



Grounds Management & Maintenance



Well managed and maintained sports facilities are important as sports clubs and schools require good quality playing surfaces.

An organisation should produce a clear management plan to cover day maintenance and management of their grounds.

Grounds management should be seen as being a long term process concerning the design, development, usage, maintenance and quality standards of pitches and outdoor areas for sport.

Grounds maintenance is the day to day care of all aspects of the grounds to an agreed standard and in an agreed way.

This Sportsheet provides a very brief guide to grounds maintenance and management, and raises issues which sports clubs and schools should consider in planning the long term care of their grounds. For succinctness, throughout this SPORTSsheet, organisations with sports grounds will be classed as 'clubs'. However, this SPORTSsheet is relevant for schools, associations, trusts and other organisations providing playing fields.

Getting the work done

There is a range of options for organisations to consider:

- a **Directly employed full time groundsperson** The Institute of Groundmanship publishes recommended rates of pay for this type of appointment. The person employed will have a contract of employment and be dedicated to the needs of the club and able to carry out maintenance operations when required.
- b **Volunteers** A committed pool of enthusiastic, competent members who can be relied upon to carry out the work. Most will probably not be formally trained although some training may be available through the Institute of Groundmanship or local Agricultural and Horticultural Colleges.
- c **Contractors** Either for all maintenance or specific jobs which require expensive equipment or specialist skills e.g. gang mowing, weed spraying, hollow tine spiking etc. A clearly written specification giving full details of what is required, including measurements, is essential.

Producing a Management Plan

Clubs should produce a management plan, which is essential to set and monitor standards. The plan should consider the process of surveying and recording the state of current provision, assessing the standards, deciding on future standards and the need or otherwise to alter the regime or initiate layout or other changes. In order to simplify the collection of information, it is best to divide up any large site into small sectors or compartments that can be easily identified. There is a range of technical standards, e.g. pH soil, nutrient status, grass types, rooting depth, etc which can be measured on a regular basis and provide essential information on the condition of pitches.

Brief action notes and timescales for action plus costs can then be added to the plan. Discussions with users and their reactions to pitches are vital at this point. In the maintenance plan, clear times at which vital items are to be ordered must be established e.g. soil, fertilisers, seed, machinery. This will enable work to proceed smoothly when planned. Any plan will need updating regularly, but once established this should be a relatively easy task.

Legal Issues

All clubs should be aware of the following relevant legislation concerning the management and maintenance of sports grounds:

Health and Safety at Work Act 1974

Under this legislation there is a duty to ensure the safety of the facility users.

Construction (Design and Management) Regulations 1994 (CDM)

The objective of these regulations is to manage people to plan work safely during construction projects. The regulations rarely affect routine grounds maintenance, but may apply to development projects e.g. construction of new pitches.

Control of Substances Hazardous to Health (COSHH) 1994

Introduced under the Health and Safety at Work Act, COSHH requires employers and others responsible for the use of pesticides, weed killers etc to assess the health risks and then prevent or control the exposure of those applying pesticides and other people to those risks.

Food and Environment Protection Act 1985

Regulates the way pesticides such as herbicides and fungicides are sold and used. Individuals who apply pesticides need to be certified as competent and trained.

Environment Protection Act 1990

Covers issues such as litter control.

Occupiers Liability Act 1957 (Revised 1984)

Clubs may be responsible to pay damages for injuries sustained by people using the site. There is a duty of care to ensure a safe environment for all potential site users.

Local Bylaws – Rights of Way

There may be Bylaws or Rights of Way which affect your land. Information on these is available from your local authority.

Public Liability, Owners Liability, Building and Machinery Insurance

Clubs need to ensure that they are fully insured. This insurance should cover the activities of unpaid volunteers working on the grounds using tools and powered equipment.



Materials and Equipment

Grass

It is important to use the best quality materials possible. Grass seed is available from a wide range of sources. Great advances in breeding have led to the introduction of many high quality grass types. All suppliers have mixtures tailored for individual sports. The main grass species are:

Perennial Ryegrass – *Lolium perenne*

Quick establishment and growth, resistant to wear and tear. Main use – winter pitches, parks etc. Also on Cricket squares to help bind the surface, but needs careful management if used.

Fescues

Festuca rubra ssp rubra – Strong creeping red fescue
Festuca rubra ssp commutata – Chewings fescue
Festuca rubra ssp litoralis – Slender creeping red fescue
Fine leaved species used for close mown turf, e.g. Golf and Bowling green, Cricket squares and high quality lawns.

Bent

Agrostis tenuis – Browntop bent
Agrostis castellana – Highland browntop bent
A compact fine leaved species used in mixtures with fescues for fine turf areas to give a 'bottom' grass in mixtures for playing fields etc.

Smooth Stalked Meadows Grass *Poa Pratensis*

Broad leaved grass, dark green colour, slow to establish from seed, best sown in autumn. Used in playing field mixtures but not always successful. Once established, can be as hard wearing as perennial ryegrass. Recovers well from wear and has some drought tolerance.

Fertilisers

All sports turf areas require the regular application of fertiliser to maintain healthy growth. Fertilisers typically contain the three major plant foods – Nitrogen (N), Phosphate (P) and Potassium (K). Some also have Magnesium (Mg) and Iron (Fe) added. Fertilisers for spring and summer use have a higher nitrogen content than those used in autumn. **For example:**

Spring 20%N : 10%P : 10%K Autumn 3%N : 12%P : 12%K

The amount of fertiliser needed will vary with type of pitch, level of use, whether clippings are removed or not and the soil nutrient status. Soil tests every other year are an essential guide to fertiliser levels. A Football pitch may need 100kgN or 500kg of a fertiliser containing 20%N.

The size of fertiliser particles also varies – coarse for winter pitches and finer smaller ones for use on Bowling greens and Cricket squares. Fertiliser should be bought in good time to be available to use normally in March / April for spring application and August / September for the autumn. On intensively used pitches, smaller applications can be made between the two main ones.

Pesticides

All chemicals used in grass care are covered by the term 'pesticides', and include weed-killers, fungicides, worm and moss-killers. All chemicals approved for use are listed in The UK Pesticide Guide ISBN 0851991130 from BCPC, which is published each February. Pesticides must be selected with care and used by trained people, for under the Control of Pesticides Regulations 1986 it is illegal to use any pesticide unless it is officially approved.

Line Marking

There is a range of materials available to include whiting (ground chalk), proprietary marking solutions and dry line materials. The duration of the line varies with material selection of the type for use is normally made on this basis. The use of hydrated lime and creosote is not recommended due to the possible risk of injury to pitch users.

Machinery

A very wide range of specialised machinery is available for maintaining sports areas. Purchase of machinery represents a large financial investment and great care needs to be exercised in its choice. All reputable suppliers will demonstrate equipment to allow a thorough evaluation. The annual Institute of Groundmanship SALTEX exhibition in Windsor each September gives a valuable opportunity to see a wide range of equipment. For many clubs, hiring in machinery for annual operations is a better option than buying.

Turf

Turf can be bought from many sources and is best laid in autumn to give time for establishment. Turf is specified by a British Standard BS 3969 : 1990 which describes the quality of the turf and BS 4228 : 1989 which covers the laying process.

Soil

The best quality soil for repairs and topdressing should be used. Soil can be bought to British Standard BS 3882 : 1994 which describes three grades – Premium, General Purpose and Economy. Premium grade should always be used for sports pitches.

Drainage

The advantages of drainage are mainly that surface water (rainfall) is cleared more rapidly and the soil provides a better growing medium. It also helps to provide a reasonably firm surface and so prevents damage to the soil structure. Drainage problems are most likely on clay and silt soils and less likely in sand. When sports fields drainage systems are designed, there are often several different ways of achieving the same result but the cost of the alternatives can vary dramatically. In each situation, the designer has to work out the likely cost difference and for instance decide between either a system of substantial surface slits and a few under drains, or simple slits with many closed spaced under drains.

Notional costs for various drainage systems (1997 prices) are:

Main underground pipes installation	£10.00 per linear metre
Underground feeder pipes (laterals)	£6.00 per linear metre
Catch pits at junctions	£450.00 each
Sand slits across the pitch	£2.50 per linear metre
Whole pitch sand topdressing	£6,000.00

A cost of between £6,000 to £10,000 per pitch is likely for an underdrains system, not including sand slits and topdressing.

Weather

It is predicted that our climate may match that of the Loire Valley in 50 years. This may result in some changes to traditional methods of maintenance.

Regular irrigation is essential to maintain grass pitches. It may be that a single pitch is well looked after and used for matches with others being used as practice areas.

The traditional practice of renovating worn winter pitches in May / April failed in 1995 and 1996 due to dry conditions. When the situation occurs, repairs may have to be carried out in autumn with pitches being rested / relocated to allow recovery.

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The Grounds Maintenance Year

Winter Sports

Hockey / Football / Rugby etc

Winter – November / February

- Mow Hockey
- Spike pitches and goalmouths
- Keep posts and nets in good condition
- Sand wet area (note these for planning drainage work)
- Remark pitches
- Replace divots
- Smooth surface by use of dragmat or light roller

Order – seed, fertiliser, soil, turf etc for delivery before March

Spring – March / May

- Continue routine maintenance
- Prepare for end of season renovation
- Cultivate goalmouths, add soil to level, re-seed or re-turf
- Re-seed or re-turf other bare areas
- Spike, harrow and fertilise whole pitch
- Apply weedkiller if needed
- Check goal posts on removal for damage and repair
- Repair nets
- Cover goal post sockets

Order – fertiliser for autumn application

Summer – June / August

- Mow regularly
- Check on renovations, water if needed
- Check pitch positions, relocate goal sockets if needed
- Check goal posts
- Set out and mark pitches

Autumn – September / October

- Continue mowing
- Mow Hockey with cylinder mower and remove clippings
- Spike pitches
- Apply autumn fertiliser

Summer Sports

Cricket / Tennis / Bowls etc

Winter – November / February

- Switch or brush to remove surface moisture
- Mow in dry conditions to maintain correct height
- Brush
- Shallow spiking
- Check for fungal attacks
- Check / maintain irrigation system

Order – fertiliser, weed-killer and fungicide. Check Tennis nets, Cricket practice nets and renovate Bowling green surround channels.

Spring – March / May

- Scarify lightly to remove dead material
- Gradually reduce cutting height
- Mow regularly
- Fertiliser application
- Weed-killer if needed
- Overseed any small bare areas
- Roll Cricket with progressively heavy rollers
- Roll Tennis to smooth and firm
- Set out and mark Tennis
- Irrigate if needed
- Start Cricket wicket preparation
- Check for disease attacks

Summer – June / August

- Continue all routine maintenance
- Mow twice each week
- Apply fertiliser if needed
- Repair worn areas on Cricket
- Brush / dragmat Tennis to keep smooth
- Irrigate

Order – fertiliser, topdressing, weed-killer, fungicide, specialist equipment.

Autumn – September / October

- Renovate worn areas
- Deep spike
- Scarify
- Topdress
- Overseed
- Weed-kill if needed
- Continue mowing but reduce frequency and raise cutting height
- Remove / repair Tennis nets, Cricket practice nets.

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Costs / Time

The time spent maintaining pitches can vary enormously. The following are general guidelines for the minimum to maintain an average standard:

Cricket Square	105 hours per year
Cricket Wicket	3 to 6 hours per wicket per occasion of use
Tennis	45 hours per court per year
Bowling Green	280 hours per year
Hockey (grass)	200 hours per year (excluding summer mowing)
Football	95 hours per year (excluding mowing)
Rugby	70 hours per year (excluding mowing)

All maintenance should be planned carefully, particularly in the light of playing characteristics. Consultations with players are essential to find out how pitches play and maintenance should be designed to correct faults.

Useful Organisations

Further information on grounds management and maintenance can be obtained from the following sources:

- **Institute for Sport, Parks & Leisure (ISPAL)**
The Grotto House, Lower Basildon, Reading, Berkshire RG8 9NE
Tel: 01491 874800
- **Institute of Groundsmanship (IOG)**
28 Stratford Office Village, Walker Avenue, Wolverton Mill East, Milton Keynes, MK12 5TW
Tel: 01908 312511
- **National Playing Fields Association (NPFA)**
2d Woodstock Studios, 36 Woodstock Grove, London W12 8LE
Tel: 0208 735 3380
- **British Standard Institution (BSI)**
389 Chiswick High Road, London W4 4AL
Tel: 0208 996 9001
- **Royal Society for the Prevention of Accidents (RoSPA)**
RoSPA House, Edgbaston Park, 353 Bristol Road, Edgbaston, Birmingham, B5 7ST
Tel: 0121 248 2000
- **Health and Safety Executive**
Rose Court, 2 Southwark Bridge, London SE1 9HS
Tel: 0845 345 0055
- **Sports Turf Research Institute (STRI)**
St Ives Estate, Bingley, West Yorkshire BD16 1AU
Tel: 01274 565131
- **British Association of Landscape Industries (BALI)**
Landscape House, Stoneleigh Park, National Agricultural Centre, Warwickshire, CV8 2LG
Tel: 0870 770 4971

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