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1. Introduction

It is now widely acknowledged that occupant behaviour is a major factor in the difficulty of predicting building energy performance, particularly for low energy buildings. There are two possible solutions to this problem: change the way occupants behave, or improve performance prediction. The first involves educating occupants about the benefits of virtuous behaviour, which is productive, or restricting their behaviour, which is coercive and therefore not conducive to the overall comfort of the occupant. The second solution, which is more building-scientist oriented, requires an improvement in modelling to recreate real behaviour.

Traditionally in building performance programs, occupants are modelled deterministically through regular schedules for occupancy and thermostat settings, or through simple rules for opening windows, raising blinds and switching on lighting. Deterministic models are appropriate for physical phenomena that are fully predictable without any uncertainties. However, it is clear that occupant behaviour doesn't obey rational law: indeed, different occupants may respond differently on different occasions, and the differences may be