



The Swim School Pool

Size	1
Filtration	2
Chemicals	3
Heating	3
Installation.	3
Building Costs	4
Pool Construction Materials	4
Pool Installation Cost budget.	4
Pool Running Costs	4
The next steps to opening your swim school.	5

The trend for small swim school pools in the UK is growing. Largely driven by the lack of publicly funded facilities and cuts by councils. This has driven an explosive niche for private teaching pools.

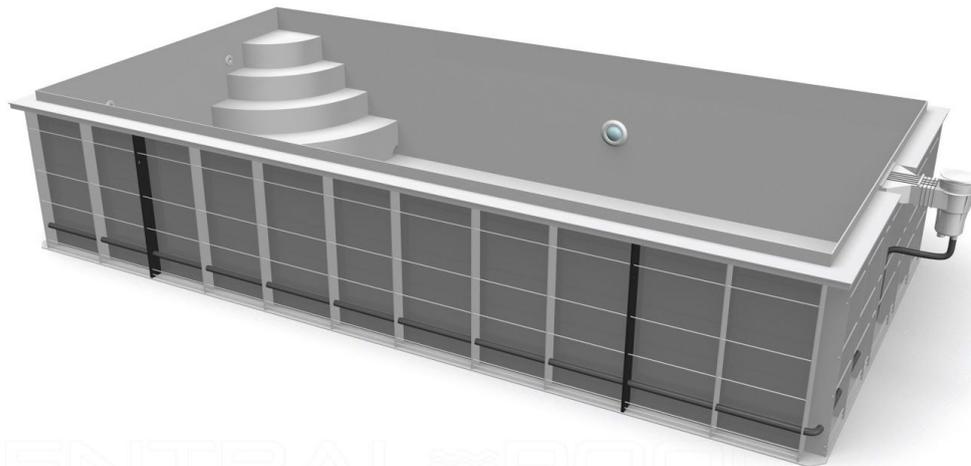
Unfortunately the laws and economics around these pools is massively misunderstood with pools being shut down every week for flouting HSE law by local environmental health officers.

Waterstream has risen to these need in developing a dedicated school pool designed specifically for operation by small teaching establishments that conforms with all safety laws and keeps the running costs to a minimum so you are able to operate an economic and profitable business.

We look at the various aspects of a swim school pool and how a Waterstream Pools working with Zeiss Pools DE rises to the challenges thrown by a business swim school.



Size



This is the first consideration. Most business that come to us are asking for a 25m pool. As this is might be what they are used to swimming in at their local council pool. What most don't realise is that most of these pools never make any money and are in fact run at a subsidised loss by the council. Furthermore the costs of building such a pool run into the millions. Quite simply the economics don't add up.

The HSE law around size revolves around area per swimmer. At depths below 1.5m this is 2.5m² per bather. Typically bathers would be considered those over a year old. i.e not babies.

Based on our research the optimum pool size weighing up, running costs, build costs, and optimal class size is around 15 bathers.

The width of the pool is important from the point of view of lane width. The average arm span is 1.7m when swimming breaststroke. A two lane pool would give a width with some tolerance of 3.7m.

To work out the optimum length we take the number of bathers (15) multiplied by the area per bather (2.5) to get to total required area (37.5m²). Then to get the optimum length we divide this by our optimum width 3.7m to get 10.13m optimum length.

So based on this research we get an optimal pool size of 3.7m wide x 10.13m long x 1.3m deep.

With regards to optimal depth the shallower the better. Why? The deeper the pool the greater the water volume. The greater the water volume the greater the filtration and heating costs. All reducing profit margin. This however has to be balanced with the practicalities of flexible

teaching. Thus the optimal depth of a teaching pool is 1.3m. Adults are able to hold their children or babies in their arms at a comfortable height yet you are still able to swim comfortably as an adult without kicking your feet on the floor. Furthermore, pools at this depth do not require constant lifeguard supervision allowing private swimming when a teacher is not required.

Filtration

When it comes to filtration, this is the area that most swim schools accidentally flout the laws when it comes to Health and safety, a mistake that could not only shut them down but could land them with a lawsuit against them should they infect one of their pupils with a water born infection.

Why is this? Simply put, most swim schools are using domestically sized filtration. In that the filtration equipment is sized for an average sized family to use occasionally.

How is this equipment sized? Quite simply put, it's all about turnover. i.e how long does it take to run all of the water in the pool through the filtration equipment. Domestic pools are typically sized to turnover in 6 hours. In which time many classes could have been through the pool without the water being cleaned. For gyms and health clubs and hotels this rate should be under 3 hours.



Here's the maths. Basically we work out the pool volume in m³. So we take width (3.7m) x length (10.15m) by depth (1.3m) to get the volume of 48.92m³ or 48920 Litres. We then divide this by the number of hours (3h) to get the filtration rate of 16.37 m³/h. Typically we would round this up to 20m³/h to ensure the equipment isn't running flat out all the time.

We have designed a filtration system to output exactly this output with a dedicated redundant system. Each pushing 10m³ per hour. Why a split system. Well, this allows for servicing and maintenance to keep your swim school running and profitable year round.

All of our pipework is sized to ensure minimal water velocities to reduce the risk of entrapment under water.

Chemicals

Equally important as filtration, why do we need them? To put it simply, filtration takes out everything we can see, chemicals take out everything we can't. These bugs and nasties unfortunately are introduced to our pools by our customers, off their bodies. The chemical levels are typically maintained to kill any bugs within 1 second. I.e it doesn't have enough time to float from one person to another.

To manage this we typically use chlorine. Some consider this bad for people's health. What most don't realise is we drink it every day, as it comes out of our taps at a rate of about 0.5 parts per million. In a commercial pool this is a little higher at around 1ppm. To dose, you have two options. Either manually or automatically. Cost of installation of an automatic system is obviously higher. However it can often save money in the long run due to the reduced maintenance time and exact chemical consumption. These systems can typically detect in water accidents and dose to compensate! The system will also manage PH



Heating

One of the largest costs of running a pool and is vital to get right. There are two elements to heating. Heating of the water and heating of the air in the room. The cheapest option, if it's available is always mains gas when running the pool year round. For those looking to invest a little more, a hybrid system using a heat pump will pay dividends by switching between an air source heat pump when the air temperature outside is warm and gas when its not. The best way is to install a simple domestic gas boiler and couple this to a pool heater. We recommend a Worcester bosch combi boiler.

The air in the room also needs to be heated. This has to be done with an air handling system. The most cost effective of these is a heat recovery system that uses our naturally dry air in the UK to dilute the humidity in the room with fresh air. This is cost effectively delivered through an inflatable ceiling duct. Glass in the room should be kept to a minimum as this increases heat loss and likely to steam up in the winter without specialist ducting.



Installation.

In or out of ground? Where it is an option in the ground is always cheaper to install than out of ground. While this sounds counterintuitive, when installed in the ground, the pressure of the water is contained by the ground itself. When out of the ground you have to design a structural concrete tank to retain the water. While this is possible to does increase the costs.

Building Costs

If you don't have an existing building and are thinking of putting up a structure you should be budgeting between £500 and £1000 per m². You need to think about space for the pool 37m², space around the outside, the filtration equipment (7m²), changing rooms, showers and toilets for your pupils. We recommend getting a good architect to plan this out, which we can assist them with if required. Realistically a minimum building size would be 140m² or 1500ft²



Pool Construction Materials

Pools are typically made of 3 different materials.

Concrete and tiles. This is the most expensive and least economical to run due to the volume of grout lines for bacteria to grow and the inefficiencies of heating a concrete pool.

Liner pools are the cheapest to build but are unsuitable in a commercial environment as they are susceptible to being punctured.

One piece pools are the quickest to build and offer a puncture proof shell. They are also economical to run on both chemicals and heating. Waterstream solely builds one piece pools due to their benefits.

Pool Installation Cost budget. (exc vat)

Pool Shell	£25000
Pool Shell install (by others below ground)	£10000
Filtration	£4000
Air Handling and Water Heating	£12000
Flex Air Ducting	£2000
Heat Pump (optional)	£5000
Gas Boiler (est by others)	£3500
Pool Cover (optional recommended)	£1300
Pool insulation (optional)	£3000
Auto Dosing (optional)	£3599

Estimated Pool Running Costs

Filtration Pumps	£5.76 per day
Chemical	£2.00 per day
Water Heating	£10.00 Per day
Air Heating	£5.00 Per day
Other costs, Rent, Rates, Staffing, Advertising etc.	Depending on area
Total Daily Costs	

Running costs assumptions

- Pool open for 8 hrs a day
- Optional cover installed for remaining time
- Pool shell has optional insulation
- Building with no glass
- Building with a volume of 250m³
- Building insulated to modern building standards
- Chemicals dosed by optional auto dosing.
- All heating by mains natural gas all year round.

The next steps to opening your swim school

Once you have sourced a suitable location and have sourced funding to develop your swim school give one of our consultants a call and we can arrange for a feasibility study of your potential facility. This costs just £229 and you will be furnished with a full report and costings to start your swim school.

Please email sales@waterstream.co.uk

