

HALLAM LAND MANAGEMENT LIMITED AND ST ALBANS SCHOOL

Specification for the construction of a new natural turf playing field at Woollams Playing Fields, St. Albans School, 162 Harpenden Road, St. Albans, AL3 6BZ

16th August 2024

TGMS1284.4

| REVISION RECORD | | | | | |
|-----------------|------------|---|----------|---------|----------|
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1. North St Albans Agricultural Land Classification and Soil Resources, Reading Agricultural Consultants, July 2022
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4. Drawing Tgms1183.2-3 Woollams Playing Fields – Drainage Design Rev 3
5. Drawing Tgms1183.2-5 Woollams Playing Fields – Setting Out Rev 2
6. Tgms1284 Hallam Land Management Ltd Woollams Playing Fields Natural Turf Work Schedules 18 09 2024.xlsx

Please note: Quantities have been provided in the Work Schedules referred to above however these are indicative only and must be verified by the Contractor. TGMS accepts no liability for these quantities, which must not be relied upon.

1. PART I: JCT 2016 MINOR WORKS BUILDING CONTRACT - PRELIMINARIES SUMMARY

1.1 PROJECT PARTICULARS

1.1.1 The Project

- Name: Woollams Playing Fields Extension.
- Nature: Natural turf playing field construction.
- Location: Woollams Playing Fields, 162 Harpenden Road, St Albans AL3 6BZ.
- Length of contract: 16 Weeks plus 12 months initial agronomic maintenance.

1.1.2 Employer (Client)

- Name: St Albans School.
- Address: Abbey Gateway, St Albans, AL3 4HB.
- Contact: Edward Saunders
- Telephone: 07775 786560
- Email: esaunders@st-albans.herts.sch.uk

1.1.3 Principal Contractor (CDM)

- Name: **TBC**
- Address:
- Contact:
- Telephone:
- E-mail:

1.1.4 Contract Administrator and Designer

- Name: Matt Young.
- Address: 4 Doolittle Mill, Froghall Road, Ampthill, Bedfordshire, MK45 2ND.
- Contact: Matt Young
- Telephone: 01525 307060
- Email: matt.young@tgms.co.uk

1.1.5 CDM Administrator

- Name: N/A
- Address:
- Contact:
- Telephone:
- Email:

1.2 FORM OF CONTRACT

The form of contract will be the Joint Contracts Tribunal Ltd Minor Works Building Contract 2016 Edition incorporating all current published amendments.

The Clauses are scheduled within this document, but the Contractor must inspect the draft form for the full details of these Clauses and is to allow such sum/s as may deem necessary for carrying out the obligations and services required by the Contract.

All information contained within this document is subject to the conditions of the above stated contract.

1.3 THE RECITALS

1.3.1 First Recital

The work comprises surface re-grading and the installation of a primary land drainage scheme and a secondary surface bypass system plus establishment of turfgrass from seed.

1.3.2 Second Recital

All construction information is found in the specification section (**REF: TGMS1284.4**) and on the drawings scheduled in Table 1 below.

1.3.3 Third Recital

The Contractor is to supply the Employer with a copy of the priced Work Schedules.

1.3.4 Forth Recital

Is the Employer a 'contractor' for the purposes of CIS? **No.**

1.3.5 Sixth Recital

The Contract is not supplemented by a Framework Agreement.

1.4 THE ARTICLES

Article 2: Contract Sum: **TBC.**

Article 3: ~~Architect~~/Contract Administrator: **TGMS.**

Article 4 The Principal Designer for the purposes of the CDM Regulations is the ~~Architect~~/Contract Administrator.

Article 5 The Principal Contractor for the purposes of the CDM Regulations is the Contractor.

Article 7: Is dispute resolution to be by arbitration? **Yes.**

1.5 CONTRACT PARTICULARS

Fourth Recital & Schedule 2

Base Date: **10 days before tender return date**

Fifth Recital

CDM Regulations **The project is not notifiable.**

Section 2.2

Works commencement date **TBC.**

Date for completion: **TBC.**

Section 2.8

Liquidated damages: **£50 per day or part thereof.**

Section 2.10

Rectification period: **12 months from the date of practical completion (seed in the ground).**

Section 4.3 Date of first interim payments

30 days from start date.

Section 4.3 Interim payments

95% of total work value up to practical completion.

Percentage of the total amount to be paid to the contractor on or after practical completion: **97.5%.**

Section 4.8.1 Final certificate and final payment

Supply of documentation for computation of amount to be finally certified: **3 months.**

Section 4.3 and 4.8 Fluctuations provision

Schedule 2 (Fluctuations Option): **Does not apply.**

Section 5.3

Contractor's Public Liability insurance: injury to persons or property – the required level of cover is not less than **£1 million.**

Section 5.4A, 5.4B and 5.4C Insurance of the Works.

Insurance of the works: **Option A Applies.**

Percentage to cover professional fees: **15%**

Section 7.2 Settlement of Disputes – Adjudication

The Adjudicator is: **Chartered Institute of Arbitrators**

Nominating body: **Chartered Institute of Arbitrators**

Appointor of Arbitrator (and of any replacement): **President or a Vice-President of the Chartered Institute of Arbitrators.**

Attestation

Method of execution: **By Deed.**

1.6 FORM OF TENDER

PROJECT TITLE: Woollams Extension.

We (Tenderer's name to be entered) hereby tender and undertake to perform the whole of the works/services required in and associated with the Project for **Hallam Land Management** according to the Specification, Work Schedules, Preliminaries and Drawings examined by us for the firm price sum of:

.....(pounds)

.....(pence)

(£ : p) excluding VAT.

Further we are prepared, when called upon to do so, to enter into and sign a contract, the full terms of which we have read, for the due and proper completion of the works/services.

We understand that we are tendering at our own expense and that the Client is not bound to accept the lowest or any tender and that the client reserves the right to award the contract phase by phase.

We declare that we are not party to any scheme or agreement under which:

- we inform any other person the amount of our tender; and/or
- we have fixed the amount of any tender in accordance with a price fixing arrangement.

We accept that the Client is entitled to cancel the contract and to recover from us the amount of any loss resulting from such cancellation if it is discovered that there has been any corrupt or fraudulent act or omission by us which in any way induced the Client to enter into the contract.

We declare that all goods materials and workmanship will meet the appropriate British Standard Specification or British Standard Code of Practice issued by the British Standards Institution or equivalent European standard current at the date of the contract.

We undertake in respect of all persons employed by us or with whom we sub-contract to comply with the Disability Discrimination Act 1995 and the Commission for Racial Equality's Code of Practice issued under the Race Relations Act 1976 aimed at eliminating discrimination and promoting equality of opportunity.

We undertake not to transfer, assign, or sub-let any portion of the contract nor create any lien or charge on premises, goods or equipment connected with or forming part of the contract, without the written consent of the Client or its duly authorised officer.

We agree that if, before acceptance of this tender, an error in computation of the tender is detected in the priced document submitted by us we will be given details of the error and the opportunity of confirming the total tender sum or withdrawing the tender.

We agree that the insertion by us of any qualifications to this tender or any unauthorised alterations to any of the tender documents will not affect the original text but will cause the tender to be liable to rejection.

We agree that this tender will remain open for acceptance by the Client and will not be withdrawn by us for a period of 90 days from the last date fixed for the receipt of tenders or any notified extension thereof.

We certify that this is a bona fide tender.

Tenderer's Name

.....

Address

.....

.....

.....

Telephone

.....

Facsimile

.....

Signature*

.....

Name

.....

Date

.....

Witness

.....

Name

.....

Date

.....

* Where the Tenderer is an incorporated association the Company Secretary or a duly authorised Director should sign. In the case of a partnership a Partner should sign. In the case of an individual the Proprietor should sign.

2. PART II: DESIGN SPECIFICATION

2.1 INTRODUCTION AND SITE INFORMATION

2.1.1 Site location and access

- The site is situated on arable agricultural land immediately east of The Woollams Playing Fields, 162 Harpenden Road, St Albans AL3 6BZ.
- The grid reference for the centre of the site is approximately: OSGB 515050,210223.
- The existing Woollams Playing fields were constructed 21 years ago from the same farmland. The construction method was to remove the topsoil, screen it to remove stones and then stockpile. The cut and fill earthworks were on the subsoil to a formation level. The stones removed in the screening were placed on the subsoil formation and then the screened topsoil was replaced, a piped drainage scheme installed and the soil ameliorated with sand to improve drainage.

2.1.2 Relevant site investigation reports

- North St Albans Agricultural Land Classification and Soil Resources, Reading Agricultural Consultants, July 2022 (presented in Appendix 1).
- TGMS1284.2 - A feasibility study and equivalent quality assessment for the relocation of pitches at Woollams Playing Fields, St Albans

2.1.3 Arrangements to visit the site can be made by contacting

Contact Name: Edward Saunders

Position: Head of Strategic Land

Organisation: St Albans School

Contact Number: 07775 786560

Email: esaunders@st-albans.herts.sch.uk

2.2 GENERAL SCOPE

The work proposed in this specification shall be as follows:

PART A: EARTHWORKS, DRAINAGE AND ESTABLISHMENT

- Site clearance and initial cultivations
- Topsoil strip and temporary storage in a stockpile
- Cut and fill remodelling earthworks
- Topsoil return
- Topsoil re-grading
- In situ stone removal works
- Installation of a piped drainage scheme
- Installation of secondary drainage (sand bands)
- Removal of spoil from site.
- Importation and placement of screened, approved 50 mm deep rootzone carpet
- Final cultivations
- Fertilisation and seeding
- Reinstatement of damage
- As-built survey, O&M Manual and H&S File

PART B: CRICKET SQUARE CONSTRUCTION

- Setting out.
- Construction of a nine-pitch cricket square.
- Installation of a water supply.
- Installation of gully pots
- Prepare seedbed.
- Fertilise.
- Seed.
- Removal of spoil from site.

PART C: INITIAL AGRONOMIC MAINTENANCE [PLAYING FIELD]

- Mowing
- Fertiliser application
- Herbicide (if required)
- Overseeding
- Aeration
- Sand topdressing
- Pesticide/Fungicide application (if required)

PART D: INITIAL AGRONOMIC MAINTENANCE [CRICKET SQUARE]

- Mowing
- Fertiliser applications
- Herbicide (if required)
- Pesticide/Fungicide application (if required)
- Verti-cutting
- Spiking
- Over-seeding
- Topdressing
- Rolling

Please refer to the Schedule of Drawings (Table 1).

Table 1 Schedule of Drawings.

| Drawing No. | Title |
|--------------|--|
| TGMS1284.4-1 | Woollams Playing Fields - Proposed and Existing Levels Rev 2 |
| TGMS1284.4-2 | Woollams Playing Fields - Formation Level Isopachytes Rev 1 |
| TGMS1284.4-3 | Woollams Playing Fields - Drainage Design Rev 3 |
| TGMS1284.4-5 | Woollams Playing Fields – Setting Out Rev 2 |

General Notes

- All drainage and earthworks to be carried out using equipment fully equipped with laser grade control.
- All ancillary equipment to be fitted with low ground pressure tyres.
- The position and layout of the drainage system, as indicated on the attached drawing, may be amended to take account of local factors encountered on site.
- Contractors must be aware: allowance shall be made for topping up trench lines following settlement occurring during the 12-month period following drainage installation, including as a result of natural soil shrinkage in dry weather.
- Diesel or any other deleterious matter shall be prevented from contaminating the site etc. Any such matter allowed to pollute the site shall be removed together with all affected soil and/or plant material and carted to tip at the Contractor’s own expense. Any material necessary to make good the soil formation or plant material will be provided by the Contractor and will be of the type and quality of the original material prior to damage, and must be approved by the Contract Administrator.
- Stones are a particular safety hazard and are a key component of Performance Quality Standards. The Contractor should note that the imported materials must not include stones or any material outside the specified particle size distribution.
- Provisional sums will not be considered as a compliant bid, and the specification must be achieved for the price stated by the Contractor in the tender return documents.
- It is the Contractor’s responsibility to conduct searches to determine the presence of any services and utilities running through, over and/or around the working area. Contractors should conduct site investigations to determine the location of any service or utilities as per good health and safety procedures. All this should be before the commencement of any work on site.
- Prior to start on site, the Contractor shall prepare a photographic Schedule of Condition and agree same with the Contract Administrator.
- The works listed below are not necessarily to be conducted in chronological order. It is the responsibility of the contractor to implement all items specified to the desired standards irrespective of the order that they are presented in this document.

2.3 DETAILED SPECIFICATION

PART A: EARTHWORKS, DRAINAGE AND ESTABLISHMENT

| Item | Operation |
|------|-----------|
|------|-----------|

- | | |
|----|--|
| P1 | The Contractor shall allow for all necessary fencing and signage in order to secure the working and site compound areas and haulage routes in order to protect members of the public from the works. It is anticipated that Heras fencing shall be used to demarcate the working areas and site compound. Footpath crossing points shall be marked appropriately. The location for deep excavations (e.g. inspection chamber construction) shall be protected with Heras (or similar) fencing. |
| P2 | The Contractor shall allow for compliance with all relevant Health and Safety regulations including the Construction Design and Management regulations (CDM) 2015. This shall include performing the role of Principal Contractor. |
| P3 | The Contractor shall allow for the provision of all welfare facilities for staff. |
| P4 | The Contractor shall allow for the mobilisation and demobilisation of all necessary plant to complete the project. |
| P5 | The Contractor shall allow for compliance with all Conditions of Contract. |
| P6 | The Contractor shall locate and mark the path of the electrical cables in and around the project area. The Contractor will be responsible for making good any damage caused by construction. |

A1 Setting out

- | | |
|------|--|
| A1.1 | The Contractor shall set out the working area. Please see drawing TGMS1284.5 Setting Out Rev 2 for details. |
|------|--|

A2 Site clearance and enabling works

- | | |
|------|---|
| A2.1 | Spray off the existing vegetation in the working area with an approved, systemic, non-residual total herbicide in accordance with the manufacturer's instructions and an appropriate COSHH assessment by qualified personnel. A period of 14 days shall elapse between spraying and undertaking cultivations to allow sufficient time for the vegetation to senesce. A second application of total herbicide may be required just prior to cultivation to ensure complete vegetation control. |
| A2.2 | All remaining vegetation on the site shall be flail-mowed and all clippings/vegetation removed to disposal off-site. |

A3 Topsoil cultivation and removal

- | | |
|------|--|
| A3.1 | When ground conditions are suitable (topsoil in a dry and friable state), the working area shall be rotary cultivated in order to incorporate any remaining organic matter residue and to provide a suitable tilth for stripping. |
| A3.2 | Under suitable ground conditions (i.e. topsoil in a dry and friable state), the topsoil shall be stripped from the development area and removed to a stockpile on-site for re-use. Only true topsoil shall be stripped which shall not be contaminated with subsoil. This is assumed to be in the region of 300 mm however topsoil depths may be variable. |
| A3.3 | The topsoil shall be piled at a height no greater than 2.5 m and carefully consolidated to ensure minimal infiltration of rainwater. |

A4 Cut and Fill earthworks

- A4.1 All earthmoving equipment shall be fitted with laser grade control to ensure that the specified formation levels of are achieved.
- A4.2 With reference to drawings **TGMS1284.4-1 Proposed and Existing Levels Rev 2** and **TGMS1284.4-2 Formation Level Isopachytes Rev 1**, Cut and fill and re-grading operations shall be carried out when the existing and imported subsoil material is below its plastic limit. The subsoil/fill material shall be compacted into place above the geotextile separation membrane in layers of not more than 150 mm thickness to a density similar to that of the undisturbed subsoil.
- A4.3 The formation surface and surrounding areas shall be graded to even, flowing contours such that there are no deviations >30 mm beneath a 2 m straight edge.
- A4.4 The completed formation surface shall form a smooth transition with adjacent areas of the site. There shall be no slopes greater than 1:3.
- A4.5 The resulting cuttings and embankments shall be trimmed to the appropriate gradient with even contours.
- A4.6 The subsoil shall be loosened (i.e. subsoil cultivation using a winged cultivator, shakaerator or similar approved machine) in two directions in order to alleviate compaction and remove any smear that may have resulted from the earthworks.
- A4.7 Following loosening, a stone separation operation shall be undertaken to remove all stone >50 mm in any dimension from at least the upper 50 mm depth of subsoil plateau. This shall be undertaken with a modified potato harvester, beach cleaner or other suitable approved equipment and may require multiple passes to achieve the specification. The stones shall be disposed of off-site.
- A4.8 Following loosening and the stone separation, the subsoil shall be lightly tracked using low ground pressure tracks to consolidate but not overly compact the formation surface.
- A4.9 Surface level uniformity of the subsoil formation surface shall achieve a tolerance of no more than a 30 mm deviation beneath a 2 m straight edge.

A5 Top-soiling

- A5.1 Following final grading and trimming of the subsoil, the stockpiled topsoil shall be spread over the development area with minimal trafficking including embankments and batter slopes.
- A5.2 The topsoil shall be graded and then lightly consolidated to achieve a dry bulk density of approximately 1.2 – 1.3 Mg m⁻³. Consolidated topsoil depth shall be a minimum of 150 mm and finished surface levels must tie in with the proposed levels drawing.

A6 Stone separation / removal and surface re-grading

- A6.1 A stone separation operation shall be undertaken to remove all stones >20 mm in any dimension from at least the upper 100 mm depth of topsoil by stone picking or in-situ stone separation techniques. This shall be undertaken with a modified potato harvester, beach cleaner or other suitable approved equipment and may require multiple passes to achieve the specification. The stones shall be disposed of off-site. The contractor should make themselves aware of the stone content prior to the works commencing.
- A6.2 Following this, the surface shall be cultivated and graded to restore surface levels prior to drainage installation.

A7 Drainage installation

A7.1 Trench excavation

- 7.1.1 Please refer to the accompanying drawing **TGMS1284.4-3 Drainage Design Rev 3** for the layout of the drainage scheme. Drain cross sections are also presented.
- 7.1.2 The trenches shall be clean cut, with a level base, to the dimensions given in **Item A7.2**.
- 7.1.3 All trenches shall be excavated with machinery fitted with laser grade control.
- 7.1.4 Excavation shall begin at the outfall, the profile to be established at the outfall, and carried upstream with adjustments for grade and depth as work proceeds.
- 7.1.5 Any under drains encountered are to be marked so they can be renovated and connected into the new system if considered viable.
- 7.1.6 All spoil from this operation shall be disposed of off-site.

A7.2 Trench dimensions

- 7.2.1 Lateral drains (80/100 mm \varnothing plastic perforated pipe)
- Depth 0.450 m below nominal ground level (not including the 50 mm rootzone carpet). Please see cross sections for drainage depths on drawing **TGMS1284.4-3 Drainage Design Rev 3**.
 - Grade at natural fall of finished surface.
 - 5.0 m spacing (solid orange lines)
 - Not less than 0.150 m wide.
- 7.2.2 Collector drain (160 mm \varnothing plastic perforated pipe).
- Depth 0.500 m below nominal ground level.
 - Grade at natural fall of finished surface, Please see cross sections for drainage depths on drawing **TGMS1284.4-3 Drainage Design Rev 3**.
 - Not more than 0.200 m wide.
- 7.2.3 Carrier drain (300 mm \varnothing non-perforated twin-walled pipe).
- Depth varies.
 - Grade not less than 0.50% (1:200).
 - Not more than 0.400 m wide.

A7.3 Gravel backfill for lateral and collector drains

- 7.3.1 The material shall be clean, hard, gravel or chippings (e.g. quartz or quartzite) with dimensions not greater than 6 mm and not less than 2 mm. The calcium carbonate content shall not exceed 10%.
- 7.3.2 The material shall be free of fines.
- 7.3.3 The gravel backfill shall be placed immediately and carefully over the pipe to within 200 mm of the surface. Any damage to the pipe shall be made good at the Contractor's expense.

A7.4 Sand backfill material for the lateral and collector drains

- 7.4.1 The sand shall comply with the following grading:
- | | |
|---------------------------------|----------|
| - V. coarse sand (2.0 – 1.0 mm) | <5% |
| - Coarse sand (1.0 – 0.5 mm) | 10 – 20% |
| - Medium sand (0.5 – 0.25 mm) | 55 – 70% |
| - Fine sand (0.25 – 0.15 mm) | 10 – 20% |
| - V. fine sand (0.15 – 0.05 mm) | <5% |
- 7.4.2 The sand shall have a capillary rise of no more than 250 mm when compact (1.65 Mg m⁻³).
- 7.4.3 The sand shall have at least 15% air-filled porosity in the top 50 mm of the capillary rise.
- 7.4.4 The sand shall have a saturated hydraulic conductivity >300 mm h⁻¹ when compact (1.65 Mg m⁻³).

- 7.4.5 The sand shall be non-saline (electrical conductivity < 0.75 dS m⁻¹), and contain less than 0.5% (w/w) CaCO₃.
- 7.4.6 The sand shall have a pH in the range of 5.5 – 7.0.
- 7.4.7 Provision shall be made to top up the drain runs to take account of natural settlement of material within the trenches such that a level playing surface is achieved. Any settlement below stated levels during the first 12-months post installation shall be made good at the Contractor's expense. This includes settlement as a result of natural soil shrinkage due to dry weather.
- 7.4.8 The sand shall be placed on the gravel and consolidated flush with the surface.

A7.5 Pipe laying

- 7.5.1 Pipes shall be laid to the correct depth stipulated above and to an even grade.
- 7.5.2 Drainage depth is to be measured from finished ground levels (unless indicated otherwise).
- 7.5.3 The pipe for lateral and collector drains shall be perforated corrugated plastic corresponding to EN1401-1:2019. The pipe for carrier drains shall be non-perforated twin-walled pipe corresponding to EN1401-1:2019. There should be no damage to the pipe. Upper ends of the lateral drain runs shall be plugged to prevent ingress of soil or animals.

A7.6 Junctions and connections

- 7.6.1 Connection of lateral drains to the collector drain shall be made with purpose made junctions as required (80/160 mm).
- 7.6.2 The collector drains shall be let into inspection chambers and caulked with a sand/cement mix concrete to make good the pipe/wall seal.

A7.7 Inspection chambers

- 7.7.1 Inspection chambers to be positioned as indicated on the accompanying plans and detailed in the work schedules.
- 7.7.2 Chamber can be constructed of brick, concrete or plastic.
- 7.7.3 They shall be large enough to permit access for cleaning, jetting and rodding.
- 7.7.4 A sump of at least 150 mm below the lowest pipe shall be incorporated to act as a silt trap.
- 7.7.5 The top of the chamber shall be set level with the ground surface.
- 7.7.6 The cover loading (to BS EN 124) for the inspection chamber on the playing surface shall be Class B125.
- 7.7.7 Synthetic turf shall be fixed to the inspection chamber covers (in turf areas only).

A8 Installation of sand bands [at construction], please see drawing

Please note: Due to the installation of a rootzone carpet, it is preferable to install the sand bands at construction. The contractor must be comfortable with this methodology at the tender stage and communicate if they feel this approach is not achievable. The contractor is responsible for ensuring soil conditions are suitable for sand band installation at construction and will have complete responsibility for the installation including covering any uplift in costs of additional backfill due to unsuitable ground conditions e.g., too wet or too dry. Sand bands must not be capped over with soil prior to installation of the rootzone carpet i.e. there must be a clean direct hydraulic connection between the sand bands and the rootzone

A8.1 Please note, sand bands must be topped up if sand levels have dropped below surface level (even as a result of periods of drought). Any topping up is to be included in the price of the sand bands. For direction of sand bands please see drawing **TGMS1284.4-3 Drainage Design Rev 3**.

A8.2 Using a Koro Topdrain or similar, sand bands shall be cut through the surface at approximately a 90° angle to the lateral drains and should intercept with the permeable

backfill in these drains. The sand bands shall be approximately 40 mm wide x 200 mm deep and shall be spaced at approximately 500 mm centres.

A8.3 The sand bands are to be filled with washed sand of predominantly 0.125 to 1.0 mm particles. The sand shall:

8.3.1 Comply with the following grading:

- V. coarse sand (2.0 – 1.0 mm) <5%
- Coarse sand (1.0 – 0.5 mm) 10 – 20%
- Medium sand (0.5 – 0.25 mm) 55 – 70%
- Fine sand (0.25 – 0.15 mm) 10 – 20%
- V. fine sand (0.15 – 0.05 mm) <5%

8.3.2 have a capillary rise ≤ 150 mm when compact (1.65 Mg m^{-3})

8.3.3 have at least 10 % air-filled porosity in the top 50 mm of the capillary rise.

8.3.4 have a saturated hydraulic conductivity of at least 300 mm h^{-1} when compact (1.65 Mg m^{-3}) at 15 cm tension.

8.3.5 be non-saline (electrical conductivity $< 0.75 \text{ dS m}^{-1}$) and contain less than 0.5% (w/w) CaCO_3 .

8.3.6 have a pH in the range of 5.5 – 7.0.

A8.4 If necessary, flat roll the surface to restore surface levels.

A9 Rootzone carpet installation.

A9.1 Following installation of the slit drains, a 50 mm deep rootzone carpet shall be placed and graded over the drained area such that a direct hydraulic connection between the rootzone carpet and the slit drains is maintained.

A9.2 The rootzone material shall be of the following specification:

9.2.1 Comprise 80% sand compliant with the following grading:

- V. coarse sand (2.0 – 1.0 mm) <5%
- Coarse sand (1.0 – 0.5 mm) 10 – 20%
- Medium sand (0.5 – 0.25 mm) 55 – 70%
- Fine sand (0.25 – 0.15 mm) 10 – 20%
- V. fine sand (0.15 – 0.05 mm) <5%

9.2.2 The sand shall be non-saline (electrical conductivity $< 0.75 \text{ dS m}^{-1}$) and contain less than 0.5% (w/w) CaCO_3 .

9.2.3 The rootzone shall also:

- Comprise 20% sandy soil.
- Contain a minimum organic matter content of 2% (LOI)
- Incorporate a slow-release fertiliser
- Have a capillary rise of no more than 250 mm at a dry bulk density of 1.65 Mg cm^{-3}
- Have at least 15% air-filled porosity in the top 50 mm of the capillary rise
- Have a hydraulic conductivity of at least 100 mm h^{-1} at 30 cm tension and a dry bulk density of 1.60 g cm^{-3}

9.2.4 The Contractor shall supply an independent laboratory report on the proposed rootzone to include a particle size distribution (with appropriate sieve sizes to determine 9.2.1, calcium carbonate content, pH, organic matter content, saturated hydraulic conductivity and air-filled porosity at the stated dry bulk density).

A9.3 The rootzone shall be placed to a consolidated depth of 50 mm over the playing field.

A9.4 Incorporation of rootzone amendments is to be agreed with the Client but may include;

9.4.1 TerraCottem at 25 g m^{-2}

- 9.4.2 Zeolite at 200 g m⁻²
- 9.4.3 STEP-Hi-Mag mini-granular fertiliser at 10 g m⁻²
- 9.4.4 Vaminoc-G granular mycorrhizal fungal inoculant at 200 kg ha⁻¹
- 9.4.5 Sierrablen Plus Active 4-5 month controlled release fertiliser at 35 g m⁻²

A9.5 The rootzone shall be consolidated (but not overly compacted) to achieve a dry bulk density of approximately 1.5 Mg m⁻³.

A9.6 Once placed, the rootzone shall be graded such that the surface level uniformity shall achieve a tolerance of no more than a 10 mm deviation beneath a 2.0 m straight edge.

A10 Cultivations

A10.1 The rootzone in the development area (i.e. pitches, embankments and surrounds) shall be cultivated in order to produce a tilth suitable for the cultivation of fine-leaved Perennial Ryegrass species.

A10.2 Any stones greater than **20 mm in any dimension** shall be removed from the top 50 mm of the surface by stone picking or in-situ stone separation techniques. **No sharp stones, pottery, ceramics or glass** shall be present in the upper 50 mm of the rootzone on the pitch areas. Should physical contaminants be present e.g., ceramics, glass pottery etc., the contractor will be obliged to remove all rootzone for disposal off site and replace with clean material at the contractors cost.

A10.3 Surface level uniformity of the finished surfaces shall achieve a tolerance of:

- no more than a 10 mm deviation beneath a 2.0 m straight edge on the playing surfaces and safety margins, and
- no more than 20 mm deviation beneath a 2.0 straight edge elsewhere.

A11 Fertiliser application

A11.1 The cultivated area shall be fertilised with an appropriate pre-germination fertiliser of 10:15:10 formulation at a rate of **70 g m⁻²** at least 3 days prior to seeding. This should be lightly worked into the seedbed during final cultivations.

A12 Seeding

A12.1 A suitable 100% Perennial Ryegrass seed mix shall be drilled @ **50 g m⁻²** in at least three directions. The seed mix shall be made up from at least three varieties each with a minimum rating for the mean of live ground cover and visual merit of 7.0 as listed in the latest BSPB Turf grass Seed Book, Table S1: Perennial Ryegrass, Sports Uses.

A12.2 Prior to seeding, mix the seed with a mycorrhizal coating at a rate of 3 kg ha⁻¹.

A12.3 The seed shall have a certified germination of not less than 80% and a certified purity of not less than 90%. Total weed seed content shall not be more than 0.5% and the total content of other crop seeds shall not exceed 1%.

A12.4 If necessary, the seeded area shall be lightly rolled to settle and firm the surface.

A13 Goal posts and sockets

A13.1 Install three sets of goal sockets (i.e. 12 sockets in total - Client to confirm requirements)

A13.2 Supply and erect socketed aluminium rugby union goals (Client to confirm requirements) in accordance with BS EN 16579.

A14 Reinstatement of damage

- A14.1 All damage caused by plant and vehicle movement to the playing fields and identified / agreed with the Contract Administrator shall be made good by:
- 14.1.1 Cultivating the affected area to below the depth of damage using a rotary cultivator or similar equipment. Care must be taken with the timing of this operation to avoid smearing on the base of the cultivation. Any weeds, rubbish and stones over 20 mm gauge must be removed and disposed of on-site as directed by the Contract Administrator.
 - 14.1.2 A seedbed should then be prepared using a power harrow.
 - 14.1.3 Pre-seeding fertiliser (10:15:10) to be applied @ 70 g m⁻² over the reinstated area a minimum of 5 days prior to seeding.
 - 14.1.4 A suitable Perennial Ryegrass dominated seed mix shall be drilled at a rate of 35 g m⁻² in two directions. The seed mix shall be made up from at least three varieties each with a minimum rating for the mean of live ground cover and visual merit of 7.0 as listed in the latest BSPB Turf grass Seed Book, Table S1: Perennial Ryegrass, Sports Uses.
 - 14.1.5 The seed shall have a certified germination of not less than 80% and a certified purity of not less than 90%. Total weed seed content shall not be more than 0.5% and the total content of other crop seeds shall not exceed 1%.
 - 14.1.6 The finished levels for seeding shall, unless otherwise indicated on the drawings, be perfect to the surrounding contours and 25 mm above any adjacent hard surfaces.

A15 As-built survey, O&M Manual and H&S File

- A15.1 An as-built/laid survey of the construction shall be carried out and provided to the Client in both pdf and dwg formats. The survey should indicate the location and type of all materials used including the drainage and the relevant diameters and depths of the installation.
- A15.2 Information on materials and methods used, and the operation and maintenance of all systems. This should be provided to the Contract Administrator for inclusion in the O&M manual and H&S files as per the requirements of CDM 2015.

PART B: CRICKET SQUARE CONSTRUCTION

Item Operation

- P1 The Contractor shall allow for all necessary fencing and signage in order to secure the working and site compound areas and haulage routes in order to protect members of the public from the works. It is anticipated that Heras fencing shall be used to demarcate the working areas and site compound. Footpath crossing points shall be marked appropriately. The location for deep excavations (e.g. inspection chamber construction) shall be protected with Heras (or similar) fencing.
- P2 The Contractor shall allow for compliance with all relevant Health and Safety regulations including the Construction Design and Management regulations (CDM) 2015. This shall include performing the role of Principal Contractor.
- P3 The Contractor shall allow for the provision of all welfare facilities for staff.
- P4 The Contractor shall allow for the mobilisation and demobilisation of all necessary plant to complete the project.
- P5 The Contractor shall allow for compliance with all Conditions of Contract.
- P6 The Contractor shall locate and mark the path of the electrical cables in and around the project area. The Contractor will be responsible for making good any damage caused by construction.
- Preliminaries within the Work Schedules (Part A) refers to the entire project encompassing all parts of the specification and maintenance i.e. there should be one value for prelims for the entire works.

B1 Setting out

- B1.1 The Contractor shall set out the working area. Please refer to drawings **TGMS1284.4-5 Setting Out Rev 2** for details.

B2 Construction of a nine-pitch cricket square

- B2.1 The area for the cricket square shall be excavated using laser-controlled equipment to produce a surface level 150 mm below proposed finished levels (cricket square to be 25 mm higher than outfield surrounds). The topsoil arisings shall be disposed of off-site. The formation surface shall be consolidated and then lightly cultivated to produce a suitable keying surface to accept imported cricket loam. The cricket square should be constructed on a single plane to match the levels of the surrounding outfield.
- B2.2 Following this, 150 mm depth, at a dry bulk density of 1.65 Mg m⁻³, of an approved stone-free (screened down to 4 mm) cricket loam with a clay content in the range of 28 – 33%, <48% silt content, an organic matter content of <6%, and a soil binding strength of no less than 60 kg (Motty test) shall be placed onto the prepared formation surface. Details and specification concerning the proposed cricket loam must be submitted with the completed tender submission. The cricket loam will be subject to approval by the Contract Administrator or their representative. Care should be taken not to contaminate the backfill of any surrounding drainage.
- B2.3 The loam should be laid in layers of no greater than 50 mm, with care taken to ensure the layers are well keyed into each other (including into the underlying topsoil) through the use of a spiked harrow, sheep's-foot roller or similar implement. Each layer shall be firmed through tracking prior to spreading the next layer. The final layer should be graded to a precise level with a tolerance of no more than 5 mm deviation under a 2.0 m straight edge. The cricket square should be 25 mm higher than the surrounding outfield and feathered into the outfield.

- B2.4 Once the proprietary cricket loam is laid, the square shall be firmed such that a final average dry bulk density of 1.65 Mg m⁻³ is achieved throughout the top 75 mm.
- B2.5 The corners of the true square should be marked with permanent markers such as PliFix Grass Tufts to facilitate pitch marking.

B3 Installation of a water supply to the cricket square (Contractors proposal)

- B3.1 Supply and install a mains-fed 10,000 L tank and pump system on a suitable concrete pad, to supply sufficient water to irrigate the cricket square at a pressure suitable for the delivery of water over a minimum of four adjacent pitches using a travelling spinning head irrigator. The system must provide WRAS Category 5 backflow protection. The supply to the tank shall be metered for the purposes of determining water use.
- B3.2 A 63 mm diameter water pipe (polyethylene), rated to at least 5 bar pressure shall be installed at a minimum depth of 750 mm as shown on drawing **TGMS1284.4-3 Drainage Design Rev 3** [location of water supply to be confirmed on site].
- B3.3 At the cricket square end, connect pipe to an aluminium standpipe/hydrant fitted with a gate valve and quick coupling (e.g. Geka) housed in a lockable, pre-cast plastic irrigation chamber sunk into the ground such that the top of the box is 20 mm lower than the surrounding grassed surface. The top of the box should be covered with synthetic turf to form a level surface with the surrounding ground/grass.
- B3.4 The Contractor is responsible for the connection of the irrigation system to the mains water system as per the requirements of the current Water Supply (Water Fittings) Regulations.
- B3.5 The Contractor is responsible for the safe connection (in accordance with all relevant legislation) of the irrigation pump to the mains electricity supply and supply and commission a suitable control system.

B4 Installation of a ring drain

- B4.1 Installation of a ring drain (covered as part of Item A7, see section of 100 mm diameter – dashed orange line)
- B4.2 Gullies
- 4.2.1 Gullies/rodding eyes are to be positioned as indicated on the accompanying plans and detailed in the work schedules.
- 4.2.2 The top of the gullies/rodding eyes shall be set level with the ground surface.
- 4.2.3 Synthetic turf shall be fixed to the gully covers.

B5 Final seedbed preparations, fertiliser application and seeding of the cricket square

- B5.1 Once the full depth of loam has been laid and firmed, the surface should then be lightly raked in 2 directions and any stones removed. A pre-seeding fertiliser such as 6:9:6 amenity approved granular fertiliser should be incorporated in the seedbed at a rate of 70 g m⁻².
- B5.2 The cricket square should be sown at a rate of 50 g m⁻² in a union-jack pattern using a grass seed mixture of Dwarf Perennial ryegrass containing at least 3 cultivars with a mean score of 6.5 or more in the Mean Score of Shoot Density, Fineness of Leaf, Slow Regrowth and Visual Merit as listed in the latest BSPB Turfgrass Seed Book for a mowing height of 10 – 15 mm (Series L).

B5.3 The seed shall have a certified germination of not less than 80% and a certified purity of not less than 90%. Total weed seed content shall not be more than 0.5% and the total content of other crop seeds shall not exceed 1%.

B6 Removal of spoil off-site

B6.1 All arisings from the construction of the cricket square shall be disposed of off-site at a registered landfill facility.

B7 Reinstatement of damage

B7.1 All damage caused by plant and vehicle movement to the playing fields and identified / agreed with the Contract Administrator shall be made good by:

7.1.1 Cultivating the affected area to below the depth of damage using a rotary cultivator or similar equipment. Care must be taken with the timing of this operation to avoid smearing on the base of the cultivation. Any weeds, rubbish and stones over 20 mm gauge must be removed and disposed of on-site as directed by the Contract Administrator.

7.1.2 A seedbed should then be prepared using a power harrow.

7.1.3 Pre-seeding fertiliser (10:15:10) to be applied @ 70 g m⁻² over the reinstated area a minimum of 5 days prior to seeding.

7.1.4 A suitable Perennial Ryegrass dominated seed mix shall be drilled at a rate of 35 g m⁻² in two directions. The seed mix shall be made up from at least three varieties each with a minimum rating for the mean of live ground cover and visual merit of 7.0 as listed in the latest BSPB Turf grass Seed Book, Table S1: Perennial Ryegrass, Sports Uses.

7.1.5 The seed shall have a certified germination of not less than 80% and a certified purity of not less than 90%. Total weed seed content shall not be more than 0.5% and the total content of other crop seeds shall not exceed 1%.

7.1.6 The finished levels for seeding shall, unless otherwise indicated on the drawings, be perfect to the surrounding contours and 25 mm above any adjacent hard surfaces.

PART C: INITIAL AGRONOMIC MAINTENANCE [PLAYING FIELD]

Item Operation

- P1 The Contractor shall allow for all necessary fencing and signage in order to secure the working and site compound areas and haulage routes in order to protect members of the public from the works. It is anticipated that Heras fencing shall be used to demarcate the working areas during the post-construction maintenance period. The site compound shall be secured with Heras (or similar) fencing. Footpath crossing points shall be marked appropriately. The location for deep excavations (e.g. inspection chamber construction) shall be protected with Heras (or similar) fencing.
- P2 The Contractor shall allow for compliance with all relevant Health and Safety regulations including the Construction Design and Management regulations (CDM) 2015.
- P3 The Contractor shall allow for the provision of all welfare facilities for staff.
- P4 The Contractor shall allow for the mobilisation and demobilisation of all necessary plant to complete the project.
- P5 The Contractor shall allow for compliance with all Conditions of Contract.
- P6 The Contractor shall locate and mark the path of the electrical cables in and around the project area. The Contractor will be responsible for making good any damage caused by construction.

Preliminaries within the Work Schedules (Part A) refers to the entire project encompassing all parts of the specification and maintenance i.e. there should be one value for prelims for the entire works.

- C1** Mowing. The Contractor shall carry out the first cut with a rotary mower when the grass has reached a height of 60 mm. The first three cuts shall maintain the grass at 50 mm. Checks for stones; hand-picking shall be carried out if necessary, before each cut. After the first three cuts, the Contractor shall gradually reduce the cut height to 30 mm, never removing more than 1/3rd of the leaf blade, with low ground pressure cylinder mowing equipment for the remainder of the contract period. During this period the grass must never be allowed to exceed a height of 50 mm unless ground conditions are too wet for cutting. It is anticipated that **30 cuts** will be required in total.
- C2** Granular Fertilisers. The contractor shall allow for supplying and applying the following fertilisers (May to October). Applications at the beginning of establishment will depend on sowing date and weather conditions. Plan for the application of fertiliser to commence 4 weeks after grass establishment using the following programme as a guide:

| Month | Fertiliser (%) | | | | | Quantity (kg/ha) |
|-------|----------------|-------------------------------|------------------|-----|-----|------------------|
| | N | P ₂ O ₅ | K ₂ O | Mg | Fe | |
| May | 12 | 6 | 6 | 0 | 0 | 350 |
| June | 12 | 6 | 6 | 0 | 0 | 350 |
| Aug | 12 | 0 | 9 | 0 | 1.0 | 350 |
| Oct | 4 | 4 | 8 | 2.0 | 4.0 | 350 |

Fertiliser shall be applied uniformly using calibrated mechanical equipment and irrigated in if no rain has fallen within 48 hours of application.

- C3** Liquid Fertiliser. Supply and apply liquid fertilisers as follows:

GS Consolidate Plus 100 litres
 GS BioCarb 25 litres

In 600 litres of water to give an even coverage on two occasions approximately two weeks after emergence and again 4-6 weeks later. Both products available from Growing Solutions Ltd, Ecclestone, Lancs.

www.growingsolutionsltd.co.uk

Liquid fertiliser shall be applied uniformly using a calibrated sprayer.

- C4** Slow-release granules. Slow-release granules such as Symbio Caviar 10-0-4 containing nutrients, fulvic and humic acids and amino acids shall be applied at a rate of 350 kg ha⁻¹ on two occasions between June and August.
- C5** Plant Growth Regulator. The contractor shall supply and apply Syngenta PrimoMAXX with liquid feed as per the manufacturer's label and relevant pesticide regulations at 0.4-0.6 L/ha. Timing to be after two true leaf emergence and 80-90% ground cover.
- C6** Weed control (if required, to be confirmed by The CA). The contractor shall plan for the application of an approved selective herbicide 6 months after establishment. This shall be applied at least two weeks after any fertiliser treatment and at a time when grass growth is strong and healthy. Do not apply herbicide during periods of potential turf stress i.e. if the weather is hot and dry or if the weather is frosty. Apply herbicide strictly according to the manufacturer's label recommendations.
- C7** Overseeding (If required, to be confirmed by The CA). The development area shall be overseeded using the same seed mixture as that used in the original establishment of the site at a rate of 25 g/m².
- C8** Decompaction. Verti-drain the development area on two occasions (April and September) when ground conditions are suitable (sufficient water content to allow penetration of Verti-drain tines to full operating depth).
- C9** Pest and disease control (If required, to be confirmed by The CA). Pest and diseases should be controlled using an approved control agent.
- C10** Marking Out. The Contractor should allow for the initial line marking of the pitches on one occasion prior to handover. All lines should be in proprietary approved white line marking paint, without the mixing of herbicides or growth regulators. The pitch and in-goal corners shall be marked using Plifix markers or similar.

PART D: INITIAL AGRONOMIC MAINTENANCE [CRICKET SQUARE]

- P1 The Contractor shall allow for all necessary fencing and signage in order to secure the working and site compound areas and haulage routes in order to protect members of the public from the works. It is anticipated that Heras fencing shall be used to demarcate the working areas and site compound. Footpath crossing points shall be marked appropriately. The location for deep excavations (e.g. inspection chamber construction) shall be protected with Heras (or similar) fencing.
- P2 The Contractor shall allow for compliance with all relevant Health and Safety regulations including the Construction Design and Management regulations (CDM) 2015. This shall include performing the role of Principal Contractor.
- P3 The Contractor shall allow for the provision of all welfare facilities for staff.
- P4 The Contractor shall allow for the mobilisation and demobilisation of all necessary plant to complete the project.
- P5 The Contractor shall allow for compliance with all Conditions of Contract.
- P6 The Contractor shall locate and mark the path of the electrical cables in and around the project area. The Contractor will be responsible for making good any damage caused by construction.
- Preliminaries within the Work Schedules (Part A) refers to the entire project encompassing all parts of the specification and maintenance i.e. there should be one value for prelims for the entire works.

- D1 Mowing. Once the seed has germinated allow the sward to grow to 40 mm height before cutting the area with a rotary mower to tip the leaf blades. After the initial grass cut, keep the grass topped at a height of 30 mm with a pedestrian rotary mower for the next three cuts. Reduce height of cut to 25 mm with a pedestrian cylinder mower and maintain at this height until April. In April, gradually reduce height of cut from 25 mm to 15 mm and maintain for the remainder of the contract period, unless otherwise instructed. Allow for **40 cuts** in total. Never allow the grass to exceed a length of 5 mm above the cutting height. All clippings to be boxed-off for disposal on-site as directed by the Contract Administrator.

NB. The initial mowing of the cricket square shall be with a pedestrian rotary mower with a roller or hover action. Narrow wheels should be avoided to prevent wheel ruts.

- D2 Fertiliser. The Contractor shall allow for a sufficient number of fertiliser applications to maintain healthy growth and colour throughout the contract period. Plan for the application of fertiliser to commence four weeks after grass establishment using the following programme as a guide:
- | | |
|-----|--|
| Nov | 5:5:10 + Fe at 350 kg/ha |
| Mar | 12:6:6 at 350 kg/ha |
| Jun | Controlled release fertiliser 14:4:14 at 350 kg/ha |
| Sep | Controlled release fertiliser 10:5:15 @ 350 kg/ha |

- D3 Weed control. The Contractor shall plan for the application of an approved selective herbicide 6 months after establishment. This shall be applied at least two weeks after any fertiliser treatment and at a time when grass growth is strong and healthy. Do not apply herbicide during periods of potential turf stress i.e. if the weather is hot and dry or if the weather is frosty. Apply herbicide strictly according to the manufacturer's label recommendations. The Contract Administrator shall be consulted prior to any herbicide application to ensure the timing of the herbicide application is appropriate.

- D4 Pest & Disease Control. Pest and diseases should be controlled using an approved control agent, if required. All pesticides should have the relevant DEFRA, MAPP or HSE number on the label of the container to prove compliancy with UK regulations.

- D5** Verti-cutting. Verti-cut the square in two directions on a monthly basis from May to September (6 occasions in total).
- D6** Spiking. Following scarification, the square should be spiked, working to a depth of approximately 150 mm. This should only be undertaken under suitable ground conditions following the guidelines produced by the IOG and ECB (TS4).
- D7** Over-seeding. Over-seed the square after scarification at a rate of 25 g/m². Use the same mix as that detailed for establishment.
- D8** Topdressing. Top dress the square in the September (approx. 12-months after establishment) at the rate of approximately 100 kg/strip using an identical specification of loam to that used in the original construction. Work the dressing into the surface.
- D9** Rolling. Commence pre-season rolling in accordance with the Cranfield Guidelines (<https://www.durhamcricket.co.uk/wp-content/uploads/2017/10/guidelines-for-rolling-in-cricket-10409.pdf>). This should be based on rolling on a little and often basis, gradually increasing the weight of the roller as the square begins to dry out. Do not roll if the soil is too wet as this will at best be ineffective and at worst will corrugate the surface of the square. There should be no more than 4 passes over the same strip of the square during a rolling session and the square can be rolled in any direction but in preparation for play rolling should be carried out in the direction of play only. Ideally, the soil should be allowed to dry out in between rolling sessions.

As a guide allow for the following:

- Feb – early May: 20 hours over 5 occasions.
- Early May – September: 20 hours over 5 occasions

2.4 WORK SCHEDULES

Please refer to the accompanying MS Excel spreadsheet:

Tgms1284 Hallam Land Management Ltd Woollams Playing Fields Natural Turf Work Schedules 18 09 2024.xlsx

Please note: Quantities have been provided in the Work Schedules referred to above however these are indicative only and must be verified by the Contractor. TGMS accepts no liability for these quantities, which must not be relied upon.

2.5 PERFORMANCE OUTPUT

2.5.1 NATURAL TURF WINTER SPORTS PITCHES

Prior to handover to the client, the natural turf winter sports pitches must be tested against Sport England Performance Quality Standards (PQS) and the pitches must pass all parameters to be deemed fit for purpose. The contractor shall arrange for pitch testing, the costs of which are to be included within the work schedule. Should the pitch not pass all baseline parameters, the contractor will be responsible for any additional works (at their own cost and to include further pitch testing) to bring the pitch up to the required standard.

Please note: Weather conditions must be taken into account, particularly in the absence of irrigation (not instructed by the client) and if drought conditions persist with regards to the potential handover date.

Performance Quality Standards (PQS) provide a recommended minimum quality standard for the construction and maintenance of natural turf pitches.

Sport England has produced a pro forma for summarising the condition of natural turf sports pitches by conducting a Performance Quality Standard assessment and comparing the results for a given site against minimum standards. The parameters of the PQS test and the required standards are summarised below.

| ELEMENT | LIMITS | METHOD OF TEST |
|---|--------------------------------------|---|
| Ground cover % | >70 for SH 25-30 >80 for SH 30-35 | BS 7370: P3 A6 |
| Broad-leaved weeds % | <10 | BS 7370: P3 A6 |
| Sward height mm | 20-60 PS 20-70 SM | BS 7370: P3 A3 |
| Thatch depth mm | <15 | BS 7370: P3 A7 |
| Hardness in g | 35-200 | STRI method of test using a 0.5 kg Clegg Impact Hammer from a drop height of 0.55 m |
| *Water infiltration rate mm h ⁻¹ | >5 | BS 7370: P3 A8 |
| Evenness (2 metre straight edge) | <25 mm | BS 7370: P3 A6 |
| Slope: Direction of play Across play | <1.25% <2.00% | BS 7370: P3 A5 |
| pH value | 5.8 – 7.5 | ISO 10390 |
| GUIDANCE FOR ROOTZONE LAYER | | |
| Maximum diameter (stones) | <32 mm | Particle Size Distribution |

2.5.2 CRICKET SQUARE

Following post construction maintenance, the cricket square shall be subjected to Performance Quality Standard Testing (to be organised by the contractor) using the ECB/GMA Grounds Management Framework Performance Quality Standards Cricket Table – Cricket Square- Playing season. The square shall attain performance standard **Advanced** and should be tested

approximately 1 week prior to the season commencing. The Performance Quality Standards can be found in the following link:
[pqs-cricket-022023.pdf \(thegma.org.uk\)](https://www.thegma.org.uk/pqs-cricket-022023.pdf)

2.6 INDICATIVE WORK PROGRAMME

With respect to timescales for completing the project, it is recommended that the construction works are only completed under suitable ground and weather conditions to avoid any potential performance-related problems later on.

The date for start of play is highly dependent on weather conditions during the construction phase and growing-in period. Drought conditions during summer can significantly delay the handover of the pitches.

Indicative programme (Phase 1 works only)

| Activity | Year 1 | | | | | | | | | | | | Year 2 | | | | | | | | | | | |
|---|--------|---|---|---|---|---|---|---|---|---|---|---|--------|---|---|---|---|---|---|---|---|---|---|---|
| | J | F | M | A | M | J | J | A | S | O | N | D | J | F | M | A | M | J | J | A | S | O | N | D |
| Specialist pitch contractor mobilisation | | | | | | | | | | | | | | | | | | | | | | | | |
| Spraying off | | | | | | | | | | | | | | | | | | | | | | | | |
| Topsoil cultivation and removal | | | | | | | | | | | | | | | | | | | | | | | | |
| Cut and fill remodelling earthworks | | | | | | | | | | | | | | | | | | | | | | | | |
| Stone removal (subsoil) | | | | | | | | | | | | | | | | | | | | | | | | |
| Topsoil replacement and grading | | | | | | | | | | | | | | | | | | | | | | | | |
| Stone removal (topsoil) | | | | | | | | | | | | | | | | | | | | | | | | |
| Primary land drainage installation | | | | | | | | | | | | | | | | | | | | | | | | |
| Secondary land drainage installation | | | | | | | | | | | | | | | | | | | | | | | | |
| Installation of irrigation system (for the cricket square) | | | | | | | | | | | | | | | | | | | | | | | | |
| Cricket square construction | | | | | | | | | | | | | | | | | | | | | | | | |
| Importation, placement and grading of 50 mm rootzone carpet | | | | | | | | | | | | | | | | | | | | | | | | |
| Installation of sockets and goal posts | | | | | | | | | | | | | | | | | | | | | | | | |
| Cultivations, fertiliser and seeding | | | | | | | | | | | | | | | | | | | | | | | | |
| Initial agronomic maintenance | | | | | | | | | | | | | | | | | | | | | | | | |
| First use of rugby pitches | | | | | | | | | | | | | | | | | | | | | | | | |
| First use of cricket square (slow low bounce) | | | | | | | | | | | | | | | | | | | | | | | | |
| Full use of cricket square - (May in Year 3) | | | | | | | | | | | | | | | | | | | | | | | | |

Notes:

N.B. The precise date for the return to play is highly dependent on the weather conditions that prevail during the construction works and growing-in period. Play/use shall recommence upon approval from the Contract Administrator.

2.7 DESIGNERS ASSESSMENT OF RESIDUAL RISK

2.7.1 The project:

- Name: Woollams Playing Fields Extension.
- Nature: Natural turf playing field construction.
- Location: Woollams Playing Fields, 162 Harpenden Road, St Albans AL3 6BZ.

2.7.2 Nature of work:

PART A: EARTHWORKS, DRAINAGE AND ESTABLISHMENT

- Site clearance and initial cultivations
- Topsoil strip and temporary storage in a stockpile
- Cut and fill remodelling earthworks
- Topsoil return
- Topsoil re-grading
- In situ stone removal works
- Installation of a piped drainage scheme
- Installation of secondary drainage (sand bands)
- Removal of spoil from site.
- Importation and placement of screened, approved 50 mm deep rootzone carpet
- Final cultivations
- Fertilisation and seeding
- Reinstatement of damage
- As-built survey, O&M Manual and H&S File

PART B: CRICKET SQUARE CONSTRUCTION

- Setting out.
- Construction of a nine-pitch cricket square.
- Installation of a water supply.
- Installation of gully pots
- Prepare seedbed.
- Fertilise.
- Seed.
- Removal of spoil from site.

PART C: INITIAL AGRONOMIC MAINTENANCE [PLAYING FIELD]

- Mowing
- Fertiliser application
- Herbicide (if required)
- Overseeding
- Aeration
- Sand topdressing
- Pesticide/Fungicide application (if required)

PART D: INITIAL AGRONOMIC MAINTENANCE [CRICKET SQUARE]

- Mowing
- Fertiliser applications
- Herbicide (if required)
- Pesticide/Fungicide application (if required)
- Verti-cutting
- Spiking
- Over-seeding
- Topdressing
- Rolling

2.7.3 Timescale for works:

16 Weeks + 12 months initial agronomic maintenance.

2.7.4 Existing drawings:

See Table 1 above.

2.7.5 Existing environment:

The site is situated on arable agricultural land immediately east of The Woollams Playing Fields.

2.7.6 Residual risk to construction workers:

1. Tetanus.
2. Injury from vehicle movements in and around site.
3. Excavations >0.5 m.
4. Potential fall hazard from exposed trenches prior to backfilling.
5. Fertiliser application.
6. Herbicide application.
7. Materials handling, including bulk materials handling.
8. Existing piped drainage infrastructure
9. Overhead power cables

2.7.7 Residual maintenance risks:

1. Handling, storage and application of pesticides.
2. Handling, storage and application of fertilisers.
3. Dust (soil).
4. Manual handling.
5. Use of machinery including tractors, mowers, rollers and others.
6. Vibration.
7. Confined, deep spaces (maintenance of inspection chambers)

2.7.8 Residual operator risks:

1. Risk of acute and chronic sport injury – this risk has been minimised through the use of industry approved products and systems, material selection, the use of industry best practice design and the use of performance testing. It is the recipient's responsibility to maintain the surfaces following pitch handover so that these performance and safety standards are maintained.
2. The use of sports facilities during the construction phase (this risk is owned by the Contractor and the Client and behaviour, coordination and communication are as important as physical control measures such as fencing and signage).

2.7.9 Construction materials that are hazardous to health:

1. Fertiliser
2. Soil
3. Herbicide
4. Cement

2.7.10 Site wide elements:

The working areas and haul routes shall be fenced with Heras fencing, or similar, to delineate these areas. This fencing shall be maintained until handover to the Client.

2.7.11 Method statements & risk assessments to be provided by contractor:

1. Cut and Fill earthworks
2. Topsoil return
3. Stone separation
4. Primary drainage installation
5. Secondary drainage installation

6. Installation of a 50 mm rootzone carpet
7. Herbicide application
8. Fertiliser application
9. Cricket Square installation

2.8 METHOD STATEMENTS

| ITEM | Brief method statement (Continue on additional sheets if required) | Type / name of equipment you intend to use | Is equipment owned by the contractor? | Is equipment rented? | Will work be sub-contracted? | How many staff will be on site? |
|------------------------------------|--|--|---------------------------------------|----------------------|------------------------------|---------------------------------|
| 1. Cut and Fill earthworks | | | | | | |
| 2. Topsoil return | | | | | | |
| 3. Stone separation | | | | | | |
| 4. Primary drainage installation | | | | | | |
| 5. Secondary drainage installation | | | | | | |

| | | | | | | |
|--|--|--|--|--|--|--|
| 6. Installation of a 50 mm rootzone carpet | | | | | | |
| 7. Herbicide application | | | | | | |
| 8. Fertiliser application | | | | | | |
| 9. Cricket Square installation | | | | | | |

2.9 SUBCONTRACTORS

Please specify the names and contact details for any subcontractors that you intend to use during the project (please continue on a separate sheet if necessary):

| Name: | Contact Details: | Role: |
|-------|------------------|-------|
| | | |
| | | |
| | | |
| | | |

2.10 REFERENCES

Please provide references from three recent (last 2 years) schemes where you have carried out work of a similar nature and value. Please give name, address and telephone number for the referees.

| Name: | Contact Details: | Nature of work / project value (£): |
|-------|------------------|-------------------------------------|
| | | |
| | | |
| | | |

2.11 CONFIDENTIALITY

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2.12 CONTACT DETAILS

TGMS
4 Doolittle Mill
Froghall Road
Amphill
Bedfordshire
MK45 2ND

Tel: 01525 307060
Email: matt.young@tgms.co.uk

2.13 APPENDIX I – North St Albans Agricultural Land Classification and Soil Resources, Reading Agricultural Consultants, July 2022

