

KING GEORGE HOSPITAL



CONTRACTOR: Inspire Contracts Ltd SIZE: 1,300m² SYSTEM USED: SA-20 Flat Roofing System COMPLETED: October 2019

Aging roof estates and reduced maintenance budgets have resulted in reactive maintenance becoming the only feasible way for many trusts to operate. For this reason, roofs demand attention only when a problem develops.

King George Hospital is part of the Barking, Havering and Redbridge University Hospitals NHS Trust in Ilford, it is a significant estate, serving a population of over 750,000 in outer North East London. The roofs across the hospital estate had started to show signs of degradation and posed a risk for leaks.

Water ingress on healthcare estates risks damage to electrical equipment, transmit pathogens and put patients at greater risk of developing illness. It also reduces efficiency or completely nullifies the roof insulation if sodden, reducing the heat retention in the building and the potential to cause increased energy bills - trying to keep the building a sustainable temperature for patients.

The client's requirement to address the degradation was a flat roof system that had a flame-free application. They also required a project team that would work collaboratively to complete the works within the tight time frame and cause minimum disruption to a extensive hospital environment that remained open and fully functional throughout the project.

Langley was one of the tendering roofing suppliers and was asked to complete a comprehensive roof condition survey. Langley assessed each roof area using core samples and other investigations, such as moisture readings to assess the potential risk of water ingress.

Once the survey was complete this informed a comprehensive overview of the condition of the roof. This provided details of the roof systems that have been used, their current condition, evidence of any exposure to the elements, previous repair condition and any urgent concerns requiring immediate attention.

Finally, as part of the survey the roof areas were checked to ensure full compliance with Health and Safety and Building Regulations, alongside Part L compliance (thermal efficiency).

The results of the survey revealed that much of the original roof areas remained waterproof. Therefore majority of the remedial works were not reactive but formed part of a PPM (Planned Preventative Maintenance) plan. This plan incorporated works to extend the lifespan of the roofs and included annual maintenance guidelines to manage the estate onwards initiated by the data gained from the survey. They were suitable for a cost-effective overlay solution across five buildings. The remaining roof area, however, involved a full roof strip up, the consequence of a drain blockage on the roof, causing water to back up into the roof. The insulation was saturated and beyond repair and of high risk of letting water into the hospital facility below.

The solution specified and supplied by Langley for the six roof areas was the SA-20 Flame Free Roofing System - meeting the main client requirement of no hot works on the roof of the active hospital.

Before - Access hatch









Speaking on the decision to choose Langley, Steve Last; Director of Estates and Facilities at King George Hospital commented: "In the current NHS climate, there is limited capital, so repairs need to be reliable, long-term and cost-effective. We considered a number of providers, but Langley stood out with a solution that met the brief in all aspects and more. The tender initially focussed on just one roof, but we were so impressed with the solution and approach, that we extended Langley's scope across the rest of the hospital's roofs".

Inspire Contracts, a Langley Approved Contractor, were chosen to carry out the works across the hospital estate. The installation process consisted of removing accessories including lightning conductor system, access hatches and metal cappings. Extend soil pipe vents for the new height of the roof and prepare the area with Langley's spray on primer and then complete the installation with the two layered Langley SA-20 Flame Free Roofing System. The metal cappings access hatches and lightning conductor system could then be reinstated.

The strip up was the most complex roof, with many new internal outlets needed to replace the inefficient existing alongside new drainage accessories all incorporated into Langley's design and supplied by Langley compatible with the flat roof system.

As an active hospital there was a hugely limited compound area and therefore deliveries of system components were orchestrated when needed following the comprehensive programme plan. This was paramount when there was just one access point to the roof estate. Inspire Contracts therefore deployed multi-teams to various blocks to be able to manage the access point and to achieve the client's tight works deadline.

Steve Last continued; "We are pleased to report that the installation went very smoothly and has made the building water-tight, which has made a huge impact in providing better working conditions for our staff and a comfortable and safe environment for our patients and visitors".

The self-adhesive bituminous membrane system is ideal for projects where a flame-free application is required. King George Hospital roofing works were carried out whist the hospital remained operational. No gas torches were required for any of the component layers and installed entirely with self-adhesive technology or heat activated with a flameless heat gun.

Paul Connolly; Langley Area Manager concludes: "In October 2019 the government pledged to create funds that would make the NHS estate fit for the future. For trusts that are afforded any grants or receive funding there is a need for hospital and healthcare facilities to find repair and refurbishment solutions that provide high-quality long-term results, with minimal disruption. By working closely with a waterproofing expert such as Langley, hospitals can be sure they are making a sound investment. Once works were complete the hospital received our 20-year insurance backed guarantee, covering the materials, design and workmanship, ensuring their asset was guaranteed for years to come'.

Before - Existing waterproofing







WATERPROOFING SYSTEM INFORMATION



SA-20

The SA-20 Flame Free System is a premium quality, heat activated self-adhesive high performance membrane system for flat or sloping roofs. Ideal for projects where a flame free application is required due to either site restrictions or combustible materials, compliant with the NFRC Safe2Torch guidelines. All system layers are highly versatile and can be used on refurbishment or new-build applications.

Advantages:

- Extremely robust and flexible
- Parafor Solo SA achieves a 'resistance to damage' rating of R4 under MOAT 31
- Fire rating Broof(t4) EN 13501-5:2016
- Long term solution life expectancy of at least 40 years
- 20 year independent insurance guarantee for materials, design and workmanship
- Meets NHBC Technical Standards Chapter 7.1 for roofs and balconies.

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