

Energy Efficiency in Historic Buildings

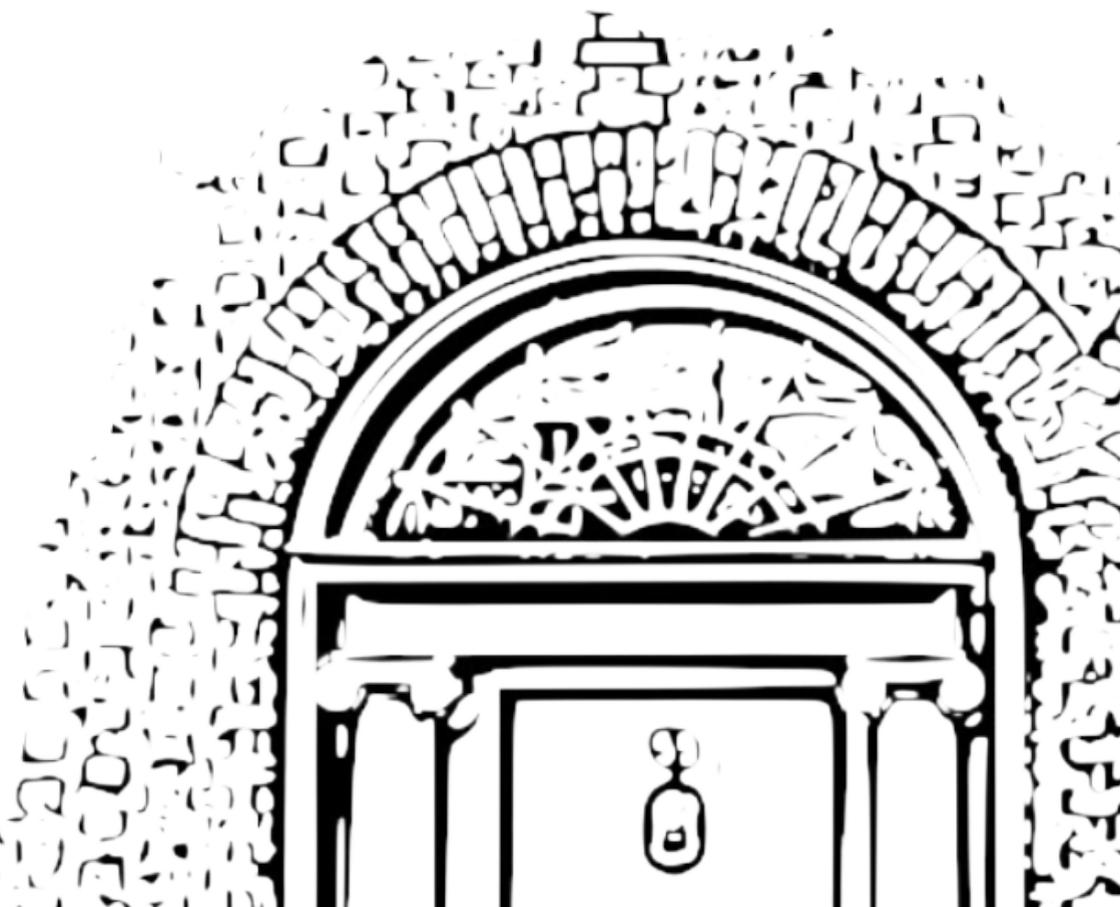


THURSDAY 24 NOVEMBER 2022

9:30 AM - 4:00 PM

City Assembly House & Online

SEMINAR PRESENTED BY THE IRISH GEORGIAN SOCIETY



9:30 AM - INTRODUCTION & WELCOME

Donough Cahill, IGS Executive Director

SESSION 1

Chair, Colm Murray, Architecture Officer, The Heritage Council

ENERGY EFFICIENCY IN TRADITIONAL BUILDINGS - THE CONTEXT

Jacqui Donnelly, Senior Architect in Built Heritage Policy at the Department of Housing, Local Government and Heritage

REUSE & RECYCLE TO REDUCE CARBON, TOWARDS A CIRCULAR ECONOMY FOR THE HISTORIC ENVIRONMENT

Adala Leeson, Head of Socio-Economic Analysis and Evaluation at Historic England

CASE STUDY: DÚN LAOGHAIRE VICTORIAN MARITIME HOUSE

Gráinne Shaffrey, Shaffrey Architects, Grade I RIAI Conservation Accredited

BENIGN SUSTAINABLE INTERVENTIONS IN HISTORIC DWELLINGS

Dr James Ritson, Vice-President, ICOMOS International Scientific Committee on Energy and Sustainability

INTRODUCTION TO WALL INSULATION FOR TRADITIONAL BUILDINGS

Dr Rosanne Walker, Post-Doctoral Researcher, Research Group on the Fabric of Traditional Buildings, UCD

DECARBONISING ENERGY USE FOR RESIDENTS IN GEORGIAN BUILDINGS - WHERE ARE THE OPPORTUNITIES?

John Burgess, Buildings Performance Practitioner, MEP Lead Engineer for Arup, Cork

1:00 - 2:00 PM - LUNCH

SESSION 2

Chair, Carl Raftery, Architectural Heritage Advisor, The Department of Housing, Local Government & Heritage

CASE STUDY: RUBRICS: ENERGY RETROFITTING TRINITY COLLEGE DUBLIN'S OLDEST SURVIVING BUILDING

Peter Cox, MD, Carrig Conservation International Ltd.

CASE STUDIES OF ENERGY UPGRADES TO TRADITIONALLY BUILT BUILDINGS: A CONSERVATION ARCHITECT'S PERSPECTIVE

Fergal McGirl, Fergal McGirl Architect

CIRCULAR & DEEP - CASE STUDY OF THE RENOVATION-EXTENSION OF AN URBAN VICTORIAN COTTAGE IN DUBLIN

Joseph Little, Head of Construction and Building Performance, School of Architecture & Building and Environment, TU Dublin

GRANT AID FOR IMPROVING THE THERMAL PERFORMANCE OF TRADITIONALLY BUILT BUILDINGS

Brian McIntyre, Programme Manager, High Performance Building Technologies, Sustainable Energy Authority of Ireland.

4:00PM - CLOSE & THANK YOU

Emmeline Henderson, IGS Assistant Director & Conservation Manager

Energy Efficiency in Historic Buildings Seminar

This Irish Georgian Society seminar will provide practical, appropriate, and easy to understand advice and guidance on how to thermally upgrade historic buildings and reduce energy use whilst ensuring that no damage occurs to their historic fabric and character. Best practice case studies will be showcased and information on planning considerations, wall, roof and window insulation, heating systems and grant aid provided.

Attendance at the seminar will benefit both historic building owners and built heritage professionals. The seminar is recognised by the Construction Industry Federation, the Register of Heritage Contractors, Engineers Ireland and the Royal Institute of Architects of Ireland as formal structured CPD (5 ½ points).



This Irish Georgian Society seminar is an action of the IGS's Conservation Education Programme, which is supported by the Department of Housing Local Government and Heritage, and The Heritage Council.



An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreacht
Department of Housing,
Local Government and Heritage

An Chomhairle Oidhreacht
The Heritage Council



ABSTRACTS

Jacqui Donnelly

Energy Efficiency in Traditional Buildings – the Context

Historic buildings have a significant role to play in climate action and in decarbonising the built environment. This talk sets the context for upgrading the energy performance of traditional buildings while protecting their architectural heritage value, the durability of their building fabric and the health and well-being of occupants.



Adala Leeson

Reuse and recycle to reduce carbon, towards a circular economy for the historic environment

Research commissioned by Historic England and undertaken by Carrig International in 2019, showed why the built historic environment is such an important part of our journey towards net zero. Through a detailed analysis of carbon emissions including embodied carbon emissions, the study demonstrated that a retrofitted historic property will typically emit less carbon than an equivalent new build. This research clearly demonstrated the importance of how and what we measure – “What we measure affects what we do, and if we measure the wrong thing, we will do the wrong thing” (Joseph Stiglitz, Nobel laureate, Economics). Can a circular economic approach provide the tools to better make the case for reuse, repair and maintenance of the historic environment?



Gráinne Shaffrey

Case Study: Dún Laoghaire Victorian Maritime House

As part of a comprehensive refurbishment of this seaside house, fabric upgrade and other measures were carried out to improve energy performance. Now more than 10 years complete, the project provides a useful reference and will be discussed in the context of current research and practice.



Dr Rosanne Walker

Introduction to Wall Insulation for Traditional Buildings

This talk outlines the important thermal and moisture properties of wall insulations and traditional solid brick and stone walls that should be considered when selecting appropriate thermal upgrading options for historic buildings.



Dr James Ritson

Benign Sustainable Interventions in Historic Dwellings

The need to reduce carbon emissions and lower the energy consumption of the historic built environment is now recognized as a critical factor in helping national and international targets. This presentation proposes, rather than encouraging owners of historic properties to follow a carbon reduction-focused refurbishment; it proposes that the most sustainable option is to adopt a building conservation-focused strategy to maintain and apply small benign changes to the property. It will show that this strategy lowers carbon emissions and meets broader cultural and economic sustainability goals.



John Burgess

Decarbonising energy use for residents in Georgian buildings: where are the opportunities?

Conservation of energy in historic buildings presents the ultimate challenge for those who seek to retain original features, form and function. Georgian buildings are no exception. While providing excellent performance for 3 seasons of the year, what can one do to reduce the thermal energy needed to provide comfort during the winter months? And how does one go about decarbonising that energy?



Peter Cox

Case Study: Rubrics: Energy Retrofitting Trinity College Dublin's Oldest Surviving Building

The Rubrics Building is the oldest surviving building on campus and is the longest building in Ireland as continuously in residential use. The building dates from 1698 - 1702 and is going through a major conservation and energy retrofit programme. Many of its features remain and working with Pascal Watson Architects, Aecom and others Carrig have designed the conservation strategy and the energy retrofit programme. This includes serious investigation of the building fabric, analysis of the thermal performance of the building, cold bridge analysis, interstitial moisture movement analysis, geological analysis of the envelope and includes a building fabric upgrade, sympathetic insulation strategy and renewable energy sources. We will explain the conservation and energy upgrade strategy and the way we addressed may challenges to achieve an extremely high energy performance whilst fully respecting the importance of the heritage asset.



Fergal McGirl

Case Studies of Energy Upgrades to Traditionally Built Buildings: a conservation architect's perspective

The area of energy upgrading traditional and historic buildings has been a subject of increased debate in recent years with the conflicting demands of conservation of historic fabric & features and pressure for increased standards of energy efficiency often being difficult to resolve. In this presentation Fergal will present examples of recent experiences of approaches to energy upgrading of historic buildings, including the selection of materials and how challenges were resolved.



Joseph Little

Circular & Deep – Case Study of the Renovation-Extension of an Urban Victorian Cottage in Dublin

This exemplary project explores the challenges of renovating and extending in a way that respects historic building fabric, creates a thermal envelope that is super-low energy, airtight and breathable, while using innovative, circular building materials.



Brian McIntyre

Decarbonising energy use for residents in Georgian buildings: where are the opportunities?

SEAI offers grants for individual energy upgrades that provide for roof insulation, wall insulation, heat pump, heating controls and solar energy. However, not all grants will be suitable for historic/traditional buildings. Brian will discuss limitations of current grants in context of materials & considerations being given to provide for appropriate materials for traditional buildings within SEAI grant offerings.

JOHN BURGESS

A building services engineer with 36 years of experience working in the built environment in Australia, Ireland and Europe. He has developed his career into one which places a heavy emphasis on sustainable design practice across all market sectors including historic buildings. John provides energy management advisory services relating to effective systems operations and improved indoor air quality.

PETER COX

An expert in Embodied and Embedded Carbon in existing buildings. From 2012 until 2021 he has been President of the ICOMOS International Scientific Committee on Energy, Sustainability & Climate Change. In 2019 Peter was elected a fellow of the RSA for services to conservation and sustainability. He is a founding member of Carrig Conservation International Limited, a multidisciplinary company, whose services include energy research; energy policy development; and energy upgrade advice.

JACQUI DONNELLY

Senior Architect in Built Heritage Policy at the Department of Housing, Local Government and Heritage and Grade 1 Accredited Conservation Architect with the Royal Institute of the Architects of Ireland. She is engaged on the implementation of the Climate Change Sectoral Adaptation Plan for Built and Archaeological Heritage and chairs an inter-departmental committee overseeing the preparation of a new guidance document Improving the Energy Efficiency of Traditional Buildings. She is a member of the ICOMOS International Scientific Committee on Energy and Sustainability and was a founding steering committee member of the international Climate Heritage Network. She has recently completed an MSc in Climate Change at Dublin City University.

ADALA LEESON

Head of socio-economic analysis and evaluation at Historic England, Adala leads its social and economic research, and the production of Heritage Counts – an annual audit of the Historic Environment. She is a member of the DCMS Culture and Heritage Capital Steering and Working groups, and of the Climate Heritage Network. Prior to joining Historic England, Adala worked as an Associate Economic Consultant for 10 years, advising public and private clients on economic development and regeneration programmes. She has also worked in academia as a researcher at the London School of Economics.

JOSEPH LITTLE

Manager of school programmes relating to construction and building performance, and programme chair of MSc in Building Performance (Energy Efficiency in Design). He researches and lectures in hygrothermal risk assessment and energy efficiency of historic dwellings. Little is a director and founder member of the Irish Green Building Council and a member of the National Scientific Committee on Energy Efficiency, Sustainability and Climate Change in ICOMOS. He is also the Irish co-operation partner of the Fraunhofer Institute for Building Physics in relation to training and development of the WUFI suite of hygrothermal evaluation software.

FERGAL MCGIRL

Studied architecture in Bolton St. DIT graduating in 1994 after which he worked for several conservation architect practices in Dublin including Richard Hurley & Associates and Arthur Gibney & Partners before setting up private practice in 2000. The practice has evolved since then to provide both full inception to completion architectural services to heritage projects and conservation consultancy to other teams. Fergal is an RIAI grade 2 conservation architect and current secretary of the RIAI Historic Buildings Committee.

BRIAN MCINTYRE

Programme Manager looking at the performance of technologies to deliver high-performance, low-energy homes. He has 17 years' experience in the Energy sector and has previously worked on SEAI's Deep Retrofit Pilot Programme and the Warmer Homes Scheme. He previously worked in the private sector with a core focus on energy throughout his career including providing consultancy services to SEAI and across the public sector, SME, RD&D and Delivery programmes. Brian has also provided consultancy to the public and private sector on policy, infrastructure and technology including on Strategic Environmental Assessments of national policies.

COLM MURRAY

Architectural Officer with the Heritage Council. He works on policy relating to Traditional Building Skills, heritage-led urban regeneration and Architectural Conservation Areas. He is running an accredited course: Fundamentals in Energy Renovation for Traditional Buildings in conjunction with the Technological University of the Shannon in Limerick.

CARL RAFTERY

Over 24 years' experience working in the field of Built Heritage in various capacities, as an apprentice and decorative plasterwork practitioner, private conservation consultant, and for the past 16 years, as an Architectural Conservation Officer in Dublin and Cork City Councils. She has a MSc in Advanced Energy and Environmental Systems specialising in Traditional Buildings from the University of East London and the Centre for Alternative Technology along Post Diplomas in Building Fabric Conservation from Trinity and Architectural Inventory Recording from Bolton St. Most recently she has completed a level 3 award for Domestic Retrofit Assessors of Energy Efficiency Measures for Older and Traditional Buildings with Historic Environment Scotland. She is looking forward to her new role as part of the team in the Built Heritage Unit in the DHLGH.

DR JAMES RITSON

BA(Hons). PG. Dip. Arch. MA. PhD. FRGS, UCEM Programme leader MSc. Building Surveying is the programme leader for the MSc. Building Surveying programme at University College of Estate Management. Currently the vice-president of ICOMOS International Scientific Committee on Energy and Sustainability and a member of the ICOMOS UN Sustainable Development Goals Working Group. James has published widely on sustainability, health and conservation issues and main research interests are sustainability of the existing built environment and the recording of existing buildings.

GRÁINNE SHAFFREY

B.Arch., M.A. Urban Design & Regeneration, M.R.I.A.I. Grade 1 Conservation Architect is Director of Shaffrey Architects. The practice undertakes architectural, urban design and planning projects throughout Ireland. Grainne's work includes the conservation, adaptation and extension of historic buildings and new buildings in existing urban settings and includes projects like the Wicklow Head Lighthouse in 1998 (conservation) for the Irish Landmark Trust and Ardfert Cathedral in Co. Kerry (restoration) for the Office of Public Works. The latter project was awarded the RIAI Silver Medal for Restoration 1999-2001. Grainne is past President ICOMOS Ireland (2017 - 2020). Past Chair Building Limes Forum Ireland (2004 - 2008); Past Vice President Royal Institute of Architects of Ireland (2013-2015).

DR ROSANNE WALKER

BA, BAI, PgDIP (Conservation), PhD, currently works in as a Post Doctorate Researcher as part of a research group in UCD investigating the thermal and moisture properties of traditional building materials. Prior to this she undertook research for a number of years in Trinity College Dublin investigating building materials, in particular wall insulation compatible with traditional solid wall buildings.

