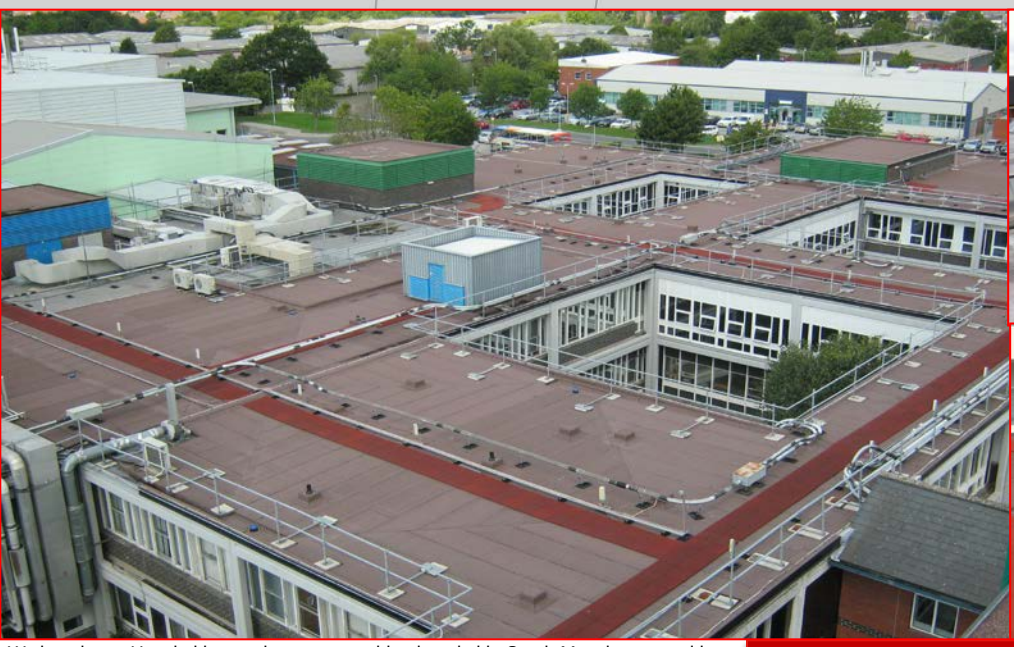
CASE STUDY

WYTHENSHAWE HOSPITAL

Roof refurbishment for major teaching hospital



'Beehive' Heating Vents Before

'Beehive' Heating Vents After

Wythenshawe Hospital is a major acute teaching hospital in South Manchester and is part of the University Hospital of South Manchester NHS Foundation Trust. It is a founding member of the Manchester Academic Health Science Centre, a teaching hospital of Manchester Medical School and a recognised centre of clinical and research excellence. As part of a major refurbishment IKO PLC was invited to provide specifications and technical support for the renovation of the 13,000m2 roof. Several areas were involved including the OPD clinic and the Maternity Wing.

IKO worked with Building Surveyors Property Tectonic and three of IKO's approved contractors, Fulwood Roofing, Helix Roofing, and Mitie, who carried out the works.

Sector:	Healthcare
System:	Reinforced Bituminous Membrane
Products Used:	Ultra PrevENt, Systems SA Underlay, Systems VCL, Polimar EC/UV System, Polycarbonate Rooflights
Contractor:	Fulwood Roofing, Helix Roofing, Mitie - IKO Approved Contractors
Size:	13,000m^2
Duration:	2011 -2016 (phased delivery)

The Challenge

Poor maintenance meant the original asphalt suffered UV exposure, leading to brittleness causing minor splits and cracks and allowing water ingress, mainly at perimeter details. Some repairs had been carried out using liquid applied coating systems, but they weren't successful as long term solutions. The asphalt had been coated with solar reflective paint which acted as the waterproofing membrane's only UV protection. The paint requires reapplication every 3-5 years. The task was to renew waterproofing and upgrade the thermal performance on the roof, with tapered insulation, so all leakages were stopped and to ensure no damage to the interior renovations going on inside.

Additional Tasks:

- Existing Georgian wired rooflights on Maternity Roof to be removed and boarded over.
- Existing polycarbonate rooflights to be renewed.
- All internal outlets to be renewed (if possible).
- Plant room required detail alteration around perimeter in order to achieve 150mm.
- Beehive vent housing required raising and installing new roof decks.
- The vertical glazing required boarding out prior to the waterproofing being installed.

The Solution

IKO undertook a detailed visual and physical survey of the roof including a Roofscan Infra-red survey. Following the systematic thermal imaging carried out by IKO certain areas were stripped back and made good so approved contractors could install the high performance waterproofing. IKO recommended its Ultra PrevENt overlay system - Ultra PrevENt and Polimar EC/UV, all with tapered insulation - as appropriate for the roof. IKO also agreed to replace two polycarbonate rooflights and remove and board over the Georgian wired rooflights.

Damp areas which showed up on the infra-red thermal imaging were removed and made good.

Materials Used to Refurbish the Roof

The work improved the U-value to 0.18 W/ m^{2}K.

In the hospital environment fire safety is a major issue. The Graphite Firewall Technology incorporated in Ultra PrevENt is a fire retardant which slows penetration of external fires and also forms a heat shield. Internally it slows the spread of smoke and stops melted bitumen from dripping into the building – all important features in a hospital. It is listed in the Red Book as a best practice product.

Steve Bithell, IKO'S Approved Contractor at Fulwood Roofing explains some of the challenges of the project: "It was interesting repairing and replacing the roof of an active Maternity Wing. Obviously the unit is in operation around the clock, but we had to schedule tasks such as removing the Georgian wired rooflights - initially to see what was involved, later to remove them and board over the gaps in quieter times. A fair amount of the work was done 'out of hours'. Refurbishing the 'beehives' (heating vents) was a challenge too. We completely dismantled them, raised the upstand to accommodate the tapered insulation, then rebuilt the sides and constructed a new roof onto which the IKO system was installed. We then applied a maintenance free and ascetically pleasing finish over the existing louvres".

The project was successfully completed on time and on budget, giving the hospital a BBA approved system with a 20 year single point guarantee, as required in the original specification.

IKO ultra prevent – Graphite Based Fire Performance

IKO polimar – Liquid Applied Waterproofing

IKO PLC, Appley Lane North, Appley Bridge, Wigan, Lancs WN6 9AB Tel: 01257 255 771 www.ikogroup.co.uk