

## Information Paper

## Penrhiwceiber Eco Terrace

Achieving housing for the 21st century and the UK's 2050 carbon reduction target

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This Information Paper deals with the issues regarding achievement of the UK government's 2050 carbon reduction target for the built environment. Focusing on the case study of the Penrhiwceiber EcoTerrace in Wales, it looks at the arguments against demolishing existing housing stock in favour of building new homes and describes the level of refurbishment that may be required when looking to improve solid wall dwellings constructed prior to 1920.

This publication is aimed at housing providers, architects and homeowners who are evaluating the approach that should be taken when looking at either individual improvements or area-based regeneration. It sets out the cost of such measures and looks at a comparison with newbuild costs in the social housing sector, demonstrating that with imagination and commitment the UK's older housing stock can be made fit for the twenty-first century. After reading this Information Paper the reader will have a greater understanding of the opportunities and benefits that can be delivered by refurbishing the existing stock and thereby maintaining community cohesion and character.

## Introduction

The UK government has set itself the challenging target – known as the 'C80' target – of reducing long-term carbon dioxide (CO<sub>2</sub>) emissions from energy use by 80% by 2050, based on a 1990 benchmark, with an interim target reduction of 34% by 2020. These targets will require significant and challenging refurbishment programmes to be applied to UK housing.

The domestic sector contributes approximately 27% to the UK's total carbon emissions. The majority of household emissions are a result of energy use for heating, so there is a significant incentive to improve the energy performance of homes in order to meet these targets. Renovating and improving the existing housing stock to a high standard will reduce UK emissions from fuel combustion.



Figure 1: Ty'r Felin Street, Penrhiwceiber

This Information Paper looks at the case study of the Penrhiwceiber Eco Terrace, set in the Welsh Valleys. It sets out the extent of the works that are required to meet the C80 target for a number of dwellings constructed prior to 1920, which are of solid wall construction and occupy a relatively small footprint. This publication also examines the benefits of refurbishing these older properties rather than demolishing them in favour of new construction and provides a simple cost comparison for renovation versus newbuild. It is argued that the benefits of maintaining community cohesion by retaining the character and appearance of older buildings should not be underestimated when evaluating any particular approach.

## Background

In response to the C80 target, many publications and organisations have argued that the older, poorer-performing housing stock should perhaps be demolished and replaced with new low-carbon dwellings<sup>[1]</sup>. However, this approach does little to consider the positive qualities of the existing community and sense of place and character that are appreciated by residents.