LBR 2.44.5

AGRONOMIST'S REPORT

Sports Pitches

Borough of Redbridge

PETER JONES ASSOCIATES

PJA

AGRONOMIST'S REPORT

PITCHES REPLACEMENT ASSESSMENT

for

BOROUGH OF REDBRIDGE SITES

April 2016

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EXECUTIVE SUMMARY

This report investigates the suitability of four local authority natural grass amenity sites and their potential for being used to accommodate the replacement provision sporting activities which would be lost at three existing sports pitch sites (two of which are adjacent to each another).

The existing sports pitch sites (Fords and Oaklands) were visually inspected by the Agronomist and all were found to be properly constructed natural grass sports pitches laid out to soccer for winter use, and cricket for summer use, and at the time of the inspections, it was quite apparent that the condition and quality of the soccer pitches and the cricket squares was good, and that they are well maintained.

Furthermore, it was clear to see that the pitch areas have had the benefit of a good maintenance regime over the years to maintain them and improve them sufficiently well to sustain a considerable amount of seasonal use and it was apparent from the nature of the wear patterns that the pitches are very well used and well managed in terms of rotation of play. It was not evident that the pitches are open for general public use.

They layouts of both sites appeared to be good in terms of proximity to the Clubhouses and car park areas. In the case of Fords, a sizable area of grass had been sectioned off as overspill car park to accommodate cars during periods of peak activity (typically weekends).

From an agronomic perspective the four replacement sites have suitable existing topsoil in terms of quality and quantity and which is capable of growing good quality grass. However, the levels and undulations that exist on the proposed sites mean that significant improvements to the levels would be needed in order to accommodate the replacement provision of soccer and cricket pitches that would be located in the areas which are currently not used for sport.

This requirement would typically form part of the pitch construction works, and would in turn lead to (in most cases) the need for a drainage scheme to be designed and installed that

would provide sufficiently good drainage performance on the pitch surfaces to enable them to withstand the levels of play that could be expected from Day 1 of use. The scope of works would typically also include soil improvement and soil amelioration work that would remove stones from the topsoil, plus topdressing the surface with a sports-grade sand, all of which would seem feasible from a practical perspective.

One of the key reasons for this is that newly constructed pitches that have been regraded to achieve desired levels suffer from the soils and sub-soils being compacted and do not benefit from the good soil structure and drainage performance that is more generally found on older, mature sports fields and parkland sites, and as such, the drainage performance needs to be designed into the new pitches. Secondly, it is important that the drainage performance of a newly constructed pitch is matched to the anticipated usage, and where pitch capacity is being lost it means that the remaining pitches will typically need to be improved to sustain the potential increase in wear & tear.

With regard to capacity, Cundall have provided the Consultant Agronomist with site plans showing indicative layouts for the purpose of proving that that the replacement capacity for soccer and cricket pitches is possible on the available area(s). Bearing in mind that the plans are indicative only, it is strongly recommended that the Council undertake full detailed feasibility and design work before finalising any layout(s) and this will include access, parking and clubhouse facilities. It is advised that the Council also consult with external user groups when undertaking their detailed feasibility and design work.

There is a need for good design input to ensure that the pitch configurations meet the logistical requirements of an integrated summer & winter sports set-up, otherwise there may be a risk of there being overlap playability issues and maintenance issues in the longer term.

In the case of Fords moving to Seven Kings Park, it would seem beneficial if some of the Fords site was retained where it abuts Seven Kings Park as this proposal would significantly help to improve the capacity of the land for sporting purposes and address some of the current constraints.

In the case of Oakfields moving to either Hainault or Forest Road, it would be beneficial if some capacity from both of the adjacent sites was pooled to allow a sufficient and more adequate overall area for improved logistics, better integration of the cricket, and the possibility of a more centrally located car parking and pavilion/clubhouse arrangement.

In terms of the construction work required to achieve the desirable standards for sports pitches that will sustain regular use, it will be necessary in the case of Seven Kings Park, Forest Road and Hainault sites to: strip off the topsoil and re-grade the subsoil to required levels, re-spread the topsoil, install a pitch drainage system, construct cricket squares, then seed (or turf) and grow-in the site until it is established and ready to play on.

This construction process would typically take six months, (being April to September) followed by a minimum further 12 months Grow-in period (if seeded) needed for the pitches to mature and be ready for play.

In the case of the Goodmayes Extension site, it appeared that the existing surface levels are not too far adrift, and importantly, the topsoil is quite deep (300mm where inspected) and thus it may be possible in this case to plough the site and re-grade the topsoil to acceptable levels without the need for a topsoil strip operation or re-grading of the subsoil. This proposal could be substantiated by further inspection holes and a topographical survey if the site was deemed to be a favorable option.

Final Conclusion

Therefore with investment and further detailed feasibility work, it is possible to be able to provide equal or better quality and quantity of replacement provision for Oakfield and Fords playing pitches, assuming that they are appropriately constructed and maintained.

INTRODUCTION

Background

Peter Jones Associates Ltd has been appointed by the Borough of Redbridge to undertake agronomy and feasibility analysis. The proposal is to relocate the component parts of Oakfields Sports Ground and Ford Sports Grounds to two new locations to allow residential development on the existing sports fields. The playing fields are located in and around Ilford and is shown on the location plans following.

Pitch Replacement

The scope of the proposed works is to provide winter and summer sports surfaces by relocating the existing sports ground known as Oakfields Sports Ground and Ford Sports Grounds to new locations owned and operated by the Borough of Redbridge. Two sites have been identified for the Oakfields Project and two sites have been identified for the Ford Project.

Objectives

- Provision of Agronomy advice for the proposed new locations together with outline scheme requirements.

Sources of Information

Information has been provided by the Borough of Redbridge and Cundall's.

- Site inspection, investigations and testing – carried out by PJA Ltd
- Email from Cundall dated 31/3/16 – subject; Redbridge – Playing Pitch Quality Work

- Existing Plan showing – Oakfield - Jack Carter
- Existing Plan showing – Oakfield - Old Parkonians
- Existing Plan showing – Fords Sports Ground
- Option Oakfields at Billet (subsequently withdrawn)
- Option Oakfields at Forest Road
- Option Oakfields at Hainault
- Option Fords at Billet (subsequently withdrawn)
- Option Fords at Goodmayes Extension
- Option Fords at Seven Kings Park

Limitations and Constraints of Report

This report deals only with the requirements for agronomy planning and outline scheme proposal as indicated in the objectives section above. The detailed design and specification of the sports surfaces, any drainage and outfalls together with detailed cost planning may be developed and subject to further consideration by a recognized and qualified sports turf consultant. No detailed information has been provided regarding existing underground services.

Site Location

- Option Oakfields at Forest Road
- Option Oakfields at Hainault
- Option Fords at Goodmayes Extension
- Option Fords at Seven Kings Park

The sites noted here and above are shown below on satellite photographs.

EXISTING SITES

Site Location

- Jack Carter Pavillion, Oakfields, Fenceplace Road, Ilford
- Old Parkonians, Oakfields, Forest Road, Ilford
- Fords Sports Grounds – Aldborough Road South, Ilford,
- The sites noted here and above are shown on satellite photographs.

Sites Description, Usage & Quality Assessment

The existing pitches are shown on the following aerial photographs together with a brief description of their Quality. From visual inspection by PJA Ltd the pitches appear to be well used and popular. The pitches have been assessed based upon the following: -

Football

The quality of football pitches across the Borough of Redbridge has been assessed by site visits and user consultation to arrive at an agreed rating with the Football Association National Governing Body of either:

- Good
- Standard
- Poor

“The quality assessment of pitches assists with the identification of how many hours/games a pitch can be played on per week. This then informs the playing capacity of each football pitch by typology.”

Cricket

“The quality of cricket pitches across the Borough of Redbridge has been assessed by site visits and user consultation to come to an agreed rating with the English Cricket Board NGB of either:

- Good and Standard - 5 games can be played per pitch per season

- Poor - 3 games can be played per pitch per season

Quality of pitches determines the capacity or number of times a pitch can be played.

The non-technical site assessments have been used along with club perceptions of the quality of the pitches.

Fig.1. Jack Carter Pavilion – Fencepiece Road, Ilford IG6 2JL

4 Adult football pitches – Standard Quality
1 Junior (9v9) football pitch – Good Quality
2 Mini Soccer (7v7) football pitches – Good Quality
2 Cricket squares – Poor Quality

This information has been taken from the Council's latest version of the Playing Pitch Strategy.

Following visual inspection by PJA Ltd it is noted that the sportsfield has been developed over many years and is generally well constructed and maintained by experienced groundsmen. In particular, the cricket wickets are good quality being flat and full sized. It has good clubhouse facilities together with what appears to be adequate parking to support the use of the pitches at peak time.

Fig.2. Old Parkonians Association – Forest Road, Ilford, IG6 3HD

5 Adult football pitches – Good Quality
1 Junior (11v11) football pitch – Good Quality
1 Mini (7v7) football pitch – Good Quality
1 Mini (5v5) football pitch – Good Quality
2 Cricket squares – Good Quality

This information has been taken from the Council's latest version of the Playing Pitch Strategy.

Following visual inspection by PJA Ltd it is noted that the sportsfield has been developed over many years and is generally well constructed and maintained by experienced groundsmen. In particular, the cricket wickets are good quality being flat and full sized. It has good clubhouse facilities together with what appears to be adequate parking to support the use of the pitches at peak times.

Fig.3. Fords Sports Grounds – Aldborough Road South, Ilford, IG3 3HD

7 Adult football pitches – Standard Quality
1 Junior (11v11) football pitch – Good Quality
4 Mini (7v7) football pitches – Standard Quality
2 Mini (5v5) football pitches – Standard Quality
3 Cricket squares – Standard Quality

This information has been taken from the Council's latest version of the Playing Pitch Strategy.

Following visual inspection by PJA Ltd it is noted that the sportsfield has been developed over many years and is generally well constructed and maintained by experienced groundsmen. In particular, the cricket wickets are good quality being flat and full sized. It has good clubhouse facilities together with what appears to be adequate parking to support the use of the pitches at peak times.

PROPOSED SITES

The total number of pitches to be relocated for the two clubs at Oakfields is as follows: -

- 9no. full sized adult football pitches
- 1no. 11 V 11 junior football pitch
- 1no. 9 V 9 junior football pitch
- 3no. 7 V 7 mini football pitch
- 1no. 5 V 5 mini football pitch

For Fords Sports

- 7no. Full sized adult football pitches
- 1no. Junior (11v11) football pitch
- 4no. Mini (7v7) football pitches
- 2no. Mini (5v5) football pitches
- 3no. Cricket squares

There are two possible sites to relocate the two Oakfields clubs which are Forest Road and Hainault (these two sites are adjacent to each other).

There are two possible sites to relocate Fords Sports which are Goodmayes Extension and Seven Kings Park.

To follow are four aerial photographs showing the option sites with the pitch allocation superimposed upon them. These initial pitch allocations have been provided by Cundall's for demonstration purposes in relation to capacity.

Fig.4. Oakfields Relocation Option to Forest Road (Indicative only)

Fig.5. Oakfields Relocation Option to Hainault (Indicative only)

Fig.6. Fords Relocation Option to Goodmayes Extension (Indicative only)

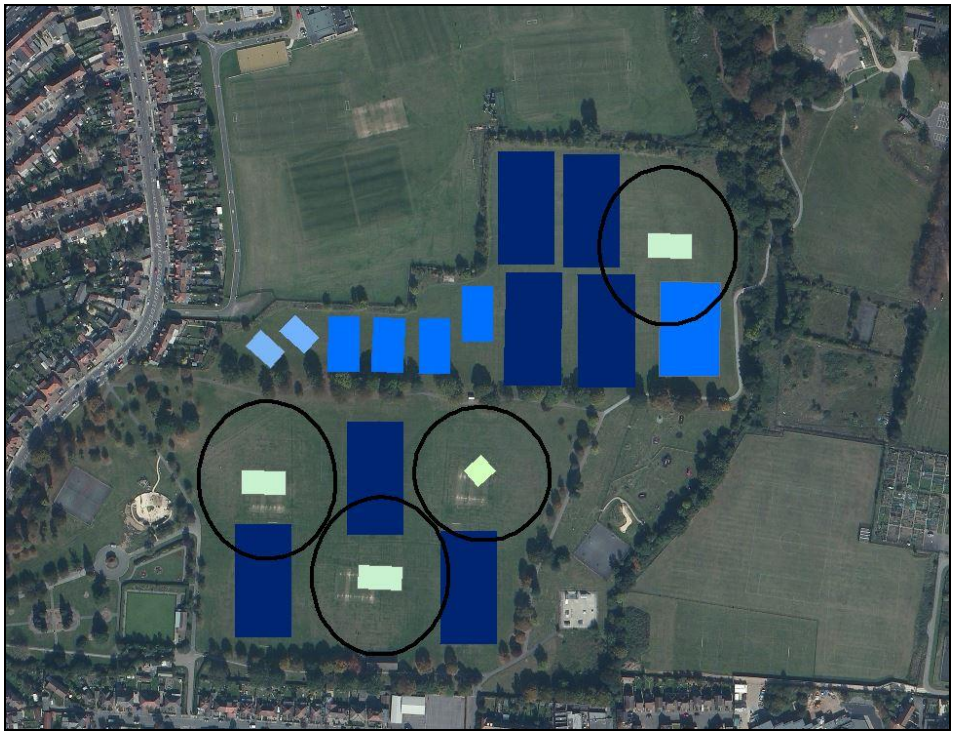

Fig.7. Fords Relocation Option to Seven Kings Park (Indicative only)

Suitability of the Land

The proposed sites already have sports being played on them which therefore suggests that they would be suitable for the relocation of the Oakfields and Ford sports grounds.

All of the sites have soils which are of a satisfactory type that, with improvement, can support the use of the land as playing fields. The indicative plans show that the number of sports pitches required can be fitted onto the site(s).

Sport England Recommendations: ***Generally, depending on the standard of facility required, the gradients of the playing surface should be no steeper than 1:80 – 1:100 along the line of play and 1:40 – 1:50 across the line of play. However, it is not desirable for both the longitudinal and cross-falls to be at these maximum values. In addition, to the gradients the ground must be flat.***

Forest Road

The site can physically, as shown on the indicative plan, accommodate the number of pitches proposed. It has a number of undulations within the site and could be described and humpy bumpy. There is, what appears to be a large diameter drain running diagonally across the site. Further site surveys would be required during detailed feasibility to assess underground services.

Hainault

This is a smaller site adjacent to the Forest Road site and is currently used for sport. It slopes gently and is relatively flat. There are some areas of poor grass growth where the topsoil depth is very shallow.

The indicative plan shows that the pitches can be fitted onto the footprint, it would be beneficial if some capacity from both of the adjacent sites was pooled to allow a sufficient and more adequate overall area for improved logistics, better integration of the cricket, and the possibility of a more centrally located 'hub' for car parking and pavilion/clubhouse arrangement.

Goodmayes

This site benefits from a good natural soil structure. The site has a number of isolated undulations within the site, and given the depth and quality of topsoil it may be feasible that these undulations may be removed without major earthworks. There is no record of underground services or public drains with may run through the site – this will have to be verified in due course.

Seven Kings Park

This site splits into two distinct sections, separated by an avenue of trees and a well-used pedestrian tarmac drive which crosses the site. The southern half of the site is already laid out to soccer and cricket pitches. The pitches undulate slightly and the existing cricket wickets would require significant work and investment to bring the wickets up to the standard of Fords and Oakfields, or alternatively be re-provided.

The north half of the site is unmaintained long grass which has a significant gradient falling from west to east down to the river, meaning this section would need earthworks to achieve acceptable levels. A man-hole cover towards the west suggests that services may run under this section. To accurately determine potential design levels a topographical survey should be carried out in conjunction with details of underground services.

The upper section of field is difficult to work with in relation the layout and the site could be significantly improved to achieve a much better layout if the site was ‘squared-off’ in the north-west corner to accommodate some of the existing Fords site.

Trial Pits and Agronomic Investigations

As part of the investigation the soil profile was examined and samples were taken for physical and nutritional analysis, and the analysis if the soil textural classification.

Soil Test Results

Soil Samples were taken during the site investigation and sent for independent laboratory testing. Sampling Date: 1st April 2016

Forest Road

ANALYTICAL REPORT

Report Number	**13071-16**	**N607**	**PETER JONES ASSOCIATES**
Date Received	**04-APR-2016**		**THE PATCH**
Date Reported	**11-APR-2016**		**1B DUKE STREET**
Project	**SOIL**		**ASPLEY GUISE**
Reference	**FOREST ROAD**		**MILTON KEYNES**
Order Number			**MK17 8EE**

Laboratory Reference		**SOIL301387**
Sample Reference		**FOREST ROAD**
Determinand	**Unit**	**SOIL**
Sand 2.00-0.063mm	% w/w	60
Silt 0.063-0.002mm	% w/w	23
Clay <0.002mm	% w/w	17
Textural Class **		SL

Notes

Analysis Notes: The sample submitted was of adequate size to complete all analysis requested.
The results as reported relate only to the item(s) submitted for testing.
The results are presented on a dry matter basis unless otherwise stipulated.

Document Control: **This test report shall not be reproduced, except in full, without the written approval of the laboratory.**

** Please see the attached document for the definition of textural classes.

Reported by: *J Doyle*

Natural Resource Management, a trading division of Cawood Scientific Ltd.
Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS
Tel: 01344 886338
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email: enquiries@nrm.uk.com

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Forest Road – Textural Soil Analysis Result – Sandy Loam over stony subsoil

Fig.8. 150mm of well-structured sandy loam soil over stony subsoil

Hainault

ANALYTICAL REPORT

Report Number	**13070-16**	**N607**	**PETER JONES ASSOCIATES**
Date Received	**04-APR-2016**		**THE PATCH**
Date Reported	**11-APR-2016**		**1B DUKE STREET**
Project	**SOIL**		**ASPLEY GUISE**
Reference	**HAINAULT**		**MILTON KEYNES**
Order Number			**MK17 8EE**

Laboratory Reference		**SOIL301386**
Sample Reference		**HAINHAULT**
Determinand	**Unit**	**SOIL**
Sand 2.00-0.063mm	% w/w	27
Silt 0.063-0.002mm	% w/w	42
Clay <0.002mm	% w/w	31
Textural Class **		HCL

Notes

Analysis Notes: The sample submitted was of adequate size to complete all analysis requested.
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Hainault - Textural Soil Analysis Result – Heavy Clay Loam

Topsoil depth varies. In some areas limited to 50mm shallow depth over stony subsoil. Poor grass coverage on these areas. Hard and compacted subsoil.

Majority of areas have 200mm depth of well-structured topsoil and good grass cover.

Goodmayes Park

ANALYTICAL REPORT

Report Number	13072-16	N607	PETER JONES ASSOCIATES
Date Received	04-APR-2016		THE PATCH
Date Reported	11-APR-2016		1B DUKE STREET
Project	SOIL		ASPLEY GUISE
Reference	GOODMAYES PARK		MILTON KEYNES
Order Number			MK17 8EE

Laboratory Reference		SOIL301388
Sample Reference		GOODMAYES PARK EXT
Determinand	**Unit**	**SOIL**
Sand 2.00-0.063mm	% w/w	46
Silt 0.063-0.002mm	% w/w	34
Clay <0.002mm	% w/w	20
Textural Class **		MCL

Notes

Analysis Notes: The sample submitted was of adequate size to complete all analysis requested.
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Goodmayes Park - Textural Soil Analysis Result – Medium Clay Loam

Fig.11.

300mm depth of Medium Clay Loam over brown clay. Good grass coverage. Undulations across the site. Scope for leveling the area within the topsoil layer, so may be no need to strip all topsoil and re-grade the subsoil.

Seven Kings Park

ANALYTICAL REPORT

Report Number	**13073-16**	**N607**	**PETER JONES ASSOCIATES**
Date Received	**04-APR-2016**		**THE PATCH**
Date Reported	**11-APR-2016**		**1B DUKE STREET**
Project	**SOIL**		**ASPLEY GUISE**
Reference	**SEVEN KINGS PARK**		**MILTON KEYNES**
Order Number			**MK17 8EE**

Laboratory Reference		**SOIL301389**
Sample Reference		**SEVEN KINGS PARK**
Determinand	**Unit**	**SOIL**
Sand 2.00-0.063mm	% w/w	50
Silt 0.063-0.002mm	% w/w	34
Clay <0.002mm	% w/w	16
Textural Class **		SZL/SL

Notes

Analysis Notes
The sample submitted was of adequate size to complete all analysis requested.
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[29-
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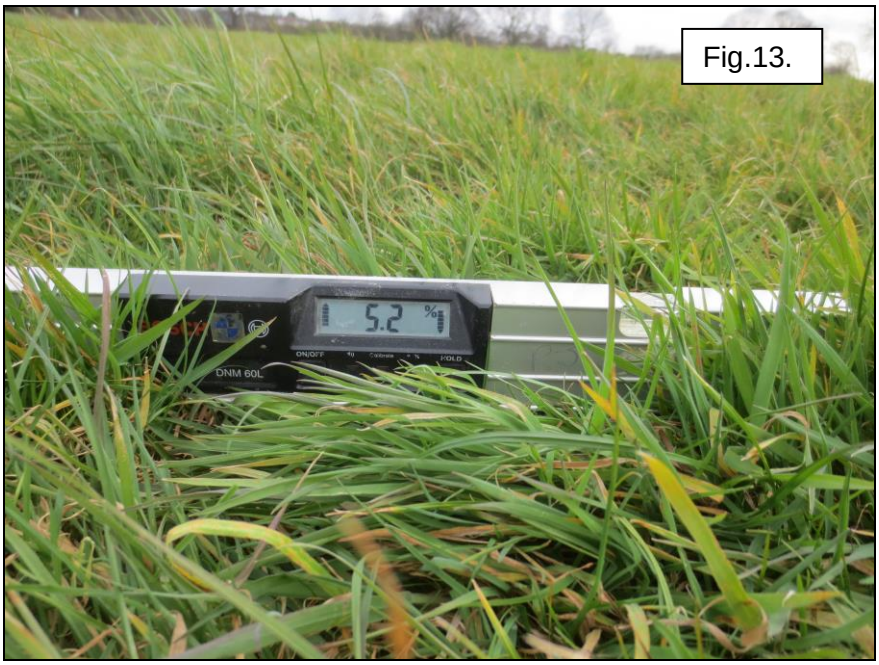
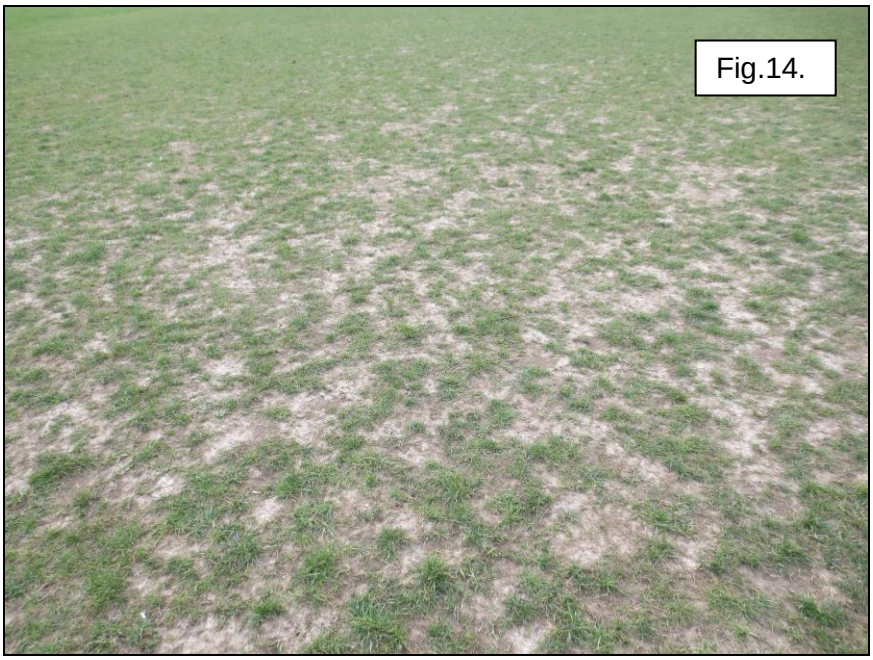
Seven Kings Park - Textural Soil Analysis Result – Sandy Silt Loam /Sandy Loam

250mm depth of Sandy Silt Loam / Sandy Loam. Good grass coverage.



Steeper gradients in northern section falling towards river, (5% +) meaning earthworks are required to alter gradients.



Cricket wickets at Seven Kings Park require investment.

Technical Information

Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

Class	Code
Sand	S
Loamy sand	LS
Sandy loam	SL
Sandy Silt loam	SZL
Silt loam	ZL
Sandy clay loam	SCL
Clay loam	CL
Silt clay loam	ZCL
Clay	C
Silty clay	ZC
Sandy clay	SC

For the *sand, loamy sand, sandy loam* and *sandy silt loam* classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

F Fine (more than 2/3's of sand less than 0.2 mm)
C Coarse (more than 1/3 of sand greater than 0.6 mm)
M Medium (less than 2/3's fine sand and less than 1/3 coarse sand).

The subdivisions of *clay loam* and *silty clay loam classes* according to clay content are indicated as follows:

M medium (less than 27% clay)
H heavy (27-35% clay)

Organic soils i.e. those with an organic matter greater than 10% will be preceded with a letter O.

Peaty soils i.e. those with an organic matter greater than 20% will be preceded with a letter P.

For further information on all analyses and services available from NRM Laboratories contact us on:
Tel: 01344 886 338 Fax: 01344 890 972 Email: enquiries@nrm.uk.com Website: www.nrm.uk.com
Part of the Cawood Scientific Group

SOILS PHYSICAL CHARACTERISTICS & NUTRITIONAL ANALYSIS RESULTS

SAMPLING DATE: 01.04.16

Sample Reference:	Hainault Sports	Goodmayes Sport	Seven Kings Sports	Forest Road Sports	*Guideline*
Calcium	1642	1401	1207	2379	*500 - 2000mg/l*
Magnesium	113	125	92	123	*20 - 200mg/l*
Iron	1079	1410	1135	661	*100 - 2000mg/l*
Sulphur	7	5	6	5	*10 - 15mg/l*
Phosphorus	13	30	48	21	*15 - 50mg/l*
Potassium	176	170	148	245	*100 - 200mg/l*
Sodium	25	35	23	20	*N/A*
Organic Matter	6.4	5.6	4.8	6.0	*2.0 - 3.0%*
pH	5.1	5.0	5.3	6.7	*5.5 - 7.0*
Cation Exchange Capacity (CEC)	8.0	7.0	5.9	11.6	*10 - 15meq*

Summary of all four proposed sites

Sample Reference:	Hainault Sports				*Guideline*
Calcium	1642				*500 - 2000mg/l*
Magnesium	113				*20 - 200mg/l*
Iron	1079				*100 - 2000mg/l*
Sulphur	7				*10 - 15mg/l*
Phosphorus	13				*15 - 50mg/l*
Potassium	176				*100 - 200mg/l*
Sodium	25				*N/A*
Organic Matter	6.4				*2.0 - 3.0%*
pH	5.1				*5.5 - 7.0*
Cation Exchange Capacity (CEC)	8.0				*10 - 15meq*

Hainault

Sample Reference:	**Goodmayes Sport**				***Guideline***
Calcium	1401				*500 – 2000mg/l*
Magnesium	125				*20 – 200mg/l*
Iron	1410				*100 – 2000mg/l*
Sulphur	5				*10 – 15mg/l*
Phosphorus	30				*15 – 50mg/l*
Potassium	170				*100 – 200mg/l*
Sodium	35				*N/A*
Organic Matter	5.6				*2.0 – 3.0%*
pH	5.0				*5.5 – 7.0*
Cation Exchange Capacity (CEC)	7.0				*10 – 15meq*

Goodmayes Park

Sample Reference:	**Seven Kings Sports**				***Guideline***
Calcium	1207				*500 - 2000mg/l*
Magnesium	92				*20 - 200mg/l*
Iron	1135				*100 - 2000mg/l*
Sulphur	6				*10 - 15mg/l*
Phosphorus	48				*15 - 50mg/l*
Potassium	148				*100 - 200mg/l*
Sodium	23				*N/A*
Organic Matter	4.8				*2.0 - 3.0%*
pH	5.3				*5.5 - 7.0*
Cation Exchange Capacity (CEC)	5.9				*10 - 15meq*

Seven Kings Sports

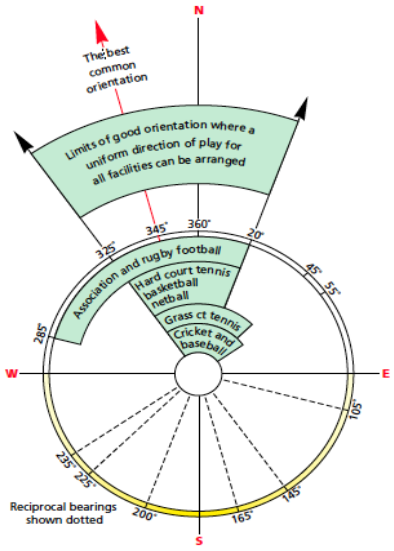
Sample Reference:	**Forest Road Sports**				***Guideline***
Calcium	2379				*500 - 2000mg/l*
Magnesium	123				*20 - 200mg/l*
Iron	661				*100 - 2000mg/l*
Sulphur	5				*10 - 15mg/l*
Phosphorus	21				*15 - 50mg/l*
Potassium	245				*100 - 200mg/l*
Sodium	20				*N/A*
Organic Matter	6.0				*2.0 - 3.0%*
pH	6.7				*5.5 - 7.0*
Cation Exchange Capacity (CEC)	11.6				*10 - 15meq*

Forest Road

Playing Field Orientation

In terms of pitch orientation, Sport England's published guidance for optimum pitch orientation for a range of sports, for example, the limits of orientation for winter sports pitches between 285° and 20°.

The pitch orientation as shown in the indicative layouts in Figures 4. to Fig.7. earlier in this report falls broadly within the permitted orientation in line with Sport England guidance.



Sport England Pitch Orientation Guidance Wheel

Outline Specification

Determining the outline specification for new playing fields is based upon a number of separate but interconnected elements such as: -

- Range of sport
- Number of hours of use proposed
- The age groups of the proposed users

- Topsoil conditions
- Subsoil conditions
- Environmental conditions

The purpose is to provide a outline design parameters and an implementation programme together with an aftercare plan based upon those elements listed.

The objective will be to prepare playing surfaces capable of providing playing surfaces that are fit for purpose by means of contemporary construction methods and drainage installations.

In identifying the outline specification the following should be taken into account as representing a reasonable estimation of the likely usage for a range of drainage construction types.

Drainage status Adult weekly use* (hours)

DRAINAGE TYPE	ADULT WEEKLY USE * (hours)
Undrained	Under 2
Pipe-drained	2 - 3
Pipe-drained with mole drains	2 - 4
Pipe-drained with sand grooves	3 - 6
Pipe-drained with slit drains	3 - 6
Pipe-drained with topsoil and drainage layer	3 - 6
Pipe-drained with suspended water table	4 - 6

*The usage levels shown will increase by ~50 % for players 15 years of age and under **10 to 14 play 20 minutes each match.**

The proposed Specification

- Level pitch to meet gradients set out by Sport England.
    - Remove topsoil, screen and set aside for reuse.
    - By means of cutting and filling the subsoil, consolidating and laser grading.

- Installation of a neutral discharge underground drainage system consisting of,
    - Primary Drainage System of 550mm deep x 100mm wide **Lateral Drains** at 5m centres over the site discharging via **Carrier, Toe or Collector Drains.**
    - Drains to discharge into local ditch or stream system via headwalls or into purpose built soakaways.
    - Secondary Drainage System of **Sand Bands** at approximately 250mm centres, max. 20mm wide and up to 250mm deep over all the playing and run off areas.
- Install screened topsoil to be amended and ameliorated with specified sports sand.
    - Specification to be determined from further soil analysis.
- Surface preparation/cultivation.
- Fertilising and seeding.

- **Post Construction 'Grow-In' including**

Stone picking (if necessary)	Rolling
Mowing	Fertilisation
Topdressing	Spot Renovation
Verti-drain Aeration	Soil De-compaction

The 'Grow-In phase of the works should be recognised as a special period of establishment as opposed to simple 'maintenance', and as such it will require a Grow-in specification to be prepared.

Which is followed by

- Implementation of an Ongoing Maintenance Scheme.

Timescales

It terms of construction and Grow-In timescales, the construction process would typically take six months, being best carried out from April to September to allow for seeding in September.

This would be followed by a minimum further 12 months Grow-in period (if seeded) needed for the pitches to mature and be ready for play.

Indicative costs

In due course the preparation of the detailed design and specification on the selected site will identify the complete quantities followed by a detailed cost plan for the project.

SUMMARY & RECOMMENDATIONS

In relation to soil, orientation and topography of the replacement sites it will be necessary to properly address issues such as appropriate drainage design, pitch orientation, gradients and associated facilities through a detailed design process and feasibility study prior to any relocation. Thereafter, further long term investment in the establishment and maintenance of the pitches could, in principle, provide equivalent or better quality provision over time subject to investment and detailed feasibility studies.

Agromonic Quality

The site and soil investigations at the four of the proposed sites have determined that all locations under consideration are suitable locations for sports pitches, subject to further design deliberation relating to soil improvements, gradients and drainage.

It is important that the drainage performance of newly constructed pitches is matched to the anticipated usage so that it is able to sustain the potential wear & tear and enable the replacement pitches to provide equivalent or better quality and quantity of pitches

Levels & Gradients

It is not expected that major ground remodeling will be required however it will be necessary for some leveling which can be achieved by a balanced cut & fill operation. No material should be removed from the site.

Where topsoil is required to be stripped to accommodate pitch leveling, before the topsoil is re-spread it should be screened to remove the stone. The existing topsoil can then be reused to create flat playing surfaces to the specified grades. If additional imported topsoil should be required, it should be screened topsoil to BS 3882:2015.

Forest Road Site

The site can physically, as shown on Figure 4, accommodate the number of pitches proposed, however the indicative pitch arrangement may need to be modified to make the best and practical use of the area available.

A large diameter drain runs diagonally across the site and its route can be seen as the land is scarred. There are raised manholes and mounding which may indicate the drain is near the surface and therefore further site surveys are required to further assess the underground services.

It is recommended that the Council undertake full detailed feasibility and design work before finalising any layout(s) and this will include access, parking and clubhouse facilities. It is advised that the Council also consult with external user groups when undertaking their detailed feasibility and design work.

There is a need for good design input to ensure that the pitch configurations meet the logistical requirements of an integrated summer & winter sports set-up, otherwise there may be a risk of there being overlap playability issues and maintenance issues in the longer term.

Hainault Site

This site is satisfactory from an agronomic perspective but manhole covers noted on the site need further investigation to determine where underground may be found.

The site slopes gently and it is fairly flat and would probably be the most suitable of the sites in terms of topography, however, there is a certain localised areas of the site that lack an acceptable depth of topsoil which would need to be addressed during the detailed design work.

The site is the smaller of the two sites proposed for the relocation of Oakfields and when the layout is adjusted to create a satisfactory pitch arrangement for the two clubs it seems that it is less than practical.

In the case of Oakfields moving to either Hainault or Forest Road, it would be beneficial if some capacity from both of the adjacent sites was pooled to allow a sufficient and more adequate overall area for improved logistics, better integration of the cricket, and the possibility of a more centrally located car parking and pavilion/clubhouse arrangement.

Goodmayes Site

This site can easily accommodate the number of pitches as laid out in the indicative layout, however further detailed design and feasibility work is required to find optimum pitch orientation layout.

The site slopes gently and it is fairly flat. To achieve the gradients set out by Sport England there will be a requirement for some regrading earthworks. The depth and quality of the soils are considered quite satisfactory for this purpose.

Seven Kings Park Site

A topographical survey should be carried out to check and accurately determine the site levels and potential for ground modelling in conjunction with satisfactory pitch layout proposals. If the lower part of the existing Fords playing field is used it is felt that the overall site could work very well in terms of space and layout. If not, it may prove difficult, given the constraints of the levels.

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DESIGN, AGRONOMY, PROJECT MANAGEMENT,
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