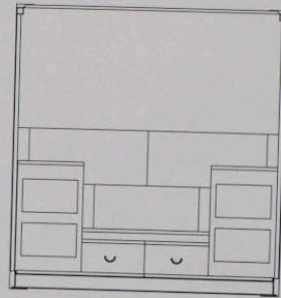
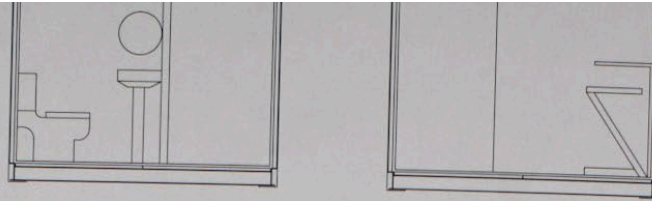


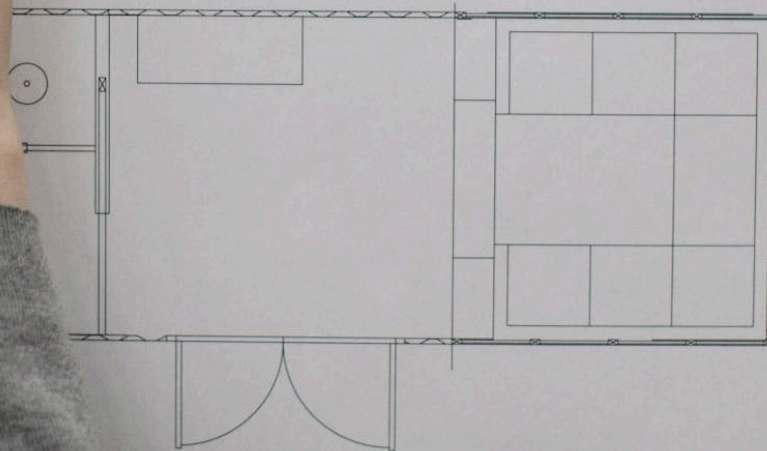
RESILIENT DESIGN CURRICULA

*Resilient Design Curricula for 21st
Century Professionals Project*

Project Portfolio update: Issue 1



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date	13 december 2018
name	monika uzpalyte
project	shipping container
revision	2
scale	1:25



file	floor_plan
date	13 december 2018
name	monika uzpalyte
project	shipping container
revision	2
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Welcome to Project Portfolio Update Issue #1 from the Resilient Design Curricula for 21st Century Professionals Project.

This project is funded under the Irish Government Human Capital Initiative (HCI) and is piloting radical revision in architectural education to prioritise the United Nations Sustainable Development Goals (SDGs) 2030 Climate Action (SDG 13.3) and Sustainable Housing (SDG 11.1), in line with the associated government policies on climate action and sustainable housing.

The project is a partnership of the six architecture schools in the Republic of Ireland, including Technological University Dublin, University College Dublin, University of Limerick, South East Technological University, Atlantic Technological University and the Cork Centre for Architecture Education (a joint initiative of University College Cork and Munster Technological University).

We are undertaking a transformative process, reconfiguring, and revising our architecture curricula to enable our graduates to help society address sustainability challenges. Our approach incorporates several interconnected facets. A critical needs analysis will determine key skills and knowledge areas needed for future professionals and the prioritisation of these in terms of the specific context of the projects focus on UN SDGs 11.1 and 13.3. Working with our stakeholders we will identify key skills gaps to incorporate into the curriculum to deliver graduates with capabilities in meeting the challenges of climate action and sustainable housing.

Studio Pilots allow the project to explore the reimagining of design studio curriculum towards a problem and design-based methodology of projects that confronts students with climate action and the housing crisis within both their regional areas and nationally. Continuous professional development plays a central role in the project through the upskilling of staff to contribute to the formation and delivery of the resilient design curricula.

An overarching goal is to engage with the RIAI towards the revision of their accreditation requirements for architecture degree programmes such that they incorporate the necessary sustainability concepts and requirements.

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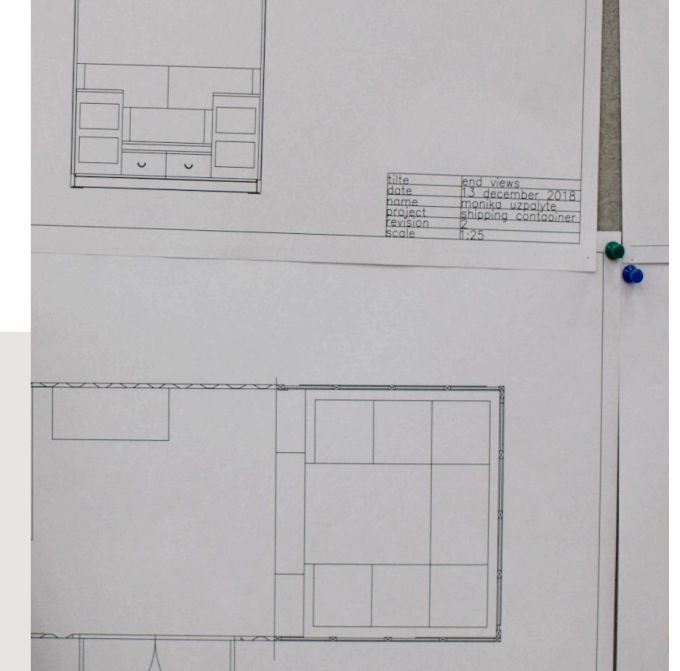
An all-day workshop took place on the 10th May 2022 at VISUAL in Carlow. This was the first in-person event which brought together the project team for the Resilient Design Curricula project. Participants represented all seven institutions that make up the six Irish schools of architecture, with external facilitation by ACAN Education and assistance from VISUAL.

7 PARTNER UPDATES

These updates set out activities running across the project partners, to provide an overview of progress to date and plans for the coming semesters.

19 OUTRO

Upcoming events and a note from Jennifer Boyer, VP for Sustainability at TU Dublin.

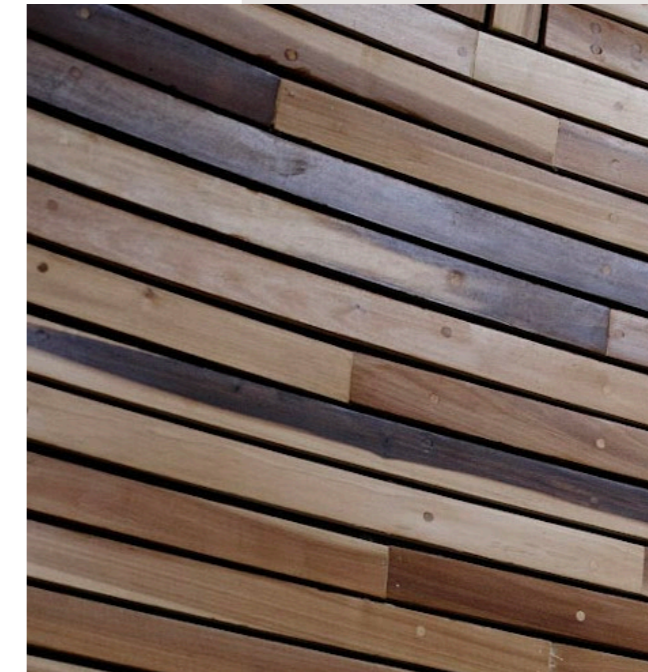




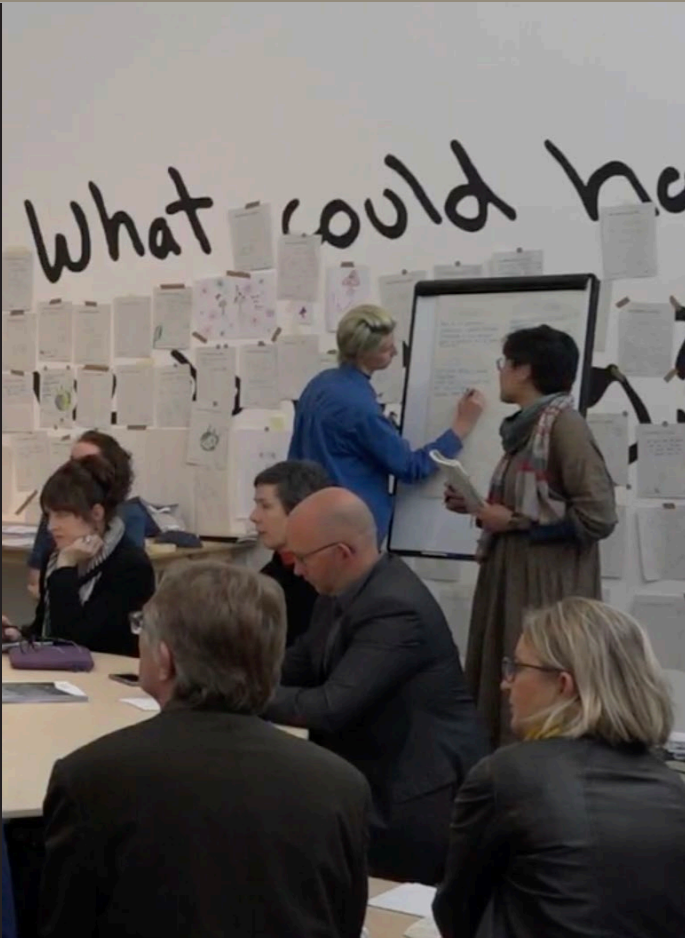
The aim of the workshop was to introduce and familiarise a wider project team with the aims, scope, and timeline of the project, and to enable open discussion to progress the most immediate work packages.

An all-day workshop took place on 10th May 2022 at VISUAL in Carlow. This was the first in-person event which brought together the project team for the Resilient Design Curricula project. Participants represented all seven institutions that make up the six Irish schools of architecture, with external facilitation by ACAN Education and assistance from VISUAL.

The workshop commenced with an exploration of what each school of architecture considered they were bringing to the project. Breakout groups examined requirements and options for the architecture Design Studio Curriculum Pilots, the continuous professional development for staff, and how the critical needs analysis (which is required to identify gaps in the curriculum) could be accomplished.

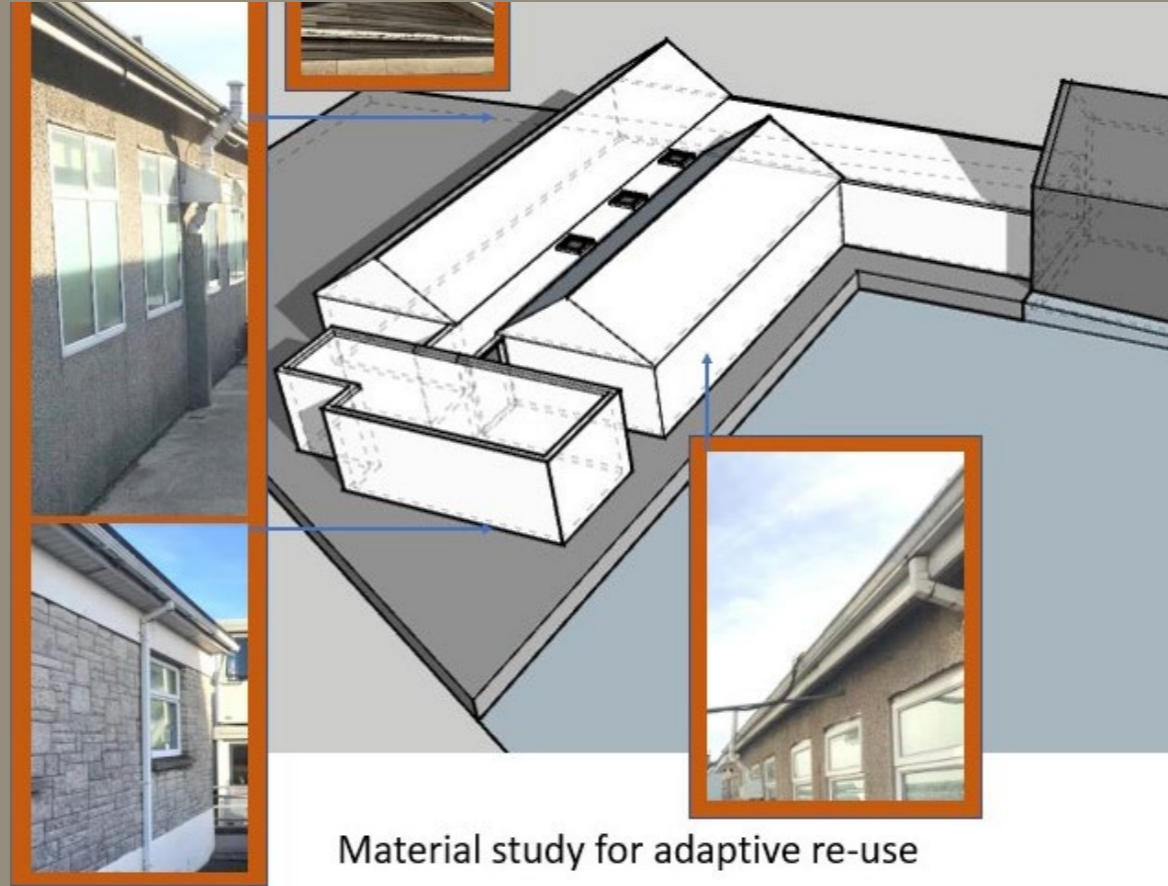


3 CARLOW WORKSHOP



Project Progress and Plans

Following from the Carlow workshop, the Autumn Semester for the academic year 2022-23 has been a busy and exciting time for the project. Our project Steering Board has met regularly to provide guidance to the project and has worked together to enable a range of activities across the project partners.



Material study for adaptive re-use

Architecture Design Studio Curriculum Pilots commenced for all partners, focusing on the theme of 'Materials'

This activity continues in the Spring Semester 2022-23, where in April, students from across the architecture schools will attend a workshop in TU Dublin to discuss their impressions of the effectiveness of the studio pilots.

In March, under the auspices of the project SETU will host a national event, bringing together stakeholders to explore the critical needs of the Resilient Design Curricula, with a particular focus on housing. Several related events are being planned over the next 12 months, encompassing both regional and national perspectives.

Our first CPD will commence in January 2023, with a module on Whole Life Design, and a further schedule of CPDs is being developed. Although initially the CPD is restricted to architecture educators from the six schools, the programme will be opened later to architects in practice and related professionals in industry.

Each of our six partners has taken an active role in the start-up of our project, and the following pages provide overviews of their activities.

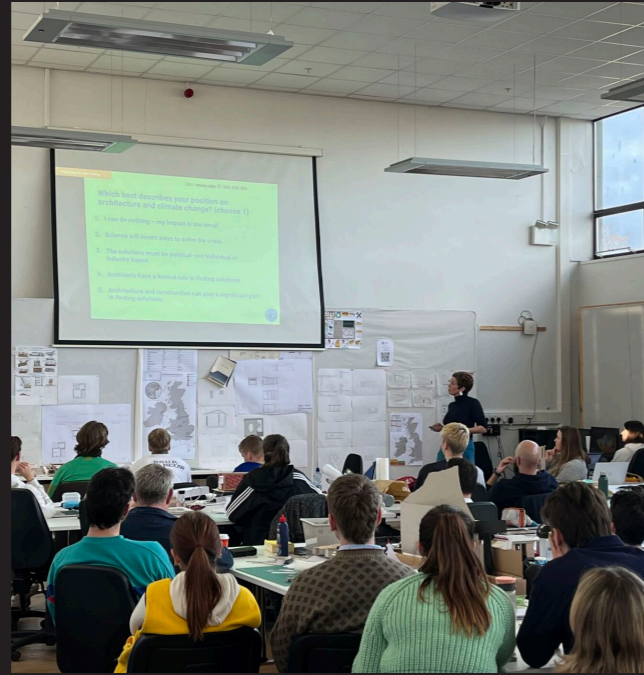
TU DUBLIN PROJECT UPDATE

In the School of Architecture, Building and Environment (SABE) the Resilient Design Curricula project team has had a busy semester working on student engagement, studio pilots, curriculum change strategies, critical needs analysis and CPD

In our new second and third year Vertical Studio model we have developed two pilot studio projects focusing on materials and methodologies – Material Stewardship (which builds student skills on material specification and understanding of embodied carbon) and the Constructive Idea (with an emphasis on the building detail, timber construction and digital fabrication techniques).

In parallel we have been reviewing all of our undergraduate design, environment and technology modules to identify opportunities for reinforcing project objectives around housing and climate action as well as embedding UN SDG literacy.

Workshop launch



Student survey



Site visit



Studio Pilot Projects



Barnabas Calder lecture



We have developed a strong engagement strategy to build a culture of co-design with our students – this was launched in November with attendance by students from all year groups. This has included developing a student fund, nominating student photographers (who will document the Studio Pilots and curriculum change activities) and establishing a student forum. A new book section has been set up in the Bolton Street Library with a [Resilient Design Curricula Bookshelf](#) with updates by the project team and library staff.

We have invited expert guest lecturers Dr Diarmuid Torney and Dr Barnabas Calder (author of Architecture: PreHistory to Climate Emergency) to run workshops with staff and students and deliver public lectures. Future events will welcome guest lectures Annalie Riches of Mikhail Riches (architects of Stirling Prize winning Passiv Haus housing scheme in Norwich), Matthew Howland Barnett and Dido Milne (architects of the Cork House) and Dr Ruth Lang (author of Building for Change: Architecture for Creative Use).

We have also organised several site visits for students including a very successful tour of the Dominick Street Housing by Cotter Naessens/Denis Byrne Architects.

WHOLE LIFE DESIGN

In response to initial results from our critical needs analysis with staff we have developed a new 5 ECTS CPD module 'Whole Life Design' which has been designed to provide architectural educators with the knowledge, skills and knowhow to teach and assess design for durability principles in architectural design studio. The CPD module has been approved through the TU Dublin internal quality assurance processes and will commence in January 2023 with staff from all the partner schools of architecture attending.

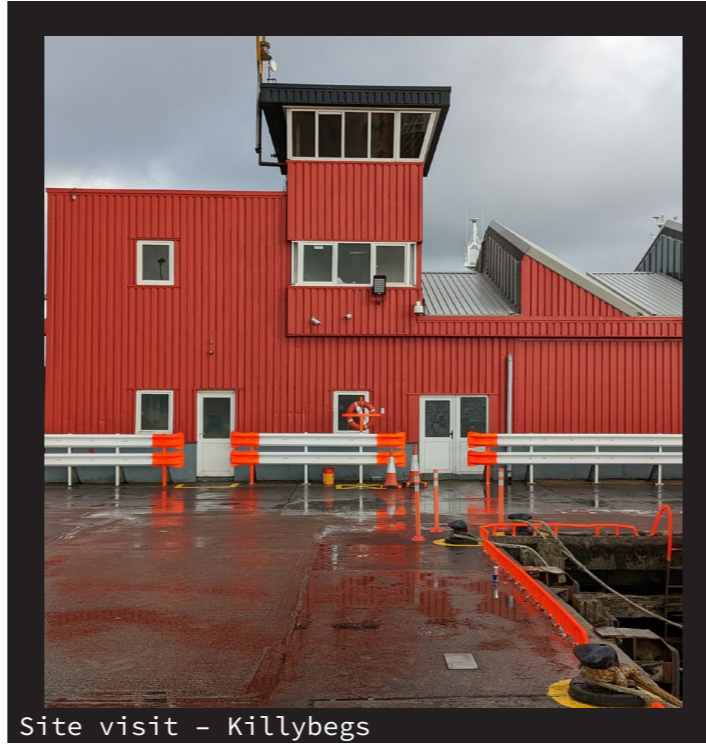


Studio Pilot Project models

At ATU Sligo we are piloting the project in Year 3. The studio brief was developed around four primary themes that aim to address the UIA Panel 2 goals. The students have been asked to internalise these themes and use them to drive their work and approach with a particular focus on material selection and embodied carbon.

“North by Northwest” seeks to establish an approach that responds to the exposed coastal sites and dramatic rugged landscapes of the North-West. Liam McCormick is being studied by the students across several modules. We feel he is particularly relevant to our school since his work is deeply rooted in its place in the North-West of Ireland. He was ahead of his time in terms of the circular economy, re-using cobbles from Derry that were being dumped into the River Foyle for his church at Burt. He also used local materials from stone quarries in the Fanad Peninsula and worked with local boat builders to make the curved roof structure at Burt.

The third-year studio is run with a focus on real world constraints and scenarios. In this academic year we have introduced the theme of ‘Resilience



Site visit – Killybegs

and Robustness’ in terms of material selection and detailing which is considered appropriate for exposed coastal sites. Supporting modules such as Technology and Environment, Drawing and Communication and Structures have been aligned tightly with Design Studio, spreading the load across multiple modules.

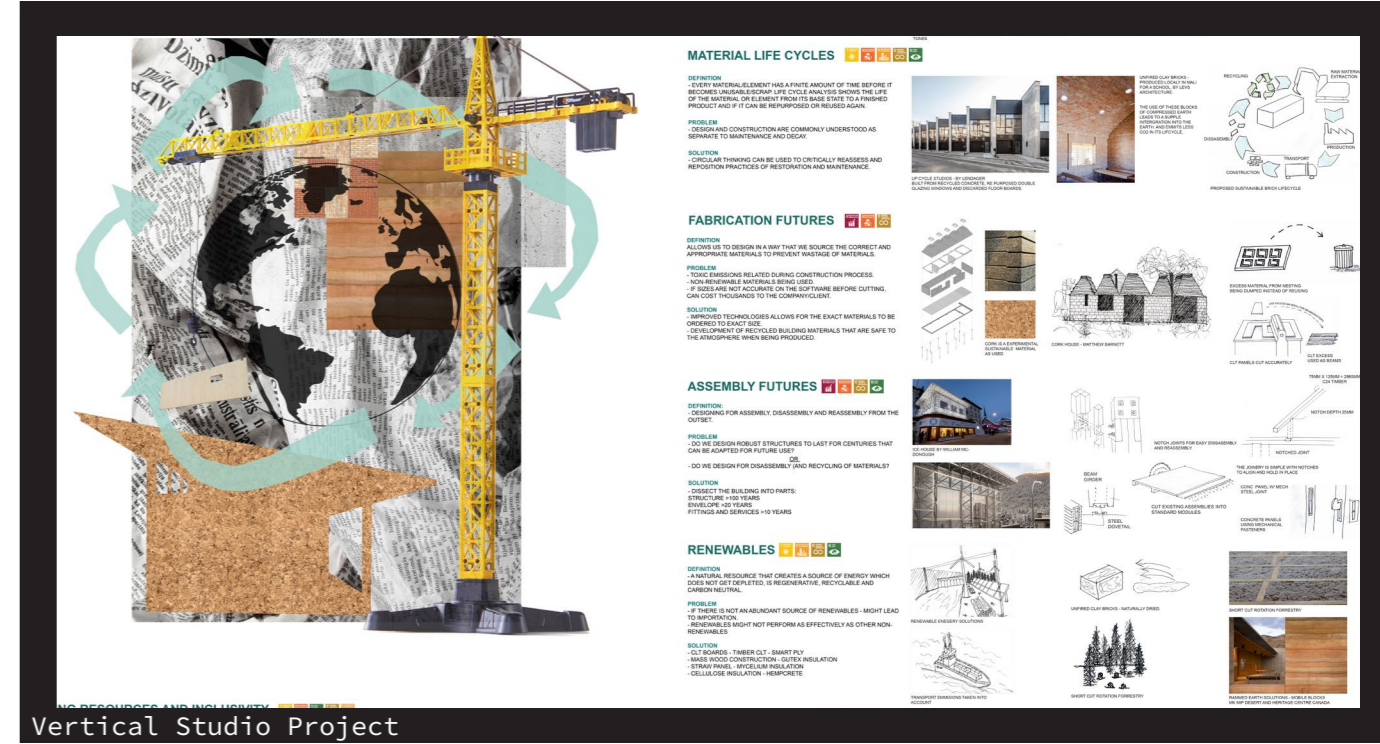
The third theme ‘Simulacra and Simulation’ embeds ideas of testing and iteration of solutions to reduce the embodied carbon of a design. This is achieved through exploring manufacturing efficiency using 1:1 digital modelling of primary structural elements, file to factory techniques, like nesting, to minimise waste, and embodied carbon analysis to inform the design and validate design choices.



Vertical Studio presentations

ATLANTIC TECHNOLOGICAL UNIVERSITY

We are piloting the project in Year Three. Our goal has been to use this semester to test and evaluate ideas. We are excited to build on them with more ambitious goals in the next academic year.



Vertical Studio Project

‘Scarcity and Substitution’ asks students to think from a point of view of scarce materials, carbon budgets and soaring energy costs. They are asked to consider what substitutions can they make in their design choices to minimise the embodied and lifecycle carbon. While we acknowledge that concrete is not going away, students are asked to minimise its use and suggest realistic low-carbon alternatives that could be applied in practice.

We commenced the year with a Vertical Studio Project where students from years two, three and four presented their analysis of the six panels of the UIA World Congress to incoming Year One students. This was a great way to start the project and got the students thinking in terms of climate issues. The enthusiasm of the students to engage with these

ideas was remarkable and a much research was completed in a short space of time.

Themes around the climate emergency such as embodied carbon and sea level rise have been integrated into the briefs in Year Three and discussions in studio on resilient design strategies for coastal sites, alternative structure and materials have been ongoing throughout the First Semester.

The technology and environment module is being used to explore low-carbon construction systems and students are being encouraged to bring that learning into their concepts for studio. A photo above shows of a collection of models produced by the students.

SOUTH EAST TECHNOLOGICAL UNIVERSITY

Following the Carlow Workshop project launch, we established a core working team and undertook a series of 'critical needs' interviews with all our colleagues.

These critical needs interviews resulted in mapping several themed areas for future workshops, upskilling, CPD preparation and targeted consultations with external stakeholders.

Workshop in Saarbruecken



Workshop in Saarbruecken



Workshop in Saarbruecken



Workshop in Saarbruecken



One major area identified by staff was carbon footprint evaluation, combined with environmental assessment methods: In response to this we have worked with our environmental engineering colleague and organised workshops in second and third year which have introduced a variety of easy-to-use tools which can review materials against their carbon footprint. This has helped students make a more informed decision on the choice of materials in their studio design projects. Next semester we intend to explore 'nature-based-solutions in architectural design and hands-on-workshops on retrofit details both in co-operation with external partners. The prospect of a staff training programme on 'Whole-Live-Cycle-Assessment of Materials' is currently being explored with external consultants.

A second field of critical needs identified was a better understanding of eco-systems and the development of a site analysis technique which is informed by geographical information systems. Two staff members have started investigating these research areas and have linked up with the 'Bioregional Weaving Lab' run by GIY in Waterford to brainstorm further collaborative opportunities. A CPD module is being developed in this area.

We are participating in a Pilot Studio Project in our Third Year Studio with all six schools addressing the areas of 'Materials and Methodologies'.

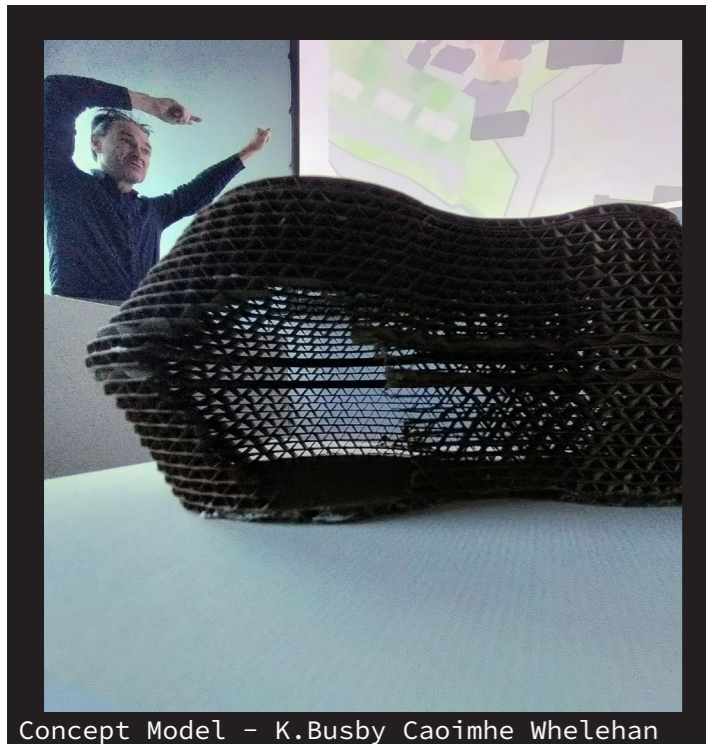
Regarding housing, we began exploring alternative housing development models, such as international case studies on community-led-housing and informal housing. We want to gain insights into how this will challenge and change the role of architects and the approach to housing design projects in architectural education. This task is now being researched by a third staff member. We are planning a Critical Needs Analysis Workshop in early 2023 which will be framed by current housing policies.

In November 2022 some of our senior students and staff participated in an international student workshop in October in Saarbruecken, Germany, to review a masterplan for a redeveloped industrial heritage site of the city of St. Ingbert, Saarland. Embedding of USD goals formed part of the project.

A vertical workshop is being planned for the first three years of our programme next semester based on sustainable practices in 'Water', 'Nature' and 'Applied Resilience'.

In parallel with Design Studio, where the students were asked to select from several educational-based briefs on the school site, cognate projects relating to life-cycle analysis and material selection were undertaken in Applied Technology Studio. The latter will specifically attempt to improve both staff and students' knowledge of the climate-related impacts of building materials.

The school project continues into Semester 2 where Phase 2 attempts a more detailed analysis of key spaces within the student's schemes and considers alternative construction and detailing solutions.



Concept Model - K. Busby Caoimhe Whelehan



Design Studio

Cork Centre for Architectural Education

THE SAUL online architecture materials online lecture series shared with us has been an excellent example of our attempt at resource sharing and collaborating with all six architecture schools with its dividends already evident.



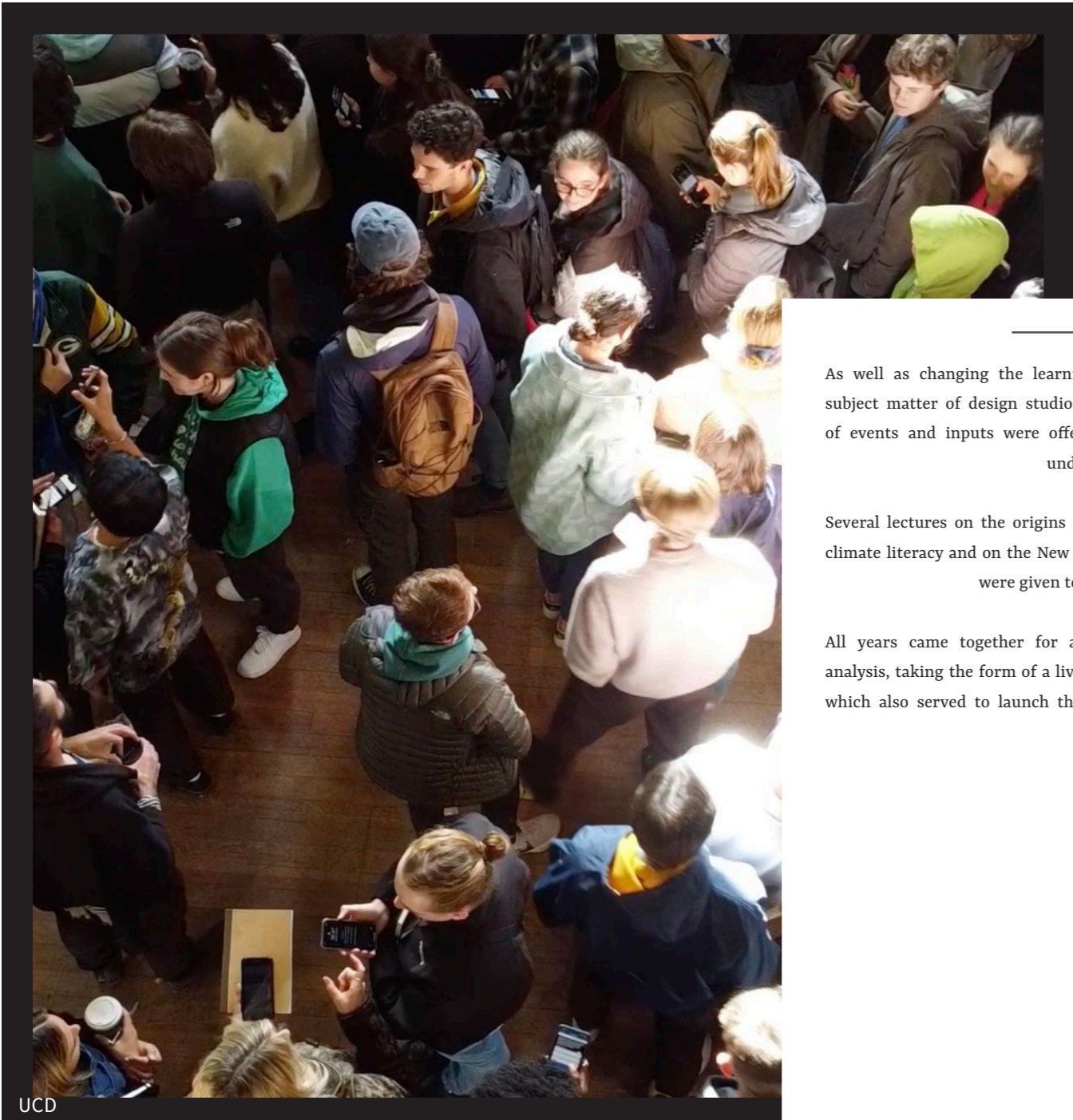
St. Angela's School visit

Our Year Three HCI RDC Pilot Project commenced in Mallow, Cork, in October 2022. Following a week of introductory mapping of Main Street, we were given a tour of the Patrician Academy in the town centre by a member of staff and a student. The existing school site contained buildings ranging from a late 19th Century protected structure through to several poor-quality 20th Century interventions. This provided us with opportunities to consider the balance between adaptive re-use and the potential for new-build architectural space. During the project, Year Three students organised a site visit to O'Donnell and Tuomey's St. Angela's School in Cork where we were shown around by the principal.

In September 2022 MTU hosted a talk and workshop; 'Dereliction, duty and delightful destination - taking a regenerative place-making approach to vacancy in Cork'. Facilitated by Cork native Dr. Donagh Horgan, an expert on social innovation in the built environment (based at Inholland's Urban Leisure and Tourism Living Lab,

Rotterdam, Netherlands) the event included contributions from Eoghan Horgan in MTU and Frank O'Connor and Jude Sherry of Anois.

Partly in response to this, but to a more visceral concern around issues of housing, the student body in CCAE organised a 24-hour design charette in November. A highlight of this event was the visit of Greg Keeffe, who gave a lecture that evening on various issues of sustainability. Students from all the undergraduate years were provided with lists of vacant and derelict sites with the view to proposing their re-use in the context of housing need.



UCD

As well as changing the learning outcomes and subject matter of design studio modules, a series of events and inputs were offered to the entire undergraduate cohort.

Several lectures on the origins of climate change, climate literacy and on the New European Bauhaus were given to each year in turn.

All years came together for a survey and gap analysis, taking the form of a live interactive event which also served to launch the Resilient Design Curricula project.



Debate event



Debate event



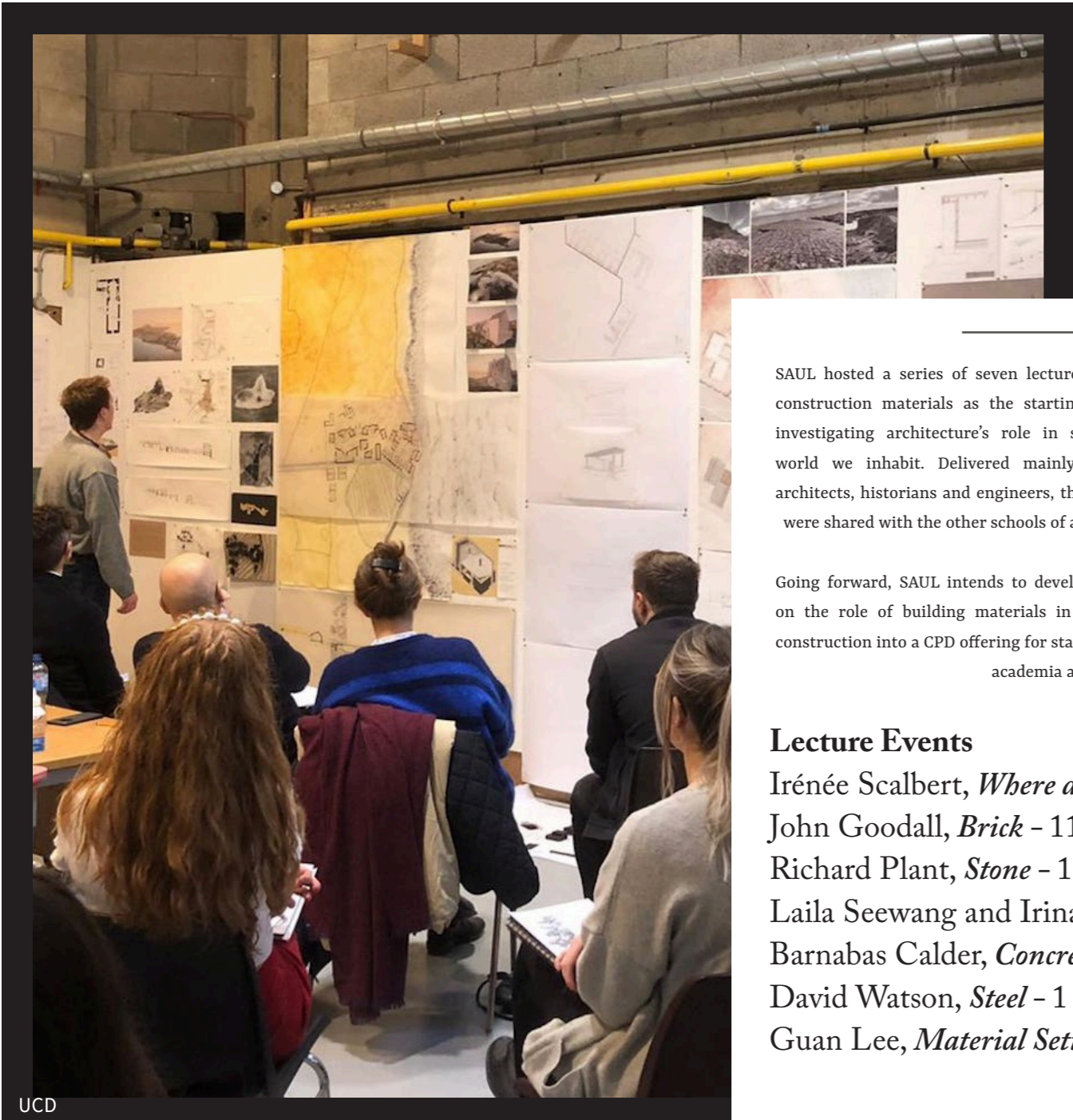
Debate event

UNIVERSITY COLLEGE DUBLIN

In UCD, there has been a twin-track approach to the first phase of embedding climate action in the undergraduate curriculum.

A debate on the role of architecture in relation to climate change included contributions from academics across different disciplines in UCD as well as invited guests and experts. The events to-date have sought to inform but also to enable students in their work.

All these events will now feed into the next phase which will involve a combination of an initial round of training and workshops as well as a comprehensive curriculum review and revision.

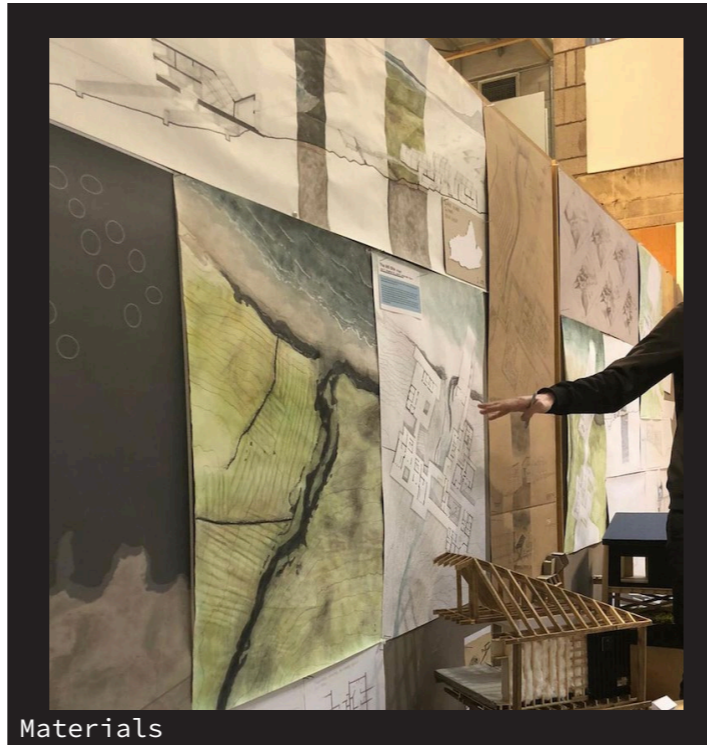


SAUL hosted a series of seven lectures that take construction materials as the starting point for investigating architecture's role in shaping the world we inhabit. Delivered mainly online by architects, historians and engineers, these lectures were shared with the other schools of architecture.

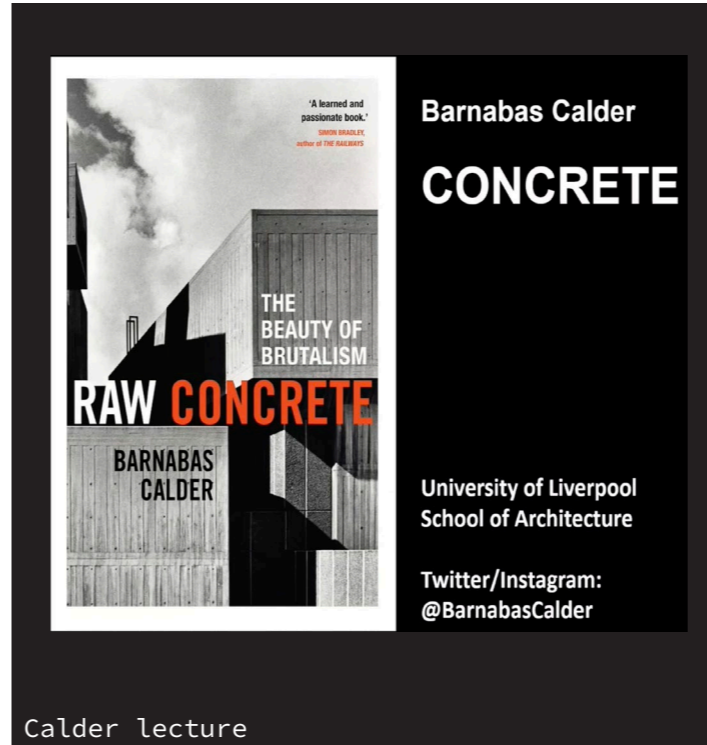
Going forward, SAUL intends to develop its focus on the role of building materials in sustainable construction into a CPD offering for stakeholders in academia and industry.

Lecture Events

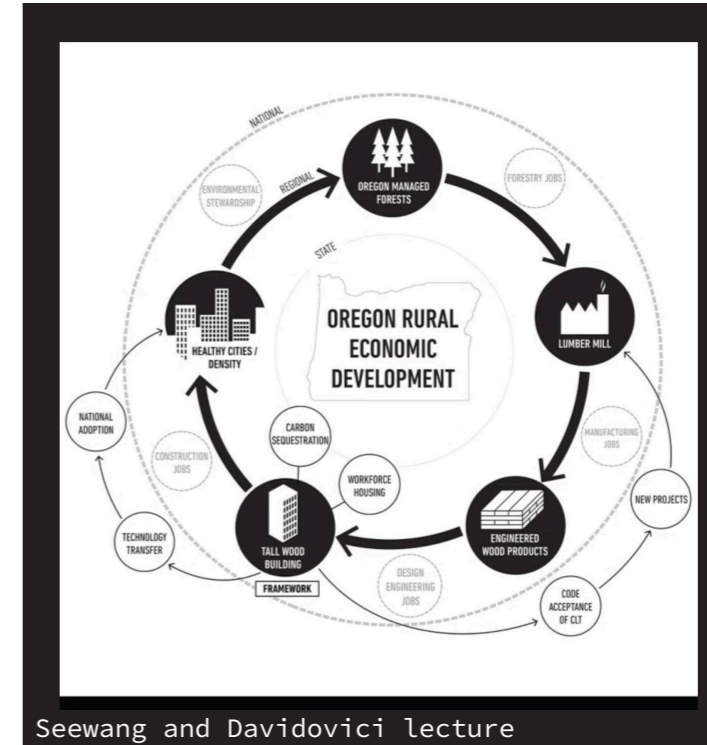
- Irénée Scalbert, *Where do Materials Come From?* - 27 Sep 2022
- John Goodall, *Brick* - 11 Oct 2022
- Richard Plant, *Stone* - 18 Oct 2022
- Laila Seewang and Irina Davidovici, *Timber* - 18 Oct 2022
- Barnabas Calder, *Concrete* - 25 Oct 2022
- David Watson, *Steel* - 1 Nov 2022
- Guan Lee, *Material Setting* - 8 Nov 2022



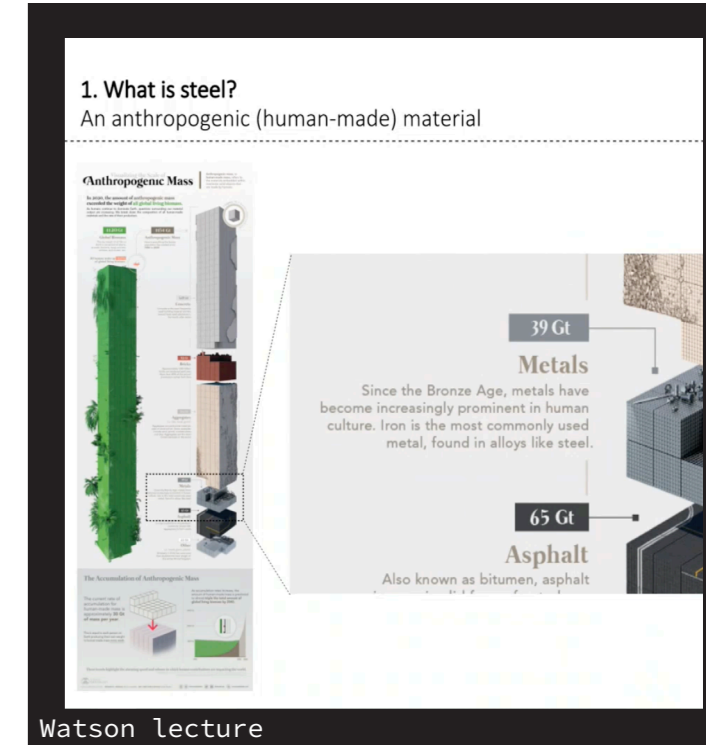
Materials



Calder lecture



Seewang and Davidovici lecture



Watson lecture

UNIVERSITY OF LIMERICK

Formed in 2005, The School of Architecture at UL (SAUL) sits within UL's Faculty of Science and Engineering, and collaborates with the engineering, life sciences, material sciences and digital sciences to address STEAM education.

SAUL has established a strategic partnership with Limerick City County Council co-operating with FabLab Limerick and the Citizen's Observatory; a public-facing education space, exhibition space, cultural venue, and digital fabrication laboratory.

The SAUL FabLab platform draws strategically from local and international industry partners providing education and upskilling of their labour force following the National Skills Strategy. We address the Climate Action Plan as co-PIs in the Positive City Exchange Horizon 2020 project. We are developing new technologies, market platforms, and training new citizens to transform Georgian Limerick into a positive energy city.

The SAUL Research Unit, named the SAUL Intelligence Unit (IU) established in 2009, has a track record in delivering studio-based multi-disciplinary research on real-world local issues located within the region. Issues selected for research are locally based and a topic of global importance, and include; re-use, post-occupancy, rural redevelopment, smarter cities and more.

Resilient Design Curricula as an Intersvarsity Project - Autumn 2022 - Spring 2023 Year Three SAUL and Year Three UCD are halfway through a year-long shared design studio curriculum exploring Co-op Housing and Land Management on Clare Island, Co. Mayo.

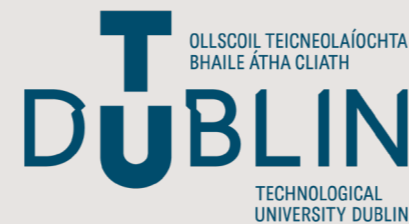
The shared design studio module is deeply invested in Resilient Design Curricula as an intersvarsity project and the shared programme between SAUL and UCD. It is a response to a critical need to develop a robust design studio curriculum that seeks coherent responses to the challenges posed by the climate emergency.

A note from Jennifer Boyer, Vice President of Sustainability, Technological University Dublin:

The Resilient Design Curricula HCI Pillar 3 project establishes a unique partnership across Ireland to advance architectural education by focusing on the real-world challenges of climate change and the national housing shortage.

At a period of major disruption, this innovation project establishes core priorities, shared values, and agile approaches to respond quickly and cohesively to building capacity across the profession.

This partnership establishes a new model of collaboration to address global concerns through local networks, offering students of architecture, educators, enterprise partners, and higher education institutions an impactful and relevant means of creating a systems level change.



UPCOMING EVENTS

CRITICAL NEEDS

On March 15th, under the auspices of the project, SETU will host a national event, bringing together stakeholders to explore the critical needs of the Resilient Design Curricula project, with a particular focus on housing.

A-IARG CONFERENCE 2023

Under the theme of *'Not Too Late: Design Thinking for Ecological Futures'*, the 12th annual conference of the All Ireland Architecture Research Group (AIARG) explores the shifts required in architectural thinking to address climate change and invites us to think optimistically about the future.

The conference will be delivered in association with and support the objectives of our national Resilient Design Curricula project. The conference invites local and global perspectives on how architectural teaching, practice, research and policy can address the urgent challenge of climate change.

The conference will take place in Grangegorman, TU Dublin 13th, 14th and April 2023.

Call for papers deadline 12th January 2023.

STUDENT WORKSHOP

On the 13th April students from across the architecture schools will attend a workshop in TU Dublin to discuss their impressions of the effectiveness of the Studio Pilots.





CONTACT

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RESILIENT DESIGN CURRICULA

*Resilient Design Curricula for 21st
Century Professionals Project*



An Roinn Breisoideachais agus Ardoideachais,
Taighde, Nuálaíochta agus Eolaíochta
Department of Further and Higher Education,
Research, Innovation and Science

