

Appendix II: Playing Fields





Playing Fields

Schools need outdoor teaching/activity spaces to deliver the PE curriculum and for extra curricular activities by school clubs and school teams. The school grounds will also be used by pupils at breaks and lunchtime for games and other informal activities. Finally, there may be community demand for use of the school's playing fields and other outdoor activity areas.

A significant proportion of the PE curriculum may be delivered in outdoor teaching spaces. The activities taught outside are likely to include many of the following: athletics, football, hockey, rugby, cricket, shinty, rounders. In addition, there are many other activities which may be taught indoors or out, or both, depending on the facilities available at the school. Such activities may include tennis, basketball, netball, volleyball and golf. The school grounds may also be used for other outdoor pursuits such as orienteering and archery. A range of facilities is therefore required to meet these needs.

Extra-curricular school activity may be based on many of the above sports. School clubs and teams may require the school facilities in the evening and weekends for match-play and training. Likewise, there may also be demand from the community for these outdoor facilities. This will typically be from clubs and again may be for both matches and training.

School playing fields have traditionally been of natural grass, although in some parts of the country a significant proportion are mineral based. Grass playing fields can, of course, accommodate only a certain amount of use per week without deterioration in their quality. This makes the decision on which and how many outdoor teaching spaces to provide somewhat more complex than for indoor spaces which have no such constraint on their capacity.

A further factor is the requirements of the School Premises (General Requirements and Standards) (Scotland) Regulations. These Regulations set out the minimum requirements for the area of school grounds and for the area of playing fields which must be available to a school (although they need not be within the school grounds).

The Regulations are not, perhaps, the best guide to determining the appropriate playing field provision at a school. Due to the cost

and time spent transporting pupils off-site, it is preferable to have all the playing fields within (or adjacent to) the school grounds. The Regulations, however, do not impose this requirement and indeed do not preclude pitches off-site being available for other users. Nor do the Regulations offer any guidance on the type of pitches and other outdoor facilities which should be provided.

Ideally, numbers of playing fields and other outdoor facilities which are of a type and surface sufficient to accommodate the range of school needs (curricular, extra-curricular and informal use by pupils at breaks and lunchtime) should be provided at the school itself.

Where possible, the needs of community users should also be accommodated. In this regard, it is important to identify what times of the year each activity will take place, the required hours per week of each activity, age of participants, standards of play, requirements for spectators and officials, use for both matches and training and so on, and any possible changes to these factors over time.

Deciding playing field provision on this basis is preferable to simply following the approach taken in the Regulations. The Regulations, however, remain extant and Local Authorities must satisfy themselves that their provision complies in terms of the site area of the school, the total area of playing fields available and indeed the remainder of the provisions of the Regulations.

Scale of Provision

The suggested model for outdoor activity spaces in secondary schools is one or more synthetic areas, supported by grass playing fields. This combines the advantages of the higher capacity of a synthetic surface with the flexibility of a large area of grass playing fields. It will also be desirable to provide one or more hard-surfaced games areas. These may be used for kickabouts and other activities during break times, thereby alleviating wear and tear on the synthetic grass and natural grass areas. The use of mineral pitches, such as red blaes, is not recommended.

In deciding how many of each type of facility to provide, the likely requirements of all the potential user groups should be established, and consideration given to the amount of activity that the various spaces can accommodate in a normal week.



A full-size synthetic grass pitch can be used for a number of different activities.

If the site is constrained then a higher proportion of synthetic and hard surfaces may be required, as may an increase in the number of indoor facilities, but the aim should be to provide an adequate number and mix of outdoor facilities.

Synthetic grass pitches have several advantages over traditional grass ones. They can cope with much more intensive use, require significantly less maintenance and are significantly less affected by severe weather. Synthetic grass is suitable for match play and skills practice for football, hockey, tennis, netball, basketball and some rugby skills practice. Pitches can be either full-size or a smaller multi-court area. Synthetic grass areas will also normally have a greater capacity to accommodate community use than grass pitches.

It is therefore recommended that all secondary schools have access to a synthetic grass area suitable for use as a teaching space. Larger schools may require a second, although this would not necessarily be full-size. In addition, a synthetic cricket wicket may be required. The requirements of school and community users should determine the number, size and specification of these synthetic areas.

Natural grass playing fields can provide for match play and skills practice for hockey, football, rugby, cricket and shinty. A running track and facilities for field events are also required, and these, along with the cricket pitch, will typically be lined out in the summer on the area of the grass pitches lined out for football, hockey, shinty and rugby in the winter.

Site Planning

Location and Layout

Playing fields and other outdoor activity spaces should be accessible from the physical education complex. Ideally, an exit from the outdoor activity changing rooms of the PE complex should lead onto an area of playground and court games provision and then to the main playing fields. It is important,

however, that routes to natural grass pitches should not cross other games areas (particularly synthetic grass surfaces) in order to avoid mud being deposited. Similarly, players and spectators should not have to cross grass areas when walking to and from synthetic grass facilities. The high standards required of grass hockey pitches means that they should be sited so that it is not necessary to cross them to get to other activity areas.

There should be easy and clearly defined access for players and non-players. All access routes should be designed with the requirements of disabled users in mind, and access for emergency vehicles is essential. The playing fields will also require easy access to storage space and must be accessible for maintenance equipment. Access to a near-by source of water may also be required for irrigation and for maintenance of synthetic turf pitches. Depending on their location, many playing fields may require robust boundary and security fencing.

In deciding the location of playing fields, the surface topography of the site is an essential consideration. The site must be capable of being leveled off, and the less cut and fill required the better. In the interests of safety, banks with a gradient greater than 1:3 should be avoided. Steep banks can also create drainage problems for the land at their base.

Gradient of Playing Surfaces

For the grass playing field areas a slight gradient across the direction of play is generally preferred. This aids surface drainage, even where the soil is exceptionally free draining, and is likely to become more important as soils become compacted as a result of use. Gradients of 1:60 to 1:80 across the line of play (ideally falling either side of a ridge running lengthways along the middle of the pitch) will be suitable for winter games pitches and the cricket outfield. Pitches should be level along the line of play (although a maximum of 1:100 is acceptable if existing gradients are a constraint). Cricket squares should preferably be level in the direction of play, although a maximum gradient of 1:100 is acceptable, as is a cross gradient of 1:60 to 1:80.



Orientation

The alignment of pitches and courts in relation to the sun must be considered. This is less critical for games such as hockey, where the ball is on or close to the ground, but for football, rugby, tennis, netball and cricket it is an important consideration. Problems are caused not only by the early morning and evening sun but by the low angle of the winter sun throughout much of the day. A broadly NNW to SSE orientation of pitches will ensure that players face the sun at its highest and least troublesome.

The likelihood of balls landing in neighbouring roads and property must be considered and may influence the layout of pitches and height of boundary fencing. The topography of the site and the requirement for the correct gradients may also conflict with the optimum orientation of pitches. In such cases, the cost and convenience of constructing pitches to a suitable gradient may take precedence over orientation in relation to the sun.

Pitch Margins

For safe play, by both school and community users, pitch layouts should include adequate run-off margins around the playing area, especially between adjacent pitches, as recommended by the relevant sports' national governing bodies. Larger clearances may be needed where pitches are close to roads, buildings or adjacent property.

Seasonal Layouts

Ideally, summer and winter games facilities should share the same playing field area. Winter activities are generally football, rugby, hockey and shinty. The main summer activities are athletics, rounders and cricket, although smaller court games such as tennis, basketball, netball and volleyball can be categorised as summer activities when played outdoors. Golf practice outdoors can be classed as a summer activity.

Winter pitches become in the summer the cricket outfield, running track and athletics field. It is important that activity spaces are laid out to avoid conflict between concurrent uses and between seasonal uses of the same area. In particular, the summer running track (especially the home straight) should avoid the heavily used areas of the winter pitches such as the goalmouths and, to lesser extents, centre circle and touch lines.

The location of any spectators for winter games must be carefully considered to avoid interference with adjacent activities or damage to playing surfaces. This can be a particular problem if such pitches are located too close to a cricket square. Grass cricket squares should be fenced off to avoid damage during the winter season. In deciding the location of cricket squares, no other concurrent activities should be located immediately behind the bowlers arm. In most schools, a synthetic cricket wicket should normally be provided and is less likely to be damaged by other users. Cricket wickets cannot be moved or used for any other activity, and their locations therefore need to be chosen carefully with reference to the overall flexibility of the surrounding playing fields. The heavy wear which rugby inflicts on grass pitches means that the cricket outfield should, if sufficient space exists, ideally not overlap any rugby pitches.

The location of athletics field events and cricket and golf practice nets should reflect the need for effective supervision and group teaching. Spreading them about the playing fields in the areas between pitches and in left over corners is not ideal for educational use and may hinder movement of winter pitches from season to season. For safety reasons, and to minimise damage to pitches, the position and orientation of the shot, hammer, discus and javelin throwing areas must be chosen carefully.

The extension of the playing season in some sports has made such multi-use of areas more difficult. For most schools, however, using the same grass playing fields for different summer and winter uses will be a common-sense approach.

Flexibility of Layout

Flexibility in the use of school playing fields is essential, and the whole playing field should, as much as is practicable, be regarded as one area upon which changes of marking are possible. For example, because of the heavy wear to goal areas, grass pitches should be capable of being moved laterally from one season to the next. This will ideally require a 9m wide strip along one side of the pitch, over and above the minimum run-off areas.

In addition, small-sided versions of team games require varying sizes of pitch depending on the number and age of players, as may the full versions of the game depending on age. Smaller areas and the sub-division of pitches will also be required for the teaching of a range of skills and tactics.

Due to the small ball-size, grass hockey pitches require a more regular surface than football or rugby in order to provide more predictable ball surface reaction for safe play of a good standard. Football and rugby also tend to have a more destructive impact on grass playing surfaces than hockey and therefore grass hockey pitches, in order to maintain their playing surfaces, should not normally be used for any other activity during the winter season.

If space allows, rugby pitches should be well away from the site boundaries to reduce the likelihood of balls kicked into touch or at goal going into neighbouring property.

Synthetic Grass Pitches

Synthetic grass pitches come in a range of surfaces. There are numerous surface types available, for example sand-based, water-based and new generation. Each has different playing characteristics, and range of factors must be considered before deciding on the appropriate choice.

The principal consideration will be the school's need for outdoor teaching spaces for physical education. A surface which can be used to teach a range of sports is likely to be required. The number of school pitch-sport clubs, their age groups and their match-play and training needs should be taken into account. The needs of likely community users should also be considered. For football and rugby this is likely to be training needs while for hockey a synthetic surface will also be suitable for match-play.

In considering the needs of these user groups, it is essential that a strategic view is taken. The surface types and current use of other nearby synthetic grass pitches should be considered as it may not make sense to duplicate what is already being provided locally. If several schools are being redeveloped then the opportunity may arise to think of the 'estate' of synthetic surfaces and perhaps to provide a mixture of sizes and surfaces to meet different pitch sport needs. Reference should also be had to the local authority sports development plan, and any local open space or sports facilities strategies which may exist, in order to set the investment in such facilities within the wider objectives of sports development in the area. Advice may also be sought from **sportscotland**.



Pitch Sizes and Margins

A full-size hockey pitch measures 91.4m x 55m, with minimum recommended margins of 5m at ends and 4m at sides. Football pitch dimensions are not fixed, and to a certain extent are dependant on the standard of play. A football pitch of 60m by 100m will be adequate for school and most community users. To provide for both football and hockey, and adequate pitch margins, a synthetic carpet with dimensions of 106m x 66m is recommended.

If a pitch is to be divided for smaller courts or group teaching, portable goals and divisions should be used which avoid anchor holes in the pitch surface.

Fencing

Synthetic grass pitches should be enclosed for security and ball stop. Fencing may also help keep the surface clean by stopping leaves blowing on to the surface and preventing dog fouling.

Fencing should be 3m high around the pitch, rising to 5m behind goals, at the end of the pitch and at other sensitive areas such as boundaries with busy roads. Gates must be installed for pedestrian access and vehicular access for maintenance machinery is essential. A timber kick-board, 200mm to 300mm high, should be incorporated to stop and deflect hockey balls and the fencing may require to be robust enough to deter and withstand vandalism.

Goals for crossfield small sided games can also be constructed within the fencing system (details available from [sportscotland](#)).



Natural surveillance is essential for security.

Lighting

In order to obtain the full benefit from the increased capacity of a synthetic pitch, floodlighting for evening and winter play is essential. Six or eight lighting columns are normally specified, and these should not encroach into the safety run-off areas. The level of illuminance will depend on the standard of play but will normally be in a range between 200 lux and 500 lux, with 250 lux being suitable for most schools. Ideally, the lighting system should be capable of providing different levels of illumination depending on the requirements of the pitch users.

Drainage

Synthetic grass pitches require a drainage system, the detail of which will depend upon the type of surface and construction and the nature of the site. Pitches should be level along the main direction of play, with a cross fall not in excess of 1:200. Drainage may also be necessary out-with the pitch enclosures to cut off ground and surface water movement before it can affect the pitch. Similarly, drainage of water off the pitch must not adversely affect adjacent areas of the grass playing fields. Watering is essential for water-based pitches, but even sand-based pitches may require occasional watering. A water supply is therefore needed, and for water-based pitches an automated irrigation system will be required.

Multi-courts

In addition to a full-size synthetic pitch, some schools may elect to provide a smaller synthetic 'multi-court' area. Such a facility can, depending on its size, provide for a range of activities including five-a-side football, tennis, basketball, netball and mini-hockey. Most multi-courts will have a synthetic grass surface, although other surface types, such as polymeric surfaces, may be acceptable.

The dimensions of a multi-court area will depend on what activities it will accommodate. An area of 36m by 18m, for example, can accommodate five-a-side football, basketball, netball, 'indoor' hockey and tennis. The larger the facility, the greater number of courts can be provided, although care must be taken to avoid a confusing mass of lines on the surface.

Multi-courts are ideal for group teaching, and the larger the area the larger the group which can be taught. Ball-stop fencing and kickboards/rebound walls should be provided. Courts should be level in the direction of play, with a cross-fall of 1:80-100 recommended.

Multi-courts should be floodlit with goals incorporated into the fencing system.



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