of Architecture

PROOFREADING:

Iris Arsić, AKADEMIJA OXFORD

CIRCULATION:

100

PRINTING:

DONAT GRAF, Beograd

volume 13 _2021 № _1

ISSN 1821-3952

e-ISSN 2787-1908



C O N T E N T S

LESSONS FROM EXPERIENCE
AND PERSPECTIVES FOR EDUCATION - FOREWORD
Ružica Bogdanović

1-18 METAMORPHOSES:
AN ONLINE STUDIO FOR THE *DIGITALFUTURES* WORLD
WORKSHOP EVENT TOWARD LIVING ARCHITECTURE
Rachel Armstrong

19-38 THE HYPERREAL: A NEW NORMAL FOR TEACHING POST-COVID.
TRANSFORMATION OF REMOTE TEACHING EXPLAINED
THROUGH BAUDRILLARD'S FOUR STAGES OF SIMULATION
Mitesh Dixit and Amber Bartosh

39-54 CAN THE 'DESIGNERLY WAY OF THINKING'
BE TAUGHT REMOTELY?
Nora Lefa

55-70 SOFT(ER)WARE OF ARCHITECTURE
EXPERIENCES OF TEACHING INTERIOR ARCHITECTURE AND DESIGN
IN THE TIME OF PANDEMIC
Masa Ruane Bratusa

Guest Editor: Ružica Bogdanović

LESSONS FROM EXPERIENCE AND
PERSPECTIVES FOR EDUCATION

Three common issues prevail in this publication:

- **The digital age and Digital Me, technical innovation and the boundaries between my natural me and Digital Me (artificial)**

Innovation is not a novelty or a privilege of the digital age. It has always been present in human efforts to solve problems, better organise the community, improve the quality of life, work more efficiently, etc. The digital age, however, has brought unprecedented and all-encompassing opportunities for innovation in all walks of life. In the digital age, perhaps more than ever before, there is a growing need for a multidisciplinary approach that has resulted in a growing need for an inter-, multi- and trans-disciplinary approach in art, architecture, science and technology to meet the challenges of modern society.

As Lucas Dietrich' preface to 60: Innovators Shaping Our Creative Future states: 'The future of innovation is no longer in the hands of scientists, artists, or designers working on their own in a laboratory, loft or studio... It is a creative, collective, humanistic endeavor that seeks to find new solutions to the problems of our planet and its future.'

More and more we see the blurring of boundaries between art and science, architecture and computer design, physical and virtual spaces and the self, fiction and reality, all due to the development of new media technologies and innovations that introduce us to modern society.

Philosopher Warren Steinkraus identifies artistic innovation types from 'exploring new techniques or materials derived from technology to significant creative progress within tradition.' The importance is that these types or principles of innovation are also applied to other fields, creating new, hybrid or frontier disciplines in science and human sciences.

• Education ranging from Latin ūniversitās to the University of Bologna (Università di Bologna), the topic of distance learning, and rethinking how we teach architecture and urban design

Every era, a new epoch and each generation gives their own responses to the same questions authors are inevitably asked about on how to create architectural and urban design. The global coronavirus pandemic has further pointed to limitations, not only in our understanding of architecture, but also the existing processes of knowledge transfer. As architects and educators, we are confronted with the need to re-conceptualise and test the settings of the theory of architecture, new ways of researching the existing state of location and territory as well as designing architectural objects and urban public spaces. Digital and virtual platforms are used in all spheres of life and social interaction, and this pandemic, with its own specific circumstances, has initiated the use of such platforms in education, developing and using teaching techniques that enable the concept of space to be understood and researched.

New teaching models point to the potential in the use of new tools, but at the same time imply access to the necessary technological equipment that supports and enables such advantages.

• Covid-19 challenges and the Implications of the Pandemic

The aspiration of mankind to bring nature and technology together, as a way to expand human capacity with the help of technology or to blur natural and artificial boundaries, has always been present in times of pandemics. It is manifested in two ways: how we experience ourselves in the physical environment and how we establish communication with other people, and the quality of this communication.

The differences between the physical, digital, real and virtual are constantly evolving, especially in the new dimension of distance, which we are all part of and preoccupied with.

The challenges arising from the pandemic have created a framework for reviewing many areas, such as educational programmes, ways of transferring knowledge, virtual reality and augmented reality, hybrid reality, and other topics such as special engagement of teachers in remote teacher-student interaction, creating virtual classrooms, and the issue of mobility.

Authors who have been asked to present their experiences and whose works are found in this double issue have inadvertently painted a picture of their Digital Me and as students-participants in this process.

They presented the educational programmes they partook in, critically evaluating the success of applied methods, opportunities for improvement, strengths and weaknesses of these methods and techniques. Weaknesses and strengths relate to the medium itself.

It is necessary to make improvements to what we have achieved and not rush back to traditional face-to-face teaching as a better-established model. We need to take advantage of this opportunity to redefine topics, educational programmes, and to continue to use them in a future without Covid-19 that awaits us.

METAMORPHOSES: AN ONLINE STUDIO FOR THE DIGITALFUTURES WORLD WORKSHOP EVENT TOWARD LIVING ARCHITECTURE

A B S T R A C T

An urgent paradigm shift is needed for the production of architecture but when this new worldview has not yet emerged, then how can we prepare students for this change? This paper highlights the anthropocentric perspectives that have led to environmental disequilibrium, and are being experienced by the ongoing Covid-19 pandemic. In keeping with the move to online studio teaching the METAMORPHOSES studio, a week-long workshop for Inclusive Futures organised by the Experimental Architecture Group and run by Digital Futures World, is outlined both thematically in terms of exploring disruptive paradigms and instrumentally using home as a radical studio space. The paper concludes that in the absence of a formal solution to modern architecture and its environmentally pernicious tropes, pedagogical concerns must turn to challenging concepts and use design-led experimentation to explore the limits of existing practice and establish possibilities beyond them.

1

Rachel Armstrong

Department of Architecture, KU Leuven, Belgium
rachel.armstrong@kuleuven.be

KEY WORDS

MICROBES,
LIVING ARCHITECTURE,
DIGITALFUTURES WORLD,
WORKSHOP,
ONLINE STUDIO,
ECOLOGY,
PEDAGOGICAL.

INTRODUCTION

The environmental tipping point known as the climate emergency has been reached, marking the end of what was once considered a ‘normal’ world. Deadly heatwaves from record temperatures and their associated lack of water have set the stage for large swathes of the land to dry out, and burn. Massive wildfires have ravaged New South Wales, Victoria, California, Greece, and even the Arctic, each time coming ever closer to the populated areas, damaging buildings, and forcing mass evacuations.¹

In other parts of the world, the warmer atmosphere holds more moisture which intensifies downpours resulting in flash flooding, such as in Zhengzhou, where 14 people died when torrents of water rushed into a subway line.² Animals are also suffering. In southwest Florida, an especially intense red tide fuelled by coastal pollution from human sewage, agricultural runoff, and rising ocean temperatures, killed 600 tonnes of fish.³ While each of these tragedies seem like *acts of God*, all were preventable. The massive scale combustion of fossil fuels that fuelled the modern era has trapped heat in the atmosphere, raising average temperature baselines by nearly two degrees Fahrenheit since 1900, and is responsible for all these seemingly separate events.

Architecture embodies the paradigms it represents, enacting their effects through our daily lives and framing the expectations of the architect, the occupants, and society. The modern practice of the built environment is in thrall to industrialisation, a resource-hungry economy, and the power afforded by the combustion of fossil fuel. Typifying how this epoch has been inhabited, Le Corbusier’s observation that a house is a *machine-à-habiter* upheld the minimalist, efficient, sterile, and technologically ornate character of the International Style.⁴ This *architecture of the machine age* crystallised modernism as a form of building design that symbolised social, technological, and industrial progress.

Founded on the insights and excesses of the Enlightenment, which prides itself on humanism, the dominant Western culture has centralised the role of humans in relationship to the order of the world - a worldview that has been built upon and refined by centuries of intellectual debate, aspects of which have been taken up through cultural narratives. Consequently, blind spots in the character of life exist based on historical assumptions, which are reinforced by perspectives that maintain the status quo and so, resist fundamental changes to the nature of ‘human’ development. While anthropocentrism brought Progress, it has also caused ecological devastation, preventing us from being able to evaluate our advances from nonhuman perspectives.⁵ This meant that the processes,

assumptions, and expectations that typify the modern era have been free to damage natural systems. Rolled out globally, they have privileged human needs over all others, except for our beloved machines. Cramming our cities with industrial fossils (plastics and concrete), traversing them with emissions-generating highways and binding them to industrial processes, anthropocentrism has escalated human economic wealth while diminishing environmental riches. The tipping point of this unfolding environmental catastrophe was recorded in tragic detail by Rachel Carson in her 1962 book *Silent Spring*, where songless forests were the price of industrial ecocide.⁶

While sustainability narratives have sought to reduce the environmental impacts of high modernism, its anthropocentric legacy upholds the *status quo*. Green veneers laid over concrete structures and designing more resource efficient buildings do not sufficiently counter the insatiable consumption that underpins our economic systems.⁷ If we are to make a radically different contribution to our planet than its relentless exploitation, then we must go beyond the good intentions claimed by incremental changes. Alternative paradigms than our dominant socioeconomic systems are needed if we are to counter the damaging practices underpinning present notions of ‘human’ development.⁸ To reach escape velocity from the cycles of incremental innovation underpinning our expectations of a *new green industrialised society* (whether that’s version 2.0, 3.0, or version 100) we must develop a new *culture of life*. However, invoking a first-principles re-conceptualisation of how we live that results in profound change seems almost unrealisable, as established infrastructures, economic systems and values constrain what is possible.⁹ While the necessary paradigm shifts have not yet been recognised or acknowledged and may not be implemented in our lifetime, radically new forms of practice can still be developed, even in the absence of the first exemplar, by teaching the attitudes and tools for change.¹⁰

THE CORONAVIRUS PANDEMIC: TOWARDS A CULTURE OF LIFE

 3

Change is difficult and requires significant, ongoing investment in time, energy, and resources. Given our busy lives and the demands made upon us every day, change is something we tend to consider a luxury, or leave until an emergency is upon us. On March 11, 2020 change was no longer an option. The outbreaks of SARS-CoV-2 virus all over the world were declared a pandemic, which confronted us with the consequences of prolonged anthropocentrism on a global scale. Enforced periods of self-isolation ensued in a process called ‘lockdown’, where daily routines collapsed like a global cascade of dominoes.

At first, indoor spaces were welcoming. The time saved in commuting was liberating, and we were able to organise our schedules freely but without being able to go anywhere. Those with online access and white collar employment, such as university tutors, turned to online working, transforming less-used areas of their homes into makeshift offices. As employees weathered the extra costs of overheads in addition to their labour, the home itself started to become more present and we had to find new daily routines for living. Our distance from others grew, unable to visit friends, loved ones, and the dying. We learned the greatest risk of infection was indoors through the breath we shared in poorly ventilated spaces, where microbial atmospheres could work their way through every door, window, and with every visitor. Domestic space took a dark turn as precautionary measures to prevent the spread of Covid-19 imposed restrictions on our usual freedoms. Even the arrival of a package could potentially mean that the virus might cross the threshold, imperilling our health and lives. Quarantines, social distancing hygiene protocols and fear, restricted our access to the haptic realm, distancing us from the comfort of natural touch (washing rituals, gloves), greetings (shaking hands), and physical reassurances (hugs). An ominous psychological dimension permeated everything, creating doubt about what and whom we could trust. For those fortunate enough to be able to work from home discovered that familiar activities (meetings, writing, corresponding, calculating, etc.) now provoked mental health issues, while those already trapped in the discomfort of their living spaces, such as victims of domestic violence and the lonely, could not escape from their torment. At worst, our lockdown living spaces were waking nightmares where we were not safe from a disrupted world, confining us to a space that prevented our much-anticipated return to normality. At best, these gilded cages that separated us from society through deadened digital filters, but even the most computer literate individuals had to return at some point, to a more immediate physical reality. The scars left by these tensions will persist long after the pandemic ends, haunting our living spaces and urban fabric in ways we cannot yet imagine.¹¹

Despite the enforced trauma we changed little, and our concerns remained fundamentally anthropocentric. Focusing on vaccination - a highly localised mode of prevention situated in our own bodies - we continue to neglect tackling the coronavirus through its full lifecycle with potential for multi-species zoonotic transgressions from wildlife to wet markets, to domestic birds, farm animals and ultimately to 'us'. This means we are only addressing the 'human-centred' part of the coronavirus, and leaving intact the conditions that typify its natural history in breeding grounds that will give rise to many new kinds of zoonoses. Even as the pandemic raged through our cities, further zoonoses were already

springing up elsewhere. For example, Denmark, culled its entire population of minks raised for the fur industry after a mutant version of the new coronavirus was detected. In February 2021 alone, the World Health Organisation Disease Outbreak News reported a slew of new zoonotic outbreaks with avian influenza A (H5N8) in Russia; Ebola in Guinea; Rift Valley Fever in Kenya; Ebola in the Democratic Republic of the Congo, and Influenza A (H3N2) in the US.¹²

Exacerbated by animal welfare abuses, global travel and urban density, ongoing human expansion has ‘set the stage for many dissonant encounters with nonhuman ‘others’, and despite our ingenuity in developing vaccines, we must anticipate many more deadly zoonoses. Going forward, dangerous blind spots in our thinking and practice must be urgently addressed, which leave us vulnerable to many further viral transgressions by taking responsibility for the environmental invasions and abuses that we continue to uphold.

USING DESIGN TO MOBILISE CONSTRAINTS AND BRING ABOUT TRANSFORMATION - *METAMORPHOSES*

Despite the disruption, economic pressures and the uncertainty of the lockdown required tutors and students to establish functional teaching relationships. Raising critical questions about the method of learning and type of architecture capable of addressing 21st century challenges the socially-distanced learning posed individual challenges (emotional, psychological, technical, economic, and social), and provided an immersive case study in extreme environments. While online teaching initiatives have been promoted within universities over the last 15 years, social distancing protocols provided a context to (re)discover the platform using new kinds of software programmes. A timely opportunity to explore the limitations and opportunities for knowledge sharing within the global architectural academy was created by DigitalFUTURES World during lockdown. Under ordinary circumstances, DigitalFUTURES is an annual academic event of conferences, workshops, and exhibitions that has been hosted by the College of Architecture and Urban Planning, Tongji University, since 2011. Promoting theoretical and scientific research on computational design and robotic fabrication among academic institutions, it encourages international collaborations and interactions. Instead of cancelling this event, a group of volunteer academics held a continuous, week-long series of talks and workshops that explored every aspect of the potential impact of online communication on design-led knowledge sharing. The event was held on Zoom free of charge.

Building on the concept of distance learning that started as correspondence education in the 18th century, a slow-motion exchange often taking weeks was founded where assignments were mailed to students and responses (or questions)

were sent back to the tutor. Despite the lag, improvements to the postal service ensured the popularity of the service, with the University of London becoming the first university to offer distance learning degrees in 1858. With the introduction of radio and television in the 20th century, massive increases in distance learning were possible, and the University of Iowa became the first university to use television as a learning tool in the 1930s. The University of South Africa reshaped its mission in 1946 to accommodate distance learning and is today one of the world's most innovative institutions in this respect. The Open University in the UK - the largest academic institution in the United Kingdom, one of the largest in Europe, and indeed the world - has been awarding undergraduate and postgraduate degrees as well as non-degree qualifications, such as diplomas, certificates, or continuing education units, to more than 2 million students since its inception in 1969.

From the 1980s the increasing availability of computers has brought many innovations to distance learning, but it was not until the Covid-19 pandemic that students and tutors were 'persuaded' to fully surrender to online education. Coinciding with the run-up to exam time, the classroom was simultaneously placed into the virtual domain and domestic environment. Institutes and academics responded by using a slew of online platforms from *Skype for Business*, *Microsoft Teams*, *Cisco's WebEx Meetings* and *Zoom* being among the most popular. Notably, all share a communications interface that combines persistent workplace chat, video meetings, and file sharing. Lockdown knowledge was revealed as a collaborative environment - not a database for information gathering.

Generating a new literacy in architectural education that aimed to prepare participants for radical change, the Experimental Architecture Group (EAG)¹³ organised the workshop *METAMORPHOSES: Unruly Architecture and the Consolations of Ritual* in the second year of the DigitalFUTURES World event for the Bio-FUTURES themed track.¹⁴ Biologically speaking, metamorphosis is the process of profound physical changes that occur in some non-mammalian animal species during their development from immature stages to the adult form. Despite the ongoing age of biotechnology, the secrets of metamorphoses have not been fully deciphered, and their mechanisms remain incompletely characterised but are invoked and realised through breakthrough innovations, such as stem cell technologies where mature cells are sent back into an embryonic form to become another cell type. Such real yet seemingly magical ability to become something else confers a metamorphic entity with different qualities, powers, and relations for transforming worlds, not just bodies.

This was the theme of the Roman poet Ovid's collection of mythological and legendary stories, many originating from Greek sources. His thematically unrelated stories are told in chronological order from the creation of the world (the first metamorphosis of chaos into order) to the death and deification of Julius Caesar (the culminating metamorphosis). Embedded in the complexities of the living world, the stories of many different kinds of metamorphosis engage with the challenges we face, and unleashing our creative capacity to overcome them. To design is to change the nature of matter from one material expression into another, but the human biological and cultural evolution quest for inviting spontaneous, deeper, more valuable transformations of one substance into another has roots in magic, alchemy, and the modern sciences closely linked with technological innovations.

Culturally, material transformation still implies its mediation through a supernatural bond between people and ecosystem, where insights of science provide access to new knowledge that has provoked new understandings of reality. Most notably these were through quantum physics, which have simultaneously led to developments in material culture, technology, and symbolic expression. While Ovid was a great inspiration to Shakespeare, the alienation of Gregor Samsa, who one day woke up as a giant dung beetle, began over 2,000 years later. The rest of Franz Kafka's story follows the changed man's thoughts and actions as he is locked in his room and cut off from his family and his former life, where nobody would even look at him once a bug, let alone bond with him. Both transcendence and punishment, the secrets of material transformation encoded in metamorphosis produce a source of bittersweet narratives that can help us reimagine ourselves, our lives, and our world anew.¹⁵

ONLINE STUDIOS: REACHING BEYOND TRADITIONAL STUDIO SPACES INTO THE DOMESTIC REALM

Using the global online platform as an interface to the participants' informal domestic studios (kitchens, living rooms, bedrooms, etc.) tutors Rachel Armstrong (BioDesign), Rolf Hughes (storytelling/performance art), Maria Usk (puppetry), Jan Wurm (architecture), and Esther Armstrong (scenography) turned this site into a studio space for creative praxis. Participants from all over the world (Japan, China, the US, Columbia, Lebanon, and India) had been locked down for months in these spaces, which had separated them from their usual routines, and estranged them from all expectations of normality.

Embarking on an active process of transformation, the studio theme challenged the premise that architecture is static, inert, lifeless, asking what an architecture would be that could transform itself in ways that are more like nature. Working with approaches that combined and confused the physical and digital worlds within their homes, participants explored methods of empowerment that enabled them to reconfigure their relationships with the changed world. Having reframed the objective perspectives of science by invoking a holistic dialogue between the mind, body, environment, life, and matter, the climate emergency, and the negative side-effects of the Anthropocene such as the Covid-19 pandemic were considered indicative of our inseparability from natural forces.

Participants were invited to imagine how such a radical turn of events could take place through the power of (material) transformation, the resilience of the living realm and its ability to enchant, and what impact this would have on the neighbouring spaces, materials, inhabitants, communities, economies, political landscapes, and ecosystems. The inner life of such spaces was also acknowledged and responses to such unruly architecture were also invited. The starting point for each metamorphosis began with consolidating a set of values identified during the pandemic lockdown or identified while in the presence of nature. These were then expressed by designing, enacting, and transforming a site in each participant's home environment, developing a ritual associated with metamorphosis using scenography, sonic, material and narrative/poetic transformation, and performance techniques.

Since the participants were limited to their immediate surroundings, their methods and materials were adapted accordingly. Gathered from the home, or during permitted excursions into their immediate environments, overlooked materials were commonly used such as ash, nail varnish, hand gels, surgical gloves, discarded plastics, leaves, petals, hair, twine, rice, pocky, noodles, sugar, cooking oil, mirrors, and other seemingly insignificant items that had taken on a new meaning. Mappings, recordings, drawings, and sound were used to construct a ritual and ritualistic space through their scenographic placement. Spaces affording such opportunities included kitchens, bathrooms, staircases, bedrooms, windows, and balconies. This juxtaposition of the familiar alongside the out-of-place allowed the materialisation of an intense space that embodied the ethics and values of life which participants wished to reconfigure, transforming everyday living spaces into sacred, metamorphic theatres. For example, domestic lighting and 'found' elements, like the time of day, and even the Zoom interface itself, were used to create atmosphere and generate narratives. Sound was

explored as a fabric and sampled, drawing our attention to the ambient noises of spaces at different layers and different levels with the chosen sites. While the simplicity of materials, objects, clothes, liquids, and tools highlighted the limits of domestic spaces as workshop, it also facilitated a creative engagement in the immediacy of sites as a method for conjuring forth the extraordinary from the everyday enabling participants not only to imagine but actualise change and transformation.

Converting the domestic environment into a place that expresses the possibility of real change in the world, participants were provided with a series of short, stimulating talks and exercises to enable them to find ways of expressing and interrogating their values as iterative, physical, spatial, and material acts. Aiming to empower participants to become the changemakers of the near future, the programme addressed ways of helping them identify their core values and then act upon them using design-led practices and processes. Requiring the use of all senses as a starting point for a new kind of being-in-the world, participants explored their responses through a designed metamorphosis. While people are not said to undergo physical metamorphosis, a radical transformation in our own thinking and attitudes is, however, essential not only with respect to how we see the world but also explore our own role within it.¹⁶

In addition to the taught material, the participants received feedback on their progress from unfamiliar presences and voices from all over the world, which entered by Zoom into the participants' homes to observe their work and studio spaces. Rather than the familiar show-and-tell of a conventional studio, presentations were acts of discovery expressed through performance ecologies, whose diversity was heightened by readings through different cultural perspectives. Within a very short space of time, the participants had transformed the complex ideas put forward by the tutors into multiple formats ranging from short films to installations, reappropriated objects, and even transformed the native features of Zoom as a platform for storytelling.

The efficacy of these practices and the potential of working with everyday objects and experiences was liberating, as it enabled artistic exploration, expression, and exchange in an uncomplicated way via Zoom without being unduly impeded by the technological interface. Though participants came from a wide range of visual and architectural design disciplines, each highlighted the significance of things that were seen as initially unimportant, but during lockdown became vital, spotlighting issues of privacy, the necessity of routine, relationships with nature and fear of the outside. Each proposition disrupted notions of personal space, the comfort of domestic shelters, and generated new learning experiences. These

sought to understand that different kinds of metamorphic ‘transformation’ exist; find ways of experimenting with unfamiliar materials and processes, develop a re-figured sense of architectural practice; identify ways of finding and working with the ‘inner life’ of things/spaces; use sound as a spatial material; develop tools and protocols for ritual making that explore the possibility of change and learn to construct a spatialised, ritualised design-led narrative in a short amount of time.

Seeking a design language that captured and facilitated engagement with the ongoing, unprecedented, ecologically tumultuous times, the participants set out to animate an experience, propose an emerging lifestyle, or design synthesis that embodied and explored design, architecture, theatre, and performance practices. The final work was a synthesis of discoveries that conveyed the values embodied in each participant’s domestic site, synthesising the outcomes in a video format. These interventions were considered as one example of transformation, an embodied, dynamic process, to open up to alternative ways of sorting, ordering, and valuing the world. Each video was, therefore, a design-led statement about each vision of metamorphosis for living that detailed their thinking and making processes as scenographies; the inner life of designed objects observed through the construction of a ritual; characters changed by a space; and personal transformations, each being characterised by one or more processes of change, if not radical transformation. With the prospect of near-future lockdowns, this online home-school approach to the architectural studio is likely to remain at least partially relevant for knowledge sharing and synthesis for some time yet to come. This marks the advent of domestic spaces assuming the roles previously provided by university, religious, theatrical and concert architectures.

CONCLUSION: ACCESSING THE POSSIBILITY OF METAMORPHIC HOMES AND LIVING SPACES

Examples of reconfigured elements presented during the workshops included discussions of the incorporation of biology into building construction, as well as puppetry techniques that transformed everyday inert materials into animated entities and performance art exercises that altered the experience of time and understanding of character (Figures 1, 2, 3, 4, 5).

Work included embryonic liquid landscapes in the process of coming to life; matter acquiring vital energy from the electromagnetic fields of power cables to take on new expressions;¹⁷ the distillation of elemental forces into vials and containers as new kinds of design materials; haunted spaces; simple subtractions of light through filters to emphasise diurnal variations; the appreciation of

knowledge as a living thing; flights from oppression to new beginnings and the dissolution of gender.¹⁸ Embodying the broad spectrum of knowledge needed for the emerging ecological era arising alongside the climate emergency, these contributions heightened our awareness of the limits of human knowledge, as we collectively try to establish the rules of a new approach towards designing and realising our habitats, which include a functioning educational landscape.

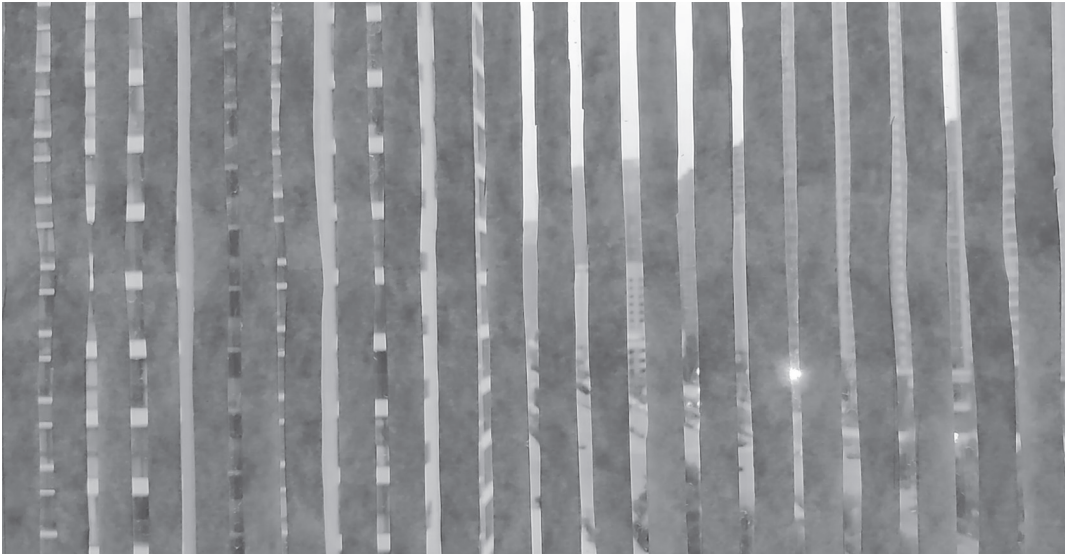
While the Covid-19 pandemic feels significant in its scale and impact, it is just one of many symptoms of our planetary disturbance, and we must urgently find ways of dealing with our species-wide existential crisis, despite having failed to reach any consensus on how to conduct ourselves. Typically, we are used to responding to challenges through innovation - the relentless and valorised search for new solutions and technologies - where successful forays to the marketplace occur within established frameworks of thinking and practice. Almost inevitably, they substitute one existing problem for another. By acknowledging the inner agency of nonhumans and establishing an appropriate, responsive ethics to the changemaking system that comprises the living realm, we can make space for uncertainty and staying attentive to unfolding events through a critical (re) evaluation of our knowledge practices, so that we may observe more-than-human cues as starting points for different kinds of awareness.¹⁹

Such synthesis invokes a broader portfolio of tactics including inaction and reconfiguring things that already exist, so we can notice the world acting upon us. Within our altered contexts, every school, public organisation, university, and enterprise can reconfigure established tools and methods to develop their own curricula and policies for confronting the climate crisis. Becoming microcosms of a mutated world, each institution could establish itself as a change-agent, developing ambitious forays and designed metamorphoses that extend power to students and emerging voices as authors and advocates of ecologically-centred ideas, which through their implementation, provide models for critique and adoption by other communities. Such multi-dimensionality poses a challenge for evaluation that must consider integration, flows, relevance, mutability, risk, and the capacity for generative activity. It is an ongoing process of discovery, where narratives are constantly changing, events are always in motion, and endeavours constantly strive for end points we cannot see, where appropriate value systems are also needed to draw our consideration, accompanied by an appreciation of time that our present lifestyles do not afford. Resisting reductive evaluation tropes, such as deconstruction without synthesis, the criticality of *worlding*²⁰ does not lie at its margins but is at the core of decision-making, where inequalities revealed by established epistemologies can be urgently addressed to ensure the constitutional thriving and overall liveliness of our living world.



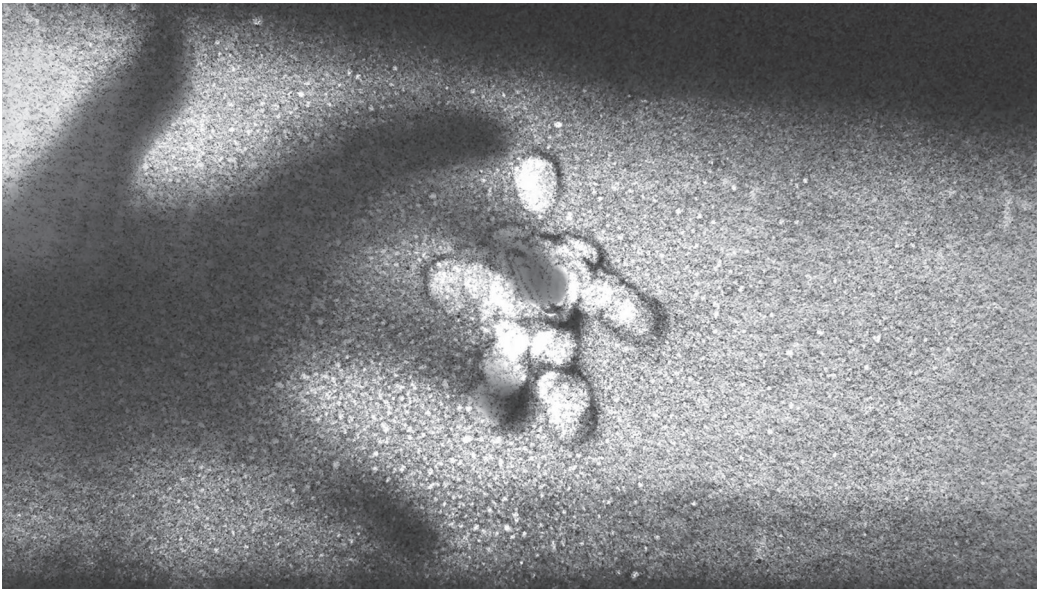
UP: Fig. 1. Liquid Life: using kitchen fluids to generate a self-evolving skin.
Movie Still by Luis Gilberto Junior Matias Rodriguez, 2021.

DOWN: Fig. 2. Electric Dust: exploring the life-bearing potential
of the electric fields emanating from a pylon to bring about transformation and
lifelike properties in the neighbourhood dust. Movie still by Tria Amalia Ningsih, 2021.



UP: Fig. 3. Living Window: using puppetry to engage with the inner life and experiences of a front room window. Movie still by Shivani Raju, 2021.

DOWN: Fig. 4. The metamorphosis of my window at dusk using shuttering origami. Movie still by Cen Ma, 2021.



DOWN: Fig. 5. Now I am safe: sandbox amination. Movie still by Evelyn Bulege, 2021.

NOTES

- 1 A. Borunda, 'Zombie' fires in the Arctic are linked to climate change. *National Geographic*, 19 May 2021. [online]. Available at: <https://www.nationalgeographic.com/environment/article/zombie-fires-in-the-arctic-are-linked-to-climate-change>. [Accessed 12 August 2021].(Kang, 2021)
- 2 D. Kang, After Massive Floods, Zhengzhou's Subway Becomes a Public Mourning Site, *The Diplomat*, July 27 (2021). [online]. Available at: <https://thediplomat.com/2021/07/after-massive-floods-zhengzhou-subway-becomes-a-public-mourning-site/>. [Accessed 12 August 2021].
- 3 Q. Schiemer, How to tell when climate change is to blame, *Nature*, 30 July 2018. [online]. Available at: <https://www.nature.com/articles/d41586-018-05849-9>. [Accessed 12 August 2021].
- 4 Le Corbusier, *Toward an Architecture* (Los Angeles: Getty Research Institute, C.E. 2007).
- 5 A.L. Tsing, H.A. Swanson, E. Gan, and N. Bubandt, *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene* (Minneapolis: University of Minnesota Press, 2017).
- 6 R. Carson, *Silent Spring* (New York: Houghton Mifflin Company, 1962).
- 7 D. Haraway, Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making kin. *Environmental Humanities* 6, 2015: 159–165.
- 8 B. Latour, *Down to Earth: Politics in the New Climatic Regime* (Cambridge: Polity Press, 2015).
- 9 U. Haque, The age of collapse: Why everything's collapsing and what to do about it? *Eudaimonia*, 24 January 2019. [online]. Available at: <https://eand.co/the-age-of-collapse-e606bfc1b46d> [Accessed 26 October 2021].
- 10 R. Hughes and R. Armstrong, *The Art of Experiment : Post-pandemic Knowledge Practices for 21st Century Architecture and Design* (London: Routledge, 2021).
- 11 R. Armstrong, *Safe As Houses: More-Than-Human Design For A Post-Pandemic World* (London: Lund Humphries, 2021).
- 12 WHO, Disease Outbreak News, World Health Organisation. 2021 [online]. Available at: <https://www.who.int/emergencies/disease-outbreak-news>. [Accessed 14 August 2021].
- 13 The Experimental Architecture Group (EAG) was founded in 2017 by Rachel Armstrong, Rolf Hughes, and Simone Ferracina to bring artistic and designed experiment into juxtaposition with the technological repertoire of "living technologies". Fundamentally transdisciplinary and collaborative, EAG's outputs have ranged from written texts to public installations and immersive environments.
- 14 The first DigitalFUTURES World workshop was called Wicked Homes: Sacred Spaces and is covered in detail in *Post-pandemic Knowledge Practices for 21st Century Architecture and Design* (Hughes and Armstrong, 2020), with Rachel Armstrong (experimental architecture), Rolf Hughes (storytelling/performance art), John Bowers (sound art), Jo Liekens (interior architecture) and Esther Armstrong (scenography).

-
- 15 F. Kafka, *The Metamorphosis* (New York: Bantam Books, 1986).
- 16 D.J. Haraway, When species meet: Staying with the Trouble, *Environment and Planning D*, 28(1), 2010: 53-55.
- 17 D. J. Haraway, *Crystals, Fabrics, and Fields: Metaphors that Shape Embryos* (Berkeley, CA: North Atlantic Books, 2004).
- 18 You Tube, 2021)YouTube, METAMORPHOSES video, 14 August 2021. [online]. Available at: <https://www.youtube.com/watch?v=7qYcCAENVFQ>. [Accessed 14 August 2021].
- 19 M. Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More Than Human Worlds* (Minneapolis: University of Minnesota Press, 2017).
- 20 The term ‘worlding’ was first popularised by Heidegger in *Being and Time* (Heidegger, 1978), who turned the noun (world) into the active verb (worlding), and so proposed an ongoing, generative process of world-making that defies formal definitions of object-ness as it is forged by our engagement with it, so it is also always unmaking, renewing, and constantly revealing different aspects of its being (Hughes and Armstrong, 2021).

 BIBLIOGRAPHY

- Armstrong, R. (2021). *Safe as houses: More-than-human design for a post-pandemic world*. London: Lund Humphries.
- Borunda, A. (2021). 'Zombie' fires in the Arctic are linked to climate change. *National Geographic*, 19 May. [online]. Available at: <https://www.nationalgeographic.com/environment/article/zombie-fires-in-the-arctic-are-linked-to-climate-change>. [Accessed 12 August 2021].
- Carson, R. (1962). *Silent Spring*. New York: Houghton Mifflin Company.
- Haque, U. (2019). The age of collapse: Why everything's collapsing and what to do about it? *Eudaimonia*, January 24. [online]. Available at: <https://eand.co/the-age-of-collapse-e606bfc1b46d> [Accessed 26 October 2021].
- Haraway, D. (2015). Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making kin. *Environmental Humanities*, 6, pp.159–165.
- Haraway, D. J. (2010). When species meet: Staying with the Trouble. *Environment and Planning D*, 28(1), pp. 53-55.
- Haraway, D. J. (2004). *Crystals, Fabrics, and Fields: Metaphors that Shape Embryos*. Berkeley, CA: North Atlantic Books.
- Heidegger, M. (1978). *Being and Time*. Oxford: Wiley Blackwell.
- Hughes, R. and Armstrong, R. (2021). *The Art of Experiment : Post-pandemic Knowledge Practices for 21st Century Architecture and Design*. London: Routledge.
- Kafka, F. (1986). *The Metamorphosis*. New York: Bantam Books.
- Kang, D. (2021). After Massive Floods, Zhengzhou's Subway Becomes a Public Mourning Site, *The Diplomat*, July 27. [online]. Available at: <https://thediplomat.com/2021/07/after-massive-floods-zhengzhous-subway-becomes-a-public-mourning-site/>. [Accessed 12 August 2021].
- Latour, B. (2015). *Down to Earth: Politics in the New Climatic Regime*. Cambridge: Polity Press.

-
- Le Corbusier. C.E. 2007. *Toward an Architecture*. Los Angeles: Getty Research Institute.
- Puig de la Bellacasa, M. (2017). *Matters of Care: Speculative Ethics in More Than Human Worlds*. Minneapolis: University of Minnesota Press.
- Schiemier, Q. (2018). How to tell when climate change is to blame, *Nature*, 30 July. [online]. Available at: <https://www.nature.com/articles/d41586-018-05849-9>. [Accessed 12 August 2021].
- Tsing, A.L., Swanson, H.A., Gan, E. and Bubandt, N. (2017). *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*. Minneapolis: University of Minnesota Press.
- WHO. (2021). *Disease Outbreak News*, World Health Organisation. [online]. Available at: <https://www.who.int/emergencies/disease-outbreak-news>. [Accessed 14 August 2021].
- YouTube. (2021). *METAMORPHOSES* video, 14 August. [online]. Available at: <https://www.youtube.com/watch?v=7qYcCAENvFQ>. [Accessed 14 August 2021].

THE HYPERREAL: A NEW NORMAL FOR TEACHING POST-COVID. TRANSFORMATION OF REMOTE TEACHING EXPLAINED THROUGH BAUDRILLARD'S FOUR STAGES OF SIMULATION

A B S T R A C T

The pandemic's redefinition of spatial interface brought with it the need to reconsider our territories of occupation and to study both the 2d and 3d as our built and unbuilt environment. The distinctions between physical, digital, actual, and virtual have evolved and blurred, and we must prepare our students for the new dimensions which we all occupy and engage. Through alternate methods of exploration, investigation, and documentation, we as architects and educators must reconceptualise what constitutes the territory of architecture and use the changes the pandemic has forced upon us to expand our understanding of the architectural landscape and site.

Through a comparison with Baudrillard's theory of simulation from his book "Simulacra and Simulation", this paper describes the evolutionary phases of design instruction over the course of the pandemic. It describes the teaching techniques utilised to help students comprehend the concept of space, landscape, and territory in a time when the events of the world simultaneously constrained us to our domestic habitations and extended our international reach through data and internet connectivity. The foreground, background and focus of the video conference call is playfully examined; the process of remote site analysis is assessed, and the expansion of architecture into the virtual realm is explored. The transformative existing and speculative impact of hybrid-reality architecture is revealed and discussed.

Mitesh Dixit

Department of Architecture & Design, Politecnico di Torino
DOMAIN Office
info@domainoffice.eu

Amber Bartosh

School of Architecture, Syracuse University
abartosh@syr.edu

KEY WORDS

IMMERSIVE,
HYPERREAL,
INFRASTRUCTURES,
TERRITORY,
DESIGN PEDAGOGY,
CRITICAL THEORY,
CRITICAL CARTOGRAPHY

‘If you dislike change, you’re going to dislike irrelevance even more.’

General Eric Shinseki, 2001

INTRODUCTION

Necessitated by the onset of the pandemic, the desire to replicate traditional in-person design education using online tools resulted in an inadequate simulation. The Inside Higher Ed and College Pulse survey from spring 2020,¹ on student voices across campus and in the classroom - plus ideas for action, found that:

- Nearly half of students (47 percent) would rate the value of their education this year as fair or poor;
- More than half (52 percent) say they learned less this year compared to pre-COVID years;
- About one-quarter (23 percent) of freshmen report having felt very unprepared for college; an additional 35 percent felt somewhat unprepared;
- Regarding cheating, 47 percent say it is at least somewhat common in online courses;
- Only about one in five students recalls receiving nudging reminders from their college about both course activity and college business deadlines.

Why? Because one cannot simply impose a system designed for a specific context onto a fundamentally different material and immaterial environment. The method and systems of teaching must be re-invented to allow for a new paradigm of teaching.

Architectural institutions, scrambling to provide a consistent pedagogical structure, largely missed the opportunity to see the pandemic as a moment in time to correct the fundamental injustice in education, e.g., diversity, accessibility, income equality, mobility, to name a few. These biases result from clinging to an ideology that is derived from a 18th century European concept of teaching - per Marx’s concept of historical materialism - the material conditions of a society determine the meaning of human existence.² In essence, Marx argued that every generation must define freedom for themselves. The concept of historical materialism applies to architecture as well. Each generation will have to define what architecture is for their generation. However, one must appreciate that this ‘definition’ is not fixed or certain and will have to exist in a state of radical

impermanence, allowing their definition to evolve. Our generation desperately needs a re-definition – the pandemic has clearly illustrated that we are at an epoch shift. As with the re-consideration of work which has led to the ‘great resignation’ – our generation desperately needs to reflect on how we teach architecture.

Further, the environment for which and within which we design are changing. The trending term ‘metaverse’ is used with both a promise and caution.³ Regardless of its hype status, it is relatively undeniable that the pandemic acted as a catalyst in a move towards digital/virtual platforms for social interactions. This was true of almost all facets of life from business to recreation as offices were emptied, grocery delivery increased, and conferences moved online. For students (and their parents), the impact of switching to remote learning almost overnight was perhaps shocking, but the ‘spaces’ for online interaction had been available for a while. While most people may have never heard of Zoom pre-March 2020, certain industries had been using it for years, and likewise, more immersive AR/VR environments which acquired attention and maturity during the pandemic were under-utilised, but available tools as well.

Employing the four-stages of simulation, as defined by the French sociologist Jean Baudrillard in his book ‘Simulacra and Simulation’, this paper will describe the evolution of an approach to design education which embraced the digital and virtual. It will identify its shortcomings, previous and remaining obstacles as well as positive outcomes of the shift from in-person learning to alternative teaching formats. It will illustrate an attempt to find new tools for design education that respond to the need for new modes of interaction, which respond to both the digital and virtual landscape of our current environment, and the need to address the inherent infrastructural deficiencies of an inherited but outdated pedagogy.

1. BAUDRILLARD AND THE FOUR STAGES OF SIMULATION

Jean Baudrillard (1929-2007) was a philosopher, sociologist, cultural critic, and theorist of postmodernity who challenged all existing theories of contemporary society with humour and precision. An outsider in the French intellectual establishment, he was internationally renowned as a 21st century visionary, reporter, and provocateur. His *Simulations* (1983) instantly became a cult classic, and made him a controversial voice in the world of politics and art.

In the world of Baudrillard, social relations have begun to disappear between humans because humans have begun to disappear. In fact, Baudrillard thinks that reality itself is in the process of disappearing; what has been learned and understood under the name of 'the real'. Baudrillard argued that postmodern is a blurring of the lines between humans and machines, a blurring of the line between reality and image. It is a grouping of the world in which reality is simply that which can be simulated, xeroxed, and copied.⁴

The postmodern trajectory leaves us in a situation where drawing the line between the real and the unreal is no longer merely philosophical but a practical day-to-day issue. Instead, all we have is the Hyperreal, when the simulation transcends the very thing, it was a copy of; it has become more real than the 'real' - the simulation becomes the new real.

2. SIMULACRUM

Is never that which conceals the truth - it is the truth which conceals that there is none.⁵ The simulacrum is true.

2.1. First Stage

Faithful image/copy, where we believe, and it may even be correct, that a sign is a 'reflection of a profound reality'⁶. This is a good appearance in what Baudrillard called 'the sacramental order'.

2.2. Second Stage

A perversion of reality, this is where we come to believe the sign to be an unfaithful copy, which 'masks and denatures' reality as an 'evil appearance - it is of the order of maleficence.'⁷ Here signs and images do not faithfully reveal reality to us, but can hint at the existence of an obscure reality which the sign itself is incapable of encapsulating.

2.3. Third Stage

Masks the absence of a profound reality, where the sign pretends to be a faithful copy, but it is a copy with no original. Signs and images claim to represent something real, but no representation is taking place and arbitrary images are merely suggested as things which they have no relationship to. Baudrillard

calls this the ‘order of sorcery’,⁸ a regime of semantic algebra where all human meaning is conjured artificially to appear as a reference to the (increasingly) hermetic truth.

2.4. Fourth Stage

Pure simulation, NO relationship to any reality whatsoever. Signs merely reflect other signs, and any claim to reality on the part of images or signs is only of the order of other such claims. This is a regime of total equivalency, where cultural products need no longer even pretend to be real in a naive sense because the experiences of consumers’ lives are so predominantly artificial that even claims to reality are expected to be phrased in artificial, ‘hyperreal’ terms. Any naive pretension to reality as such is perceived as bereft of critical self-awareness, and thus as over sentimental. Hyperreality is more real than real.

3. THE FOUR STAGES OF SIMULATION THROUGH TEACHING DURING COVID

Architectural education has become seduced by serving global capital, and as such, the education has been solely focused on producing staff via ‘professional’ course requirements for accreditation, revising curriculum to chase dubious rankings, and a post-graduation intern ‘development’ programme to serve private interest. Perhaps the profound changes required to teach during Covid can provide a way out of a system that has failed both our built environment and students – historically, chaos is the catalyst for invention and progress – the resulting chaos brought on by the pandemic has prompted teachers to not just question how we teach, but most importantly what we teach. Teachers must use this unfortunate crisis as a moment for radical change and an escape from a system that has nearly rendered both the academy and the practice of architecture obsolete. Perhaps the first terrain we must interrogate is the classroom itself. This paper will illustrate how the authors’ employed Baudrillard’s four stages of simulation in an attempt to develop teaching techniques during the pandemic. It is also an opportunity to address the systemic failures within the current structures of teaching to develop a pedagogy that blurs the lines between the real and unreal, physical versus virtual, and address the inherent biases in an educational system that was defined over two centuries ago. In essence, this paper will illustrate an attempt to define a new reality – a hyperreality – for teaching after Covid.

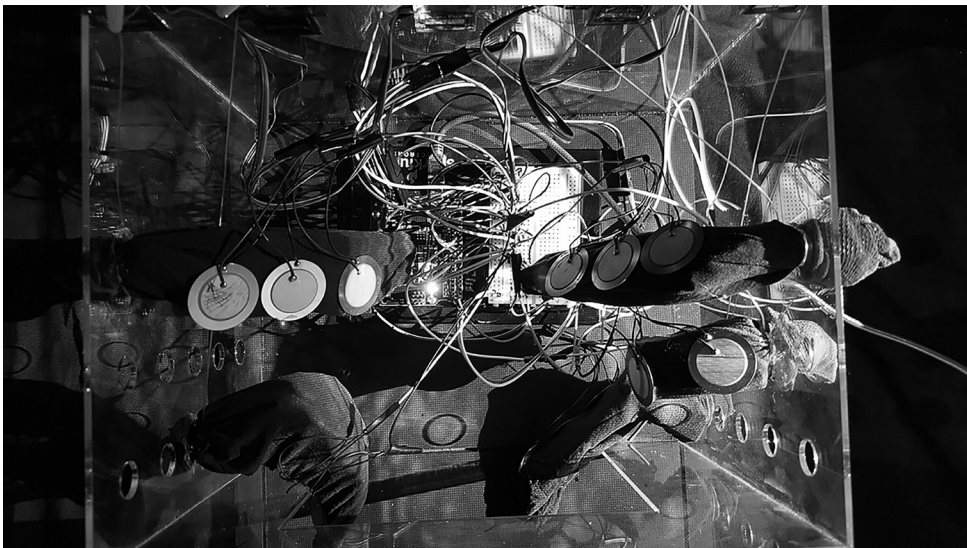
3.1. First Stage - Reflection of a Profound Reality

Over the course of almost a decade, the media courses under the authors' prevue have evolved to reflect changes in the professional and academic application of digital design and visualisation tools. In 2014, graphics-based scripting and animated modelling tools were the advanced digital design tool standard. That year students were challenged to apply these skills in a full-scale constructed installation using digital fabrication techniques, animation, and projection mapping (Figure 1). Each year's course was adapted to build on the year before and introduced new content - including programming and scripting to make interactive digital and physical models using microprocessors, smart phones, augmented reality (AR) applications, and immersive virtual reality (VR) environments (Figure 2). In 2017, this culminated in another installation, a formally complex, student-constructed, sensor-driven interactive physical environment with a parallel virtual environment accessed through a VR headset (Figure 3). In 2018 and 2019, the class integrated geographic information systems (GIS) with visual programming, and animation into immersive VR environments (Figure 4).

With each year, the course evolved to reflect the changing environment within with and for which we design. Initially, the tools themselves were digital, and projection mapping was the most accessible method for enabling occupation of a digital creation. But as virtual environment tools, including AR/VR headsets, became more commercially available, the design products also shifted. Increasingly, digital documentation of physical territories recorded as data (as with GIS or environmental simulation software) was utilised to design information augmented digital versions of those locations that could only be occupied in virtual reality (Figure 5). These digital simulations are indicative of the invisible immersive infrastructures – hybrid realities – which were emerging and expanding the design palette, and the realm of architecture even before the pandemic. These initial designs for hybrid reality were intended as faithful images, digital copies of physical environments, augmented with information to support design communication.

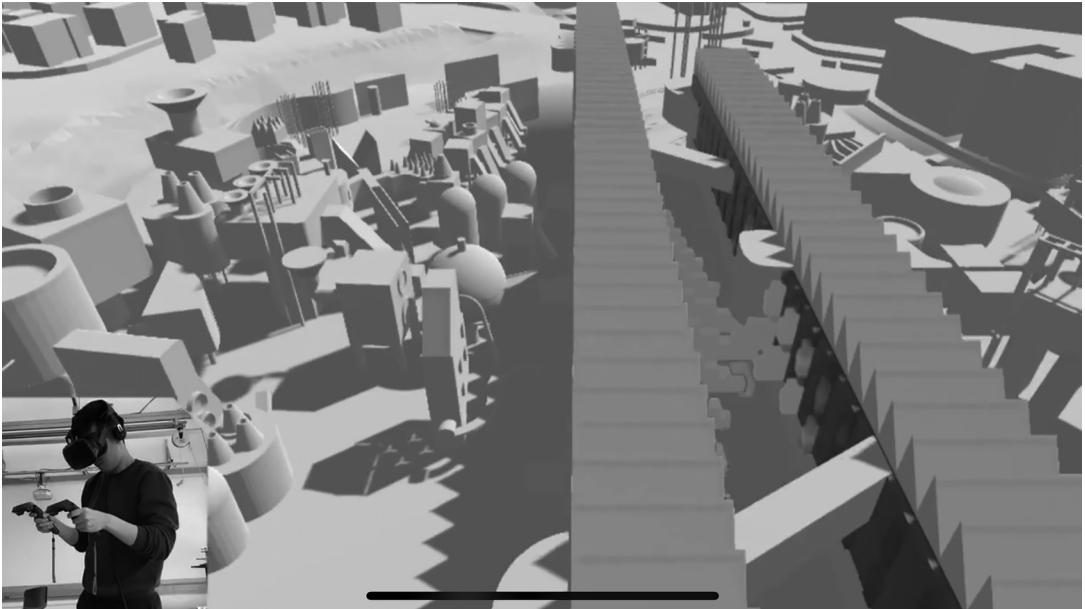
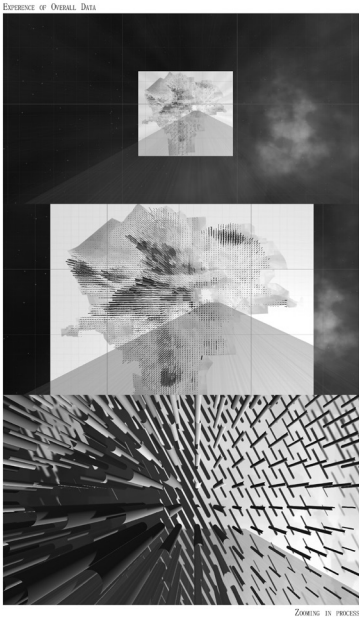


2017-18 | Amber Bantesh



UP: Fig. 1. Physical fabrication and projection mapping techniques were used to construct an occupiable digital façade in 2014.

DOWN: Fig. 2. Students experimented with programming, micro-processors, and kinetic physical models to create interactive architecture.



UP RIGHT: Fig. 3. An iteration of the physical installation, this time implementing sensor-driven kinetic components and a parallel Virtual Reality environment.

UP LEFT: Fig. 4. Spatialised visualisation of GIS data.

DOWN: Fig. 5. Student utilises a VR headset to spatialise visualisation data within a simulated city.

3.2. Second Stage – Perversion of Reality

The transition to an exclusively online format for design education, particularly when it's an approximated interpretation of the expected, resulted in predictable shortcomings in the delivery, short attention spans, and limitations in the capacity for demonstration of the intended learning objectives. Design studios, particularly 'integrated design studios', holistically approach design from concept through to structure, and into detailing. They require the dissemination of professional experience and knowledge and have historically utilised hand sketching, physical model building, and construction fieldtrips as instructional tools. In the fall of 2020, 'hybrid teaching' was the technical offering, but online teaching remained predominant, and a methodology of teaching was established which approximated the in-person studio experience using digital tools like Miro, Conceptboard, Sketchfab, and Modelo as pin-up boards (Figure 6), coupled with the common social interaction softwares like Zoom or Teams.

These tools offered some advantages which should continue to be implemented in post-Covid instruction. Unlike the lost sketches on trace paper or damaged models, the digital pin-ups created archives of student work, and faculty feedback, which could be easily accessed and used to trace the trajectory of the design. External guest critics from all over the world were able to offer advice and insights to students, without travel demands. This broadened the reach of a typical studio budget and allowed for the integration of more expert guests throughout the semester. And new XR techniques were tested that enabled students to create and share interactive building tours and 360-degree digital models remotely.

Unsurprisingly, there were drawbacks to these tools as well, some of which were apparent before the pandemic. Digital modelling tools reliance on panning and zooming made scale and gravity less tangible than the physical models. Material studies were limited to internet searches rather than hands-on demonstrations offering kinaesthetic learning. 'Zoom fatigue' limited student attention spans and engagement, and taxed instructors' capacities as well. Economically or location restricted access to technology and Wi-Fi became an even greater impediment for students, and social distancing inhibited the informal learning opportunities and emotional support previously nurtured through studio culture.

Ultimately, this stage of pandemic teaching was a perversion of the known. While significant effort was made by all, the approximation of 'the real' was always evident. These imitation disconnected students and amplified how

access to resources (or lack thereof) is a factor in architectural education. The juxtaposition acknowledges that a breadth of expertise from all over the world was brought into the classroom via Zoom lectures and new tools for exploration, communication, and dissemination of design were developed and retained.

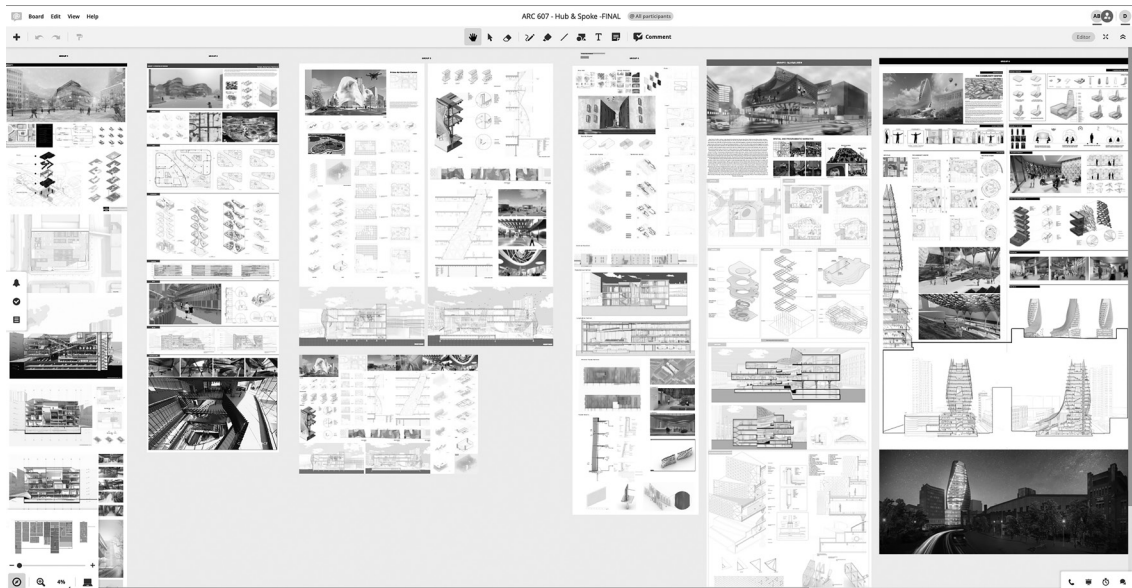


Fig. 6. Digital studio pin-up using Conceptboard platform for communication.

3.3. Third Stage - A Copy with No Original

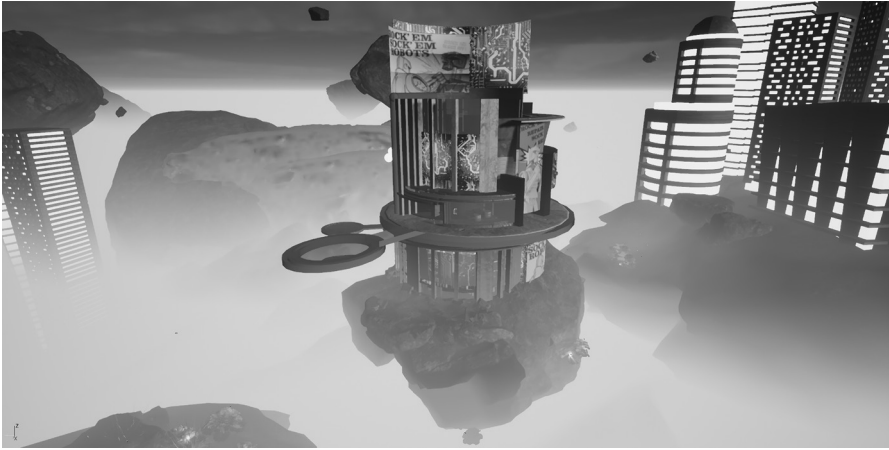
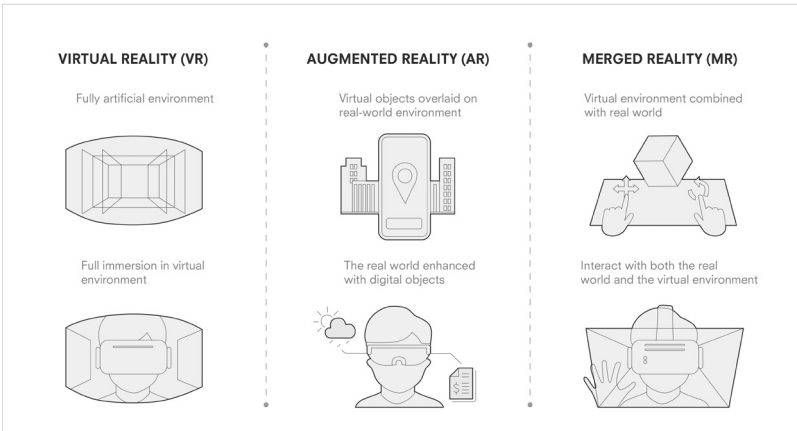
In the fall of 2019, a short intensive two-week summer course delving into the realm of 'XR,' including AR, VR, and MR (Figure 7), was planned for May of 2020. This course was intended as an introduction to the content of the more involved media courses described previously. A multitude of equipment and lab time had been coordinated in preparation for this course, which had to be radically re-considered with the onset of the pandemic. The content was delivered remotely without access to the intended professional equipment by adapting to open-source software and mobile devices. Coupled with the amplified presence of XR in our culture, the increased availability of course content that engages these mediums has propelled the capacity of students to use and question their architectural value through studios and independent projects (Figure 8). Students were able to use online and mobile devices to

develop a range of shareable content implementing XR principles through the web and as customised mobile applications to create immersive, interactive environments. Although this course had no actual precedent and was novel out of necessity, it unveiled a host of resources available for implementing XR as a design and a communication tool without expensive equipment. These tools were then utilised in subsequent studios to help convey design ideas, 3-dimensionally and interactively, even in remote-learning settings (Figure 9).

This evolution of an XR-informed design course into a ‘faithful copy’ of the original intent struggled with accomplishing learning objectives across multiple software platforms and devices, with shifting updates, and no opportunity for easy hands-on assistance. But it opened a new level of accessibility to a previously exclusive realm – one which required labs filled with powerful processors and expensive equipment. Pushed to do so, conventional XR visualisation tools were substituted with open-source software and ubiquitous personal devices. These new mechanisms could not entirely replicate the virtual realm of an AR or VR headset, but they certainly pointed out how digital & virtual realms, even when accessed via tiny hand-held screens, are increasingly sites for architectural occupation and immersive interaction.

3.4. Fourth Stage - Hyperreality

In the spring of 2021, the authors’ instructional focus while teaching a landscape studio shifted to include a larger scale of contextual information as a design parameter. The still hybrid delivery of instruction made the imperative to analyse sites remotely unavoidable. Analysis and documentation of selected sites was supported by familiarity, with GIS data collection and other online mapping resources. As the setup for a yearly memorial competition, the theme ‘Foregrounding Backgrounds: The Landscapes of Remote Interaction’ was inspired by the concept of Immersive Infrastructures and the realisation that the space of the Zoom call has physical, virtual, and digital landscapes embedded in it. Students were instructed to create Zoom backgrounds, which engaged all three factors and considered the temporal component of the medium as well. The resulting work was diverse reflection into the students’ widely varied interests and situational settings (Figures 10 & 11). Many were a kind of multi-dimensional ‘selfie’, with representations of themselves engaged in alternate activities in multiple locations of their screen. Others took a more picturesque approach to this digital landscape and created ‘windows’ which framed themselves within an extended view beyond. Some highlighted the spatial



UP: Fig. 7. The components of XR, including VR, AR, & MR.

CENTRE: Fig. 8. Virtual environment constructed for occupation exclusively via the internet using a VR headset and keyboard movement.

DOWN: Fig. 9. Students created a video game to enable virtual tours of their studio designs.

constructs of their alternate non-studio locations while some implemented the virtual background as a way of reinforcing the school setting, they were missing. In all cases, the assignment was a recognition that this learning environment had become a new space of occupation (Figure 12). The realm of the online class had surpassed its simulation status and become its own reality.

CONCLUSION

The desire for a radical break from an educational structure that was defined over two centuries ago is rooted in Baudrillard's critique of modernity. The postmodern is a distortion of the distinction between humans and machines, a blurring of the line between reality and image. Baudrillard argues that this process, from modern to postmodern, in which capitalism reached a certain level of accumulation, commodities began to detach themselves and become images, and citizens who formerly played roles as political actors, began to detach themselves from their own lives and become spectators, has changed us fundamentally, and helped to bring our relations as humans to a close.⁹ For Baudrillard, the apocalypse has already occurred. It wasn't religious, it was not atomic bombs, it was shopping. At some point in the development of technology human beings ceased to be the reason of things, and things took on their own reasons. However, Baudrillard believed that this is a good thing. After all, modernity was also responsible for some of the greatest atrocities of mankind: the Holocaust, nuclear bombs, climate crisis, slavery, genocide, etc. For Baudrillard, the opportunity to escape a world in which such horrific acts can be justified through 'rational' argument, 'objective' data, and scientific reason – is one we should all welcome. And perhaps, this is how we should also position ourselves teaching after Covid. Our previous normal was one that benefited the wealthy, physically privileged, white western European, and English speaking. As Baudrillard laid out in his book *Fatal Strategies* a plan for us all to survive in the Post-Modern, teachers must also see this moment as requiring a new paradigm to not simply survive but develop techniques that can address the prejudice and inherent bias the previous system refused to even recognise.

Ironically, among the authors' pre-Covid research and teaching goals was the pursuit to expand the opportunity for hybrid reality integration in the classroom and aim to design and test a virtual classroom for studio instruction that allows remote teacher-student interaction. Of course, that opportunity presented



UP: Fig. 10. A multi-layered allegorical image that compiles the foreground, object, and background of the Zoom landscape.

DOWN: Fig. 11. Simulated environments for occupation of the simulated classroom.



Fig. 12. The new hyperreal classroom allows for universal engagement by students and faculty asynchronously and in real-time.

itself to almost everyone in the past year, and the benefits and challenges it revealed have heightened the demand for more accessible tools to facilitate 3D interaction, social engagement, and instruction.

One promising possibility of the increased use of XR and digital tools for remote teaching is the increased accessibility to design education for non-traditional students and students with disabilities. Using the spatial and immersive capacity of these tools can better enable remote teacher-student interaction, and accommodate student disabilities and scheduling challenges. But hybrid teaching requires access to the necessary technological equipment and infrastructure. While there is a great potential to implement new tools, there is also a reliance on accessibility to the necessary devices and internet which allow these benefits. Inequitable access to technology has created an obstacle for effective architectural education, especially as digital and virtual realms become site, landscape, and material for architectural intervention.



NOTES

- 1 Mellisa Eznak, *How Covid-19 Damaged Student Success*, <https://www.insidehighered.com/news/2021/06/21/what-worked-and-what-didnt-college-students-learning-through-covid-19>, 21 June, 2021.
- 2 Karl Mark, *A Contribution To The Critique Of Political Economy: The Mode Of Production Of Material* (Moscow: Progress Publishers, 1859).
- 3 Ethan Zukerman, *Hey, Facebook, I Made a Metaverse 27 Years Ago*, <https://www.theatlantic.com/technology/archive/2021/10/facebook-metaverse-was-always-terrible/620546/>, 29 October, 2021.
- 4 Jean Baudrillard, *Fatal Strategies* (Los Angeles: Semiotext(e), 1983).

-
- 5 Jean Baudrillard, *Simulations & Simulacra* (Los Angeles: Semiotext(e), 1981).
6 Ibid.
7 Ibid.
8 Ibid.
9 Guy Debord, *The Society of the Spectacle* (Paris: Black & Red, 1967).

 BIBLIOGRAPHY

- Bartosh A. & Anzalone, P. “Experimental Applications of Virtual Reality in Design Education”, ACADIA 19: Ubiquity & Autonomy (2019).
- Bartosh A. and Clark L. “Mixed Reality Visualizations of Urban Data”, *Technology | Architecture, and Design* (April 2019).
- Bartosh A. and Gu, R. “Immersive Representation of Urban Data”, *SimAUD Conference Proceedings* (2019).
- Bartosh, A. and Krietemeyer, B. “Virtual Environment for Design and Analysis (VEDA): Interactive and Immersive Energy Data Visualizations”, *Technology | Architecture, and Design* (May 2017).
- Baudrillard, Jean. *Simulacra & Simulations*. Los Angeles: Semiotext(e), 1981.
- Baudrillard, Jean. *Fatal Strategies*. Los Angeles: Semiotext(e), 1983.
- Boone, Z., Bartosh, A., Green, M. A. “Interactive and Immersive Visualization of Fluid Dynamics using Virtual Reality,” *Journal of Visualized Experiments* (2020).
- Eznak, Mellisa. How Covid-19 Damaged Student Success, <https://www.insidehighered.com/news/2021/06/21/what-worked-and-what-didnt-college-students-learning-through-covid-19>, 21 June, 2021.
- Krietemeyer B., Bartosh A., Covington L. “Shared Realities: A Method for Adaptive Design Incorporating Real-Time User Feedback Using Virtual Reality and 3D Depth-Sensing Systems”, *ACADIA Conference Proceedings* (2017).
- Mark, Karl. *A Contribution to the Critique of Political Economy: The mode of production of material*. Moscow: Progress Publishers, 1859.
- Zuckerman, Ethan. Hey, Facebook, I Made a Metaverse 27 Years Ago, <https://www.theatlantic.com/technology/archive/2021/10/facebook-metaverse-was-always-terrible/620546/>, 29 October, 2021.

CAN THE ‘DESIGNERLY WAY OF THINKING’ BE TAUGHT REMOTELY?

A B S T R A C T

It is widely accepted that certain domains of knowledge are better made accessible to students by a complex set of strategies comprehensively known as ‘designerly way of knowing’. This ‘way of knowing’, which is appreciated as essential to (good) design, is developed within the framework of the design process, the copying and reusing of existing forms, and the making of artefacts. The distant teaching applied during the Covid-19 pandemic lockdown could only partly substitute for the in-person guidance provided to students in normal design studios. While the transfer of explicit aspects of knowledge, such as constant critical evaluation and reflection on the various stages of the design, could more-or-less be kept to the in-person tutoring, the transfer of implicit aspects of knowledge based on bodily involvement probably suffered considerably. The latter is involved in both the reactions to the modified design presented by students each week, and in the new modifications proposed by the tutor, or the critique realised by means of exploratory sketches meant to show the weaknesses or suggest ameliorations to the design presented. But, there is an upside, too. Students open up their personal space; the instructor can make adjustments to their tutoring on the basis of information they normally don’t have access to.

INTRODUCTION

This paper examines the up- and downsides of architectural design remote tutoring practiced during almost three semesters of the Covid-19 pandemic induced lockdown.

Remote tutoring has been the most common, if not the exclusive, form of tutoring design studios during the Covid-19 pandemic in large parts of the world. The problem faced by academics was quite straightforward: Can the ‘designerly way of knowing’ be taught remotely? Can the main means of communication between a tutor and students, namely sketching on paper, and, the students’ provisional proposals, in case these are printed, be substituted by digital sketching? How can a tutor compensate for the loss of physical contact which takes place in any normal university environment?

Closed universities offering only online classes and studios was a novelty. However, aspects of the issues raised, and the problems faced by online design studios tutoring, have been researched since the emergence of digital drafting tools, and the rise in online communication. This paper will base its arguments on this research.

THE NATURE OF DESIGN AND DESIGN TUTORING

Design is a kind of, so-called, creative art, whereby the expected goal is the production of unforeseen blueprints for the making of never-seen-before artifacts. It is widely accepted that design is a discipline employing its own methods of gradually approaching its goals.¹ It goes without saying that these goals vary significantly, and depend heavily on ideology and world views of designers, owners and users of the artifacts, and created settings.

The methods employed in design practice are quite different to those used in hard science, such as biology or physics.² What really sets it apart from other disciplines is that these forms of knowledge which are ‘special to the awareness and ability of a designer, independent of the different professional domains of design practice,’³ are based on the premise that multiple answers to a given task may be valid; that the criterion of veracity isn’t valid, since there are no ‘rights’ or ‘wrongs’ in the absolute sense these judgements have in hard science; and that the livability of an answer is proved, if at all, decades after it is provided.

This unique kind of knowledge is partly inherent in the activity of designing, gained through engagement with, and reflection on, that activity. This is exactly what Vitruvius claimed 2,000 years ago, when he urged architects to enrich their knowledge by both acquiring explicit knowledge and practicing their trade.⁴ As Donald Schoen put it, the knowledge and skills required for design are ‘implicit in the artistic, intuitive processes which some practitioners do bring to situations of uncertainty, instability, uniqueness, and value conflict’; design is a ‘reflective practice.’⁵

Some of it is the knowledge inherent in the artifacts,⁶ gained through using and reflecting upon the use of those artifacts. Some of it is knowledge inherent in the processes of manufacturing the artifacts gained through making and reflecting upon the making of those artifacts. And some of each of these forms of knowledge also can be gained through instruction in them.

It is similar to the knowledge ancient Greek philosophers thought is required to perform any kind of artisanry, a knowledge (episteme) ‘inherent in the application’ of arts such as those relating to building and to handicraft in general, as Plato put it.⁷ Transmission of such kind of knowledge is quite difficult since it can only to some extent be communicated verbally through instruction. While part of instruction is more or less conventional in the sense that it is clearly articulated, another part of it is of a special kind, involving the body.

Martin Heidegger had pointed out that actually all our thoughts are more or less based on corporeality, on the fact that we who do think are made of flesh and bones - in his own words ‘at any rate, [thinking] is a craft, a ‘handicraft.’⁸ The bodily involvement in design is well known among practicing architects and educators. Bryan Lawson’s ‘thinking pencil’ condenses the essence of tutoring as practiced in architectural schools around the globe.⁹ Body language is key for conveying non-verbal reactions to, and critique of the design presented: such reactions and critique express sentimental or automated responses, rooted in the deepest layers of the self that are beyond one’s control. They partly result from empathy.

Empathy is a psychological mechanism thought to be activated during interaction with one’s surroundings; it involves the projection of oneself onto the object of perception. Empathy (German: *Einfuehlung*), is a term coined by German philosopher and aesthetics theorist Robert Vischer in the late 19th century (1887), and further elaborated on, among others, by his peer Theodor Lipps who expanded its use in psychology.¹⁰ The theory goes that the beholder

identifies themselves with the object they see, and ‘feels’ on their own body what the object would feel was it a living creature. When we are in front of a Greek temple we ‘feel’ the burden of the epistyle that columns have to carry, and sympathise with them; the successful response of the columns, emulating the flexing of our muscles when we have to carry a load, deeply satisfies us. The aspects of instruction not dependent solely on verbal communication, but also involving body language and gestures and other non-verbal forms of expression, are considerably hindered by the absence of physical presence, in the same room, around a table of the instructor and students.

SKETCHING AS A PRIME TOOL OF IDEATION

Prime among these non-verbal forms of expression is sketching. Sketching is a form of ideas and design representation widely used in creative arts and especially in architecture.¹¹ It is quite unique, differing substantially from other types of representation, and drawings, in particular.¹² It can be a solitary process or a part of tutoring. The core aim of sketching is not to convey information that cannot be easily communicated in other ways, although this can be central during tutoring sessions; actually, it is the exploration of several possibilities and the opening up of new horizons unthought-of up to this point; this function of sketching is common among student novices and accomplished architects.

By sketching, the designer creates ideas, they don’t just record preexisting images or solutions already formed in their mind, as Aristotle suggested in his famous passage in *Metaphysics* 1032b, who drew a clear distinction between *noesis* (νόησις: cogitation) and *poiesis* (ποίησις: production) by claiming that ‘things are generated artificially whose form is contained in the soul [of their maker]... In generations [i.e. in the making of things]... part of the process is called cogitation, and part production – that which proceeds from the starting point and the form is cogitation, and that which proceeds from the conclusion of the cogitation is production.’¹³ It must be stressed that this passage must be read having in mind that in the designer’s case the ‘production’ is the drawing completely and precisely describing the object intended to be constructed, be it a car, a spoon, or a building.

The opening up of new horizons brought about by sketching is hinged with the very nature of design, especially in architecture. It is widely accepted that architecture poses more or less ill-defined problems. In an ill-defined problem ... ‘the initial state is usually vague, and the goal state either unknown or ambiguous; neither

stop rules nor algorithms for operators are specified in advance. The solver of an ill-defined problem must generate and represent a great deal of additional information that he or she ‘imports’ into the problem space in order to construct states, including the initial and goal states, and in order to construct a path or paths that connect them.’¹⁴

Actually, modernism has sought to make architectural design a well-structured problem by clearly stating the design goal: the seamless function of the building which, alongside with its plain form, derived from this function, and the adequate application of building materials. Clear-cut goals free of contradictions and complexity were sporadically set to architects by centralised or authoritarian regimes: the Nazis wanted to overwhelm opponents and subjects alike, and their principle means were to construct buildings of huge dimensions and strictly laid-out at every scale. However, historical, associative, symbolical, and aesthetic considerations have usually blurred the design goals as well as the means to achieve them.

Sketching helps generate new ideas: as Donald Shoen put it ‘the designer ha[s] a conversation with the drawing.’¹⁵ Such conversations are extremely fruitful, and there is now consensus¹⁶ that are cornerstones of innovative creations since they help the designer ‘see more information in them than was invested in their making.’¹⁷ By attempting to formulate some initial thoughts on the paper, hardly consciously drawing lines that represent their first approach, either of the design goal (no matter how ill-defined it is), or by fine-tuning a part thereof at a later stage, the designer comes up with a sketch. By seeing it and evaluating it, they can judge its merits and pinpoint its weaknesses, or they can uncover some scarcely visible potential - research has shown how differently each designer perceives a sketch.¹⁸

Designers then ‘appear to see visual clues in their sketches that trigger mental images’¹⁹ helping them to propose new ideas and new approaches to the problem posed, and transform what they see in front of them so that it better serves the goal they themselves have set, even to amend this goal if they come up with some new idea.²⁰

Sketching is widely used as a tool for instructors to help trigger the student’s imagination by conveying some initial reactions to their design; the instructor uses sketching (usually on the very sheet of paper the design is presented) to pinpoint the weak areas of the design, and to unveil what they think is the hidden potential thereof – a potential not visible to the student who has presented their design to the instructor.

In the times of the pandemic, the interaction between the instructor and students takes place online; Sketches were used, but they were digitally supported sketching tools employed, not conventional ones made with pencil on paper. The differences between digital and manual sketching has been studied since the immergence of the powerful design, drafting, and sketching tools available more than a decade.

Sketching, either with conventional means or digitally, is aimed at producing a variety of solutions, which are examined, approved or rejected in split seconds. The gradual approach to even more satisfactory design is a long process of engagement, involvement, distancing and all over again; each round produces better and better outcomes, or explores the limits of an idea, so that it can be discarded, and a new thread followed.²¹

However, the question is what are the substantial differences between hand-made sketches and digital sketching computer aided ones, such as those used during the pandemic by tutors commenting on the students' work? Research is quite inconclusive. Some research has shown that computer aided sketching had 'no significant influence on the nature of design activity during conceptual ideation;'²² and that digital sketching environment is similar to free-hand sketching 'in all significant aspects of the design process.'²³ In contrast, other research concluded that conventional sketching is better suited for supporting reinterpretation as well as generation of design ideas.²⁴ Interpreting and reinterpreting these during the initial phases of design - that is during the ideation phase - manual sketching provided better opportunities to reflect upon the provisional results; better understanding the weaknesses and strengths of the design at each stage of elaboration as well as minor or major revisions facilitated by manual sketching.

THE CHALLENGES AND BENEFITS OF ONLINE TUTORING

The Landscape Architecture Design Studio III of the Landscape Architecture Post-Graduate Programme offered by the Agricultural University of Athens presented and commented in this paper was taught remotely. The programme called for the design of an open-air theater at the tip of a large brownfield area at the mouth of Piraeus port, the main sea-getaway of Athens, which is earmarked to become some kind of cultural park (Figure 1).

The instructor used a variety of means to communicate her reactions, ideas, and guidelines to the students who presented their draft designs digitally each week: verbally formulated critique following a general assessment of the progress

made the week before; widely understood gestures and body postures; and sketches drawn digitally on the students' plans shown on computer screens. While verbal communication conveyed the intended message, the quality of non-verbal communication was rather poor. Body language used by both the instructor and the students was mutually hard to grasp and properly understand.

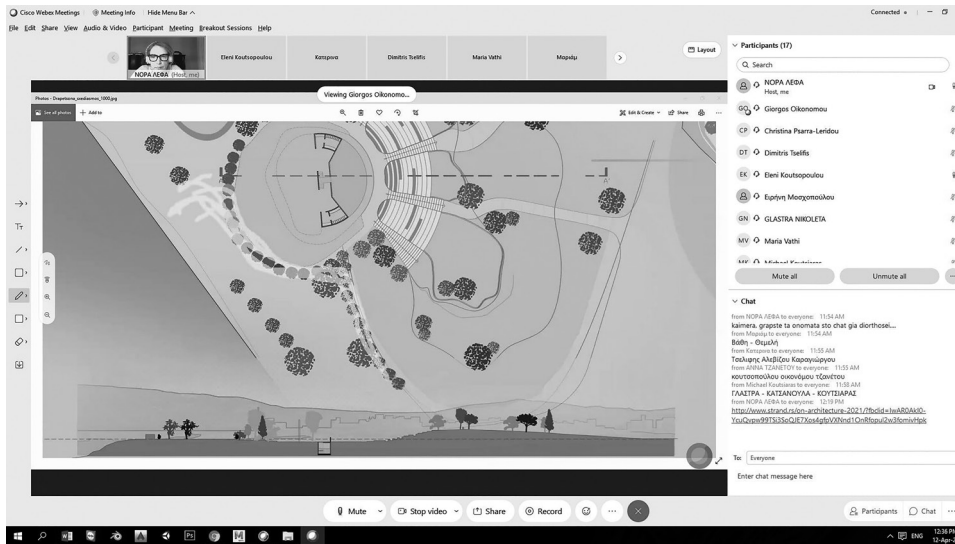


Fig. 1. Online tutoring. The instructor conveys their comments sketching on a student's draft proposal.

However, what suffered most was the quality of instruction through sketches. The lack of immediacy provided by the pencil drawn on the paper was detrimental to real contact between the instructor and students. The pressure applied on the pencil during sketching on paper, or the delicacy of the movement of the hand holding it; the accuracy or the lack of precision; these nuances were substituted for the indifferent and soulless lines of predetermined width and colour digital sketching tools provide. Good for pointing the exact area of the plan shown and suggesting directions or shapes, digital sketching proved quite inadequate for communicating the enthusiasm or the disappointment of the instructor, the hopes and challenges seen by her in the draft designs she was presented with. An example is given in Image 1, which is a screenshot of the online tutoring described above. The students had worked out a draft design: the theatre consisted of a stage inscribed in a circle facing the audience sitting on banks on the slope across it; the slope and the banks are designed concentric with the stage but are developed in fragments. It thus reminded of - but did not imitate - some ancient theatre, partly in ruins as are the remnants of the ancient city walls nearby.

The tutor noticed that the theatre is well-placed in the landscape, but raised two issues: first its relation to the embankment which is shaped in straight line to facilitate the docking of ships; and second, the access to the theatre by the audience coming mainly from the south. While both issues were presented verbally, drafting on the drawing presented helped the tutor to make her point clear. However, the intensity of the collision between the stage circle and the embankment, and the obstruction of view to the theatre by the line of trees parallel to the embankment (which, on the other hand, provided a border line and some degree of protection and privacy) as perceived by the instructor could not be accurately conveyed.

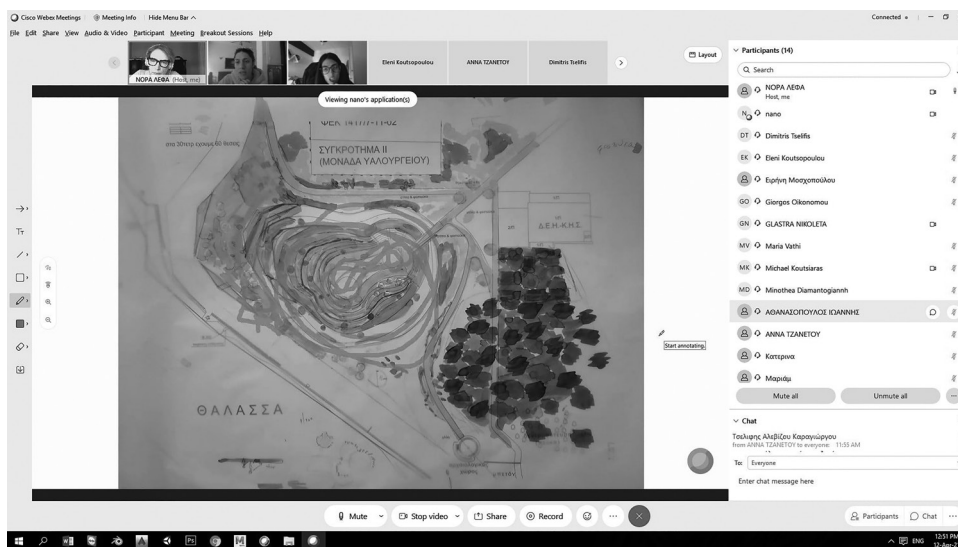


Fig. 2. Simultaneous sketching by three persons -the instructor and two students.

However, Image 2 depicts what can be perceived as an advantage of online tutoring: the simultaneous sketching/commenting by various agents (Figure 2). The most difficult thing the students had to do in online studios was to connect with their instructor and understand her objections and remarks. The tools available online on shared screen programmes allowed them to ‘meet’ by sketching on the same image (even temporally like the thoughts which come and go). In person-to-person instruction this would be a no-go since three hands working on the same area of the drawing would be extremely confusing and frustrating for all participants. During online tutoring, the instructor’s comments were sketched on the students’ draft proposal, and the students would reply by pinpointing what they think is important, and depicting movement of people, vistas, and shapes of buildings. In the screenshot presented here, we

can recognise the communication taking place. What is normally a succession of interventions on a drawing in progress, here is an almost chaotic, but nevertheless vivid collaboration.

Any creator views the sketch drawing they make as objects belonging to them, and where they have the exclusive rights. But here we see how this ‘ego’ object escapes from its owner. We can recognise that from the balance of the different colours and lines provided by Cisco’s Webex platform used for the studio sessions coexist on this same drawing. Something personal becomes something common, one of the main goals of architecture.

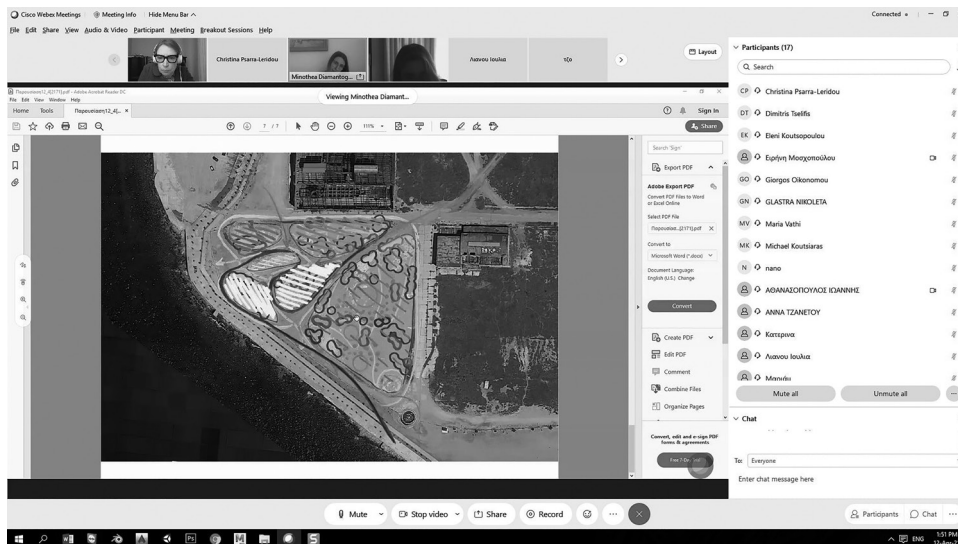


Fig. 3. Online tutoring. The instructor conveys their comments sketching on a group’s draft proposal. Parts of the students’ working environments are visible.

Here another aspect of design studios online tutoring comes into play (Figure 3). According to Sigmund Freud, human personality is complex and has more than a single component. In his famous psychoanalytic theory, Freud states that personality is composed of three elements known as the id, the ego, and the superego. These elements work together to create complex human behaviours. And, in online tutoring some aspects thereof become prominently visible. The glimpse offered in their working environment unveils aspects of the students’ personality that would be otherwise unknown to the instructor. Students and other instructors participating in what is usually group work opened up their personal space to the instructor and fellow students. It wasn’t the carefully groomed image projected in social media platforms, but the real environment where a student lives and works. It was their space, a deeply familiar environment.

Actually, to some degree they also chose what aspect of this space they would show; they set up the stage for their appearance to the public, but this could have been doctored to a lesser degree than let's say an Instagram story. However, one could still see what they hang on their walls, how many books they had. One could also discern how many people shared a room, and sometimes one could sense what kind of relations they had with their roommates or their family; students and fellow tutors may not have exposed themselves as they usually do in the studio taught at the university, but still, they presented their work and their views on the background of a privacy partly compromised.

People often regard their home as an extension of their own body.²⁵ British philosopher and art theorist Peter Lamarque considers the tendency to 'anthropomorphise buildings and speak of them as 'living' or as having a character or personality to be revealed' as 'fairly innocuous'.²⁶ Moreover, buildings are often considered metonymies of the human body, not just metaphors of the human body.²⁷ The burglary of a home often causes more distress than the actual loss because it is 'experienced metaphorically as an assault on, a penetration of, the owner's body'²⁸: home is strongly associated with self-identity.²⁹

Such ideas were mostly developed by phenomenology. French philosopher Maurice Halbwachs in the first half of the 20th century intensely reflected on the relation between people - both as individuals and as groups - and the edifices in their surroundings; a relation often bordering identification, since 'homes and walls, and the roofs sheltering people' have become 'integral parts of the group'. This may explain, he noted, why people pay 'disproportionate attention' to the material aspect of the city, with the great majority being 'more sensitive to a certain street being torn up, or a certain building or home being razed, than to the gravest national, political, or religious events.'³⁰

And, knowingly, the controversial German philosopher Martin Heidegger, held that the notion of home is essential for the Being.³¹ Man (standing for humans in general, and not just for males), is by dwelling. Heidegger clearly distinguished between *housing*, which he considered to be a technical problem to be solved by technical means, and *dwelling*, which he perceived as a condition of man's being in the world. The concept of home was fundamentally redefined. Moreover, Heidegger argued that man dwells in 'places', not in abstract 'space'; home is essential for space to be transformed into place; or, better, for places to be created in oceans of undifferentiated and hostile places which cannot form the environment for any meaningful life. He thus placed dwelling at the heart of the debate on built environment.

Heidegger's thought deeply influenced subsequent thinkers, not least in the domain of architectural theory. For Mark Wigley the notion of house is associated with the drawing of a line that produces an 'inside' as opposed to an 'outside' and acts as mechanism of domestication.³² Emmanuel Lévinas, a philosopher who sought to enrich the notion of being at home with a concept of hospitality towards the Other, held that the house has a privileged role in the life of every human being by being an essential condition of human activity, and in this sense its commencement. To dwell, he claimed, is recollection, a coming to oneself, a retreat home with oneself, as in a land of refuge.³³ No need to say that the concept of home and homecoming is as old as human narratives. Myths and poems from all cultural environments abound with related references. For many thinkers, a house is clearly much more than a shelter.

The opening, therefore, of the most essential modern human abode and refuge to the gaze of 'others', may it be fellow students or tutors, has profound psychological implications. Admittedly, this 'opening' is also metaphorical: no one really intrudes the personal space of the participant; the 'guests' are just given the opportunity to see inside it, and invade it visually, not physically. Thus, while the participants who open up their personal space are physically safe, they are socially vulnerable to judgement, disapproval, or irony for their choices regarding its configuration.

In great many cases during tutoring sessions, they chose to do exactly this. But, they earned something vital in return: the personalised approach of the tutor who was able to grasp the nuances of the milieu the students lived in. For sensitive tutors this knowledge provided a very powerful tool for making their contact with the students more profound and substantial. The real-time camera and the real-time sketch brought them closer. Showing the places where the participants worked and lived partly eliminated the distance between them (Figure 4).

It was these personal moments that an instructor took advantage of to adjust her way of lecturing and tutoring, with the aim to gain access to some deeper layers of the student's personality, so that she could energise the student's potential and set their creativity in motion. The opening up of the personal space was transformed with the help of technology into an opening-up of some of the participants' personality layers that are normally hidden from public view, or carefully manicured to conform to the widespread social norms in our times immensely reinforced by the omnipresent social media.

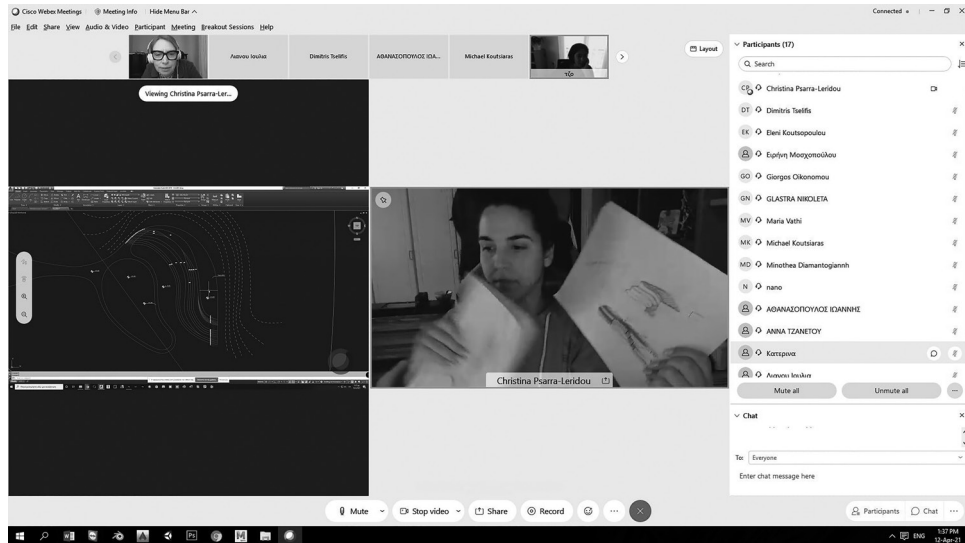


Fig. 4. Online tutoring. The students' working environment are prominently visible..

CONCLUSION

The quality of Architectural Design Studio may suffer as a result of online tutoring because the means of communication between the tutor and the students are significantly impoverished. Verbal communication may be almost as good as that of in-person classes, but the body language and bodily involvement suffer a lot during classes. This poses a major problem since the 'designerly way of thinking' cannot be transmitted solely by explicit learning methods. Sketching, which is a prime method of communicating, and helps to generate ideas also suffers. The subtlety of hand sketching is missing; the typified lines of uniform predetermined width cannot substitute for the richness of the hand-made sketch.

However, there is an upside: the students and fellow tutors alike opened up their personal space, allowing the tutor to partly understand their background and fine-tune her way of teaching to the specific challenges that are hardly perceivable in normal circumstances. The lack of physical contact has been partly compensated for by the intimacy of private worlds partly shared with others.

NOTES

- N. B. This article was first published at: Facing the future – new challenges: proceedings [9h International Conference] On Architecture, [3-4 December 2021], Belgrade, editor Ružica Bogdanović (Beograd: STRAND - Sustainable Urban Society Association, 2021)
- 1 Nigel Cross, 'Designerly Ways of Knowing,' *Design Studies* 3, 1982: 4.
- 2 Gabriela Goldschmidt and W. Porter, eds., *4th Design Thinking Research Symposium* (Cambridge, MA: MIT Press, 1999).
- 3 Nigel Cross, 'Designerly Ways of Knowing: Design Discipline versus Design Science', *Design Issues* 17 2001, 3: 49ff.
- 4 *Vitruvius I, 1, 1-4.*
- 5 Donald Schön, *The Reflective Practitioner*, (London: Temple-Smith, 1983), 49.
- 6 E.g., in their forms and configurations - knowledge that is used in copying from, reusing, or varying aspects of existing artifacts, Cross, 'Designerly Ways of Knowing.'
- 7 *Statesman, 258d.*
- 8 Martin Heidegger, *What Is Called Thinking?*, trans. Fred D. Wieck and J. Glenn Gray (New York: Harper and Row Publishers, 1968).
- 9 Bryan Lawson, *Design in mind* (Oxford: Butterworth Architecture, 1994).
- 10 Theodor Lipps, 'Ästhetische Faktoren der Raumschauung,' in: Arthur König (ed). *Beiträge zur Psychologie und Physiologie der Sinnesorgane. Hermann von Helmholtz als Festgruss zu seinem siebzigsten Geburtstag* (Hamburg: Leopold Voss, 1891): 219–307; Theodor Lipps, *Ästhetik. Psychologie des Schönen und der Kunst* (Leipzig: Leopold Voss, 1903-06).
- 11 D. Herbert, *Architectural Study Drawings* (Van Nostrand Reinhold, New York, 1993).
- 12 I. Fraser and R. Hemni, *Envisioning Architecture: An Analysis Of Draw-Ing* (Van Nostrand Reinhold, New York, 1994).
- 13 Aristotle, *Metaph.* 1032b, 1-19.
- 14 Gabriela Goldschmidt, 'Capturing indeterminism: representation in the design problem space,' *Design Studies* 18 (1997): 441-445.
- 15 Schön, *The Reflective Practitioner*.
- 16 *Schön and Wiggins, 1992; Goldschmidt, 1994.*
- 17 *Lawson, 2006*
- 18 Alexandre Menezes and Bryan Lawson, 'How designers perceive sketches,' *Design Studies* 27, Issue 5, September 2006: 571-585.
- 19 Bryan Lawson, *What Designers Know* (Oxford: Architectural press, 2004).
- 20 Gabriela Goldschmidt, 'The dialectics of sketching,' *Creativity Research Journal* Vol 4 No 2, 1991: 123-143; Lawson, *What Designers Know*; Suwa et al., 2000)
- 21 M. Suwa M, J. Gero, and T. Purcell, 'Unexpected Discoveries And S - Invention Of Design Requirements: Important Vehicles For A Design Process,' *Design Studies*, Vol 21 No 6, 2000: 539-567.

-
- 22 H.H Tang, Y.Y. Lee, and J.S. Gero, (2011) ‘Comparing collaborative co-located and distributed design processes in digital and traditional sketching environments: a protocol study using the function-behaviour-structure coding scheme,’ *Design Studies*, Vol. 32, No. 1: 1–29.
- 23 Tang, Lee, and Gero, ‘Comparing collaborative co-located and distributed design processes in digital and traditional sketching environments.’
- 24 C. Stones, and T. Cassidy, ‘Seeing and discovering: how do student designers reinterpret sketches and digital marks during graphic design ideation?’, *Design Studies*, Vol. 31, No. 5, 2010: 439–460.
- 25 Charalambos Politakis, ‘The Human Body Matter: Notes on the Persistence of Anthropomorphism in Architecture,’ in: M. Voyatzki (ed.): *What’s the Matter? Materiality and Materialism at the Age of Computation* (Brussels: European Network of Heads of Schools of Architecture, 2014); C. Di Salvo and F. Gemperle, ‘From Seduction To Fulfillment: The Use Of Anthropomorphic Form In Design,’ *Proceedings of the Designing Pleasurable Products and Interfaces Conference*, (Pittsburgh PA. New York: Association for Computing Machinery, 2003): 67-72; Peter J. M. Nas and Chantal Brakus, ‘A Note on Anthropomorphic Architecture,’ *Space and Culture* 7, 3, 2014: 260-264.
- 26 Peter Lamarque and Nigel Walter, ‘The Application of Narrative to the Conservation of Historic Buildings,’ *Estetika: The Central European Journal of Aesthetics*, LVI/XII, No. 1, 2019: 5-27.
- 27 Marco Frascari, *Monsters of Architecture: Anthropomorphism in Architectural Theory* (Washington D.C.: Rowman and Littlefield, 1991).
- 28 *Tabor, 1998, 218.*
- 29 S.T. Sigmon; S.R. Whitcomb, and C.R. Snyder, ‘Psychological Home,’ in: A.T. Fisher; C.C. Sonn, and B.J. Bishop, *Psychological Sense Of Community: Research, Applications, And Implications* (New York: Plenum Publishers, 2002), 25-41; Mallett, 2004.
- 30 Maurice Halbwachs, *On Collective Memory* (Chicago: University of Chicago Press, 1992 [1925]), ch4
- 31 Martin Heidegger, *Building Dwelling Thinking. In: Poetry, Language, Thought.* (New York: Harper, 2013 [1951]): 141-160.
- 32 Mark Wigley, *The Architecture of Deconstruction: Derrida’s Haunt*, (Cambridge, Mass. and London, England: MIT Press, 1993), 104.
- 33 Emmanuel Lévinas, *Totality and Infinity; An Essay on Exteriority, transl. by Alphon Lingis* (Pittsburgh: Duquense University Press, 1961). 156

BIBLIOGRAPHY

- Cross, Nigel (1982). 'Designerly Ways of Knowing,' *Design Studies* 3:4.
- Cross, Nigel (2001). 'Designerly Ways of Knowing: Design Discipline versus Design Science', *Design Issues* 17, 3: 49ff.
- Di Salvo, C. & Gemperle, F. (2003). From seduction to fulfillment: The use of anthropomorphic form in design. Proceedings of the Designing Pleasurable Products and Interfaces Conference, Pittsburgh PA. New York: Association for Computing Machinery, 67-72.
- Frascardi, Marco (1991). *Monsters of Architecture: Anthropomorphism in Architectural Theory*. Washington D.C.: Rowman and Littlefield.
- Fraser, I and Hemmi, R (1994). *Envisioning architecture: an analysis of drawing* Van Nostrand Reinhold, New York.
- Goldschmidt, Gabriela (1991). The dialectics of sketching. *Creativity Research Journal* Vol 4 No 2: 123-143.
- Goldschmidt Gabriela and W. Porter, eds. (1999). 4th Design Thinking Research Symposium. Cambridge, MA: MIT Press.
- Goldschmidt, Gabriela (1997). Capturing indeterminism: representation in the design problem space. *Design Studies* 18 (1997) 441-445.
- Halbwachs, Maurice (1992). *On Collective Memory*, Chicago: University of Chicago Press [1925].
- Heidegger, Martin (2013). Building dwelling thinking. In: *Poetry, language, thought*. New York: Harper, 141-160 [1951].
- Heidegger, Martin (1968). *What Is Called Thinking?* Trans. Fred D. Wieck and J. Glenn Gray. New York: Harper and Row Publishers.
- Herbert, D (1993). *Architectural study drawings* Van Nostrand Reinhold, New York.
- Lamarque, Peter & Nigel Walter (2019). The Application of Narrative to the Conservation of Historic Buildings. *Estetika: The Central European Journal of Aesthetics*, LVI/XII, No. 1: 5-27.
- Lawson, Bryan (2004). *What designers know*. Oxford: Architectural press.
- Lawson, Bryan (1994). *Design in mind*. Oxford: Butterworth Architecture.
- Lévinas, Emmanuel. (1961), *Totality and Infinity; An Essay on Exteriority*, transl. by Alphonse Lingis. Pittsburgh: Duquense University Press.
- Lipps, Theodor. (1891). Ästhetische Faktoren der Raumschauung. In: Arthur König (ed). *Beiträge zur Psychologie und Physiologie der Sinnesorgane. Hermann von Helmholtz als Festgruss zu seinem siebenzigsten Geburtstag*. Hamburg: Leopold Voss: 219–307.
- Lipps, Theodor. (1903-06). *Ästhetik. Psychologie des Schönen und der Kunst*. Leipzig: Leopold Voss.
- Menezes Alexandre and Bryan Lawson (2006). How designers perceive sketches. *Design Studies*, Volume 27, Issue 5, September 2006: 571-585.
- Nas, Peter J. M. & Chantal Brakus. (2014). A Note on Anthropomorphic Architecture. *Space and Culture* 7, 3: 260-264.

-
- Politakis, Charalambos. (2014). The Human Body Matter: Notes on the Persistence of Anthropomorphism in Architecture. In: M. Voyatzki (ed.): *What's the Matter? Materiality and Materialism at the Age of Computation*. Brussels: European Network of Heads of Schools of Architecture.
- Roster, C.A.; Ferrari, J.R. & Jurkat, M.P. (2016). The dark side of home: Assessing possession 'clutter' on subjective well-being. *Journal of Environmental Psychology*, 46, 32–41.
- Schön, Donald (1983). *The Reflective Practitioner*. London: Temple-Smith.
- Self, J., Evans, M. and Kim, E.J. (2016) 'A comparison of digital and conventional sketching: implications for conceptual design ideation', *Design Research*, Vol. 14, No. 2:171-202.
- Sigmon, S.T.; Whitcomb, S.R. & Snyder, C.R. (2002). Psychological home. In: Fisher, A.T.; Sonn, C.C. & Bishop, B.J. (Eds.). *Psychological sense of community: Research, applications, and implications* (25-41). New York: Plenum Publishers
- Stones, C. and Cassidy, T. (2007) 'Comparing synthesis strategies of novice graphic designers using digital and traditional design tools', *Design Studies*, Vol. 28, No. 1: 59–72.
- Stones, C. and Cassidy, T. (2010) 'Seeing and discovering: how do student designers reinterpret sketches and digital marks during graphic design ideation?', *Design Studies*, Vol. 31, No. 5: 439–460.
- Suwa M, Gero J, and Purcell T (2000) Unexpected discoveries and S - invention of design requirements: important vehicles for a design process. *Design Studies* Vol 21 No 6: 539-567.
- Tang, H.H., Lee, Y.Y. and Gero, J.S. (2011) 'Comparing collaborative co-located and distributed design processes in digital and traditional sketching environments: a protocol study using the function-behaviour-structure coding scheme', *Design Studies*, Vol. 32, No. 1, pp.1–29.
- Vischer, Robert (1873). Über das optische Formgefühl. Ein Beitrag zur Ästhetik. Leipzig: Herman Credner [English edition: On the optical sense of form: a contribution to aesthetics. In: Mallgrave, H. F., Ikonoumou E. (eds). (1994). *Empathy, form, and space: problems in German aesthetics, 1873-1893*. Santa Monica, California: Getty Center for the History of Art and the Humanities: 89-123.
- Wigley, Mark (1993). *The Architecture of Deconstruction: Derrida's Haunt*, MIT Press, Cambridge, Mass. and London, England.

SOFT(ER)WARE OF ARCHITECTURE EXPERIENCES OF TEACHING INTERIOR ARCHITECTURE AND DESIGN IN THE TIME OF PANDEMIC

A B S T R A C T

Of the many lessons that the pandemic has taught us and brought into our personal and professional lives, the recognition of human agility and flexibility is possibly the least recognised, but most valuable.

Architecture courses, which traditionally apply practice-based pedagogy and foster studio-based learning, were the most reluctant to embrace the growing cohort of online and blended (or hybrid) model programmes. However, pandemic-induced circumstances found us, less than a week into lockdown, embracing the virtual world and carving our own spaces in its digital alcoves.

After two and a half semesters of exclusively teaching architecture and interior architecture remotely across a range of practical modules (from Studio to Architectural Representation), it became apparent that architecture was finally given the permission to become fluid and be interpreted through the tools which we still refer to as digital, thus distinguishing and removing them from the realities of their seamless, quiet integration to our everyday, physical lives.

On return to on-campus teaching, elements of the virtual practice became an established part of studio pedagogy, proving that remote learning is not only beneficial for providing access to knowledge, but also an instrument for conducting advanced layers of analysis, thinking and creativity. However, in bringing us together, the technology not only establishes itself as the (only) means, but also as a selector: qualifying participation based on connectivity and equipment quality.

SOFT(ER)WARE OF ARCHITECTURE

In a world of rapid changes and fleeting encounters, the pandemic created not only an unprecedented shock to the planetary existence in its entirety but forced a lived, immediate experience for all. Less than two years since the beginning of the outbreak, Baudrillard's¹ claim that 'time will never again be that of duration and that our only temporality is that of the accelerated cycle and of recycling'-recuperates. Alongside this, the anticipated end-of-geography,² probed as it has been by Mosco, has failed. The resurrection of the physical space, place, or location rendered the *image*, distinguishing singular presence and participation of an individual, every individual, in the redefined, albeit more inclusive, online world.

The abrupt ending of on-campus teaching took place in early March of 2020 across all third level institutions in Ireland. Although some discussions took place in the days before all staff and students were asked to work from home, the duration of the government-imposed lockdown and indeed the nature of exclusively remote delivery of the curriculum, left both staff and students entirely unprepared for the journey, which lasted almost three academic semesters, and has seen the completion of two academic years in online mode.

The particular circumstances of the pandemic in relation to public health guidance in Ireland rendered existing methodologies applied in remote learning and online programmes largely inapplicable. The trial of the myth of free online education accessible to all commenced. The context of studying in the early stages of the pandemic reflected the conditions otherwise recognised in the regional school: a large percentage of students come from disadvantaged backgrounds, which affects their living arrangements (shared rental accommodation with no space for drawing and model making set-up, the need to work while studying, lack of personal digital equipment). The Institute ordinarily provides dedicated studio spaces for each student, access to computer labs, library and printing facilities. However, during the pandemic, reduced mobility and closure of public institutions as well as retail outlets contributed to student's isolation from learning facilities, materials and tools; the instruction to stay at home for many students meant no access to dedicated work space, and exacerbated connectivity issues (although 92% of households are covered by internet connection in Ireland, in the west of the country, where the majority of our students population is from, that percentage is below 80, with accessibility to high-speed and stable connection far lower).³ Additionally, a number of students became carers for elderly or young members of the family, due to closures of day-care facilities in the country, which affected their routine and workload.

The first cohort of students affected by the pandemic had already completed seven out of twelve weeks of on-campus studies in the second semester, prior to moving to online mode. This was particularly relevant for first year students, who gained solid hand-drawing, physical model-making and basic digital representation skills before being asked to study online. Third year students were proficient digital-environment designers, with a tendency to depart from any physical engagement with design development beyond initial sketching, which for the first time served to their benefit. However, as more mature students with established work and familial commitments, their living circumstances were the worst affected, the results of which were evident in online student engagement.

THE WAY WE WERE - INTERIOR ARCHITECTURE STUDIO III

The Interior Architecture and Design (IAD) programme focuses an environmentally conscious approach to the re-use, re-imagination and innovative re-invention of the existing built environment, with a strong focus on sculpting interior space. Through interactions with live clients, sites and diverse design projects our students learn to position urgent stories in a coherent spatial and sociological narrative. Memory, identity and sense of place along with the intrinsic qualities of community and culture are explored and often juxtaposed with the global context, to inspire resonant, sensitive and rich design projects. Interior Architecture Studio is the core module, with semester-long project-based thematic briefs.

Interior Architecture Studio III is the award-year studio where a final project is developed. The studio brief undertakes in depth contextual research and the development of a cohesive response to the existing building and place. Typically, the research phase involves numerous site visits, and parallel desktop research of the locality, which is one of the reasons why a disused nineteenth century prison building in the vicinity of the campus, is used. The distinguished characteristic of interior architecture studio, when compared to architecture studio, is the importance of the site – problems are situated in existing structures, albeit often long disused and dilapidated. This means that the physical framework of a structure, a building or a ruin, has to be graspable in its limitations, aesthetic and atmospheric qualities, while equally encouraging and challenging. The selection of sites usually involves protected structures, and trains students to re-read and develop sensitive approach to re-invention of same.

Sligo Gaol (Jail) has a rich, documented, history. Its convenient location, both in terms of its proximity to campus and to town centre, allows students to conduct not only informal and individual site visits, but accidental analysis and observations of the building's participation in the everyday life of the town. Part of the building which contains prison cells has been closed off in recent years, as it became unsafe for visits due to dilapidation. This has since been compensated by visits to the remainder of the building/site, and the provision of a rich collection of photographs of the closed-off section from lecturers' own archive to students (Figure 1). The ground floor cells are visible through the windows, while an adjoining two-storey building comprising the kitchen and the courtyard remain available for visits, the latter requiring no prior or scheduled arrangements.



Fig. 1. Sligo Gaol at present (source: Yeats Academy of Art, Design and Architecture digital archive).

The second semester of the academic 2019/20 year commenced in January 2020, giving students time to complete site analysis and historical research, as well as numerous site visits, before the first government lockdown was announced in March. On Thursday, 12 March, academics were requested to work from home; the first staff online meeting was called for the following day via Microsoft Teams. IAD programme commenced online on Monday, 16 March, predominantly using Microsoft Teams platform, with no previous training or experience, and supplementing this with existing Moodle module content as well as relying on email as means of communication outside scheduled online classes.

It is interesting to observe the differences between the first group of students in their final project Studio, who attended on-campus studies in the first half of semester, thus having the opportunity to visit the location and carry out site analysis and other research, elements of which were conducted as group work, before switching to remote learning mode, and the second group, a year later, who have not had the opportunity to be on campus, or in town, and have not

had any opportunity to visit the location. Additionally, it may be of interest to note that the period from March to May 2020 was quite different in terms of the psychological reflection of the pandemic and the global transition and adaptation to ‘work from home’, ‘learn from home’ and various public health related government-imposed restrictions, together with the pandemic outlook, compared to the same period of 2021, by which time vaccine availability and greater clarity in messaging regarding the pandemic has made the global population in general become more optimistic about the future.

STUDIO SET IN STONE

Studio-based pedagogy has generally been adopted as the norm in architectural education throughout the last century, the argument behind this being that the strength of the diverse channels of communication, verbal, graphic and spatial, within the studio environment, offer a holistic and varied learning experience. Each mode of communication, often hard to distinguish or define as a result of the nature of the design process, the transmission and the development of which assumes parallel conveyance of representation and verbal explanation, occurs on various hierarchical levels. The range covers all forms of dialogues: from informal peer-to-peer discussions or feedback, to open discussions between lecturers or practitioners, its pace and direction changing rapidly and perpetually – as even the more formal ‘studio crit’ often departs into a discussion, the thread of which may entangle social or philosophical as much as technical or aspects of representation, concurrently. Owing to the complexity and uniqueness of the pedagogical process, the architectural studio format is still considered paramount, and inseparable from the open-ended task given to the group of students which invites complex considerations and arrival at the final, individual, design proposal within the specified time frame, usually a semester-long.

If we examine the historical development of architectural education, we can trace the origins of the studio to the seventeenth century, where practical architecture was taught in studios, evolving from the Renaissance guilds, but separate from theoretical elements which were part of academia. While the model was established at the *École de Beaux Arts* in Paris, where studios became incorporated in the school only in the second half of the nineteenth century, it is in the twentieth century Bauhaus that we see the first truly successful example of the integration of the professional workshop in the

academic education of architects. Its pedagogy was rooted in the traditional apprenticeship system, and proposed re-integrating technical and aesthetic issues through intense work in the production shop.⁴ In the late twentieth and early twenty first centuries, design labs emerge, somewhat linked to the *model shop*, at the time, in traditional studio-based education. Model shops can, in turn, be seen as a separate element to the studio, but ordinarily assume integrated or extended studio work. The emergence of the design labs may be attributed to the technological advancements and availability of means for immediate production and prototyping, but their significant contribution lies in focusing scientific elements of architectural education, consequently impacting both aesthetic and technological standards- in the process. While nothing is novel in the suggestion that contemporary architecture is the product of new technologies, and that the ontological, often confrontational, relationship between the rational, metaphysical, solid and ambiguous in architecture remains open for theorisation, the experience of the pandemic may have clarified the blurred truth: ‘the forms and relationships established by architecture are distinguished from the strict forms of engineering with the assertion that in the latter, innovation is forever dictated by science and technology. Architecture, in contrast, for all that it learns from the engineers’ way of working, should seek a different role for itself: expression of the absolute.’⁵

STUDIES SENT TO AIR

Due to the abrupt shift to online studio sessions and prolonged uncertainty, the methodologies utilised and developed remained experimental and random, often responding to immediate, individualised, challenges. In reflection, the particular circumstance which enabled the online studio to function, especially evident in the case of the Interior Architecture Studio, where previously highlighted challenges in communicating the characteristics of an existing building in lieu of site visits, and expectations that the unseen and unexperienced building will be sensitively restored in students proposals, is that the on-campus studio with all its focus on tangible, physical model making, tactile and immediate analysis, and concretisations through graphics, actually only revolves around perceptions and interpretations. Furthermore, the design proposals from early conceptual stages to final submissions, as much as they are situated, remain abstract and fluctuate in the domain of the representation, as opposed to being present.

In ‘Paradoxes of Appearing,’ Olafur Eliason⁶ discusses his search for the form that has a potential to co-produce reality. His installations and architectural work draw from negotiations and frictions, and are propped by intangible relational set-ups - social, political, collective or individualised - to arrive at their physical appearance, while retaining the dichotomy of representation and reality. To address the outcome of his work, *reality* - a tangible component - is necessary. But this reality is elusive, fluctuating between the representation, illusion, and perception.

Architectural design proposals invert this approach. The physical spatial component is considered to be the factual, given and unquestionable reality. This is a consequence of the ‘analysis’ process, which does not account for the subjective and perceived, and overlooks the deceptive nature of photography. In the particular case of the Interior Architecture studio, this space being the ruin of the former jail building, the notion of the building is merely an illusion of the framework, the context of design considerations. Students have traditionally relied on frequent site visits and photographic records to develop their understanding of the structure, and supported with desktop research, they would produce a repertoire of conclusions in the forms of maps, diagrams and bullet points, but with implied factuality, the objectiveness of which would never be interrogated. The diversity of conclusions has always been present, but rather than recognising it to be the traitor of stability, which would be an excuse to query the methodology of research, it was attributed to students’ individual interests or access to available documents.

If we observe the research element of the studio carried out by the group of students who have never physically visited the site, in the second semester of 2021, it is notable that the focus was on atmospheric, albeit imagined, qualities of the jail building. For them, the building is de-contextualised, despite elements of site analysis which would, at the minimum, consider the Sun path diagram for the specific location. The dark history and political significance of the jail, with its carcass unfortunately forgotten amid service yards and a fire station, are interpreted as a fictional narrative, the role of which is to induce students’ conception. While this in itself may be an affirmative practice, it is the removal or the disappearance of the object of architectural intervention that stands out as a novelty.

Furthermore, the impact of the pandemic on mental health, the pressure created by the media and the challenging personal circumstances a number students

found themselves in, impacted their work. While this is true in terms of the quality and quantity of the output, it is interesting to analyse students' design concepts and their approach to the task. Traditionally, the task is to design a hotel with a specific functional determinant. In years preceding the pandemic, students would generally propose a museum element as part of the hotel's public domain and in response to the building's history, or alternatively include conventional wellness and spa facilities. While the majority of students in the year when pandemic started, proposed a spa hotel at the conceptual stage of the design, with one proposal considering the growing housing crisis in Ireland and consequently choosing co-living & co-working space as a theme, and one taking winery, the progress of design proposals in the circumstances of remote learning and the atmosphere of the lockdown, diverged from their initial understanding of the typologies.

While this process can be observed from the phenomenological point of view and is likely to be strongly related to the theory of imaginative experience,⁷ for the analysis of educational practice it may be enough to acknowledge the role of imaginative perception in understanding and interpreting of, as well as responding to, the object of the design. This is also where the role of remote learning, especially in its earliest stages, had a strong impact. As previously described, the sudden shift to online mode meant that the immediacy of multiple and successive means of communication, possible in the studio environment, became difficult and/or impossible in the online mode. The simplicity of producing sketches on a piece of paper in a studio, as a means of visually conveying an idea, required a considerable time and effort in online classrooms (e.g., producing a sketch, scanning or taking a photo of it, uploading to online classroom, sharing) and would often constitute a one-way conversation. Similarly, unlike in the studio environment where students would engage in work – drawing, model making – and the process could be supervised, the online mode allowed only for enquiry into selected elements of students' choice.

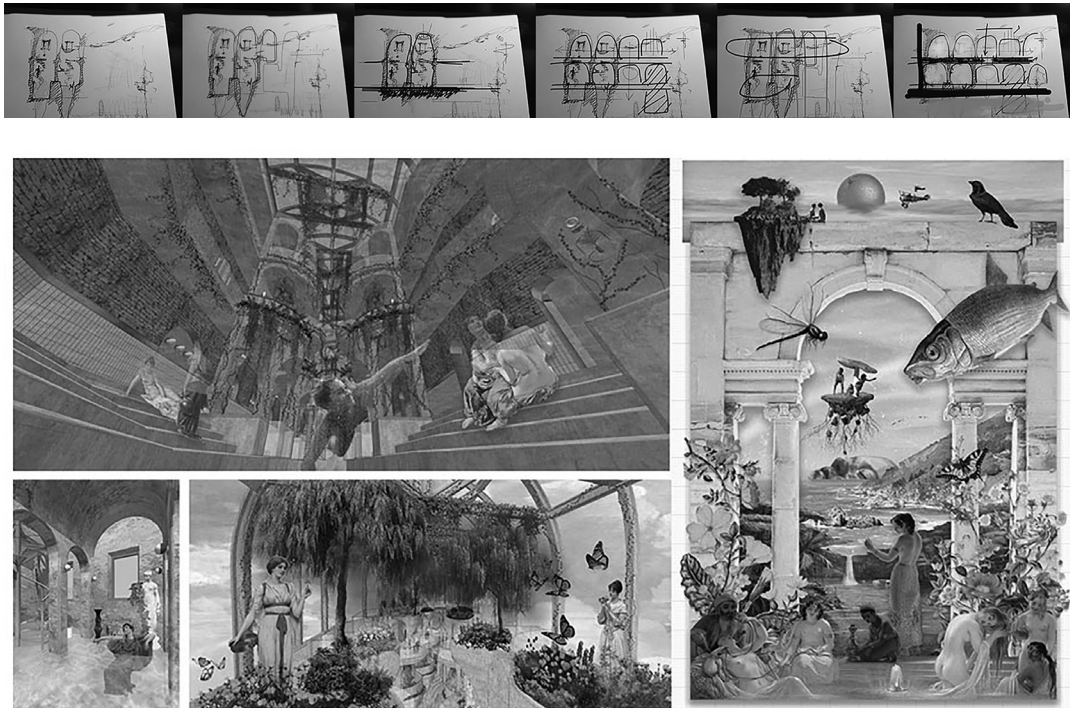
Conversely, the scarceness of materials around which the dialogue could be established, and the slower pace of the dialogue, but primarily the disappearance of the physical dimension across all levels, from the studio space, the space of the building in question, the spatial presence of a drawing or a model, all resulted in an emergence of an abstract environment where this altered design process could take place. While it may be premature to make conclusions, it is worth considering the possibility that the physical experience of the building hinders imaginative responses; or at least that in the absence of the physical experience,

the focus on the intangible qualities of the building strengthens. This could be an instinctive way to establish links to, or simply grasp, reality; or it may be a result of an attempt to overcompensate for the unseen and unexperienced. But it is equally likely that it proves that tangible reality is the means of architecture, rather than its condition.

‘A Hymn to Freedom & Rebellion’ is the title of the final project developed by Jasmine Lee, a third year student, whose proposal won the prestigious IDI Graduate Award.⁸ Drawing inspirations from the remnants of history and myth, Jasmine explored collective perceptions of historical buildings and their functional capacities, shifting the focus on the experiential and sensual components of space. She offered a vision of a dream-like ambiance which transcends temporal and dimensional frames, but which is, at the same time, incarcerated in the boundaries of human experience.

But as the online venue became a chaotic depository of media used and overlapped (Figure 2), the departure from the drawing conventions was insufficient. The vision which could only be betrayed by traditional drawing at the time when the digital domain appeared banal, perhaps caused by our prolonged residence in it during the pandemic, provoked students to wonder outside. Walking through the marvellous landscapes of imagination or memories, when the difference between virtual and real ceased, futuristic visions were created through historical references (Figure 3).

The following academic year, students were given the same task, with minor modifications to the design brief. The building was communicated to students, as previously noted, through repository of photographs and historical documents. This time, students were provided with a basic 3D model of the building. Once again, responses to the brief were more imaginative than in the years preceding the pandemic, but this time the students’ approach had a strong emotional component. From the early analysis stage, prisoners were recognised as victims of incarceration, their lives seen through the experience of the prison rather than the crime, and the analysis of the psychological impacts of incarceration became the departing points of the designs. The reason for this may lie in the endurance or reflections of the government lockdowns which in Ireland lasted from March 2020 until May 2021, with only two brief respite periods when the restrictions were eased or lifted. And yet again, the building became part of the imaginative response, rather than its boundary.



UP: Fig. 2. The sketch(es) produced in Studio as part of the discussions with student Jasmine Lee. Author's own hand drawn sketches are photographed using phone camera and uploaded; linear elements are subsequently added in digital environment using mouse as a drawing tool. (Source: author's own archive).

DOWN: Fig. 3. 'A Hymn to Freedom and Rebellion' - Jasmine Lee's final project design for Sligo Gaol Hotel 2021 (Source: courtesy of Jasmine Lee).

In their textual exposition – design statements, students were referring to the world(s) created in their minds as spaces of escapes from reality, recognising that the freedom of thought can be gained when the constraints of the real world are removed. These observations, important as the driving elements of students’ design concepts as well as their methodologies, could be the consequence or the imprints of the nature of the discipline of the Interior Architecture: the dynamics of the external vs. internal relationship. Additionally, there is a strong link between the psychological analysis or interpretations of the space, albeit intuitive, and the paradox of the creation of the space (interior) within a constituted space (existing structure/building). As Mark Wigley states: ‘...a spacing that at once subverts and produces a space, one that cannot simply be subjected to the logic of the house that depends on it’⁹ points to the distinguished possibility of an escape through internalisation. The difference here is the thinning of the envelope, that is the structure, which is traditionally assigned the dominance.

THE ETERNAL INCARCERATION

In the eighteenth century ‘Carceri d’Invenzione’, Piranesi may have surrendered to his alleged dark creative character, but the series is not about him.¹⁰ Rather, it depicts the space of imagination, where the impossible nature of an internalised exterior and surreal atmosphere of neither unfamiliar nor quite experienced, appears tangible. The scale is deceptive: the room may be the city. Despite the presence of human silhouettes which are situated in familiar architectural forms in proportion, our perception is trapped by the absurdity of the appearance. This does not prevent our bodies from entering into a relation with the depicted space and sense its atmosphere. But it does disrupt our corporeal experience of it.

The field of architecture has always equivocated its dimensionality. Architectural reality contradicts its concept, perpetually proving the complexity of the relationship between the actual and the possibility, often disguised as an intention. The spatial paradoxes of architectural atmospheres emerge from the fractures of virtualised realities, and the loops of visual transmutations. But the atmospheres, for lack of a better name, remain the cogent envoys of architectures – our residence in Carceri takes no interest in matters of the actual existence of depicted space(s).

And while architecture may be eternally confined to its physical representations, its value endures in its *other forms*.

THE PALPABLE DISTANCE

‘Architecture as mediation is rhetoric, the art of communication and eloquence.’¹¹

De Sola Morales

As history accelerates and futures age, we find ourselves moving ever faster through forms of existence. Our ability to move, to conquer distances, and to live transiently, as well as the sheer speed of it, quietly isolate us from tangible environments. Life before the pandemic was already unfolding in the virtual and in luring non-places.¹² The illusion of an image has been replaced by an illusion of a place. The world had to come to a halt to reveal the truth: the boundary between the real and the artificial has dissolved, and digital can no longer be distinguished from everyday existence. ‘The contemporary structure of representation is the product of an interlocking series of augmented conceptual and sensory frameworks that make the boundaries of our perception transitional and provisional rather than fixed and impermeable.’¹³

Architecture, as a form of communication, departed Cartesian space, but its relationship with the virtual realm is still understood as either a form of simulation or attributed to morphogenetic processes. But if we approach this from the opposite direction, we may find the architecture to be the mediator of the material embodiment of digitalisation. In either case, the presence of the multiple dialogue environments, as a consequence of the imperatives of the pandemic, may expand the enquiry into forms of existence and conditions of the disappearance, ultimately shifting the discourse from finite corporeal to endless. Where we are logging-on from became as irrelevant as it is fundamental, allowing us instant access and presence while constraining us into solitude and isolation. The human desire for equality in the cyberspace has been betrayed: by infrastructure as much as by established social and economic hierarchies. And the ‘place’ played a part in cyberspace, although this time taking the role of an ‘enabler’ and ‘identifier’ in the online space.

To the simulated normality of the moment, we bring the remnants of remote learning, the elements which permeated the meticulously defended territories of the physicality of the discipline. No briefs are printed, but rather uploaded; we discuss presentations shared via projectors and record debates. Hand sketching is broadcasted by means of visualisers, so that the discourse can be illustrated for all. And we come together, while maintaining the distance.

After several decades of designing digital architectural spatial experiences, the return to on-campus studio, after just over one year, felt strangely immaterial. The planet has been upturned, and as a consequence entered the fragile world of simulation, of our own making. What we have understood as controlled creation of illusion, became our only reality. And in it, all tangible distinctions became blurred – *all that is solid melted into air*.¹⁴

NOTES

- 1 Jean Baudrillard, *Simulacra and Simulation* (the University of Michigan Press 1994), 64.
- 2 Vincent Mosco, *The Digital Sublime* (The MIT Press 2004), 85.
- 3 Statistical data on internet connectivity in Ireland from the Central Statistics Office <https://www.cso.ie/en/releasesandpublications/ep/p-isslh/informationstistics-households2019/householdinternetconnectivity/>
- 4 Gabriela Celani, "Digital Fabrication Laboratories: Pedagogy and Impacts on Architectural Education", *Nexus Network Journal* Vol.14 (Sept. 2012) 469–482 DOI 10.1007/s00004-012-0120-x.

-
- 5 De Solà Morales analyses Le Corbusier's position, defining his "order of the universe" as the outcome of the mediation of architecture between techniques, images and the panorama that culture perpetually presents, Ignasi de Solà Morales, *Differences* (The MIT Press 1999) 119-120.
- 6 Frictional Encounters by Olafur Eliason in M.Asgaard Andersen, H.Oxvig, *Paradoxes of Appearing* (Lars Müller Publishing 2009), 130-147.
- 7 Roger Scruton, *The Aesthetics of Architecture*, (Princeton University Press 1980), 84.
- 8 The Institute of Designers in Ireland (IDI) recognises the best graduate designs in several categories, and hosts annual award ceremony.
- 9 Wigley observes the relationship between institutions, interior spaces and structures in *The Architecture of Deconstruction: Derrida's Haunt* (The MIT Press 1995), 160.
- 10 'Carceri d'Invenzione' (The Imaginary Prisons) is a series of etchings by Giovanni Battista Piranesi consisting of 14 plates, published in 1750.; republished as 16 plates (numbered and reworked) in 1761.
- 11 Ignasi de Solà Morales, *Differences* (The MIT Press 1999), 121.
- 12 Mark Auge, *Non-Places* (New York, Verso 1995).
- 13 R. Mackay, L. Pendrell, J. Trafford, *Speculative Aesthetics* (Falmouth, Urbanomic 2014), 5.
- 14 *All That is Solid Melts into Air - the Experience of Modernity*; is the title of book by Marshall Berman (London, Verso 2010).

BIBLIOGRAPHY

- Asgaard Andersen Michael, Oxvig Henrik. *Paradoxes of Appearing*. Zurich: Lars Müller Publishing, 2009.
- Auge Marc. *Non-Places*. London: Verso 1995.
- Auge Marc. *The Future*. London: Verso 2014.
- Baudrillard Jean. *Simulacra and Simulation*. MI: The University of Michigan, 1994.
- Berger John. *Ways of Seeing*. London: The British Broadcasting Corporation and the Penguin Books Ltd, 1972.
- Berman Marshall. *All that is Solid Melts into Air- the Experience of Modernity*. London: Verso 2010.
- Cook Peter. *Drawing - The Motive Force of Architecture*. London: Wiley 2014.
- Degen, Monica Montserrat, Clare Melhuish and Gillian Rose. Producing place atmospheres digitally: Architecture, digital visualisation practices and the experience economy. *Journal of Consumer Culture* 17, 2017: 24-3.
- de Solà Morales Ignasi. *Differences*. Cambridge, MA: The MIT Press, 1999.
- Di Mascio, Danilo and Putra Yvette. *Traditional and Digital Representations of Atmosphere in Architecture. A first systematisation*. 14th European Architecture Envisioning Conference, 2019
- Farrell Yvonne, McNamara Shelley. *Dialogue and Translation: Grafton Architects*. NY: GSAPP Books, 2014.
- Goodman Nelson. *Languages of Art*. Brighton: The Harvester Press, 1981.
- Le Corbusier. *Towards a New Architecture*. NY: Dover Publications, 1986.
- Milenkovic Vladimir. *Forma prati temu*. Beograd: MSU 2015.
- Mosco Vincent. *The Digital Sublime*. Cambridge, MA: The MIT Press 2004
- Pallasmaa Juhani. *The Eyes of the Skin: Architecture and the Senses*. London: Wiley, 2005
- Reisner Yael. 'Why aesthetics are more than just a matter of opinion' interview by Arian Lehner, *Architektur Aktuell*. November 12, 2020 https://www.architektur-aktuell.at/news/interview-yael-reisner#_ftn2
- Salama Ashraf M. *Spatial Design Education: New Directions for Pedagogy in Architecture and Beyond*. London: Routledge, 2016.
- Saxena, Shweta. Learning from the Architecture Studio: Implications for Project-Based Pedagogy. *International Journal of Engineering Education*, 2001.
- Scruton, Roger. *The Aesthetics of Architecture*. New Jersey: Princeton University Press, 1979.

METAMORPHOSES: ONLAJN STUDIO ZA DIGITALFUTURES SVET RADIONICA KA ŽIVOJ ARHITEKTURI

Rachel Armstrong

Potrebna je hitna promena paradigme za proizvodnju dela arhitekture, ali kako onda možemo pripremiti studente za promene kad se ovaj novi pogled na svet još nije pojavio? Ovaj rad naglašava antropocentrične perspektive koje su dovele do neravnoteže u životnoj sredini i kroz koje prolazimo zbog pandemije KOVID-19. U skladu sa prelaskom na onlajn studio, predavanje u studiju METAMORPHOSES, koji je bila jednodnevna radionica za Inkluzivnu budućnost koju je organizovala grupa za eksperimentalnu arhitekturu, a vodio je DigitalFutures world, prikazano je i tematski, u smislu istraživanja disruptivnih paradigmi i instrumentalnog korišćenja doma kao radikalnog studijskog prostora. U ovom radu autor zaključuje da u odsustvu formalnog rešenja za modernu arhitekturu i njene ekološki pogubne trope, pedagoški problemi moraju da se okrenu izazovnim konceptima i da koriste eksperimentisanje vođeno projektom, kako bi istražili granice postojeće prakse i uspostavili mogućnosti izvan njih.

KLJUČNE REČI: MIKROBI, ŽIVA ARHITEKTURA, DIGITALFUTURES WORLD, RADIONICA, ONLAJN STUDIO, EKOLOGIJA, PEDAGOŠKI.

HIPERREALNO: NOVA NORMALA ZA PODUČAVANJE NAKON KOVIDA. TRANSFORMACIJA NASTAVE NA DALJINU OBJAŠNJENA KROZ BODRIJAROVE ČETIRI FAZE SIMULACIJE

Mitesh Dixit, Amber Bartosh

Redefinisanje prostornog interfejsa izazvano pandemijom donelo je sa sobom potrebu da preispitamo teritorije koje zauzimamo i da proučavamo i 2d i 3d kao naše izgrađeno i neizgrađeno okruženje. Razlike između fizičkog, digitalnog, stvarnog i virtuelnog su evoluirale i zamagljene su, i mi moramo da pripremimo naše studente za nove dimenzije koje svi zauzimamo i u kojima smo svi uključeni. Kroz alternativne metode ispitivanja, istraživanja i dokumentovanja, mi kao arhitekta i edukatori moramo ponovo da konceptualizujemo šta čini teritoriju arhitekture i da promene koje je zahtevala pandemija iskoristimo kao podsticaje za proširenje našeg razumevanja arhitektonskog pejzaža i lokacije.

Iako se poredi sa Bodrijarovom teorijom simulacije iz njegove knjige „Simulakrumi i simulacija“, ovaj rad opisuje evolucionu fazu instrukcija dizajna tokom pandemije. Opisuje nastavne tehnike koje se koriste da pomognu studentima da shvate koncept prostora, pejzaža i teritorije, u vremenu kada su nas događaji u svetu istovremeno ograničavali na otiske naših domaćih prebivališta i proširili naš međunarodni domet putem podataka i internet konekcije. Prvi plan, pozadina i fokus video konferencijskog poziva su ispitani kroz igru; procenjuje se proces daljinske analize lokacija i istražuje se širenje arhitekture u virtuelno područje. Razotkriva se i diskutuje transformativni postojeći i spekulativni uticaj hibridno-realne arhitekture

KLJUČNE REČI: IMERZIVNO; HIPER-REALNO; INFRASTRUKTURE; TERITORIJA; PEDAGOGIJA DIZAJNA; KRITIČKA TEORIJA; KRITIČKA KARTOGRAFIJA

DA LI SE 'DIZAJNERSKI NAČIN RAZMIŠLJANJA' MOŽE PREDAVATI NA DALJINU?

Nora Lefa

Opšte je prihvaćeno da su određeni domeni znanja bolje dostupni studentima pomoću složenog skupa strategija koje su sveobuhvatno poznate kao „dizajnerski način saznanja“. Ovaj „način saznanja“, koji se ceni kao suštinski (dobar) dizajn, razvija se u okviru procesa dizajna, kopiranja i ponovne upotrebe postojećih oblika i pravljenja artefakata. Nastava na daljinu koja se koristila tokom pandemije Kovid-19 mogla je samo delimično da zameni lično vođenje koje se pruža studentima u normalnim dizajnerskim studijima. Dok bi se transfer eksplicitnih aspekata znanja, kao što je stalna kritička evaluacija i razmišljanje o različitim fazama dizajna, mogao manje-više zadržati na nivou ličnog podučavanja, prenos implicitnih aspekata znanja, zasnovan na fizičkom prisustvu, verovatno je znatno pretrpeo. Ovo poslednje je uključeno kako u reakcije na modifikovani dizajn koji studenti predstavljaju svake nedelje, tako i u nove modifikacije koje predlaže nastavnik, ili kritiku realizovanu pomoću istraživačkih skica koje imaju za cilj da pokažu slabosti ili sugerišu poboljšanja predstavljenog dizajna. Ali, postoji i dobra strana. Studenti otvaraju svoj lični prostor; instruktor može da prilagodi podučavanje na osnovu informacija kojima obično nema pristup.

KLJUČNE REČI: PODUČAVANJE NA DALJINU, DIZAJNERSKI NAČIN RAZMIŠLJANJA, RUČNO I DIGITALNO SKICIRANJE, PRIVATNOST

(MEKŠI) SOFTVER ARHITEKTURE. ISKUSTVA U NASTAVI UNUTRAŠNJE ARHITEKTURE I DIZAJNA NA TEHNOLOŠKOM INSTITUTU SLIGO, IRSKA

Masa Ruane Bratusa

Od mnogih lekcija koje je pandemija donela u naš lični i profesionalni život, prepoznavanje ljudske agilnosti, fleksibilnosti i proaktivnosti je možda najmanje priznato, mada je ono najvrednije. Kursevi arhitekture, koji tradicionalno primenjuju pedagogiju zasnovanu na praksi i neguju učenje zasnovano na studiju, bili su najotporniji da se pridruže rastućoj kohorti onlajn i kombinovanih (ili hibridnih) modela programa. Međutim, okolnosti izazvane pandemijom zatekle su nas, nakon manje od nedelju dana u izolaciji, kako prihvatamo virtuelni svet i urezujemo sopstvene prostore u njegove digitalne niše.

Nakon dva i po semestra isključivo predavanja arhitekture i unutrašnje arhitekture na daljinu, kroz niz praktičnih modula (od studija do arhitektonskog predstavljanja), postalo je očigledno da je arhitektura konačno dobila dozvolu da postane fluidna i interpretirana kroz alate koje i dalje nazivamo digitalnim, čime ih razlikujemo i uklanjamo iz realnosti njihove besprekorne, tihe integracije u naš svakodnevni, fizički život.

Po povratku na nastavu na kampusu, elementi virtuelne prakse postali su deo pedagogije u studiju, dokazujući da učenje na daljinu nije samo korisno za obezbeđivanje pristupa znanju, već i instrument preko kojeg napredni slojevi analize, razmišljanja i kreativnosti mogu biti sprovedeni. Međutim, okupljajući nas, tehnologija ne samo da se uspostavlja kao (jedino) sredstvo već i kao selektor: kvalifikaciono učestvovanje na osnovu povezivosti i kvaliteta opreme.

KLJUČNE REČI: SOFTVER, DIGITALNI ALATI, REZILIJENTNOST, OBRAZOVANJE, POVEZIVOST

PRIVACY STATEMENT

The names and email addresses entered in this journal site will be used exclusively for the stated purposes of this journal and will not be made available for any other purpose or to any other party.

CONTRIBUTORS

Rachel Armstrong, PhD
Professor, Department of Architecture, KU Leuven, Belgium
rachel.armstrong@kuleuven.be

Mitesh Dixit, M.Arch
Assistant Professor, Department of Architecture & Design, Politecnico di Torino
DOMAIN Office
info@domainoffice.eu

Amber Bartosh, B.A., M.Arch
Assistant Professor, School of Architecture, Syracuse University
abartosh@syr.edu

Nora Lefa, PhD
Associate Professor, School of Fine Arts, University of Ioannina
nora_arch@yahoo.gr

Masa Ruane Bratusa, MScArch, MRIAI
Ass. Lecturer, Atlantic Technological University Sligo
masa@studioplustwo.com

AUTHOR GUIDELINES

SAJ is a blind-peer reviewed international journal of original multi- and interdisciplinary inquiries of architectural theory and spatial practice. SAJ considers all manuscripts on the strict condition that they have not been published already, nor are they under consideration for publication or in press elsewhere and which report original research and demonstrate a full command of the scholarly literature and understanding of the codes of academic discourse. Papers for consideration should be submitted to saj@arh.bg.ac.rs.

manuscript submission

Authors are encouraged to submit manuscripts electronically as email attachments, and for any assistance, please e-mail to editorial team saj@arh.bg.ac.rs.

All submissions must include these separate files, presented in this order:

1. Cover file as a MS Word file containing names, full affiliation, e-mail and postal address, year of birth and brief biographical notes (200 words) of each authors and any acknowledgements regarding the submitted article;
2. Article as a MS Word file containing title, abstract, keywords, text, accompanying endnotes, bibliography and captions with illustration sources;
3. Figures grouped as a Zip/Rar/7z file.

All files should be labeled with authors' last name and a number from the list above.

form of the manuscript

Contributions not conforming to style may be returned.

Articles are limited to the given word count (not including notes and captions) and 10 illustrations, and articles not exceeding 10,000 words are preferred. Manuscripts are to be classified as: 1) Original Scientific/Research Article; 2) Review Article; 3) Short Communication; 4) Critique; 5) Polemical Article.

Papers are accepted only in English.

The article file must be 1.5 line-spaced on standard size paper (A4). Pages must be evenly-justified. Do not use automatic numbering for the caption list or numbered lists.

Title is limited to max 100 characters with spaces.

Abstract is limited to max 200 words and accompanied by keywords (up to 7). It should summarize the argument of the article and be written in the third person.

The text of the article including introduction section is preferred. Section headings should be concise and numbered sequentially, using a decimal system for subsections.

Footnotes are not acceptable. Notes must be supplied as endnotes at the end of the article using the Endnote function in Word. The use of notes in general should be kept to a minimum and must not exceed two-thirds of the length of the text. Bibliography list is required to follow the article. Endnotes and bibliography should be formatted according to The Chicago Manual of Style.

All illustrations, whether diagrams or photographs, are referred to as Figures. Figures must be saved separate to text. Please do not embed figures in the article file. They should be in Grayscale or BW Mode and numbered consecutively in the order in which they are referred to in the text. Please prepare all figures, especially line diagrams, to the highest possible standards. Please be sure that all imported scanned material is scanned at the appropriate resolution: 600 dpi for line art, or 300 dpi for pictures. Files should be saved as TIFF or PDF file. Maximum reproduction sizes in the journal are: 11x19cm (full page), 13x6cm (bottom) or else that follows maximum height of 5-6cm. All sizes given are maxima and include borders.

general guidelines

Use current UK spelling and typographical practice.

After the first mention, the last name of a person, living or dead, will suffice unless clarity requires a title or additional name.

Use figures rather than spelled-out numbers for cardinal numbers over one hundred and for all measurements. Form the plural of decades without an apostrophe; “1990s” rather than “1990’s.” Dates should be given in the following forms: “22 October 1946,” “22 October,” “October 1946,” and “1946-51.” Spell out centuries and millennia in full: “twentieth century.”

Use figures rather than spelled-out numbers and spell out units of measurement: “100 feet” or “31 centimeters.” English and metric units may be abbreviated in discussions of quantitative data in technical articles: 100 ft., 31 cm (no periods with metric abbreviations).

Do not use abbreviations in the title of a paper, in the abstract, in the keywords, in the running heads or in headings and subheadings within the paper, unless the full version is very long and clumsy or the abbreviation is better known than the full term. If in doubt, spell out. Define an abbreviation the first time that it is used (except in the Abstract): write the term out in full followed by the abbreviation in parentheses. Use the abbreviation consistently thereafter, including at the start of sentences.

Quotations from foreign languages must be translated in the text, with the original in the endnote only if necessary. Isolated foreign words should be italicized. Full foreign-language quotations are set in Roman type and put within quotation marks. Foreign personal titles, names of buildings/rooms or places (Sala della Regina, Palazzo Montecitorio, Piazza Navona), institutions (Biblioteca Angelica), and the like are not italicized.

Use single quotes, with double quotes within quoted material. Short quotations should be indicated by single quotation marks, with double quotation marks for quotation material within the quote. A full point (or other punctuation) follows the reference for the quote: ‘... is the most decisive and important’. Lengthy quotes (40 words or more) should be displayed in block quotation, i.e., separate paragraph, indented and it should not have quote marks.

All other editorial issues may be resolved by consulting The Chicago Manual of Style or the SAJ Editorial Office.

author's agreement and permissions

When a manuscript is accepted for publication, the author will be sent an author's agreement that shall be signed and returned, as well as a layout proof to review and approve.

Contributors are required to secure permission for the reproduction of any figure, table or extensive extract from the text of a source that is copyrighted or owned. Authors are themselves responsible for the payment of any permission fees required by the copyright owner. Copies of the written permissions should be attached to a copy of the captions/sources lists and accompany the signed author's agreement.

postprint permission

Authors of accepted papers will receive a PDF file of their published paper. SAJ will also permit the Author to use his/her Article elsewhere after the date of its publication in the journal in other works or for the purposes of the Author's teaching and research.

Reprints of articles published in SAJ can be purchased. If you have any queries, please contact the Editorial Office at saj@arh.bg.ac.rs.





CIP - Каталогизacija у публикацији
Народна библиотека Србије, Београд

72

SAJ : Serbian architectural journal / editor-in-chief Vladan Đokić. - Vol. 1, no. 1
(2009)- . - Belgrade : University of Belgrade, Faculty of Architecture,
2009- (Beograd : Donat Graf). - 27 cm

Tri puta godišnje.

ISSN 1821-3952 = SAJ. Serbian architectural journal
COBISS.SR-ID 172308748

ISSN 1821-3952



9 771821 395002