# CASE STUDY BASEMENT WATERPROOFING New-Build and Existing Riverside Basements



### BASEMENT WATERPROOFING

Waterproofing listed riverside basements with Newton System 500 in Hammersmith, London

# **Project Details**

This spectacular multi-million pound listed property on the Thames was being completely refurbished and extended to provide a large modern property, yet retain the features of the original design. As a large section of the project was below ground level and metres from the River Thames, a robust and reliable waterproofing approach was essential. Newton Specialist Basement Contractor Wing Waterproofing were commissioned to undertake the project.

# Methodology

SEMENT WATERPROOFIN

 $\hat{\mathbf{m}}$ 

CASE STUDY

The project had a series of existing vaulted arches and brick walls to the front of the property which were underpinned to create the extra living space required. To the rear of the property a very large RC concrete box was cast to provide a new subterranean living space, coupled with a large swimming pool. Wing Waterproofing used Newton 101F as a cementitious Type A barrier system across all underpinned sections to provide a resistance to water coming through the dry pack elements. New-build joints in the RC box were protected by Newton 303 PolyProof water bars incased in the new shuttered box. In all the vaulted areas. Newton 508 membrane was installed and batten hung off the plugs. Any water would be diverted to the Newton Basedrain which was fitted around the perimeter of the entire structure. Prior to the membrane system being installed a new RC slab was installed throughout both elements of construction.

The engineered slab had concrete sumps formed within the structure as a means of capturing the water that entered the system and to be removed via mechanical means. Newton 106 Lime Inhibitor was used on the slab, 50mm of closed cell insulation was installed as a spacer on the slab and the Newton 508 was installed with a 65 screed with underfloor heating to finish.

# Result

Both new-build and existing building elements were waterproofed to a Grade 3 habitable environment in accordance with BS8102:2009. This project was in an extremely high risk area being metres for the Thames and the skill of the main contractor interfacing with NSBC Wing Waterproofing ensured the client had a watertight structure. The projection of the joints with the contingency of the Cavity Drain means the system is "maintainable" a prerequisite when designing waterproofing systems to BS8102:2009. Wing Waterproofing took PI on the design and installation so the client has an insured backed guarantee for all works.

# NSBC Contractor: Wing Waterproofing



The property, situated a few metres from the River Thames, required a reliable waterproofing method



Newton 508 being curtain hung to existing elevations



Sump chamber formed in new RC slab prior to floor finishes and Newton Titan-Pro pump installed



The external finished CGI impression of project

### © Newton Waterproofing Systems (*a trading name of John Newton & Co. Ltd.*) Newton House, 17-19 Sovereign Way, Tonbridge, Kent, TN9 1RH T: +44 (0)1732 360 095 W: www.newtonwaterproofing.co.uk E: info@newtonwaterproofing.co.uk



# **Featured Products**

## **NEWTON SYSTEM 500**

Maintainable Cavity Drain System Comprising Waterproof Membranes, Drainage, and Pumps

The professional's "waterproofing system of choice", Newton System 500 is an internally applied waterproofing system based upon Newton's extensive range of cavity drain membranes, drainage conduits and sophisticated pumping and control systems. It is a maintainable system,

so complies with BS8102 Code of Practice for Protection of Structures Against Water from the Ground.

Newton recommends that our structural waterproofing systems are installed by one of our Nationwide Network of Newton Specialist Basement Contractors (NSBC)

NSBCs have been trained by Newton and can offer full professional indemnity on design and insured backed guarantees on the installation.



### **Newton System 500**



Water Pumps

**Pumping System** 

Cavity Drain Waterproofing

# NEWTON 101F (CW 101)

BASEMENT WATERPROOFING

CASE STUDY

### Cementitious Flexible Waterproofing Membrane

Newton 101F is a two-component acrylic modified cementitious coating. It is the ideal product to waterproof and re-surface concrete and masonry. 101F is a hard wearing, seamless waterproofing solution which is very user friendly with simple on-site mixing methods.

Newton 101F is applied in two coats 1mm each to provide a total thickness of 2mm. Each 1mm coat requires a coverage rate of 1.8kg per m<sup>2</sup> to give a total coverage rate of 3.6kg per m<sup>2</sup>. Newton 101F is supplied in two components of 1 x 25kg tub of powder and 10kg of liquid additive (35kg pack) which will cover 9m<sup>2</sup> - 10m<sup>2</sup>

### **Typical Applications:**

- Waterproof lining for lift pits, swimming pools etc
- Bathroom and wet areas
- Waterproof coating for roofs
- Internal application to flat concrete soffits in conjunction with Newton System 500
- Slurry application to form waterproof bunds
- Lining existing concrete sump chambers
- Protection of steels against carbonation and chloride attacks

## **Newton System 100 Cementitious Products**



Newton 101F

© Newton Waterproofing Systems (a trading name of John Newton & Co. Ltd.) Newton House, 17-19 Sovereign Way, Tonbridge, Kent, TN9 1RH T: +44 (0)1732 360 095 W: www.newtonwaterproofing.co.uk E: info@newtonwaterproofing.co.uk

# CASE STUDY BASEMENT WATERPROOFING New-Build and Existing Riverside Basements



## NEWTON 106 Lime Inhibitor (LC1)

### Lime Inhibitor For Application To Concrete Surfaces

Newton 106 Lime Inhibitor is applied to concrete surfaces prior to the installation of a Newton System 500 cavity drain membrane waterproofing system to prevent the 'leaching' of free lime from the concrete. Primarily designed to be used to new concrete structures

### **Typical Applications:**

### Concrete floors newer than 12 months

The whole of the concrete slab or raft as well as the recess formed ready for Newton Basedrain or Floordrain Drainage Conduit.

### Concrete floors older than 12 months

The recess cut into the concrete ready for Newton Basedrain or Floordrain Drainage Conduit as well as 200mm either side of floor construction or movement joints.

### Walls

Sement waterproofin

 $\hat{\mathbf{m}}$ 

CASE STUDY

200mm up the wall from the floor, or where a 'kicker' has been formed to a concrete wall, apply from the floor up to 200mm above the kicker.

Underpinned properties require application to 200mm either side of the joints. Dry-packed areas should be sealed with a cement based tanking product and then the tanking treated with Newton Lime Inhibitor.

## NEWTON 303 PolyProof (SX303)

### High Grade Hydrophilic Water Bar

Newton 303 PolyProof is a hydrophilic, thermo-plastic elastomer water bar, which swells when activated by moisture. It is characterised by high elasticity and high tensile strength. Newton 303 PolyProof can be used to seal the structure against water leaks to both poured concrete and precast construction joints.

### **Key Benefits:**

- Very high resistance to water pressure.
- Delayed swelling will not swell during the installation process or during the concrete cure.
- Swells up to 400 times its original size to quickly seal leaks at joints in the structure.
- Very resistant to the high alkalinity of concrete.

### **Typical Applications:**

Primary swelling water bar to seal the joint against leaks through construction joints, movement joints and compression joints to earth retained structures.

## Newton System 100 Cementitious Products



Newton 106 Lime Inhibitor

## Newton System 300 Waterproofing of Concrete Structures



Newton 303 PolyProof

© Newton Waterproofing Systems (*a trading name of John Newton & Co. Ltd.*) Newton House, 17-19 Sovereign Way, Tonbridge, Kent, TN9 1RH T: +44 (0)1732 360 095 W: www.newtonwaterproofing.co.uk E: info@newtonwaterproofing.co.uk