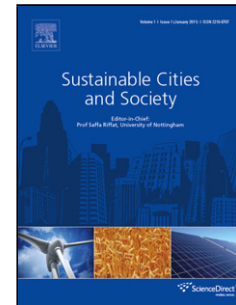


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“Actual energy and environmental savings on energy retrofit works at the Lakes Estate, Milton Keynes”

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ABSTRACT

The EU 2020 package sets three legally binding climate and energy targets: 1) a 20% cut in greenhouse gas emissions (from 1990 levels); 2) 20% of EU energy from renewables; and 3) a 20% improvement in energy efficiency. In the UK, the Milton Keynes Council has sought to implement energy performance retrofit of their building stock to achieve these targets.

This research study was conducted to determine whether the abovementioned targets could be achieved, and in order to gain further understanding over the impact of the energy retrofits on the environmental conditions at each property and the behaviour of tenants. Therefore, a sample of eight council-owned properties on the Lakes Estate, representative of 70% of the council's stock, were monitored from January 2015 to April 2016. Energy consumption and environmental parameters were measured before and after refurbishment. Building fabrics were tested pre- and post-retrofit, and a Standard Assessment Procedure (SAP) evaluation was completed. Further, occupancy behaviour surveys were conducted before and after to understand occupant energy demand and habits.

On average, total gas usage was reduced by 24%, despite the average internal temperatures for the equivalent periods in pre- and post-retrofit being higher post-retrofit while the total energy demand was reduced by 14%. At the same time energy efficiency ratings improved by an average of 19% (10 SAP points).

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