

Case Study

## Stylite EPS Geofill Keybridge Development

**Project:** Mixed Use Regeneration Zone

**Location:** Vauxhall, London

**Sector:** Civil Engineering

**System:** Stylite EPS100 & EPS300 Geofill

**Size:** 1100m<sup>3</sup> approx

### Stylite EPS Geofill offered the following key benefits to our client:

- ✓ Lightweight and easy to handle
- ✓ Simple delivery to restricted-access site
- ✓ No compaction required
- ✓ Saved time on installation
- ✓ High compressive strength

### Background

Keybridge is an important UK infrastructure project consisting of 5 mixed use blocks in London. The development occupies a privileged position at the gateway between Vauxhall, one of Europe's largest regeneration zones, and prime central London.

### Client Requirement

The client wanted to demolish the current buildings down to ground floor and construct new blocks to provide residential apartments, commercial units, primary school, swimming pool, gym, car parking and landscaping.

Reports from the consulting engineers identified several Design, Technical and Environmental constraints which the client had to manage appropriately. One constraint related to the existing basements which were to form the new footprint of buildings and were identified as requiring extensive and complex alteration.





## Design Solution

Following demolition of the existing buildings, the basements required steel transfer support beams to be installed at ground floor level and tied back to the ground floor slab from where the concrete superstructure frames could be built. The consequent voids in the basements required to be filled with some areas in the region of 2m high.

Stylite EPS100 & EPS300 Geofill was specified by the structural engineer due to it being an ultra lightweight structural fill which is easy to handle and get in to the restricted site. Manufactured from Expanded Polystyrene (EPS) and weighing just 1% the weight of concrete, it is significantly lighter than traditional fill materials. This made it the ideal choice as the large blocks could simply be manually lifted into position from the delivery vehicle and placed directly into the basements by two operatives without the need for large lifting and compaction machinery.

There were two densities of Geofill specified; EPS100 and EPS300 manufactured to BS EN 14933 Factory Made EPS Lightweight Fill for Civil Engineering Applications. The higher grade EPS300 was specified for locations where heavy water tanks were to be installed and for all other areas of the basements EPS100 was used.

## Result

EPS Geofill has successfully been installed in the basements using two sizes of blocks. The EPS100 measured 2400 x 1200 x 200mm to allow easy manoeuvrability and was placed in multiple layers to achieve the desired height. The EPS300 measured 2400 x 1200 x 400mm and provided the necessary compressive strength to withstand the loadings of the water tanks whilst also being quick to install.

V1\_240518



**“The EPS Geofill blocks were so light to handle, they made filling the basements a really quick and easy job. Even irregular sections were simple to fill as the blocks can be cut on-site to any shape using a hot wire cutter.”**

Project Manager, Specialist Subcontractor

