



OLLSCOIL NA GAILLIMHE
UNIVERSITY OF GALWAY

Ward & Burke Construction- Established Professor of Smart Infrastructure and Data Driven Engineering, 1FTE, Permanent

Ref #: 011366



TABLE OF CONTENTS

	Page Number
Job Advertisement	4-5
Job Description	6-8
Eligibility Requirements	9
Competency Framework for Professorship roles at University of Galway	10
Profile of the University of Galway	16-22

College	Science and Engineering
School	School of Engineering
Post Title & Subject Area	Ward & Burke Construction Established Professor Of Smart Infrastructure and Data Driven Engineering
Post Duration	Permanent
Level	Established Professor
Reports to	Head of School or nominee

JOB ADVERTISEMENT

Applications are invited for an appointment as Ward & Burke Established Professor Of Smart Infrastructure and Data Driven Engineering in the [School of Engineering](#) at the [University of Galway](#). This role has been developed as part of an exciting strategic partnership between [Ward & Burke Construction Ltd](#), the University of Galway and the School of Engineering and the [Construct Innovate Centre](#) (Ireland's National Research Centre for Construction Technology and Innovation). The Ward & Burke Centre for Smart Infrastructure and Data Driven Engineering, located in the School of Engineering alongside Construct Innovate, aims to make Ireland a global research and innovation leader for infrastructure, data-driven engineering, sustainable construction and built environment technology. The Centre will lead globally impactful research that enables climate resilient infrastructure and energy excellence in infrastructure development.

The successful candidate will capitalise upon and strengthen University of Galway's international position in Smart Infrastructure and Data Driven Engineering. This role strongly aligns with **climate-neutral and smart cities, one of the five missions of Horizon Europe**. This role will provide leadership to the University's ambitions to further world-class research within the newly formed Ward & Burke Centre for Smart Infrastructure and Data Driven Engineering and deliver upon our commitment to supporting the just transition to a low carbon future. It will support the infrastructure sector in meeting key societal challenges, supporting sustainable economic growth and meeting the Science Based Targets initiative (SBTi) Net-Zero Standard, which establishes a robust emissions reduction target that aligns with the pace and scale mandated by climate science. The Centre, located in the School of Engineering alongside Construct Innovate, will make Ireland a global research and innovation leader for infrastructure, data-driven engineering, sustainable construction and built environment technology.

There are many exciting opportunities to foster the application of disruptive innovation, new research approaches to the design, construction and operation of infrastructure including, but not limited to, water and wastewater infrastructure, flood and coastal protection, microtunnelling/pipe-jacking and stormwater conveyance systems. Such research will provide the opportunity for multidisciplinary research approaches including approaches for enabling energy neutrality in infrastructure projects (including on construction sites), developing climate-resilient approaches to infrastructure design and operation, enhancing the social benefit of infrastructure and minimising the environmental impacts of these projects. The successful candidate will be an ambitious, and highly committed individual who combines strong academic credentials with a record of accomplishment in research and innovation leadership in these and related areas.

The appointee will have prior experience of building, leading and managing a high-performance research team, prior experience of knowledge transfer, innovation and partnering with industry, and demonstrated experience of delivering strategic objectives. The role requires an individual who can foster a culture of innovation and collaboration with staff, industry partners, policy makers, regulatory and professional bodies, and other stakeholders to develop and grow this area of strategic importance to the University of Galway.

It is expected that the appointee will lead a world-class research programme, working with colleagues across the relevant academic disciplines such as Mechanical Engineering and research institutes. Civil Engineering has active clusters in construction, environmental engineering, structural engineering, offshore engineering, transport, geotechnical engineering etc. Of particular relevance is [Construct Innovate](#), Ireland's national research centre for construction technology and innovation, which collaborates with over 90 construction companies and is led by academic staff from the [School of Engineering](#) at [University of Galway](#) and the [Ryan Institute](#) which focuses on sustainability research

and innovation. The successful candidate will be expected to apply for major funding awards, for example from the European Research Council (ERC), Research Ireland and Horizon Europe, and will develop national and international collaborations with academia and industry.

The successful candidate will contribute to teaching, research, student project supervision, and programme administration across undergraduate and postgraduate programmes in Civil Engineering and the School of Engineering and will benefit from a significant package for Centre-related research, including PhD and researcher funding.

The successful candidate shall possess:

A PhD in Civil Engineering or a closely-related discipline, significant research experience and expertise in one or more of the following areas: soil/structure interaction, microtunnelling/pipe-jacking, water and wastewater engineering, application of data and digital engineering approaches including innovative sensor and sensing technologies, neural-network approaches for engineering applications, use and application of digital twins in infrastructure, the use of artificial intelligence for more sustainable and efficient infrastructure design and automation in infrastructure and construction applications.

For informal enquiries, please contact Professor Laoise McNamara, Head of School, School of Engineering (laoise.mcnamara@universityofgalway.ie) or Prof. Eoghan Clifford, Head of Civil Engineering, School of Engineering (eoghan.clifford@universityofgalway.ie).

Additional information on the School/Discipline/College is available at <https://www.universityofgalway.ie/engineering/> and the Discipline is available at: <https://www.universityofgalway.ie/science-engineering/engineering/civil-engineering/>.

Salary: € 144,298 to 182,427 p.a (applicable to new entrants effective from January, 2011)

This appointment will be made on the Established Professor scale in line with current Government pay policy and in accordance with the terms and conditions of the University's Remuneration policy. [QA321-Updated-PP-Remuneration.pdf \(universityofgalway.ie\)](#)

Closing date for receipt of applications is 17:00 (Irish Time) on November 21st 2025. It will not be possible to consider applications received after the closing date.

Garda vetting may apply.

Appointments will be conditional on work authorisation validation.

Further details are available at www.dbei.ie

For more information and Application Form please see website:

[Jobs - University of Galway](#) Applications should be submitted online.

Please see further information on how to apply here: [E-Recruit - University of Galway](#) and [Guidelines for On-line Applications \(universityofgalway.ie\)](#)

Please note that appointment to posts advertised will be dependent upon University approval, together with the terms of the Employment Control Framework for the higher education sector.

At the University of Galway, we celebrate diversity and believe that every candidate can bring unique perspectives, talents and approaches to our University community. We actively encourage applications from all backgrounds regardless of race, religion, ethnicity, gender, family status, civil status, membership of the Traveller community, sexual orientation, disability or age.

We value flexibility and recognise that a work-life balance is essential. We offer flexible working arrangements, including hybrid options, to accommodate the diverse needs of our staff. Our commitment to inclusivity extends beyond recruitment as we foster a friendly and supportive work environment, where all work styles are valued and respected. Join us in shaping a workplace that thrives on diversity, creativity and collaboration.

University of Galway is an equal opportunities employer.

JOB DESCRIPTION

BACKGROUND

Ollscoil na Gaillimhe – University of Galway has been inspiring minds since 1845 as a research-led university. It is one of the oldest and largest universities in Ireland. The campus community includes over 21,000 students and staff and 110,000 alumni located in over 100 countries across the world. University of Galway has earned international recognition as a research-led university with a commitment to top quality teaching. University of Galway is counted among the Top 300 universities in the world, positioned in the top 2% in QS global rankings. The university has committed to aligning all major activities, including teaching, research, operations and engagement to the Sustainable Development Goals (SDGs), targets and indicators. University of Galway is ranked 34th in the world and first in Ireland in the Times Higher Education's Impact Rankings.

The School of Engineering, as part of the College of Science and Engineering at University of Galway, is one of the premier engineering schools in Ireland, with a long tradition of excellence dating back to 1849. The school has four primary engineering disciplines: Biomedical, Civil, Electrical & Electronic and Mechanical, who are housed within the award-winning Alice Perry Engineering Building, the largest engineering education facility in Ireland.

The Civil Engineering research community is comprised of 60+ graduate research students and over 30 research staff supported through a large portfolio of funded programmes. This research profile spans all branches of the discipline, including structures, timber, geotechnics, transportation, hydrology and hydraulics, environment, energy and construction technology. These research activities align with the university's strategic research theme of Sustaining Our Planet and People by addressing: (i) Climate Action and (ii) Sustainable Bioeconomy and Decarbonisation. It also aligns with the flagship action of Sustainability by focusing research expertise and infrastructure on the targets of the UN Sustainable Development Goals. University of Galway hosts Construct Innovate (<https://constructinnovate.ie/>), Ireland's national research centre for construction technology and innovation with over 90 construction companies as members.

Full details of the extensive laboratory facilities available in the School of Engineering may be found at:

<https://universityofgalway.ie/science-engineering/engineering/facilities/>.

University of Galway is launching the Ward & Burke Centre for Smart Infrastructure and Data Driven Engineering in 2026. The mission of the centre is to enhance both fundamental and applied research that. The centre will also address how the ethical use of data-driven engineering approaches can enhance the design, construction and operation of infrastructure and the built environment for a sustainable and climate future. It will help enable the innovation and talent necessary for developing the next generation of infrastructure. The centre will ensure that the outputs from research, address the significant global challenges related to the built environment and can be harnessed by society.

Equality and Diversity

University of Galway and the College of Science and Engineering have a deep commitment to equal opportunities, and this year, University of Galway is delighted to announce that it is to be conferred with the institutional Athena Swan Silver Award. The School of Engineering is deeply committed to making real and lasting changes to career development in supporting and advancing women

throughout the pipeline including attracting more women into engineering at both undergraduate and postgraduate level, and the career development of postdoctoral researchers and staff. Engineering has already demonstrated significant leadership in this area, being the first school/unit in University of Galway to apply for and be awarded with the departmental Athena SWAN Silver award. More information on the College's activities in this domain can be found on <https://www.universityofgalway.ie/science-engineering/edi/> and the overall University activities on <https://www.universityofgalway.ie/equalityanddiversity/>.

JOB DESCRIPTION

Principal Duties and Responsibilities

The post-holder's duties will include, but not be limited to, the following:

Strategy and Research Leadership

- Provide leadership in delivering a compelling, cohesive and ambitious vision for the direction and development of the Centre of Smart Infrastructure and Data Driven Engineering beyond its start-up phase in line with the College and University's Strategic Plan objectives
- Conduct a world-class programme of research and portfolio of research projects, externally funded through national and international (especially EU) programmes.
- Disseminate research outputs in leading academic publications
- Work effectively with the centres' governance committee(s) and advisory board to realise the university's ambitions for the centre.
- Implement the equality, diversity and inclusion goals of the College and University in the operations of the Centre
- Lead and maintain external relations with relevant industry partners, funders, policy makers, other academic institutions and other stakeholders to develop collaborative research; as well as to identify opportunities for philanthropic funding
- Develop the research profile of the Centre to attract, manage and retain staff to achieve academic excellence, supported by Performance for Growth processes
- Provide leadership in relation to the transference of knowledge to society through outreach (e.g. collaborative research; seminars; workshops; lectures; websites; publications) and, where applicable, through technology transfer (e.g. collaborative research; contract work; and commercialisation of intellectual property, licences etc).
- Promote the quality of the experience of research students associated with the Centre.
- Aid the development of the Centre through appropriate and responsible income generation, resource allocation and budgetary planning consistent with the mission, strategy and needs of the University

Teaching

To give instruction and supervision, as directed by the Head of School, to students of the University in courses and programmes organised by the School or to which the School contributes to another School or College. Such duties to include:

- Curriculum and course design, preparation and delivery of lectures, tutorials, project supervision and general examination and other assessment responsibilities.
- Provide academic counselling and advice to students.
- Contribute to the supervision of postgraduate masters and PhD students

- Contribute to creating, updating and delivering relevant undergraduate and postgraduate programmes in the College of Science and Engineering

Contribution and Scholarly Activity

- Contribute actively to the academic administration and the on-going initiatives within the College of Science and Engineering through participation at College meetings and other relevant committees
- Engage in scholarly activity including refereeing of journals, membership of advisory bodies and peer review panels and work associated with external examinership
- Engage with the wider community regionally, nationally and internationally from a civic, economic, social and cultural perspective as a contribution to the life of the University.
- In representing the University externally, the post-holder is expected to maintain the highest professional standards, thereby enhancing the reputation of the University
- Other contributions to the College of Science and Engineering and School of Engineering as necessary

The post-holder shall carry out these duties under the direction of the Head of the School or of an authorised senior member of the staff of the school.

The post-holder shall be a member of College/Colleges in accordance with University Statutes.

The hours of work are those prescribed under the Public Service Agreement in respect of Academic Staff.

ELIGIBILITY REQUIREMENTS

Essential Requirements:

- A Primary degree and a PhD qualification in Civil Engineering, Structural Engineering or a closely related engineering discipline; these include, but are not limited to:
Infrastructure engineering (soil/structure interaction, microtunnelling, water and wastewater),
- Demonstrate significant research capacity and vision in data and digital engineering approaches as applied to infrastructure including innovative sensor and sensing technologies, neural-network approaches for engineering applications, use and application of digital twins in infrastructure, the use of artificial intelligence for more sustainable and efficient infrastructure design and automation in infrastructure and construction applications.
- An outstanding publication record

- Demonstrable leadership qualities at organisational, national and international levels, and a proven track record of collaboration and relationship building with industry and other stakeholders
- A substantial track record of securing and/or facilitating the securing of significant research funding at national and international level together with evidence of developing new and significant research initiatives.
- Demonstrated commitment to equality, diversity and inclusion, and cultivating respect in the workplace
- A track record of teaching excellence which includes the use of innovative teaching approaches and technologies and the integration of the latest research and industry developments to enhance student learning.

Desirable Requirements:

- Evidence of an international research network and record of leading international initiatives, including leading academic organisations, editing journals and/or organizing national/international conferences.
- Demonstrable experience of successful leadership and mentoring of postgraduate students and/or postdoctoral researchers and early career academics.
- A record of service and leadership in national/international professional disciplinary associations and/or sector educational initiatives.

The appointment will be made to the School of Engineering and will be associated with the discipline of Civil Engineering.

Competency Framework for Professorship Role at University of Galway

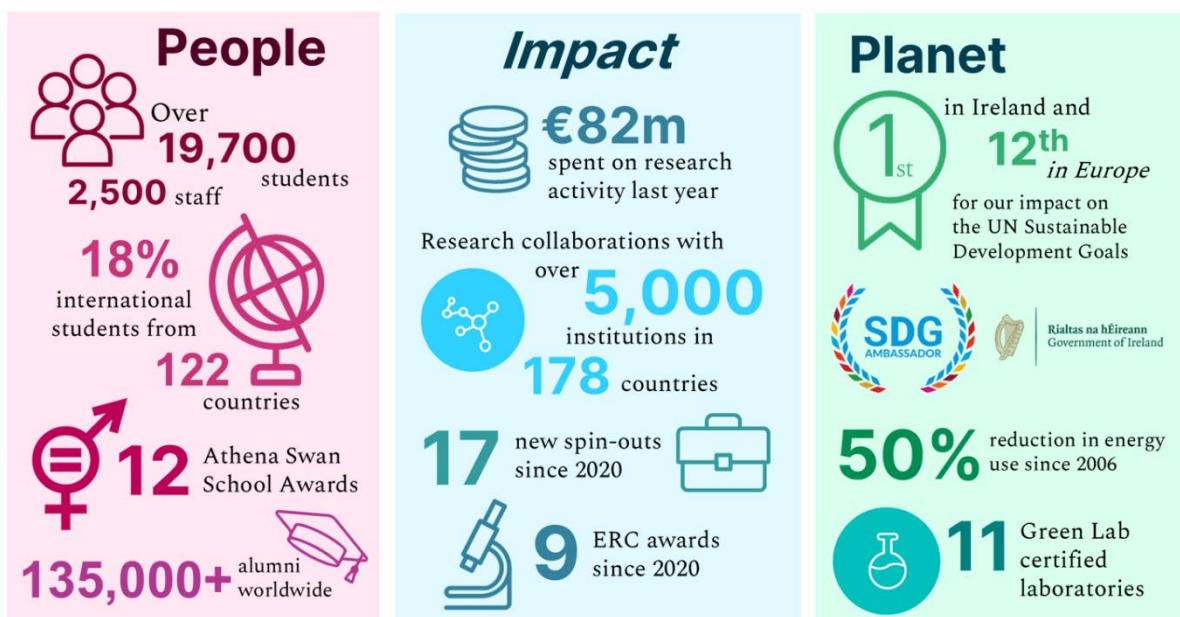
Academic Excellence	Leadership Excellence	Organisational Excellence
Excellence in Research <i>The Professor is a leader in his / her field and contributes to the direction and development of his / her discipline and body of knowledge through planning and leading research of outstanding quality. S/he leads others to make the most effective contribution to their discipline and encourages cross discipline research collaboration.</i>	Personal Effectiveness <i>The Professor is passionate and enthusiastic about the discipline/school and is committed to making his / her best personal contribution through employing excellent planning and organising, communication and decision making skills in order to achieve ambitious goals for their discipline/school and to meet the changing demands of the Professorship role.</i>	Thinking Strategically <i>The Professor is responsible for developing and implementing a strategic approach to the development of the discipline/school. S/he is aware of the wider environment, has the ability to think strategically and to devise and implement changes in line with their strategy.</i>
Excellence in Teaching <i>The Professor oversees the development of, and participates in, delivering teaching programmes which engage and inspire students at all levels and ensures a strong focus on quality teaching and on the continuous review and development of teaching skills and methodologies in the discipline.</i>	Leading and Managing Others <i>The Professor is responsible for the delivery of the work programme by getting the best out of others. S/he ensures that good administrative procedures are in place, that work is organised fairly, that there is a highly engaged work environment, and that time is given generously to developing staff.</i>	Collegiate and Community Contribution <i>The Professor values and works to instil a collegiate approach not only within his / her discipline / school and the University, but across the wider external community. S/he actively seeks to build effectively functioning teams and networks. S/he is approachable, collaborative, and values the contribution of others.</i>

Ollscoil na Gaillimhe

University of Galway

PROFILE OF THE UNIVERSITY

The University at a Glance:



The University Management Team

The University Management Team (UMT) is responsible for the executive day-to-day management of the University. UMT is led by the President who is the Head and Chief Officer of the University. Our current Interim University President, Professor Peter McHugh, was appointed in 2024. You can read more about him at: www.universityofgalway.ie/president

Acting under the President, the members of the University Management Team (UMT) each have specific leadership responsibilities for delivery of the University's objectives in education, research and management of the organisation. You can see the full UMT membership in the organisational chart above.

Find out more about the University's Governance and Management structures at: www.universityofgalway.ie/governance/the-kube-the-governance-hub

Colleges and Schools

The University has four Colleges:

- College of Arts, Social Sciences & Celtic Studies
- College of Business, Public Policy & Law
- College of Medicine, Nursing & Health Sciences
- College of Science & Engineering

Each of the Colleges is led by an Executive Dean. Within each College, decisions are taken by College Boards, chaired by the Executive Dean, and including the Heads of each School in the College.

For more information on Colleges, Schools and Disciplines, visit:

www.universityofgalway.ie/colleges-and-schools

College

College of Arts, Social Sciences & Celtic Studies

Schools

School of Political Science & Sociology
 School of Psychology
 School of Education
 School of Geography, Archaeology & Irish Studies
 School of English & Creative Arts
 School of History & Philosophy
 School of Languages, Literatures, & Cultures

College of Business, Public Policy & Law

J.E. Cairnes School of Business & Economics
 School of Law
 Shannon College of Hotel Management

College of Medicine, Nursing & Health Sciences

School of Health Sciences
 School of Medicine
 School of Nursing & Midwifery

College of Science & Engineering

School of Biological & Chemical Sciences
 School of Computer Science
 School of Engineering
 School of Mathematical & Statistical Sciences
 School of Natural Sciences



- You can read the strategic plan at: [Strategy | Straitéis 2025-30 - University of Galway](#)

Our new strategic plan was developed through 18 months of consultation with our university community, with external partners in our city and region, and with the input of experts and supporters from around the world. Despite the diversity of inputs, the message was consistent:

- Be clear in our purpose and our core activities
- Communicate our distinctiveness
- Demonstrate our global impact
- Invest in our organisation to make it an effective university to work in and work with.

Our new strategy focuses on our core mission as a university to nurture talent and generate knowledge for the world. It articulates our ambition to make a distinctive impact through our research and innovation. It demonstrates our drive to enhance our education for the future, both in the excellence of our teaching and learning and the quality of our student experience. And it commits us to investing in our organisation and infrastructure to make it a more effective, sustainable and empowering place for our people.

We have stated these ambitions clearly and concisely. We now warmly welcome the engagement of our university community, and we invite the community to respond in inspiring and impactful ways. And we invite and encourage partners who share our vision to reach out and join us on our journey.

Building upon our strategic priorities, we have used this opportunity to engage staff, students and partners to define what makes us stand out, in terms of:

- Our Distinctive Place
- Our Research Pillars
- Our Galway Graduates

These have been informed by our shared experience of working and studying in University of Galway, and by external perspectives of our reputation. We will use this framework to guide us in our strategic planning and to communicate our distinctiveness with the world.

To give confidence to our community and partners that we listened to your feedback, we have also detailed where we plan to invest in our organisation in our Priority Initiatives and where we will evidence the impact of our actions in our Measures of Success.

In such a large and complex organisation, we have identified those Key Enablers that support excellence across our activities. Guiding us in our actions, and setting standards of behaviour for our university, our people and partners, we have articulated five Core Values informed by student and staff feedback: Excellence, Respect, Openness, Sustainability, and Belonging.

Student Body

The total student body, including part-time learners, comprises over 20,000 students, over 25% of whom are studying at postgraduate level.

Over 18% of our students were from outside the island of Ireland, coming to study in Galway from over 122 different countries worldwide. Through the Global Galway project, we are seeking to grow our international diversity further through a greater focus on international recruitment, mobility and partnerships.

Research

University of Galway is a globally focused research-intensive university. We recognise that research areas are neither standalone nor static. The problems of the world are not solved from just one perspective. With our knowledge of global challenges, national policy and regional needs our research areas enable an interdisciplinarity approach and impact.

Our research community achieved over €110m in EU research funding during the 2014-2020 programme period. We are now firmly focused on the 2021-2027 programme cycle, with ambitions to achieve in excess of €150m of EU research funding, including Horizon Europe. In 2023, the University had a record €82m annual spend in research, across a breadth of research areas. Engaging with our partners locally, nationally and worldwide, our current university strategy (Strategic Plan 2020-2025) invites ambition in research that underpins the following areas:

- Enhancing policy and society
- Enriching creativity and culture
- Improving health and wellbeing
- Realising potential through data and enabling technologies
- Sustaining our planet and people

These areas are aligned to the work of our Research Institutes, including:

- Data Science Institute
- Ryan Institute for advancing sustainability and innovation
- Institute for Lifecourse and Society
- Institute for Creativity
- Institute for Clinical Trials
- Institute for Health Discovery and Innovation (launched in October 2024).

For more information on our research institutes, centres and units, visit:

www.universityofgalway.ie/our-research/listings/research-centres-institutes-and-units.html

Staff

The University employs approximately 2,500 staff, including full-time and part-time, which includes approximately 1,000 academic staff.

Human Resource issues are managed within the Human Resources Office, under the direction of the Director of Human Resources. In 2023, a new Hybrid Working Policy was launched to facilitate more flexible working arrangements in a post-Covid environment.

Finances

The University is its own financial authority and has an annual income of over €350m, including contract research income of over €70m. The sources of income are Student Fees (approx. 40%), State Grants and Pension funding (approx. 30%), Research Income (20%) and Miscellaneous (10%).

The University and the Irish language

The University's commitment to the Irish language was first set out in the University College Galway Act 1929 and this was reiterated in the University College Galway (Amendment) Act 2006, which states that one of the principle aims of the university is "the provision of education ... through the medium of the Irish language".

The University's Strategy 2020-2025 goes even further and commits to developing and implementing an ambitious and future-focused strategy for the Irish language, in partnership with national stakeholders and Gaeltacht communities, based on our values of respect and sustainability. In 2021, the University published its first Irish Language Strategy and appointed its first Irish Language Officer.

Irish language programmes are delivered primarily through the Discipline of Irish and through Acadamh na hOllscolaíochta Gaeilge, our Irish language academy, which has three centres located in the Gaeltacht.



Our Region

Our regional footprint includes five Medical Academies, three Gaeltacht centres, off-campus research sites in Connemara and the Burren, and a satellite campus in Shannon College, Co. Clare.

Our Campus

The main University Campus, with an area of some 105 hectares in the heart of the city of

Galway, is attractively situated on the west bank of the River Corrib, and stretches from Nuns' Island in the south to the Sports Grounds in Dangan to the north. Other teaching and research facilities are located outside the city in An Cheathrú Rua, Carna and Mace Head in Connemara, in Shannon, Carron and Finnevara in Co. Clare, and in Gaoth Dobhair in Co. Donegal. The University's medical students and researchers benefit from on-the-ground Medical Academies located in hospitals throughout the region from Portiuncula University Hospital in Co. Galway to Letterkenny University Hospital in Co. Donegal.

Building for the Future: The University is in the process of finalising its masterplan for the years ahead, which will include the Nuns' Island creative and innovation district in Galway city centre. Recent years have seen some significant additions to campus, including:

- Clinical Simulation Facility: completed in 2022
- Dunlin Village on-campus student accommodation (674 beds): completed in 2022

The following construction projects have been commenced or approved in recent years:

- Learning Commons (new Library): construction commenced in 2024
- Water Sports Centre: planning permission approved in 2023

- New Law School: design for planning in progress
- New Pharmacy School: funded to planning stage
- New Medical School: funded to planning stage

Sustainability

Sustainability is one of the University's core values and we are recognised as a leader in the transition to a sustainable future. We are committed to the SDGs at an institutional level on multiple levels:

- As a signatory to the SDG Accord, we have committed 'to align all major efforts with the SDG targets and indicators, including through our education, research, leadership, operational and engagement activities' and to 'share our learning'.
- Our Climate Action and Sustainability Policy formalises our commitment 'to lead the transition to a sustainable future by embedding the SDGs into all our major efforts'.
- Our Sustainability Strategy 2021-2025, which is mapped to the SDGs, sets out our vision across the campus and beyond.

In the past three years we have been ranked First in Ireland and Top 50 worldwide in the Times Higher Education Impact Rankings for our progress on the SDGs. In 2023, we established a new Sustainability Office to lead the implementation of our Sustainability Strategy and to embed sustainability across our curriculum and operations.

Through the work of the University's Sustainability Office, the Community and University Sustainability Partnership, colleagues in Buildings and Estates and other university operations, and our Student Societies, we have advanced understanding and action on the urgent need for sustainability, using a Learn – Live – Lead model. Since 2006, we have achieved over 50% reduction in energy usage, exceeding our targets. In 2021, we established our carbon footprint, and we are actively working towards achieving carbon neutrality by 2050.