VisionVentilation

Case Study

National Assembly for Wales - Senedd Welsh Parliament
Rotating Omni-directional Natural Ventilation

Architect: RSHP
Contractor: Taylor Woodrow

With a hundred-year design life, the Senedd features a range of hard-wearing, inert materials. Welsh slate steps bring the visitor upwards from the waterfront and encases the private spaces of the building. A lightweight gently undulating roof shelters both internal and external spaces and is drawn down to form the funnel over the Siamb. This funnel has a dual function, introducing daylight into the Siamb while the large Wind Cowl at its head draws fresh air through the debating chamber.

This has become an iconic building in Wales and the large cowl on the top of the building remains a talking point with anyone visiting the Cardiff Bay area. This project was a particularly complex design that we had to ensure was delivered to the client right first time and on time.

The roof above the debating chamber is fitted with the world's largest free rotating natural ventilation wind cowl ever to be designed. Vision Ventilation were key in the design of this project and worked closely with the consultants and architect to ensure that not only were the aesthetics of the unit to the architects' requirements but the airflow rates throughout the debating chamber were maintained under peak heat loads.

Inside the throat of the building under the cowl and located within a spiral tubular aluminium shaft Vision Ventilation were commissioned to design and install a mirror cone that was effectively shaped like a plug or spinning top, which could be lowered or raised to give a variance in light levels within the chamber.

The mirror cone was manufactured using highly reflective polished aluminium and could be either lowered or raised from controls located within the debating chamber giving the occupants control. From the photographs below it can be appreciated the sheer size and complexity of the project.

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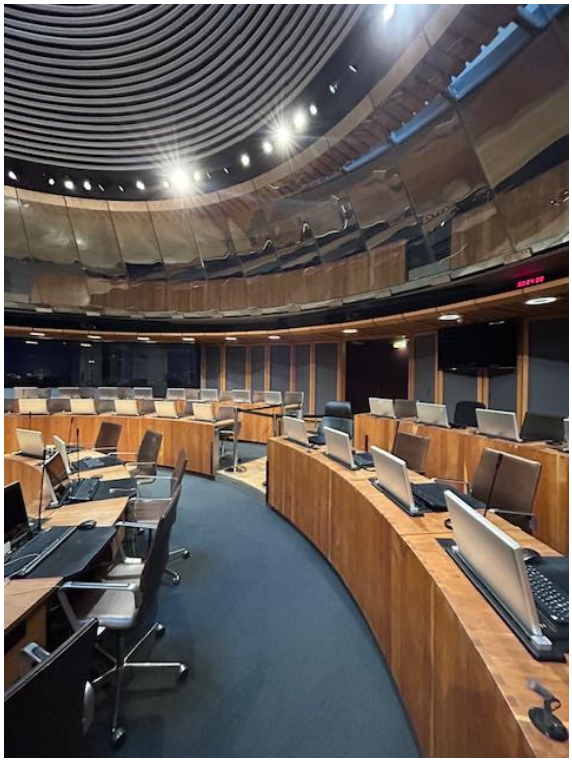

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