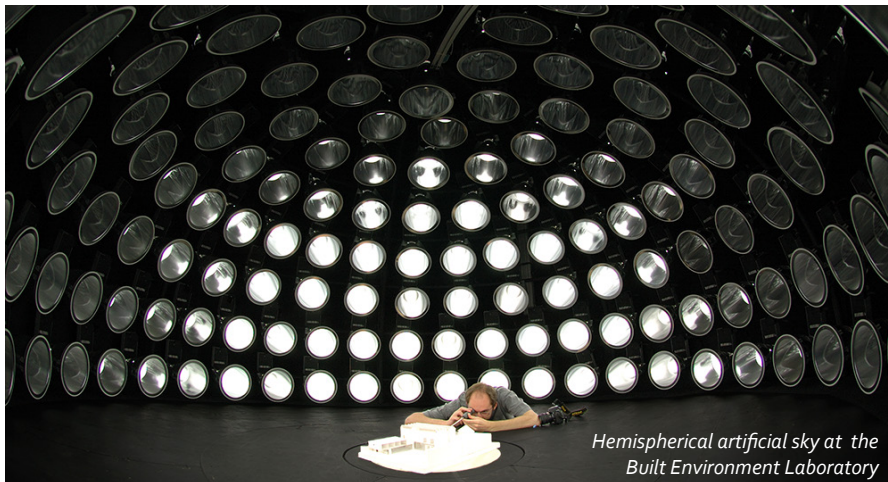


Masters of Architectural Science (MArchSc) Programme Sustainable Building Design & Performance

School of Architecture, University College Dublin



*Hemispherical artificial sky at the
Built Environment Laboratory*

The close relationship between people and society, buildings and the city are central to understanding their dynamic, evolving and inter-dependent relationship and their impact on the wider environment. The Masters of Architectural Science in Sustainable Building Design and Performance (SBDP) considers the many interfaces and exchanges that inform energy and environmental design and direct its performance. The programme will employ critical analysis of built precedents, measurement and simulation, application & testing, environmental potential and architectural expression to inform design and test performance.

The programme is a 12 month taught masters and part of an integrated programme of masters education in the UCD School of Architecture. It is rooted in the proven research strengths of the School, namely Sustainable Building Design & Performance, Conservation & Heritage and Urban Design not to mention Architecture. It provides the student with expert and specialised training as part of an interdisciplinary environment.

The programme is delivered by the UCD School of Architecture and supported by the UCD Energy Research Group and the UCD Earth Institute Built Environment Laboratory.

What is the programme about?

The programme aims to inform those who will design and make the built environments of the future in a sustainable and environmentally responsible way. It is designed to inform, enable and support students in pursuing ideas through theory and application based on established fundamentals and considered possibilities.

Who is it for?

The programme is aimed at both recent graduates and professionals alike and from disciplines such as architecture and architectural technology, landscape architecture, engineering, building physics, geography, planning, environmental studies and other cognate disciplines.

Programme Highlights

All disciplines are involved in designing, planning, making and protecting the designed environment. The programme believes that the best postgraduate education takes place in such an interdisciplinary environment.

Students are encouraged to work across disciplines to question what has happened to make the environment the way it is and how this could be improved in the future.

Students in Sustainable Building Design & Performance will have access to expertise, facilities and resources unique to Ireland such as the Built Environment Laboratory.

Students will also participate in the creative context of the UCD School of Architecture, where many changing exhibitions, guest lectures and research seminars enhance the postgraduate experience.

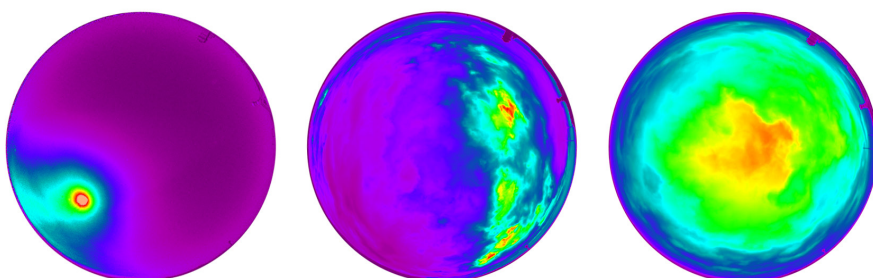
Architecture at UCD

In 2012, the UCD School of Architecture celebrated 100 years. The School has long led the way for architecture in Ireland. Its undergraduate, graduate and research programmes cover all aspects of the practice of architecture and landscape architecture, as well as advanced areas of conservation, sustainability, history and urbanism.

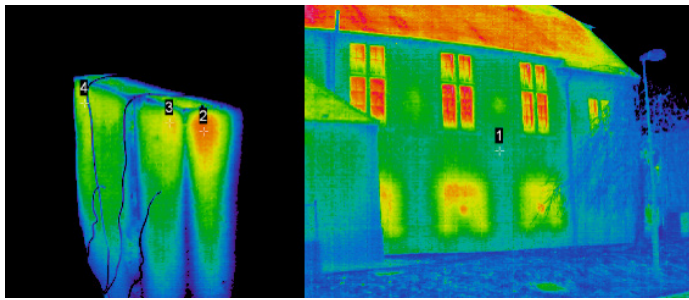
Its staff include many of the leading figures in architectural practice as well as internationally-recognised researchers. Its graduates are working all over the world.

Rooted in its context, the school is global in its outlook. Uniquely in Ireland, its programmes are accredited by the RIBA (Royal Institute of British Architects) as well as the RIAI (Royal Institute of the Architects of Ireland), thus ensuring all graduates an internationally benchmarked qualification.

The taught masters programme builds on this tradition of excellence in teaching and research.



Photometric hemispherical luminance maps of sky dome



Thermographic analysis of phase-change wall construction

Heat loss and thermal bridge thermographic analysis

What will I learn?

In this programme you will learn to:

- Work creatively in an interdisciplinary environment.
- Demonstrate advanced theoretical and conceptual knowledge of sustainable building design & performance within the wider context of the taught masters programme.
- Understand and participate in current debates within the area of sustainability as applied to building design & performance.
- Demonstrate an advanced ability to apply concepts and theoretical knowledge to related challenges both locally and globally.

Students are strongly encouraged to formulate their own dissertation topics and will be supported through a combination of lectures, design studies, workshops & seminars, field-work, modelling and lab work. Topics might include one of those indicated opposite.

Curriculum

The MArchSc programme consists of (see insert for specific modules, codes and ECTS):

- Lecture modules in theory, research methods, etc.
- Elective modules from anywhere in the university
- Design studio, working alongside masters students from other specialisations
- Focused workshops, seminars and field-work
- Research dissertation

Careers

Graduates of the programme will be well positioned and will have a distinct advantage in securing roles in defining the sustainable future of the built environment. Students who have completed graduate and postgraduate programmes with the UCD School of Architecture and the UCD Energy Research Group have gone on to work in world-renowned consultancies, practices, research agencies and universities. The programme is also an introductory vehicle for those wishing to pursue further research at research masters or PhD level both at UCD and internationally.

Duration

The full-time programme lasts 12 months, or three semesters, beginning in September of each year. The first two semesters consist of lectures, seminars, workshops and studio. In the third semester students work on the dissertation. The part-time programme can be taken over two years. Students will take all scheduled lecture programmes in the first two semesters but will extend their dissertation to four semesters.

Admissions

Applicants are required to have a primary degree in a cognate discipline with high academic grades (your transcript should include grades for each subject taken). The names and contact details of two referees who can vouch for your intellectual ability, maturity and motivation must also be provided.

If English is not your native language, unless you have done your primary degree through English in an English speaking country, an English language qualification is required. Please contact us for further information.

Module Structure for Sustainable Building Design and Performance (Total: 90 ECTS*)

Semester One (30 ECTS)

- ARCT 40300: Research Methods in Architecture (5 ECTS)
- ARCT 40640: Sustainable Building Design & Performance I (5 ECTS)
- ARCT 40680: Postgraduate Architecture Studio (15 ECTS)
- Negotiated Elective Module (5 ECTS)

Semester Two (30 ECTS)

- ARCT 40290: Case Studies and Reflective Practice (5 ECTS)
- ARCT 40630: Sustainable Building Design & Performance II (5 ECTS)
- ARCT 40620: Building Analysis Studio (15 ECTS)
- Negotiated Elective Module (5 ECTS)

Semester Three (30 ECTS)

- ARCT 40710: Thesis Module (30 ECTS)

* ECTS: European Credit Transfer System

Indicative dissertation topics

- Energy efficiency
- Ventilation and indoor air quality
- Daylight and sunlight availability and quality
- Passive and active solar design
- Sustainable building design
- Integrated design process
- The building and its microclimate
- Building environmental dynamics
- Environmental performance and assessment of buildings
- Indoor environmental quality
- Application of renewable energy in buildings
- Innovation in design, construction and development
- Energy and environmental standards, policy and regulation
- Sustainable construction processes
- Embodied Energy Profiles and Material Performance

Further Information

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