

Case Study



Location:
Diageo Global Supply

Project Manager:
Ken Robertson



- Facts & Figures:**
- £32k project
 - Whisky conditioning simulation room
 - Special requirements: Zone 2 risk of explosion

“The Perfect Whisky Conditioning Simulation Room”

Formed in 1997, after a merger of giants Guinness and GrandMet, Diageo became the worlds leading premium drinks business trading over 120 brands to over 180 countries worldwide, exporting direct from its site in Scotland, which makes up an impressive 32% of their Global volume.

With WorldClass, recognised brands such as Johnnie Walker, Gordons, Smirnoff, Tanqueray, Baileys and Archers to name but a few, Diageo operate more than 50 sites across Scotland – maltings, distilleries, warehouses, cooperages, packaging sites and offices. Five of Diageo's global priority brands – Johnnie Walker and J&B Scotch whiskies, Smirnoff vodka, Tanqueray gin and Captain Morgan rum are produced in Scotland.

As we know whisky gains much of its flavour during the maturing process where it is stored in barrels for long periods of time, sometimes up to fifteen years. The problem most distilleries face is what happens to the spirit during this time - what volume is lost and how the temperature affects the product. Until now this question has been unanswerable by the researchers at Diageo Brand technical Centre, Glenochil.

Dedicated to improving their brand names, they turned to temperature control specialists at Williams Refrigeration Scotland to provide a Whisky Conditioning Room which would be capable of simulating both day and night temperatures

and controlled humidity from 2°C to 27°C. It is crucial these temperatures are maintained evenly throughout the room with minimal variation and disturbance.

The critical design requirement that Williams had to overcome was that the whisky itself naturally gives off Ethylene which would classify the storage room as a Zone 2 Risk of explosion area. Conventional refrigeration equipment was not suitable for such a project so Williams had to re-think the crucial elements and designed a purpose built system. The first problem resolved by the specialist team was the provision of an air circulation system that would provide little temperature gradient in both the heating and cooling modes. Mr Ken Robertson designed a room with a ventilated ceiling and multidirectional discharge vents combined with a low level return plenum, fresh air inlet fan and flash back dampers - all Class 2 compliant.

Bespoke cooling and offshore coils, fans and heaters were sourced and a plenum chamber installed at the end of the room, complete with air flow baffles, drip trays, steam distribution and temperature control sensors - whilst an external heat generator controlled the changing levels of humidity. With an easy to use, digital display controller operating on a seven day time clock the refrigeration installation was complete.