

Triton supplied:

TT Super Admix (to 300m³ concrete),
TT Waterstop, TT Swellmastic, TT Vapour Membrane,
Platon Membranes (as phase 2 waterproofing)



Contiguous piles in site before watertight concrete liner wall was poured

A NEW WORLD BELOW A LUTYENS FARMHOUSE

Major renovations are being made to a Grade 1 listed Lutyens property to incorporate a basement which extends far beyond the footprint of the house, and which will accommodate a swimming pool, squash court and cinema.

A combination of Type A (barrier protection), Type B (structurally integrated protection) and Type C (cavity drained membranes) systems - as defined by BS 8102: 2009 - are being used to waterproof the new basement and to achieve the required Grade 3 habitable environment. This combined approach was decided upon following consultation between Triton's technical team, Moxley Architects, the main contractor - Boshers Master Builders and basement construction and waterproofing specialists, City Basements.

The primary method of waterproofing is structurally integrated protection achieved by the incorporation of Triton's TT Super Admix to form a watertight concrete construction (around 300m³ of new concrete has been poured) using the following mix ratios:



The original house sits on top of RSJ props while the new basement is excavated below

Cement Type: CEM-1
Concrete Grade: C28/C35
Cement Content: Min 350kg per m³
Water Ratio: 0.5
TT Super Admix Ratio: 4.1kg per m³

TT Super Admix reacts with the free lime element of the concrete, locking it in to the substrate and reducing the associated risk of potential blockages to any drainage detail that may be incorporated within the structure. (Cavity drained membranes will be installed as part of phase 2 – see below.) It also helps the concrete withstand high hydrostatic pressures and reduces shrinkage cracking in the concrete. However where this does occur, the in depth crystallisation process of the admix will enable these shrinkage cracks to self heal over a period of time, minimising the need for repairs to non structural cracks in the concrete. It also protects the steelwork/reinforcement within the structure against harsh/ aggressive ground chemicals and enhances the workability of the concrete.

Triton's technical team oversaw and inspected the concrete pours at each critical stage to ensure the correct application of the system.

Triton's TT Vapour Membrane, a liquid rubber membrane, forming a Type A waterproofing system (barrier protection), was also applied to all internal soffits/ground slabs at and below ground level to provide a waterproof and gas proof barrier to these surfaces.

All construction joints, service entries and concrete interfaces were waterproofed with Triton's TT Swellmastic and TT Waterstop forming a completely watertight concrete system and in accordance with the requirements of Triton's watertight concrete system warranty.

Phase 2 waterproofing will be achieved by the installation of a Platon cavity drained and pumped membrane system, to "mop up" any future possible minor water ingress.

Sourcing all the components of each waterproofing system from one supplier, ie Triton, avoids any potential split responsibility issues often associated with this type of project where multiple waterproofing systems are being used.

Concrete supplied by Tarmac Concrete Ltd: www.tarmac.co.uk
Moxley Architects: www.moxley.co.uk
Boshers Master Builders: www.boshersltd.com
Triton approved waterproofing contractor – City Basements: www.citybasements.com/www.toureenmangan.co.uk

Triton Systems

Units 3 – 5 Crayford Commercial Centre, Greyhound Way,
Crayford, Kent DA1 4HF

Tel: 01322 318830

Fax: 01322 524017

Email: info@tritonsystems.co.uk

www.tritonsystems.co.uk



300m³ of watertight concrete have been used to construct the new basement beneath and beyond the original building



A major retrofit basement project!



TT Vapour Membrane provides a water and gas proof barrier to new soffits