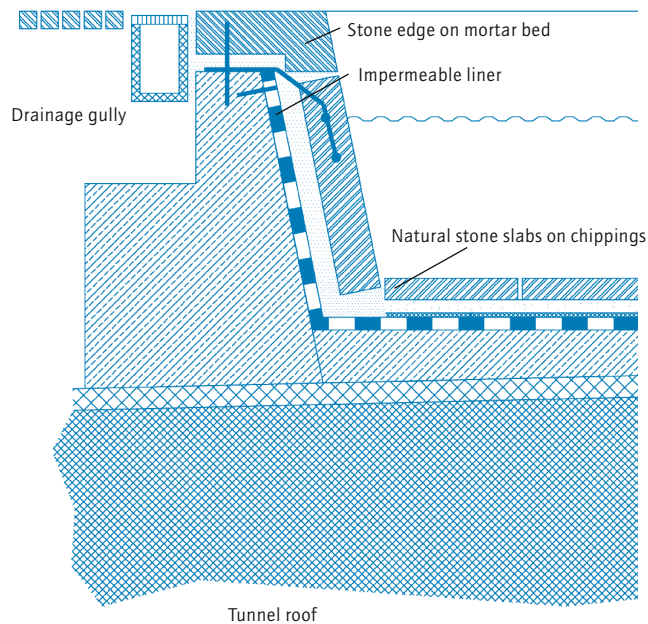
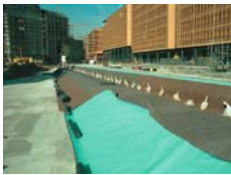
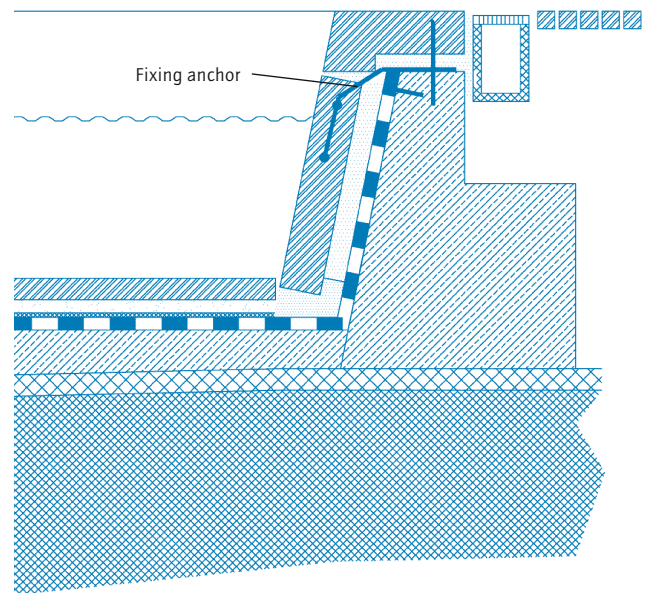


## From the idea to the finished object



Tunnel roof



Section through piazza ditch to tunnel roof

### Construction technology

Technical aspects of construction are of crucial importance for interesting water features with high design values. Interest is focused on the following four areas: sealing, foundations, materials and connections.

**Sealing:** Natural seals like clay can rarely be used in built water features. There are many sealing processes that are quite close to nature, but a certain diffusion loss has to be anticipated with all of them. Such processes are suitable only when continuous supply and constant water level are guaranteed.

When choosing a sealant the necessities arising from the specific situation have to be set off against the technical and financial input involved. The following criteria should be considered: the qualities of the building land, the geometry and surface of the feature, the desired water quality, the planned building phases and the cost.

Water features that are supplied and drained naturally make fewer demands in terms of sealing than those that rely on an artificial supply of drinking water or rainwater. However, minimal water loss should be a prime consideration even for small water features, for ecological and financial reasons.

Plastic sheeting is very adaptable as a sealing material, and is well suited to features with complex contours and very diverse geometry. But natural forms can be constructed with it as well. Many water features have to take differing settling rates into account. Flexible sheeting is suitable here, as it is

relatively easy to install on the spot, almost regardless of the weather. A whole variety of materials are available; of course their environmental friendliness must be given higher priority than technical suitability and economic viability.

If the substructure is something stable like concrete, for instance, a non-shrink grouting compound can also be used as a seal. It bonds firmly with the base and is simple to apply even if the geometry is complex. Coverings like natural stone slabs can be fitted directly to the rigid seal. This is also appropriate for fixed materials like concrete and steel, but does not work with flexible connections or expansion joints; other sealing processes have to be used here.

Water features in the shape of simple and rigid structures can be built in non-permeable concrete. However, these are appropriate only when the subsoil is stable, certain dimensions are not exceeded and walls of an adequate thickness can be built. The statics of water-proof concrete make it particularly suitable as a base for large prefabricated sections.