

Alan Lewis  **Ltd**
Sports Surface Consultant and Groundstaff Mentor

**Specification for the levelling and drainage of the
sportsfield
at
CPD Felinfach FC**

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Specification Details

Specification type	This specification is set against performance quality standard (PQS) based document. The standard of surface and material performance at set and maintained by The Grounds Management Association (GMA) and the Football Association of Wales (FAW). Full standards can be seen on GMA www.gma.org and https://faw.cymru/rules-regulations/ . The standards used for the surface this project are in the appendices.
Specification and Project Standards	There are 3 standard set in PQS, High, Standard and Basic. For this project the contractor must achieve High standard. Surface performance or material that does not reach this standard must be brought up to standard or replaced.
Standard Testing	All the surface and material testing will be done using British and European test Methods. The specification will set out time in the project when a surface test is required or when the contractor is required to supply a sample of materials used. The contractor is required to have the surfaces tested and certificated to the standards set in the specification and addition documents.
Substantial Completion	A Substantial Completion Certificate is issued when the contractor has completed all the items in the specification. The issuing of a Substantial Completion Certificate starts the 12-month default period.
Project Completion	A Project Completion Certificate is issued after the 12-month default period and the surface is to standard set out in the specification. FAW surface testing is usual completed after the contractors' period of maintenance. Then retention is paid after 12 months

Site Details

Site Details	CPD Felinfach FC
Site Address:	Felinfach Playing Fields Felinfach Lampeter SA48 8AE
Site Contact	Rhodri Jones
Specification issued by:	Dr Andy McLeod MSc
On behalf of:	Alan Lewis Ltd 1A Crowmeole Lane Shrewsbury Shropshire SY3 8AX Mobile: 07484 074904 Tel: 01743 242606 Email: alanlewis1910@btinternet.com
Date of Issue:	November 2024

Project Health and Safety

The contractor shall carry out all operations concerned with the project and the specified works in accordance with all current and future legislation.

The contractor will have on site, always, all necessary documentation to comply with health and safety legislation set out in the tender documents.

The contractor shall ensure that his insurances and rate are adequate to meet the cost of making all necessary arrangements for Health and Safety and welfare of all persons affected by the works and omissions.

Project

Alan Lewis Ltd has been invited by CPD Felinfach FC to provide specifications for the levelling and drainage of the sportsfield: 11,972 m² of including run-offs. This specification sets out the standards requirement for the project and surface establishment.

Important Site information.

The site is on a sports field and public safe working practices should be followed to ensure all members of the public are always kept safe. The compound and site are to be fenced, and the site signed under all present Health and Safety legislation for the period of the contract.

At all times during the construction process the pavilion and surrounding properties should be protected against any surface water run-off.

Existing Construction Make-Up

The make-up of the proposed pitches comprises poorly draining natural soil that is based on a heavy clay loam laying on a heavy silt clay loam subsoil.

Project Outline

1. Sports Surface topsoil strip sub-soil grade, rip and topsoil return with surface levelling.
2. Sports Surface install a Primary Drain system, with the outfalls into the drainage ditches.
3. A secondary sand groove system.
4. Sports Surface will have surface establishment with sand top dressing, aeration, fertilised and over sown.
5. **All waste to be removed from site.**

Alan Lewis Ltd and the client reserve the right to alter and amend the specification and bill of quantities at any time during the project.

Dimensions for the Project

Area	Description	Measurement
Sports Surface	Re-grade, with topsoil strip, grade, and topsoil return.	11,972 m ²
Sports Surface	Primary drain system and outfall Solid outfall pipe Connector Drain Lateral Drains	12 m 159 m 2,097 m
Sports Surface	Surface Establishment with sand top dressing, aeration, seeding and fertiliser	10,761 m ²
Sand Grooves	Sand slits at 1m centres, after establishment.	10,761 m ²

*Project area (not to scale)*

The specification constitutes a general technical proposal, which includes recommended improvements and performance standards for the development of the required facilities. The Contractor should assume that any necessary vegetation removal, earthworks, and grading will have been undertaken by their company.

- The levelling and drainage of a sportsfield that conforms to performance equality standards.

The contractor is to agree a programme for the works with CPD Felinfach FC and Alan Lewis Ltd acting as Clients Representative at the prestart meeting to suit the needs of the end user as far as is practicable. The contractor will be expected to be pro – active in this

regard and be prepared to reserve and modify the programme to suit any changing conditions in agreement with the Client and consultant.

Access to the site will be agreed with CPD Felinfach FC.

The Contractor shall be deemed to have examined the site and its surrounds and to have satisfied himself as to the full extent and character of the operations, the form and nature of the site, the means of access, local conditions, supply of labour and materials, and to have obtained all the necessary information about any risks or circumstances affecting his tender. No claims on the grounds of lack of knowledge in any such respects will be considered.

The site should be inspected by prior appointment by contacting:

Rhodri Jones – 07817 566271

email: cpdfelinfachfc@gmail.com

This document includes:

- Performance design specifications
- Material specification.
- Project Drawings

All designs must comply with the Grounds Management Association (GMA) Performance Quality Standards (PQS) and be compliant with FAW standards.

Project Preliminaries

for

CPD Felinfach FC

PROJECT PRELIMINARIES

1. Introduction

Names of Parties

The work is to be carried out for CPD Felinfach FC.

1.1 General Requirements

- **Drawings and Specifications**

The accompanying drawings and specifications intend to convey an accurate description of the nature, extent, and standard of work to be performed by the contractor. The contractor must visit the site, to make themselves fully acquainted with the works required, and quote accordingly. Should the contractor be in any doubt regarding the true meaning and intent of any of the clauses in the conditions of contract, specifications or details shown in the drawings, they should be invited to have these fully resolved before submitting his tender. There will be no allowance for extras, including any loss or expense involved through a misunderstanding arising from the contractor failure to comply with the requirements.

The tender must include for conducting the work strictly in accordance with the true intent and meaning of the drawings and specifications. Minor works not specifically mentioned but obviously necessary and customary in the trade will be deemed to be allowed for in the contractor's price.

- **Construction Phase Health & Safety Plan**

The contractor shall provide a Construction Phase Health & Safety Plan to CPD Felinfach FC or their representative.

- **Programme – Must be provided as part of tender award criteria.**

The contractor shall, before possession of the site, prepare and submit the proposed programme for the execution of the works, for comment by the employer. Thereafter, the contractor shall amend and revise the programme as required by the Conditions of Contract or as requested by the employer. The contractor shall supply a Gantt chart illustrating each primary stage of the project; it shall show the level of detail appropriate to each stage of the Works and all activities and restraints, each of which shall be given a short title. All events shall be numbered and annotated with earliest and latest event dates.

- **Method Statement – Must be provided as part of tender award criteria.**

The contractor shall provide, prior to contract, a statement describing their proposed general and detailed arrangements, and methods for conducting the works. The statement shall include details of how all stages of the works will be executed. This should include the detail of procedures to ensure the specified performance parameters are attained and the appropriate climatic conditions required for surface installation. It

shall also highlight the appropriate health and safety requirements and any specialist training the site personnel will require before working on the site.

- **Sub-contracting**

The contractor shall not sub-let any part of the works without the written consent of the client's representative. Any intention to sub-contract any part of the works shall be notified to the client's representative when the tender is submitted and full details of the sub-contractor/s shall be provided, e.g. name and address and the phase/s of the work they are to undertake.

- **Supervision**

The contractor shall ensure adequate managerial supervision of the site and shall provide in his tender for a competent foreman to be continuously employed on the site while work is in progress and for him, as the contractor's representative, to receive and carry out any instructions given him by the client's representative.

- **Documents**

The contractor shall keep at the site of the works copies of the contract drawings and specification; these to be always available to his foreman and the client's representative.

- **Procedure**

No variation from the sequence and nature of the works detailed in this Specification will be permitted except with the prior written consent of the client's representative.

- **Site Meetings**

The Contractor will attend periodic meetings on site as required.

- **Insurance - Must be provided as part of tender award criteria.**

The tender and rates shown in the Bill of Quantities shall be deemed to cover all insurance and to indemnify the client against all claims and losses. The contractor will not be allowed to take possession of the site until the insurance policies required under the General Specification have been examined and approved. The contractor is to forward the insurance policies suitably endorsed to the client as soon as possible after the acceptance of the tender and before entering the site.

- **Standard of Work**

Any works shall be subject to inspection and approval by the client's representative before the contractor completes operations.

- **Approval of Work**

No work shall be proceeded with until any previous operations thereby likely to be concealed have been inspected and approved.

- **Warranty**

The contractor shall provide a written warranty in respect of the manufacture, installation and performance of those materials selected by them and placed in the permanent works. The warranty will be such that the contractor will indemnify the client for all aspects of the works whether sub-contracted or not.

- **Private and Publicly Owned Services**

The information in the Contract as to the whereabouts of existing services and mains is believed to be correct but it shall be the responsibility of the Contractor to verify the completeness and accuracy of the information prior to the commencement of any works.

Any services affected by the works must be temporarily supported or protected by the Contractor who must take all measures required by the various bodies to protect their services and property during the progress of the works.

- **Payments**

Will be specified in form of contract in tender documents.

- **Police Regulations**

The contractor shall allow for all costs incurred by themselves in ascertaining and complying with any police regulations.

1.2 Working Practices and Materials

- **Labour, plant etc.**

The contractor shall supply all labour, approved tools, plant and equipment necessary to the efficient execution of the work. He shall comply with all statutory regulations and shall provide such storage sheds, canteens, latrines and shelters as may be required, maintaining same during the contract in a thoroughly sanitary and hygienic manner and clear away on completion to the satisfaction of the client's representative. All temporary accommodation shall comply Health and Safety requirements current during the period of the Contract.

All offloading of materials and plant, including that belonging to subcontractors, is to take place WITHIN the boundaries of the site, except by specific agreement with the client's representative.

- **Machinery**

All traffic shall be confined to the approved routes within the site. The use or passage of heavy earth moving equipment will not be allowed on site following the return of the topsoil. Only recognised construction machinery of an approved type shall then be used to complete the specified works unless otherwise agreed by the client's representative.

- **Provision of Materials**

Any material samples or intermediate stages of the work, when tested, be found by the employer or their agent to be unsatisfactory or likely to produce unsound work, will be rejected. This will include the whole consignment which the sample represents which shall be removed and the contractor shall take suitable corrective action. All rejected materials shall be removed and replaced at the contractor's own expense.

Any delays caused by the rejection of the sample/work shall not, in any way, relieve the contractor from his responsibility regarding completion within the contract period.

- **Control of Dust**

The contractor shall conduct his operations so that as far as possible any dust settles within the site and is not carried beyond the immediate working area.

The contractor shall also undertake a daily visual inspection of vehicles (if any) parked in the site compound areas and adjacent the areas of working for the presence of any settled dust.

The contractor shall adjust the location of any excavation, regarding or filling operations and wind direction and speed.

Any stockpiles of material subject to wind whipping shall be damped down and covered to ensure satisfactory dust control.

The contractor shall ensure that airborne dust is kept to a minimum by the regular use of water bowsers during periods of dry weather. The contractor shall also deploy other water spraying equipment as required to control dust emissions whenever significant fugitive dust emissions are created or are likely to be generated by site operations.

- **Control of Noise and Vibration**

The contractor shall employ practical means to minimise noise and vibration produced by his operations and shall have regard to the recommendations in BS 5228 Noise Control on Construction and Open Sites.

The works or any part there of shall be suspended temporarily by the client's representative when, in his opinion, working conditions are unsuitable due to inclement weather. Work must cease when conditions are such that puddling and/or deep rutting of the soil or any other detriment could result.

- **Handwork**

The contractor shall allow in his pricing for the hand working on parts and conditions where the use of machinery will not produce results to the satisfaction of the client's representative even though specific reference is not made to such in the body of this specification.

- **Defects Liability Period**

The contractor shall be responsible for correcting any faults arising from poor work or faulty materials for twelve months after the completion date.

- **1.3 Site Specific Information**

- **Site Restrictions**

The contractor shall confine his work men and material, plant etc. to the area of the working site and agreed designated storage area and access routes.

- **Surface and Ground Water Run Off**

The contractor shall make all necessary temporary provision for the surface and ground water run off from the working areas, during the period between the start of the works and the final connection to a drainage outfall.

- **Storage of Equipment and Materials**

All equipment and materials shall be stored on areas as shown on the drawings or otherwise as agreed. The Contractor shall be responsible for reinstating any such areas at his cost unless otherwise allowed for in the Bill of Quantities

- **Maintenance of Public Roads Etc.**

The Contractor shall be responsible for keeping clean all public roads, pavements, verges and other areas and for making good at his own expense any damage thereto when carrying out the works. The contractor shall be responsible for avoiding any infringements of local traffic regulations.

- **Parking**

The parking of the contractor's and employees' vehicles will be restricted to his compound. The surrounding roads may not be used for the parking of vehicles that are related to the activities of the works or those employed on or visiting the site.

- **Off Site Trespass**

Allow for all measures and precautions necessary to prevent any trespass upon adjoining land or property and to preclude any rubbish, materials, etc from being deposited thereon.

- **Boundary Protection**

The contractor should allow for protecting and avoiding all damage to adjoining owners' boundaries.

- **Restriction of Advertising**

The contractor shall not use, nor let, the site or any part there of, for the advertising purposes save only that he may exhibit his own name and address together with those of his suppliers. The board shall also display the title of the works and such boards shall be approved before erection.

- **Tidiness and Clearance**

At all times the site shall be kept in a tidy condition, all surplus earth and rubbish being cleared as work proceeds. The contractor shall clear away all surplus materials on completion and leave the site in a clean and tidy condition right to contract boundaries to the satisfaction of the client's representative.

- **Protection of Trees and Shrubs**

The contractor shall carefully preserve and protect all trees and shrubs on the site from damage, until completion of the works. Individual trees to be protected in accordance with client's representatives' instructions.

Project Specification
for
CPD Felinfach FC

1.1 Site Establishment

- Set out, implement, and maintain access route as agreed with to the project footprint.
- Set out contractor's compound and project area as agreed with the client or their representative.
- Supply and erect a 2.00 m high temporary steel mesh safety / security fencing to the site compound.
- Erect public safety notices as appropriate.
- Maintain the integrity of the fence throughout the contract, restricting access from unauthorised personnel into the area containing the construction and the compound area. [All safety notices and fencing should be carried out in consultation with the client's appointed representative. The exact location of the compound should be decided in conjunction with the client at the pre-start meeting.]
- Provide within compound, sufficient lockable steel storage containers for safe storage of all synthetic components, materials, and equipment as appropriate.
- Provide welfare and toilet facilities, including all power and water supplies required for the duration of the contract.
- Contractor should record existing levels and gradients before commencing the works.
- Scan the footprint area of any services which may be present and mark and record.

1.2 Scope of works

The re-grade, drain and establish a sports turf surface of the area of 11,972 m².

Scope of works will include:

- Spray off existing vegetation.
- Topsoil strip.
- Re-grade sub-soil.
- De-compact
- Return topsoil.
- Install primary pipe drainage system with 5 m laterals.
- Surface Cultivation and grade
- Seed bed preparation
- Application of fertiliser
- Over sowing of seed
- Sand grooves after establishment.

1.3 Application of total Herbicide

The working area shall be sprayed with a Glyphosate-based herbicide, strictly in accordance with the manufacturer's instructions and COSHH regulations. Enough time shall be allowed to achieve a thorough kill of the existing vegetation.

1.4 Topsoil Stripping and Stockpile

Remove vegetation from surface and dispose of in agreed off-site licenced tip.

Excavate all existing true topsoil to a nominal depth of 250 mm, avoiding contamination with underlying subsoil material.

The topsoil shall be temporarily stacked to one side for return to the surface after grading. Topsoil should not be stockpiled higher than 2 m or for longer than 6 months.

Care shall be taken to excavate the edges of the site area to form an even soil face to a true line. Loose soil shall not be allowed to contaminate the drainage or rootzone materials during backfilling.

Allow for haulage to the stockpile area on site.

1.5 Re-grade Formation Layer

The re-grade subsoil formation surface shall be trimmed to an even gradient across the line of play where possible and to a maximum tolerance of +/- 40 mm from the design depth. A minimum cross pitch grade of 1:150 should be the aim. Levels are shown on Drawings **AL Felinfach 002, 003 and 004**.

Note: In areas where the topsoil depth is greater than 250 mm, the levelling may include partial grading of the remaining topsoil.

Note: There is a decommissioned water pipe running across the project area (see drawing – Dwr Cymru PLS0046978-Felinfach. This pipe is reported to be an asbestos concrete pipe; if the pipe is removed, it must be carried out and disposed of in a manner following the correct legal requirements.

1.6 De-compaction

The area should be ripped or aerated to relieve compaction prior to topsoil being returned.

1.7 Topsoil return

Spread and consolidate (minimum 250 mm consolidated depth) topsoil materials over the site ensuring that materials are not mixed and that they are kept separate. Stone bury the area in two directions.

1.8 Cultivation

Stone Bury or Rotary cultivate the existing surface over the whole working area to break up any pans present. Any rubbish should be removed from the soil surface.

1.9 Rough grade

Grade the surface to a crossfall of 1:150 and marry surrounds in existing surface levels. Ensure an even 250 mm depth of topsoil where possible over the whole area. Detail of grade quantities or show on Drawings **AL Felinfach 002, 003 and 004**.

2.0 Drainage system.

Install a primary pipe drainage system with 4 m laterals. Work with the fall on site to maximise drainage fall and outfall into the into the water course on site. A fall of 1:150 should be the aim. A drainage plan is show on drawing is **AL Felinfach 005**. All recommended material specifications are shown in section 3.4.

2.1 Primary Pipe Drainage System

Connector Drain

- Excavate carrier drain trench to an invert depth of 1000 mm.
- Either the use a trencher which leaves a clean trench bed or lay a bed of 3 mm to 6 mm gravel to a depth of 25 mm in the base of the drainage trench.
- Lay a main / perimeter drainage pipe in the centre of the excavated trench, on the material used for the trench base.
- Surmount the drainage pipe with 3 mm to 6 mm gravel to within 125 mm from the surface.
- Lay a sandy rootzone to a firmed depth of 125 mm over the gravel. Surmount the sandy soil over the trench with a further 25 mm of sandy soil to allow for post-construction settlement.
- The outfalls for the drainage system is shown on drawing **AL Felinfach 005**.

Lateral Drains

- Excavate lateral drainage trenches at 5 m centres and invert depth of 450 mm, this can vary depending on outfall depth.
- Either the use a trencher which leaves a clean trench bed or lay a bed of 3 mm to 6 mm gravel to a depth of 25 mm in the base of the drainage trench.
- Surmount the drainage pipe with 3 mm to 6 mm gravel to within 125 mm from the surface.
- Lay a sandy Root zone to a firmed depth of 125 mm over the gravel. Surmount the sandy soil over the trench with a further 25 mm of sandy soil to allow for post-construction settlement.

French Drain

- Excavate lateral drainage trenches at 5 m centres and invert depth of 450 mm, this can vary depending on outfall depth.
- The perforated pipe shall be 100 mm diameter.
- Surmount the drainage pipe with 10 mm to 20 mm gravel to the surface level.

Inspection Pits

The Contractor shall allow for connecting into this structure and making good the necessary reinstatement of the structure to ensure the outfall is fully functional and flows freely.

The Inspection chambers shall be installed complete including all excavation and disposal; 600 mm long rocker pipes -2; 325 mm thick concrete base in C20 concrete; polypropylene inspection chamber base and raising piece; 150 mm thick C20 concrete surround; 2 courses of 225 Class B engineering brick at top; circular cover and frame to BS EN 124: B125 (clear opening 450 mm diameter); frame bed in 5 mm thick mortar; benching as necessary. To suit up to 225 mm diameter pipe.

Outfall

Soakaway No 1

The drainage system shall outfall into a concrete ring soak away 3000 mm in diameter and 4000 mm in depth. The soak away shall include an appropriate concrete cover and access cover.

The soak away shall be positioned on a concrete base and surrounded with a porous stone fill.

Soakaway No 2

The overflow from Soakaway No 1 and the carpark French drain shall outfall into this soakaway.

The dimensions of the soak away shall be 3 m (W) x 10 m (L) x 3 m (D) and comprise 30-80 mm clean stone covered by a geotextile membrane; there shall be a minimum depth of topsoil & sub-soil of 500 mm.

2.2 Sand dressing

Import and apply evenly 180 tonnes of a medium coarse sports sand over the area and lightly work into the surface.

2.3 Aeration

Aerate the area with a solid tine cam action aerator (verti-drain) to a minimum depth of 250 mm with 25 mm tines, the aerator should also apply some heave or lift action on the soil. **Soil conditions may limit depth of aeration.**

2.4 Grade and prepare seed bed

The area shall be evenly firmed to the even depth and the surface trimmed to a maximum tolerance of +/- 15 mm from the design levels. Care shall be taken to avoid disturbing the underlying subsoil. Create a stone free surface with a sandy crumb structure.

2.5 Apply pre seed fertiliser

Supply spread evenly and work into the seedbed a granular fertiliser with analysis 9:6:9 at a rate of 70 g/m².

2.6 Apply grass seed

Supply and sow a 100% perennial ryegrass seed mix using cultivars selected from Turfgrass Seed 2023 produced jointly by The British Society of Plant Breeders Ltd and STRI.

The seed shall comply with the minimum standards set out in the Seed Regulations. Details of the proposed seed mixture shall be submitted for approval prior to commencing work.

The seed mix must contain 50% Tetraploid Perennial Rye grasses. The seed shall be sown evenly with an approved distributor at a rate of 50 g/m².

The seed shall be lightly raked into the surface taking care to avoid creating ridges in the prepared surface or shall be sown using an approved direct drill seeder with a minimum of 3 passes in different directions.

2.7 Brush

The area is to be brushed or drag matted in a minimum of two directions to work all material into the surface.

2.8 Sand Grooves (After pitch establishment)

Sands slit trench drainage consists of an intensive system of narrow trenches backfilled with permeable materials running approximately at right angles to the drainage were possible. Their purpose is to move excess soil water speedily to the piped system.

Excavate trenches 150 mm deep, 50 mm to 75 mm wide at spacing's of 1 metre. The trenching machines should be used to cut and backfill the slits. The machines should be fitted with spoil conveyors to load transport leaving the sward clean and uncontaminated. The excavated soil will be stockpiled on site to be agreed at the pre – start meeting.

The trenches or slits are to be filled with a coarse sand or with suitable with a medium/coarse sand.

3.0 Material Specifications

Within 14 days of the contract being awarded, the Contractor shall submit to the Alan Lewis Ltd, a list of the suppliers from whom they propose to purchase the material necessary for the execution of the works. Each supplier must be willing to admit the Alan Lewis Ltd to their premises during ordinary working hours for the purpose of obtaining samples of the materials in question. Alternatively, the Contractor shall deliver the samples of material to the Alan Lewis Ltd, if requested. Sample sizes shall be in accordance with the relevant British Standard where applicable, or shall be of a reasonable size as requested by the Alan Lewis Ltd. Materials subsequently supplied shall conform with any specified tolerances to the quality of samples, which have been approved by the Alan Lewis Ltd.

The information regarding the names of the suppliers may be submitted at different times, although in accordance with the above. No source of supply shall be changed without the Alan Lewis Ltd' prior approval. When any material or article is required to comply with the relevant British Standard, such materials or article, or its container, shall bear the stamp of the registered certification trademark of the British Standards Institute. Alternatively, the Contractor shall submit to the Alan Lewis Ltd test certificates furnished by the supplier or manufacturer of the material or article, indicating compliance with the relevant British Standard.

All such materials liable to deterioration or damage shall be stored in such a way that they shall be in accordance with the specification at the time of use and will not deteriorate in use.

3.1 Particulate Materials

All particulate materials used in the drainage system and the contract, will conform to the appropriate standard as indicated in this specification. The Contractor will ensure that all materials used, other than soil, achieve the following:

- a. Resist the effects of frost or drought,
- b. Will not change their structure,
- c. Retain their shape,
- d. Will provide a stable structure,
- e. Will not break down because of weathering, or activities on the surface,
- f. Will not fuse together,
- g. Will not affect the performance of the installation outside the parameters indicated within this specification.

3.2 Standard of Particulate Material for use in Top-Dressing and Sand Slits the Surface of Pitch:

Type/Name of Material: **Medium Sand**

Main Range of Particles: 0.500 mm to 0.250 mm

Breakdown of Particle Range:

Particles between 1.000 mm and 0.500 mm not to exceed 10% of total

Particles between 0.500 mm and 0.250 mm to be 55% to 80% of total

Particles between 0.250 mm and 0.125 mm to be 15% to 40% of total

Particles below 0.125 mm not to exceed 5% of total

Particle Shape: Rounded to Sub-rounded

% of Particles in Required Shape: 90%

Minimum Hydraulic Conductivity: 1,000 mm per hour

3.3 Standard of Particulate Material for use in the Drainage Trenches:

Type/Name of Material: **Gravel**
 Main Range of Particles: **6 mm to 3 mm**
 Breakdown of Particle Range:
 Particles between 10 mm and 6 mm not to exceed 5% of total
 Particles between 6 mm and 3 mm up to 100% of total
 Particles between 3 mm and 2 mm not to exceed 10% of total
 Particle Shape: Rounded to sub-rounded
 % of Particles in Required Shape: **95%**
 Minimum Hydraulic Conductivity: **30,000 mm per hour**

3.4 Standard of Particulate Material for use in the Sandy Soil Layer in the Drainage Trenches:

Type/Name of Material: Sandy Soil
 Main Range of Particles: 0.500 mm to 0.125 mm
 Breakdown of Particle Range:
 Particles between 2 mm and 1 mm not to exceed 5% of total
 Particles between 1 mm and 0.5 mm to be 5% to 15% of total
 Particles between 0.5 mm and 0.25 mm to be 25% to 50% of total
 Particles between 0.25 mm and 0.125 mm to be 25% to 40% of total
 Particles between 0.125 mm and 0.053 mm to be 5% to 10% of total
 Particles below 0.053 mm to be 10% to 20% of total
 Particle Shape: Rounded to Sub-rounded
 Minimum Hydraulic Conductivity: 200 mm per hour

3.5 Drainage Pipes

All drainage pipes shall be UPVC flexible, perforated, corrugated drainage pipe in accordance with BS 4962.

The diameter of the drainage pipes shall be:

- Main / Catchment: 110 mm internal diameter / 175mm external diameter;

Or as determined by the Contractor

Pipes used for drainage shall be strictly in accordance with the appropriate section of this specification. Only one type of pipe and only one size of pipe shall be used within any individual drain length between manholes / inspection pits or silt traps, except at the connections to the stated structures.

3.6 Connections to Manholes / Inspection Pits, Silt Traps and Outlets

Suitable sized rigid drainage UPVC pipe in accordance with BS 4660.

3.7 Drainage Pipe Connections / Junctions

All joints between drainage pipes and runs must be made with approved purpose made connections in accordance with BS 4962.

3.8 Manholes / Inspection Pits and Silt Traps

Manholes etc shall be constructed from pre-cast concrete sections all complying with BS 5911: Part 1 and Section 507 of the Department of Transport's Specification for Highways Works. Concrete shall be grading CP0P as defined in Clause 60 of the Department of Transport's Specification for Highways Works.

Manholes etc to have HB 600 x 450 mm. Cast iron covers and frames grade B in accordance BS 497.

Where appropriate, manholes etc to have galvanised malleable iron steps to BS 147 at 300 mm vertical centres, staggered 300 mm horizontally with the lowest step 300 mm above the base and the top step 450 mm below the top cover, positioned in direct view of the access.

Frames shall be securely bedded on an appropriate depth of no more than 5 mm of cement mortar. On two courses of Class B engineering bricks, the covers and frames shall be left 5 mm below the adjacent finished surface unless otherwise indicated.

3.9 Concrete

All concrete used to be in accordance with COP as indicated in the Department of Transport's Specification for Highway Works Section 60. Where appropriate all concrete used shall be subject to the following conditions:

- a) Ready mixed concrete shall be in accordance with BS 538. The use of non-agitating equipment for its transport will not be permitted; truck mixer units and their mixing and discharge performance shall comply with the requirements of BS 451. When truck mixed concrete is used, water shall be added under supervision either at the site or at the central batching plant as agreed by the designer and in no circumstances shall water be added in transit.
- b) Concrete shall not be mixed when the air temperature in the shade has fallen to 3° C (38° F). No frozen materials or materials containing ice shall be used.
- c) During hot weather the constituent materials of the concrete must be kept sufficiently cool to prevent the concrete from stiffening in the interval between its discharge from the mixer and compaction in its final position.
- d) The method of transporting and placing concrete shall be to the approval of the designer. Concrete shall be so transported that contamination, segregation or loss of a constituent material does not occur.

- e) No concrete shall be placed until the Total Turf Solution's approval has been given.
- f) All form work and reinforcement contained in it shall be clean and free from standing water, snow or ice, immediately before the placing of the concrete.
- g) No concrete shall be placed in flowing water.
- h) Concrete when deposited shall have a temperature of no less than 5° C (41° F) and not more than 30° C (90° F). It shall be compacted in its final position within 30 minutes of discharge from the mixer unless carried in a purpose made agitator, operating continuously, when the time shall be within two hours of the introduction of cement into the mix and within 30 minutes of discharge of the agitator.
- i) Where appropriate all concrete shall be compacted to produce a dense homogenous mass. Freshly compacted concrete shall not be subjected to vibration from internal or external sources for at least 4 hours following compaction.
- j) Immediately after compaction and for seven days thereafter, concrete shall be protected against harmful effects of the weather, including rain, rapid temperature changes, frost and from drying out. The methods of protection used shall be subject to the approval of the Alan Lewis Ltd.

3.10 Grass Seed

All seed will be certified (OECD Green or Blue Label Certification). Purity, germination, harvest and origin of each mixture component must be indicated on the tender document and attached to each bag.

Alan Lewis Ltd will supply the details of the proposed mixture and cultivars.

Only approved cultivars, which comply with the following criteria, shall be acceptable.

Grass seed for winter games pitches:

- Mixture to be composed of 100% perennial ryegrass; a minimum of three different cultivars of Perennial Ryegrass to be used in the mixture. **The seed mix must contain 50% Tetraploid Rye grasses.**
- Cultivar criteria in accordance with the 'Turfgrass Seed 2021, produced jointly by The British Society of Plant Breeders Ltd and STRI.

Due to the changing nature of turfgrass research and development, different mixtures based on the above may be permitted, subject to the prior approval of the client.

3.11 Fertiliser

A Certificate for Nutrient Analysis Content shall be provided for each type of fertiliser used. Each fertiliser shall consist of an approved compound containing the specified nutrients and the fertiliser shall be evenly applied at the manufacturers recommended rate.

All fertiliser material shall comply, where applicable, with the Fertilisers Regulations 1990 and all subsequent Amendments.

Autumn Fertiliser: [The Nitrogen content will depend upon at what time during the Autumn period any fertiliser is applied, e.g. a low Nitrogen content will be given during the late Autumn]

Nitrogen	4% to 11%
Phosphate (P ₂ O ₅)	2% to 6%
Potash (K ₂ O)	4% to 10%

Spring / Summer Fertiliser: [To be in a ratio of 2:1:1 unless otherwise approved]

Nitrogen	10% to 20%
Phosphate (P ₂ O ₅)	5% to 10%
Potash (K ₂ O)	5% to 10%

Pre-Seeding Fertiliser: [To be in a ratio of 1:1:1 unless otherwise approved]

Nitrogen	6% to 10%
Phosphate (P ₂ O ₅)	9% to 15%
Potash (K ₂ O)	6% to 10%

4.0 Aftercare

The contractor shall provide a 12-month maintenance program to ensure that the grass is properly established; this will include: -

4.1 Mowing

The Contractor shall carry out the first cut with a rotary mower when the grass has reached an approximate height of 50 mm. The first three cuts shall maintain the grass at 50-60 mm. Checks for stones; handpicking will be carried out, if necessary, before each cut. After the first three cuts, the Contractor shall cut the development area at a height of 30 mm 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. It is anticipated that a minimum of 25 cuts will be required in total.

4.2 Fertiliser

The contractor shall allow for 3 fertiliser applications to maintain healthy growth and colour throughout the contract period. Plan for the application of fertiliser to commence 4 weeks after grass establishment using the following programme as a guide:

October 3:12:12 at 350 kg/ha

April 20:6:6 at 350 kg/ha

July 12:6:6 at 350 kg/ha

4.3 Selective herbicide

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.

4.4 Over seeding (if required)

Where any areas of the development area are outside standard then they shall be over-seeded using the same seed mixture as that used in the original establishment of the site at a rate of 25 g/m².

4.5 Aeration

Verti-drain (solid tines)/earthquake the development area on 4 occasions (approx. October, January, April & July) when ground conditions are suitable (sufficient water content to allow penetration of Verti-drain tines to full operating depth without causing disruption at the surface).

4.6 Pest & Disease control

Pest and diseases should be controlled using an approved control agent, if required.

4.7 Topping up of drainage trenches

All drainage trenches shall be topped up with the relevant material to ensure that the final surface levels conform to standard.

Bill of Quantity

Item	Item Description	Quantity	Unit	Cost (£)
	CPD Felinfach FC			
1	Site Preparation			
1.1	Mobilisation Cost		Item	
2	Sportsfield			
2.1	Remove/Spray off Vegetation	11,972	m ²	
2.3	Topsoil strip	2,993	m ³	
2.4	Grade Formation layer	11,972	Item	
2.6	Rip, De-compact the subsoil	11,972	m ²	
2.7	Topsoil return	2,993	m ³	
2.8	Supply & lay sand topdressing	180	t	
	Cultivate surface	10,761	m ²	
	Grade and prepare seed bed	11,972	m ²	
2.9	Supply and apply pre-seed fertiliser	754	kg	
2.10	Supply and apply seed	538	kg	
2.11	Brush the surface	10,761	m ²	
3	Drainage			
	Supply & install collector drain (160 mm dia)	159	lm	
	Supply & install lateral drains (80 mm dia)	2,097	lm	
	Supply & install inspection chambers	3	No	
	80/160 mm connectors	32	No	
	Install French Drain	50	lm	
	Install Concrete ring soakaway		Item	
	Install loose stone soakaway		Item	
	Install sand grooves	10,761	m ²	
4	Maintenance			
	Post construction maintenance 12-month period		Item	
	Contingency	5	%	
	Sub-total			
	VAT	20	%	
			Total	

Project Appendices

for

CPD Felinfach FC

Appendix 1: Schedule of Information to be Included with the Contractors Proposals

Document	Included	
1	Detailed method statement, giving the methods and sequence of construction operations. This should include a programme of events in the form of a Gantt chart.	<input type="checkbox"/>
2	Specifications of all proposed materials comply with BS 7044	<input type="checkbox"/>
3	List of sub-contractors	<input type="checkbox"/>
4	List of suppliers	<input type="checkbox"/>
5	Contractor's warranty	<input type="checkbox"/>