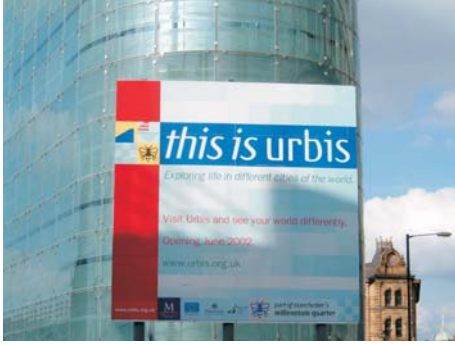


Low energy air conditioning units with indirect adiabatic cooling for landmark museum in the heart of Manchester



This £30million building is part of the Manchester Millenium quarter project regenerating the historic area of the city around Exchange Square.

The radical concept of the museum uses the history and experiences of people and communities who have shaped the urban spaces where they live as its "collection"

The striking design of the building also needed an innovative solution for air conditioning in order to deal with the heat gains and heat losses with minimum energy costs.

The exhibition floors are conditioned by six low energy air conditioning units with indirect adiabatic cooling in conjunction with a displacement ventilation system. Two further units serve the ground floor areas. The total supply air volume is 33.0m³/s.

In winter, the two stage heat recovery achieves temperature efficiencies of up to 80% thereby minimising the ventilation heating requirement. In summer, when free cooling is no longer available, the indirect adiabatic cooling process cools the supply air by up to 10°C. The integral DX cooling systems are only required during peak summer conditions. All heat from the cooling systems is rejected into the exhaust air and so no external condensing unit or chiller is necessary.

The cooling power input is reduced by more than 50% when compared to an air cooled chiller solution.

Full use of night time cooling is used to reduce the temperature of the fabric overnight in summer and a special buffer zone prevents excessive heat gains.

Urbis is now being transformed to accomodate the national football museum.

