

Section through watercourse



**Foundations:** Semi-natural lakes and ponds do not need rigid foundations. But fountains, pools and other built water features are particularly sensitive to subsoil settling, which can lead to cracks and leaks. What is usually needed here is foundations that can have a frost-free base and that are designed to meet the structural loading. The dimensions and thickness of the foundations are based on the weight, geometry, size and tolerance limit of the surface building.

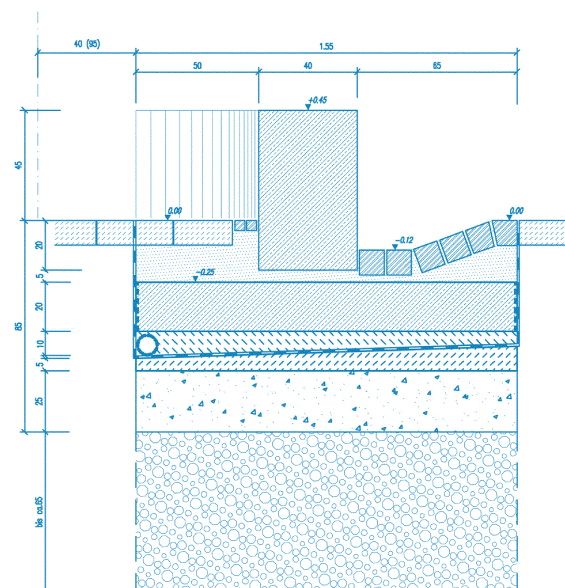
**Choice of materials:** Unlike other structures, built water-features have surfaces that are always wet. For this reason it is important to use materials that are structurally stable and also frostproof in colder regions. Another important factor is that chemical and physical reactions of materials can be different and more aggressive in contact with water than in air, and vary with the characteristics of the water (pH value, temperature etc.). Building materials must be chosen to withstand such processes in the long term. Water quality must also be taken into account when choosing materials, as substances dissolved out of mortar or concrete can have a lasting deleterious effect on water chemistry.

In the case of earth and mineral substrates, chemical stability and the purity of the material are important factors. Organic components should be avoided wherever possible, as they raise nutrient levels and thus promote the growth of algae.

The colour of these materials is a key influence on the visual impact of the water; here dark shades are generally better for reflections on the surface of the water whereas-

lighter shades are suitable for showing reflections on the bottom. However, it is not so important to design the surface of these coverings elaborately, as the effect they make will be considerably reduced by the natural surface growth that occurs in any water. This growth can only be avoided by mechanical cleaning or the use of chemicals.

Water features in which people are intended to walk should have non-slip surfaces to minimize the risk of falling. Sharp-edged installations should also be avoided as they increase the risk of injury.



Section through concrete element run and watercourse