

Design Guidance

Design Guidance for 25-metre swimming pools.

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General specifications

Pool Specifications	25m x 4-lane pool	25m x 6-lane pool	25m x 8-lane pool	25m x 10-lane pool
Length – maximum	25.030m	25.030m	25.030m	25.030m
Length - minimum	25.000m	25.000m	25.000m	25.000m
Minimum Width	8.4m	12.4m	16.4m	20.4m
Maximum width	10.4m	15.4m	20.4m	25.4m
Minimum Depth – shallow end	0.9m	1m	1m	1m
Minimum depth – deep end	1.8m	1.8m	1.8m	2m
Minimum lane width	2m	2m	2m	2m
Maximum Lane width	2.5m	2.5m	2.5m	2.5m
LUX levels community use	300LUX	300LUX	300LUX	300LUX
LUX levels competition		500LUX	500LUX	500-1000LUX
Pool deck minimum width - sides	1.5m	2m	3m	4m
Pool deck minimum width – turn end	2m	2m	3m	4m
Pool deck minimum width – start end	2m	3m	4m	6m
Water circulation	Deck Level	Deck Level with 1 raised end at start end	Deck Level with 2 raised ends	Deck Level with 2 raised ends
Spectator seating	25	150	250	
Water temperature	28/29°C	28/29°C	28/29°C	27/28°C
Turnover period	2½ hours	3 hours	3 hours	3 hours
Swimming Pool Water Purification	Ultra-Violet	Ultra-Violet	Ultra-Violet	Ultra-Violet
Swimming Pool Water Disinfection	Chlorine	Chlorine	Chlorine	Chlorine
Pool Hall Humidity	50-70%	50-70%	50-70%	50-70%

1. Proposal for community/educational 25-metres by 4-lanes community swimming pool

1.0 Design

1.1 General

The design should provide a facility which

- Primarily meets the needs of the School and the local swimming club for training purposes. It may be made available for out of school activities and to other organisations at times when not required by either the school or the swimming club. If general public bathing is to take place it will be necessary to enhance the changing area.
- Is constructed to a high standard of materials, plant and equipment which meets appropriate manufacturing and operating standards.
- Is sustainable, being responsive to environmental issues in terms of the use of energy and non-sustainable resources and the control of pollution.
- Is cost efficient to allow the facility to be managed with sustainable operating costs.

1.2 Energy Efficiency

The 2002 amendments to the Building Regulations refer to “DFEE Guidelines for Environmental Design in Schools’ Building Bulletin 87” as adequate compliance. The design should be aiming to achieve “a good low energy” construction i.e. Band A and should incorporate a total insulation/heating and ventilation strategy for the project to achieve this energy target.

2.0 The Pool and Pool Hall

2.1 Pool Dimensions

The pool is to provide four swimming lanes and should be:

- Length – Nominal 25m plus 0.03m, minus 0.00m.
- Width – 4 by 2m lanes with 0.25m outside lanes 1 and 4 (8.5m).
- Depth – 0.9m for 5.0m, sloping to 1.8m over 15m.

2.2 Pool Construction

Proposals might consider:

- a fully welded stainless steel tank
- a steel tank utilising a liner
- a tiled (epoxy grout) concrete pool and the benefits and disadvantages of these three types of construction should be considered particularly in respect of long term maintenance.

2.3 Pool Requirements

The pool tank should incorporate the following:

- Deck level construction on the longitudinal sides with the water overflowing the pool edge into a channel from which the water is returned to a balance tank and then to the filtration plant. The pool edge should provide a finger grip profile and be of a distinct colour contrast with the pool tank and the pool surround.
- Raised ends walls 0.3m above the water level which are provided with a finger grip detail and lane line sockets at water level. The top surface of the raised ends should be slip resistant and at the deep end should be provided with starting platform fixing sockets. Drainage channels, returning to the overflow channels should be provided at the rear of the raised ends to accommodate water from the pool surrounds.
- Slip resistant surfacing on pool end walls extending 0.8m below the water level.
- Slip resistant surfacing on the pool floor in the area where the pool is shallower than 1.35m deep.
- Recessed steps in the longitudinal side walls at each end of the pool.
- Lane markings of a dark contrasting colour (black is most commonly used) on the floor of the pool in the centre of each lane. The width of each lane line should be 0.2m plus or minus 0.05m and should end 2m from the end wall of the pool with a distinctive crossed line 0.80m long and of the same width as the lane line. Target lines should be placed on the end walls, in the centre of each lane of the same width as the lane lines. They should extend from the pool deck edge to the floor of the pool and should have a cross line 0.5m long placed 0.3m below the water surface, measured to the centre point of the crossed line.

2.4 Pool Surrounds

These should be of a minimum width of 1.5m on the longitudinal sides and 2m at the ends. If there is to be a requirement for some spectators then these may be accommodated on the longitudinal sides by increasing the width to 2.25m and providing a form of bench seating. Alternatively a small seating area for no more than 25 people might be provided off the pool surround and separated from the pool area by a glazed screen.

Also if general public bathing is to take place the width of the surrounds should be increased by 0.5m on longitudinal sides and ends.

There may be a need to consider increasing the width of the pool surround at the deep end for lane line storage.

The pool surrounds should fall to the overflow channel connected to the filtration plant. (If spectators are allowed on the poolside they should be required to remove outdoor footwear or wear plastic overshoes to prevent soiling entering the filtration system.)

The surface of the poolside should have slip resistant tiling and ponding should be avoided by providing suitable falls in order that water freely runs to the overflow channel and to the drainage channels at the rear of the raised ends.

2.5 Pool Hall

The pool hall finishes have to withstand a warm, relatively humid and potentially corrosive atmosphere.

Up to 2.0m above the pool surround the finish should be smooth, easily cleaned, have minimal water absorption and be unaffected by splashes of pool water.

If water polo is to be played, the design should prevent damage to the building fabric including glazing, plant, controls and equipment from the ball

Above 2.0m the need for sound absorption may affect the choice of material.

If natural lighting is to be provided this should not produce glare, increase specular reflection or cause solar gain unless this latter is to be included in the heating and ventilation balance for the building as an energy conservation measure. Experience has shown that to minimise problems of glare glazing should be restricted to roof lights or areas on North facing walls.

Lighting – 300 lux for general activities. Up-lighting preferred to reduce reflection and glare on the water surface.

3.0 Changing/Toilets/Showers

3.1 Design

The design should allow for the following sequence - changing area - toilet - pre-cleanse - pool hall. Access from the pre-cleansing area to the pool hall should, for safety reasons, lead to the shallow area of the pool.

Floors should be slip resistant and be suitable for hosing down with adequate drains and appropriate falls to drain.

Walls should be smooth with a finish which may be easily cleaned and in shower areas tiling would be a preferred option.

3.2 Changing

Three open plan changing rooms with benching should be provided on the basis of 25 spaces at a minimum of 400mm per person in each.

The changing rooms will be provided with hooks over each changing space and consideration needs to be given as to the provision of clothes storage lockers and if these are to be provided where they will be sited.

A hairdryer point and mirrors should be provided in the area of the changing rooms.

If the pool is to have general public bathing consideration should be given to a village changing room and two club rooms.

3.3 Toilets

Provision should be made for:

- Males – minimum one WC, one urinal, and one lavatory basin
- Female – minimum two WC's and one lavatory basin.

3.4 Showers

These should be located just prior to the pool hall entry point(s) from the changing areas and bathers should be required to then pass through a pre-cleanse area with a minimum of six warm water showers.

3.5 Disabled Changing

A disabled changing room, with shower, WC and hand basin, having direct access to the pool surround should be provided.

Additionally consideration should be given to designing the general toilet and showering facilities with disabled users and also the needs of ethnic minorities in mind.

2. Swim England Swimming Pool Design Requirements for a 25 metres by 6-lane community pool suitable for competition

This information sheet briefly outlines the design requirements for a 25 metres by 6-lane swimming pool to be used for general community swimming and which is also capable of providing for swimming competitions and swimming club training, synchronised swimming and water polo.

Ideally an additional learner pool, which can be used for warm up and swim down and by persons and groups as well as for the teaching of swimming, should also be provided.

Main Pool

Length - 25m plus 0.03m minus 0.00m.

Width – 6 by 2m lanes with a preferred space of 0.5m (minimum 0.2m) outside the first and last lanes.

Depth – 1.0m to 2.0m. A moveable floor is an option which may be provided to give a deep water pool of 1.8m to 2m all over depth. (Should the pool be considered for Synchronised Swimming competitions a 12m section of the pool will require a minimum depth of 3m).

Deck level construction with water overflowing the two sides and with raised ends 0.3m above the water level. Finger-grip detail to be provided at water level in the raised ends. The edging tile between the side walls of the tank and the pool surround, over which the water flows, should be of a contrasting colour to the pool tank walls and the pool surround and provide a finger grip for swimmers.

Slip resistant surfacing on pool end walls extending 0.8m below the water level.

Recessed steps in the side walls at each end of the pool.

Lane markings of a dark contrasting colour (black is most commonly used) on the floor of the pool in the centre of each lane. The width of each lane line should be 0.2m plus or minus 0.05m and should end 2m from the end wall of the pool with a distinctive crossed line 0.80m long and of the same width as the lane line. Target lines should be placed on the end walls, in the centre of each lane of the same width as the lane lines. They should extend from the pool deck edge to the floor of the pool and should have a cross line 0.5m long placed 0.3m below the water surface, measured to the centre point of the crossed line.

Pool surrounds to be a minimum of 3m at the start end and 2m at the turning end and on both sides. If League events are to be held the main pool surrounds plus the surrounds of the learner pool should be able to accommodate up to 180 competitors and officials and consideration needs to be given to increasing the width of the pool surrounds and the provision of fixed (bench) or alternatively bleacher seating.

Gallery providing seating for a minimum of 150 spectators and 6 spaces for wheel chairs. The seating and wheel chair spaces should give a view of the whole area of the pool.

Water temperature – 27/28 degrees C

Lighting – 500 lux (in accordance with CIBSE Guidance) for competition and 300 lux for other activities. Up-lighting preferred to reduce reflection and glare on the water surface.

Equipment

6 lane swim timing system comprising timing computer, printer, start system with 6 speakers (provides a fairer start than a single speaker), 6 touch pads, wiring harness and 6 line alpha-numeric scoreboard. The timing computer and printer to be capable of linking to a results system and ideally to be housed in a separate suitably ventilated control room at the start/finish end of the pool at first floor level with direct access from the pool side. A storage trolley should be considered for the touch pads and it would be prudent to have an extra touchpad in case of damage.

6 by starting platforms (0.75m) for use where the water is more than 1.5m deep. If high level competitions are to be held consideration may be given to providing platforms fitted with an electro mechanical contact device which will provide a split second recording of the take-off time.

In pools where such platforms are not necessary one such block may be provided for training purposes.

Turning boards at both ends if raised ends are not provided.

7 by anti-wave lane lines with the floats extending 5.0m from each end of the pool being red. Additionally there is a need at 15 metres from each end of the pool for the floats to be of a distinctive colour from the surrounding floats.

The colour of the lane ropes should be as follows:

- 4 blue ropes for lanes 1, 2, 5 and 6
- yellow ropes for lanes 3 and 4

False start rope to be suspended across the pool not less than 1.2m above the water level from fixed standards placed 15m in front of the starting end. The rope should be

secured to the standards by a quick release mechanism and should effectively cover all lanes when activated.

2 by backstroke turn indicators which should take the form of flagged ropes suspended across the pool at a minimum height of 1.8m above the water surface from fixed standards placed 5m from each end wall of the pool.

2 by Water Polo goals – depth of goals to be 0.75m providing 23.5m between goal lines.

Water Polo timing equipment, including possession clocks, linked into the 6 line scoreboard (appropriate software package added to timing computer).

Large sweep hand timing clock

White boards at each end of the pool

If Synchronised Swimming is to take place judging equipment and an underwater sound system.

Real time clock

Public address system.

Portable hoist, for use by swimmers with disabilities, with fixings in both the main pool and the learner pool.

Drinking water fountain.

Learner Pool

4 lane (8m) x 17m.

Deck level construction.

Recessed steps at each corner in the side walls.

Pool surrounds 2m in width in order to allow adequate circulation space at points of access from the changing areas and for wheelchairs users. On sides where there is less movement of bathers a narrower width of 1.5m may be considered.

Moveable floor to provide a variable depth of water down to 1.8m.

Ideally it should be possible for the learner pool to be separated both visually and acoustically from the main pool to allow for use by people or organisations or activities which require quiet or privacy e.g. teaching of swimming, persons with disabilities and ethnic groups. The separation should be such that the pool hall area can be opened out to become contiguous with the main pool area at other times.

Water temperature 29/30 degrees C.

Lighting – 300 lux

Spectator accommodation for up to 30 persons and including a space for a wheelchair adjacent to the pool hall area.

Group, individual cubicles and disability changing areas with direct access to the learner pool which can be separated off from the main changing area if required.

Equipment

- Swimming and teaching aids
- Play equipment
- Portable stairs or ramp to assist access to and egress from the pool for people with walking difficulties.
- Drinking water fountain.
- Real time clock.

General

The above are the main requirements to meet the detailed needs of the Swim England but in addition the design should ensure

- a high standard of water treatment with medium rate (24m/h) sand, pressure, air scoured filters, with the continuous dosing of a coagulant, good water circulation within the pools, appropriate turnover periods and chlorine supplemented by ozone or Ultra Violet for disinfection, is recommended. Good practice would dictate that each pool should have its own separate water treatment plant. However, there may be operational advantages if the main and teaching pools are linked
- a good standard of ventilation with heat recovery, but no re-circulation of exhaust air, providing an air temperature of plus or minus 1 degree C of the water temperature and a relative humidity of 50 to 70% in the pool hall areas and a temperature of around 24 degrees C in the changing and shower and toilet areas
- there is no glare or specular reflection in the pools from either natural or artificial light sources and no solar gain unless this is compensated for in the design and used as an energy conservation measure
- if water polo is to be played, that the design is such as to prevent damage to the building fabric including glazing, plant, controls and equipment from the ball
- village and group changing with circulation routes which encourage the use of toilets and showers prior to entry into the pool areas adjacent to shallow water
- the use of appropriate finishes; including slip resistant surfaces in wet areas which comply with the requirements as appropriate of groups A, B and C EN 13451-1 in all directions
- provision of a First Aid room
- pool safety equipment in accordance with a risk assessment including reaching poles and throwing ropes, spine board, push button alarms and consideration should be given to computer aided pool surveillance equipment to supplement but not replace pool lifeguards
- adequate storage areas – this may mean also providing areas for clubs which use the pool to store equipment e.g. swimming training aids, polo balls, sub aqua equipment etc.

- provision of a meeting room
- provision of notice boards for clubs
- adequate safe parking for cars and coaches together with drop off and loading points close to the front of the building
- the building incorporates the requirements of the Disability Discrimination Act 1996 and it is in accordance with the Code of Practice BS8300: Design of Buildings and their Approaches to Meet the Needs of Disabled People and the Sports Council publication “Access For Disabled People” which can be downloaded from the Sport England website.

Indeed these should be part of a design providing a facility which is

- intended to meet the swimming needs of the whole community
- constructed to a high standard of materials, plant and equipment which meet appropriate manufacturing and operating standards
- sustainable, being responsive to environmental issues in terms of the use of energy and non- sustainable resources and the control of pollution
- cost efficient to allow the facility to be managed with sustainable operating costs.

3. Pool design requirements for a 25-metre by 8-lane pool

This information sheet briefly outlines the design requirements for a 25-metres x 8-lane swimming pool to be used for general community swimming and which is also capable of providing for swimming competitions (up to and including National Short Course standard where a 10-lane pool is not available) and training, synchronised swimming and water polo.

Ideally a learner pool, which can be used for warm up and swim down (essential for National Short Course) and by persons and groups as well as for the teaching of swimming, should also be provided.

For 8 lane pools not providing for major competitions; water depths, seating etc. will vary according to needs.

All swimming pools should be designed with the Sport England/Swim England Design Guidance note and The BS EN 15288-1:2008, Safety requirements for design, taken into full consideration.

Main Pool

Length - 25m plus 0.03m minus 0.00m.

Width – Minimum 8 by 2m lanes with minimum 0.2m outside the first and last lanes (16.4m); preferred 8 by 2.5m lanes with 0.5m outside the first and last lanes (21m National Short Course).

Deck level construction with water overflowing the two sides and with raised ends 0.3m above the water level. Finger-grip detail to be provided at water level in the raised ends. The edging tile between the side walls of the tank and the pool surround, over which the

water flows, should be of a contrasting colour to the pool tank walls and the pool surround and provide a finger grip for swimmers.

Slip resistant surfacing on pool end walls extending 0.8m below the water level.

Recessed steps in the side walls at each end of the pool.

Moveable floor to provide a deep water pool of 2m all over depth. (Should the pool be considered for Artistic Swimming a 12m section of the pool will require a minimum depth of 3m). Where a moveable floor is not provided the minimum depth of water at the shallow end should be 1.2m if a learner pool is provided, with a depth of 2.0m at the opposite end. If a learner pool is not provided the minimum depth may be 0.9m but should not be less.

Lane markings of a dark contrasting colour (black is most commonly used) on the floor of the pool in the centre of each lane. The width of each lane line should be 0.2m plus or minus 0.05m and should end 2m from the end wall of the pool with a distinctive crossed line 0.80m long and of the same width as the lane line. Target lines should be placed on the end walls, in the centre of each lane of the same width as the lane lines. They should extend from the pool deck edge to the floor of the pool and should have a cross line 0.5m long placed 0.3m below the water surface, measured to the centre point of the crossed line.

Pool surrounds to be a minimum of 4m at the start end and 3m at the turning end and on both sides. The main pool surrounds plus the surrounds of the learner pool should be able to accommodate 250 competitors and officials and fixed (bench) or alternatively bleacher seating should be provided.

Gallery providing seating for a minimum of 250 spectators (National Short Course 500 plus) and 6 spaces for wheelchairs. The seating and wheel chair spaces should give a view of the whole area of the pool.

Water temperature – 27/28 degrees C

Lighting – 500 lux (in accordance with CIBSE Guidance) for competition and 300 lux for other activities. Up-lighting preferred to reduce reflection and glare on the water surface.

The provision of a pool side land conditioning room should be considered.

Equipment

8 lane swim timing system comprising timing computer, printer, start system with 8 speakers, 8 touch pads, wiring harness and 8 line alpha-numeric scoreboard. The timing computer and printer to be capable of linking to a results system and ideally to be housed in a separate suitably ventilated control room at the start/finish end of the pool at first floor level with direct access from the pool side. A storage trolley should be considered for the touch pads and it would be prudent to have an extra touchpad in case of damage.

8 no. starting platforms. The height of the platform should be between 0.5m and 0.75m above the water surface with a water depth of no less than 1.35m for a distance of 1m to 6m from the end wall. Consideration should be given to providing platforms fitted with an electro mechanical contact device which will provide a split second recording of the take-off time. In pools where such platforms are not necessary one such block may be provided for training purposes.

9 by anti-wave lane lines with the floats extending 5.0m from each end of the pool being red. Additionally there is a need at 15 metres from each end of the pool for the floats to be of a distinctive colour from the surrounding floats.

The colour of the lane ropes should be as follows

- green ropes for lanes 1 and 8
- blue ropes for lanes 2, 3, 6 and 7
- yellow ropes for lanes 4 and 5

False start rope to be suspended across the pool not less than 1.2m above the water level from fixed standards placed 15m in front of the starting end. The rope should be secured to the standards by a quick release mechanism and should effectively cover all lanes when activated.

2 by backstroke turn indicators which should take the form of flagged ropes suspended across the pool at a minimum height of 1.8m above the water surface from fixed standards placed 5m from each end wall of the pool.

Water polo pitch goal and side lines to provide a field of play (between goal lines) no less than 20m long and no more than 30m long for men and no more than 25m long for women with goals installed. Side lines to be suitably coloured to denote the following:

- White marks – goal line and half distance line.
- Red marks – 2 metres from goal lines.
- Yellow marks – 5 metres from goal lines.

Water Polo timing equipment, including possession clocks, linked into the 8 line scoreboard. (appropriate software package added to timing computer)

If Artistic Swimming is to take place judging equipment and an underwater sound system.

2 by large sweep hand timing clocks.

White boards at both ends of the pool.

Real time clock.

Public address system.

Portable hoist, for use by swimmers with disabilities, with fixings in both the main pool and the learner pool.

Drinking Water fountain.

Learner Pool

4 lane (8m) x 17m (20m preferred for a National Short Course swim down pool).

Deck level construction.

Recessed steps at each corner in the side walls.

Moveable floor to provide a variable depth of water down to 1.8m.

Pool surrounds ideally a minimum of 2m in width in order to allow adequate circulation space at points of access from changing areas and for wheelchair users. On sides of the pool where there is less movement of bathers a narrower width of 1.5m may be considered.

Ideally it should be possible for the learner pool to be separated both visually and acoustically from the main pool to allow for use by people or organisations or activities which require quiet or privacy e.g. teaching of swimming, persons with disabilities and ethnic groups. The separation should be such that the pool hall area can be opened out to become contiguous with the main pool area at other times.

Water temperature 29/30 degrees C.

Lighting – 300 lux

Spectator accommodation for up to 30 persons and including a space for a wheelchair adjacent to the pool hall area.

Group, individual cubicles and disability changing areas with direct access to the learner pool which can be separated off from the main changing area if required.

Equipment

- Swimming and teaching aids.
- Play equipment.
- Portable stairs or ramp to assist access to and egress from the pool for people with walking difficulties.
- Drinking water fountain.
- Real time clock.

General

The above are the main requirements to meet the detailed needs of the Swim England but in addition the design should ensure

- a high standard of water treatment with medium rate (24m/h) sand, pressure, air scoured filters, with the continuous dosing of a coagulant, good water circulation within the pools, appropriate turnover periods and chlorine supplemented by ozone or ultra violet for disinfection is recommended. Good practice would dictate that each pool should have its own separate water treatment plant. However, there may be operational advantages if the main and teaching pools are linked
- a good standard of ventilation with heat recovery, but no re-circulation of exhaust air, providing an air temperature of plus or minus 1 degree C of the water temperature and a relative humidity of 50 to 70% in the pool hall areas and temperature of around 24 degrees C in the changing and shower and toilet areas,
- there is no glare or specular reflection in the pools from either natural or artificial light sources and no solar gain unless this is compensated for in the design and used as an energy conservation measure

- if water polo is to be played, that the design is such as to prevent damage to the building fabric including glazing, plant, controls and equipment from the ball
- village and group changing areas have circulation routes which encourage the use of toilets and showers prior to entry into the pool areas adjacent to shallow water
- the use of appropriate finishes; including slip resistant surfaces in wet areas which comply with the requirements as appropriate of groups A, B and C EN 13451-1 in all directions
- adequate storage areas - this may mean also providing areas for Clubs which use the pool to store equipment e.g. swimming training aids, polo balls, sub aqua equipment etc.
- provision of a First Aid room which will also be suitable for Dope Testing,
- pool safety equipment in accordance with a risk assessment, including reaching poles and throwing ropes, spine board, push button alarms and consideration should be given to computer aided pool surveillance equipment to supplement but not replace pool lifeguards
- provision of a meeting room
- provision of notice boards for clubs
- adequate safe parking for cars and coaches together with drop-off and loading points close to the front of the building
- the building incorporates the requirements of the Disability Discrimination Act 1995 and is in accordance with the Code of Practice BS8300: Design of Buildings and their Approaches to Meet the Needs of Disabled People and the Sports Council publication "Access For Disabled People" which can be downloaded from the Sport England website.

Indeed these should be part of a design providing a facility which is

- intended to meet the swimming needs of the whole community
- constructed to a high standard of materials, plant and equipment which meet appropriate manufacturing and operating standards
- sustainable, being responsive to environmental issues in terms of the use of energy and non- sustainable resources and the control of pollution
- cost efficient to allow the facility to be managed with sustainable operating costs.

4. Swimming Pool Design Requirements for a 25 metres by 10-lane (International Short Course Championship Pool)

This information sheet briefly outlines the design requirements for a 25 metres by 10-lane swimming pool to be used for general community swimming and which is also capable of providing for swimming competitions up to International Short Course Championships, synchronised swimming competition (where the depth is suitable), low level water polo, competition and all training.

Ideally a learner pool, which can be used for warm up and swim down (essential for International Short Course) and by persons and groups as well as for the teaching of swimming, should also be provided.

All swimming pools should be designed with the Sport England/Swim England Design Guidance notes and the BS EN 15288-1:2008, Safety requirements for design, taken into full consideration.

Main Pool

Length - 25m plus 0.03m minus 0.00m.

Width – Minimum 10 by 2.5m lanes.

Deck level construction with water overflowing the two sides and with raised ends 0.3m above the water level. Finger-grip detail to be provided at water level in the raised ends. The edging tile between the side walls of the tank and the pool surround, over which the water flows, should be of a contrasting colour to the pool tank walls and the pool surround and provide a finger grip for swimmers.

Slip resistant surfacing on pool end walls extending 0.8m below the water level.

Recessed steps in the side walls at each end of the pool.

Moveable floor to provide a deep water pool of 2m all over depth (Minimum requirement for International Competition). (Should the pool be considered for Synchronised Swimming a 12m section of the pool will require a minimum depth of 3m). Where a moveable floor is not provided the minimum depth of water at the shallow end should be 1.2m if a learner pool is provided, with a depth of 2.0m at the opposite end. If a learner pool is not provided the minimum depth may be 0.9m but should not be less.

Lane markings of a dark contrasting colour (black is most commonly used) on the floor of the pool in the centre of each lane. The width of each lane line should be 0.2m plus or minus 0.05m and should end 2m from the end wall of the pool with a distinctive crossed line 0.80m long and of the same width as the lane line. Target lines should be placed on the end walls, in the centre of each lane of the same width as the lane lines. They should extend from the pool deck edge to the floor of the pool and should have a cross line 0.5m long placed 0.3m below the water surface, measured to the centre point of the crossed line.

Pool surrounds to be a minimum of 6m wide at the start end and 4m wide at the turning end and on both sides. The main pool surrounds plus the surrounds of the learner pool should be able to accommodate 200 (though provision up to 500 would be preferable) competitors and officials and fixed (bench) or alternatively bleacher seating should be provided.

Gallery providing seating for a minimum of 500 spectators (International Short Course 1000 plus, though these may be temporary) and 12 spaces for wheelchairs. The seating and wheel chair spaces should give a view of the whole area of the pool.

Water temperature – 27/28 degrees C

Lighting – 500 lux (in accordance with CIBSE Guidance) for competition and 300 lux for other activities. Up-lighting preferred to reduce reflection and glare on the water surface. Lighting for major championships where television is to factor requires 1000 lux

The provision of a pool side land conditioning room should be considered.

Equipment

10 lane swim timing system comprising timing computer, printer, start system with 10 speakers, 10 touch pads, wiring harness and 10 line alpha-numeric scoreboard. The timing computer and printer to be capable of linking to a results system and ideally to be housed in a separate, suitably ventilated control room at the start/finish end of the pool at first floor level with direct access from the pool side. A storage trolley should be considered for the touch pads and it would be prudent to have an extra touchpad in case of damage.

10 no. starting platforms. The height of the platform should be between 0.5m and 0.75m above the water surface with a water depth of no less than 1.35m for a distance of 1m to 6m from the end wall. Consideration should be given to providing platforms fitted with an electro mechanical contact device which will provide a split second recording of the "take off" time.

In pools where such platforms are not necessary one such block may be provided for training purposes.

11 no. anti-wave lane ropes with the floats extending 5.0m from each end of the pool being red. Additionally there is a need at 15 metres from each end of the pool for the floats to be of a distinctive colour from the surrounding floats.

The colour of the lane ropes should be as follows

- green ropes for lanes 0 and 9
- 6 blue ropes for lanes 1, 2, 3, 6, 7 and, 8
- yellow ropes for lanes 4 and 5

False start rope to be suspended across the pool not less than 1.2m above the water level from fixed standards placed 15m in front of the starting end. The rope should be secured to the standards by a quick release mechanism and should effectively cover all lanes when activated.

2 no. backstroke turn indicators which should take the form of flagged ropes suspended across the pool at a minimum height of 1.8m above the water surface from fixed standards placed 5m from each end wall of the pool.

Water polo pitch goal and side lines to provide a field of play (between goal lines) no less than 20m long and no more than 30m long for men and no more than 25m long for women with goals installed. Side lines to be suitably coloured to denote the following:

- White marks – goal line and half distance line
- Red marks – 2 metres from goal lines
- Yellow marks – 5 metres from goal lines

Water Polo timing equipment, including possession clocks, linked into the 10 line scoreboard. (appropriate software package added to timing computer)

If Synchronised Swimming is to take place judging equipment and an underwater sound system.

2 no. Large sweep hand timing clocks

White boards at both ends of the pool

Real time clock

Public address system.

Portable hoist, for use by swimmers with disabilities, with fixings in both the main pool and the learner pool.

Drinking Water fountain

Learner Pool

4 lane (8m) x 17m (25m preferred for an International Short Course swim down pool).

Deck level construction.

Recessed steps at each corner in the side walls.

Moveable floor to provide a variable depth of water down to 1.8m.

Pool surrounds ideally a minimum of 2m in width in order to allow adequate circulation space at points of access from changing areas and for wheelchair users.

Ideally it should be possible for the learner pool to be separated both visually and acoustically from the main pool to allow for use by people or organisations or activities which require quiet or privacy e.g. teaching of swimming, persons with disabilities and ethnic groups. The separation should be such that the pool hall area can be opened out to become contiguous with the main pool area at other times.

Water temperature 29/30 degrees C.

Lighting – 300 lux

Spectator accommodation for up to 30 persons and including a space for a wheelchair adjacent to the pool hall area.

Group, individual cubicles and disability changing areas with direct access to the learner pool which can be separated off from the main changing area if required.

Equipment

- Swimming and teaching aids
- Play equipment
- Portable stairs or ramp to assist access to and egress from the pool for people with walking difficulties
- Drinking water fountain
- Real time clock

General

The above are the main requirements to meet the detailed needs of Swim England but in addition the design should ensure

- a high standard of water treatment with medium rate (24m/h) sand, pressure, air scoured filters, with the continuous dosing of a coagulant, good water circulation within the pools, appropriate turnover periods and chlorine supplemented by ultra violet for disinfection is recommended. Good practice would dictate that each pool should have its own separate water treatment plant. However, there may be operational advantages if the main and teaching pools are linked
- a good standard of ventilation with heat recovery, but no re-circulation of exhaust air, providing an air temperature of plus or minus 1 degree C of the water temperature and a relative humidity of 50 to 70% in the pool hall areas and temperature of around 24 degrees C in the changing and shower and toilet areas
- there is no glare or specular reflection in the pools from either natural or artificial light sources and no solar gain unless this is compensated for in the design and used as an energy conservation measure
- if water polo is to be played, that the design is such as to prevent damage to the building fabric including glazing, plant, controls and equipment from the ball
- village and group changing areas have circulation routes which encourage the use of toilets and showers prior to entry into the pool areas adjacent to shallow water
- the use of appropriate finishes; including slip resistant surfaces in wet areas which comply with the requirements as appropriate of groups A, B and C EN 13451-1 in all directions
- adequate storage areas - this may mean also providing areas for Clubs which use the pool to store equipment e.g. swimming training aids, polo balls, sub aqua equipment etc.
- provision of a First Aid room which will also be suitable for Dope Testing
- pool safety equipment in accordance with a risk assessment, including reaching poles and throwing ropes, spine board, push button alarms and consideration should be given to computer aided pool surveillance equipment to supplement but not replace pool lifeguards
- provision of a meeting room
- provision of notice boards for clubs
- adequate safe parking for cars and coaches together with drop-off and loading points close to the front of the building
- the building incorporates the requirements of the Disability Discrimination Act 1995 and is in accordance with the Code of Practice BS8300: Design of Buildings and their Approaches to Meet the Needs of Disabled People and the Sports Council publication "Access For Disabled People" which can be downloaded from the Sport England website.

Indeed these should be part of a design providing a facility which is

- intended to meet the swimming needs of the whole community,
- constructed to a high standard of materials, plant and equipment which meet appropriate manufacturing and operating standards,
- sustainable, being responsive to environmental issues in terms of the use of energy and non- sustainable resources and the control of pollution,
- cost efficient to allow the facility to be managed with sustainable operating costs.

Information

The following are useful sources of information

- “Managing Health and Safety in Swimming Pools” – ISBN 0 7176 2686 5 or HSG 179
- “Swimming Pool Water – Treatment and Quality Standards” – ISBN 0 9517007 6 6
- “Swimming Pools” – ISBN 0 419 23590 6

The following may be out of publication but may be obtainable through reference libraries

- “Handbook of Sports and Recreational Building Design – Volume 3 Swimming Pools and Ice Rinks” – ISBN 0 7506 2256 3
- “Design and Planning of Swimming Pools” – ISBN 0 947685 04 9
- “Swimming Pools Design Guidance Note” – Sport England website.

Readers are advised that the guidance or advice given in this information sheet is not inclusive and any decisions on swimming pool design should first be discussed with a member of the Swim England’s Facilities Team. Contact details: facilities@swimming.org or telephone: **01509 618700**.