

OPW Technical Guidance: ‘Approaches to Improving the Energy Performance of Heritage Properties in State Care’

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Abstract

With a significant holding of heritage properties and a commitment to improve energy efficiency across its portfolio, the Office of Public Works Ireland architects department identified a need for more detailed, technical guidance with a readily applicable and standardised process to apply across future energy renovation projects. Working with a consultant team led by Shaffrey Architects with support from Arup Engineers and Passivate Building Energy Consultants, the resulting new technical guidance, ‘Approaches to Improving the Energy Performance of Heritage Properties in State Care’ provides a replicable methodology to assist with the assessment of existing building performance and identification of renovation works that will provide the greatest energy efficiency benefits whilst respecting the heritage significance across all building typologies.

The guidance follows the process recommended by I.S. EN 16883:2017 *Conservation of cultural heritage - Guidelines for improving the energy performance of historic buildings* and provides practical advice on the steps necessary to arrive at rigorously assessed and suitable solutions tailored to each individual building and its particular requirements and constraints. This step-by-step process assists with the assessment of heritage value and fabric / services opportunities and restraints; measuring and calculating existing thermal efficiency; analysing potential hygrothermal risks associated with different renovation options; determining appropriate objectives

and targets; designing appropriate fabric and services renovation specifications; and recommendations for post-occupancy monitoring.

The OPW, as the Irish state's main property portfolio manager and advisor, has adopted and will implement the guidance methodology in our approach to forthcoming energy efficiency upgrades of historic buildings. Notably, the recommendations for in-situ measurements, hygrothermal risk assessments and post-occupancy monitoring will inform a more data-driven approach to future heritage building energy renovations and will provide much needed data on the actual performance of renovation works. The guidance will initially be supported by two case studies to demonstrate the recommended approach in practice; 1) a typical Georgian terrace at No. 7 Merrion Square, Dublin 2 and 2) a former army barracks at the 'Block M' Office, Ship Street, Dublin Castle. Further case studies will be compiled and made available as subsequent energy renovation projects are completed.

As increased attention is placed on improving the energy efficiency of the worst performing buildings, many of which are traditionally-built, guidance was urgently needed to consolidate existing knowledge and experience into a holistic energy renovation methodology for OPW architects to assess and adapt heritage properties for improved energy performance. This guidance will assist the Irish public sector in meeting National and EU targets for climate change mitigation and adaptation, but through its application and the subsequent sharing of case studies and data, it will ultimately improve industry wide technical expertise and reduce instances of maladaptation of historical structures in the name of energy efficiency.