



Sports Surface Construction Specialists 01275 845499  

Operation and Maintenance Manual for Natural Grass Pitches at Stonehenge School

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Revision	Date	Description

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Operation and Maintenance Manual for Natural Grass Pitch Stonehenge School

Introduction

The purpose of this Operation and Maintenance (O&M) Manual is to provide guidelines regarding maintenance and use of a natural grass sport pitch for reference/use by the owner/occupier and others undertaking maintenance and other future works on the installed works.

All guidelines included within this O&M Manual must be managed by a qualified Grounds Manager who must also be conversant with all land drainage and soil types with the variety of different sports to be played.

Also, the sequencing of ground care operations with the sport and play is essential to ensure the durability and performance is maintained to eliminate deterioration of the play surface.

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Grounds Manager's Duties

Following installation of the natural grass sport pitch, there is a crucial obligation to all end users.

When play starts there will be specific tasks required by an experienced Grounds Manager to make decisions on when and when not the conditions will allow play or decide correct timing and sequencing of maintenance and husbandry works.

The Grounds Manager planning, over-seeing of operations and play has a responsible and committed position, the timing for maintenance is the key for most successful natural sports turf play surfaces.

The Grounds Manager taking charge of this O&M Manual must be fully qualified and conversant with the latest modern machinery and techniques to manage and maintain a natural grass sports play surface.

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Natural Grass Management

Establishment of the new natural grass sward is a continuous operation and is always requiring continuous work during the use of the new sports pitch and will require daily decisions when and what the next operations is required from top-dressing, feeding, slitting and mowing.

A schedule of works is attached and will help plan operations. The tasks carried out will depend on the original specification, weather conditions, soil types and the frequently and the type of sports played for activities required.

Walk

Prior to any operations or any sports being played, the whole area must be inspected to monitor current ground conditions for suitability. Also check for any broken glass, litter / debris bottles, cans, stones, etc., and removed off the surface to ensure no injury / damage is caused to either children or machinery.

Machinery

All operations carried out must be with approved sports field machinery and be readily checked for condition and maintained to ensure perfect performance including correct low ground pressure (LGP) / grass tyres to minimise any damage.

Ground Conditions

The weather conditions play a big role on Ground Conditions and must be ideal, i.e., never too wet, cold, frosty or heavy dew or when conditions are too dry, close monitoring with an experienced grounds person is required to control and oversee all machinery operations and play.

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Natural Grass Maintenance Operations

It is essential that a defined programme of maintenance is specified for the area to ensure that it remains capable of sustaining the degree of use required. With inappropriate levels of maintenance the area will deteriorate, particularly in relation to the quality of the playing surface. The correct specification of agronomic requirements is essential to the establishment and long term success of the area. Maintenance should include the following:-

Mowing

Mowing must be undertaken in appropriate conditions (see sub-sections Walk and Ground Conditions) and at regular intervals to suit the end performance criteria required for play.

During normal weather and mowing conditions, all arisings of grass in areas that are mown with un-boxed mowers should be evenly spread with no accumulations or heaps of grass left. The blades and knife bed of the mowing equipment must be accurately adjusted to ensure that all grass should have an even finish, be cleanly cut and not torn, all cuts should overlap. The finish should be free of ribbing, skids, ruts, excessive tyre marks and no tufting or divots.

It is essential to avoid excessive cutting at a reduced height particularly during late spring and summer period to avoid putting the sward under stress through lack of top foliage.

Ideally mowing regimes should include cutting in transverse directions to encourage a reduced bias in growth habit.

~~Cut & Collect~~

Remove ~~At the height of the growing season (June to August), grass arising may not disperse sufficiently with just a cylinder mower and therefore collecting and removing the grass clippings is essential, do not leave arisings on the surface at any stage as it may kill off the grass sward/ or spread of disease.~~

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~~Fertilising~~

REMOVE
~~Appropriate fertiliser applications will be required particularly in the Spring and Autumn periods to maintain nutrient levels. Application method will be to half the rate and apply at transverse directions to each other. The requirements is for the application to cover the whole of the grass area to ensure a comprehensive, healthy and disease free sward. All fertiliser applications must be appropriately considered to meet the cultural requirements of the sward. If necessary a suitably qualified sportsturf agronomist should be commissioned to determine the precise nutrient requirement for the sward. Some facilities are within a live school so precaution is required.~~

✓ Over-Seeding

Spring and Autumn is the time to over-seed using a direct disc grass drill at the recommended rate, i.e., Germinal GB Ltd's Allsport Ryblend (or similar) sport grass seed mixture at 25gms/m² during moist conditions.

✓ Harrowing

Harrowing will discourage thatch and encourage the entrance of air and moisture to the turf. The operation shall be undertaken with approved tractor mounted reversible chain or light flexible spike harrow

✓ Aeration / Spikes

Regular aeration of surface by the action of spiking or slitting. These operations to be carried out during the play season to allow good root development and surface water dispersal. The operation should be undertaken with approved tractor mounted slit tine equipment to effect penetration of 150mm depth. This operation will also promote strong root growth and sward resilience.

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~~Deep Aeration / Verti Draining / Earthquake~~

REMOVE
~~This operation may be required after heavy play and will allow quicker water dispersal and good aeration to playing surface. All sports pitches no matter if children or adults are using the pitch, aeration will relieve any compaction. All natural turf sports pitches will become compacted over a period of time and aerating them will ensure the surface doesn't become hard and solid to play on.~~

~~If necessary a dressing of suitable sand may be applied to further ameliorate the topsoil layer to improve drainage and structure for growth. The specification of the sand and / or ameliorants should take account of the requirement to restore structure within the upper margins of the soils. If necessary a suitably qualified agronomist should be commissioned to determine the precise amelioration requirements.~~

Rolling

✓ Regular rolling in ideal conditions (see sub-section Walk and Ground Conditions) is essential to even the surface for play during ideal ground conditions as damage is easily caused if applied in wrong conditions, the ideal roller size should be approximately 2-3 metres wide and between 1.5-2.5 tonnes. The operating speed for work shall not exceed 10 km/hr.

Weed Control

✓ Regular observation of weed species within turf sward is necessary to identify undesirable forms which will suppress grass development and use an approved non residual selective herbicidal during the correct conditions.

~~Watering / Irrigation~~

REMOVE
~~During dry periods water applications may be necessary to reduce any shrinkage or settlement of drainage runs or prevent cracking of soils especially clay/silt type soils. During extreme hot conditions, local authorities may impose a hose ban so it will be difficult to irrigate the whole sports pitch. On most pitches, the machinery and water supply to adequately irrigate the~~

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surface may not be possible, however irrigating the drainage runs will reduce the shrinkage and settlement.

~~Top-Dressing~~

REMOVE

~~Appropriate top dressing application to ameliorate and maintain soil structure and surface tolerance quality. After the close of the season, top-dressing with a root-zone or sand at the rate between 3-8kgs/m² and harrow into the surface.~~

~~Topping up Settlement~~

REMOVE

~~Topping up settlement to cracks and drainage runs will be required during very dry periods especially to clay type soils, this will require a specialist machine to redress shrinkage on drainage runs and the root-zone (70:30 sand/soil mix) will require grass seeding on these occasions. This is applicable to all soil types more so with clay type soils.~~

~~Pesticide Application~~

REMOVE

~~The operation shall be undertaken at rates in accordance with the manufacturer's recommendations or as instructed. Where necessary, agitate mechanically during operation. Application shall be undertaken with approved tractor mounted equipment or hand held equipment if appropriate. A specialist product must be specified to deal with identified problems.~~

~~If necessary, a suitably qualified Sports Turf Agronomist should be commissioned to determine the precise requirements for treatment of the sward.~~

~~Alternatively, hand picking of weeds could be carried out but would suggest this as the last option due to the size of the sports pitch.~~



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Grass Maintenance Schedule (indicative)

OPERATIONS / VISITS GUIDE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
MOWING Maintain height between 25 – 40 mm			1	2	4	3	3	3	3	2	1	
CUT & COLLECT When arisings are on surface					1			1				
FERTILISING / FEEDING Slow release NPK 21:11:11 or similar				1				1				
RENOVATING / OVERSEEDING Worn or bare areas				1				1				
HARROWING Dispersing worm casts / divots		1		1					1		1	
SCARIFYING Dethatching dead grass									1			
ROLLING Firming up frost heave / playing conditions			1	1				1		1		
SPIKING / SLITTING / AERATION Assists surface water	1		1	1					1		1	
SELECTIVE HERBICIDE / WEED CONTROL Broad leaf weed removal				1				1				
TOP-DRESSING WITH SAND Assist surface drainage and growing medium					1				1			



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OPERATIONS / VISITS GUIDE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
WATERING / IRRIGATION Only in dry Summer conditions if required						1	1	1	1			
DEEP AERATION Relieves compaction	1		1						1		1	
TOPPING UP SHRINKAGE / SETTLEMENT / CRACKS When conditions require					1			1				
PEST CONTROL Worms, leatherjackets, etc.				1				1				
VERTI-DRAINING / EARTHQUAKE Helps relieve compaction and assists drainage				1					1			

Please note:

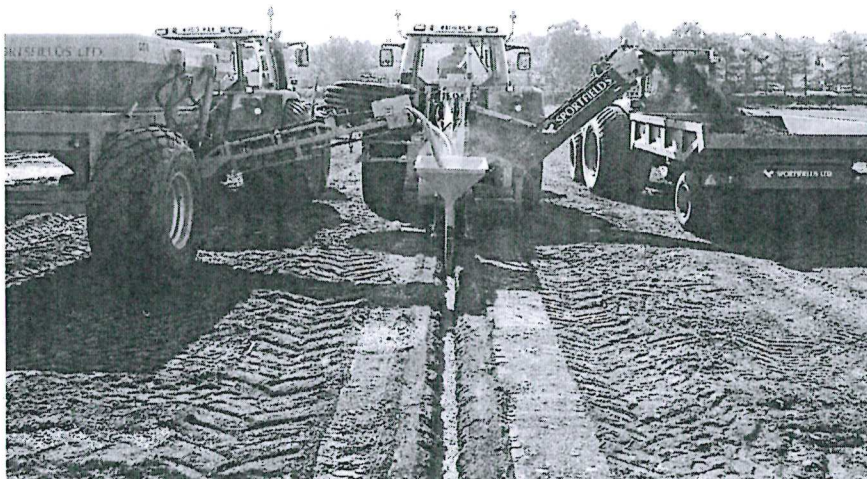
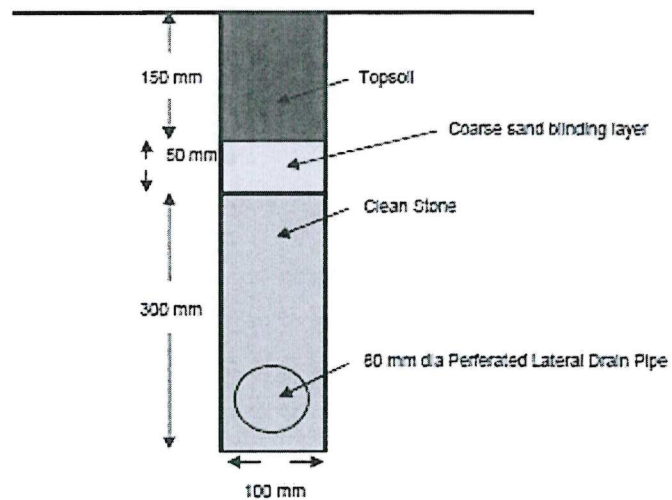
These operations are a guide to help maintain a healthy growing natural grass pitch. Before each operation ensure ground conditions and suitability requirements as climate and conditions will vary accordingly.

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Land Drainage Cross Sections

80mm Dia. Laterals – Approximate Dimensions

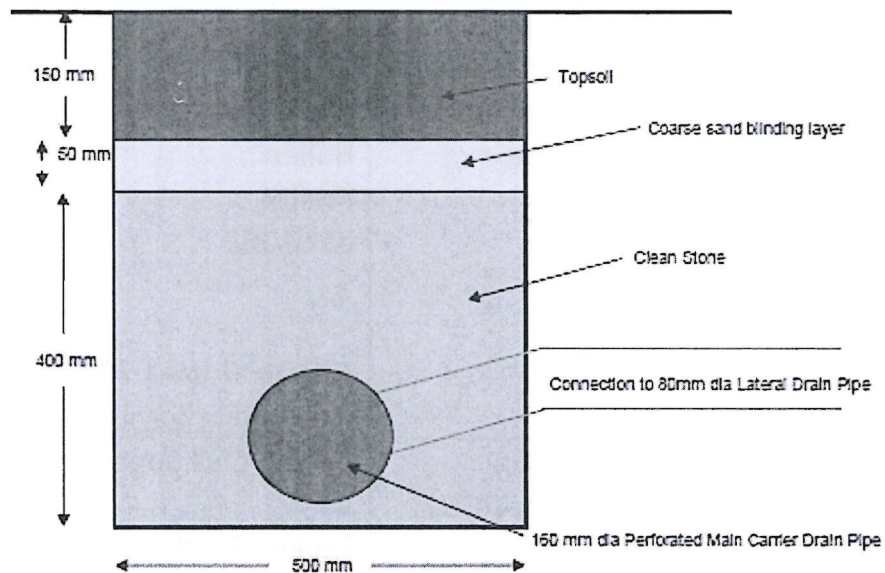
Installed at 5 metres centres



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Carrier Drain – Approximate Dimensions

Installed at end of laterals and connecting into outfall



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Materials

Product / Material	Function / Location Used	Manufacturer / Supplier
Kitemarked Land Drainage, High Density Polyethylene (HDPE) Pipe, Perforated (Black) and Twin Wall (Black), 450mm, 300mm, 160mm and 80mm	Perforated Land Drainage Coiled Pipe and Twin Wall Pipe	United Civil Supplies Severn Road Hallen Bristol BS10 7SE Tel: 0330 174 0740 www.unitedcivilsupplies.co.uk
Manhole(s) 450 mm plastic section BS 4962	Inspection Chamber (IC 1)	United Civil Supplies Severn Road Hallen Bristol BS10 7SE Tel: 0330 174 0740 www.unitedcivilsupplies.co.uk
Integrity KD100 Ductile Iron Single Seal Access Cover, 450mm x 450mm x 40mm	Inspection Chamber (IC 1), Manhole Cover	United Civil Supplies Severn Road Hallen Bristol BS10 7SE Tel: 0330 174 0740 www.unitedcivilsupplies.co.uk

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Product / Material	Function / Location Used	Manufacturer / Supplier
0/4 mm washed sand 0/2 mm washed sand 4/10 mm aggregate	Drainage and Amelioration	GRS Group Durnford Quarry Longwood Lane Failand Bristol BS41 9DW Tel: 01275 394153 Website: www.grsstonesupplies.co.uk
All Sport Ryblend	Overseeding	Germinal Seeds Camp Road Witham St Hughs Lincoln LN6 9QJ Tel: 01522 868714 Website: www.germinal.com
Topsoil BS3882:2015	Sports Pitch	The Woodhorn Group Unit 6 Woodhorn Business Centre Owing Chichester West Sussex PO20 2BX Tel: 01243 270232 Website: www.woodhorngroup.co.uk

MAINTENANCE LOG

Operator Name		Location	
Date		Ground Conditions	
Operation Carried Out		Machinery Employed	
Comments			
Operation Carried Out		Machinery Employed	
Comments			
Operation Carried Out		Machinery Employed	
Comments			
Note: To be completed for each operation carried out and kept on file			