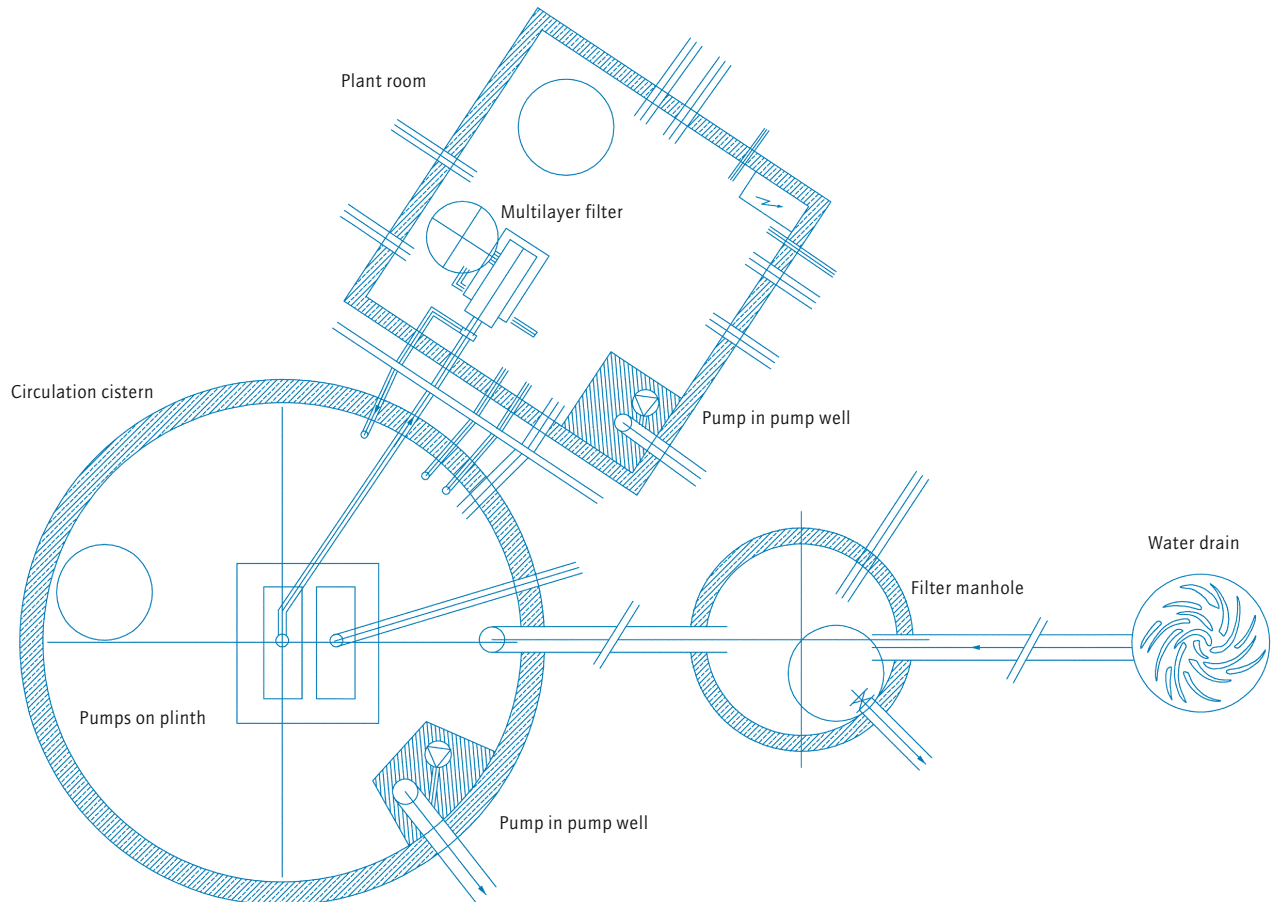


From the idea to the finished object

General plan for
plant room and
circulation cistern



Construction elements



Water features cannot be built without technical equipment like reservoirs, pumps, filters and control devices. These are needed to purify the water, to store it and to control its circulation.

Storage and circulation cisterns: All water features with a circulating water system need a cistern or storage reservoir to ensure that there is always enough water available for them to run on. When small quantities of water are involved it is usually sufficient to install a cistern near the feature where the water can fall to by gravity. The cistern or reservoir has to be big enough for all the water to be stored after the feature has been switched off. The circulating volume consists of the amount of water circulating in all the pipes, channels and pools, and has to be specifically fixed for each feature.

It is not unusual for mistakes to be made when calculating for large volumes of water. The volume flowing out of a feature must be the same as the volume flowing in. The smaller and narrower the outlet, the more the water will back up. This variation in water level has thus to be assessed as a volume and the water level has to be able to rise accordingly.

Water from the cistern is either brought by suction to the pumps in the plant room or pumped directly back into the circulation system by a submerged pump in the cistern. When features have a low-lying body of water like a pool or pond, these can be used as a reservoir and thus a separate cistern is not needed. Additional water is then fed directly into the body

of water. It is important that every storage reservoir or cistern is provided with an overflow as well as a drainage outlet so that it can be emptied and cleaned at regular intervals.

Pumps: It is seldom that a water feature can be set to run on a natural slope. Normally the water has to be circulated artificially with pumps. As a rule these are modern rotary pumps that are set up in either a wet or a dry state. Dirty-water pumps are recommended if high dirt levels are anticipated.

Our experience is that it makes sense to run small fountains and watercourses with a circulation volume of up to 300 l/min with submerged pumps. But not all makes are entirely suitable for this. Submerged pumps are usually more reasonably priced than dry-installed pumps, as they do not need their own control room and can be placed directly in the reservoir. They are more expensive to maintain than dry-installed pumps. Submerged pumps must always be set up so that they are sufficiently above the bottom of the feature to avoid clogging with mud.

Dry-installed pumps are recommended when several pumps are required or they have to be set up in sequence. They are more accessible and thus easier to maintain, but they need adequate installation space. The best place is in a building near to the water feature or a readily accessible service shaft. Here it is essential to build in a bottom outlet to the channel and also ventilation where necessary. Dry-installed pumps do not run silently even when fitted with vibration dampers; for this reason they should be sited so that sound