



Beautiful Basements Case Study

Large new build with sheet piled perimeter – Central Birmingham

Client

Waterproofing Designers

Mr. Naderkumar

Beautiful Basements

Background

Space is at a premium in central Birmingham, so plots of land have to be maximised to get as much value for money as possible.

This plot was constrained by large houses either side, restricting the land upon which a new house could be built. To be able to use all of the space available a basement was included, to add another storey to the house, and to be able to use the full width of the land, the neighbouring houses had to be supported throughout the build.

Construction Method

Before any excavation, 9m sheets of steel were driven into the ground around the entire perimeter of the basement, the tops of these 'sheet piles' were then linked with a continuous ring beam of reinforced concrete.

With the perimeter supported, the basement could be excavated to the full 6m depth and construction could begin.

There were three level changes across the basement, each one being cast individually. The reinforcing for the walls was welded to the front of the sheet piles and the walls shuttered temporarily with timber shutters. Concrete could then be poured to the underside of the top concrete ring beam, creating a full formed concrete shell.

The various changes in level were completed and the swimming pool created in the centre of the basement. Finally the large hollow core plank ground floor was lowered and cast in place to finish the underground structure.

Waterproofing Method

Type B – Integral Protection

All external walls and floor were cast with waterproof additives within the concrete. All joints were painted with a hydrophilic waterproofing slurry and had expanding water-stops installed.

Type C – Cavity Drainage Membrane System

A cavity drainage membrane was applied to all the external walls & floor and was then linked to two pumping stations via a series of perimeter and underground drainage channels. Four pumps and two alarms were installed within these stations. All internal walls were isolated with membranes to prevent the transfer of damp.

All waterproofing materials were supplied by Triton Systems Ltd.

Build Programme

9 months



**Basement Build
Conversion
Retro-fit
Waterproofing**

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