



# Unico SDHV Cooling Technology Is A Clear Winner In Worcester Race's New Weighing Room

## Introduction

Worcester Racecourse, part of Arena Racing Company (ARC), recently renovated its facilities. The steel frame building has been constructed on the site of the original weighing room and features a green living roof to tie in with the natural riverside landscape and provide biodiversity. Solar photo-voltaic panels capture the sun's energy and convert it into electricity for

for the building providing a sustainable building.

As a part of this upgrade, Unico System's Small Duct High Velocity (SDHV) cooling, heating and ventilation technology was specified to provide the perfect indoor environment all year round for everyone using the facilities. For the weighing room in particular, the system was stipulated as a versatile, practical and financially

attractive alternative to a traditional fossil fuel-based HVAC system. The overall cost and energy efficiency of the Unico System were not the only considerations and indeed sustainability was a key focus for the whole Weighing Room project.

The cooling capabilities of the Unico System were considered particularly important.

Throughout the summer racing season, indoor temperatures within the weighing room complex can be uncomfortably high. The ability to set draft-free even temperatures, as well as providing precise instant cooling is a major benefit.

## Strategy

The HVAC system for Worcester Racecourse's Weighing Room was developed through a collaboration between Worcester Racecourse & Arena Racing Company, Bell Plumbing, and Butco. The project focused on meeting the demands of the space

during the National Hunt season while addressing the challenges of maintaining comfort levels in a room with large windows and high insulation. To meet Building Regulations for ventilation, energy efficiency, and overheating prevention, Unico Air Handling Units (AHUs) and an MVHR unit were installed. These systems provided energy savings and effective temperature control, ensuring compliance with Parts F, L, and O of the regulations.





The installation incorporated two main central ducts with Climaver insulation, delivering air efficiently through flexible supply tubing. This ensured even air distribution without drafts, and temperature differentials remained minimal. The lightweight ductwork and flexible tubing made installation easier, allowing integration into the building's existing structure.

Additionally, the system operated quietly and unobtrusively, enhancing indoor air quality by reducing humidity levels and maintaining consistent comfort throughout the building.



The design successfully addressed the challenge of potential overheating due to the extensive glazing, ensuring a balanced and energy-efficient environment.

## Results

For Worcester Racecourse management, the ability to set temperatures for each area and control the complete Unico installation remotely from an office located in the Grandstand is very convenient.

The new Weighing Room is a significant step forward in the future viability of the racecourse. Feedback regarding the indoor environment from jockeys, race officials, broadcasters and others who uses the facility has been very positive in terms of indoor temperature levels and personal comfort in a busy working environment.



## Key Features

### Installation Date

June 2024

### Property Type

Large entertainment facility with multiple rooms

### System Specification

Three separate Unico AHUs. Unico 3642 AHU, Unico 3036 AHU, The Unico 4860 AHU has a 14-17.5 kW cooling capacity and 8.5-22.3 kW capacity for heating

### Energy Source

Two Air Source Heat Pumps (Vaillant aroTHERM Plus)

### Controls

Three compatible wall mounted smart Nest Learning Thermostats have also been provided within different areas of the Weighing Room.