



Triflex

Delivering solutions together.

NEW BUILD BLUE / GREEN ROOF, BALCONIES
AND PODIUMS
WIMBLEDON

PLOUGH LANE

CASE
STUDY

Authorised Contractor:

Kingsley Roofing (London) Ltd

Area

16,800m²

Systems

Triflex ProTect® Warm

Triflex ProDetail®

Triflex ProFibre

Triflex FlexSealer

☎ 01785 819119

🌐 triflex.co.uk

✉ info@triflex.co.uk

🌐 Triflex (UK) Ltd

🐦 @TriflexUK

Triflex (UK) Ltd. | Whitebridge Way | Stone | Staffordshire | ST15 8JS

Introduction

Galliard Homes in association with AFC Wimbledon Football club developed a 14-acre brown field site designed by Sheppard Robson (Masterplan) and Wilson Owens and Owens (Stadium design). The project brought together an exciting 602 new home development and retail space encircling a purpose-built stadium, bringing AFC Wimbledon back to its spiritual home of Plough Lane, Wimbledon.

Triflex working together with Kingsley Roofing (London) Ltd, provided a comprehensive, certified waterproofing system for this large new build mixed development in central London. One of the largest Blue / Green roof complexes in the capital to date, the rapid curing, hydrolysis resistant and versatile system simplified the waterproofing solution for the multiple roof elements.

The programme of works was started in early 2020, completing in 2021 and faced unprecedented challenges during the pandemic. Here we describe how both Kingsley Roofing and Triflex worked together to deliver a first-class solution in challenging times.





Meeting the challenges of a changing climate

The pioneering project incorporated Blue, Green Roof and Photovoltaic (PV) requirements and is thought to be one of the largest blue roof installations in the capital to date. The Blue / Green system will be capable of storing over 1 million litres of water, which is slowly released into the drainage network, significantly reducing any additional strain on the Victorian sewer systems commonly found in London. The blue roof can store 40% more water than is calculated to fall in a 1 in 100-year storm.

The project included multiple elements in three major blocks, demonstrating a sustainable system for future large-scale developments. The main roof areas were of Blue / Green roof type, finished with PV panels. Other finishes included non-combustible pedestal and pavers to balconies, as well as hard landscaping to the podiums. The developer Galliard Homes required a BBA certified cold liquid waterproofing system. The project required the waterproofing of some 16,871m² concrete substrate, which incorporated 11,682m² of Blue / Green roof finish and 5189m² of podium. The project also encompassed 673m² of balconies, waterproofed with the cold liquid applied Triflex systems, and Triflex FlexSealer as a pitch / pocket sealer.

Designing out risks

In the wake of the Grenfell disaster Kingsley Roofing were asked to design out risks for the roof build up, ensuring the system met requirements for the highest levels of fire classification of construction products and building elements for waterproofing membranes.

Triflex supported the design process with Triflex ProTect specifications for each of the large scale three building blocks, encompassing insulated buried roofs, warm roof, and roof details for parapets, including calculated condensation risk analysis and U values for the proposed build ups.

The specification of a cold applied system mitigated risks from hot works for the project, satisfying insurers of the development. Aspects of design also included the requirements for a combined build up to provide an insulated Blue / Green roof solution. In addition, roof abseil points with differing load requirements were accommodated in the design.

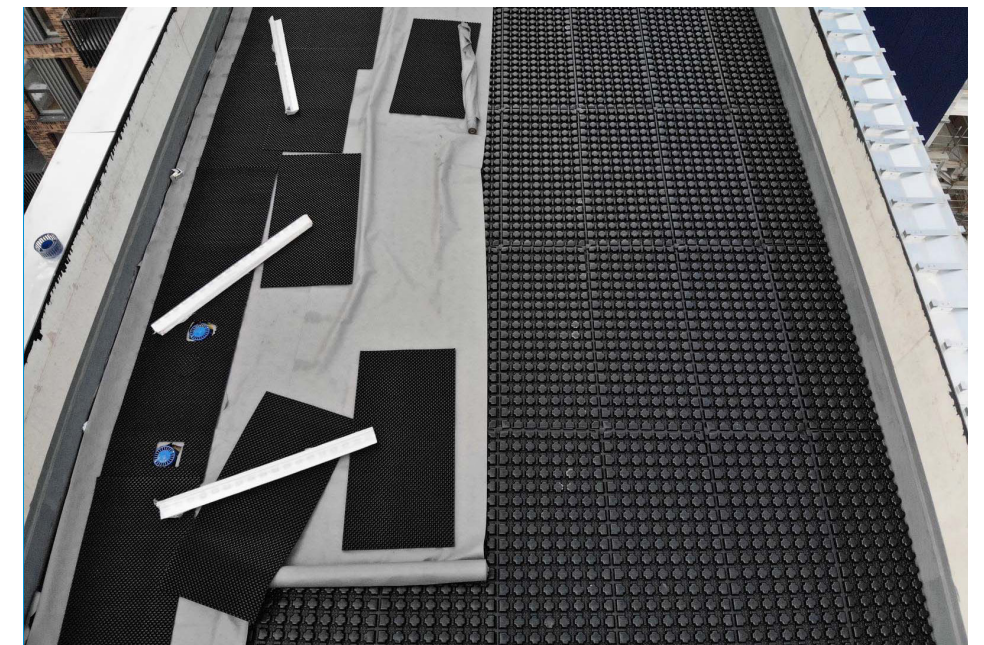
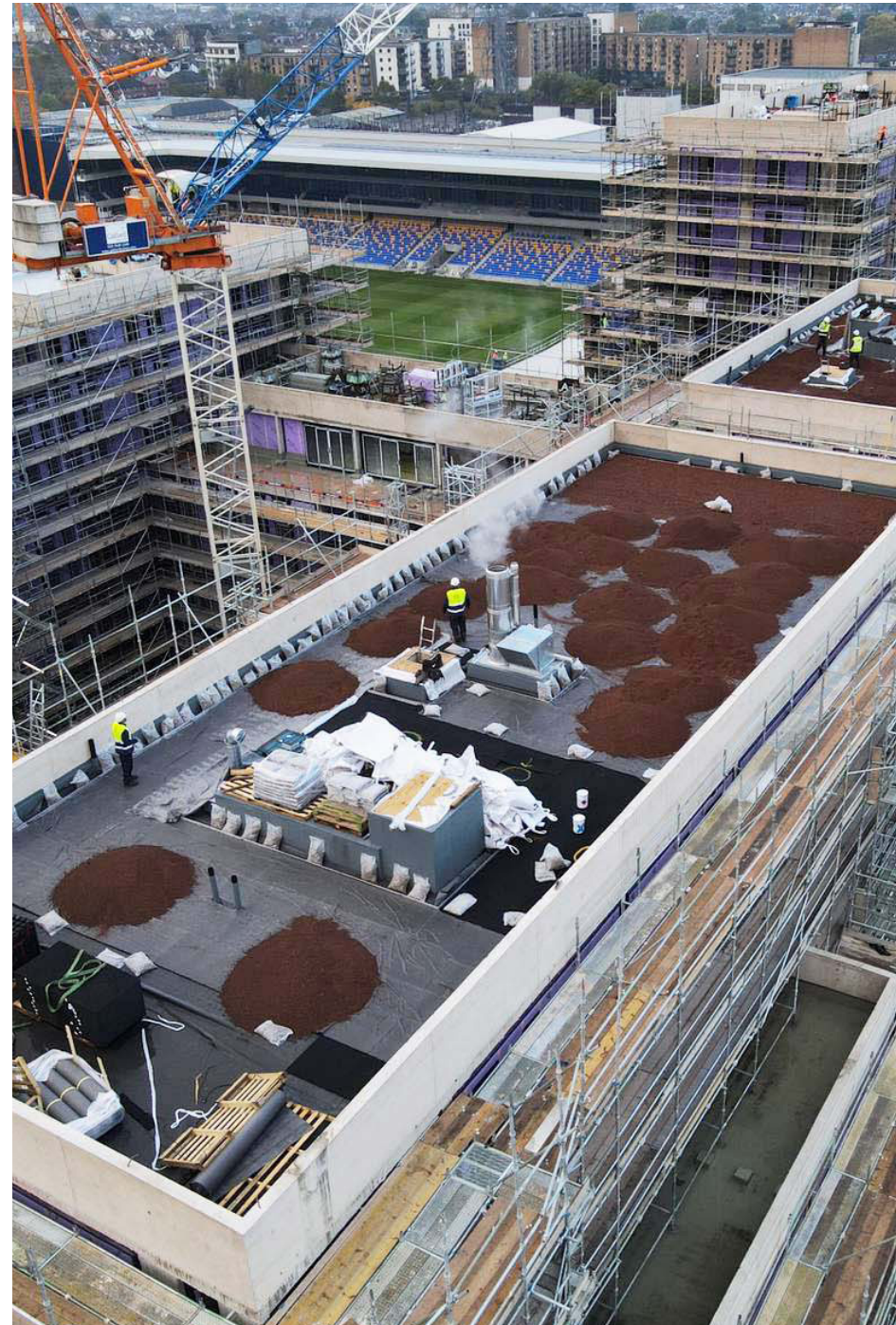
Preparation key for programme timescales

Kingsley Roofing are a Triflex authorised contractor and have a number of fully trained operatives. With such a large-scale project, Triflex implemented a training programme ahead of the start of the scheduled works to ensure that the project could be implemented quickly and efficiently once the roof waterproofing could be undertaken.

Training took place at Triflex UK headquarters in Stone, and at Kingsley Roofing, London premises. With training completed ahead of the project, this approach proved fortuitous to the completion of the project to a high standard and timely installation against the back drop of the pandemic.

In the majority of instances, Triflex systems are fully compatible with concrete, however due to the nature of the substrate it is still necessary to conduct on-site testing. Triflex Field Technicians attended site to conduct thorough testing of the concrete substrate to ensure that a strong adhesion could be achieved with the Triflex systems.

The Triflex Field Technicians report confirmed the required preparation, pre-treatment and priming method for the Triflex waterproofing system through a number of tests, across multiple areas. The on-site peel strength adhesion tests showed that the substrate was suitable for the system to be installed directly. Peel tests for Triflex air and vapour control layer and Triflex ProDetail provided reassurance of bonding strength for the specified systems.





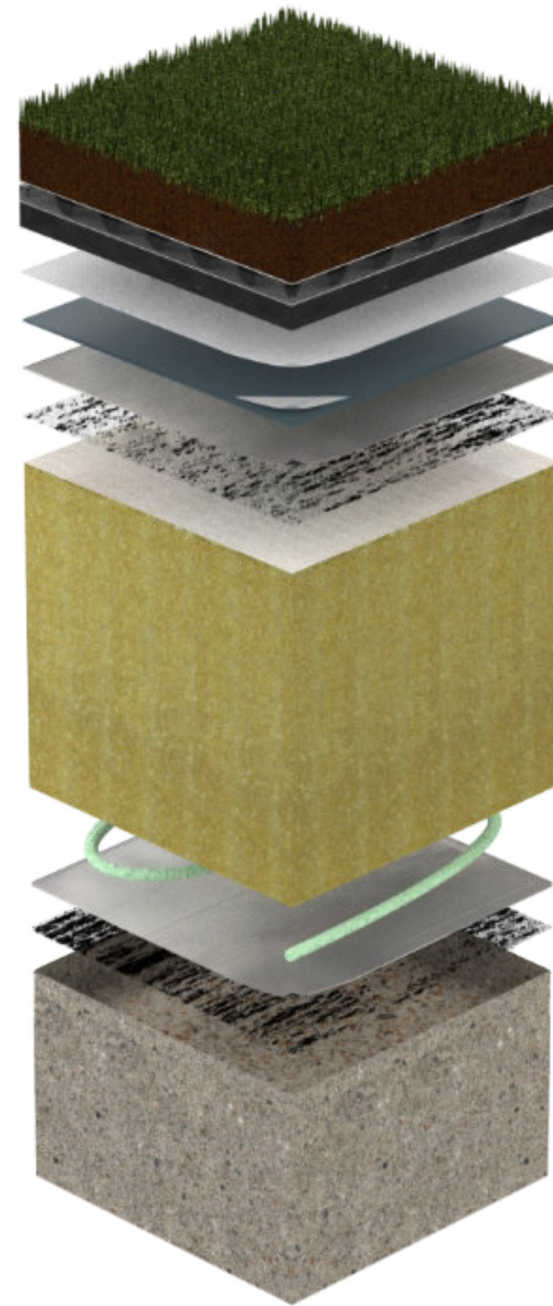
Inherent properties simplify multiple roof types

The Triflex ProTect waterproofing system was installed as a buried system under the Blue / Green roof system, or underneath pavers and hard landscaping. Triflex ProTect is hydrolysis resistant meaning it will not break down when submerged in water, making it ideal for the Blue / Green roof applications.

The system is also inherently root and rhizome resistant allowing it to be used as the waterproofing membrane for the Green roofs. With multiple trades and a tight programme of works, the rapid curing in one hour meant that subsequent roof elements could be quickly installed ensuring that the Blue / Green roof was efficiently constructed.

The versatility of the system also meant that that it was suitable for all the roof and podium types of the project. This not only simplified the installation, but with a central London site this meant greater efficiency for the logistics and delivery of materials.

For the terraces, the balustrades were sealed with Triflex FlexSealer. Here a former was created around the base of the metal balustrades and their fixings, and the cold applied, flexible PMMA based waterproof sealant was poured to make a seal, which was fully cured within an hour. The Triflex FlexSealer was then waterproofed over with the Triflex ProDetail as per the NHBC approved detailing standard.





Challenges of the pandemic

The project spanned 2020, completing in March 2021. As the project stopped and started in line with pandemic lockdowns and governmental guidance, the programme of works was challenged at several stages. The impact was that the site was closed for a period of a month in April 2020.

Returning to the site in the pandemic, employee safety was the number one priority for all parties concerned. The large-scale project meant that there were typically 150-200 trades working on site each day. Due to the scale of the site, a segregation system was implemented, together with a one-way system for people movement secured with a logging in process. Consequently, the project required a smart approach to operational delivery. The planning and management for people movement was constantly reviewed, revised and co-ordinated between Kingsley Roofing, Triflex and other trades.

Triflex and Kingsley Roofing revised ways of working safely during the pandemic in line with latest governmental guidance. Site risk assessments were developed to control social distancing where possible, good hygiene procedures were maintained and personal protection equipment made available. Kingsley Roofing rewrote all their policies for onsite working and provided new, appropriate PPE. At the point of returning to site this included changes of clothes and appropriate facilities to help prevent the spread of COVID-19. A programme of toolbox talks was implemented to keep all the team safe.

Supply chain management

The distribution of material to the correct areas of the site was one important element to ensure that the programme of works ran to schedule. Deliveries were scheduled to coordinate with installation of a roof area, and deliveries had to be booked with the site some two days in advance. The buildings themselves stand at seven storeys high. Working at this height raised its own challenges for the logistics of getting materials onto the installation areas. There were six cranes on site in total and each delivery had to hit the correct areas at ground level before being raised to the roof areas. Occasional interruptions due to high winds mean that the schedules were further challenged and the project was under constant review to maximise the installation team resource.

Triflex Logistics team worked closely with Kingsley Roofing to ensure deliveries were at the right place, at the right time whatever the change in schedule. The construction industry has felt the after effects of the pandemic with supply shortages. Triflex worked closely with Kingsley Roofing to ensure supply. Thanks to advance and rapidly implemented contingency plans, the European Triflex manufacturing and warehouse facilities ensured that Triflex customers could still be serviced as construction sites got back to work.

Due to shortages Kingsley Roofing had to source alternative suppliers of some blue roof components, trial new pedestal products and juggle with constraints of slabs, soil and seed to be able to complete the roofs to the design, further challenging the contract delivery timescales.





Performance management

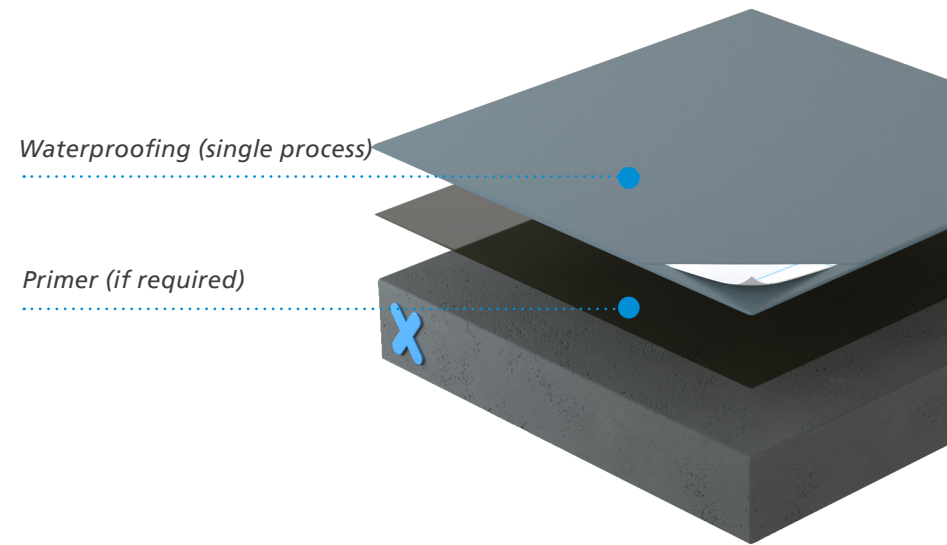
Kingsley Roofing implemented multiple management strategies to ensure that the project ran smoothly. This included both on site management, and extensive off-site support. A daily reporting process helped to keep the now very challenging project timescales on track to make up the one-month interruption.

Triflex supported project performance management with a weekly site visit by an experienced field technician. This service ensured that the Triflex system installation remained fully compliant with the specification and provided reassurance for the warranty process. In addition, expertise was available first hand, on site to support the authorised contractor. With 25 to 30 Kingsley Roofing operatives at any one time, Triflex were able to assist with any questions or additional needs which could be addressed quickly.

Triflex take pride in delivering solutions together with our authorised contracting partners. The Plough Lane development was delivered together on time and in budget against the back drop of the pandemic, thanks to the teamwork, project management and diligence of the parties involved.

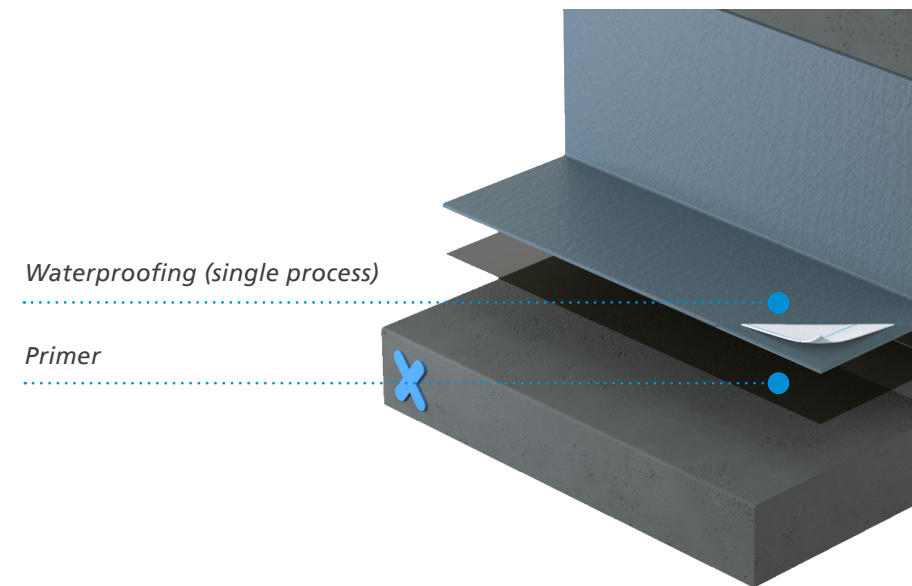
System benefits Triflex ProProtect®

- Totally cold applied, with no risk from hot works
- Compatible with virtually all roof substrates
- Suitable for all roof build-ups and applications
- Exceptionally rapid curing / rainproof times, even at low temperatures
- Fully reinforced waterproofing technology
- Suitable for zero pitch, completely flat and pitched roofs
- Simple, single process waterproofing application
- Hydrolysis (standing and ponding water) resistant



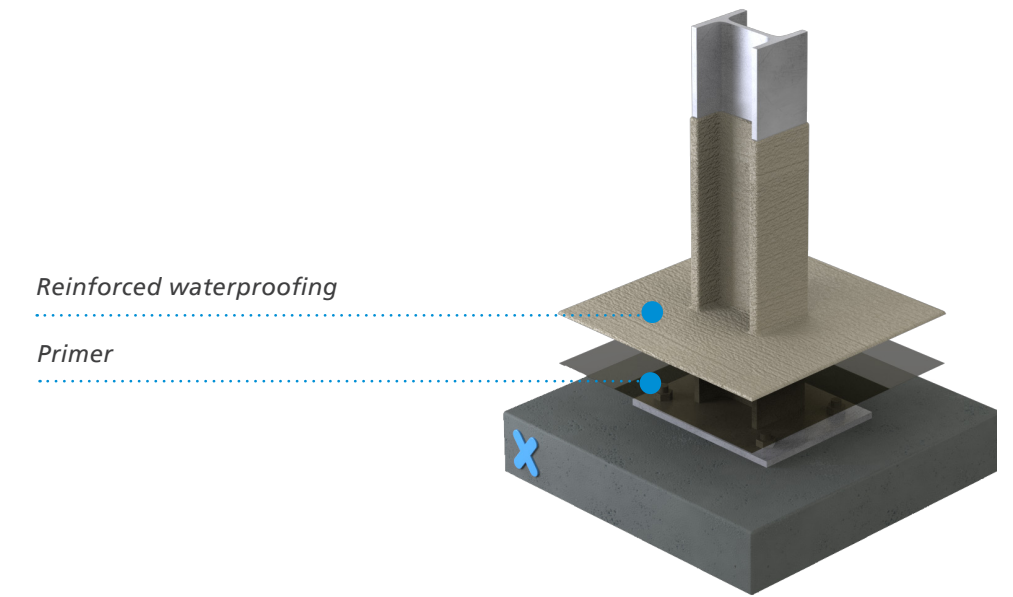
System benefits Triflex ProDetail®

- Waterproof down to the smallest detail
- Compatible with virtually all substrates including asphalt
- Cold applied, fast curing with rapid installation
- Simple, single process waterproofing application
- Rapid curing system - even at low temperatures
- Fully reinforced technology
- Certified to the highest standards



System benefits Triflex ProFibre

- Waterproof down to the smallest detail
- Compatible with virtually all substrates including asphalt
- Cold applied, fast curing with rapid installation
- Simple, single process waterproofing application
- Rapid curing system - even at low temperatures
- Fully reinforced technology





Delivering solutions together.

Triflex is the leading European specialist in cold liquid applied waterproofing, surfacing and marking resins. Our high-quality systems provide reliable and lasting waterproofing, surfacing, protection and markings for roofs, walkways, balconies, terraces, car parks, roads and infrastructure.

We are a family owned and operated company that provides tailored solutions worldwide. From our production facilities based in Minden, Germany, we have been researching and developing solutions designed to protect and repair the built environment for more than 40 years.

From our UK and Ireland headquarters based in Stone, Staffordshire we pride ourselves on providing our clients with tailored solutions and exceptional levels of service and support throughout all stages of their project. From conducting in-depth site surveys to our comprehensive testing and off-site and on-site support, we ensure that your project is completed on time, expertly. Triflex solutions are certified to the highest standards and are backed up by long-term meaningful warranties, ensuring peace of mind for years to come.



01785 819119



triflex.co.uk



info@triflex.co.uk



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@TriflexUK

Triflex (UK) Ltd. | Whitebridge Way | Stone | Staffordshire | ST15 8JS