Appendix III: Swimming Pools

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Swimming Pools

Should a Pool be Provided?

Whether or not to provide a pool at a school is a complex decision because:

- pool use is typically less than the other teaching spaces, and
- swimming pools are the most expensive facilities to construct, operate and maintain.

The demand for pool space from all schools in the area should be taken into account, as it may be sensible for a cluster of schools to share rather than each school having its own. Alternatively, it may make more sense to use an existing community swimming pool if there is a suitable one nearby, and an assessment of the availability and suitability of all local swimming pools is therefore recommended.

The decision to provide a new pool on the school site or make use of one nearby should be taken after a thorough operational and economic appraisal of the alternative approaches. Another consideration may be the opportunity for specialisation in the size and type of pools provided at different schools within the same local authority area. Where school pools are to be provided, they should in the main be located at secondary schools with local primary schools and the local community having access to them.

Use

A swimming pool can accommodate some or all of the activities listed below. Many of these may be taught at school, but the principal school activities will be learning to swim and the development of swimming, diving and life-saving techniques. The community activities to be provided should be based on a study of the needs of the community, and the management of the pool must successfully integrate the programming of school, club and community use.

The range of activities that can be provided in a pool are:

- Teaching of Swimming and Basic Diving
- Life Saving and Associated Skills
- Recreational Swimming
- Fitness Swimming
- Training for Competition
- Synchronised Swimming
- Water Polo
- Sub Aqua
- Canoeing skills
- Aqua aerobics
- Hydrotherapy
- Diving

In addition to this the pool may be used for events such as school swimming galas. The layout and dimensions of the tank, pool hall and ancillary facilities must therefore take account of a number of different user requirements.

Main Pool - Design Considerations

Swimming pools will cost much more to operate over a normal life cycle of around 25 years than their initial capital cost. The larger the pool, the greater the operating costs, therefore a school pool should be no larger than is required to meet the school's needs unless there is some strategic or community need for a larger, more flexible, facility.

Many joint use school/community pools will be 25 metres long and either 5 or 6 lanes wide (10.5 to 13 metres) however for smaller secondary schools in a rural setting a 20 metres long by 4 lanes wide (8.5 metres) will often be sufficient.

Casual use by the community may require one or two lanes for fitness swimming (ideally two to give a fast and a slow lane) and the remaining width used for more leisurely swimming or in some cases for swimming lessons either during or outwith school hours.

Pool Profile

Creating a suitable pool depth and profile requires careful consideration. The pool dimensions and profiles must allow the selected range of activities to be undertaken safely and take into account the varying abilities of all the user groups.

It is perhaps easier to decide on the depth of the deep end of a pool than the shallow, but a number of requirements must be considered. A minimum depth of 1.50 metres is recommended

for shallow diving during recreational sessions, and 1.80 metres for instruction. For practising life-saving techniques and sub-aqua a minimum depth of 1.80 metres is required. For synchronised swimming up to 3.0 metres may be required, and 3.20 metres for the instruction of all diving other than shallow dives.

The depth at the shallow end presents several problems. A depth of 0.9 - 1m is required in which to teach children to swim. This depth should extend for at least four to five metres before the pool starts to deepen. However if the pool is used for competition a minimum depth of 1.20 metres is preferred to allow the safe execution of tumble turns and for racing dives (relay races at galas or competitions may require diving from both ends of the pool) from the pool edge or starting platform that can be up to 0.75m above water level. Although tumble turns can be undertaken at depths down to 0.90 metres, this depth could present problems for adults and larger children.

Racing starts can in fact be made into water to depths as low as 0.9m from the pool edge or starting platforms no higher than 0.5m above water level. These, however, should only be undertaken by swimmers with suitable training and experience. Instructors and coaches must therefore satisfy themselves that each individual swimmer is capable of this before starting any such event. For further guidance, refer to 'Diving in Swimming Pools and Open Water Areas'.

The question of the depth of the shallow end therefore creates a potential conflict between providing safe water for the teaching of school pupils and non-swimmers and providing for practice and competition for clubs and schools.

Further advice on resolving these issues for a particular pool may be sought from **sport**scotland, but the ideal solution is the provision of a movable floor at the deep end of the pool while the shallow end will be at a depth between 0.9m - 1.2m depending on the specific requirements of school, club and community users.

Moveable Floors

Such a floor can be moved up and down to create the depths of water required for the various activities. The moveable floor allows the deep end to become the shallow end when required, perhaps allowing the permanent shallow end to be deep enough to accommodate club and competition tumble turns and racing dives. The floor can be raised right up to the level of the pool deck which not only provides a potential extra dry space for the teaching of resuscitation techniques but also allows people with disabilities to gain easier access to the pool than that provided by poolside hoists.

The movable floor should incorporate either a flap or a movable bulkhead. A bulkhead configuration allows the pool to be split into two distinct spaces thereby allowing two activities, for example lane swimming and sub-aqua, to take place concurrently.

Water Depth and Signage

For safety reasons the shallow end should be near the entrances to the changing rooms. This is particularly relevant for pools with movable floors as water that was say 600 mm deep on one visit could be over 3 metres deep on the next visit. The placing of the moveable floor at the end furthest from the changing area gives instructors more time to issue a warning or take action before a child enters deep water. The design and prominence of the water depth display units are also very important to the safe running of the pool.

Pool Ends

Incorporating fixed raised pool ends helps swimmers, especially those with visual impairment, to identify the end of the pool and can be useful for some club competition and training. However, if the pool is to be used mainly for teaching and community purposes it is better, for safety reasons, not to include raised ends. Removable starting platforms can be introduced when the pool is used for competition or the practise of racing starts and other diving.

The introduction of a movable floor and bulkhead eliminates the need for a separate teaching pool and should eliminate the need for a separate toddlers pool, helping to reduce energy and staffing costs.

Teaching Pool

A separate teaching pool should not be required if a moveable floor is installed. However, if one is provided it should be located near the shallow end of the main pool to allow free movement between the two water spaces. The pool should vary in depth from 600 mm to 900 mm, be between 10.5 and 13 metres long and around 7.5 metres wide. The gradient of the pool floor should ideally be 1:19 but should not exceed 1:15.

Pool Surrounds

The surrounds along the length of the pool should be at least 2 metres wide, although if the pool is to hold galas or inter-school competitions then at least one of these surrounds should be increased by around one metre to allow sufficient space for around 50 permanent seats for competitors, spectators and officials.

The surrounds at the end of the pool should be at least 3 metres wide to give sufficient space for swimmers, coaches and judges during races (especially relays). This also creates a safe space in which parents and toddlers can wait while the pool floor is moved. If the pool cover is not wall mounted then the width of one of the end surrounds should be increased accordingly to allow storage of the cover when the pool is in use.

A handrail should be fixed along at least one of the long walls to assist those with mobility problems or visual impairment. There should ideally be no changes in level of the pool surround and a handrail should be fitted at any that are unavoidable.

Pool Hall - General Considerations

The size and number of pools and their surrounds will generally determine the floor area of the pool hall. Treating the air costs more than heating the water and the greater the volume of the hall the higher the running costs. As with the other activity areas, a high standard of specification and finishes is required.

Any desire for significant levels of spectator seating has to be balanced against the increase in the volume and therefore running costs of the pool hall. Increasing the pool surround by a further metre would provide for around 50 extra spectators without a great increase in the volume of the hall. Any spectator seating at a school pool in excess of that number is likely to be used very infrequently and the extra running costs incurred would not normally be justified.

Acoustic Considerations

Swimming pools can be noisy facilities. The design should recognise this and materials chosen for their acoustic qualities should be incorporated into the design (for example perforated acoustic linings to the underside of the roof). A maximum reverberation time of 2 seconds at 500hz with a noise rating of 50 is recommended.

Lighting

The admission of some natural daylight into the pool hall is desirable, but great care must be taken to ensure this does not cause excess solar gain or heat loss or introduce problems of glare and reflection. The latter can be dangerous as it can effectively turn the surface of the pool into a mirror. This can affect the views lifeguards have of the full water area and depth and it can and has led to serious accidents. Large roof overhangs or glazing that diffuses light can help reduce this threat.

Any clear glazing below 2.5 metres should be capable of being covered so that the pool hall can be screened off from public view when privacy is required. Horizontal blinds within the

If not treated with care, the introduction of natural light can cause problems of reflection and glare.

thickness of the glazing unit are the best way to achieve this. Simply minimising areas of low level glazing is probably the best way of ensuring privacy, but this will mitigate against providing views into the pool from social and reception areas.

Pool and Pool Hall Environment

A water temperature in the main pool of 27ºC to 28ºC is adequate for club swimming, recreational swimming and learning to swim. Some community activities, toddlers, and disabled swimmers may require slightly higher temperatures of between 29ºC to 30ºC, as will a separate teaching and/or toddlers pool.

Air temperatures are normally set 1ºC higher than the water temperature with relative humidity levels of 50-70%. Because of the different air and water temperatures the environmental controls will require careful balancing to achieve the optimum air temperature, air supply and extract rates and relative humidity along the borders of the various pool environments.

Uplighters which reflect light off the ceiling are one of the best methods of lighting the pool hall. Artificial lights should not be placed over the pool area.

Changing Accommodation

School use of the pool may be concurrent with community use, and the design and layout of the changing accommodation must allow for this. It is important to provide privacy for all users groups while still providing a comfortable changing environment.

One approach is a village changing layout that can be used simultaneously by different user groups. When the changing is being used solely by either a school or the community all of the cubicles can be accessed. When joint use is required part of the village changing can be sectioned off for school use by the introduction of secure gates or barriers across the corridors between the cubicles. The size of the changing village allocated for school use should be large enough to cope with the various class sizes. Pupils may either use lockers or leave their clothes in the individual cubicles if the area can be secured.

A dedicated changing room incorporating a shower, toilet and possibly a bidet should always be provided for swimmers with disabilities. Ideally this room should be accessed from the main circulation space of the building and give access directly onto the pool surround.

In addition to the village changing a team changing room of around 20 square metres should be provided. This room can be used in a variety of ways:

- team/club changing;
- school changing (especially primary school as small children may need assistance with dressing);
- large families;
- school galas/inter-schools competitions.

Incorporating a shower into one corner of the team changing room means the space can also be used as an additional changing room for swimmers with disabilities. During galas, it can also be used as a pre race reporting area for competitors before being escorted to their starting lanes.

Lockers in changing villages should be spread out between the cubicles in open areas so that natural surveillance is easy. Consideration should be given as to the most appropriate method of operating the lockers (coin operated lockers, for example, may not be suitable for young children). Lockers capable of storing artificial limbs should also be provided in the accessible changing room and possibly the club changing room. Grooming facilities should be well lit with fixtures at a height suitable for both children and adults. Floors throughout the facility should be non-slip, and all surfaces should be low-maintenance and be easily cleaned.

Toilets

If there is concurrent school and community use, separate toilets for each should be provided as close to the point of entry to the pool as possible.

Showers

Showers should be located at the point of entry to the pool hall and all swimmers encouraged to have a pre-swim shower before entering the pool. If there is concurrent school and community use, separate shower areas will be required for both school and community users. Provision should be on the basis of 1 shower for every 4 pupils and 1 for every 4 to 6 public changing spaces. Showerheads should be provided at different heights to suit children and adults of different stature.

In addition to the poolside showers it is a good idea to provide an additional 2 showers set within cubicles. These can be used by staff and those who wish a full body shower after swimming.

Ancillary Accommodation

A first aid room should be provided. Ideally this room should have emergency access directly to the outside as well as to the pool hall.

A Pool Equipment Store directly accessible from the poolside must be provided. The store should have a floor area equal to at least 10% of the pool water area(s).

A separate cleaners' store should be provided. Hose down points should also be provided within the changing areas.

A separate, well-ventilated chemical store with access to the outside should be provided next to the plant room.

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