

Wood Awards Ireland 2022

Forest Industries Ireland, promoting wood as a sustainable and versatile natural material



The mission of Wood Awards Ireland is to promote excellence in wood construction and design. We seek innovation in design and excellence in execution. Wood is the inherent sustainable medium; neither singular nor one-dimensional. There are many facets to this renewable material from solid sections of hardwood and softwood to engineered wood. The awarded schemes explore the intrinsic physical properties of wood while also developing the inherent relationship between form, technology and the brief requirements of the client.



Wood Awards Ireland 2022

*Foreword by CIARAN O'CONNOR
Edited by DONAL MAGNER*

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Wood Awards Ireland (WAI) acknowledges funding by the Department of Agriculture, Food and the Marine, FII and Enterprise Ireland. WAI is especially grateful to the Royal Institute of the Architects of Ireland (RIAI) for promoting the project and hosting the awards' adjudication. WAI also acknowledges Rotary Ireland, the Society of Irish Foresters and Design & Crafts Council Ireland for their generous support and Michael Warren for once again creating and making the prize winning sculptures.

| | |
|---------------------------|---|
| WAI judges | Ciaran O'Connor (chairperson), State Architect; Karen McEvoy, Bucholz McEvoy; Seán Harrington, Seán Harrington Architects; Maria Couchman, Design & Crafts Council Ireland; Des O'Toole, FII; Neil Kerrigan, Enterprise Ireland. |
| Rotary judges | Prof. Mary Ryan, University of Galway; John Mc Loughlin, Society of Irish Foresters; Tom Kent, South East Technological University; Des O'Toole, FII. |
| Editor | Donal Magner |
| Design | Grasshopper Graphics and Magner Communications |
| Print | W&G Baird |
| Editorial, administration | Pat O'Sullivan, Society of Irish Foresters |
| Photography | Celeste Burdon (25); Andrew Campion (18, 19, 20-21 back cover right); Cygnum Building Offsite (29); Miriam Dunn (48); Glenfort Timber Engineering (43); Joseph Little (47, 50, 51); Fionn McCann (6, 40); Adrian McGreevy, EAK Ireland Treetop Walks (10-11, 12-13, 34-35, 36-37, front cover left); Aisling McCoy (41); Donal Magner (9, 52); Luke O'Connor (53); Donal Murphy (8, 38); O'Donnell + Tuomey (39); Roland Paschhoff (33); Shantanu Starick (4, 22-23, 24, front cover centre); Tierney Haines Architects (2, 3-3, 26-27, 28, 30-31, 32, front cover right and back cover left); Shane Walsh (back cover centre, 14-15, 16-17 back cover centre). |

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FOREWORD

Wood has resilience, strength, sustainability, versatility, endless visual variation and many end uses. It can be evocative, sensory and experiential in the hands of creative designers. Sustainability is now a design driver for wood's wider use. Unlike inert building materials, wood is a biological material needing added care in its design and detailing. Respect for, and knowledge of wood is vital to its future success.

The next ten years will see great changes in architectural and engineering timber design. We must respond to ecological and sustainability needs. Equally we need to be cognisant of likely carbon taxes and greater statutory demands. Architecture and the forestry supply chain are bedfellows who need a symbiotic relationship going forward. Our age is one of change. There is a need to rethink and redesign conventional ways of doing things from forestry licences to building in timber. Technology will be one key agent of change

In Ireland we had less than 1% forest cover when we became independent in 1922. Now we have 11% but need to double that quantity as soon as possible. The concept of the right tree in the right place is paramount. However, we need spruce and pine trees as well as hardwoods. It is not an either or equation, nor should it be an ideological stance. The quality of the soil should determine the variety of species it can sustainably support. Our mild and wet climate means we can grow tree at three times the speed of Scandinavian countries. The long running problem with forest licensing and serial objectors needs resolution.

Human culture has deep rooted connections with timber ever since our ancestors built the first log house in a forest clearing. Our relationship with timber means something to us. Innately, it meets a need which is not easily met by man-made materials. How many other materials are so richly endowed with so many qualities? It can be easily profiled for a structure or a lightweight skin. It has versatility, character, craft and charm few other materials possess. And it is endlessly renewable, creating oxygen, capturing carbon and providing beneficial environments, plus sustainable employment in rural areas.

Timber has always been with us. Its use and appreciation has waxed and waned. The nineteenth century and the first half of the twentieth century saw the sidelining of timber as a cutting

edge building material. Technological developments saw steel and concrete become the materials of choice for architects and engineers. The Greene Brothers, Frank Lloyd Wright and Alvar Aalto kept faith with timber until the birth of the ecological movement in the 1960s. Timber began to have both a "flip-flop" and "corduroy" design following. More recently "pinstripe" property people and politicians have engaged with ecological sustainability. The door is now open to technological and ecological developments. Timber can now enter the mainstream for a wide range of end uses from housing to high-rise.

New forests and new technological developments will help to create a timber culture, alongside our masonry culture. Technology in the processing and product development of timber end uses must evolve at pace. We need to keep the variation inherent in different species, while also providing consistency in technical performance. Architects and engineers will also need to respond by improving their design and technical skills in timber use in our wet and windy climate. Specifying and detailing timber correctly can not be over emphasised. The new edition of *Woodspec* will help make its excellent advice digitally available to everyone later this year.

The mixing and melding of tradition and innovation require timber to be both modern and nimble. Cross-laminated timber (CLT) is one such technological development among many worth exploring. Timber frame, cassettes and modular construction also deserve development if we are to advance on the broad sustainability front as we need to. The regulatory environment also needs to evolve. Fire research and testing needs to replace fire officer bashing. Real supporting science is needed, not just opinion.

The Wood Awards span a wide spectrum of design, scale and typologies. These awards recognise and celebrate quality and sensibility. I commend them to you and thank all involved in the planning and judging for their time, insight and expertise. Wood can be both the robust structure and the jewellery of detailing delight, as Wood Awards Ireland clearly shows.

CIARAN O'CONNOR FRIAI
STATE ARCHITECT
CHAIRPERSON, WOOD AWARDS IRELAND

RIAI COMMITTED TO SUSTAINABLE BUILDING SOLUTIONS

The RIAI is delighted to have been a founding partner of Wood Awards Ireland (WAI). Launched in 2014, the awards have gone from strength to strength, playing an important role in raising awareness of the unique qualities of wood in architecture. Award-winning buildings to-date have included civic offices, schools, homes and leisure facilities – reflecting the breath of project types that use timber as an inherent medium. The architect's skill in these projects lies not only in the design but in understanding the capabilities of wood and its structural and aesthetic qualities.

The National Policy on Architecture, Places for People is committed to sustainability and prioritises environmentally sensitive buildings and places. The new RIAI Strategy 2023-2027 places a strong emphasis on Climate Change Action to achieve these sustainable development goals. Our partnership with Wood Awards Ireland forms part of our holistic commitment to sustainability. Wood sourced from sustainably managed forests has become an important building material for architects to meet their ambitions and obligations for a sustainable architecture. This is evident from the diverse projects included in this year's shortlist, which range from impressive structures such as the breath-taking Treetop Walk in Avondale to workplaces and homes. Common to all is an innovative and inspiring design solution that has responded to the requirements of the brief.

The shortlisted projects of WAI 2022 have also demonstrated a research-focused approach to designing and building with timber, including the student award category. The RIAI is a passionate advocate of research into sustainable building technologies. We believe that the architect's skillset in partnership with our built environment colleagues can advance new and sustainable built environment solutions to align our needs in housing and infrastructure with our Climate Action targets.

Since the inauguration of WAI in 2014, wood has significantly increased its role as an inherently sustainable and versatile building material that enhances our enjoyment of buildings and places when used creatively as demonstrated in these awards.

CHARLOTTE SHERIDAN
RIAI PRESIDENT 2022-2023

FII: CHANGING THE WAY WE BUILD TO ACHIEVE NET ZERO BY 2050

The materials we build with are now being challenged by the rising awareness of climate change and the gradual but increasing policy focus on embodied carbon which are the emissions associated with the traditional construction methods and materials we use. Ireland's Climate Action Plan provides a framework for taking decisive action to achieve a 51% reduction in overall greenhouse gas emissions by 2030 and setting us on a path to reach net-zero emissions by no later than 2050. Ireland's built environment represents 37% of overall annual greenhouse gas emissions with 14% of this related to embodied carbon. Ireland urgently needs to embrace low-carbon construction methodologies at a meaningful scale.

Timber has the lowest embodied carbon of any mainstream building material. Europe has recognised this and embraced medium rise timber frame and 'mass timber' which is the most innovative and lowest carbon building systems on the market today. Many of the technical barriers have been cleared and fire-safety issues have been resolved. As a result, the popularity of these timber building systems has risen as developers look to future-proof their assets by using these technologies to deliver the lowest carbon footprint. Wood products are one of the few natural, renewable, and sustainable building materials that store carbon removed from the atmosphere. Timber building systems are also pre-fabricated off-site to stringent quality control procedures so they can be erected on site much faster. This reduces the project delivery time while also producing less on-site waste and environmental pollution.

Utilising local forest resources to develop more advanced timber based modern methods of construction will deliver more sustainable buildings, supporting the drive to decarbonise and meet Ireland's climate targets while addressing ambitious housing targets by providing a faster means of delivering homes for our citizens. We hope these awards provide inspiration for future architects and engineers to embrace timber to allow our construction and forest industries to fully contribute to Ireland's decarbonisation goals and the transition to Net Zero 2050.

DES O'TOOLE
MARKETING & COMMUNICATIONS DIRECTOR
FOREST INDUSTRIES IRELAND



Eirigh
'Built to Disappear' Eco Pavilion
Reddy Architecture + Urbanism



Cherrywood Canopy
MOLA Architecture

PREFACE

Wood is enjoying a renaissance as a major contemporary construction and design material. Innovative architects, engineers and designers are once again turning to wood as the medium of choice in 21st century sustainable living. While Ireland is behind much of Europe in developing a wood culture, signs of a greater awareness of timber's potential have been emerging in recent years especially since Wood Awards Ireland (WAI) was initiated in 2014.

WAI promotes wood as a sustainable material in innovative construction and design. Essentially, the project is a collaboration between a wide range of stakeholders including architects, engineers, designers and woodworkers alongside the suppliers from the forest to the timber processors, manufacturers and timber traders.

It is encouraging to see that all WAI entrants have bought into the project brief of using wood as an inherent medium in all award categories – large and small scale buildings, international projects, furniture and innovation. In addition, we are delighted to continue with the third level student awards which we introduced in 2020. These are aimed at architecture, engineering and design students while we have also introduced the Rotary Environment Award which challenges students from a wide range of disciplines to explore the role of wood and forests in helping Ireland achieve carbon neutrality by 2050.

The emphasis in all categories is on innovation and sustainability, which are aspects of wood design and construction that our supporters and sponsors advocate. We acknowledge the generous support of the RIAI, Department of Agriculture, Food and the Marine, Forest Industries Ireland, Enterprise Ireland, Rotary Ireland and the Society of Irish Foresters. We also thank our panel of judges for their time in selecting the winners of the awards. We look forward to their continued support and the active participation by Ireland's timber specifiers and the new wave of architects, engineers and designers emerging from our third level colleges.

A feature of Wood Awards Ireland (WAI) has been the presentation of original sculptures in wood to award winners. since the inaugural competition in 2014. The awards have been designed and made by Michael Warren in his studio in Letatlin, Gorey, Co. Wexford. He is also connected to the awards through the RIAI. In 2012, he was conferred with Honorary Membership of RIAI, which has supported WAI since its inception. Finally we thank all WAI entrants who are responsible for the magnificent projects featured in these pages.

DONAL MAGNER
PROJECT MANAGER, WAI
ENVIRONMENT LEAD
ROTARY IRELAND

THE UNBROKEN LINE



Michael Warren with the Wood Awards Ireland 2022 sculptures.

Michael Warren works in many media but wood has been a consistent material in his oeuvre which was the theme of his major exhibition – Unbroken Line – in the Centre for Contemporary Art, Carlow in 2010.

In addition to Ireland, he has been commissioned to create public sculptures in Europe, North and South America, the Middle East, Asia, Africa and the West Indies. He has held solo exhibitions in Galerie Der Spiegel, Cologne (1996), Douglas Hyde Gallery, Trinity College, Dublin (2003), Crawford Art Gallery, Cork (2011), the Irish Museum of Modern Art, Dublin (2013) and Galerie Weiller, Paris (1996 and 2015). He has been a regular group and solo exhibitor at the Hillsboro Fine Art Gallery, Dublin (2005 – 2022).

Michael has received a number of Irish and international awards including the Utsukushiga-Hara Open-Air Museum Award, Japan (1989), Medalla al Mérito Artístico, Madrid (1991) and Decoracion of Cultural Merit, from the Government of Ecuador (1998).



OVERALL WINNER
WOOD AWARDS
IRELAND 2022

PROJECT

Treetop Walk, Coillte
Avondale
Co. Wicklow
EAK Ireland Treetop Walks

PROJECT TEAM

Project Manager: Fritz Donhauser
Site Manager: Ian Redmond
Architect: stöger + kölbl
Contractors: John SISK & Son;
D&S Baucon Ltd

*Treetop Walk, Avondale.
Co. Wicklow*





Treetop Walk Avondale is a spectacular 1.4km wooden walkway rising gradually to 23m, close to the forest canopy and ending at a 38-m viewing tower, which provides 360° views of the Wicklow landscape. It is designed to fit seamlessly into the wooded landscape. It combines recreation with education as the walk explores the various strata within the forest and forest canopy. A trail has also been created below the walkway allowing people to view the structural and architectural elements of the canopy walk which showcases the use of high-quality Irish wood. It used 1,100m³ of wood, which locked in 700 tonnes of carbon. The design elements use glulam technology and the structure demonstrates the beauty of wood, including the entrance building, play and adventure stations, walkway and support poles.

The Treetop Walk and Viewing Tower were designed and constructed using the most advanced production and prefabrication methods. The various elements are made from high strength, durable Irish wood, and many of the trees were grown locally in Avondale Forest Park. Every tree harvested was replaced with three more trees. Douglas fir or Oregon pine is the predominant wood. It has an attractive appearance and is naturally durable which means it doesn't require preservatives.



DOUGLAS FIR
*Pseudotsuga
menziesii*



EUROPEAN
LARCH
Larix decidua

CATEGORY

LARGE-SCALE
PUBLIC BUILDINGS



WINNING PROJECT
Beyond the Trees Avondale
Coillte

COMMENDED
The Padel Club
Adare Manor



*Beyond the Trees – Avondale
van Dijk Architects*

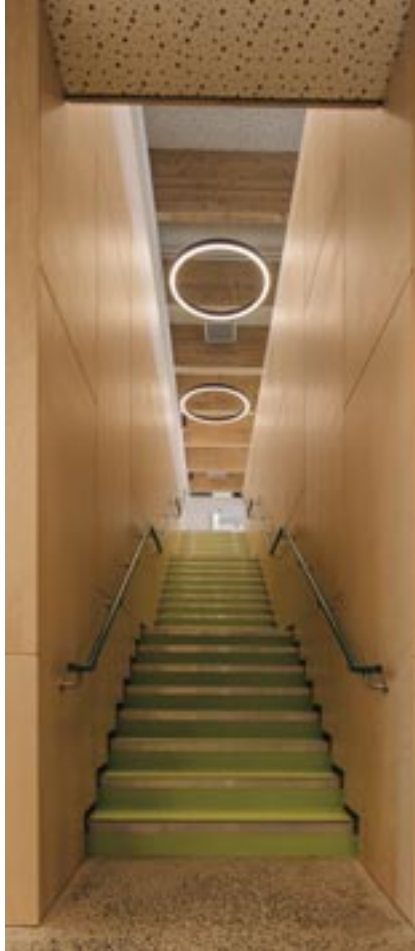
WINNER
LARGE-SCALE
PUBLIC BUILDINGS
BEYOND THE TREES
AVONDALE, COILLTE



SITKA SPRUCE
Picea
sitchensis



EUROPEAN
 LARCH
Larix decidua



Beyond the Trees is a new visitor centre in Avondale, Co. Wicklow comprising a shop, café, exhibition space and pavilion. The project also involved extensive restoration of the existing historic courtyard buildings and walled garden to include new retail, exhibition and craft areas. Visitors pass through the orientation space and into the cafe at first floor level, arriving at a double height volume with expansive views, continuing to the walled garden, pavilion and forest beyond.

This is the first project in Ireland to use homegrown C16 Sitka spruce for glulam structures, providing both an environmentally friendly building material and a valuable low carbon structure.



The glulam was pre-assembled and delivered to site. The 25-m beams and columns bring a sense of warmth to the space and replicate the rhythm of the trees beyond, while polished concrete floors and glazing softens the threshold between inside and outside to reflect the surrounding forest and historic buildings.

The internal joinery has been designed to complement the glulam structures, while birch plywood is utilised to clad the café stairwell walls. The exterior finish is a combination of triple glazing and innovative CARB2 compliant material – Medite Smartply – which is a ground breaking, high-density moisture resistant engineered board.

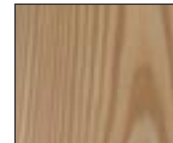
Architects: van Dijk Architects
 Construction Manager: Roy Brown,
 John Sisk & Son Ltd.
 Project Manager: Colman Stack-
 Rogerson, Reddan & Associates Ltd.
 Engineers: Hayes Higgins Partnership
 Main Contractor: John Sisk & Son Ltd.
 Engineered wood subcontractors:
 Glenfort Timber Engineering



BIRCH
Betula spp.

HIGHLY COMMENDED THE PADEL CLUB ADARE MANOR

Architect: Healy Partners Architects
Interior Designer: Kim Partridge Interiors
Contractor: John Paul Construction
Civil & Structural Engineers - Dra Consulting Engineers
Mechanical & Electrical Engineers: Metec Consulting Engineers
Quantity Surveyor: Patrick Molloy & Partners
Project Manager: JSK Project Management Consultants



SIBERIAN LARCH
Larix sibirica

The philosophy behind this project is to allow nature have a life of its own and that architects should strive to bring nature and people together. The existing site axis, prevailing winds, annual solar paths, protected structures, vistas, and landscape have determined the building's location, orientation, size, form, and materiality. The building incorporates large areas of glazing that create a synergy between inside and outside.

Materials such as wood, glass and limestone were carefully chosen to ensure that the building and site context would be seamlessly integrated. The pavilion-like timber clad structure, sits on a low-lying plinth that unifies the building with the surrounding topography while giving a sense that the structure is floating above the landscape. The proposed building mass is divided into three volumes to ensure solar protection, increase privacy internally, and to assist in blending the structure into its immediate context. The external envelope is that of pre-treated glulam timber vertical fins. These are 150mm x 350mm in dimension and are treated to mimic the verticality and colour of the nearby trees. To further merge the building with the mature landscape, the entire building is clad in Siberian larch timber which has been pre-treated.





*The Padel Club
Adare Manor
Healy Partners Architects*



The Forge
Broadstone Architects



CATEGORY

SMALL-SCALE
PRIVATE BUILDINGS

WINNER
The Forge

HIGHLY COMMENDED
Working from Home

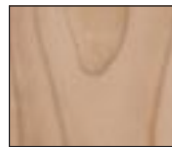
WINNER THE FORGE

Architects: Garbhan Doran, Tom Hunt, Stephen O'Brien, Eamonn Costello, Broadstone Architects
 Planning Consultants: Aiden O'Neill, Sinéad Kearney, Coakley O'Neill Planning Consultants
 Quantity Surveyor: Kevin Crowley, Brian McCarthy, Karl Slyne Quantity Surveyors
 Civil/Structural Engineer: Declan Daly, Concept Design Project Managers
 Main Contractor: CHOM Construction

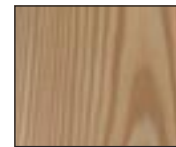
The original forge was a road-fronted structure operating publicly to the northern boundary of the site in Schull, Co. Cork. The owners wanted to strengthen the building's connection to the existing landscape and better capture the surrounding scenic views and their own maritime interests.

The design sought to re-configure the existing house around the historic forge, responding to the site and existing structure through two perpendicular forms of stone and wood. The original forge chimney was used as an anchoring point from which these forms would extend.

The lower form is constructed of stepped reveals, clad in render, to reflect the vertical erosion of the existing rock outcrop in this coastal location. The upper form is clad with slender timber elements and employs overhanging roofs to emphasise a light element sitting on a contextual plinth. This in turn conjures nautical references of floating sails over a solid hull, reflecting the coastal setting of the project. The project employs numerous types of timber in varying ways. Large DuraWood (pressure-treated Ayous hardwood) fins act as brise soleil to the large window openings around the entrance where 5.5m long members connect the upper and lower floors. Siberian larch is used as external soffits and wall cladding and continues as vertical fins past windows to provide privacy screening to the master bedroom areas. Douglas fir clads structural fitch columns supporting the overhanging roof and also acts as free-standing members to provide enclosure. Internally, a planed white deal roof structure is exposed with a birch plywood ceiling and herringbone struts to contrast the structural steel elements.



DOUGLAS FIR
Pseudotsuga menziesii



SIBERIAN LARCH
Larix sibirica



SITKA SPRUCE
Picea sitchensis



EUROPEAN LARCH
Larix decidua

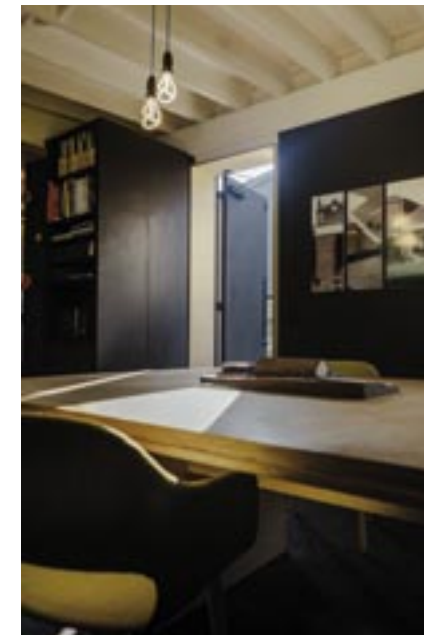
COMMENDED WORKING FROM HOME

Architect: Simply Architecture
 Project design team: Gareth Sullivan, Paul Higgisson, Siobhán Keogh, Peter Luddy
 Main Contractor: Shane O'Shea

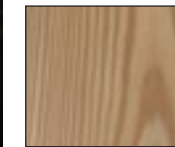
This garden room was designed primarily out of a need to work from home, but the brief had to consider its lifecycle; whether to be used for another function in the future by the client or to allow for the flexibility to move it if required.

The building was designed to be demountable and comprises two separate blocks that can be individually relocated and repurposed if necessary. The current site is part of a garden surrounded by mature trees that create the backdrop for a relaxed and comfortable workspace. Internally, the timber structure of the roof, celebrated in its raw form, painted white, sits on a datum line that aligns with the window heads.

The contrasting black interior accentuates the warmth of the birch plywood window surrounds, ventilation apertures and furniture. The building is wrapped in crackled alligator charred larch that forms a striking backdrop to the trees around it.

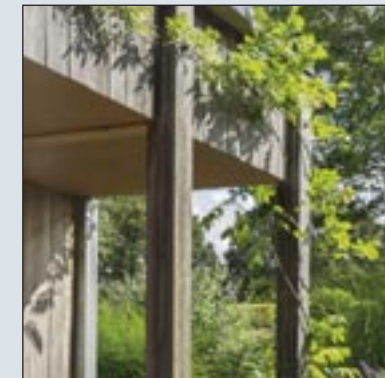


BIRCH
Betula spp.



SIBERIAN LARCH
Larix sibirica





CATEGORY
INTERNATIONAL

WINNER
House in the Woods

HIGHLY COMMENDED
Hackwood Primary School, London

House in the Woods
Tierney Haines Architects

WINNER HOUSE IN THE WOODS

Architect: Tierney Haines Architects
Design team: Stephen Tierney,
James Casey, Nicola Haines
Engineers: Ross and Partners
Contractor: Steven Haines

This three bedroom 250m² replacement house in Surrey sits within a woodland clearing, overlooking a tributary of the river Arun. The hardwood forest is part of a network of protected copses dating to the time of Henry VIII. The clients were keen to find a way of living in the woods that celebrated the unique qualities of the place and a closeness to nature. Due to strict planning restrictions on replacement dwellings, the upstairs is limited to 124m² but has a generous basement.

The new house had to be raised a metre higher than the previous for better light and ventilation, but because of height planning restrictions, the roof is flat. The structure is constructed to UK Code 6 standards using Structural Insulated Panels. Air-tightness, insulation, and energy use have been optimised with rain water harvesting, heat-pump, HRV and solar panels contributing to a near zero energy building. Oak and ash were harvested by horses from the clients' own woodlands and seasoned on site. Untreated oak was used for external cladding, while ash was used for internal joinery.



OAK
*Quercus
robur*



ASH
*Fraxinus
excelsior*



MAPLE
*Acer
platanoides*



HIGHLY COMMENDED HACKWOOD PRIMARY SCHOOL, LONDON BOROUGH OF SUTTON

Architects: Architype
Engineers: Price & Myers
Fabrication: Cygnum Building Offsite



Hackbridge Primary School is the first school in the UK to meet the ambitious Passivhaus Plus low-energy design standard. This standard not only drastically reduces energy use, but also produces as much energy as the occupants consume. The school is carbon positive, using only 75% of the 100% renewable energy that it generates with the remaining 25% being exported to the grid. The school is not only an exemplar for zero carbon and sustainability but, clad in sweet chestnut battens, it is also a beautiful building that celebrates our natural world and inspires children in their learning.

The Cygnum Passive system featured a twin-wall sheathed on both sides with Smartply OSB and a membrane on the inside to form the airtight layer. The build-up featured an 89mm stud frame, and a second 67mm stud frame, fully cellulose-insulated with an overall wall thickness of 399mm, which is designed to be thermal bridge free.

The timber frame was precision cut and assembled from a 3D model to ensure minimum waste and perfect alignment and spacing on the building, Good timber frame engineering also resulted in an economic design, which in general terms means using less materials.



NORWAY
SPRUCE
Picea abies

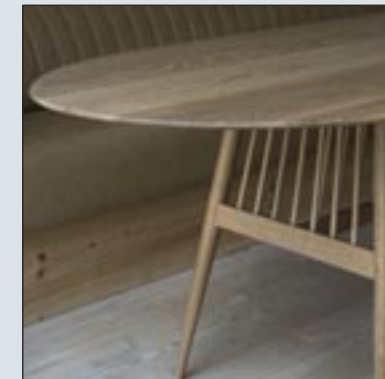


SWEET
CHESTNUT
Castanea sativa





*Emma Table
Stephen Tierney and Paul O'Brien*



CATEGORY
FURNITURE

WINNER
Emma Table

HIGHLY COMMENDED
Curio Furniture Collection

The Emma table is named after a client in a renovation project in Sandymount. It is designed to fit a leather banquette. The objective was to achieve a light look but a solid feel; the traditional spindles provide stiffness and a gentle pattern. The smooth curve allows easy access to the bench seat, and the legs are splayed so as not to hinder passing knees.

The collaboration between designer and maker gives this table a sense of balance both in principle and reality, something often lacking in the beer mat propped banquette tables of Ireland. The relationship between banquette seat and table was refined through collaboration of thought between designer and maker. On one side there was the question of stability considering the edge focused pressure that will occur to aid manoeuvring into the banquette and on the other side a search for a refined slenderness that works with the stance, required for stability.

WINNER EMMA TABLE

Designer: Stephen Tierney,
Tierney Haines Architects
Craftsman: Paul O'Brien,
Model Furniture

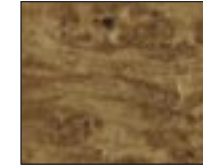


AMERICAN WHITE OAK
Quercus alba



HIGHLY COMMENDED CURIO FURNITURE COLLECTION

Designer: Alan Meredith
Project Manager: David Kelly, Oakfield
Architect: Joe Lawrence, Jack Byrne,
Helen Kelly, Lawrence and Long
Architects



IRISH BURL OAK
Quercus robur

The Curio Furniture Collection is made from native Irish burl – or bur(r) – oak and comprises a table, a four-metre credenza and a concealed television cabinet. The intention was to celebrate this material and reveal its potential to express material depth. Although machined using traditional sawing techniques, once the wood dries it gains a three-dimensionality that allows visibility into the material while the surface undulates and contracts as the tension in the material is released. Steaming the wood at 100°C. for five hours and slowly drying in a low temperature kiln for a couple of months allowed the stresses to be released from the wood with minimum cracking of the surface.

Stability of material was essential for the doors of the credenza as they are all single pieces of wood 500mm wide. Cuts into the surface of the cabinet doors reveal the depth of the material while the subsequent movement of the remaining fins, create visual intrigue. The oak was fumed with ammonia to achieve the rich brown hue. The credenza and television cabinet are topped with Kilkenny limestone, another local Irish material.





*Treetop Walk, Avondale
EAK Ireland*



CATEGORY

INNOVATION

WINNER
Treetop Walk Avondale

HIGHLY COMMENDED
Cherrywood Timber Canopy and
Biophilic Sunken Garden

COMMENDED
Passage House

Éirigh: 'Built to
Disappear' Eco Pavilion

Ireland-Estonia
Architectural Collaborative Project

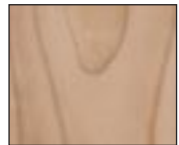
House A – Multi-layer Reciprocal
Frame

WINNER

TREETOP WALK, COILLTE AVONDALE. CO. WICKLOW

EAK Ireland Treetop Walks
(See pages 10-13 for further details)

The Treetop Walk Avondale near Rathdrum, Co. Wicklow is a unique boardwalk experience as it climbs slowly from the forest floor to the tree canopy of this historic forest and parkland. The walk culminates in the monumental viewing tower which boasts the finest views of the Wicklow landscape. The entire walkway is fully accessible to all ages and even though it climbs steadily to 23m, the gradient is never more than 6% so it is the first certified “Age Friendly” tourism attraction in the world. The walk is designed to bring people back to nature, exploring the various strata within the forest. It is also an opportunity for Coillte, timber processors, designers and manufactures to demonstrate what can be achieved using wood sourced in sustainably managed Irish forests in, what, is a triumph of innovation and functionality.



DOUGLAS FIR
*Pseudotsuga
menziesii*



EUROPEAN
LARCH
Larix decidua



HIGHLY COMMENDED CHERRYWOOD TIMBER CANOPY AND BIOPHILIC SUNKEN GARDEN

Lead Architect: MOLA Architecture
Client: Spear Street Capital.
Main Contractor: Cleary & Doyle Ltd.
Specialist Sub-Contractors: Octatube,
Hess Timber, Cedarlan
Project Manager: Scollard Doyle
M&E: O'Connor Sutton Cronin
Structural Engineer Bakkala Consult-
ing Engineers
Facade Consultant: Billings Design
Associates.
Executive Landscape Architect: Mur-
ray & Associates



EUROPEAN
LARCH
Larix decidua



The Cherrywood Canopy and Biophilic Sunken Garden provides an innovative and sustainable approach to the enhancement of the Cherrywood public realm. It is centrally located on the main public pedestrian link between Cherrywood Town Centre and the greenway, within the Cherrywood Business Park. The sunken garden provides a place to meet and to share ideas, while enjoying the benefits of being within a natural biophilic environment.

Double curved timber glulam beams were designed using advanced computer modelling and fabricated using large-scale CNC processing. Cold bent glass, fixed to the double curved timber beams, protects the beams from direct rain, while providing shelter for the occupants below. Rainwater flows directly off the canopy edge into the upper landscape planters, which are interconnected with the lower planters within the garden, allowing the water to cascade – forming a natural irrigation system under the canopy. The form of the canopy was optimised using environmental software to measure the wind speed over the surface of the glass and under the canopy. A reduction of wind speed under the canopy provides a more comfortable environment for people to experience the sunken garden throughout the year.

COMMENDED PASSAGE HOUSE

A collaboration between O'Donnell + Tuomey and Joseph Walsh Studio

O'Donnell + Tuomey Architects: John Tuomey, Sheila O'Donnell, Brian Barber
Joseph Walsh Studio: Joseph Walsh, Ian Scannell, Gerry O'Brien, John Barn and Phaid Cunningham.



Over the past 10 years O'Donnell + Tuomey architects made a number of studies in collaboration with Joseph Walsh Studio using stone and timber objects, varying between functional furniture and architectural sculptural form. In 2022, to coincide with the *Making In* symposium, a larger scale structure was designed. The objective, according to the collaborators was:

To celebrate the capacity of local craftsmanship and to test our own understanding, stretching the limits of traditional construction. We wanted to make a contemporary pavilion, a tribute to vernacular architecture, a completely new thing made by hand and using the old ways of working.

Passage House is an experimental structure, a demonstration of local skills, built in locally sourced materials – stone, timber and thatch. The drystone field walls are quarried out of the site. The structural timber is Irish-grown Douglas fir; the reeds for the thatch are from the shallow waters of the Shannon.

The team worked from initial sketches into a series of scale models and then on to full-scale mock-ups of junctions that were tested in the workshop. The timber-to-stone connection plates were forged by a local blacksmith. There were no contract documents, no technical specifications, no detailed working drawings. Most of the details were worked out on site together with the builders, carpenters and thatchers. The result is an open air pavilion, the first in a planned series of rambling houses. Rambling houses were found in old Irish villages, gathering places for music and story-telling; places open to the passer-by. The Passage House has no doors or windows, just a stone floor dug into the ground, a timber skeletal bone structure like an upturned boat and a thatched roof that appears to be floating in air. It's a place of passage, located at a point of convergence, on the path between Joseph Walsh's design studio and production workshop.



DOUGLAS FIR
*Pseudotsuga
menziesii*

COMMENDED
ÉIRIGH: 'BUILT TO
 DISAPPEAR' ECO PAVILION
 REDDY ARCHITECTURE +
 URBANISM

Project Team: Rory Murphy, Lisa Wynne, John Maxwell, Carolyn Strauss (Lioncor), Ciaran Kennedy (Barrett Mahoney), Mick Duncan (MJ Duncan)



WHITE WILLOW
Salix alba



NORWAY SPRUCE
Picea abies

Éirigh is a unique, site-specific collaboration that brings together art, architecture, creativity and construction. It represents a place where people can gather to talk, to listen, to learn and to take decisive action on the future of our planet.

The pavilion was designed and built as a central installation for the Earth Rising Eco Art Festival at the Irish Museum of Modern Art. It was positioned at the heart of the festival to be an inspiring example of sustainable construction and interdisciplinary achievement. Softwood timber was chosen for the structure as a lightweight and low-carbon material. Its natural characteristics helped support the concept of engaging with nature. Its geometric shape reflects the shape of the Earth itself. It was built with sustainable and recyclable softwood, willow, bamboo and jute. These are used in indigenous woven architecture around the globe. They can be grown locally and biodegrade back into the environment. They are 'Built to Disappear.' The title *Éirigh* means 'wake up' or 'get up' and reflects the fact that we must all engage in the climate debate and not leave it to others.



COMMENDED
 IRELAND-ESTONIA
 ARCHITECTURAL PROJECT

*There is a forest in my backyard
 but my house is built from trees
 grown far away.*

CURATORS: Alder Architects, Dublin (St John Walsh) and b210 Architects, Tallinn (Aet Ader, Helmi Marie Langsepp and Mari Möldre)
 Project promoter: Nathalie Wedick, Irish Architecture Foundation

PARTICIPATING OFFICES:
 Hannigan Cooke Architects, Joseph Mackey Architects, OGU Architects, Robert Bourke Architects, Workshop Architects (Ireland), Creatomus Solutions, Paco Ulman & Kaja Pae, Peeter Pere Architects, Ruumiringlus, Studio Kuidas (Estonia)

This collaboration explored the act of transformation across the lifecycle of wood. The theme chosen by the curators aimed to frame this process; from extraction to transportation, standardisation to encapsulation and eventual disassembly for potential reuse. The aim was to question how industry and construction can learn from and be shaped by the material's inherent qualities. Whether a building site is next to a forest or not, timber used in construction has been subjected to an industrial decision-making process that dictates its final physical properties. In this act of translation, where wood is often treated similarly to other inanimate materials, a tree's uniqueness is sacrificed for transportability, structural consistency and usability. The process of investigation began with the pairing of Irish and Estonian practices; a collaboration involving its own acts of translation and logistics. Following a series of lectures by architects, industry, academics and thinkers, each pair were provided with a timber shipping box to initiate a dialogue. This was an invitation to change cadence from the immediacy of modern communication to a potentially more considered exchange of ideas in physical form. The response of the paired practices resulted in the following eight exhibits:

- *De Oratorio* – reimagining an early Irish chapel from an 8th century poem.
- *I know this room* – I have walked on its floor – wood's ability to record the memory of movement and patterns of daily life.
- *Butterfly Building* – considerations of the circular economy raises questions about why, when and how we build.
- *Symphony of the Forest* – sustaining factors in Estonian culture as the forest is portrayed through field recording and music.
- *Raw Potential* – a radical structural system, assembled from raw, untreated logs and standardised plywood joints.
- *Conversation Piece* – a written protocol that addresses the challenge of reusing building material.
- *Bricoleurs* – how wood offers the 'Bricoleurs' agency to create environments that are strangely familiar, curious and exotic.
- *Mnemonic Wood* – wood's way of changing over time is presented as a tool to prolong the life of Soviet prefabricated concrete housing.



Two Irish-Estonian Architectural Collaboration Exhibits: "Butterfly Building" by Robert Bourke Architects, Dublin and Creatomus Solutions, Tallinn (left) and 'The Bricoleurs' (right) by OGU Architects Belfast and Studio Kuidas Viljandi.

COMMENDED
HOUSE A – MULTI-LAYER
RECIPROCAL FRAME

Architect: Miriam Dunn
 Engineer: David Maher
 Contractor: Timberwise Construction

In a Reciprocal Frame (RF) structure, an element such as a beam is supported by another beam and supports another at the same time. This co-operation means that a set of short beams can span a longer distance together than they could do alone. In the 16th Century, the modular and self-supporting structural properties of planar RF were proposed as flooring designs where longer beams were not available.



The properties of planar RF structures were developed and exploited in the project House A, East Wall, Dublin, 2021. The roof is a planer RF system sitting on three short beams of solid Douglas fir which span the width of the space. All other beams are of shorter length and are arranged in a pattern of RF Modules to exploit the square void in the centre, 900mm x 900mm. For the assembly, the first step is to install three short beams (layer 1). Once the beams are in place they become the support for the subsequent RF layer (layer 2) negating the need for temporary support during construction. The final layer (layer 3) comprises cross-laminated timber panels which create horizontal stiffness and alternating voids to light the plan.



DOUGLAS FIR
Pseudotsuga menziesii



SITKA SPRUCE
Picea sitchensis

WAI SPECIAL AWARD
GLENFORT TIMBER
ENGINEERING

Various structural and restoration projects including Glenfort Timber Engineering HQ by Cathal and Colm Campbell



The WAI judging panel presents a special award to Glenfort Timber Engineering for its creative and innovative use of home-grown timber in construction. The contribution of Glenfort has been the key element in a number of major timber projects including Beyond the Trees in Avondale, Co. Wicklow. Glenfort engineered the Sitka spruce glulam structures, the first of their kind from home grown spruce. Glenfort was attracted to this project because it uses mass timber, which displaces fossil-based materials. Other signature projects include oak in the construction of Hogs Head Golf Club, Waterville, Co. Kerry and Kildare Village Entrance Building while Douglas fir was the main species in the restoration of the chapel at Belcamp House, Balgriffin, County Dublin.

Glenfort's latest milestone is the design, manufacture, and installation of its glulam factory, comprising nine portal frames spanning a width of 30m and length of 50m (pictured). This sustainable structure has over 140m³ of glulam timber, which locks in 114 tonnes of CO₂, compared to a traditional steel structure of the equivalent size. Sustainability is the key to the building which is finished with insulated panels and heated with timber waste.



DOUGLAS FIR
Pseudotsuga menziesii



OAK
Quercus petraea



SITKA SPRUCE
Picea sitchensis

CAN TIMBER CONSTRUCTION REDUCE THE ENVIRONMENTAL IMPACTS OF A POSSIBLE BUILDING BOOM IN IRELAND?

Aim

The primary focus of this research concerns the use of timber in the Irish construction industry and the materials' potential to reduce the environmental impacts that would arise if a possible 'building boom' were to happen in the country

Why would a building boom need to occur in Ireland?



Supply is not yet at a scale that will meet demand.

Motivation



"Embodied Carbon, emitted by construction, demolition and the wider supply chain of a building-accounts for an estimated 10-20% of the EU's CO₂ building footprint" (Irish Building Magazine (2021, 10 June))

"for each ton of wood products used instead of non-wood products, there is an average emissions reduction of approximately 2 tons of CO₂" (Harmekoski (2017))

"Over 300,000 new homes will be built by 2030, including a projected 54,000 affordable homes for purchase or rent and over 90,000 social homes." (Department of Housing, 2021).

Objectives

- Critically Review relevant literature and Determine Ireland's environmental targets.
- Evaluate the environmental footprint of the most common dwelling type by conducting a comparative Life Cycle Analysis (LCA) on different construction methods.
- Establish the environmental impact reduction of using timber for the building type.
- Calculate the impact that the 30,000+ houses per year will have on Ireland's emission targets.

Methodology



According to the Central Statistics Office, there were 20,433 houses built in 2021 and out of all the completions, 52.1% were scheme houses. (10,644)



Commits Ireland to reducing greenhouse gas emissions by 51% by 2030 and achieving net-zero emissions no later than 2050.

Using Life Cycle Analysis (LCA) software to determine the environmental impacts of the most common building type and to calculate how the construction of these types of houses has on Ireland's emission targets.

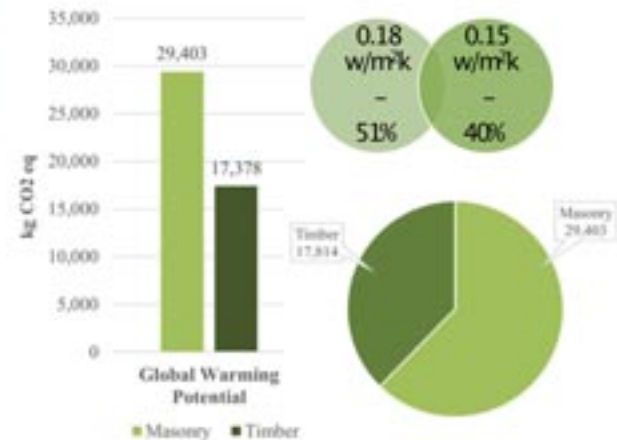
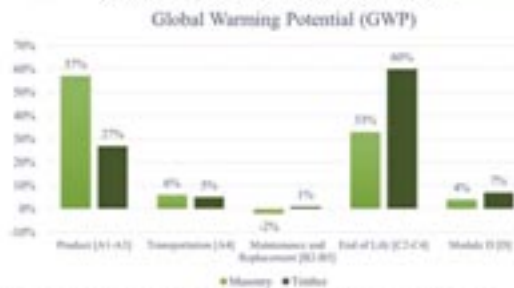


Results & Findings

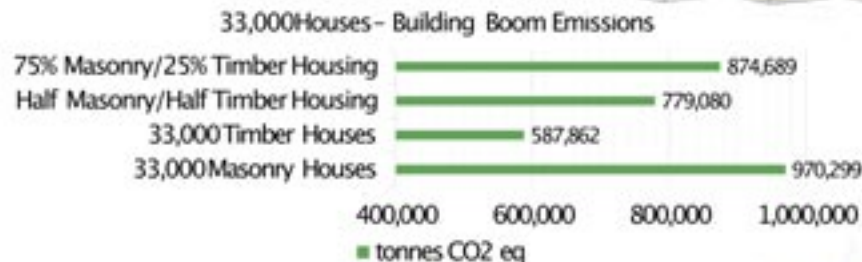
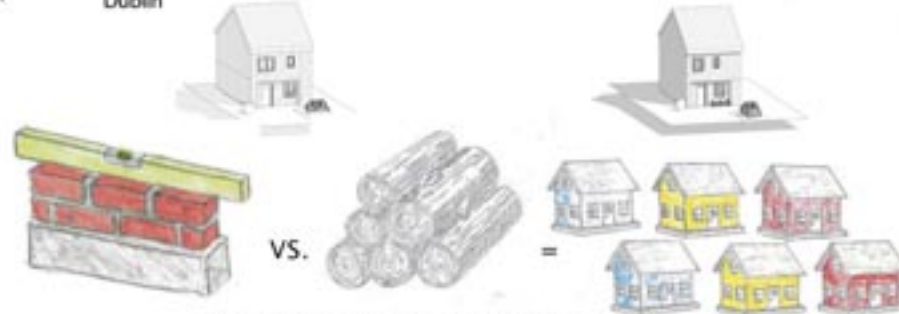
Global Warming Potential
A measure of greenhouse gas emissions such as carbon dioxide and methane. May, in turn, have adverse impacts on ecosystem health, human health, and material welfare.



Comparing LCA Results of Case Studies



Using this Timber System for the construction of new houses, instead of a masonry construction method, there is a saving of 11,589 kg CO₂ eq. Which is 40% of emissions.



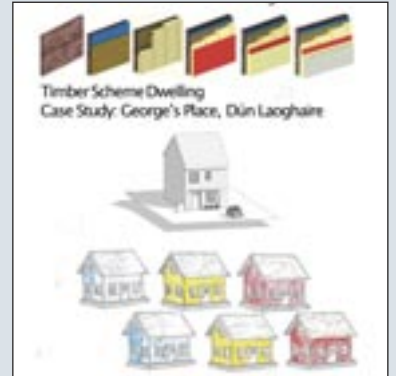
779,080 tonnes of CO₂ eq is equivalent to the carbon sequestered by 53,593 Sitka spruce trees.



Area of these trees is equivalent to approx. 17 Croke Park Stadiums!!!



Detail of project poster, by Laura O'Toole



CATEGORY THIRD LEVEL STUDENT WOOD AWARDS

WINNER
Laura O'Toole
Technological University Dublin

HIGHLY COMMENDED
Michael Conway
University of Galway

Group entry
Technological University Dublin

COMMENDED
Sean Nolan
Technological University Dublin

Maighréad Bussmann
Atlantic Technological University

Kyle Tunney
Bray Institute of Further Education

Daniel Stafford
Atlantic Technological University

**WINNER THIRD LEVEL
STUDENT WOOD AWARDS
LAURA O'TOOLE
TECHNOLOGICAL
UNIVERSITY DUBLIN**

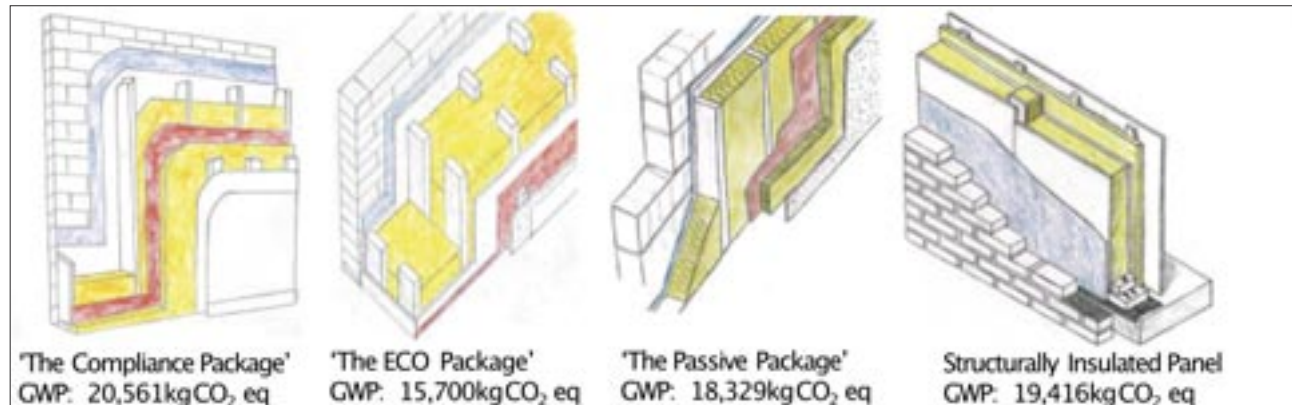
Can Timber Construction reduce the Environmental Impacts of a possible building boom in Ireland?

Tutor: David Knight

This research was carried out to investigate the use of timber in the Irish construction industry. Respecting timber's environmental capabilities, the study uncovers the use of timber as a sustainable construction material and proves its influence in carbon emission reduction in building 33,000 new houses each year until 2030.

A life cycle assessment (LCA) was conducted using the Revit plug-in Tally on the environmental footprints of two different construction types. For the purpose of the comparative study to determine the environmental impact reduction of using timber, an LCA was carried out on a Revit model with a timber construction system which was then compared with the results of another LCA, carried out on the same building type but modelled with a masonry construction. This building type for the Revit models was based on drawings from a Scheme Dwelling Development in Dublin, which was a case study found upon the examination of Ireland's common dwelling types.

This study can confirm that the timber dwelling assessed does have a lower environmental footprint than the masonry, especially regarding the level of CO₂ emissions which were analysed under the Global Warming Potential impact category. The results prove the role of timber in carbon reduction and therefore it is a sustainable choice for the construction of the 33,000 plus houses to be built as part of the intended building demand in Ireland. Using LCAs to highlight this decrease in emissions is a small step to achieve Ireland's long-term decarbonisation goals.



**HIGHLY COMMENDED
REPLACEMENT SEATS,
SEAMUS HEANEY WALK,
IN COILLTE'S DEVIL'S
GLEN FOREST**

Killian Denys (winning college design), Daniel Cash, Andrew Dawson, Ciaran Farrelly, Michael Martin, Adam McGuirk, Conor McNally, Colm Brennan, Joshua Lloyd, Daniel Mc Entegart, Andrew Mc Hugh, Rowan O'Flynn, Faruq Olasupo, Brian O'Shea, Thomas Rafter, Neil Schorman, Kresimir Stefko, James Whyte and Kyal Reid

Technological University Dublin.
Project co-ordinator: Joseph Little
Lead lecturer: Aidan Ryan
CNC lettering: Chris Lawlor
Supervision of surface finish: Eric Bates

The challenge was to design and make new seats for the Seamus Heaney Walk in the Devil's Glen Forest, Co. Wicklow to replace the original benches. The students visited the forest and met the local stakeholders including Coillte and Rotary Ireland representatives before a class design competition was held. This was won by student Killian Denys. Before production commenced his design was assessed for strength, durability and manufacturability.

The project involved 20 timber technology students across three years of two degree programmes under the guidance of lead lecturer Aidan Ryan (pictured). The project is commendable for its contribution to several sustainability agendas and for the quality of benches. It allowed the students to explore production improvements and to work as teams to ensure the project's success, which is acknowledged by the stakeholders that worked with the college. At the outset, a review of the suitability of locally-available timber species was undertaken. In both phases, Douglas fir was sourced, sawn and delivered to TU Dublin by Pat Staunton Sawmill, Glenealy, Co. Wicklow. The end result has been praised by visitors to this important woodland amenity as well as community groups, sponsors, Coillte and the Heaney family.



DOUGLAS FIR
*Pseudotsuga
menziesii*



COMMENDED
SEAN NOLAN
TECHNOLOGICAL
UNIVERSITY DUBLIN

Complexity and Tectonics

Tutor: Marcin Wojcik

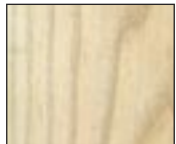


ALDER
Alnus rubra

COMMENDED
MAIGHRÉAD BUSSMANN
ATLANTIC
TECHNOLOGICAL
UNIVERSITY

Rocking Chair

Tutors: Dr. Susan Rogers and
Jeremy Madden



ASH
Fraxinus excelsior

This masters research design project examines how the intelligent use of on-site timber might result in sustainable timber construction by reversing embodied material cost in architecture. The project explores existing research in the field of 'utilising timber in its natural form'.

The project site, located at Huntstown quarry in Finglas, Dublin, is zoned as a 'heavy industry area'. The trees, from a 3D scan of the site, were analysed and specific branches from the trees were catalogued in a database. From this database, specific branches are assembled to create different complex geometries and formations of timber. This is possible using the computer programme 'grasshopper' for Rhinoceros 3D modelling, while rapid prototyping is also carried out conjunctly with physical timber models. The real model allows for testing of forces or areas of weakness. It also shows the type of spaces that are achievable with this construction method.

The Rocking Chair, made from native ash and upholstered with Mourne Textiles, uses finger jointing, which wraps its way around the chair and gives strength to the jointed wood.

The varying tones in the olive ash are enriched through the application of the Osmo oil finish. In terms of manufacturing, the 40mm x 40mm stock is easy to machine. Once the components are sawn to size, they can be cut efficiently on the spindle moulder to create the finger joints.

The project involved a lot of time researching how best to achieve a comfortable rocking chair, bearing in mind that the centre of gravity and the angle of the rocking component needed to be correct to achieve a comfortable seating position. The student created a softwood prototype of her design to test how the chair performed.

COMMENDED
KYLE TUNNEY
BRAY INSTITUTE OF
FURTHER EDUCATION

Lunax

Tutor: Noel Sweeney

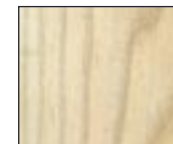


ALDER
Alnus rubra

COMMENDED
DANIEL STAFFORD
ATLANTIC
TECHNOLOGICAL
UNIVERSITY

Rocking Chair

Tutors: Dr. Susan Rogers and
Jeremy Madden



ASH
Fraxinus excelsior



BEECH
(SPALTED)
Fagus sylvatica

The objective in designing *Lunax* was to create a contemporary fluid piece with clean curves. It needed to be impactful but non-imposing to fit in a small room. The concept behind the piece was to create the furniture with hand held tools and perfecting the shape and symmetry of the piece through eye and touch.

To achieve this, the student sketched up multiple curvaceous designs finishing with a 1:1 scale drawing. From this the cut list was measured before the process of steaming 15 pieces of beech, which were all cut to size, then jointed and glued over the course of a week. This was followed by grinding and sanding with regular testing for stability and strength. On completion Osmo oil was applied to enhance the natural wood colour.

This rocking chair is inspired by the world-renowned furniture maker Sam Maloof, with the help of drawings by Hal Taylor. Featuring bent lamination, Maloof joints, a sculpted seat, flowing curves and seamless joints, this rocking chair took 91 hours to complete. The timber used is mainly beech, but the chair also has ash back slats and walnut plugs. The beech was cut and sawn by the student from a fallen tree along the shores of Lough Ramor in Deerpark Forest, Virginia, Co. Cavan. He sourced the ash from his family farm in Virginia and the walnut from a friend's farm in Kingscourt, Co. Cavan. All trees were either windblown or at risk of storm damage and were replaced by saplings.

Spalted beech was chosen because of its attractive patterns while the back slats contain one layer of ash to add strength and flexibility and to conform to the shape of the occupant's back. The walnut plugs are used to cap off some screw heads which are necessary to increase the strength of the chair. The chair is finished with Osmo Polyx which is a hard wax oil that is durable, environmentally friendly and resistant to abrasion and water.

ROTARY THIRD LEVEL STUDENT ENVIRONMENT AWARDS ACHIEVING NET ZERO WITH TREES AND WOOD

Transitioning to a carbon neutral world is regarded by the UN as one of the greatest challenges facing humankind. To keep global warming to no more than 1.5°C, emissions of greenhouse gas (GHG) need to be reduced to net zero by 2050. This environmental challenge has been acknowledged by Rotary Ireland. In 2022, it launched the Rotary Student Environment Award to encourage third level students to submit projects on how forests and forest products can contribute to Ireland's

Climate Action Plan. The Rotary Third Level Student Environment Award is aimed at undergraduate students from a wide range of disciplines including, forestry, architecture, ecology, engineering, science, design, agriculture and bioenergy. We are encouraged that all colleges contacted have expressed a wish to be involved in future Rotary awards, which are open to Irish undergraduate students from third level colleges in Ireland – north and south – and overseas.



CATEGORY

ROTARY NET ZERO AWARD

WINNER

GROUP ENTRY
Technological University Dublin

HIGHLY COMMENDED

LUKE O'CONNOR
Atlantic Technological University

LAURA O'TOOLE
Technological University Dublin

COMMENDED

SEAN NOLAN
Technological University Dublin

KATERINA JURKEVICA
Technological University Dublin

Technological University Dublin students designed and made 12 benches for the Seamus Heaney Walk in the Devil's Glen Forest from locally sourced and sawn timber to minimise the carbon footprint of this collaborative project involving 20 students, college staff, Coillte and Co. Wicklow sawmill.

WINNER

**REPLACEMENT SEATS,
SEAMUS HEANEY WALK,
DEVIL'S GLEN FOREST**

**TECHNOLOGICAL
UNIVERSITY DUBLIN**

Killian Denys (winning college design), Daniel Cash, Andrew Dawson, Ciaran Farrelly, Michael Martin, Adam McGuirk, Conor McNally, Colm Brennan, Joshua Lloyd, Daniel McEntegart, Andrew Mc Hugh, Rowan O'Flynn, Faruq Olasupo, Brian O'Shea, Thomas Rafter, Neil Schorman, Kresimir Stefko, James Whyte and Kyal Reid

Technological University Dublin.
Project co-ordinator: Joseph Little
Lead lecturer: Aidan Ryan
CNC lettering: Chris Lawlor
Supervision of surface finish: Eric Bates



Exploring and celebrating how timber can be used outdoors in ways that are long-lasting and robust through material selection, design, joint type, manufacturing quality and surface finish contributes positively to a technical discussion about the use of timber and the substitution of carbon-intensive materials in accordance with Ireland's Climate Action Plan 2021. The project allowed 20 students to meet with stakeholders (pictured, below), develop skills in technical design evaluation, learn production, material efficiency and teamwork. Having the opportunity at undergraduate level to repeatedly evaluate the quality and efficiency of manufacturing and assembly processes is invaluable – 12 benches were produced for the Seamus Heaney Walk in the Devil's Glen, Co.Wicklow.

The emphasis was on reducing transport emissions by sourcing and sawing timber locally. The distance (and thus carbon intensity of travel) from a Co. Wicklow forest to Glenealy sawmill and on to TU Dublin in the city centre before transporting back to the Devil's Glen Forest is exceptionally low in comparison to carbon intensity transport of commercially-available imported park benches. Adopting the orthodoxy of the Inventory of Carbon and Energy (ICE) database, manufacturing these benches in sustainably-sourced timber sequesters 0.4 tonnes of CO₂, and in lieu of pre-cast concrete benches, offsets and sequesters 0.5 tonnes of CO₂.



HIGHLY COMMENDED
LUKE O'CONNOR
ATLANTIC
TECHNOLOGICAL
UNIVERSITY
CONNEMARA

A guide to estimate the carbon footprint of furniture using Life Cycle Assessment (LCA)

Project Supervisor: Finian Sheridan

Lecturers: Des Kelly, Kate Dunne, John Hewer

Technicians: Kevin Gyves, Martin Kearney



This research project was inspired by the work of furniture maker Sebastian Cox who uses LCA to quantify the carbon footprint (CF) of furniture using British hardwoods. Storm felled native trees were processed on campus at ATU Connemara (pictured) which allowed the student to use a similar approach. The aim was to create a guide to tangibly measure the environmental impact of furniture made and processed within the college using Irish grown hardwoods. Research was conducted to gain a better understanding of environmental impacts and methods of measuring these impacts. The author concluded that using LCA to measure the CF of the furniture manufactured in ATU Connemara from cradle-to-gate would be the most suitable method to assess the sustainability of furniture making projects.



A product's CF is an indicator of how sustainable the product is by creating transparency about its greenhouse gas (GHG) emissions and their contribution to climate change. CF was selected as the impact category measured as the author believes that due to significant increases in GHG emissions, a guide for measuring the CF with furniture would be an important tool for students and furniture manufacturers.

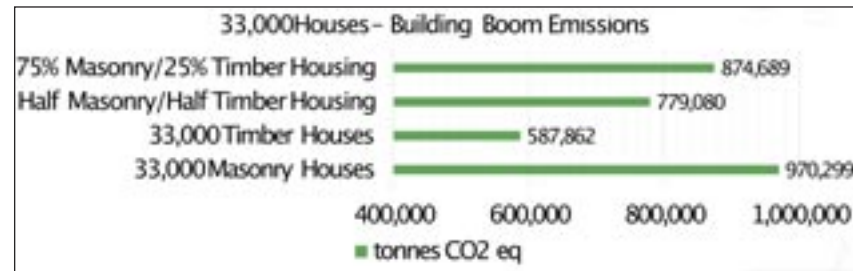
The outcome of this highly commended project is a MS Excel tool where students can easily track and enter their workshop processes and the volume of timber used to receive a tangible measurement estimating the CF of their project.

HIGHLY COMMENDED
LAURA O'TOOLE
TECHNOLOGICAL
UNIVERSITY DUBLIN

Can Timber Construction reduce the Environmental Impacts of a possible building boom in Ireland?

Tutor: David Knight

This project involved research to investigate the use of timber in the Irish construction industry. The primary focus of this research concerns the use of timber in the Irish construction industry and the materials' potential to reduce the environmental impacts that would arise if a possible 'building boom' were to happen in the country.



It involved a critical review of relevant studies and to determine Ireland's environmental targets. It also evaluated the environmental footprint of the most common dwelling type by conducting a comparative Life Cycle Analysis (LCA) on different construction methods. It calculates the impact that the 30,000+ houses per year will have on Ireland's emission targets (further details, page 40).

COMMENDED
KATERINA JURKEVICA
TECHNOLOGICAL
UNIVERSITY DUBLIN

An investigation into the embodied carbon content of an external wall retrofit to a typical Irish semi-detached house

Tutor: David Knight

This study addresses the embodied carbon content of insulation products as part of an external wall retrofit. Life Cycle Analysis (LCA) was employed to evaluate the carbon intensity of several biogenic, synthetic and mineral insulation products obtained from an Environmental Product Declaration (EPD) database. The scope of the LCA was from cradle-to-grave or from raw material extraction to the end of life. In summary, the study aimed to evaluate the environmental impact of materials and determine the most sustainable wall retrofit intervention while achieving a wall U-value of 0.18 W/m²K. Insulating materials were obtained from EPD Ireland and EPD International databases. As a result, over 100 insulating materials were downloaded and recorded.

An EPD was employed to obtain the environmental impact of insulation in kilograms across Modules A1-A3 due to the carbon intensity of the product stage.

SPONSORS AND SUPPORTERS OF WOOD AWARDS IRELAND

FOREST INDUSTRIES IRELAND



www.ibec.ie

Forest Industries Ireland (FII) represents the forestry and forest products sector in Ireland. A key FII objective is to place timber and forestry at the heart of the rural economy. FII brings together 24 companies from across the sector; from forest owners and forestry companies, to timber processors, wood product manufacturers, and renewable energy producers. FII has developed a new free online timber specification CPD series, which covers a range of course topics including: sustainability; structural timber use and design; durability and timber preservation; landscape applications; and timber frame construction. Each CPD is delivered through animated video and features interactive content and knowledge checks.

COFORD, DEPARTMENT OF AGRICULTURE, FOOD AND THE MARINE



www.coford.ie

The COFORD council is a body appointed by the Minister for Agriculture, Food and the Marine to advise the Department on issues relating to the development of the forest sector in Ireland. Its membership comprises stakeholders from across the forestry sector including State companies and organisations, and bodies representing farmers, environment groups, foresters and forestry companies, researchers, nurseries, timber processors and universities. Council working groups produce published findings on: forest genetic resources; roundwood forecasting and wood mobilisation; forests, climate change mitigation and adaptation; forest policy; and promotion of forestry and afforestation.

ENTERPRISE IRELAND



www.enterprise-ireland.com

Enterprise Ireland's mission is to accelerate the development of world-class Irish companies to achieve strong positions in global markets resulting in national and regional prosperity. EI's priority is helping companies develop innovative market-led products and grow and develop new export markets. EI also provides assistance for international companies who are searching for world-class Irish partners. Enterprise Ireland works with Irish timber processors, to maximise their impact by supporting them to:

- Develop and implement strategies
- Access new international markets
- Invest in R&D
- Compete through productivity
- Build management teams
- Finance growth and innovation

Enterprise Ireland is committed to supporting innovation in the Irish forest products industry.

THE ROYAL INSTITUTE OF THE
ARCHITECTS OF IRELAND



www.riai.ie

Founded in 1839, the Royal Institute of the Architects of Ireland supports and regulates the architectural profession. Support services are also provided to architectural technologists. The RIAI promotes the value that architecture brings to society for everyone's benefit and engages with government, the professions, industry, clients and the public to deliver quality and sustainability in the built environment. As the official registration body under the Building Control Act 2007, the RIAI is committed to discharging its obligations to administer the Register of Architects in Ireland.

ROTARY IRELAND



www.rotary-riai.org/districts

Rotary Ireland a voluntary organisation comprising 72 clubs throughout Ireland and a membership of 1,700. These promote environment, social, educational and health projects in Ireland and globally. Rotary Ireland is part of Rotary International which has 1.4 million members. Signature projects include Polio Plus Programme, which has eradicated this disease in 122 countries. Rotary's contributions and matching funds from the Gates Foundation amounting to \$1.4 billion has been a major factor in confronting this disease. The Rotary Ireland Third Level Environment Award is just one of Rotary's programme's aimed at helping Ireland achieve Net Zero by 2050.

DESIGN & CRAFTS COUNCIL
IRELAND



www.dcci.ie

Design & Crafts Council Ireland promotes the commercial development of Irish designers and makers, stimulating innovation, championing design thinking and informing Government policy. DCCI's activities are funded by the Department of Trade, Enterprise and Employment via Enterprise Ireland. The Council provides a range of programmes, supports and services for designers, craftspeople, learners and teachers, retailers, gallery owners, shoppers, collectors and the media in order to raise the standard and profile of Irish design and craft. DCCI has 64 member organisations and over 3,500 registered clients.

SOCIETY OF IRISH FORESTERS



www.societyofirishforesters.ie

The Society of Irish Foresters is an all-island organisation which was founded in September 1942. Its main aims are to spread knowledge of forestry and to improve professional standards. To that end the Society publishes an annual scientific journal, policy position papers, organises field days, public lectures, conferences and an international study tour each year. The Society regularly makes submissions to government on policy initiatives which are likely to impact on the forestry industry and it is represented on several interdepartmental working parties.



Ciaran O'Connor was appointed State Architect and Principal Architect in the Office of Public Works by the Irish Government in 2012. A Fellow of the Royal Institute of Architects of Ireland (RIAI) and former President of the RIAI (2020-2021), he is the main advisor to Government in relation to architectural matters including Green Public Procurement for Construction. In addition to 25 Irish (RIAI, AAI and CIF) annual awards he has received the All-Ireland Landscape Award twice, the RIAI Triennial Medal for Restoration (2001), the Europa Nostra Medal (1996) and the European Union Prize for Cultural Heritage (2006). Chairperson of the Wood Awards Ireland jury since 2014, he has published and co-authored a number of books and is an occasional visiting lecturer, and external examiner to schools of architecture.



Donal Magner, editor, forester and forest owner is forestry editor of the *Irish Farmers Journal* and Environment Lead, Rotary Ireland. He holds master's degrees in science (forestry) from UCD and arts from DCU. He is the author of *Stopping by Woods: A Guide to the Forests and Woodlands of Ireland* and editor of forestry and environmental publications. A recipient of the RDS-Forest Service Special Award in 2012 for his contribution to Irish forestry, he serves on a number of forestry policy bodies and has been project manager of Wood Awards Ireland since 2014.

