

## Information Paper

## Bridging the performance gap

Understanding predicted and actual energy use of buildings

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Operators of commercial and public (ie non-domestic) buildings need clear and realistic guidance on targeting energy running costs for their properties and on the potential savings available. At their disposal are two seemingly irreconcilable indicators of performance: the asset rating (eg energy performance certificate or EPC), which provides a theoretical assessment of the asset under standard 'driving conditions' typical of that type of building in that location; and the operational rating (eg display energy certificate or DEC), which is based on energy bills so gives no indication of how much lower running costs could be. To truly understand how a building uses energy, it is necessary to know how the building has been designed and how it is used; this requires both an asset rating and an operational rating.

The difference between these ratings – or between the predicted and actual performance of buildings – is known as the 'performance gap'. This Information Paper looks at a way to bridge this gap and bring together these two assessments using the Green Deal assessment tool for non-domestic buildings, which allows the input of non-standard operating conditions, hours of operation and occupancy patterns. By defining these aspects of the building 'in use', the predicted energy performance of the asset can be brought closer to the in-use reality.

This publication is aimed at all those working to identify energy waste and deciding on energy-saving measures and programmes.

## 1 Introduction

### 1.1 What is the performance gap?

Buildings rarely perform as well as their designers predicted. Energy consumption can be as much as double what was expected, so annual energy costs can also be doubled. This difference has become known as the 'performance gap'. In some cases it is due to more intensive or extended occupancy,



**Figure 1:** Buildings rarely perform as well as their designers predicted and energy consumption can be as much as double what was expected; this difference has become known as the 'performance gap'

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