

Indoor Bowls



Introduction

This Guidance Note covers the planning, design and management of permanent indoor bowls facilities. It focuses on the development of new centres but all the issues discussed are relevant to centres where an extension or upgrade to existing facilities is being considered.

Indoor bowls centres will be successful only when they are developed in response to firm evidence of demand. They must provide an enjoyable environment while at the same time meeting the functional needs of users.

Management must provide an infrastructure of leagues and competitions in which members and casual users can participate.

It is essential that the facilities are clean and well maintained and are as much a pleasure to use as other well designed leisure attractions.

Since indoor bowls centres are open for long hours, seven days a week, it is essential that they are built with good quality and easily maintained materials and finishes.

Subject to structural constraints, a well-designed facility with scope for extension may prove far better value for money in the long run, than a more ambitious, poor quality building.

Feasibility study

A successful indoor bowls centre requires a combination of the right location, design, and financial and general management. Thus, the careful planning and preparation of a detailed feasibility study is essential.

It is vital to establish contact with key organisations at an early stage to ensure that your proposals will not conflict with other similar schemes. Additionally, this is an effective method of establishing whether there is a recognised deficiency of provision in the general area. Key contacts are:

- Local authority sport and planning sections
- English Indoor Bowling Association
- English Women's Indoor Bowling Association
- Sport England regional offices.

Market analysis

When you have determined the general location for your facility the catchment area should be defined and assessed. The following guidelines on catchment for indoor bowls centres must be interpreted in the light of local circumstances:

- Assume the majority of users will live locally and not travel more than 20 minutes
- Assume 90% of users will travel by car, with the remainder by foot.
- As a guide, demand is calculated as one rink per 14,000-17,000 of total population
- A six-rink green, therefore, is required for a population of 85,000-100,000. This will be dependant upon the population profile of your area. To help you identify the population profile of your area, contact the EIBA
- The number of rinks required can be related to the estimated number of members: assume 80-100 members per rink

Draw up a profile of the catchment area showing population density, socio-economic groupings and local employment patterns. Nearby schools, residential areas and existing recreational facilities may offer ready membership potential.

A good base market for bowls is essential. Existing sports participation characteristics of the catchment area must be established detailing, in particular, the location of active



Indoor bowls centres must be sensitively planned

bowls players. Additionally, it should be expected that a new facility would attract non-bowlers. As a guide, the level of new bowlers as a percentage of total membership can vary from 25% to 50%.

It is crucial to ensure that all existing indoor bowls facilities in the locality have been accounted for within the needs analysis.

Many centres are now open for 13 hours a day throughout the year.

Location

The identification of suitable sites for a proposed new facility can be difficult. To help with this process you can seek guidance from your local authority. While not obliged to disclose all the information you may need, it may be willing to do so if the proposed facilities will be beneficial to the community as a whole. For example:

- The planning department may be able to supply a list of sites suitable for recreational use.
- The council may be able to disclose the name of the owner of a particular site or the agent who manages it.
- The council may own land or buildings it would be prepared to lease and for which a more suitable use is sought.

When a site has been identified it should be assessed to ensure fitness for purpose. Some key requirements are:

- Good accessibility, including existing and planned transport routes and services.
- Space for car parking and possible expansion, including outdoor rinks.
- Clear visibility from main access routes.
- Space for clear on, and off-site signage.
- Ideally, the site should be level, free from major sub-surface problems, and within easy reach of mains services.

Finance

It is essential to seek professional financial advice. This will alert developers to the financial

gearing of the project and projected cash flows, which could highlight shortfalls in working capital before the project is underway.

Assets and available funding should be carefully assessed. Sources of funds may include:

- reserves
- bank loans
- equity
- grants
- members' subscriptions
- interest-free loans
- brewery loans
- sponsorship
- fund-raising schemes.

A financial investment plan should be drawn up showing:

- Total project cost: cost of land, construction, equipment, professional fees and marketing costs.
- Operating costs: salaries/wages, tax liabilities, rent, rates and general overheads.
- Operating revenue: membership subscriptions, green fees, bar and catering receipts and revenue from gaming machines.
- Secondary income: hiring out function or multi-purpose rooms, particularly during the summer months.

Balance sheets, profit and loss accounts and cash flow forecasts, together with a sensitivity analysis of all forecasts and assumptions, should enable an accurate financial appraisal of a project's viability to be made.

On completion of the feasibility study a clear justification for the recommended number of rinks will have been made, showing clearly the viability of the project.

Site planning

The shape and contours of the available site will obviously influence the location of the facility. However, in most instances the proximity of an

existing access road and/or the necessary main services will be the principal factors affecting location, if unnecessary and expensive site development costs are to be avoided.

Provision should be made for:

- car parking related to local needs
- coach parking for visiting teams, close to the main entrance
- minimum of two accessible car parking bays, or 6% whichever is the greater, close to main entrance
- access and adequate turning space for service and emergency vehicles
- secure cycle standing located within sight of an office or reception
- ramps and additional handrails if there are changes in ground level
- lighting of car parks and footpaths for safe access after dark
- pedestrian routes planned away from areas of potential concealment

A planting scheme will assist in linking the building to its surroundings and in urban projects can help to create a more welcoming appearance to the entrance environment. Suitably selected shrub planting will provide a barrier to the building face, deterring vandalism, and also give more privacy and security to windows. All new planting will need temporary protection until established.

This subject is covered in detail in a separate Sport England Guidance Note - 'Car Park and Landscape Design'.

External appearance

Indoor bowls centres are substantial buildings with few windows and must be sympathetically planned to avoid giving the appearance of being a factory or warehouse.

In order to build a functional yet aesthetically pleasing facility and to ensure that the centre is attractive and inviting by day and night, a broad range of expertise is required including general design, skilful selection of materials and careful use of colour.

Brick cladding may be appropriate in some locations, but care must be taken in selecting the colour as this material can give a heavy and oppressive appearance.

To summarise, an indoor bowls centre should have:

- well-articulated structure and form
- clearly identified entrance of appropriate scale
- high quality, crisply detailed cladding and roofing materials.
- clear signage

The above elements together with attractive and practical landscaping will help create an attractive and welcoming facility.

Internal planning

The level of ancillary accommodation is dependent on the size of the facility. Requirements will vary but every freestanding indoor bowls centre will have:

- foyer and reception
- changing and toilet accommodation
- facilities for disabled people
- office accommodation
- storage for equipment, furniture and supplies
- lounge/bar with views to the green
- refreshment area
- kitchen
- bar cellar and kitchen stores
- club/function room
- committee room
- plant room
- cleaner's store



A bowls centre with a clearly defined entrance

Indoor bowls centres must be planned to provide: Simple, economical and spacious circulation that is clearly intelligible to the user and permits easy supervision. Avoid long narrow corridors that could confuse visitors and convey an institutional image.

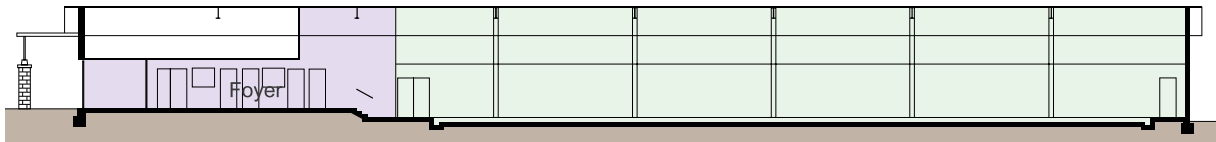
The circulation pattern should allow a simple, sequential progression through the building:

- entrance foyer and reception, with social/refreshment area, leading to-
- changing and toilet facilities, then to-
- activity spaces

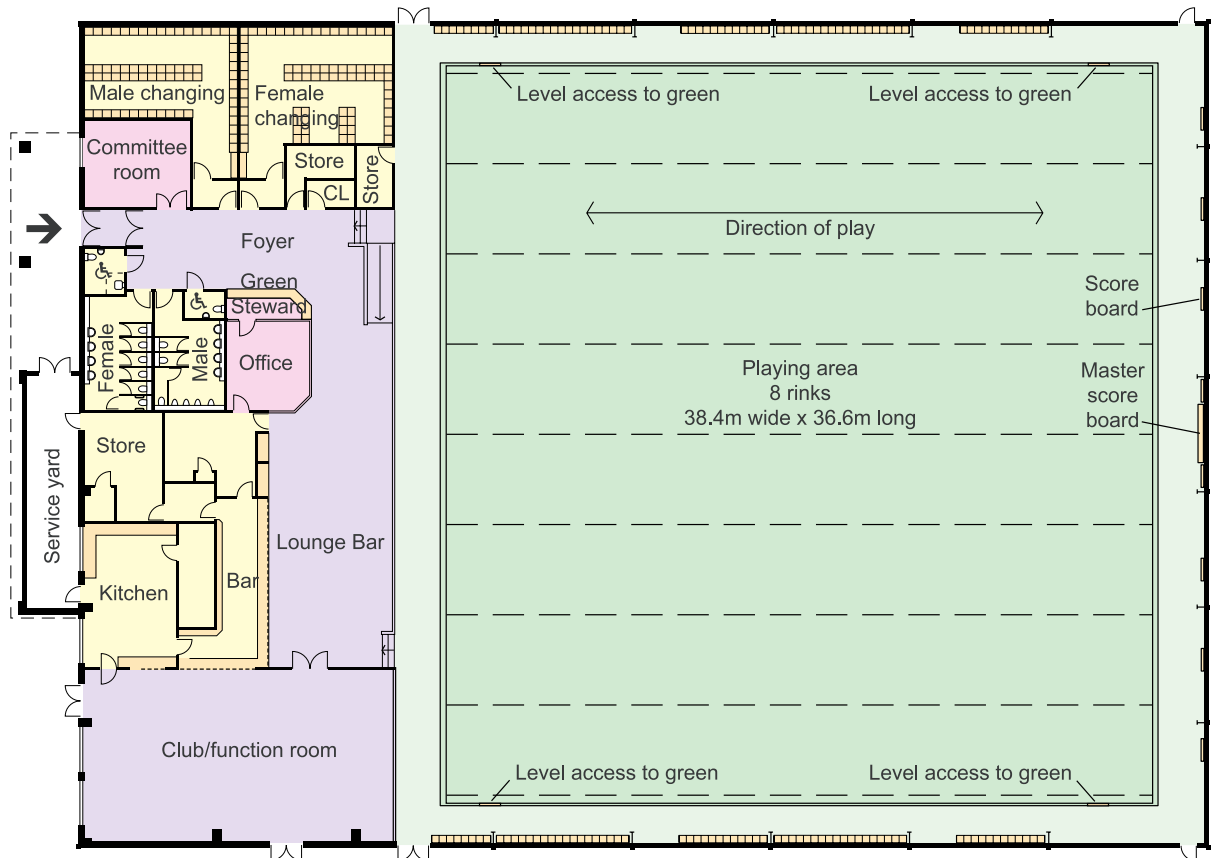
Service and plant room access, and screened service yard, should be remote from the main entrance or arranged on an adjoining elevation with an internal service route direct to the kitchen store or bar cellar, or to any accommodation provided for social functions.

Plant rooms should be located as close as possible to the most heavily serviced spaces, usually the kitchen and toilet facilities.

Safe and secure access should be achieved by design rather than reliance on a closed-circuit television system (CCTV).



Section through bowls centre



A notional 8 rink bowls centre with the standard range of accommodation. An economical layout with the bowls hall designed to meet current recommended standards

Main entrance

The entrance area to be warm and welcoming. The foyer is the hub of the building and must have sufficient space and volume for people to circulate, view notices or wait for friends in comfortable surroundings. Design to provide:

- draught lobby to the main entrance doors
- automatic operation of the main doors, which can be particularly helpful for disabled people and visitors with young children.

Management strategy will determine planning of the Foyer, although it is likely that most centres will operate most effectively with the reception close to the point of entry with sufficient space for queuing. This arrangement has the advantage of allowing close control over those entering the centre.

The foyer and its associated spaces, which may include seating, viewing and refreshment areas, should be designed to be as open and transparent as possible. The volume of space is important and should relate to the volume of the bowls green beyond. Note that low ceiling heights can make the space feel tight and unwelcoming.

Reception/office accommodation

The reception desk should:

- Be prominently sited
- Be of 'open' design with a dropped level for wheelchair users and children
- Incorporate storage for lost property and items for sale or hire
- Make provision for the monitoring of fire and security systems
- Allow for possible use of CCTV

Reception and administration areas should be closely linked. Whenever possible they should be planned on an external wall with windows overlooking the approach to the building

The minimum administration accommodation in a four-rink centre is one office for a single occupant plus records storage.



Reception designed to allow good supervision of the facilities

Depending on management structure, indoor centres with six or more rinks may justify a manager's office with meeting space

Social and viewing areas

All indoor bowls centres must provide some social and refreshment areas from which the rinks can be viewed. To ensure ease of movement and improved views for spectators, all ancillary accommodation should be at a level above the green and surround.

Balustrades will be required at changes in level between social and playing areas. It should be designed to permit unobstructed views from spectator seating.

Walls to social areas and accommodation that may be hired out to outside organisations must be designed to provide acoustic separation from the playing area, and any viewing windows provided with blinds or curtains.



Lounge area overlooking bowls green.

Cafe, bar and lounge areas should:

- Be located in or close to the entrance foyer to enhance the welcoming ambience and to enable the centre to benefit from customer secondary spend.
- Be designed with a standard of decor matching good quality commercial equivalents.
- Meet relevant Licensing regulations.

Support accommodation will include:

- kitchen and plant room serviced from a nearby vehicle delivery point
- proper refuse storage and containment
- separate cellarage will be necessary for a licensed area and some form of physical segregation may be required.

Disabled people must be able to access all levels. Ramps having the lowest practical gradient can be used for small changes in level, with lifting devices being used for greater changes. Both shall be supplemented with

stairs suitable for use by ambulant disabled people. Stair lifts are not acceptable.

Access requirements are covered in detail in Building Regulations Approved Document Part M, BS 8300: 2001 and the Sport England Design Guidance Note - 'Access for Disabled People'.

<http://www.sportengland.org/disabled.pdf>

The bowls hall

Design

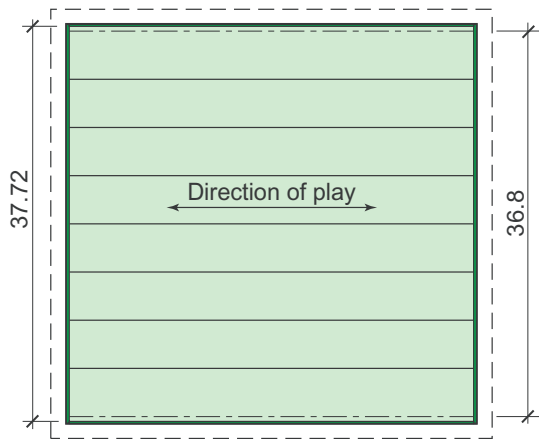
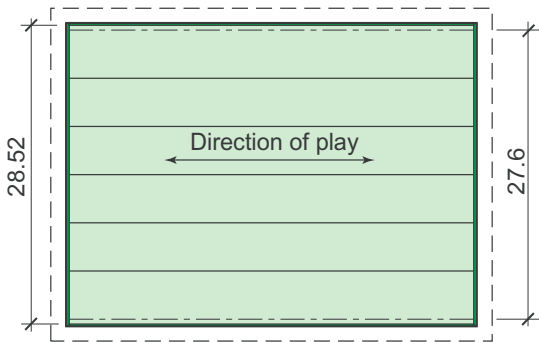
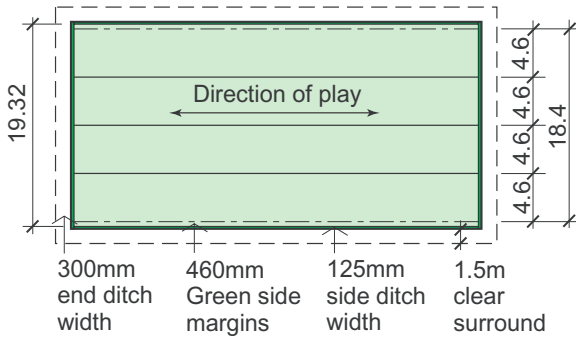
The bowls hall is a functional space with mandatory minimum and maximum rink dimensions for different levels of play, as stipulated by the Laws of the Sport.

This Guidance Note recommends standardised dimensions that offer best value for money and combining quality of play with efficient use of space.

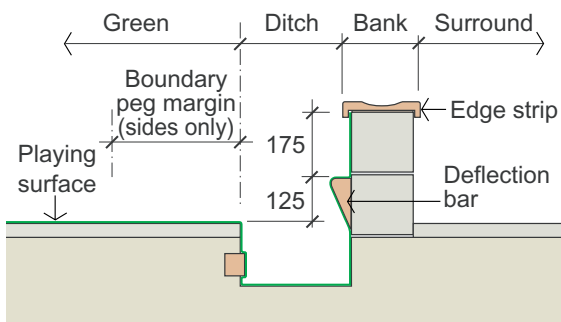
The green surround dimensions in the table are the minimum to allow for wheelchair users. Widths of surrounds must also satisfy means of escape requirements.

Rink dimensions

	Range	Recommended standardised dimensions
Width	4.6 - 5.8m	4.6m
Length	34 - 40m	36.5m
End ditch width	200 - 380mm	300mm
Side ditch width	125 - 145mm	125mm
Boundary peg side margins	460mm	460mm
Green side surround	1.5 - 2.0m min (1.8m min at passing places)	1.5m min but 2.0m min for larger centres (excludes space for lockers)
Green end surround	2.5 - 3.0m min	2.5m min, but 3.0m min for larger centres (excludes space for scoreboards)
Ditch depth (playing surface to bottom of ditch)	50 - 200mm	150mm
Playing surface to top of bank (before edging strip)	300mm	300mm
Deflection bar height from playing surface	125mm	125mm
Upstand bank width (below edging strip)	200mm	200mm



Rink layouts



Section through ditch and bank



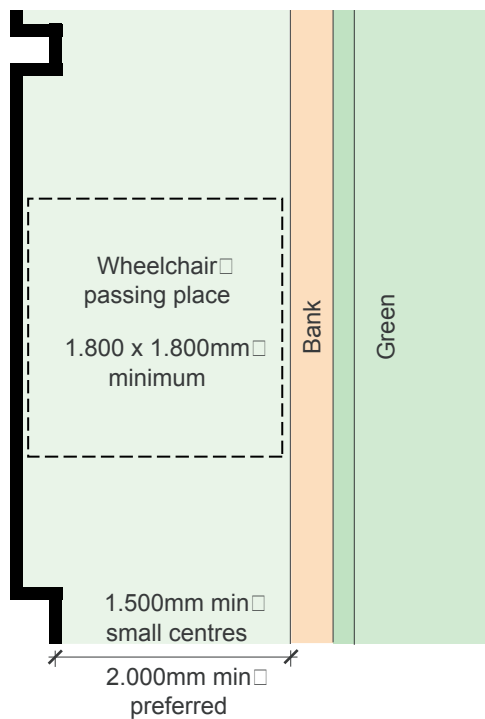
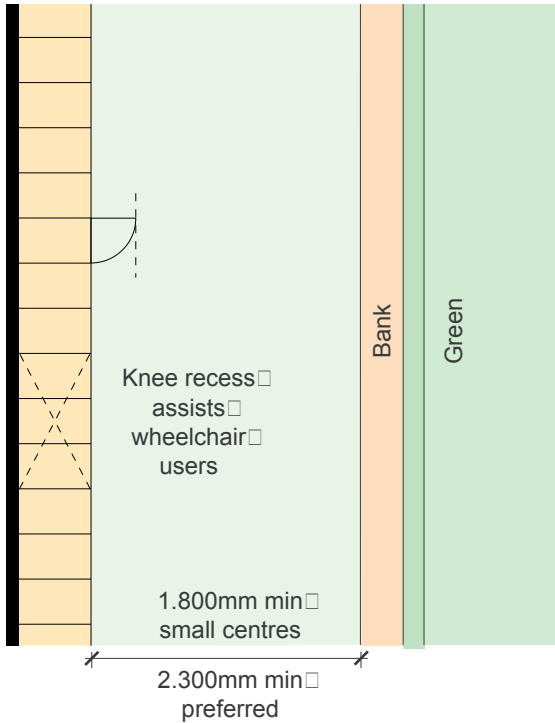
The green surrounds need to be wide enough for wheelchair access - see table on page 8

Structure

- Floor to ceiling heights of 4.5m-6.0m minimum will give sufficient internal clear height above the playing surface. In larger centres, a low ceiling over a large area can appear oppressive and so ceiling heights should be increased to expand the space and provide a more comfortable playing environment.
- The most common and economic forms of construction for indoor bowls centres are based on steel portal frame structures but they have a heavy industrial appearance.
- Curved cellular beams are an economical form of roof structure and provide an elegant and functional interior.
- Lattice beams have a lighter appearance.
- Whenever possible purlins should be avoided in favour of a structural deck spanning between the main beams. Structures and roof decking should be painted white to improve light reflectance.

Floor

Obviously, the floor construction in an indoor bowls centre is critical. Bowlers' expectations of the quality of indoor greens rise as floor tolerances improve. Timber floors are the norm and the advent of laser-levelled timber floor systems has enabled much tighter floor tolerances to be achieved. A tolerance of $\pm 1\text{mm}$ under a 3m straight edge is a recognised standard.



Circulation around green



A large bowls hall with increased floor to ceiling height provides a more comfortable playing space

Generally, floor systems for indoor bowls greens take the following form:

- concrete base laid to within levels of $\pm 6\text{mm}$
- laser-levelled preservative treated softwood battens, packed to level
- thermal insulation
- moisture-resistant loadbearing particle-board or external quality plywood
- underlay
- synthetic playing surface.

The speed of the green is directly related to the type of underlay used and is calculated by measuring the time taken for a World Bowls Board Master Bowl to travel a measured 27m:

- slow green: between 14 and 15.5 seconds.
- medium green: between 15.5 and 16.5 seconds.
- fast green: 17 seconds or more.

The speed of the green also affects the draw of the bowl. The recommended standard width of a rink should be increased from 4.6m to 5m if a green speed of 17 seconds or more is required. Clearly, this has cost implications and these details should be determined at an early stage in the development process.

Carpet for the bowls green

The carpet for the bowls green will be of synthetic construction and can be either woven or needle-punched material:

- woven surface: 100% polypropylene, extremely hard wearing, with a guaranteed life of 10 years
- needle-punched: acrylic fibre needled into a woven fibrillated polypropylene base cloth with a life of eight to ten years
- green colour, not blue, to suit the needs of visually impaired people.

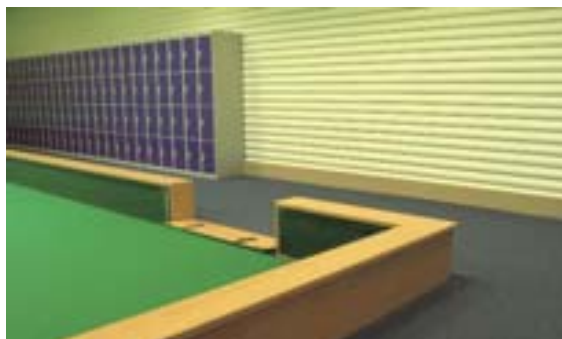
Carpets are produced in rolls and laid across the direction of play so that all bowling is across the seams that are machine-sewn.

To sustain the performance of the carpet over its projected life, it must be maintained as recommended by the manufacturer.

Access to the green

Bowls players who have to use wheelchairs can compete on equal terms with non-disabled players. A well-designed facility must ensure easy access to the green for all users including disabled people.

Traditionally the most common arrangement for an indoor bowls green has been a raised surround and a sunken rink. This arrangement creates problems for wheelchair users as well as for the large number of bowls players who have difficulty coping with changes in levels between the green surround, the rink, and with the location of the ditch between two surfaces.



Green and surround at same level



Ramped side surround

A better arrangement is to ensure that the green and surround are at the same level. This form is generally easier to construct and should present a cost saving over the traditional sunken green. All of the mandatory dimensions are met by the construction of a dwarf wall to create the 'bank'.

Access to the green is afforded by two gates within the wall structure, on each side of the green. The gates must be fitted flush on the green side. They must never be positioned at the ends of the green.

An alternative solution is to maintain the green end surrounds at top of bank level and to ramp the sides surrounds down to the level of the green.

Both of these solutions allow easier access to the bowls green for all users. The details must incorporate hinged 'infill pieces' that can easily be fitted within the side ditch so as to provide a perfectly level access for those that require it.

To eliminate the possibility of damage to the playing surface wheelchair players should access the green using either:

- A specialist bowls 'buggy' fitted with very wide wheels.
- A wheelchair fitted with 'clip-ons'. These significantly widen the width of the wheel and are tailor made for each individual wheelchair.



The provision of special wheelchairs allows access directly onto the playing surface

The practice of confining wheelchair players to one rink is not acceptable as it discriminates against individuals and will also, in the long term, make the speed and playing characteristics of the rink surface change significantly compared to the adjacent rinks.

When planning a new project, include within the budget for a minimum of two 'adult' bowls buggies and one 'junior' bowls buggy, to help encourage new players.

An additional aid, for some disabled players accessing the green, is to provide a 'grab post' at the end of each rink. These provide a stable support for someone entering or leaving the green over the bank and ditch. These are particularly convenient for players in the 'inner rinks' who would otherwise have to walk across other rinks to use the accessible 'gates'.

Roof

The following points should be borne in mind:

- Mill-finish aluminium standing seam roofing is likely to provide the best value for money in most sports buildings and can be curved, enabling the avoidance of a ridge.
- Where location demands a slate or tile roof the better quality pressed steel sheet products can be convincing alternatives without the weight penalty of the genuine product and can reduce the threat from vandalism.

- Ideally, the structural roof decking should span between the main beams to minimize surface obstruction.
- High quality, self finished, liner panels provide a better solution than suspended ceilings and will not require the same level of maintenance.
- The internal soffit and structure should be uniform in colour, white, with a 90%+ reflectance value.
- Make provision for acoustic absorbency. Reverberation time should not exceed two seconds at mid-frequencies.
- Suspended ceilings can be used to reduce the volume of the hall and conceal the roof structure while permitting the integration of a high quality lighting system. However, the cost implications of gaining access to services and maintaining the ceilings at an acceptable level may not give the best long-term value.
- The roof structure must be carefully co-ordinated with the lighting fittings and ventilation ducts and fans.

External walls

Consider the following points when selecting materials for external walls:

- Colour-coated profiled steel cladding may be appropriate.
- Metal cladding used above brickwork at a lower level invariably gives an industrial appearance and should be avoided.
- Cedar boarding may be suitable, is cheaper than metal cladding and requires no maintenance. Boards can easily be replaced if damaged.
- External windows and door frames must be in long lasting and low maintenance materials such as powder-coated aluminium or galvanised steel, or hardwood. PVC may only be considered if it is recyclable.
- Care must be taken in the choice of colour and detailing of the cladding.

Internal walls

Internal walls should be impact-resistant. Options include:

- liner panel
- fairfaced brick
- painted blockwork

Light reflectance value of walls should be around 70% to avoid an oppressive interior. The wall colour should contrast with the floor and be uniform across the wall plane.

Lighting in indoor bowls centres does not represent a high percentage of total project cost but it can fundamentally affect the enjoyment and quality of play. As well as being critical during a game it has a major impact on the overall ambience.

Lighting must be considered as an integral element of the overall design and planning of all areas in the centre. The colours and types of surface must be carefully selected in conjunction with the lighting scheme to achieve the optimum overall visual quality for activities and to provide an attractive environment.

Direct sunlight must not fall directly onto the bowls playing surface. Illumination must be even so that players are not affected by glare.

Natural lighting can be used to support artificial lighting and give a less oppressive feel to the playing area. If natural light does penetrate the interior of the green it must do so from above. Vertical or V-profile baffles should be fitted to prevent glare. Natural lighting complements the hall's atmosphere but suitable systems are expensive.

Advances in lighting techniques are ongoing. Currently, however, linear fluorescent fittings are likely to provide the best artificial lighting. If these are used they must be high frequency fittings to eliminate flicker and reduce energy costs. (Metal halide discharge fittings give a good white colour, but have higher glare than fluorescents, can have a slight flickering effect and are more susceptible to colour shift with age. They are not recommended for bowls centres).

Care should be taken in the selection of luminaries. Baffles or louvers should be designed to reduce glare and to avoid sharp cut-off of the lighting that would otherwise cause a shadowing effect on the green. The underside of luminaires should be mounted between 4.5m and 6m above the green. Successful lighting of the bowls green requires professional expertise and a qualified lighting engineer should be contracted to design the system.

The following minimum illumination standards should be applied:

- uniformity ratio of 0.9
- maintained average illuminance on the horizontal plane should be 500 lux at playing surface level.

Note the following surface reflectance values:

- end walls 70%
- side walls 70%
- ceiling 90%
- bowls carpets 30%

Hall equipment

General

It is essential that consideration to storage needs.

- All centres should implement coaching and development programmes and will need to provide equipment enabling new players to try out the sport. Storage should be provided for shoes, woods, jacks, mats and so on within easy access of reception and changing rooms.



An example of well planned storage

- Provision must be made for the on-site storage of bowls 'buggies' for use on the bowls green.
- A racked store may be required for items for hire such as shoes.
- A chair store may be needed.

Fittings

Equipment in the bowls hall will include:

- Manual flip-over or digital scoreboards at the end of each rink. Power is required for digital scoreboards and so their location must be considered at an early stage to avoid unforeseen complications.
- A digital master scoreboard to display match scores. Location should be planned at an early stage to ensure that structural support can be built into the design. The board must be clearly visible to players and spectators, most of whom will be located in the lounge/bar area during a match.

Club/function room

The club/ function room should have the benefit of large windows to enable viewing of the bowls green. Glazing should be planned with care to ensure that no glare from green lighting reflects on to the playing area or obscures viewing. If the room is available for hire, walls must provide acoustic separation from the bowls green, and windows overlooking the green must have blinds or curtains.



Scoreboards are provided for individual games and for matches and competitions

The range of activities that can be accommodated in the social area should be given careful consideration:

- The primary use of this space will be a refreshment area. Provided that bowls play is not disturbed, it could also be used for other activities that may generate secondary income. Table tennis can be played if there is minimum clear space of 8 x 4 x 3m high.
- A store for furniture should be provided so that part of the floor can be cleared for dancing and also to accommodate sports equipment such as folded table tennis tables.
- The potential for full social use is enhanced by ease of servicing from adjoining catering or bar space.

Changing areas

Whenever possible plan high ceilings and rooflights. Note that clerestory windows and suspended ceilings are vulnerable to vandalism. It is essential to use high quality, durable and easily cleaned materials that give an immediate impression of hygiene and cleanliness.

Doors to changing areas should be planned so that entry can be supervised from the reception desk. Special access locks may be needed for additional security.

The nature of programming in a bowls centre means that a changeover allowance is not as critical a factor as for other types of sports centre. However, a minimum changing provision of 1.5 times the green capacity should be allowed.

Allow 0.9m² per person with a 0.5m bench run in 'open' changing areas, and more where provision for disabled people is incorporated in the general area. Changing area layouts should:

- be accessible to wheelchair users
- be equipped with privacy screening or lockers, coat hooks and mirrors.
- Unless formal matches are to be played, showers are generally not necessary in indoor bowls centres



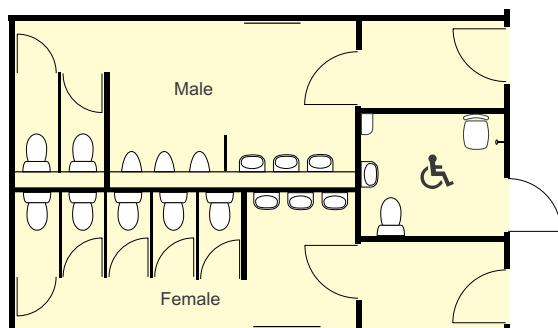
A bright and spacious changing room

Clothes storage

- Allow 75% of maximum membership capacity with space for expansion if required. An eight-rink bowls centre's maximum capacity is 800 players therefore provide locker space for 560.
- 'Behind bench' lockers save space but are inconvenient during times of peak use.
- Lockers in changing rooms offer maximum convenience for users. The side surrounds of the bowls hall can be widened to accommodate lockers for personal equipment.
- A proportion of lockers should be suitable for wheelchair users.

Provision for disabled people

The minimum provision is a dedicated disabled changing room with toilet and shower area, accessed from the main circulation.



General toilets for a 6 rink centre

Additionally, disabled peoples' needs can be met within the general changing areas by provision of open bench changing.

This subject is covered in detail in Building Regulations Approved Document Part M, BS 8300: 2001, and Sport England design Guidance Note - 'Access for Disabled People'.

<http://www.sportengland.org/disabled.pdf>

Toilet accommodation

To maximise available floor area it is preferable for toilets to be planned to share a common access lobby with changing rooms. Plan to give easy access to sports, social and office areas.

It is recommended that a separate accessible unisex disabled toilet is provided in all centres, and this is a requirement in larger facilities. This is in addition to the dedicated disabled changing room.

At least one cubicle in each of the 'general' male and female toilets should be suitable for ambulant disabled people.

Cleaner's store

Even in a small hall separate storage for cleaning equipment and materials must be planned. Locate the store close to changing accommodation and include a bucket sink.

First Aid

Provision must be made for first aid whether in a dedicated space or in a shared use with a staff area, dependant on size of the centre. A sink and drainer, a secure first aid cabinet and access for a stretcher in a clear space of 2 x 1.6m is a minimum provision.

Number of rinks	Male			Female	
	WC	Urinal	Wash basin	WC	Wash basin
4	1	2	2	3	2
6	2	3	3	5	3
8	3	4	4	6	4



Sustainability

Ensuring a better quality of life for everyone, now and for future generations to come lies at the heart of the Government's strategy for sustainable development.

The design team should follow best practice in sustainable development and whole life design. Buildings should have high environmental performance, particularly in terms of energy, water efficiency and waste management.

The design team must ensure that all timber is acquired from sustainable and legal sources, and that suppliers provide independent verification.

Further information is available from:

www.defra.gov.uk/environment/internat/cbd/forests/index

www.sustainable-development.gov.uk

www.odpm.gov.uk

www.cabe.org.uk/policy/reports

Building services and the Environment

Energy efficiency

Consideration should be given to energy efficiency when designing the facility:

- The position and orientation of the building on the site, the selection of materials, and the choice of heating and ventilation systems will all contribute to energy efficiency throughout the life of the building.

- Requirements for active cooling can be reduced by the correct orientation of the building and the use of solar shading on windows.
- Careful use of natural lighting can reduce the need for artificial lighting.
- Energy-efficient lighting sources should be used wherever practicable.
- The ventilation system should be provided with a method(s) of heat recovery, particularly in larger centres.
- Effective controls should be provided for all environmental systems.

Heating and Ventilation

Selection of the heating and ventilation system will depend on use, occupancy and operational and managerial arrangements. For stand-alone indoor bowls centres the most appropriate solution may be a ducted warm air system.

The system will usually comprise a central supply air handling unit containing a fan, filter, and heating coils and an extractor unit with a heat exchanger or re-circulation system. Air is distributed via ductwork and supplied to the hall via grilles or diffusers. The heat will be provided via a gas, or oil-fired boiler and a low-pressure hot water distribution system. The system will service all ancillary areas.

- The recommended temperatures in an indoor bowls centre range from 18°C on the bowls green to 21°C in circulation and social areas.
- Minimum fresh air requirements should be based on the needs of eight players per rink at a rate of 12 litres per second per person.
- The bowls centre should be designed to ensure comfortable temperatures in all seasons without the need for artificial cooling plant.
- Heating and ventilation systems should be as quiet as possible to enable bowlers to hear instructions from one end of the green to the other.

Electrical Services

A careful assessment of the electrical demand will need to be carried out by a competent engineer to ensure that the correct size supply and tariff are selected.

Positioning of power outlets should be carefully considered to take account of cleaning and general flexibility as well as any special events such as competitions.

Automatic and manual control of lighting must be considered. Controls should be easy to use and operate by staff. Automatic presence and ambient lighting detection can be considered in rooms not in continual use, such as changing rooms and toilets.

External lighting should be carefully designed to provide a safe and welcoming environment to the centre. See Sport England Design Guidance Note – ‘Car Park and Landscape Design’.

Consideration must be given during the design to access, safety and security requirements throughout the centre.

A risk assessment should be carried out to determine whether internal or external close circuit television (CCTV) equipment will be required. Advice may be sought from the local police crime adviser, using the Secured by Design Scheme.

Electrical systems will need to take into account the requirements of disabled players and staff. Matters to be considered include: -

- The Disability Discrimination Act (DDA)
- Mounting height of general electrical accessories.
- Induction loop, or other systems to assist the hard of hearing.
- Disabled assistance alarms to disabled toilets, and possibly changing rooms.
- Increased lighting levels to steps and ramps.
- Additional visual and audible warning systems for fire alarms etc.

Management

The success of an indoor bowls centre will largely depend on the establishment of an appropriate management structure that exercises tight financial and administrative control.

Due to the high start-up costs, it is likely that most new indoor bowls facilities will be developed in partnership and this could involve the public, private or voluntary sectors.

If the provision of an indoor bowls facility fits within a council's leisure strategy, an opportunity exists to form a partnership with the council. Mainly due to staffing costs it is unlikely that a bowls facility will be provided and managed solely by a local authority.

Registering as a club limited by guarantee or as a charity should be considered by clubs to be the preferred legal status. A company limited by guarantee can be registered as a Community Amateur Sports Club (CASC) in order to obtain tax exemptions. Legal advice must be sought when setting up either a charity or a limited company.

The constitution of a limited company comprises:

- Memorandum of association: sets out the aims and objectives of the company and defines the powers it has to pursue them.
- Articles of association: describes the company's rules including procedures for electing the management committee and the keeping of accounts.

The company will have a board of directors elected by members of the bowls club. The local authority may grant the company a long-term lease on land at an agreed rental or provide a site freehold; it may provide a capital grant or make a loan to the company.

It is likely that local authorities will enter into this sort of partnership only if there is significant benefit to the community with the opportunity for casual community use, together with coaching and development opportunities.

The company will work in partnership with the local authority which will have representation on the board of directors to ensure that specific development programmes are in place.

The long-term success of the facility will be gauged in the context of tight financial and administrative control. All too often, however, this goal conflicts with the fact that many centres rely too heavily on the services of voluntary staff. While the use of some voluntary and part-time staff will assist in keeping staff costs down, it is important to recognise from the outset that the centre is a business venture that must be operated efficiently in order to succeed.

There is no formula for deciding staffing levels or the ratio of paid to voluntary staff. This must be decided formally on a club-by-club basis.

In smaller four- or six-rink centres contracting out services to specialist management companies is unlikely to be commercially viable. An eight-rink centre could justify contracting out services and these might include catering (including staffing the bar), cleaning and security.

Expert advice must be sought at an early stage in development of the project on appropriate management structures and the related subject of Value Added Tax.

Programming

It is important to offer a basic range of activity including leagues, matches, competitions, tournaments and junior club development.

Most clubs divide their daily programme into two-hour sessions, allowing six sessions each day for seven days. EIBA Guidance Notes provide further information.

It is essential that sufficient funds be set aside for planned maintenance and refurbishment of the facility and equipment to combat wear and tear and ensure an attractive environment.

Bowls Green

Ensure the bowls green is properly maintained otherwise the quality of the green will deteriorate significantly:

- Daily cleaning of the green with a specialist vacuum cleaner to ensure that the carpet does not wear unduly due to ground-in dirt.
- Every six months check the tension of the carpet and condition of the underlay against the anticipated and actual speed.

- Stretching the carpet is important, as is the condition of the underlay.
- Ensure a sinking fund within operating budget for replacement of the underlay that may be required after five years.
- Ensure a sinking fund within operating budget for replacement of the carpet that may be required after 10 years.

Lighting

All lighting will require periodic cleaning and maintenance and consideration as to how fittings will be safely accessed and lamps changed should be made during the design process.

- Particular attention must be given to the lighting of the green. This is crucial to the quality of the playing surface and a systematic planned replacement of lamps should be undertaken.
- The light output of all lamps deteriorates with age and this should be allowed for when preparing a planned maintenance and lamp replacement schedule. As lamp deterioration is gradual, the effect will not be noticed, but lighting levels may deteriorate by up to 50% due to lamp age and fitting cleanliness.
- Consideration should be given to “hours run” recording meters to each rink, which will greatly assist the re-lamping/maintenance schedule.
- As a guide, re-lamping may be required after 10,000 hours or every 2 years if the centre is used throughout the year.



Co-ordinated services

References and further reading

SPORT ENGLAND

Access for Disabled People

Car Park and Landscape Design

Construction Project Management in the Voluntary Sector

Sports Halls – Design

The above are all free to download from:

http://sportengland.org/index/get_resources_downloads/design_guidelines.htm

CIBSE

Addendum to CIBSE Lighting Guide 4: Sports, 1990, issued February 2000

(Please note this document is currently being reviewed and a further updated document is anticipated during 2005)

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NOTES:

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A full set of Design Guidance Notes is available from the Sport England website at:
http://www.sportengland.org/index/get_resources/resource_downloads/design_guidelines.htm

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