

17 December 2014

Mr N. Mardon
Will to Win
Regents Park Tennis Centre
York Bridge
Inner Circle
Regents Park
LONDON. NW1 4NU.

Dear Mr Mardon

TENNIS COURT ADVISORY SERVICE – HYDE PARK TENNIS COURTS (REF. NR 2014CAS016)

Further to our recent meeting in respect of the above I now attach my initial condition survey and inspection report for your information and comment.

If you have any queries with the above, or require further detailed advice, please contact me.

When I am out of the office you can contact me on my **mobile phone - 07770 366259**.

Yours sincerely
for *SPORTS FACILITY PLANNING & DESIGN LIMITED*

LEE WEST M.R.I.C.S. M.C.I.O.B.

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**HYDE PARK TENNIS COURTS
S.F.P.D. REF. NR. 2014/CAS/016
CONDITION SURVEY AND SITE INVESTIGATION REPORT**

1.00 INTRODUCTION

1.01 Sports Facility Planning & Design Limited have been commissioned to undertake a project vetting consultancy on behalf of Will to Win for tennis court renovation and construction works to be undertaken at the Hyde Park site.

The production of an initial site investigation and condition survey report forms part of the overall consultancy. Matters concerning health and safety are also addressed within the report where applicable.

1.02 The scope of project vetting commission is detailed as follows :-

- i) Visit to site and attend initial meeting to establish scope of court works.
- ii) Prepare site inspection and condition survey report (including indicative court layout drawings where required).
- iii) Prepare scope of works documentation to enable the Client to obtain comparable tender submissions for the court works.
- iv) Provide outline costs for the court work
- v) Comment on tenders received and the subsequent formal resolution of any queries identified.

1.03 Existing macadam court Nrs 1 – 6 comprising one block of six doubles courts was subject to a detailed site inspection and trial section investigation.

2.00 COURT NRS 1 – 6 : SIX COURT BLOCK DIMENSIONS : 36.62M LONG x 94.54M WIDE

EXISTING COURT TYPE : POROUS MACADAM

PROPOSED COURT TYPE : POROUS MACADAM PLAYING SURFACE OR SYNTHETIC CLAY

2.01 INSPECTION COMMENTS

a) The existing macadam court Nrs 1 – 6 were considered to have constructed in excess of 8 years ago.

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The existing porous macadam surface course to court Nrs 1 - 6 is subject to a moderate level of fretting, pitting and aggregate loss.

The existing porous macadam surfacing to court Nrs 1 – 6 is in a relatively stable condition with the exception of following areas :-

- i) the near run back of court Nrs 1 – 5 inclusive with frost heave bumps present ;
- ii) the far run back of court Nrs 1 & 3 – 4 inclusive with frost heave bumps present ;
- iii) the intermediate side run area between court Nrs 4 and 5 with frost heave bumps present ;
- iv) the intermediate side run area between court Nrs 1 and 2 (to the far half of the court block) with frost heave bumps present ;
- v) the near half of court Nr 3 between the net line and base line with frost heave bumps present ;
- vi) the near half of court Nr 4 between the net line and base line with frost heave bumps present ;
- vii) the far half of court Nr 3 between the net line and service line with frost heave bumps present ;

As such large areas of the existing playing surface are affected by the presence of frost heave bumps i.e. 50mm – 300mm diameter humps with associated cracking.

- b) Perimeter fencing comprises 2.75m high 60mm tubular section fence posts with chainlink mesh.

The existing fence posts are in a fair condition. Chainlink mesh subject to ballooning and distortion.

- c) The existing court block comprises six doubles courts in a block with the courts currently being orientated generally North to South in their length. This is the preferred orientation for outdoor tennis courts.

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The L.T.A. minimum outer side run dimension is 3.05m, the minimum intermediate side run dimension 3.66m and the run back 5.49m.

The L.T.A. recommended (or full size) outer side run dimension is 3.66m, the recommended (or full size) intermediate side run dimension 3.66m and the recommended (or full size) run back 6.40m.

The L.T.A. overall minimum dimensions for a six doubles court block are 34.75m long x 90.22m wide and recommended (or full-size) dimensions 36.58m long x 94.49m wide. S.F.P.D. Drawing Nr 2014 016 HP 001 is attached for further reference in this respect.

As such the existing courts are dimensioned generally in accordance with the L.T.A. recommended requirements in the court block length and width. S.F.P.D. Drawing Nr 2014 CAS 016 PP 002 is attached in respect of the existing setting out of the court block.

2.02 TRIAL SECTION INVESTIGATION

- a) A number of trial sections were agreed to be taken by S.F.P.D. through the courts to establish the nature of the existing sub-base construction.

Court Nr 4 : The trial section taken within the central intermediate side run area between court Nrs 4 - 5 revealed the following court construction :-

- i) 20mm depth of 6mm diameter porous macadam ;
- ii) 30mm depth of 14/20mm diameter porous macadam ;
- iii) At least 100mm depth of crush concrete which comprised a particulate mass except for 40-50mm diameter harder fragment at the centre of the raise bump.

Court Nr 4 : The trial section taken within the central intermediate side run area (near run back) between court Nrs 4 - 5 revealed the following court construction :-

- i) 20mm depth of 6mm diameter porous macadam ;
- ii) 35mm depth of 14/20mm diameter porous macadam ;

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- iii) At least 100mm depth of crush concrete which comprised a particulate mass except for 40-50mm diameter harder fragment at the centre of the raise bump.
- b) The trial section taken revealed that the courts Nrs 1 – 6 have been originally constructed with a frost susceptible recycled crushed concrete sub-base material when compared to modern tennis court construction standards.

The crushed concrete present may have been delivered in a lump state comprising 40mm – 50mm pieces and has subsequently degraded into a fine sand state with some harder pieces of concrete remaining which are being pushed upwards when the aggregate sub-base material freezes causing the bumps present. Alternatively a high fines content may have been present on delivery.

S.F.P.D. have previous experience of DOT Type 1 crushed concrete being subject to frost heave action when used as a tennis court aggregate sub-base material as the grading curve of DOT Type 1 material allows frost heave to occur and this will be at the higher level allowed when all the DOT Type 1 material is a recycled product.

S.F.P.D. does not allow the use of recycled aggregates for their tennis court projects.

The trial sections taken revealed that the courts had not been constructed with a non-frost susceptible aggregate material (i.e. carboniferous limestone or granite chipping's had not been used).

The presence of this type of defective court sub-base material will usually give rise to the effects of frost heave action to the entire playing surface i.e. general displacement, 50mm – 300mm diameter humps and depressions are usually created which eventually leads to cracks being formed in the macadam sub-base construction.

- c) For your general information modern tennis courts (porous macadam and sand-filled synthetic turf) constructed over a clay sub-grade should have a geotextile membrane, at least 300mm minimum compacted depth of non-frost susceptible aggregate sub-base and a 65mm total combined compacted depth of macadam binder and surface course's (i.e. a total 365mm minimum compacted depth of non-frost susceptible court construction).

The installation of a geotextile membrane prevents the upward movement of the sub-grade material into the clean aggregate chipping sub-base.

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2.03 TECHNICAL RECOMMENDATION AND BUDGET OPTIONS

- a) The existing macadam court sub-base construction to court Nrs 1 – 6 inclusive is considered to be defective on a technical basis in respect of the use of a frost susceptible crushed concrete sub-base material when compared to current standards of court construction.
- b) If the Royal Parks wish to continue with the porous macadam renovation project to court Nrs 1 – 6 project then on a technical basis the future stability of the courts should be ensured so that the new macadam surface course playing surface will not be affected by the further possible action of frost heave or changes in sub-grade moisture content and will also be suitable free draining and porous.

I do not consider that the existing court construction to court Nrs 1 – 6, on a technical basis, provides a satisfactory foundation for the installation of a new single layer of macadam surface course (25mm depth) or two layers of macadam (65mm combined compacted depth).

S.F.P.D. propose to produce tender documentation based on fully reconstructing the existing tennis court to form one block of five new porous macadam tennis courts (i.e. mechanically plane or break up existing macadam layers into small pieces, re-grade to level, vibration compact, installation of geotextile membrane, installation of a minimum 150mm depth non-frost susceptible aggregate sub-base, installation of a binder course and surface course's of porous macadam 65mm combined depth, colour coating, line markings together with a new perimeter edging and court fittings).

This would increase the general height of the court surface in the order of 215mm above the existing court level.

The budget cost of the above works would be in the order of £ 22,500 per court for the porous macadam court reconstruction works. This budget cost excludes V.A.T., design risk (i.e. contingency), inflation and professional fees.

- c) The installation of a synthetic clay playing surface above the reconstructed courts would be in the order of £ 13,500 – 16,500 per court (cost range based on different surfaces available).

Installation of perimeter chainlink fencing off angle section fence posts 2.75m high in the order of £ 60.00 per linear metre. A new single access gates (1.20m wide x 2.00m high) will be in the order of £ 750.00 and double access gates (2.40m wide x 2.00m high) in the order of £ 1,500.00.

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- d) In the immediate short term frost heave bumps may be cut out and patch repaired but in the medium to long term there will be no other technical option other than reconstruct the entire six court area.

Rolling to remove the frost heave bumps is to be avoided as the porous macadam surface ages as the rolling process may cause the playing surface to become loose and brittle.

4.00 MAINTENANCE REQUIREMENTS FOR POROUS MACADAM TENNIS COURTS

- a) Maintenance regime requirements were discussed in respect of porous macadam tennis courts.

Porous macadam court surfaces generally require the following maintenance regime (as a minimum):-

- i) the annual (or six monthly if the growth rates dictates) application of moss and total weed killer's ;
- ii) power washing every year ;
- iii) re-colour coating every 4 – 5 years ;
- iv) resurfacing every 8 – 12 years.

5.00 SUMMARY AND WAY FORWARD

- a) In order for me to progress the project vetting commission to the next stage of producing the detailed cost plan and subsequent scope of works documentation for obtaining suitable quotations for the works I would be grateful to receive your formal confirmation as to the basis on which the Royal Parks now wish to proceed.
- b) ***Please note that the scope of works document produced by this company should be used to obtain suitable tenders for the proposed court works.***

This initial condition survey and inspection report does not form an adequate basis on which to obtain tenders for the works and should not be used as a tender document.