'NOT TOO LATE'

DESIGN THINKING FOR ECOLOGICAL FUTURES

// TU Dublin, Grangegorman Campus, Dublin, Ireland

www.aiarg2023.com

// Friday 14 April 2023

'**NOT TOO LATE**'

DESIGN THINKING FOR ECOLOGICAL FUTURES

All--Ireland Architecture Research Group

12th Annual Conference

Friday, 14th April 2023

Partners

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INTRODUCTION

A-IARG 2023 "NOT TOO LATE"

Inspired by Rebecca Solnit's and Thelma Young Lutunatabua's project, 'Not Too Late' — AIARG's 12th annual conference 'Not Too Late: Design Thinking for Ecological Futures' will explore the shifts required in architectural thinking to address climate change while inviting us to think optimistically about the future. This conference will support a HEA funded revision of Irish architectural education, Resilient Design Curricula for 21st Century Design Professionals, and invites local and global perspectives on how teaching, practice, research and policy can address the urgent challenge of climate change. This year's new edition includes diverse cross-sectoral support and speakers including Dublin City Council (DCC) and Smart Dublin, as well as a much-anticipated climate-attentive remote keynote from Kiel Moe — with a range of sub-topics that are anticipated to provoke discussion on the impact, contribution and responsibilities of architectural thinking in Ireland and beyond.

For more information, see A-IARG 2023's website: www.aiarg2023.com/

ABOUT A-IARG

Established in 2010, the All-Ireland Architecture Research Group (A-IARG) is a network of researchers from nine higher education institutions in the Republic of Ireland and Northern Ireland and professionals interested in architectural research. It is at the forefront of establishing a nexus of relationships between research, education, and practice within the field. AIARG seeks to facilitate and foster ongoing development in architecture as a research field in Ireland by providing an infrastructure for research in the form of conferences and peer-review publication opportunities and by raising the profile of research within the education of architects and their subsequent careers as practitioners.

Conference Lead Organisers:

Brian Ward, Jack Lehane, Yağmur Burhan, Niamh Hurley

CQ

RH

TU

EQ
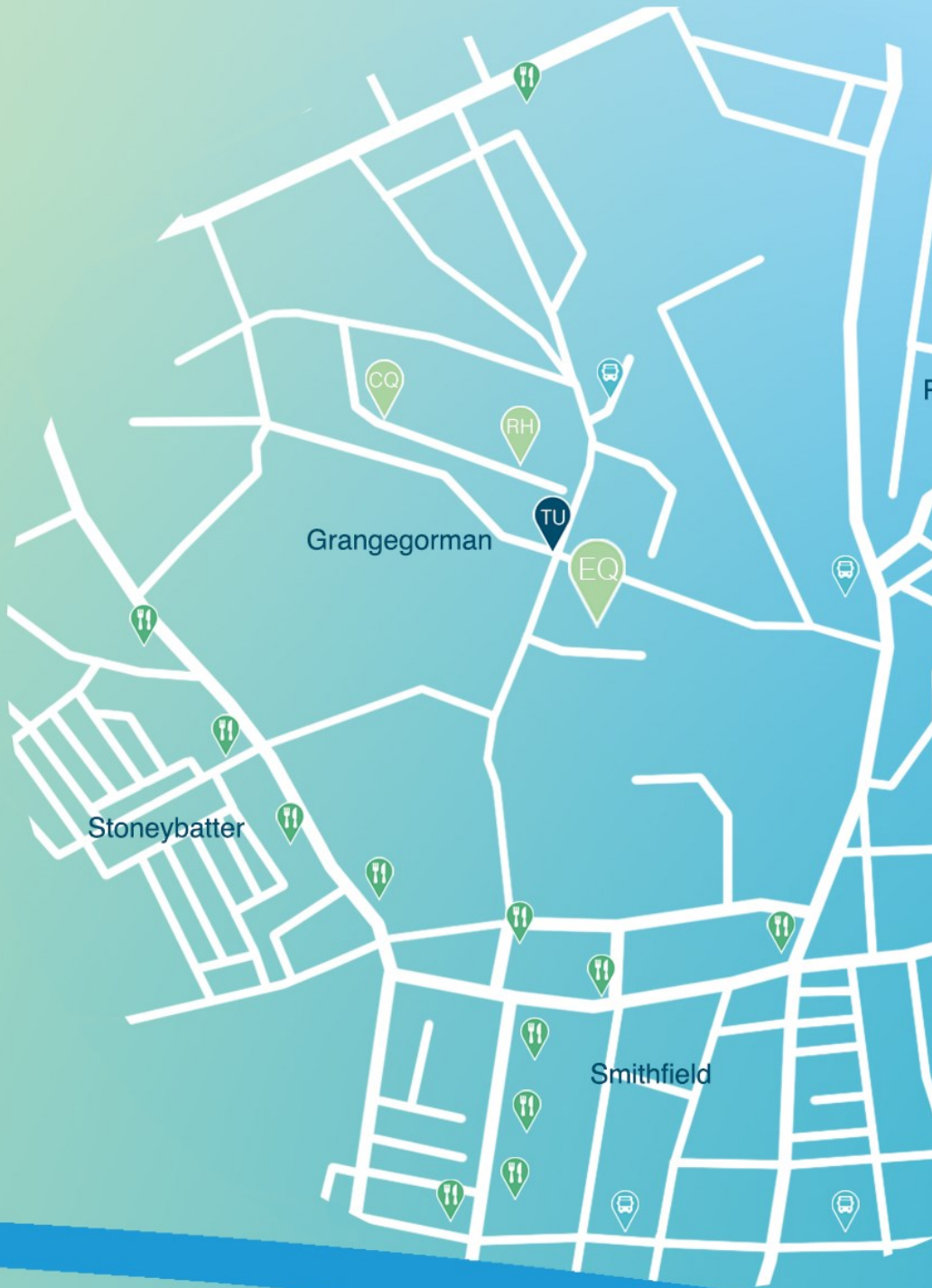
Grangegorman

Stoneybatter

Smithfield

River Liffey

Phibsboro

TU TU Dublin Grangegorman Campus

East Quad (conference venue),
Central Quad, Rathdown House

LUAS Stops

Cafes and restaurants

Access to TU Dublin Grangegorman Campus:

By Luas: Grangegorman and Broadstone-DIT Green
Line stops and Smithfield Red Line stop.
By Bus: Bus lines 9, 37, 39, 39A, 70, 83, 140, 155.
By Bike: Dublinbike stands are located outside the
campus.
On foot: The campus is within 30 minute walking
distance from Dublin city centre.

OPENING ADDRESS

Chaired by: Jack Lehane + Brian Ward

INTEGRATED TEACHING IN ARCHITECTURAL EDUCATION

Chaired by: Jack Lehane

SIMA ROUHALMIN

FUNdaMental Fridays - A collaborative and playful pedagogical approach in design studio

This paper forms part of on-going research in architectural pedagogies, in particular the role of critical thinking and its importance to the future of the profession on the basis of emerging local and global issues. In the context of climate emergency, it suggests that architectural education needs to evolve and reform to maintain its relevance in a setting of rapidly changing technological, environmental, social and economic demands. Accepting the premise that it is no longer feasible for a learner to gain all of the necessary available knowledge of a profession through existing traditional form of education, the suitability of a different type of learning experience and formation to one which simply imparts static knowledge and skills is discussed and examined.

In human psychology and behavioural science, play and self initiated play is accepted as a fundamental form of learning. This is learning that is gained through exploration, experimentation and the associated experience rather than being taught something specific. Play can enable, ignite and elevate curiosity which can in turn nurture critical thinking skills. Furthermore, this curiosity, in a collective environment with a shared endeavour becomes much more powerful in it's effectiveness as a learning tool, than on an individual basis.

This paper examines theories of play as a creative pedagogical approach in fostering critical thinking skills in a collaborative setting and explores it's application in the context of climate emergency in students design process. These theories formed the basis of a pedagogical shift in architectural education through collaborative studio between final year Architectural Technology and final year Architecture students at Dublin School of Architecture. Fundamental Fridays was the weekly meeting point in a semester long project, were all students, staff (from both disciplines) in addition to external industry experts and consultant got together, discussed, explored, designed and shared in an unscripted way their findings and work from that week.

The initial findings indicated that learning through the act of play in a collaborative environment empowers the learners to experiment much more than if working on an individual basis. Collaboration within the same discipline and across disciplines encourages, supports and nurtures intrinsic motivation. This enables the individual learners to learn through their curiosity, interest and above all enjoyment which can push the boundaries of their knowledge and perhaps even the boundaries of existing architectural knowledge.

This paper proposes a change in the process of design education to allow play as a tool for the student's learning, a central pedagogical approach, where nothing is predetermined, everything is up for grabs and anything is possible.

MIRIAM DUNN + GRAHAM PETRIE + EDDIE O'DONOVAN

Assembly, Gravity and Environment (AGE): Integrated teaching for interactive design

How do we build into the future: the interactions between structural systems, material assemblies and environmental forces are critical to an architecture that might sustain all life, in the short and long term, and achieve a balance between energy input and output. With these ideas in mind, the three modules of Assembly and Technique, Gravity and Reaction, and Environmental Systems and Forces are taught together – AGE – by a team of architects and an engineer to students of architecture from first to third year at SAUL School of Architecture, Limerick.

The AGE Module/s continuously question how the fundamental forces of nature inform the design process with increasingly complex situations and to communicate, analyse and develop integrated design solutions (between disciplines) through working drawings, sketches & models in response.

In Year 1, under the theme of Sticks and Stones, sketch models and drawings are used to test how the appropriation of structure and material to its environment relates to dwelling and inhabitation, from indigenous to contemporary building techniques.

In year 2, a series of models are built from survey drawings that "de-laminate" the layers of construction to develop an understanding of how the endurance of urban fabric, such as the Georgian buildings of Limerick, can teach us 200 years later and into the future in order to "discover alternative ways of doing things." (Conzett, 2007)

In Year 3, the surveying and drawing an existing building within the campus of the University of Limerick, from the 1970's to the present, in *layers* of structure, environment and services examines technological, social, regulatory, and economic concerns simultaneously.
The final stage of study is to re-invent these *layers* in a timber structure based on themes of joint, span, material density; embodied energy, façade, envelop, heating and air volume and water collection and attenuation to demonstrate future possibilities.

MATTHEW JONES + JEMMA BROWNE

System-Shifting the Design Studio: Educating regenerative future practitioners

Published in 2021, the UK Design Council's *Beyond Net Zero* report identified that designers are 'not yet using their skills and resources to deliberately support the green transition in the way that they should and could'.1 A rising awareness of climate change, biodiversity loss and environmental and social injustice has brought into sharp relief the urgent need for design to explore radical solutions to address these complex systemic and intersectional challenges - to '*system-shift design*'2.

Design Council's *Systemic Design Framework* captures six principles to guide this shift: people and planet centred, zooming in and out, testing and

growing ideas, inclusive and welcoming difference, collaborating and connecting, and circular and regenerative.3 While primarily aimed at industry, this paper explores the application of the Framework through two educational case studies drawn from Co.LAB, Birmingham School of Architecture & Design's interdisciplinary live project initiative: High Street 2030, a collaboration with social innovation lab CoLab Dudley, and Frameworks for Environmental Justice, a collaboration with Birmingham City Council and the Dolphin Women's Centre.

The paper argues for the potential of combining design thinking with systems thinking to co- create reimaginings of our built environments in ways that are both environmentally and socially regenerative. It reveals the potential of systemic design, as captured in the framework, as a threshold concept with potential for a deep personal and professional impact, shaping the attitude and mindsets of individuals as well as their professional trajectories toward regenerative futures.

CAROLINE AKIBOYE + SIMON CONOLLY

Education of Construction Professionals for Practice in a Changed World

The emerging generation of construction professionals - architects and engineers - must be equipped to understand and respond constructively in their practice to growing environmental crises, and the concomitant social issues.
Over the past 8 years with engineering students, and 3 years with architecture students at final undergraduate degree level, we have set challenges for our students to respond with an awareness of the environmental impact of materials and constructions, including the carbon footprint of selected materials and the consumption of energy and water in the use of buildings. The engineering students design and build structures such as bridges or shelters with limited budgets (€5-600) and account for their choice of materials and environmental impact.

The scenario set for architecture students is the year 2050, Cork's climate now suffers regular stormy wet winter weather, and long hot dry spells in summer. EU Directives now require every new building project to be totally self-sufficient in energy and water use; projects' carbon footprint should be measured and minimized in both initial construction and life cycle, as well as being zero energy/carbon-neutral in operation.

The context has focussed over the past three years on inner parts of Cork city undergoing processes such as industrial dereliction, or commercial decline, with opportunities to reuse neglected or derelict buildings, and analyse and improve biodiversity, air quality and self-sufficiency in food-growing.

We have also sought to bring the two cohorts of students together, as they will need to collaborate in practice, but tend to be educated separately.

Although the teaching programmes described here echo aspects of the recent Resilient Curriculum, they predate it by a few years.

The theme will be illustrated by student project work.

HOPE IN A TIME OF CRISIS

Chaired by: Marcin Wojcik, TU Dublin

RÓISÍN CAHILL

Finding hope, Taking action - A briefing note from the front line of practice

"To hope is to give yourself to the future - and that commitment to the future is what makes the present inhabitable." Rebecca Solnit, Hope in the Dark, Canongate Books, 2016

In 2018 anthropologist Bruno Latour recognised that we are awakening to a reality where humans are not the sole inhabitants of the earth, but a part of a complex and intrinsically interdependent ecosystem.1 A disorienting revelation. Its acceptance, destabilising the values leading the Anthropocene's blinkard charge. We must find a new true north, forge a hopeful vision of the future. To quote Lyman Tower Sargent's 'Choosing Utopia', "We must choose Utopia. We must choose the belief that the world can be radically improved."2

In line with the ambitions of 'Not Too Late', the proposed paper embraces optimism by reporting on the live-case study of a large Irish architecture practice's ongoing transition to sustainability. The paper aims to focus on how and when architects can gain agency, establishing a hopeful vision of the future and working toward it. The paper examines methods of embedding climate consciousness into the forefront of daily practice. This research paper will be a note from the frontline of practice, directed by Solnit's assurance that "hope calls for action, [and] action is impossible without hope."3

"Hope calls for action" - Seizing the potential of low-hanging fruit.
A review of the implementation of immediate actions to improve environmental impact within an architect's sphere of influence.

"Action is impossible without hope" - Empowering a positive narrative.
A reflection on promoting the growth of sustainable values throughout the practice. Examining the development of a hopeful narrative for the future role of architecture through discussion and knowledge sharing. The paper will also highlight the potential to gain agency and knowledge through the use of life cycle assessments.

GRACE JOHNSON

How can post humanism be a method in architectural research?

The purpose of this paper is to articulate a posthuman research method in architecture. Posthumanism is a line of philosophical inquiry that considers a less-than-human earthly future. An emerging set of ideas exists as a line of theoretical inquiry, but it is only now these ideas are operationalised into a practical and actionable empirical method (Braidotti, 2013). Architecture, as a discipline focused on humans' place in the future, currently exists within a parametric age of design (Schumacher, 2009). The incorporation of posthuman philosophies into the design field, inspired by Grafton architect's "Free-Space" manifesto (Farrell & McNamara, 2017), could provide the stepping stone toward a post-parametric era that decentralizes the humanist take on who the client of architecture can be.

By way of approach, this paper articulates a method of research and narrative inquiry with architects to surface how they conceptualize the client, the presumed object at the end of the architectural design process. In this, the study aspires to set forth a method of interviewing architects in ways that naturalistically surface posthuman effects that are now permeating the field. The series of interviews intends to capture a current landscape of interaction between architect and client to understand the current philosophical underpinning of the client construction process that exists in today's evolving humanist society.

As the work is only now emerging, and findings are tentative, the paper sets out the method and early findings. In doing this, it aspires to contribute to the emerging field of posthuman exploration in architecture.

MARTIN MURRAY

Three passive houses in a garden

Responding successfully to climate change can only ever be a collective endeavour. The need for such collaboration brings the practice of architecture and architectural education centre stage, however the position must be earned by positive action and transformation. The architect's role has evolved; however the climate-biodiversity emergency has created a void which can only be bridged by a forcefulness of philosophical outlook.

Hope necessitates action, and action attracts choices. In research terms these choices can be understood through the heuristics of Ulrich, identifying the who and why of the value boundaries related to energy, to be viewed either as exploitable asset, or a basic right and social good, whose value we must always look to protect.

The nZEB energy standard has failed to bring such social values forward because being defined by the cost optimality of market values it is also defined by those same market solutions. At the 2017 Climate Change Citizen's Assembly, only two resolutions gained 100% support, one unequivocally recommended that sustainable energy initiatives be promoted as community endeavours, and one requested the State to ensure the greatest possible levels of community ownership in all future renewable energy projects.

This theme is explored through an energy-positive urban infill of three passive house buildings, designed to a capability of residential or commercial use. The intent of the research is to communicate through loose-fit design, detailed energy assessment, integrated on-site renewable energy, and careful calibration of embodied carbon, a meaningful physical model of development, reflective of how we can live in 2050. We need a manifestation of hope, something which legislation and standards alone, without design, can never express. It is difficult to conceive of this being achievable or viable, if we fail as architects to physically express our energy policy in a socially equitable way, a commons infrastructure.

LANDSCAPES, FARMING AND FOOD

Chaired by: Anna Ryan Moloney, SAUL

DEAN BLACK

The Modern Broiler Chicken, The Female Farmhand & The Artificial Mother

With 23 billion alive at any one time, the modern broiler chicken outnumbers all other domesticated species on planet earth, including that of humankind. Banished from the domestic realms of our homes and cities however, today, humanity's contemporary companion species walks on eggshells between the agricultural and industrial lines of the modern poultry house - a pervasive architectural paradigm that fulfils our insatiable appetite for the bird's fleshy breasts and thighs. The bird's bones equally present themselves as geological markers that have come to define our time within the Anthropocene. Indeed, the rise of our avian companion and the modern poultry industry has significantly restructured agricultural landscapes, foodways and the body of the chicken itself. In the advent of myriad socio-political, ecological and border crises however, its proliferation as a standardised commodity and future within the United Kingdom and Ireland has been made uncertain.

Addressing such concerns, this paper investigates the historical and contemporary development of the modern poultry industry in Ulster, Northern Ireland – whose chicken bodies now supply 30% of British and Irish markets. By investigating the spatial realms of the 20th century home and fowl house, post-war development of the mechanised incubator/ refrigerator and the poultry house as it exists today, I argue that the rise of this agri-industrial enterprise has been inherently linked to a series of nonstandard actors and histories. Histories imbued with notions of women, Northern Ireland and the chicken itself as entities that are often made other. In doing so, this paper employs Donna Haraway's theories of '*becoming with'* as a conceptual tool through which the industry's development and the relations it embodies may be brought to light. In turn, the paper looks beyond normative boundaries of what constitutes architecture and suggests that by collective acts of '*brooding'*, we may disrupt and inform future relations between humans, animals and architecture/technology at large.

EMMA CAMPBELL + GREG KEEFE

From building to interface: reframing the supermarket to unlock climate transition pathways

described as a big-box store filled with trolleys, aisles, and checkouts, situated out-of-town with a vast car park. They are rarely admired for their architectural character, yet they are culturally significant spaces because we buy most of our food from them. Supermarkets have perfected an efficient and convenient system for selling food, but this current model is far from perfect: in fact, it's precarious, murky, monopolistic, and unhealthy for both people and the planet. Despite this, it is hard to imagine a radically more sustainable food shopping model that could fully replace it because they rely on a complex, locked-in food system. Therefore, imagining a new typology requires a new approach; one that reframes it as an interface to wider social, technical, economic, ecological, and political systems. In doing so, the space and food system are holistically reimagined to achieve better alternatives for both. Much like Reyner Banham's seminal text, *A Home is not a House* - a supermarket is not just a building; it's also a meeting space, a waste producer, a refrigeration node, a public health actor and much more. In the race to net-zero, thinking and designing in this way, reframing the supermarket from building to an interface, opens opportunities to reveal previously unconsidered climate transition pathways.

Through research-by-design methodologies and the application of systems thinking, this paper uses the supermarket as a case study to imagine new ways of seeing and redesigning architectural typologies in the context of a rapid climate transition. In the paper, the supermarket is first defined from an architectural standpoint, then in its relationship as an interface to wider local and global systems. This informs a thematic lens-based investigation through which pathways to several future supermarket typologies are imagined.

HELEN MCFADDEN

The construing and constructing of time in Mulranny'

This research paper, which emerged from the "Architecture and the Landscape" postgraduate research unit under the M.Arch Programme in TU Dublin, explores the role of time within the landscape and architectural design.

In Perception of the Environment, Ingold states "there is no construing without context: the act of perception is inextricable from where it happens, when it happens and under what conditions." Accordingly, Mulranny in Co.Mayo was chosen as a testing ground for the development of the research and design based dissertation.

Mulranny, a rural village located on an isthmus between Clew-Bay and Blacksod-Bay, developed in a ribbon around a tidal-pool at the foot of the Neiphin Beg mountain range and at the entrance to the Corraun peninsula. Its cultural and physical contexts are intrinsically linked - it's "identity is quietly embedded in the land". However, the village's landscape formations are currently and increasingly struggling to cope with the climactic conditions it is being presented and its future is in a precarious position.

Consequently, the thesis involves the construing and constructing of time in Mulranny to imagine how its old-world infrastructural landscape within the tidal-pool area will adapt into a future which aligns with and meets the objectives of the County and village Decarbonisation Zone Goals.

Time, a complex intangible element, is construed through architectural, cultural, ecological, geographical and historical theory. The theoretical lens prompted discrete studies through drawing and modelmaking into the particularities of Mulranny's physical and cultural contexts at three distinctive scales of enquiry – 1:1000, 1:50 and 1:5.

In response to these studies and the work of the Mulranny Community Future's Committee, a new climate registered architecture is constructed within the tidal-pool. Under the guidance of localised constructive-logic, the

project protects carbon sequestering landscapes such as saltmarshes, sand dunes and machair against the rising tide by discretely intervening with an estranged and disrepaired network of infrastructure consisting of a Famine Pier and a Victorian Pumphouse and Causeway.

INNOVATIVE PEDAGOGIES

Chaired by: Sarah Mulrooney, CCAE

PHOEBE BRADY + AIDAN CONWAY

Teaching and Learning for the Climate Agenda: Clare Island Co-operative Settlement

This paper will discuss a shared research and design project that was conducted with students at the School of Architecture at University College Limerick and at University College Dublin in Autumn 2022. The shared programme sought to develop a '*robust and questioning design studio culture'* that could develop responses to the challenges climate change presents to architectural practice.

Modules leads Peter Carroll at SAUL and Peter Cody at UCD, invited two groups of third year students to visit Clare Island, County Mayo. Responding to the development of the Resilient Design Curricula Reform, the shared brief asked students to research aspects of the Praeger Survey, the subsequent New Clare Island Survey and past and present land management systems and to conduct conversations with local champions to inform ideas for the future conservation and sustainable development of the natural and built heritage of the island.

Working in small groups the students collectively imagined a mixed farm (ing)settlement that could encourage a co-operative way of living in a self-sustaining community. The groups cultivated a common, site specific ethos as a parameter for design and methods of building construction, and systems of infrastructure were considered to work closely with the landscape and with local resources.

From the perspective of studio tutors, working with groups in both schools, this presentation will relate the resulting evolution of the project and will identify particular strategies tested taken by the staff and student groups in the context of the ambition to devise new approaches in architectural education which better reflect a response to the climate emergency.

New methods for learning critical reflection, collaborative brief formation, sustainability as a way of thinking and acting, collaborative peer-to-peer learning were deployed over the term, promoting empathic and inclusive design and more democratic ways of teaching. The presentation will

include feedback and insights from participating tutors and students over the course of the semester.

TIM COLLETT + GUILLERMO GUZMAN DUMONT + ROBIN WILSON

Urban Regeneration

We would like to share the results from a joint design project involving 23 architecture graduates who have returned from a year in practice to complete the final two years of their university-based education and 18 building systems engineering students who have returned from a year in industry to complete their fourth and final year of study.

Taking a 1500-hectare mixed-use development currently under construction to the south of Nottingham as its focus, the project challenges the students to draw upon their collective skills to reimagine an alternative future for the site, and in so doing, evolve a symbiotic relationship between the city and its greenbelt.

By transposing the current greenbelt programme onto the masterplan for a repurposed urban block in the city centre, the project explores how a process of twinning with a sibling development on the greenbelt site might deliver a full range of ecosystem services. The project tests whether, when taken in combination, it is possible to combine the urban and the greenbelt to provide for an autonomous, 'off-grid' future.

By focusing on regenerative ecosystem services linked to carbon sequestration, energy and food production, and the nutrient and water cycles, the presence and two-way exchange of services between the urban block and the greenbelt will be quantified. These will be used to speculate on an alternative model for how we conceive the greenbelt and the nature of the communities that might operate as part of it.

The final stage of the project takes the knowledge gained from exploring the relationships that exist within the system set up by the twinning process and challenges the students to imagine a Nottingham of the future, where

symbiotic relationships between the entire city and its surrounds function as a regenerative system.

CONOR WHITE GIBSON

The Shearing Layers of Carbon

Architect Frank Duffy and later Stewart Brand in his book, *How Buildings Learn: What Happens After They're Built* proposed the concept of 'Shearing layers of Change' to categorise building into distinct layers, each with their own lifespan. This paper proposes taking this concept and exploring it as a framework for how we teach the idea of Whole Life Carbon at our Schools of Architecture.

Brand defined how a building can be stratified, identifying five elements he termed Shearing Layers;

Site, Structure, Skin, Services, Space Planning and Stuff.

This paper seeks to explore concepts such as utilising the super-structure of future buildings as carbon

stores. Placing adaptability as a central design criteria in space planning. Embracing the idea of modularity and standardisation in how we skin and re-skin our buildings and pursuing the concept of circularity and re-use of the services and other 'stuff' that continually rotate in and out of the spaces we create.

This proposal focuses on pedagogy and will describe a series of lectures/ workshops that would equip undergraduate students with the core skills and knowledge to robustly integrate a holistic approach to sustainable design into their primary design projects. The ambition of scaffolding an introduction to Whole Life Carbon around these series of Shearing Layers is to make sustainability easier to understand, embrace and ultimately enact.

ZOE VICTORIA GIBSON

SuperStudio Pedagogy: Innovation for the Architectural Design Studio

The landscape of the architectural profession is advancing at a radical pace as new technologies and desired competencies are increased in the Built Environment. Pursuing a career in architecture is becoming increasingly more skills-based, as educational pedagogies are preparing students for architectural practice. Architectural education has been criticised as a course necessitating five years of intense education, and schools are being questioned about the design studio, for their effective course delivery in preparing future architects. Due to the increasing disconnect between the architect- in-practice, and the architect-to-be, calls from educators, practitioners and the profession have been acknowledged for a re-evaluation of architectural education.

Recognising the limitations of the contemporary design studio, (Pilling and Nicol 2000, Roaf and Bairstow 2008) few attempts have been made to challenge the traditional, architectural education system. In the context of architectural education, this research looks at different schools, academics, scholars and practitioners who are calling for educational reform (Potts 2000, McClean, 2009, Tankard 2020) Whilst there has been a call for change, there are many literary sources (Salama and Wilkinson 2007, Koch, et al. 2002, Thompson 2019) that provide an outlook on what it means to be in architectural education, to develop and embody the importance of critical thinking and independence of students entering the professional workplace. An analysis of the design studio, and the methods by which architects are educated, allow this research to determine what the core fundamental aspects of architectural education should envelop.

Acknowledging the changing context of architectural education, this PhD aims to research Vertical Studios to determine if it can be a successful pedagogy for educating architects. The Belfast School of Architecture have introduced a new architectural pedagogy, challenging aspects of the traditional architectural design studio by implementing vertical teaching studios, combining students of all stages into the same educational environment.

WORKSHOP/DROP-IN SESSION

Chaired by: Miriam Delaney, TU Dublin

YEAR 4 ARCHITECTURE STUDENTS, TU DUBLIN

Radical Pedagogies of an unknown future

The editors of 'Radical Pedagogies' describe experimental architectural teaching practices of the 1960s and 70s as 'relentlessly shaking disciplinary foundations' . Architectural educators and students of our time are likewise fundamentally changing how and what we teach and learn in this time of climate crisis.

A group of eight architecture students from TUDublin (led by Miriam Delaney) have been researching and comparing contemporary experimental and radical modes of teaching and learning architecture that look to the future with hope and action. The work is being conducted as part of a fourth year BArch Research Elective module, which began with readings on radical pedagogical concepts, gathering contemporary texts on new teaching practices, and finding case studies under a range of themes including; pedagogy, protest and activism; blurring disciplinary boundaries, rethinking the architect's role; and new material and making practices.

The student work will be collated into an online interactive graphic map of emerging pedogical approaches (using the Arch+ Feminist Practice Map below as a reference).

At the AIARG 2023 conference, the students will show an overview the summary results of our research to date, asking for contributions and responses from conference attendees. The workshop will be conducted in a 'drop in' format, where questions and prompts posed will assist us in identifying case studies and in designing a useful and accessible digital resource.

The students partaking in this session are: Oisin Fee, Roman Hartmann, Kotryna Knystautaite, Evin Lawlor, James Mc Grath, Alex Mc Guinness, Stuart Medcalf, and Nhu To Tao

WORKSHOP

Chaired by: Maroun Tabbal

MAROUN TABBAL

"Learning Salon: A Student-Driven Workshop on Your Architecture Education Experience"

Those who will be most affected by the future of architecture education should have a say in its design. Our goal is to foster a sincere exploration of the individual learning journey to create space for students to imagine and co-create a more just and sustainable future.

Join us for a creative and interactive workshop that invites students to explore their learning journeys in architecture education. This workshop flips the traditional conference format by prioritizing student perspectives and experiences.

After a 10-minute introduction, participants will engage in a 50 minute dialogue contributing to the Resilient Design Curricula change for the 21 century.

ROUNDTABLE DISCUSSION

Chaired by: Lara Kinneir + Ash Brocwell + Sarah O'Dwyer

LARA KINNEIR + ASH BROCWELL + SARAH O'DWYER

Mindsets and Mindshifts : The Critters within

Genuine and long-lasting change only occurs when it is approached across multiple scales of thinking, doing and developing; and when it is inclusive of the diversity and depth of participants that the change will affect.

This roundtable – itself an exploration in collaboration - will explore how such deep change is critical for the progress of architectural and built environment education, practice, research and innovation required for ecological futures; with a focus on the needed collective and individual mindshifts that are now required. The format of the session will utilise interactive discussion and reflections from participants to given prompts and provocations by the session chairs, who seek to progress this critical thinking into actionable consequences for timely impact.

THE ECOLOGICAL CITY

Chaired by: Gary Boyd, QUB

MIRIAM FITZPATRICK

Four Feet Good, Two Feet Better! Are Some Dimensions More Equal Than Others?

Urbanist Jane Jacobs included only one illustration in her *Death and Life of Great American Cities* to emphasise her main point that urban blocks must be short: that is streets and opportunities to turn corners must be frequent. [3] Short blocks she argued created more fortuitous social facilities-corner shops and street corners. It is one of the reasons the Rockefeller Centre in New York is so successful- it subdivides the long rectangular super-grid into a smaller grid.

Urbanist William Hollingsworth Whyte spent much of his life measuring street corners, their steps, and stoops and based on his close observations he led a successful change to urban planning codes in New York City. So what did he learn? The proposed paper will describe street ecologies by drawing upon research into Whyte's rules of thumb and substantiated by a decade-long study of public space in Ireland as to what works.

Now that we recognise the value of proximity, condensing urban space is a conscious goal for liveability so dimensions matter; too wide we lose a sense of urbanity; too tight and we're uncomfortable in a pandemic.

Affordance is a term coined by American psychologist James J Gibson in 1977 for a solution: it describes a good fit between the individual and their environment.[4] Drawing upon examples of streets and thresholds that range from great networks of streets to the precise dimensions of a step, this paper will address the essentials of a good fit that contribute to the liveability of urban spaces.

For an ecological future, we need a looser fit to solve the competing demands of programs and do so simultaneously- the design of a neighbourhood at the same time as the right depth of a park bench or a window ledge. If a pattern book on dimensions existed for all who impact the design of public space, might the outcome become more humane? Drawing on Orwell's axiom, for design thinking are some dimensions more equal than others?

ST.JOHN WALSH

Disassembly Plans & Material Inventories: How should we Format, Store and Update these Key Enablers of Future Reuse?

While a pre-demolition building audit, an assessment which aims to quantify and qualify the materials in a structure before deconstruction begins (Addis & Schouten, 2004), can successfully identify the resources available for reuse by establishing the quantity and quality of materials that may be extracted (Chini & Nguyen, 2003). Yet, this process is unlikely to adequately highlight the design decisions undertaken by the design team during the design process to facilitate adaptability, disassembly and reuse due to the passage of time. As a result, Disassembly plans are considered vital elements in the successful implementation and execution of designs for adaptability, disassembly and reuse when the buildings constructed today come to the end of their useful life (Crowther, 2005; Durmisevic, 2006; Morgan & Stevenson, 2005). However, little consideration has been given to how these documents might be formatted, produced, stored and updated to ensure their availability and usefulness in the future (Sandin et al., 2022), as well as the impact their production might have on the way buildings are designed and used. This paper aims to reflect on the existing guidance regarding disassembly plans and material inventories, consider the potential barriers to their implementation and discuss the options for updating and storing the documents in the future. BIM technology, often cited as a possible solution, is discussed from a practical viewpoint.

KIRSTIN SIMPSON

Harnessing the benefits of community-engagement for sustainable futures: What can we learn from informal settlements?

> The failure of cities [says Richard Sennett], can be traced to 'the overdetermination of the city's visual forms and social functions…… we need to imagine an open city in which experimentation is possible, one which is friendly to informality, one which is open.'

Vast informal settlements, as they ascend the precipitous hills surrounding Rio de Janiero, are a forceful presence in the city, so numerous and populous, that no visitor can fail to witness them. However imperfect or haphazard, there is an undeniable architectural strength to Rio's Favelas, densely built, dynamic, low rise environments in which around 24% of Rio's population are housed.

Unpacking how these settlements have evolved over the past 120 years, without governmental support and with the minimum of resources and the resilience and determination of the populations who have created them, will form a vehicle for investigation in this paper.

Founder of award-winning NGO, Catalytic Communities, Theresa Williamson, presents an 'asset-based' analysis of Favelas, which offer, she states, many of the qualities that [Urban] Planners struggle to achieve i.e. affordable housing in central areas, efficient and responsive architecture, low rise, dense development, equating to low social isolation, pedestrian-centred and therefore environmentally sustainable.

Despite global environmental crisis, when time has all but run out, the behemoths of capitalism continue to serve themselves and governments move slowly, succumbing to the demands of vested interests.

To become a significant agent for change, architects need to engage with ground-up communities, assisting and working alongside, rather than paternalistically. Ireland is behind the curve in this respect but SOA, a group formed in 2017, is seeking to redress the balance.

Architects also need to design for informality and for the appropriation of urban spaces by community, as discussed in 'Designing Disorder' by Richard Sennett and Pablo Sendra.

This paper will examine the processes of informality as demonstrated in Rio's Favelas and consider the potential lessons for architects and urbanists in creating sustainable futures and thriving cities.

YING ZHENG

Streetscape Design for Improving Outdoor Thermal Comfort in Urban Public Space: A Case Study of a Subtropical City

The natural systems approach used by green streets can cope with climate change and provide an improved thermal environment. With an emphasis on summer conditions in the subtropical cities of Shenzhen, this study considers the correlation between urban microclimate and street design. The purpose of this study is to provide different green strategies for improving thermal comfort in the street. These design strategies could be applied to the whole city to provide valuable insight into improving streetscapes' thermal environments. The methods used in this study comprise landscape design and environmental simulation, which are capable of proposing a visionary future plan for the streetscape. The landscape design method includes three scenarios with revised design interventions. The three scenarios are:1. green walls and improve in material albedo for pavements; 2. add trees and grass on the ground level; 3. combining scenario 1 and scenario 2. Environmental simulations are used to evaluate the effectiveness of different design scenarios. The results show that: 1 Reducing urban heat and improving outdoor thermal comfort can be achieved by increasing urban vegetation; 2. Adding trees are more effective than vertical greening in alleviating outdoor thermal comfort.

SMART SOLUTIONS [1]

Chaired by: Jamie Cudden

HELENA FITZGERALD

Experimentation Spaces: It is not possible to get things right first time

This paper explores the idea of experimentation that prevails in current models of innovation – mission oriented innovation, open innovation, social innovation – and in the 2022 EU Innovation Agenda. It draws on the +CityxChange1 Horizon 2020 project to illustrate how experimentation can be integral to city climate-neutral transitions and exist at different spatial scales and governance levels. Experimentation spaces are then introduced as physical and digital locations for experimentation.

A series of concepts designed to enable experimentation known as CommunityxChange – developed through the +CityxChange project – are then outlined and the Citizen Innovation Lab, a new space for experimentation initiated through project implementation in Limerick is introduced.

Examples of peoples' interactions with the Citizen Innovation Lab including experimentation in the development of new renewable energy technologies, rapid urban prototypes, new behaviours, new social structures and collaborations, and new regulation are then reviewed and the idea of citizen innovation explored.

The paper concludes with a series of observations to emerge from the Citizen Innovaiton Lab on opportunities and obstacles to experimentation as an enabler of the climate-neutral transition in Ireland.

DARACH MAC DONNCHA + GRACE D'ARCY + SADHBH NEVINS + KAROLINA ANIELSKA + CLAUDIA BAILEY

The Smart Docklands District : Engagement and Innovation

Smart Docklands is an engagement programme to accelerate sustainable innovation in cities. Established in 2018, it is funded by Dublin City Council and the Science Foundation Ireland Research Centre CONNECT in Trinity College Dublin. Smart Docklands is a unique world-class smart city programme in the heart of Dublin's Docklands. It is a first of its kind in Ireland and globally, where the municipality and academia have funded a programme team to play an 'honest broker' role amongst government, the tech and startup community, business owners, universities, research centres, and citizens of Dublin. What began initially as a validation of Internet of Things solutions over a LoRaWan network has since scaled towards an innovative 5G testbed, influencing future infrastructural deployments across the city.

Equally important is the engagement of the local community, government and industry. Employing the mantra to not deploy "tech for tech's sake", the team work closely with a diverse range of stakeholders to identify local challenges which can be addressed through new smart city technology and applications. The Academy of the Near Future initiative is an exemplar in this context. The Smart Cities education programme liaises with young people initiating community-based, citizen science projects. Our engagement seeks to ultimately create inclusive, sustainable smart cities.

RUDI O'REILLY MEEHAN

Opening Pandora's Box – Making Sense of Open Data

"If you cannot measure it, you cannot improve it" - Lord Kelvin's words from over 100 years ago describe the situation facing us when it comes to solving climate challenges. To make informed decisions for the planet, there is an essential societal need for high quality, freely accessible data.

In trying to achieve this, there is often a temptation to gather as much data as possible. However, this process can often be overwhelming and goes against making informed decisions. Simply gathering data is not enough – instead, we must make it accessible and engaging for decision makers.

There are a few steps required to do this. First, we need to be able to explore the data, spot outliers and find trends. Having done so, we can next start crafting a narrative around the data – figuring out what stories are contained therein and trying to tell them in a way that can hopefully drive action. Finally, there is a need to bring the data and narrative to life in visually engaging ways that inspires the public.

Rudi O'Reilly Meehan is a "data designer" who specialises in bringing data to life – be it open source or client data. In this talk, he describes this process for two recent open-source data projects: one around measuring global CO2e emissions and another around housing and vacancy in Ireland.

NEW VALUES

Chaired by: Susan Galavan, ATU

CIARÁN FERRIE

Investment in Sustainable Urban Transport Infrastructure as an Opportunity for Public Realm Improvement

The imminent target to reduce Ireland's transport emissions by 51% by the year 2030 will be met by a combination of a transition towards sustainable energy in existing transport modes and a transition from private car use towards sustainable transport in the form of walking, cycling and public transport. The Irish government is rapidly increasing investment in sustainable transport and supporting projects that have the potential to radically change the streetscapes and public realm in our towns and cities.

The Dublin Bus Connects Core Bus Corridor development is one such project that aims to deliver a much-improved public transport service to the city and to develop the existing cycling network. The scale of the project offers an opportunity to redesign our public space to create a more accessible, more attractive and more liveable city. My research, carried out as part of an MSc in Sustainable Transport and Mobility at TU Dublin, looks at whether the project as it is currently constituted can meet the competing demands on public space and whether our current standards, guidelines and design processes are sufficient to balance the movement function of our urban streets with the place function in a way that improves accessibility.

This study analyses two locations on the proposed Core Bus Corridors to examine whether the interaction of Universal Design principles with mobility objectives and placemaking aspirations inevitably leads to compromise, why conflict arises between these elements, and whether this conflict can be resolved through better standards or better processes.

The study recommends a reappraisal of the approach to urban transport infrastructure design which rebalances project objectives in a more holistic manner to deliver more equitable and more successful design outcomes, without diminishing the primary objective of improvements to the reliability and quality of the public transport system. It also recommends updates to the legislation, standards and guidelines that govern the design of the public realm to ensure that there is a consistent, multidisciplinary, and equitable approach to design which will improve outcomes for all.

SABRINA DEKKER

DCC Climate Action : How Cities Can Lead

To understand how cities can lead on the crisis of our generation - climate change – it is important to begin with why cities. Cities are home to over half of the world's population, and this is expected to increase to 70% by 2050. If we do not live in cities, we live in suburban, or rural areas that are dependent on cities for employment and vice versa. Further, Rees' (1996 and 1997) work – ecological foot printing in the 90s, highlights how cities depend on the land and places around them for clean air, water, food, feed and fibre, medicine, and recreation, what we also refer to as ecosystem services. With this in mind we can understand how cities can lead, and importantly why city governments' need to lead to insure health and well-being is at the centre of climate action. It will not be without challenges.

AUSTIN CAMPBELL

Robert Emmet CDP & SICCDA : Community Role in City Regeneration

The environment can be an abstract concept to an already marginalised urban community- it concerns itself with a future probability when a significant proportion of individuals cannot afford to think beyond the 'here-and-now'. Paternalistic narratives around making positive personal choices-advice to cycle rather than drive or to avoid drying clothes on radiators so as to mitigate against dampness and mould in social housing- are likely to be disregarded when delivered by authorities perceived to have primary responsibility for relevant environmental shortcomings in the first place.

In this scenario a level of community apathy is inevitable towards any top down attempt at regeneration, however genuine this attempt may be.

Understanding an area such as Dublin 8 requires a system wide perspective to guide the interpretation of problems and the conceptualization of solutions. Robert Emmet Community Development Project (CDP) / South Inner City Community Development Association (SICCDA) provide an opportunity for community members to gain this perspective and develop appropriate advocacy avenues while also liaising with academic partners, business and statutory organisations to develop workable solutions.

This piece will describe Robert Emmet CDP / SICCDA's community development methodology as it applies to community regeneration projects currently underway in Dublin 8.

STEPHEN MUSIOL

The (aspiring) post-growth architect in the suburban sphere of citizenship

This paper will argue for the need to democratise the reimagining of existing residential suburban environments, beginning with their public spheres, in response to climate change and other crises arising from human overshoot of planetary boundaries. It will argue that such democratisation is necessary to increase the variety of possible solutions and in recognition of the importance of ownership of solutions for their ongoing influence and viability. Within this frame it will explore the potential for socially engaged architectural practitioners to work with local communities of interest and agents of local governance to reimagine and adapt existing built environments through the mechanism of community-led placemaking. It will explore challenges faced by architects seeking to build this capacity in practice. The research presented draws on an ongoing engagement between the researcher and the Bloomin' Crumlin community group in Crumlin, Dublin 12, conducted as part of an MPhil (Housing) in the Graduate Research School in TU Dublin. The researcher is an architect employed in practice, pursuing the MPhil programme part time.

The paper will present the framing of hope used in the MPhil project, one critical of simple optimism about the future, and sounding a note of caution about the value of the future tense in architecture. Instead it frames hope as willful action by people in the present moment, driven by a desire to negate the fixing of present "reality" and by work on an uncertain trajectory towards prefigured futures, particularly those of post-growth. This framing draws on the thought of Ernst Bloch and his distinction between abstract and concrete forms of hope (Ernst Bloch, The Principle of Hope). Through this distinction the paper will attempt to directly address the theme of temporality for architects who are concerned about their role in the reproduction or resolution of climate and other crises.

ADAPTIVE REUSE

Chaired by: Ellen Rowley, UCD

TIAGO ASCENSAO

Ready-made architectural processes: re-signification of reality as a solution

We are looking for the development of architecture, not based on exploiting resources, whether material, energetic, or even human. The possible alternative to the infinite development model won't be over- exploiting the territory and producing unnecessary elements. But is it possible to do architecture without resources?

It is explored an architecture practice looking for processes that built the space using the already existing physical space and answering the different requests through a process of space re-signification.

Based on a transdisciplinary approach, it explored how the idea of _ready-made_ from conceptual art could be one of the answers to future architecture. It is a reaction to the sustainable targets, since it is based on the no exploration of any material: the reality is in itself the resource. Antagonistically radical it is proposed that the architecture project rethink the space and attribute a new meaning to it, and in doing it, solves the requested new necessities. The project happens in the combination between reality and the look over it, emphasizing the potentiality of reality.

Unusual actors are included in the process like the users - extending and enhancing its demands -, and the power - obliged to rethink the request when faced with a _ready-made_ proposal that solves it.

Instead of the _design_ as the base ground for architecture, in this methodology the _act of choice_ is the architectural practice. This intellectual process with critical reflection is an architecture act since the discipline has the tools and the expertise to decide in a legitim way.

This methodology emphasizes the emergency for a fundamental change of attitude in our culture, in our society, and towards our built environment, by legitimizing the possibility of the proposal being the use of what is here and now.

RICHARD O'HEGARTY

Maximising Building Use Can we transform a deconstruction headache into a decarbonisation solution?

2023 is a landmark year. We are now officially closer to our 2030 climate change target deadline than we are to the Paris Agreement (2015). And while time has progressed (as time does!) annual greenhouse gas emissions in Ireland have largely remained unchanged. The reason for this apparent stagnation is partly due to a growing population and increased annual demand for resources which offsets any emission savings we make on a per capita basis. But our targets are national, not per capita, and numbers are not empathetic to the intensified pressure this puts on our reduction efforts. One sector which is especially feeling this added stress is the built environment. The operation and construction of Ireland's built environment is estimated to account for just under 40% of national emissions currently and is expected to grow in the coming years to meet national development plan targets. This raises an intriguing question: how will we be able to facilitate a growing population while also reducing the built environment's environmental impact?

This work sets out to tackle this research question by exploring how existing floor space can be harnessed to facilitate our evolving needs, for example our changing workplace requirements. Our demand for floor-space-type is always changing, and is often determined by external unexpected factors (e.g. Covid-19). These transitioning demands are indeed real, but the net requirement for new space might not need to be as climate impactful as predicted if we can maximise the use of what is already there. This study aims to unravel this challenge using simplified whole life carbon quantification methods to estimate how much carbon could be saved by reactivating floor space and reviews the literature on vacancy in Ireland to try and understand the dynamics of this floor space. We look at some of the societal changes (e.g. workplace dynamics) and hypothesize how these changing needs might present an opportunity for the reactivation of unused floor space. We look to the past for solutions

using case study examples of buildings that have been renovated to meet a new requirement while maintaining the character of its past.

MICHAEL PIKE

The re-use of institutional buildings as housing

The targets for construction of new housing set in the Irish Government's 'Housing for All' Plan seem to completely contradict the targets for Climate Action, published a few weeks' later in Autumn 20212. Taking into account the embodied energy within the construction process, the building of all the required housing will make our carbon reduction targets unachievable. In this context we urgently need to recognise the crucial importance of the re-use of existing buildings and, in particular, our large institutional buildings. The proposed paper will explore this issue with reference to an ongoing case study.

GKMP Architects are currently working on the transformation of the former St. Senan's Hospital, Enniscorthy into housing and other amenities. St. Senan's Hospital was designed by architects James Bell and James Barry Farrell in the 1860s on an elevated site south of Enniscorthy town. The two-hundred-and-twenty-metre long building is two-and-three storeys, made primarily of red brick with a silver-grey Kiltealy granite plinth and yellow brick dressings. The project involves the conversion of this protected structure into seventy apartments, with a restaurant, leisure and communal facilities. The proposed paper would use the ongoing work on this project to explore the practical and philosophical issues involved in the re-use of our institutional buildings as housing: the questions of collective memory and cultural heritage; the minimisation of the embodied carbon involved in the transformation; and the implications for housing design arising from this type of re-use.

SHUYUN ZHANG

Future opportunities and challenges for high-rise buildings in Irish major cities: townscape character perspectives

The housing shortage has been a longstanding social problem in the Republic of Ireland, exacerbated by structural issues around demographic changes and rapid economic growth, but also contingent ones such as the surge in the number of refugees resulting from the war in Ukraine. Although Ireland is experiencing a high degree of globalisation, it has largely maintained its original townscape character compared to other countries. Internationally, some mature practices and studies have used high-rise buildings as a means of addressing the housing shortage, although these have led to a degree of irreversible impact on the original townscape of the city. On this basis, a key question relates to how to further implement high-rise buildings - thus addressing the housing shortage - while retaining the townscape character of the city. This can be addressed to some extent by studying high-rise planning in the Irish context as a sustained policy around the housing shortage.

The research presents three cases of high-rise buildings in Dublin, Cork and Limerick. It seeks to undertake a discourse analysis of key stakeholders and informants in these cases to understand the sensitivity and appropriateness of Irish planning policy in achieving design outcomes for high-rise buildings. Policy review and archival analysis is also used to identify the policy objectives and controversies respectively. The findings indicate that although the existing Irish high-rise buildings are not currently causing significant damage to the townscape, they nevertheless still have some impacts.

This study will provide an assessment and reflection on the existing tall buildings in Ireland. Considering that the implementation of high-rise housing is important for most cities and is increasing worldwide. These lessons and experiences will also inform the future development of high-rise buildings elsewhere.

SMART SOLUTIONS [2]

Chaired by: Brian Ward, TU Dublin

MANI DHINGRA

Digital and Physical : The Role of Digital Twins in Praxis

Today's sustainability and urbanization challenges call for innovative urban solutions around the efficient use of latest technology and experimenting them in an urban living lab environment. 3D modelling technology presents an opportunity to transform the way we plan, build and operate infrastructure within our cities. Dublin City Council through its smart city unit has begun exploring this technology across a variety of topics including energy consumption, urban planning, public engagement, environment, tourism, and infrastructure management. Previously it has procured and released an open-source model of the Docklands Strategic Development Zone for a 3D hackathon to uncover new insights for efficient decision-making. Other models include the ones used by Dublin Fire Brigade for pre-incident planning and Smart DCU for real-time traffic monitoring. Smart Dublin has also been experimenting with state-of-art data-capture technologies such as drones, photogrammetry, LIDAR, mobile street mapper, and Google AirView. Advancing towards a more sophisticated system, Smart Dublin's Digital Twin programme intends to apply a people-centric approach for effective stakeholder collaboration and explore novel forms of public engagement. While the concept of digital twins has existed for decades, the basis of constructing smart cities has gradually evolved from original static 3D modelling to a dynamic digital twinning using IoT, big urban data, cloud computing, blockchain, and artificial intelligence. One of the potential approaches is to use digital twins as a collaborative tool to engage internal and external stakeholders including citizens for decision-making and co-creating new ideas. The core objective is to ensure that the adoption of digital twin technology meets the needs both of the city, and the citizens who interact not just in technology deployments, but also in processes of engagement. By thinking together towards possible solutions through virtual environments may power new collaborations for future-proofing our cities.

SHANE SUGRUE

We Need to Talk: Without Sin and the architecture of conversation

WITHOUT SIN is an immersive theatre installation created by international arts collective Unqualified Design Studio for the 2022 Dublin Fringe Festival. Billed as a 'contemporary confessional for the modern sinner', the piece brings an audience of two into a purpose-built wooden booth, where they are guided into conversation with one another by a series of audiovisual prompts. Recalling the typologies of the confession box and the telephone booth – each once the key node in a nearly redundant form of social network – the piece is designed to encourage reflection on how our relationships with each other and with the city evolve over time, and what it means to live together in the face of technology-driven catastrophe.

Met with critical acclaim during its week-long run at Dublin Castle, WITHOUT SIN is now set to tour Ireland over the summer, before traveling to the Edinburgh Festival Fringe in August. The aim of this paper is to seed a parallel undertaking of research and reflexive writing around the project as it unfolds. As such, it will: 1) outline the theoretical context in which the project was conceived, 2) detail the highly collaborative construction and design process, and 3) propose potential avenues of research for discussion and critique. At the core of the project is an exploration of the role of ritual in helping us reconcile the contradictions of our present condition – and the role of both architecture and theatre as means by which we can make space for such rituals. This builds on previous work developing the idea of 'ritual infrastructures' as a conceptual framework for unpacking the material, social, and spatial processes by which narratives of place and identity are formed and contested. The climate crisis and its attendant pandemics, wars, and mass-migrations call attention to the limits of our capacity for empathy, raising sometimes uncomfortable questions about how and why we value certain kinds of lives and experiences. Providing a platform for strangers to reflect on such questions together, the WITHOUT SIN project seeks principally to generate good conversation – about the need for civic and cultural spaces where we can learn to extend our sense of care and, perhaps in time, to cooperate in addressing the collective challenge we face.

KIERAN MAHON

'Smart' Thinking : New Frontiers Through Smart DCU

Kieran's presentation will cover the Smart DCU programme - an ambitious initiative that aims to improve city outcomes on Dublin City University's (DCU) campus. The campus, being a miniature version of a city, offers an ideal setting for developing small-scale smart city test beds. By partnering with various organizations, the program aims to enhance the efficiency, sustainability, safety, and overall appeal of the campus for its residents, students, and workers. One of the primary methods of achieving these goals is by leveraging Bentley Systems' expertise to create a digital twin that accurately replicates DCU's campus in 3D, incorporating real-time data gathered from IoT sensors. Additionally, in collaboration with Cellnex, Smart DCU is deploying a 5G Mobile Computing Platform (5G MEC), which incorporates Ultra Low Latency Intelligent Edge Computing, enabling previously unthinkable possibilities.

NEW TECHNOLOGIES

Chaired by: Dónal Lally, TU Dublin

AIDAN CONWAY

Book of References: Mayo

In late 2021 I received an bursary from the Arts Council of Ireland in order to carry out an element of personal research My aim was/is to use the frame of county Mayo to examine the unexplored potential of its built environment in a similar way to that of A Lost tradition by Valerie Mulvin and Niall McCullough. Creating an Atlas of the county that would add to this base of knowledge, whilst also establishing a catalogue of references that will inform and enrich my work. A series of examinations that I hope will become an ongoing investigation.

The book of references is to be composed of a number of structures, buildings and spaces from within the county. Mapping their location. Surveying them. Analysing their construction, their form and their relation to the landscape (physical, historical or by toponym).

There was also an opportunity to take advantage of modern computational methods in order to carry out these surveys in immense detail. Local surveyors Kilkelly Geo Spatial Solutions have agreed to be involved in the proposal. They will guide me in the technical skills involved in composing 3D point cloud models of each Building/Structure/Space, through a combination of laser scanning and photographic surveying. (The above image is of a photogrammetric model of the Temple at the Neale)

The idea had been that these detailed point cloud scans would form the basis for a series of analytical and exploratory drawing and model studies. While I have used drawing and modelling to explore and understand the structures it was point clouds themselves that remained the most fascinating and the richest product of the study to date. The work is still ongoing and I'm hoping to complete it early in 2023 but regardless I would be grateful to be given the opportunity to speak about it at your conference.

BRIAN HAND

Moving Away from a Linear Economy towards a Circular Economy, Material Passports are seen as an essential tool to optimise design for greater circularity. How can BIM software aid this paradigm shift in an Irish architectural project?

Construction is a carbon-emissive heavy industry with approximately 40% of global pollution and waste production being accredited to the industry. This requires a systemic re-evaluation of global material streams from a linear model towards a Circular Economy. The implementation of material passports is deemed an integral part of adopting Circular Economy principles into the design, construction, and disassembly of the built environment. As such, designers need to be able to access and utilise material passports to optimise the design process and document the material and product use. The Material Passport offers design optimisation, design analysis and documentation parameters hosting both quantitative and qualitative information. The research assesses the current expectations from the Irish Government towards the circular economy in recent publications such as the Circular Economy Act and the National Policy on Architecture, as well as the Office of Public Works position in enabling it, and how it can be implemented through the use of BIM. Furthermore, the research will examine what a material passport is and how it aids this transition toward a circular economy. This is assessed through three case study projects that discuss integrating the material passport into all stages of an architectural project (both public and private). Ranging from early design stage to construction completion to end-of-life, the case studies offer a comparative of the full lifecycle of a building. The three case studies each offer a workflow that confirm a basic approach to producing the document, while differing in what sustainable parameters are appropriate, indicative of where the studies are situated in the project stage and by what the authors deem valuable. There is an opportunity now to redefine the role of an architect to be invested in the whole lifecycle of a building – from conception to construction to disassembly.

KATE HOTTEN

Visualising C&D Waste: Mapping Ireland's linear use of soil and stone

Ireland's largest and fastest growing waste stream is soil and stone, which makes up around 85% of the country's construction and demolition or C&D waste. These are non-renewable geologic resources but Irish policy largely focuses on waste management rather than reduction. Most of Ireland's soil and stone waste is used to restore or raise ground levels, often of quarries, in a process known as backfill. This is economically linear ("take-make-waste") but spatially cyclical. To reduce quarrying, waste materials must be used in place of newly extracted materials—and not simply to fill old holes.

This research found that there is limited publicly available information on the extraction to backfill cycle. What is available is difficult to find, use or reproduce and is jargon-dense. Much of it is also self-reported by quarry operators, developers or waste facilities. This lack of transparency limits Ireland's ability to meet waste targets, including circular economy targets, with repercussions for planning, policy and Ireland's geoheritage. Ireland currently ranks second-worst in Europe in its circularity efforts. Using Ireland's Open Data Strategy and principles as a framework, recommendations are made for new data and to improve available data.

Data is not enough, though: it must be accessible. Extraction, waste and backfill are spatially related through land use and movement of materials between sites. Maps are the most appropriate communication tool for spatial problems but are underused in this area. This research concludes, then, with a series of original maps designed using publicly available data. This is a step towards improving awareness of Ireland's geologic resources and the need for better waste management and waste reduction.

KEYNOTE ADDRESS

Chaired by: Hugh Campbell

KIEL MOE

Kiel Moe, FAIA, FAAR, is a practicing architect, researcher, and author. He has taught at Northeastern University, Massachusetts Institute of Technology, McGill University and Harvard University. In recognition of his design and research endeavours, he was awarded a Fulbright Distinguished Chair in Helsinki, the Gorham P. Stevens Rome Prize in Architecture at the American Academy in Rome, the Architecture League of New York Prize, and the American Institute of Architects National Young Architect Award. He has published several books on architecture including *Unless: The Seagram Building Construction Ecology; Empire, State & Building; Wood Urbanism: From the Molecular to the Territorial; Insulating Modernism: Isolated and Non-Isolated Thermodynamics in Architecture; and Convergence: An Architectural Agenda for Energy.*

CLOSING ADDRESS

Chaired by: Emma Geoghegan , TU Dublin

TIMETABLE

FRIDAY, 14TH APRIL 2023

	EQ111	EQ112	EQ116
08:30 - 09:00	Welcome		
08:50 - 09:00	Opening Address - Jack Lehane + Brian Ward		

09.00-10.30	**INTEGRATED TEACHING IN ARCHITECTURAL EDUCATION** Chair: Jack Lehane	**HOPE IN A TIME OF CRISIS** Chair: Marcin Wojcik, TU Dublin	
	Sima Rouhalmin FUNdaMental Fridays - A collaborative and playful pedagogical approach in design studio	**Róisín Cahill** Finding hope, Taking action - A briefing note from the front line of practice	
	Miriam Dunn + Graham Petrie + Eddie O'Donovan Assembly, Gravity and Environment (AGE): Integrated teaching for interactive design	**Grace Johnson** How can post humanism be a method in architectural research?	
	Matthew Jones + Jemma Browne System-Shifting the Design Studio: Educating regenerative future practitioners	**Martin Murray** Three passive houses in a garden	
	Caroline Akiboye + Simon Conolly Education of Construction Professionals for Practice in a Changed World		
10.30-10.45	Break - Tea + Coffee + Biscuits		

10.45-12.15	**LANDSCAPES, FARMING + FOOD** Chair: Anna Ryan Moloney, SAUL	**INNOVATIVE PEDAGOGIES** Chair: Sarah Mulrooney, CCAE	
	Dean Black The Modern Broiler Chicken, The Female Farmhand & The Artificial Mother	**Phoebe Brady + Aidan Conway** Teaching and Learning for the Climate Agenda: Clare Island Co-operative Settlement	
	Emma Campbell + Greg Keefe From building to interface: reframing the supermarket to unlock climate transition pathways	**Tim Collett + Guillermo Guzman Dumont + Robin Wilson** Urban Regeneration	
	Massaro Petkova Growing the Neighbourhood: Community Gardening for Collective Ecological Futures	**Conor White Gibson** The Shearing Layers of Carbon	
		Zoe Victoria Gibson SuperStudio Pedagogy: Innovation for the Architectural Design Studio	
12.15-13.15	Lunch - Tea + Coffee + Sandwiches + Wraps		

12.15-13.15		**WORKSHOP/DROP-IN SESSION** Chair: Miriam Delaney, TU Dublin	
		Year 4 Architecture students, TU Dublin Radical Pedagogies for an Unknown Future	

| 13.15-14.45 | **WORKSHOP**
 Chair: Maroun Tabbal

 "Learning Salon: A Student-Driven Workshop on Your Architecture Education Experience" | **ROUNDTABLE DISCUSSION**
 Chairs: Lara Kinneir + Ash Brocwell + Sarah O'Dwyer

 Mindsets and Mindshifts : The Critters within | |

FRIDAY, 14TH APRIL 2023

	EQ111	EQ112	EQ116
14.45-15.00	Break		
15.00-16.30	**THE ECOLOGICAL CITY** Chair: Gary Boyd, QUB	**SMART SOLUTIONS [1]** Chair: Jamie Cudden	**NEW VALUES** Chair: Susan Galavan, ATU
	Miriam Fitzpatrick Four Feet Good, Two Feet Better! Are Some Dimensions More Equal Than Others?	**Helena Fitzgerald** Experimentation Spaces: It is not possible to get things right first time	**Ciarán Ferrie** Investment in Sustainable Urban Transport Infrastructure as an Opportunity for Public Realm Improvement
	St.John Walsh Disassembly Plans & Material Inventories: How should we Format, Store and Update these Key Enablers of Future Reuse?	**Darach Mac Donncha + Grace D'Arcy + Sadhbh Nevins + Karolina Anielska + Claudia Bailey** The Smart Docklands District : Engagement and Innovation	**Sabrina Dekker** DCC Climate Action : How Cities Can Lead
	Kirstin Simpson Harnessing the benefits of community-engagement for sustainable futures: What can we learn from informal settlements?	**Rudi O'Reilly Meehan** Opening Pandora's Box – Making Sense of Open Data	**Austin Campbell** Robert Emmet CDP & SICCDA : Community Role in City Regeneration
	Ying Zheng Streetscape Design for Improving Outdoor Thermal Comfort in Urban Public Space: A Case Study of a Subtropical City		**Stephen Musiol** The (aspiring) post-growth architect in the suburban sphere of citizenship
16.30-16.45	Break		
16.45-18.15	**ADAPTIVE REUSE** Chair: Ellen Rowley, UCD	**SMART SOLUTIONS [2]** Chair: Brian Ward, TU Dublin	**NEW TECHNOLOGIES** Chair: Dónal Lally, TU Dublin
	Tiago Ascensao Ready-made architectural processes: re-signification of reality as a solution	**Mani Dhingra** Digital and Physical : The Role of Digital Twins in Praxis	**Aidan Conway** Book of References: Mayo
	Richard O'Hegarty Maximising Building Use Can we transform a deconstruction headache into a decarbonisation solution?	**Shane Sugrue** We Need to Talk: Without Sin and the architecture of conversation	**Brian Hand** Moving Away from a Linear Economy towards a Circular Economy, Material Passports are seen as an essential tool to optimise design for greater circularity. How can BIM software aid this paradigm shift in an Irish architectural project?
	Michael Pike The re-use of institutional buildings as housing	**Kieran Mahon** Smart Thinking : New Frontiers Through Smart DCU	**Kate Hotten** Visualising C&D Waste: Mapping Ireland's linear use of soil and stone
	Shuyun Zhang Future opportunities and challenges for high-rise buildings in Irish major cities: townscape character perspectives		
18.15-18.30	Break		

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18.30-19.30	**KEYNOTE ADDRESS - KIEL MOE** Chair: Hugh Campbell
19.30-20.00	Closing Address - Emma Geoghegan, Head of Architecture at the School of Architecture, Building and Environment, TU Dublin
20.00-	Conference Dinner - Blas Cafe - 26 King's Inn, Dublin 1, D01 P2W7

ACKNOWLEDGEMENTS