

# STUDENT ACCOMMODATION, HOLYROOD

Balfour Beatty required a Type A Barrier Protection waterproofing system complying with BS 8102:2009 to waterproof a new-build basement split over one and two storeys below ground.



### PROJECT

Student Accommodation, Holyrood

Applicator:  
Stephenson Construction

Architect:  
Richard Murphy Architects

Area: 12,000 m<sup>2</sup>

Contractor:  
Balfour Beatty

### LOCATION

Edinburgh

### PRODUCTS

VOLTEX®

WATERSTOP-RX® 101

VOLSEAL® 200

### CHALLENGE:

The main challenges to the works were derived from the need for minimal substrate preparation to meet the required works programme, the need for an all-weather installation and acknowledgement of the particular site topography.

Firstly, the waterproofing works had to be carried out over a two year period from 2013 to 2014, and continuously throughout the summer and winter months.

In addition, the development is situated at the foot of a hill, meaning that the basement will be subjected to hydrostatic pressure arising from fluctuating groundwater table levels and surface water run-off. The chosen system had to be technically robust and suitable for these prevailing site conditions.

### SOLUTION:

To meet the first challenge, an all-weather installation with minimal substrate preparation and protection requirements to prevent damage occurring from other trades assisted in keeping the project on schedule.

In order to meet the project design requirements, a robust, cost-effective, sustainable system was provided which included a package of standard and bespoke details to counter the challenging site conditions faced by the main contractor.

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The installed waterproofing system included VOLTEX®<sup>®</sup>, WATERSTOP-RX101® and VOLSEAL® 200. VOLTEX® is flexible and easily formed allowing installation to irregular substrates, does not require primers, adhesives or seamtapes, with self-seaming properties at membrane overlaps and self-sealing properties if the membrane experiences minor damage. VOLTEX® is robust and in most cases does not require protection courses or concrete overblinding, while the peel-adhesion properties of VOLTEX® enables it to form a continuous mechanical bond to cast concrete, thereby preventing lateral water migration at the actual point of ingress if the membrane becomes breached.

VOLTEX® is suitable for waterproofing vertical and horizontal foundation surfaces, such as below structural slabs, property-line wall construction and backfilled walls. It incorporates the high-swelling properties of sodium bentonite to form a monolithic, low permeable membrane which protects below ground structures from water ingress. VOLTEX® does not contain VOCs and can be installed on green concrete in most weather conditions.

WATERSTOP-RX101® is a hydrophilic waterstop containing sodium bentonite that is designed to expand upon contact with water and form a positive seal to stop water ingress through vertical and horizontal reinforced concrete construction joints and around pipe penetrations.

Its flexible composition allows for easy installation to irregular surfaces and around penetrations through the VOLTEX® waterproofing system.

### RESULT:

A comprehensive waterproofing system backed with BBA certification and complying to BS 8102:2009 (Type A Barrier Protection) was successfully installed in difficult weather conditions and the overall waterproofing package completed on schedule.