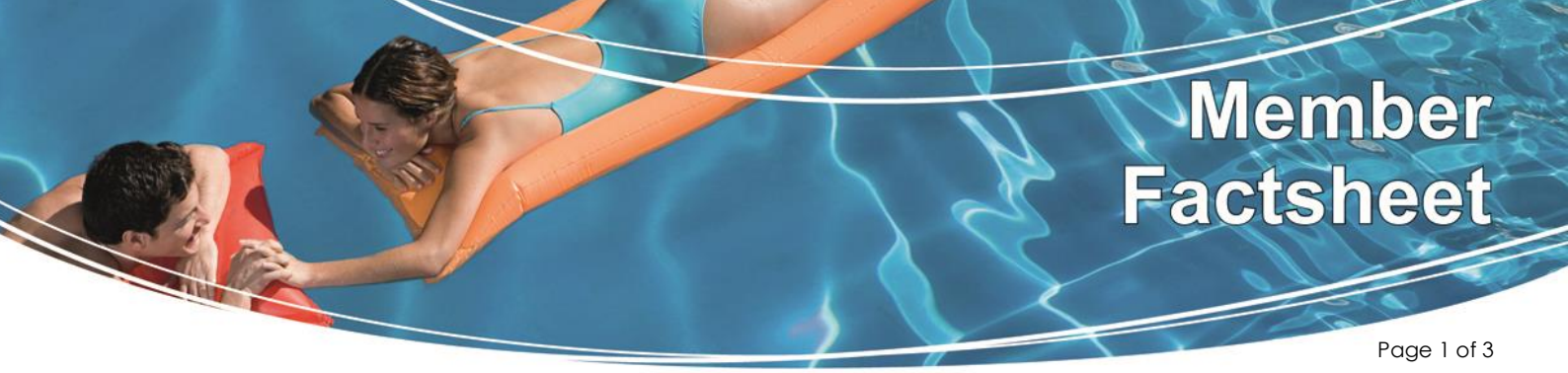


Plant Rooms

No matter what the finished pool looks like, if the equipment design and installation is wrong or installed in such a way as to make the maintenance difficult, then its appearance will deteriorate. Whether a plant room is for a domestic or commercial pool, the following should be considered:

Location

The plant room should ideally be positioned at one end of the pool, preferably at the deep end to ensure both hydraulic efficiency of the pool water circulation system and to minimise the length of the suction pipework. Location will have an impact on the size of the flow and return pipework as, depending on whether the plant room is below or above the pool water, this will affect the net pressure suction head (NPSH) (or less formally) the available pressure at the pump suction inlet, or head resistance. If the plant room is below or above the pool water, the head resistance will vary, pumping sumps for overflow drainage and forced draft ventilation may be necessary. If above vertical, lifts should not exceed the pump manufacturer's recommendations.

Noise from the plant room, both audible and vibratory, may impinge on neighbouring properties and must be minimised where possible.

Ideally, there should be easy access from the poolside into the plant room for periodic monitoring of all the plant and equipment. However, in the commercial scenario, this must be under strict management control so that customers cannot gain access to this area.

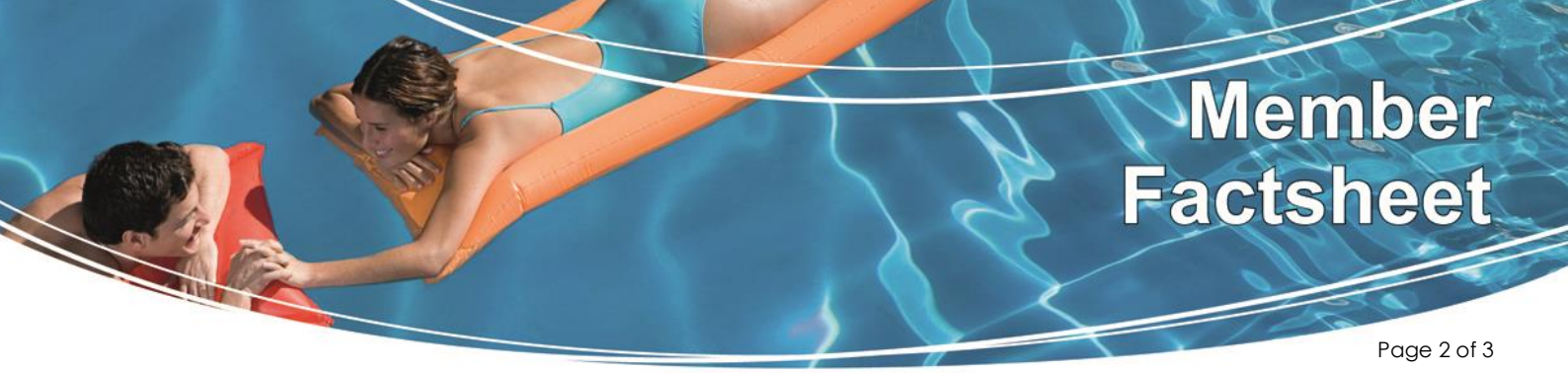
Size

The size of the plant room is critical. It should not only be large enough for the plant and equipment, but also be big enough to meet future servicing, maintenance, and replacement requirements. Clear working space around all of the equipment is an absolute necessity. Unless the access is sufficient for the operator to easily move around the equipment as required, there will be problems when things go wrong with equipment such as filters and air handling units. All too often the plant room is an afterthought and this is where problems arise.

The main doors to the plant room should be designed and sized in such a way that the future replacement of filters can be carried out as easily as possible. The height of the plant room must also be sufficient above the filters to allow you to easily change the filter media.

Planning

Clearly common sense, as well as maintenance and basic health and safety needs, demand that all plant rooms should be planned in advance. It is important not only to check the absolute size of the room but also to



make sure that installation work and service routes and co-ordination are not impeded. You will need to determine sensible positions for: suction and return pipes, as well as backwash drains.

In larger installations, the following may also be required: floor drains and equipment drains, ventilation ducts, equipment incoming service terminations, access space, access doors to the pool room, access doors to the external areas, external walls for ventilation and boiler flues, and storage areas for spares, such as air filters, fan belts, light bulbs, chemical injectors, test equipment. You will also need to provide a location for water tests and records storage that is easy to access and work in.

The ventilation to the commercial plant room must provide at least four air changes per hour, ideally consisting of both low level and high level ventilation. If natural ventilation cannot be achieved, then a mechanical ventilation system should be installed. This can apply to domestic as well as commercial plant rooms.

Noise from the plant room, both audible and vibratory, may impinge on neighbouring properties and must be avoided where possible; common sense again dictates that siting the plant room as far away from neighbouring properties as possible is desirable. Having stated that, you should also avoid having the plant room adjacent to internal areas that are sensitive to noise, such as cinemas, bedrooms, and consulting rooms.

Still on the subject of noise, the maximum acceptable sound pressure levels heard by neighbours will vary between local authorities as it will normally depend on existing background levels. In general terms, in built-up areas, it is often the case that any noise generated by new equipment should be at least 10 decibels less than the current noise levels. In more rural areas, the sound pressure generated by new equipment at the boundary with neighbouring properties, should not exceed the current level. In real terms, that may mean it is possible to have a three decibel rise at the boundary when the existing level and the new plant are combined. This would need to be agreed with the relevant local authority, however, as part of the planning process.

Plant rooms should have a light level sufficient for the maintenance and operation not only in the day time, but also at night, when the backwashing of the filters should be taking place.

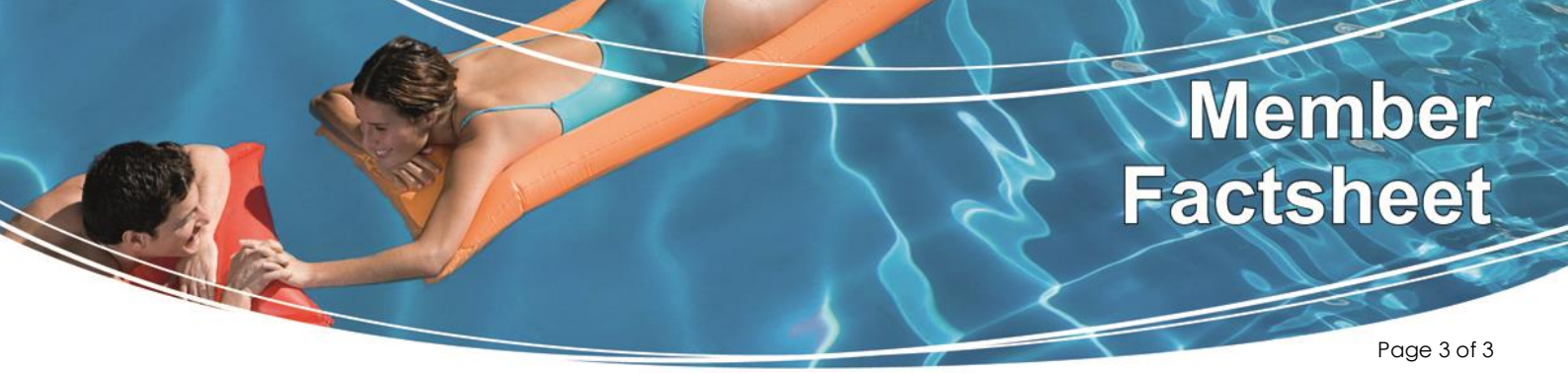
Installation

All equipment must be installed in accordance with local and national laws and regulations, manufacturer's instructions, SPATA standards (where applicable), and any other appropriate recommendations, such as health and safety requirements.

The electrical installation should be in accordance with BS 7671 "Requirements for Electrical installations". SPATA Standards require members to install IP55 rated control equipment, socket outlets, lights etc. due to the risk of spray.

Any water supply to the plant room must be in accordance with Water Supply (Water Fittings) Regulations 1999 including the connection of automatic topping up devices.

Gas installations must be in accordance with Gas Safety (Installation and Use) Regulations 1998.



Having had the equipment installed, it is important for you to know what equipment you have in your plant room and a site specific manual should be available and all valves and controls should be clearly, professionally labelled. The use of pens should therefore be avoided wherever possible.

The commercial manual should include all makes and model numbers and where replacement parts and equipment may be obtained. An up-to-date valve chart and system diagrammatic should be wall-mounted behind a protective clear plastic screen and the valve numbering should clearly identify all of the plant and valves. This will enable operatives to safely undertake maintenance and repair duties, and will also assist in the training of new staff. All the necessary health and safety signage should, of course, be installed at the same time.

Chemical storage

In the commercial installation, the storage of chemicals should be separated from the rest of the plant room itself and there should be easy access for the delivery of the chemicals required. The chemicals should be identified, and their name and type should be clearly visible. All chemicals within the storage area should be separated from each other and be placed in bundled areas if necessary. These areas can benefit from being lined with acid resistant render and there should be personal protective equipment (PPE) immediately available. PPE should include all recommended handling equipment such as goggles, gloves, aprons, and overshoes, to ensure operatives are fully protected. Ideally, an emergency drench shower and a sink with running mains cold water should be provided along with an eyewash bath. It goes without saying that this safety equipment should ideally be stored adjacent to the sink and that there should be adequate drainage from this location.

Chemical dosing equipment, and particularly day tanks, should be positioned in such a way that the different chemicals being used are separated and as far apart from each other as the plant room space allows, with all the dosing lines fully protected along their whole length. High level dosing lines should be avoided if at all possible. The chemical store, like the rest of the plant room, should have a minimum of four air changes per hour, ideally situated at high and low level.

Domestic clients should be informed of the nature of the chemicals they are to use and the installation modelled on the notes above.

Though not exhaustive, these recommendations should help you focus on some of the key areas to ensure that your plant room is fit for purpose and not an area to be dreaded by your staff and contractors alike!

SPATA reminds its Members that no responsibility can be taken by SPATA, its employees, or agents in respect of any errors or omissions from this factsheet.

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