

Information Paper

Asset management for environmental conditions – retrofitting strategies for simple buildings

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This Information Paper reviews the management of simple buildings, such as warehouses, for environmental conditions. The demands for environmental conditions in UK warehousing and retail sheds were researched and issues of user comfort and specific product categories (eg grain, spirit maturation, palletised and racking storage units, and depots) were explored.

The Information Paper considers temperature and humidity control, types of heating systems, retrofit measures, lighting recommendations, and benefits of retrofit or replacement. A specific case study of whisky maturation warehouses is used to highlight the ability to measure and model environmental conditions and the significance of their impact on process.

This Information Paper will be of interest to warehouse owners and asset managers and will help them to decide on approaches for managing environmental conditions in these simple buildings.



Figure 1: Scotch whisky maturation warehousing

Introduction

Passively maintaining or controlling environmental conditions in buildings is highly effective as a low energy and low impact method of maintaining specified conditions and user comfort in buildings. This Information Paper describes how to specify and maintain energy-efficient heating and lighting systems in warehouses.

The MATIN Project (Innovative Warehouse Design for the Efficient Maturation of Scotch Whisky, www.brematin.co.uk), supported by the Scotch Whisky Research Institute (SWRI), BRE and Innovate UK, monitored the environmental conditions in two whisky storage warehouses (Figure 1), produced a model of the variables affecting these conditions and developed a refurbishment tool. The purpose of the project was to show the connections between the management of a warehouse and the environmental conditions within it. The information in this Information Paper is about this specific type of warehouse which will be relevant to a wider audience of construction clients,

including those building other types of warehouse storage, and to the retail and distribution sectors (representing an estimated 110 000 buildings in the UK).

Environmental control

Warehouses can be used for a wide range of activities, ranging from long-term storage to consolidation, distribution, and the rapid fulfilment of customer orders. Warehouses have also been included within the retail sector to provide an acceptable shopping experience within a basic industrial shed type of building. This wide spread of activities is reflected in the wide range of environmental conditions required, driven by either the requirements of the stored product, or the comfort conditions required for staff and/or customers.