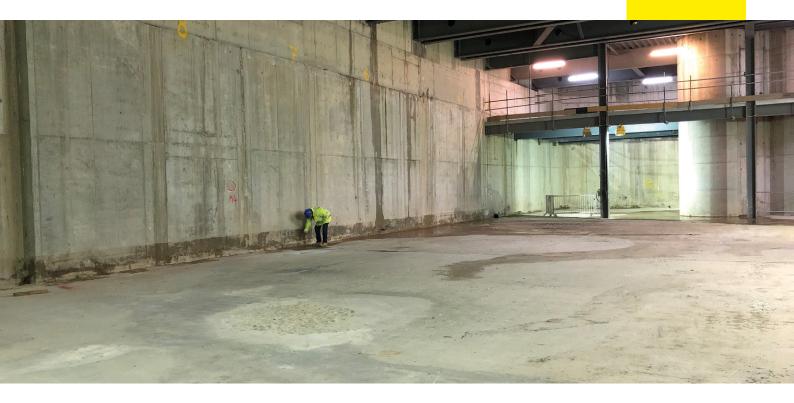
Dec 2020

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Waterproofing Design - a robust solution

Meeting Standard expectations

The British Standard regarding structural waterproofing is BS8102:2009, this standard encourages the use of a Waterproofing Design Specialist to a design team. NHBC Chapter 5.4 mirrors these guidelines. In cases of litigation or disputes both BS8102:2009 and NHBC Chapter 5.4 will be used as a benchmark.

Both standards place great emphasis on creating a robustly waterproofed environment in both domestic and commercial structures. The advantages are clear in terms of protecting the integrity of a structure. There are three categories of waterproofing systems available:

Type A (Barrier) Protection

Type A waterproofing relies on applying a waterproofing material to the internal or external walls and floor slab of a below ground structure. The structure itself is not considered to be integrally waterproof. The Type A protection needs to be 100% defect-free to offer perfect protection.

Type B (Structurally Integral) Protection

Type B waterproofing requires the structure to be built/constructed

as 'integrally water-resistant'. That the protection from water ingress is the structure itself. Like Type A waterproofing systems, the watertightness of Type B construction is heavily reliant on perfect installation to be entirely effective.

Type C (Drained) Protection

Type C waterproofing is known in the industry as a fool proof system. Unlike Types A and B, Type C systems do not inhibit water pressure/water ingress but controls water ingress in a strategic fashion.

Grades of Habitable environment

Table 2 of BS8102:2009 defines waterproofing requirements to achieve desired internal environments. These three Grades are defined as:

- Grade 1 Where some seepage and damp areas are tolerable such as car parks, non-electrical plant rooms or workshops.
- \cdot Grade 2 Where no water penetration is acceptable but damp areas are tolerable such as plant rooms or workshops which require a drier environment than Grade 1.
- Grade 3 No water penetration is acceptable such as living spaces, commercial areas, offices, restaurants and kitchens.



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It is important the environmental Grade is defined as early as possible, to ensure expectations are achieved from the outset.

In achieving a Grade 3 habitable space - a combination of two types of waterproofing (A & C, B & C) is usually adequate. In most cases the safest combination will always include a Type C system, whilst the choice of the other system is largely dictated by the type of structure/project requirements.

Another important consideration is whether the basement area will extend beyond the ground floor footprint, such as a buried deck or roof area. This will also require a waterproofing solution. In most cases, a combination of a waterproofing system along with a protective drainage layer will be required.

The steps to a good design solution

A good CSSW (or equally qualified) waterproofing designer will consider a bespoke approach, based on the project criteria.

In choosing the right approach, the design solution should be a process which includes multiple factors such as: customer requirements, standards, robustness, cost, resources, time, skill required, safety, desktop studies, analysis of geotechnical reports/tests and expectations of ground water all translated into a design solution.

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