

An abstract graphic design featuring several thick blue lines that create a stepped, upward-sloping path from the bottom left towards the top right. A large, solid orange shape is positioned in the lower right area, partially enclosed by the blue lines. The text 'Primary School Sports Facilities' is centered within this orange area in a white, sans-serif font. In the bottom left corner, the text 'sportscotland' is written in a blue, lowercase, sans-serif font.

Primary School Sports Facilities

sportscotland





Primary School PE and Sports Facilities

The Scottish Executive's School Estate Strategy aims to create a teaching and learning environment fit for the future. It gives Local Education Authorities guidance on developing a Strategy for their school estate and advice on school design. This Guide sets out **sportscotland's** latest advice on primary school sports facilities. It aims to complement the School Estate Strategy, by providing more detailed advice on meeting the requirements of pupils, teachers and the wider community.

This design guidance supplements 'Secondary School Sports Facilities: Designing for School and Community Use' (**sportscotland** 2003). Many design issues relate to both secondary and primary schools, and designers should also refer to the secondary school guidance, particularly for more technical matters. Further guidance on school playing fields, and on management of school sporting and cultural facilities for community use, will be available soon.

The need for design advice

Physical education (PE) at primary level is delivered in a less formal setting and manner than in secondary schools. In early primary years, the focus is on foundation skills such as running, throwing, catching, movement and balance, and eye/hand co-ordination. As children get older, the emphasis transfers to more specific sporting and physical activity, usually by teaching the basic skills for each activity and eventually through small-sided or 'mini' versions of full sports.

Specialist, purpose-designed facilities are required if these skills are to be taught in an environment of the right size, design and specification, conducive to learning and enjoyment. This is particularly important in encouraging children to participate in activities outside the school day, and in developing a positive attitude to health and physical activity for secondary school and beyond. This document provides advice on the numbers and types of spaces required by primary schools of a range of sizes, and on the factors to consider when designing these spaces.



The need for community use

The issues and challenges raised by community use of primary school sports facilities are different from those posed by the use of secondary facilities. The most obvious difference is the size of the children, and therefore of the spaces required. Primary school PE normally requires smaller, more intimate activity spaces. Ancillary spaces such as changing rooms, toilets and showers also require fittings and equipment designed for young children. Because the spaces are designed and equipped for smaller children, designing for adult community use in a primary school is less straightforward than in secondary schools. This usually restricts the range of activities available for adults.

However, even in communities where there are public sports facilities, or where the secondary school is available for community use, there may still be a demand for facilities that primary schools can meet. It is important, therefore, to provide for community use.

Primary schools are much more numerous than secondary schools, and tend to represent a more community-based, neighbourhood facility. They will generally be more accessible to those without access to a car. They will also be of a size well suited to less formal community use and, of course, to use by younger children. Finally, in rural areas, the local primary school is often the only facility within a reasonable distance, and can be a vital centre for sporting and other community activities. This is particularly the case in remote and island communities where travel to other facilities may not be an option.

sportscotland urges all local authorities to consider the potential contribution new and refurbished primary schools can make to meeting the sporting needs of local communities. The provision of new school facilities should be planned as part of a wider strategy for all sports facilities in the area.

Primary School PE

To achieve facilities well suited to the delivery of primary school PE, designers must be aware of how this subject is delivered. The National 5-14 Guidelines describe the aims of PE for young children as follows:

- *Physical activity is essential to the growth and development of children. Physical education offers opportunities for the development of physical competencies, social skills, fitness and a healthy lifestyle.*
- *Physical education should provide all pupils with opportunities*
 - *to engage in purposeful and enjoyable physical activities;*
 - *to develop physical skills, knowledge and understanding of the concepts involved and the ability to apply these in various contexts;*
 - *to develop self-awareness, confidence and co-operative relationships with others and the ability to meet challenges presented in a variety of physical settings;*
 - *to develop life-long positive attitudes to health and fitness;*
 - *to develop critical appreciation of their own performances and those of others.*

Despite these well-established aims, there is currently much concern over the health and fitness of young children in Scotland and their low levels of participation in physical activity. Improving this situation means not only increasing levels and quality of participation within the PE curriculum, but also increasing participation after school. Scotland's Physical Activity Strategy, 'Let's Make Scotland More Active', and **sportscotland's** Active Schools programme are both aimed at tackling these issues. Facilities must therefore be designed to meet the needs of both PE and after school sport and physical activity.

Well designed facilities are not, of course, the only factor in ensuring quality PE for our children. But they are essential if we are to allow teachers and their pupils to reach their full potential, and to encourage an enjoyment and love of sport and physical recreation.



The main activity space

As stated above, primary level PE needs specialist facilities but it does not need the range of indoor facilities required in most secondary schools.

The principal indoor teaching space for PE must be suitable for teaching a full class group of up to 30 or more children, whether P1 or P7. It must therefore be intimate enough not to prove too daunting to the younger children, or to inhibit their self-expression. At the same time, however, it must be large enough to allow a full range of dynamic activities by a full class group of the oldest children. It must also accommodate groups for after school clubs and activities, such as programmes developed by Active School Co-ordinators. Finally, many primary schools will have an important role to play in providing for a range of sports activities by the wider community.

It is apparent, therefore, that providing such a space will always be a compromise between the requirements of the various groups of users. Of these competing requirements, those of the school are of course the most important. To meet these needs, **sportscotland** considers a two-badminton-court hall to be the starting point from which to plan the provision of PE facilities in a primary school. This space should be a minimum of 18m x 18m, with a minimum height above the playing area of 6.7m (Drawing 01, Pg4).

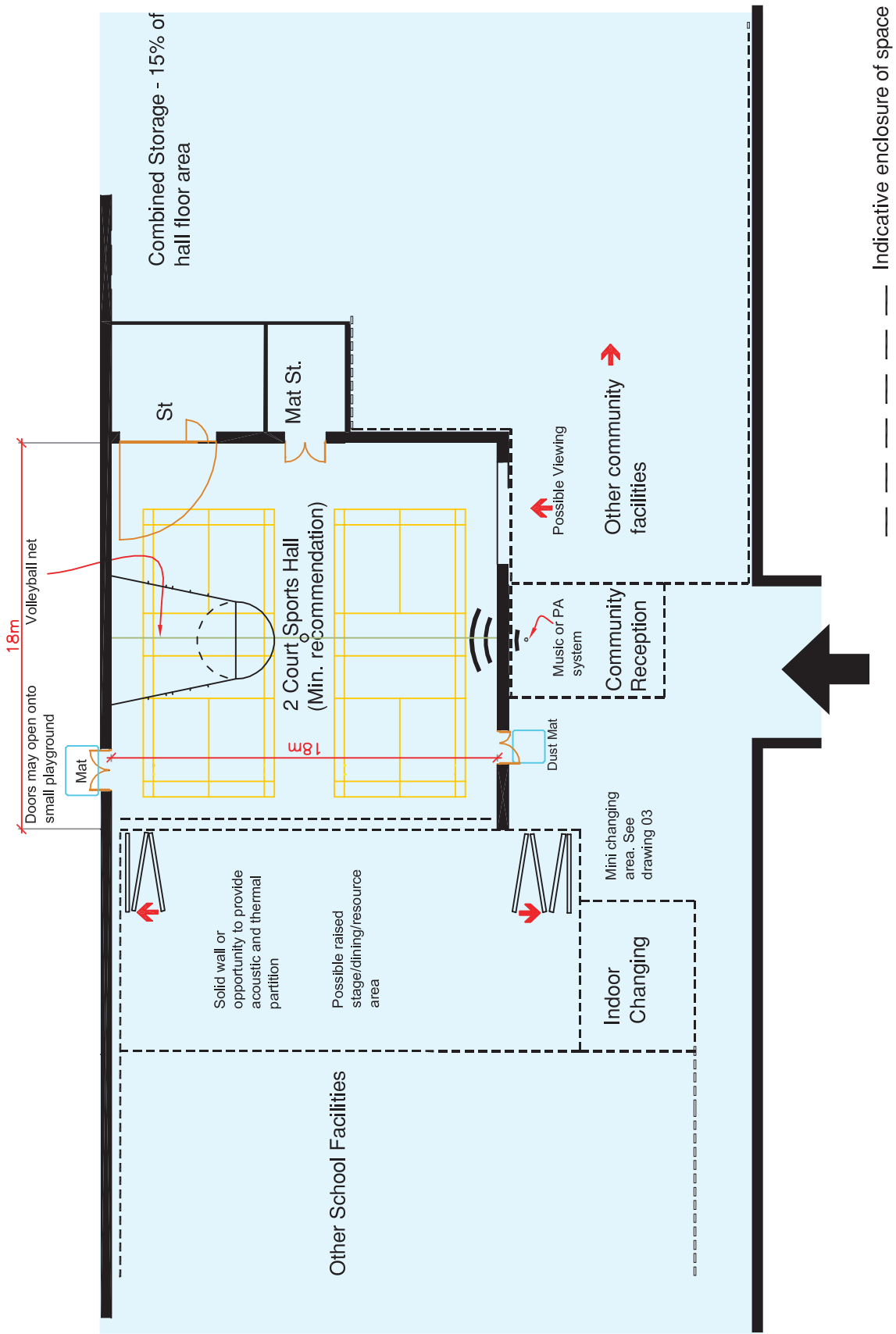
The primary requirement for the main PE space is for an adequately dimensioned teaching space for the whole school. Older children need more space for two reasons. Firstly, because they are larger, they take up and require more space around and between them. Secondly, they are likely to be doing more dynamic, sports-specific activities which require more space for movement and for projectiles. It is essential that the principal PE space in a primary school is large enough for a P7 class group. For most schools a two-court hall will be the minimum size required.

After-school activity, whether organised through Active School Co-ordinators or other school clubs, is an important opportunity for pupils to participate in physical activity. In addition to the target of two hours of curricular PE per week noted below, the National Physical Activity Strategy has a further target for every child to accumulate at least one hour of moderate physical activity on five or more days a week. After-school activity will be an important means

of moving towards such a target, and requires well-designed, adequately dimensioned facilities. Groups of children taking part in these activities can be as large as, or even larger than, a class group, and a two-court hall is therefore the recommended minimum size for indoor activities.



Community use of the facilities may be by local sports clubs for training, informal play or competitive matches; for dance or fitness classes; or for sports development activities typically provided by the local authority or leisure trust. In order to facilitate such wider community use, a two-court hall should be considered the absolute minimum to allow more than a very basic range of activities. Even a two-court hall can only accommodate a limited number of sports. A three-court hall would in fact allow for a significantly greater range of activities, especially by adults and secondary school children. If significant levels of community use are expected, serious consideration should be given to providing a three-court hall or larger. This should have dimensions of at least 27mx18m and a minimum height of 6.7m above the playing area. If providing a three-court hall, the school may wish to be able to partition the hall into two smaller spaces.



Drawing 01: Two-court Hall

A two-court hall will not be appropriate for every school, and in many schools it will not be the only PE facility. However, as the principal PE space, it should in most cases represent the best balance between competing user requirements.



Assessing facility requirements

As stated above, **sportscotland** considers a two-court hall the basic unit of provision for primary school sport and PE. Many schools, however, may require an additional activity space, or may be better served by an alternative size of principal space. In determining the level of facilities required for PE, the size of the school will be the principal factor. The greater the numbers of pupils and class groups, the greater the demands on space. This guidance uses three simple model sizes for schools:

- **single-stream**
(one class for each year group - P1 to P7)
- **two-stream**
(two classes for each year group - P1 to P7)
- **three-stream**
(three classes for each year group - P1 to P7)

In line with **sportscotland's** guidance on secondary school facilities, it is recommended that the National Physical Activity Strategy's target of two hours of PE per week for every child be used as the basis for calculating facility requirements. This is an aspirational target at present, rather than a statutory requirement, but has been adopted by the Scottish Executive as part of the Strategy. Calculating requirements on the basis of current (often lower) levels of use may result in new schools where a lack of facilities constrains future efforts to increase pupils' levels of physical activity. On the basis, therefore, of the target of two hours of PE per pupil (and therefore per class) per week, our three model schools have the following requirements:

- 14 hours of PE per week for single-stream schools
- 28 hours of PE per week for two-stream schools
- 42 hours of PE per week for three-stream schools

To calculate the number of activity spaces needed for each of these model schools, we must calculate the time available in a typical school week. If we assume five teaching hours are available on a normal school day (and three on a Friday), there are 23 teaching hours available in the school week.

Single-stream

For single-stream schools, it is clear that only one PE teaching space is required. Indeed, it is likely this can be a shared space, also used for other activities such as drama or assembly (though not

dining). It should, however, be at least the minimum recommended size of a two-court hall, particularly for those single-stream schools with full class sizes, or where significant community demand for sports facilities is anticipated. Only in very small single-stream schools with much smaller class sizes, and where there is limited demand for community use, might a smaller activity space (such as a one-court hall) be more appropriate.

Two-stream

With only 23 hours of teaching time available in the school week, the 28 hours of activity time required for two-stream schools means two PE teaching spaces are required. The principal space should be a two-court hall, and this will be used predominantly for PE.

The secondary space should be smaller and more suited to PE by younger children, and to movement and dance-based activities. This space will have a lower ceiling height than the main hall and should be designed to provide an intimate, comforting environment for younger children. (See Design Note 4 from **sportscotland's** 'Secondary School Sports Facilities: Designing for School and Community Use' for detailed design advice for a 15m x 15m secondary school dance studio.) A slightly smaller space, designed on the same principles, is likely to be suitable for primary schools. It should be noted that in a two-stream school this space will by no means be required for PE at all times, and should therefore be designed as a dual-use space.

Three-stream

A three-stream school also requires two spaces for PE. The minimum recommended requirement for a three-stream school is identical to that of a two-stream school: a two-court hall and a smaller movement and dance studio. The requirement, however, for 42 hours of PE per week means that these spaces may be almost exclusively used for PE.

Local authorities should also give serious consideration to providing larger facilities for three-stream schools. For curricular PE, there may be high demand for a relatively large space. Furthermore, the higher numbers of pupils taking part in after-school activity may require a larger main hall. Finally, facilitating community access to sports and other facilities in such a large school is likely to represent best value for the Council and will enhance the school's status as a resource for the whole community. In such circumstances,



a subdividable three-court hall can deliver a much wider range of community activities than a two-court hall. An alternative model for the PE facilities for larger three-stream schools is therefore a three-court hall as the main PE space, and a movement and dance studio as a secondary space.

The following models of facility provision are therefore recommended by **sportscotland**:

- **One-stream:**
two-court hall, used for PE and other school subjects (NB: a smaller hall may be acceptable for very small rural schools with small class sizes and limited community use)
- **Two-stream:**
two-court hall, used predominantly for PE, with a movement and dance studio used for lower school PE and other subjects
- **Three-stream (small):**
two-court hall, used exclusively for PE, with a movement and dance studio used predominantly for lower school PE
- **Three-stream (large):**
three-court hall, used exclusively for PE, and a movement and dance studio used predominantly for lower school PE

These models provide a guide only. Local authorities must carefully consider the size of schools they are providing, and all their curricular requirements, before deciding on an appropriate level of provision. In all cases the potential for community use must also be considered and, for each of the models above, may justify the provision of more or larger facilities.

Community demand may even suggest that a four-court hall is justified if there are no alternative public facilities nearby. Such a hall could be divided into two smaller spaces for many school activities.

Other design considerations

Entrance, reception and layout

Many of the issues relating to these elements of the design will be similar to those for secondary schools, the differences being principally of scale and degree. Primary school children (and, in many schools, nursery age children) are much less aware of the hazards in their environment, and designers must take particular account of safety and child protection issues.

Access and parking layouts must take account of this vulnerability by ensuring low speeds and good all-round visibility. School security and controlling unauthorised access are also important considerations, and must be carefully planned if community use of the facilities during the school day is to be facilitated. A separate community entrance may be required.

Although security is an important issue, designers must take care to design a school that provides a safe environment while remaining accessible to, and allowing integration with, the wider community.

The school entrance and reception area must be prominent and welcoming, but must not be too imposing in scale or daunting to young children. A friendly, human environment, almost domestic in scale, is required for the entrance, reception, circulation and social areas.

In more remote schools, or those with limited community use, it may be possible to provide smart-card entry and booking systems to allow use by authorised clubs and groups without the need to provide staff at all times.

Community use of a primary school will generally mean a high proportion of use by families of the pupils themselves. This, and the possible existence of a nursery school on the same campus, means infants and toddlers will often accompany parents and older children. It is essential, therefore, to provide baby changing facilities and ideally a crèche and/or children's play area if significant numbers of community users are expected. An area for pram and buggy storage should be provided. WC cubicles should be large enough for a parent and small child together.



Other uses for PE facilities

In most schools, the activity space or spaces will not be required for PE every hour of the week. It makes sense to consider what other activities may take place in these spaces, and whether their design needs adapting to suit such uses. Gatherings of the whole school, for example, can normally take place in the main PE space, providing the school timetable allows for this.



It is important that the physical characteristics and environmental controls of the activity spaces can accommodate this range of uses. Lighting (natural and artificial), heating and ventilation must all be adaptable to different user requirements and numbers. Likewise, the floor must be a purpose-designed sports floor, but must also be robust enough to withstand this range of uses. Designers must also consider whether a stage is required. This is highly desirable for drama, but may also be useful in other circumstances such as some public meetings or for school assemblies. A stage, however, restricts the available floor space and flexibility of the space. Demountable staging may be the solution for some schools, although this requires significant storage space and of course takes time to set up and remove. Another possible approach, shown in Drawing 1, is to provide a stage adjacent to the sports hall, separated by a moveable partition. Such an area can also double up as a dining space for the school.

sportscotland recommends that school dining does not take place in the same space as PE.

The time taken to set up and then remove tables and chairs encroaches significantly on the time available for PE, and regular moving of equipment or furniture is likely to quickly damage or degrade the floor. Even after removing the chairs, the floor must be cleaned and dried before subsequent use, both taking up time and presenting a safety risk if not done thoroughly. Also, the serving hatches and other design features required for a school dining area are not appropriate for a sports facility, particularly one available for wider community use. A dining area will also need to be at a higher temperature than a PE teaching space, and heating/cooling of the space will take some time. Finally, schools should aim to create a welcoming and pleasant dining environment, to encourage healthy eating habits in pupils. A sports hall with dining tables is unlikely to provide such an environment. Only in very small rural schools with limited requirements for PE may the same space be suitable for dining.





Sport	1 or 2-Court Hall	3-Court Hall	4-Court Hall
Lined out for	Badminton	Badminton Volleyball	Badminton Volleyball Basketball Netball
Sports Possible			
Badminton	Full	Full	Full
Volleyball	Mini	Full	Full
Tennis	Short	Short	Short
Netball	Mini*	Mini	Full
Basketball	Mini*	Mini	Full

*Constrained by dimensions of the hall.

The table shows which activities can take place in each size of hall. It should be noted that this relates to mini or full versions of these sports. Teaching these sports to a primary class group will not normally rely on these court markings and hall sizes. The line-markings in the table are possible options, but actual markings should be determined by educational requirements and the most common uses of the space.

Floor markings and hall sizes

Community sports activity is generally very different from primary school PE, and consequently the requirements for floor markings are also different.

Formal court markings will not normally be required to teach primary school PE. This is clearly the case for teaching foundation skills such as movement, balance, throwing and catching and so on. Even the teaching of more sports-specific skills and principles will be in a group or class situation. These therefore normally involve a more flexible use of space, rather than being restricted by court markings. For example, sockets on the end walls will allow a volleyball net to be strung across the entire hall, allowing a greater number of children to be taught and to take part than would be the case using a formal volleyball court and net.

In some circumstances, however, 'mini' or small-sided games will play a part in teaching, and are likely to be useful for extra-curricular and after-school use. Several mini-sided versions of the main hall-based sports are available:

- **Mini-badminton**
(half a badminton court, split lengthways)
- **Mini-basketball**
(on a scaled down version of a full-court)
- **Mini-volleyball**
(on a standard badminton court)
- **Mini-netball**
(using 1/3 of a standard netball court)

- **Short-tennis**
(on a standard badminton court)
- **Unihoc**

Services and hall environment

For general advice, designers should refer to **sportscotland's** design guidance for secondary school sports facilities, as many issues are common to both primary and secondary schools. There are some differences, however. For example, primary children often sit on the floor during PE. Under-floor heating should therefore be considered, supplemented by high-level gas powered heaters to raise the air temperature for sedentary activities.

For most physical activity, a hall temperature of around 16°C will be required, with the ability to boost temperatures to around 20°C for more sedentary activities. A minimum lighting level of 300 lux, with good uniformity levels, should be sufficient for most school and community uses. As with larger sports halls, the walls should have a light reflectance value of around 30% to 50%. Wall colour is not so important in smaller halls, and a variety of colours could be used in the same hall to provide a more lively and stimulating environment for young children.

Both school and community use of the hall are likely to require music from time to time. Rather than using portable equipment, it will be preferable to have an integrated music system set in a recess



in the hall wall, with wall-mounted speakers. This should be easier to use for teachers and instructors, and prove less of a hazard than bringing in portable equipment.

Sports equipment and storage

As with secondary schools, equipment should be shared between school and community users. However, primary school children will often require different sets of equipment from adults. The specialist equipment required includes primary level gymnastics and mini-athletics equipment. If there is significant community use of the facilities, separate school and adult sports equipment stores may be required, as will a separate mat store.

Where appropriate, equipment should be adjustable to meet the different requirements of adults and children. For example, badminton and volleyball nets and basketball hoops should be height adjustable. Mini-basketball, however, uses a smaller hoop and backboard set-up than the full game, and in some halls it may make sense to have both mini and full size hoops.

It is essential to provide sufficient storage for the range of school and community sports equipment required. Although approximately 15% of the floor area of the activity spaces is likely to be appropriate for equipment stores, a full assessment of the likely storage requirements should be undertaken.

Changing accommodation

Even today it is unusual to find purpose-designed changing accommodation in primary schools. Pupils often have to change in the classroom or in the sports hall itself. **sportscotland** does not consider this appropriate in the design of a modern school, and recommends that separate changing accommodation be provided for boys and girls.

The scale and design of the changing accommodation will, to a large extent, be determined by the anticipated level of community use. If the PE facilities are not to be used by the community, then separate boys' and girls' changing rooms, each approximately 12m² in size, should be provided. Each of the changing rooms should have direct access to a toilet.

Each changing room should be fitted with benches. Pupils will normally bring their sports kit to school as and when required, but sports shoes may be kept in the classroom or its associated

storage area. This should be taken into account when designing the school's classrooms.

Lockers for pupils' use are not required in changing rooms - clothes hooks are sufficient. However, because of the varying heights of the children, hooks should not be mounted directly above the benches, but mounted on a separate wall within the changing room.

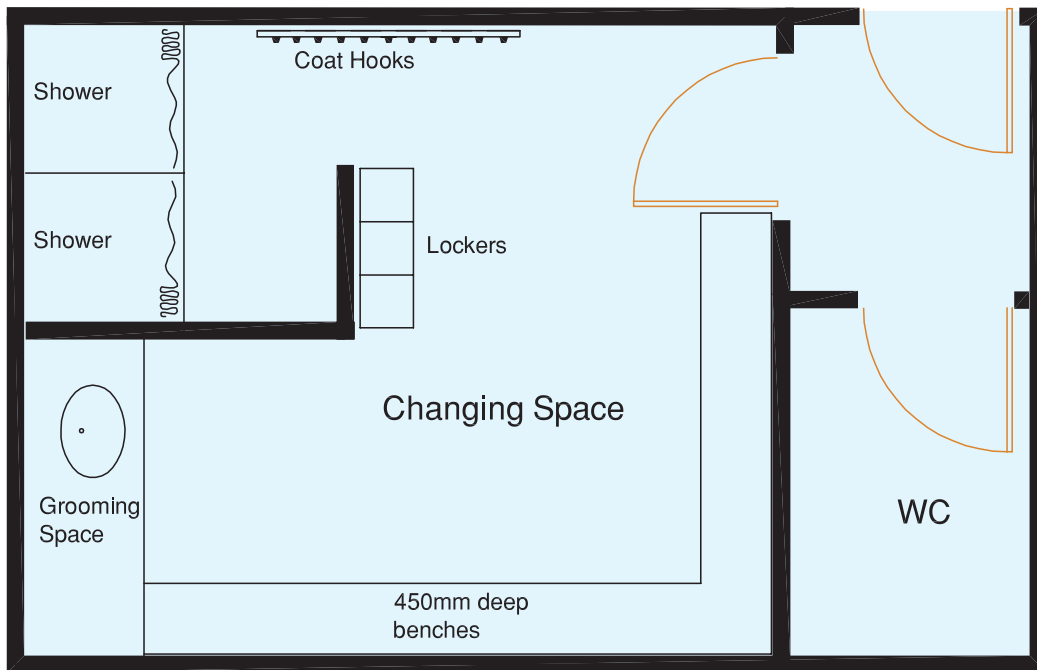
If the facilities are to be used by the community, either separate changing accommodation should be provided for adult users or the children's changing should be modified. However, unless the school is to be regularly used by school and community at the same time, separate changing accommodation for pupils and adults is probably unwarranted.

It is more likely that the pupils' changing facilities will be accessed by the community outside school hours, and it must therefore be modified to suit the requirements of both children and adults. In this case, two showers and a drying area should be provided in each changing room. The changing area should be increased to approximately 14m² to allow for the inclusion of between 12 and 14 half-height lockers, and two or three full-height lockers. A possible layout is shown in Drawing 02 (Pg 10).

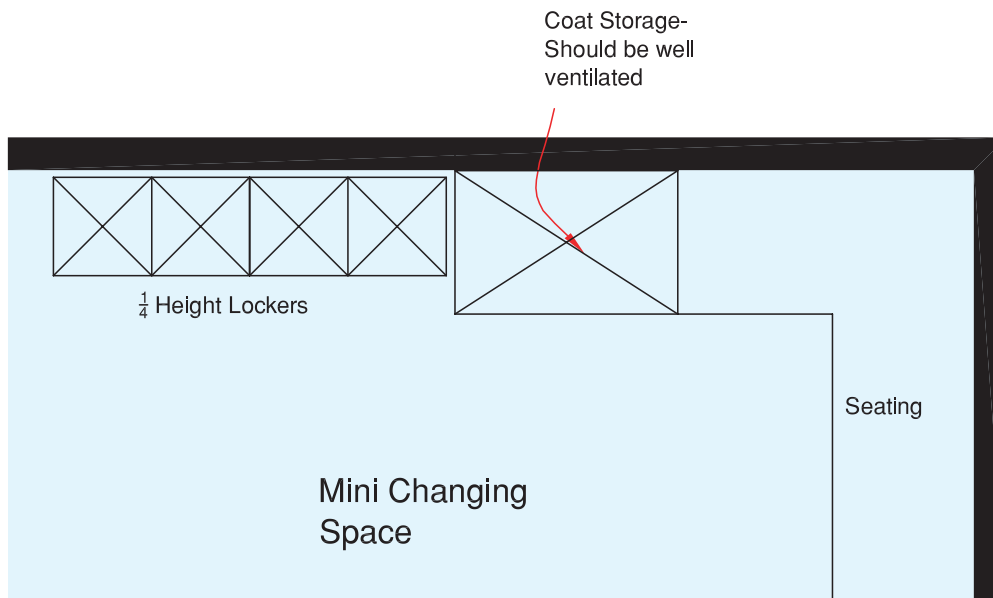
If a three- or four-court hall is provided at the school, then the changing areas should be larger still, perhaps with an additional flexible/buffer changing area (refer to **sportscotland** design guidance for secondary schools).

A dedicated changing room for people with disabilities, including toilet and showering facilities, should be provided. Baby changing facilities should be included in this space.

Some community use of the facility, for example short mat bowls, will not require full changing facilities, but only access to toilets. Many participants will arrive in their playing clothes and will only need to change shoes. This could take place in the hall, but on wet days this is not advisable, as water will inevitably be trailed into the hall. To prevent this, **sportscotland** recommends that a small changing area be created next to the entrance to the hall where participants can change shoes, leave valuables and hang up overcoats. A bank of quarter-height lockers for shoes and valuables should be provided in this area. A possible layout is shown in Drawing 3 (Pg10).



Drawing 02: Possible layout of school/community changing area



Drawing 03: Possible layout for supplementary changing space



Designers must also consider how to provide changing accommodation for outdoor activities. Unless there is significant community use of the outdoor facilities, the indoor changing will probably be sufficient for school, and occasional community, use of the outdoor facilities. Schools with a synthetic grass court or pitch are more likely to attract significant levels of outdoor use.

Swimming pools

Primary school children should ideally be taught to swim, and water-based activities should form part of their PE. However, the very low levels of use required by a primary school alone will not be sufficient to justify a pool at a primary school. For most primary schools, therefore, swimming lessons and water-based PE will be delivered in a suitable nearby public or secondary school swimming pool.



Playing fields

sportscotland will shortly be producing guidance on standards for school playing fields, which will provide advice on the numbers and types of pitches and other outdoor sports facilities required for a range of primary and secondary schools. Primary school playing fields will be used as both a formal activity space and an informal play space, and should be open to pupils at breaks and lunchtime.

Like indoor activities, full-size sports pitches will seldom be used for the teaching of primary school PE. Instead, the skills and principles of outdoor sports will be taught to groups or to a whole class. Small-sided versions of the pitch sports may also be taught, and will certainly be employed by Active School Co-ordinators.

Primary school playing fields must therefore be thought of as a flexible resource rather than as one or more sports pitches. The main area may be natural grass, but synthetic grass can accommodate higher levels of use. Such a surface will usually accommodate football, netball and hockey, and perhaps also basketball and tennis. Synthetic grass will be particularly useful for after-school activity, and where significant levels of community demand may be expected.

Regulations for designers

This document provides guidance on some of the issues designers of primary school sports facilities will have to consider, and gives practical advice on the types and specifications of facilities and equipment required. Designers must also, however, comply with a range of legislation and regulation, including the following:

- School Premises Regulations
- Building Regulations
- The Workplace Health, Safety and Welfare Regulations
- British Standards
- Nursery Regulations
- The Disability Discrimination Act 1995
- National 5-14 Guidelines





References and further reading

As well as the relevant regulations and legislation, and the list of references provided in 'Secondary School Sports Facilities: Designing for School and Community Use', designers should refer to the following:

Building Our Future:
Scotland's School Estate: School Design
The Scottish Executive (2003) ISBN 0-7559-0854-6

Building Our Future:
Scotland's School Estate: Core Facts
The Scottish Executive (2003) ISBN 0-7559-0856-2

Building Our Future:
Scotland's School Estate: The 21st Century School
The Scottish Executive (2003) ISBN 0-7559-0857-0

Building Our Future:
Scotland's School Estate: School Estate
Management Plans.
The Scottish Executive (2003) ISBN 0-7559-0855-4

Client Guide:
Achieving Well Designed Schools Through PFI
Commission for Architecture
and the Built Environment (CABE)

Quality Indicators in the Design of Schools
The Royal Incorporation of Architects in Scotland

Designing Scotland's Sustainable
Schools of the Future
The Lighthouse (2003) ISBN 0 9536533 6 6

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The image features a white background with several thick blue lines. A diagonal line descends from the top left towards the bottom right. A horizontal line crosses this diagonal line. Another horizontal line is positioned below the first horizontal line. A large orange trapezoidal shape is located in the bottom left, bounded by the diagonal line, the bottom horizontal line, and the left edge. The text is located within this orange area.

sportscotland
Caledonia House
South Gyle
Edinburgh
EH12 9DQ
Tel: 0131 317 7200
Fax: 0131 317 7202
www.sportscotland.org.uk

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