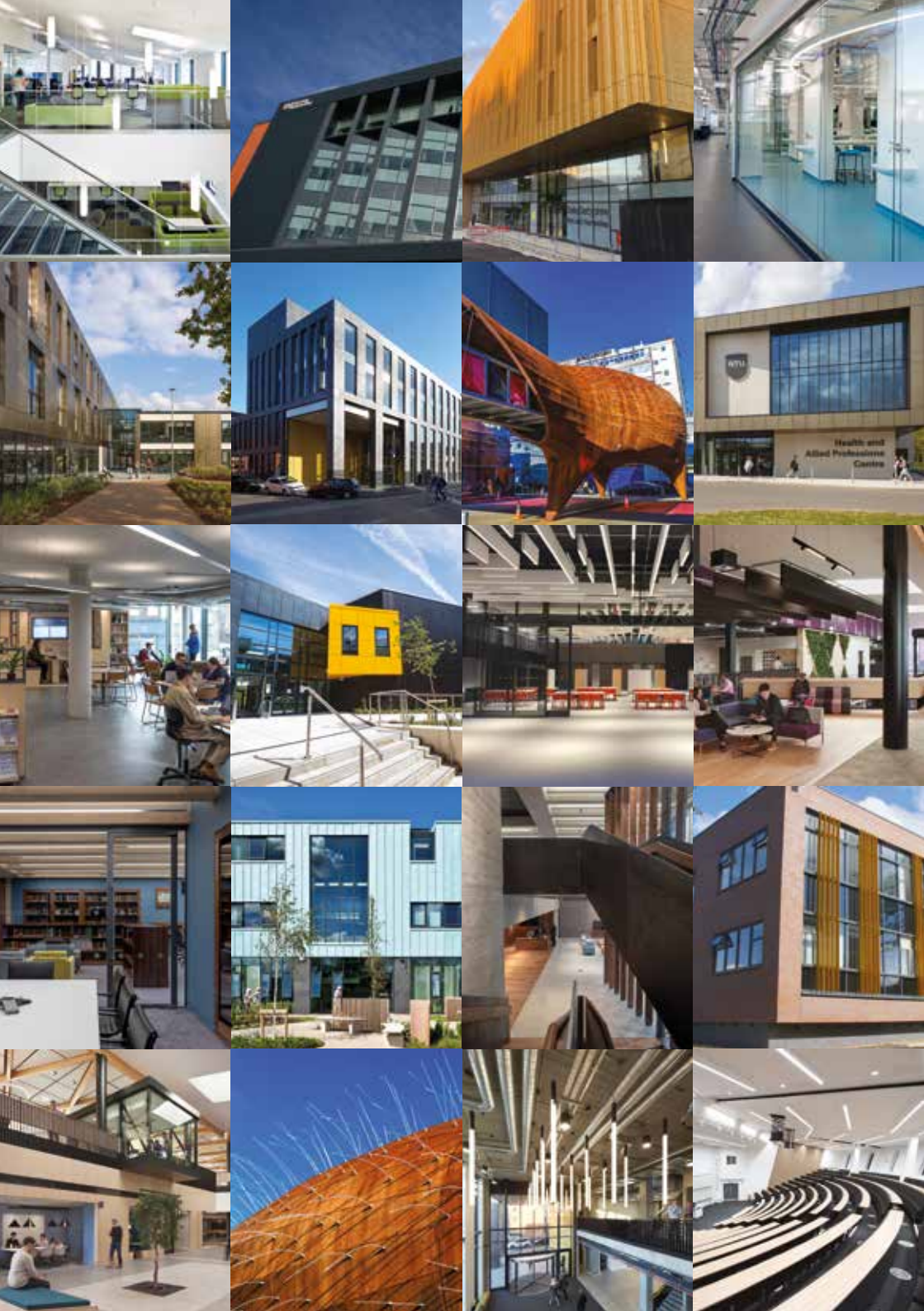


# Higher and Further Education

Creating inspiring and engaging learning environments where students and educators thrive.

Our experience spans every type of learning environment, and we're at the forefront of delivering innovative, sustainable and highly flexible education facilities.



## Contents

Introduction .....	04
An Lochran Enterprise and Research Centre .....	06
Neuron Pod .....	08
Confetti Institute of Creative Technologies .....	10
Royal College of Pathologists HQ .....	12
Delia Derbyshire Arts & Humanities Building .....	14
The Health and Allied Professions Centre .....	16
The Kydd Building, Abertay University .....	18
National Manufacturing Institute for Scotland (NMIS) .....	20
Manchester Metropolitan University's Student Union .....	22
Margaret Fell Lecture Theatre, Lancaster University .....	24
Seabourne Library, University of Chester .....	26



## Higher and Further Education

The education sector is evolving rapidly, so the learning spaces we create today must be responsive to future advances in technology and teaching methods, whilst inspiring and engaging students and academic staff from the outset.

04

That's why we create learning environments which directly respond to these requirements, building in flexibility to maximise their lifespan. We bring a deep understanding of the challenges inherent in all types of education environment, helping create dynamic, flexible facilities which stand the test of time.

From sustainability-focused university estates to leading-edge research and development facilities, we understand that early engagement with key stakeholders is vital to delivering solutions which respond directly to their specific needs.

At Waterman, every client and project matters, and our multidiscipline expertise and experience encompass the design, expansion and enhancement of all types of education facility. We've helped deliver everything from challenging refurbishment and retrofit projects to new developments incorporating sustainable, futureproof designs. Our experts help design effective and efficient buildings that fully utilise a space's potential to create stunning learning environments. Our holistic approach to sustainability considers the project's whole lifecycle, climate risk and carbon emissions.

We are tackling the climate emergency head on by ensuring circular economy principles, whole-life carbon cycles, climate resilience and operational carbon emissions are considered and incorporated from the outset. We are at the forefront of design innovation, and we take a 'fabric first' approach, designing out the need for heating and cooling and reducing embodied carbon content wherever possible.

We are a leading multidisciplinary environmental and engineering consultancy, and we're dedicated to creating outstanding communities, networks and built environments which enrich the lives of all. We harness our collective expertise to support award-winning schemes throughout the UK, Australia and Ireland. With our international reach and local expertise, we partner with private and public sector clients to deliver optimum project designs, thinking differently to deliver innovative, sustainable and economical solutions.



05

**We deliver education facilities which directly respond to the diverse requirements of educators and students.**

# An Lòchran Enterprise and Research Centre

**Location:** Inverness

**Client:** Highlands and Islands Enterprise

**Architect:** Sheppard Robson

06



An Lòchran Enterprise and Research Centre is home to Highlands and Islands Enterprise (HIE) with key research and education departments from the University of the Highlands and Islands (UHI), alongside research and consultancy divisions from Scotland's Rural College (SRUC). This unique partnership works to encourage young people to become more involved in science and technology-based subjects in support of the region's future workforce development.

The partners share the new building which is divided into two wings: one for HIE offices and outreach; and one for UHI

research and education, which includes the SRUC and Science Academy. These are joined by shared facilities, including a reception, public and social space and meeting rooms. The two- and three-storey wings are rectangular in plan with dual pitched roofs and are connected by a suspended bridge at first floor level.

Our team provided civil, structural, building services engineering design services for the Centre.



07



Awards: Shortlisted for  
'Corporate Workplace'  
BCO Scottish Awards 2019



# Neuron Pod

**Location:** London

**Client:** Queen Mary University of London

**Architect:** aLL Design Architects

08



Queen Mary University of London's striking £1.8 m Neuron Pod extends the existing 'Centre of the Cell' at the Blizard Institute of Queen Mary University of London, located in East London's Whitechapel.

Designed to resemble a nerve cell, the pod provides 86 sqm of multi-functional space to be used for seminars, exhibitions, performances and interactive workshops aiming to inspire a younger generation to pursue a career in science.



**Awards: Shortlisted**  
RIBA London Awards  
2019

The external structure of the pod was prefabricated from weathering steel and assembled on site to speed up construction. Based on the existing three-dimensional forms of cells and molecules already present within the Blizard Institute, the pod is punctuated with external acrylic 'hairs' fitted with fibre-optic LEDs to illuminate the pod at night, completing its 'neuron cell' image.

Our team delivered the building services design for this unique and inspiring development.

09



# Confetti Institute of Creative Technologies

**Location:** Nottingham

**Client:** Nottingham Trent University (NTU)

**Architect:** Allan Joyce

10



The Confetti Institute of Creative Technologies' new Digital Media Hub is located in the centre of Nottingham Trent University's (NTU) 'Creative Quarter'. This innovative seven-storey building is part of one of the most forward-thinking higher education institutions in the UK and includes contemporary classrooms, a spacious Learning Resource Centre with private study facilities, computer laboratory and cafe.

As the Confetti Institute's main site, the Hub provides more media, film and theatre courses for students at both college and degree level.

Our team provided mechanical and electrical engineering services for this exceptional build, meeting NTU's key requirements for a low energy build and achieving a BREEAM 'Excellent' rating.



**Awards: Winner**  
- 'Sustainable development of the year'  
East Midlands Brick Awards 2019



**Awards: Shortlisted**  
- 'Project of the Year - Building Project'  
Celebrating Construction Awards 2019



**Awards: Shortlisted**  
RIBA East Midlands Awards 2019

11



**Awards: Shortlisted**  
- 'Regeneration'  
RICS East Midlands Awards 2019



# Royal College of Pathologists HQ

**Location:** London

**Client:** Royal College of Pathologists

**Architect:** Bennetts Associates

12



Home to medical research professionals for over 50 years, the stunning new premises in Aldgate, Central London, has been designed as a fitting place from which to administer, train, teach and manage the College and its members for the future.

The eight-storey building features a double-height entrance atrium, two roof terraces and a suite of state-of-the-art facilities for the College's members and trainees. There is also a multi-purpose

210-person conference theatre, meeting rooms, office space and examination rooms from which to expand the College's programme of academic activities.

Our structures experts incorporated pioneering concrete techniques into the College's structural design, including an exposed board-marked concrete and brick finish internally, with underfloor ventilation and exposed trough slab soffits.



Awards: Winner  
- 'Architecture +  
Learning'  
Architizer A+Awards  
2019



Awards: Winner  
- 'Education'  
New London  
Architecture Awards  
2019

Images © Peter Cook

13



# Delia Derbyshire Arts & Humanities Building

**Location:** Coventry

**Client:** Coventry University

**Architect:** Lewis & Hickey

14



This £40m development created a modern, highly flexible teaching space with immersive media facilities, all set within a high-performance learning facility.

The redevelopment amalgamates a number of existing buildings within the university's campus through a new build centralised hub, combining extensive refurbishment and regeneration, alongside a new modern four-storey building.

Students benefit from a hyper studio designed for cross-disciplinary projects, along with immersive studios featuring cutting-edge technologies, enhancing the faculty's creative, teaching and learning spaces in a unique environment. The new complex will also be open to the public with a gallery space, café and events atrium where students, staff and visiting artists can showcase their work. The building is located opposite Starley Gardens, an urban park and green space created for the student population and wider community to enjoy.

Our structures team provided designs for the new build and refurbishment of the existing adjoining buildings, developing a flexible, dynamic approach to solving challenges and mitigating issues throughout the design process. With the existing buildings remaining operational until the end of the term, our team focussed on the new build aspects to ensure the campus was able to remain largely operational during the initial project phases.



15



# The Health and Allied Professions Centre

**Location:** Nottingham

**Client:** Nottingham Trent University

**Architect:** Pick Everard

Nottingham Trent University's (NTU's) innovative 'mock hospital' enables future healthcare professionals to gain the knowledge and skills they need for modern practice.

The Pick Everard architects-designed multidisciplinary R&D centre allows students to advance their skills in realistic settings across three-storeys. With one floor dedicated to creating simulated healthcare environments including hospital wards, consultation and counselling rooms, a makeshift flat has also been created to allow for the enactment of home and emergency care scenarios with Lifecast Body Simulation manikins. The remaining two floors provide office and flexible teaching spaces, including lecture theatres with removeable seating to permit creative learning approaches such as role play.

Our specialists provided the mechanical and electrical design for this unique scheme, incorporating an innovative all-electric solution to future proof the building and reduce its lifecycle carbon impact. The centre is substantially naturally ventilated using hybrid heat recovery devices and openable windows to establish excellent internal air quality and ensure the very best learning environments for occupants.



# The Kydd Building, Abertay University

**Location:** Dundee

**Client:** Abertay University

**Architect:** Oberlanders Architects LLP

Abertay University's Kydd Building added a stunning teaching and laboratory space to their facilities, bolstering their science division. This exceptional building has helped attract new students to the University in an increasingly-competitive higher education market place.

18

The project had two key objectives – remodelling the Southern Elevation of the Kydd Building to replace the existing building envelope bringing it in line with the design of the surrounding university buildings, whilst reconfiguring and refurbishing the tired internal space.

The use of BIM was a key requirement of the project, greatly improving the flow of design intent into construction. The design team worked collaboratively to develop a strategy focused on light and space, adding large new areas of glazing. To maximise user-comfort, angled window pods and fritted solar glazing were installed and orientated to avoid overheating of the laboratory spaces.

Our team provided structural engineering, building services, environmental, infrastructure and specialist secondment services.



19





# National Manufacturing Institute for Scotland (NMIS)

**Location:** Renfrew

**Client:** The University of Strathclyde

**Architect:** HLM Architects

20



The National Manufacturing Institute for Scotland (NMIS) was designed to shape the future of manufacturing in Scotland, helping businesses in this sector become world leaders in innovation. A joint venture between the Scottish Government and the University of Strathclyde, NMIS connects all of Scotland's engineering Universities and colleges in one unified facility.

NMIS houses a fully digitalised factory of the future, skills academy and collaboration hub that brings manufacturers together to work on the development of innovative new manufacturing technologies and products.

Future flexibility was a key requirement of the project brief, and our team accommodated this by ensuring future

servicing requirements will create minimal disruption to the main structure. Flexibility has been designed-in to the scheme by locating services below the slabs within a fully accessible services trench cast into the ground floor slab.

Following the successful delivery of the feasibility study, our team provided the structural and civil engineering design for the project, and our specialists liaised closely with the geotechnical engineers for the ground investigation works. We also developed a materials specification which championed circular economy principles by selecting materials that have been, or can be, remanufactured and reused where possible.

Images courtesy of  
David Barbour Photography



21



# Manchester Metropolitan University's Student Union

**Location:** Manchester

**Client:** Manchester Metropolitan University

**Architect:** Feilden Clegg Bradley Studios

22



Designed to be tough, flexible and fun, Manchester Metropolitan University's Student Union is a 23,000 sqm, four-storey scheme accommodating 5,000 students and 250 staff. The new facility comprises an entertainments hall, fully fitted night club and bar areas along with a shop, café bar, meeting rooms, offices and fitness studio.

The building's exterior design utilises materials which reflect its cultural importance, whilst complementing

the neighbouring Victorian pubs and playhouses. Internal spaces have been kept open and flexible, punctuated by exposed structures, services and pre-cast concrete walls.

Our team provided building services, structural engineering and acoustics consultancy and designs for this new build multi-use student union located within the city centre Manchester Metropolitan University (MMU) Campus.

Images © Hufton + Crow

23





# Margaret Fell Lecture Theatre, Lancaster University

**Location:** Lancaster

**Client:** Lancaster University

**Architect:** JM Architects

Lancaster University's £4.7m 400-seat lecture theatre connects directly with the existing Faculty of Arts and Social Sciences (FASS) building on the North Campus, affording students unrivalled access to the cutting-edge facilities.

The largest lecture theatre on the campus, this latest development serves as a space to host large scale conferences, complete with the latest innovative digital integration. In addition, the lecture theatre provides ancillary spaces including a large reception area and meeting room facilities.

A modern 'skywalk' bridge links the FASS building and the lecture theatre, spanning through a double-storey height glazed atrium break-out space. The project also involved refurbishment of the FASS building's entrance, introducing rooftop terrace spaces to the existing single storey extensions, whilst extensive landscaping works and additional raingarden features with external seating dramatically enhance the areas around John Creed Avenue and along the Spine walkway.

The lecture theatre's structure centres around a braced steel frame, supporting a striking curved timber façade running the full length of the south elevation. The atrium roof also provides support for an extensive sedum roof, with the cladding systems detailed to achieve AECB accreditation for the lecture theatre space, reducing the operational energy requirements over the lifetime of the building.

Our team delivered the structural design for this stunning scheme.



# Seabourne Library, University of Chester

**Location:** Chester

**Client:** University of Chester

**Architect:** Capita

Throughout the two-phase extension of the University of Chester's existing Seabourne Library, the library remained operational to minimise any disruption of students. To facilitate this, works were planned over the summer holidays on an accelerated programme, ensuring handover prior to the start of the new term.

Waterman provided civil, structural, environmental and geotechnical engineering services for this ambitious project which was conducted under BIM level 2 protocol and went on to achieve a BREEAM 'Excellent' rating.

The first phase of the project involved infilling the largely unused existing central courtyard to create a two-storey central gathering space for students and staff, whilst the project's second phase focused on a two-storey extension to the west of the existing library to provide additional library space.

Our structural experts carried out extensive measured surveys in the existing courtyard to perfectly align the new structural interfaces for the new infill areas, ensuring there were no clashes during erection of the new steel frame elements.







## Contact Us

London (HQ)  
Pickfords Wharf Clink Street  
London SE1 9DG  
t: +44 (0)207 928 7888

You can find further details of all  
our office locations on our website.

 @ Waterman\_group  Waterman Group

[watermangroup.com](http://watermangroup.com)