



Department of Biodiversity,  
Conservation and Attractions



SWAN CANNING  
RIVERPARK

## Form 1 – Application for Approval of Development

Swan and Canning Rivers Management Act 2006 – Part 5 – section 72(1)

### 1. Applicant details

The applicant is the person with whom the department, on behalf of the Chief Executive Officer, will correspond, unless an authorised agent has been appointed to act on behalf of the applicant, in which case correspondence will be sent direct to the agent.

Name	WILLIAM BELL		
Position (if applicable)	PRESIDENT EFLTC		
Organisation (if applicable)	East Fremantle Lawn Tennis Club		
Contact person	William Bell		
Postal address	52 Pier Street		
Town/Suburb	East Fremantle	State	WA
		Postcode	6158
Telephone	HOME Work 93191658	Mobile	
Email	steve.burdett@inet.net.au		

I give authority for an agent (as identified at item No. 3) to act on my behalf during the assessment of the application ☒ YES ☐ NO

If 'YES', please provide Agent's details at item No. 3

Applicant signature

WB [Signature]

Date

31-7-23

### 2. Landowner details

All owner(s) of the land must sign this application. Where land is owned by the Crown or has a management order granted to a local government or other agency, this application must be signed by the relevant landowner or management body as required under section 72(5)(a) of the Act. If there are more than two landowners, please provide the additional information and signature(s) on a separate page.

#### Details of first landowner

Name	TOWN OF EAST FREMANTLE		
Position (if applicable)			
Organisation (if applicable)			
Contact person	ANDREW MALONE		
Postal address	135 CANNING HIGHWAY		
Town/Suburb	EAST FREMANTLE	State	WA
		Postcode	6158

I consent to this application being made.

First landowner signature

Am [Signature]

Date

9/08/2023

#### Details of second landowner (if applicable)

Name			
Position (if applicable)			
Organisation (if applicable)			
Contact person			
Postal address			
Town/Suburb		State	
		Postcode	

I consent to this application being made.

Second landowner  
signature

[Signature]

Date

[Date]



Department of Biodiversity,  
Conservation and Attractions



SWAN CANNING  
RIVERPARK

### 3. Authorised agent details (if applicable)

The applicant must sign the form and tick the authorisation under item No. 1 to provide authority for an appointed authorised agent to act on their behalf.

#### Details of authorised agent

Name	Steve Burdett		
Position (if applicable)	Member of EFLTC Capital Works Subcommittee		
Company/agency (if applicable)			
ACN/ABN (if applicable)			
Postal address	c/52 Pier Street,		
Town/Suburb	East Fremantle	State	WA Postcode 6158
Telephone	Work	Mobile	010 9430521
Email	steve.burdett@iinet.net.au		
Authorised Agent signature			Date 1/8/23

### 4. Location of proposed development

Certificate of title information	Volume LR 3132	Folio 985
	Diagram/plan/deposit plan no. DP 40473	
Lot No.(s)	15722	
Location	East Fremantle	
Reserve No.(s) (if applicable)		
Street No.(s) and name	1 Jerrard Dye	
Town/Suburb	East Fremantle	
Nearest road intersection	Petra Street	

### 5. Details of proposed development

Please provide a written description of the proposed development (refer to the Development Application Guidelines for further details on what information to include in this section).

Estimated cost of development \$270,000 plus (power upgrade plus floodlights)

Current use of land

Please describe how the land is currently used.

Tennis Club with Hall for Hire

Proposed development

Please provide a summary of the proposed use and development. Additional detail should be provided as an attachment to this application form.

Power cable upgrade plus installation of LED floodlights on Wester Hardcourts fixed to six 15 metre high proprietary light poles. Poles to be bolted to exty concrete pile footings constructed in 2010 during a previous Court Reconstruction / Floodlight Project. Lights not completed in 2010 due to Funding shortfall. refer SRT 439-04 for previous Approval - metal halide lights replaced by L.E.D floodlights





### Checklist of information to include with a Form 1 application

To assist the efficient assessment of applications please include the detail requested below and any other additional information relevant to the proposal.

Item	<input checked="" type="checkbox"/>	N/A
Completed application form, including written consent of the landowner(s). <i>to be added by T&amp;E</i>	<input checked="" type="checkbox"/>	
Additional information including details of the proposed development (including the existing and proposed use of the site and proposed hours of operation) and addressing any relevant issues identified in the policies.	<input type="checkbox"/>	
Plans and specifications of the proposed development showing: <ul style="list-style-type: none"> <li>current and proposed levels (contours at no greater than 1 metre intervals), including retaining structures and fill requirements</li> <li>the location, metric dimensions, materials, finishes and type of all existing and proposed structures, including services</li> <li>sections through the site</li> <li>the nature and extent of any open space and landscaping proposed</li> <li>proposed external lighting and signage</li> <li>any watercourse(s) flowing through the site</li> <li>position of any large trees or on-site vegetation clearly marking vegetation to be retained and removed</li> <li>the existing and proposed means of access and movement for pedestrians and vehicles</li> </ul>	<input checked="" type="checkbox"/>	
Plans, elevations and sections of any building or structure proposed to be erected or altered and/or any building or structure to be retained.	<input type="checkbox"/>	
Site plan of the lot showing the development location in relation to: <ul style="list-style-type: none"> <li>adjacent roads</li> <li>rivers, creeks, springs and wetlands</li> <li>nearby conservation areas and/or Bush Forever sites</li> <li>floodway and floodplain boundaries</li> <li>land reserved for Parks and Recreation under the Metropolitan Region Scheme</li> </ul>	<input checked="" type="checkbox"/>	
Information on the availability of drainage and sewer.	<input checked="" type="checkbox"/>	
Information on any impacts to heritage sites and subsequent approvals (if required).	<input type="checkbox"/>	<input type="checkbox"/>
Information regarding potential acid sulphate soils and/or contamination.	<input type="checkbox"/>	<input type="checkbox"/>
If the proposed development is likely to disturb potential and/or actual acid sulfate soils or a contaminated site, a preliminary investigation is required, and the results included with this application.	<input type="checkbox"/>	<input type="checkbox"/>
Detail of proposed construction methodologies.	<input type="checkbox"/>	
Geotechnical information	<input type="checkbox"/>	
Operational details (where relevant) e.g. for a proposed cafe	<input type="checkbox"/>	
<b>Larger developments should also include:</b>		
Photo montages showing the development in relation to the river and foreshore landscape.	<input type="checkbox"/>	<input type="checkbox"/>
Information on the impacts of parking, noise and traffic generated by the proposal.	<input type="checkbox"/>	<input type="checkbox"/>
Details of stormwater management incorporating water sensitive urban design principles.	<input type="checkbox"/>	<input type="checkbox"/>
Details of any dewatering proposed during construction including the expected volumes, water quality, method of disposal and sampling regimes in accordance with DBCA's Policy 50 – Planning for dewatering affecting the Swan and Canning Development Control Area.	<input type="checkbox"/>	<input type="checkbox"/>
Any specialist studies and/or management plans required to support the application such as traffic, heritage, environmental, engineering, landscaping or urban design studies.	<input type="checkbox"/>	<input type="checkbox"/>



BEST Consultants  
BUILDING ENGINEERING SERVICES + TECHNOLOGY

# ELECTRICAL SERVICES SPECIFICATION

## EAST FREMANTLE TENNIS CLUB ELECTRICAL & FLOODLIGHTING UPGRADE





Rev	Date	Details	Originator
01	06/04/23	Works combined into 1 spec	AH



## TABLE OF CONTENTS

---

<b>1.</b>	<b>GENERAL .....</b>	<b>1</b>
1.1	Conditions of Contract .....	1
1.2	Information to be provided with Tender .....	1
1.3	Regulations .....	1
1.4	Performance .....	1
1.5	Variations .....	1
1.6	Making Good .....	1
1.7	Fabricated Equipment .....	1
1.8	Testing and Commissioning .....	1
1.9	As Constructed Drawings .....	4
1.10	Maintenance and Defects Liability .....	4
<b>2.</b>	<b>SCOPE OF WORK .....</b>	<b>5</b>
2.1	General .....	5
<b>3.</b>	<b>POWER SUPPLY .....</b>	<b>5</b>
3.1	General .....	5
3.2	Load Balancing .....	5
<b>4.</b>	<b>POWER SUPPLIES AND METERING .....</b>	<b>5</b>
4.1	General .....	5
4.2	Supply Authority (Western Power) Headworks .....	5
4.3	Associated Work .....	5
4.4	Utility Energy Consumption Metering .....	6
4.5	Service Protective Device .....	6
4.6	Prospective Fault Current .....	6
4.7	Earthing .....	6
<b>5.</b>	<b>SWITCHBOARDS .....</b>	<b>6</b>
5.1	General .....	6
5.2	Circuit Breakers .....	6
5.3	Switchboard Components .....	7
5.4	Shop Drawings .....	8
<b>6.</b>	<b>CABLE AND CABLE INSTALLATION .....</b>	<b>8</b>
6.1	Cables .....	8
6.2	Underground Wiring .....	8
<b>7.</b>	<b>CABLE CONTAINMENT .....</b>	<b>9</b>
7.1	Conduits .....	9
7.2	Civil Works .....	9
7.3	Underground Conduits .....	9
7.4	Cable Pits .....	9
7.5	Testing and Commissioning .....	10
<b>8.</b>	<b>FLOODLIGHTING .....</b>	<b>10</b>
8.1	General .....	10
<b>9.</b>	<b>FLOODLIGHTING REQUIREMENTS .....</b>	<b>10</b>



9.1	General.....	10
9.2	Floodlighting Reference Documents .....	10
9.3	Floodlighting Design .....	10
9.4	Lighting Systems Design Report .....	11
9.5	Light Technical Parameters.....	11
9.6	Colour rendering.....	11
9.7	Colour Temperature .....	11
9.8	Lighting Glare .....	11
9.9	Obtrusive Light .....	11
9.10	Lighting Control System .....	11
9.11	Minimum Luminaire Requirements for Luminaires: .....	11
9.12	LED Floodlight Luminaires .....	12
9.13	Durability of Aiming Angles and Aiming Points and Maintenance Safety.....	12
9.14	External Louvres, Visors .....	13
9.15	Drivers: .....	13
9.16	Electrical Components Enclosure for Drivers:.....	13
9.17	Lighting Poles.....	13
9.18	Surface Preparation and Protective Coatings .....	13
9.19	Pole Locations.....	14
9.20	Footings.....	14
9.21	Testing and Commissioning .....	14
9.22	Defective Luminaire Replacement .....	14
9.23	Illuminance Light Levels and Luminaire Aiming Checks .....	15
10.	<b>BOOK A COURT SYSTEM .....</b>	<b>15</b>
11.	<b>TENDER FORMAT .....</b>	<b>16</b>



## **1. GENERAL**

### **1.1 Conditions of Contract**

Inspect the site and make due allowance for existing site physical encumbrances and all idiosyncrasies with any existing services prior to submitting a tender. No cost additions will be accepted during the course of the works due to non-completion of a pre-tender site inspection and associated due diligence.

### **1.2 Information to be provided with Tender**

Submit the following documentation with the tender price. Failure to provide the required documentation may result in disqualification of the tender.

- Breakdown of tender sum

### **1.3 Regulations**

All work performed and equipment provided, shall comply fully with statutory authority regulations, bylaws and the requirements of the Building Code of Australia, relevant Australian and Industry Standards, indicated but not limited to the schedule below:

- ASNZS3000 Wiring Rules
- AS3008.1 Electrical Installation - Selection of Cables
- Western Power regulations
- Office of Energy WAER, and other applicable documents
- Worksafe Australia

Referenced standards are deemed to be the latest version available at the date of invitation to quote.

### **1.4 Performance**

#### **1.4.1 General**

Take responsibility for the maintaining of standards of materials and workmanship. The Superintendent will make periodic visits to site and instruct the Contractor on what constitutes adequate or inadequate work.

Take responsibility for the coordination of all work, both directly and associated, with this trade package and with all other trades on site.

Advise the Superintendent in writing when the key milestones of the contract works are complete.

All materials and equipment purchased for this contract shall be inclusive of all royalties, patent rights and fees.

Remove all redundant cabling, switchgear, debris and rubbish generated by the contracted scope of work.

### **1.5 Variations**

Variations to the contract shall be agreed at rates commensurate with the scope of change and the original tender price.

### **1.6 Making Good**

Repair all damages incurred in providing the services outlined with materials compatible with the surrounding material and finish off flush with the surface on which they occur to approval.

### **1.7 Fabricated Equipment**

Fabricated equipment shall be of robust and symmetrical construction. All fabricated equipment shall be approved before being installed. Metalwork shall be neatly and accurately cut and free from undulations or any other distortions.

Welding shall be neatly executed.

### **1.8 Testing and Commissioning**

Test and commission the installation in accordance with Australian Standards and the recommendations contained within the appendices of those standards where applicable.

Start up, commission and test the lighting system in accordance with the approved program. A representative, who is qualified to commission the installation, shall remain on site until the system is operating to the satisfaction of the Superintendent.

Test results shall be presented in the format set out in the following samples,

## CIRCUIT DETAILS

[illegible]

CODES FOR REFERENCE METHOD								
1	2	3	4	5	6	7	8	9 (Other - please state)
Spaced	Spaced from surface	Touching	Metallic wiring enclosure in air	Metallic wiring enclosure thermal installation	Completely surrounded by thermal installation	Buried direct	Underground non-metallic wiring enclosure	

## Page 3 of 16

Revision 1  
Issue Date 06<sup>th</sup> April 2023

Upon completion of the noted defects, provide a signed statement confirming completion of the work. Certification shall follow the following format.

The certification is to be made on company letterhead stationery, is to include ACN/ABN and license numbers and shall be signed by the Contractors Project Manager, or other senior company representative.



## **1.9 As Constructed Drawings**

Prepare comprehensive 'As Constructed' drawings, detailing all equipment and services installed within the scope of work defined within the contract documents.

The following is the minimum content acceptable for "As Constructed" drawings submissions.

- Underground cable/conduit routes and set out dimensions, relative to adjacent walls and fixed objects.

Drawings shall not make reference to construction notes or information relevant only to the construction process. All information associated with specialty systems shall not appear on general electrical services drawings.

All 'As Constructed' drawings shall incorporate the Electrical Contractor's name or Specialist Installers name within the title block. A statement shall be provided on each drawing, to read: 'As Constructed by (company name and telephone number)' and the name of the senior representative of the company responsible for the authenticity of the drawings.

Upon completion of commissioning and in no case more than two weeks following practical completion, submit final approved drawings. The drawings shall be accompanied by a letter certifying the accuracy of the drawings, on company letterhead stationery and signed by a senior company representative.

Supply one USB drive copy of 'As Constructed' drawings in .pdf and DWG format, include the PDF copy of the maintenance manual within the same disk. Note the DWG files are to be prepared in AutoCAD 2021 format.

## **1.10 Maintenance and Defects Liability**

Provide warranty and preventative maintenance for all new equipment as from the date of practical completion for the period stipulated in the Contract Preliminaries. Provide service support for the complete system for the period stipulated.

Provide corrective maintenance and repair to all electrical equipment and systems which become defective, or is found to be defective, during the Defects Period, including the making good of any resulting damage.

## **2. SCOPE OF WORK**

### **2.1 General**

The electrical services scope of work includes the delivery to site, supply, installation, modification to existing, commissioning and subsequent maintenance for the stipulated period, for all works indicated or implied. Tender drawings are diagrammatic and do not necessarily indicate exact location of services.

The work shall include, but not be limited to:

- Removal and replacement of existing site main switchboard.
- Removal of PA pole.
- New main and distribution boards
- Consumer and submains cabling.
- Trenching and excavation.
- Design, supply and installation of floodlighting.
- Design, supply and installation of floodlighting mounting crossarms.
- Design, supply and installation of poles suitable for existing footings.
- Checking of engineering for re use of existing footings.
- Design, supply and installation of subcircuit cabling.
- Design, supply and installation of book a court cabling.
- Repair and making good of existing ground surfaces
- Testing & commissioning.
- As built drawings and maintenance handbooks.
- Maintenance during the defects period.

## **3. POWER SUPPLY**

### **3.1 General**

Power supply to the installation will be three phase, four wire, 415/240V, 50 Hz. All equipment supplied as part of this Contract shall be suitable for the actual voltage and frequency available by the Supply Authority.

### **3.2 Load Balancing**

The loads and circuits shall balance as evenly as possible over the three phases throughout the installation. Failure to comply with this section will result in the rejection of the electrical installation.

Where phases have not been nominated for particular loads, balance the loads between individual phases to the approval of the Superintendent or his representative and the Supply Authority.

## **4. POWER SUPPLIES AND METERING**

### **4.1 General**

The existing site main switchboard shall be replaced. Provide a new main switchboard and provide new cabling to services which are to remain, and for the new floodlighting switchboard to the location of the new switchboard.

### **4.2 Supply Authority (Western Power) Headworks**

The following work will be undertaken by Western Power and forms the scope of the headworks. Liaise with Western Power with respect to program, access to site, etc.

- Disconnect existing mains cabling at the point of attachment.
- Connect new mains cabling at a uni pillar.
- Installation of energy meter in switchboard.

### **4.3 Associated Work**

Undertake the following work, which is required by Western Power to be completed to accommodate their work. Refer to Western Power's quotation for full requirements, and obtain latest design manual(s) from them (available on [www.westernpower.com.au](http://www.westernpower.com.au)) as required prior to construction.

- Provide protection devices which grade with upstream authority protective devices.
- Terminate the consumer mains cables at the Western Power pillar.
- Provide suitable lugs and crimping tools for termination of consumer mains.
- Provide current transformers for kWh meter(s).

Supply and install consumer mains from the supply authority point of attachment to the new site main switchboard, in accordance with the Supply Authority requirements.

Carry out all trenching required for the installation of the Western Power cables to the site. Survey and mark out the cable route prior to trenching and obtain approval from Western Power.

Supply and install underground conduits from the street boundary to the substation and from the substation to the site main switchboard in accordance with the drawings and as directed by the Supply Authority.

Provide Service Protective Device as required by WA Electrical Requirements, published by the Director of Energy Safety WA under provisions of Regulation 49 of the Electricity (Licensing) Regulations 1991.

Liaise with the Supply Authority prior to carrying out this work.

#### **4.4 Utility Energy Consumption Metering**

Submit all necessary applications to the Supply Authority, to enable metering equipment to be installed and supply accounts to be created on behalf of the EFLTC.

Request the account details for the new meter(s) from the Superintendent two weeks prior to the date necessary for submission of the application for connection.

#### **4.5 Service Protective Device**

Provide a Service protection device (S.P.D.) in accordance with Western Power and WAER regulations. Adjust the protection device trip settings to Western Power approval.

#### **4.6 Prospective Fault Current**

All parts of the installation shall be sized to withstand the nominated prospective fault current for a period of one (1) second.

Circuit breakers shall be rated for the prospective fault current at the point of installation, or the level of fault current nominated on the drawings, whichever is the greater.

#### **4.7 Earthing**

The earthing system shall be a 'Multiple Earth Neutral' (MEN) system as outlined and in accordance with the requirements of A.S.3000, Supply Authority.

### **5. SWITCHBOARDS**

#### **5.1 General**

Switchboards shall;

- Comply with AS 61439 as appropriate.
- Be designed to operate in the ambient environmental conditions.
- Have a minimum of 2.0mm thick marine grade aluminium construction with removable escutcheons fitted with gaskets and lifting handles on panels larger than 0.4 sq. metres.
- Where installed externally, shall be provided with a sun shield, welded to the roof panel, open at both ends and provided with a slope to enable run off of rain water.
- Be provided with lockable doors. Doors shall be capable of opening to 100° and be provided with captive stays to secure the door in the open position
- Be provided with suitable non-ferrous gland plates to all cable entry points
- Be positioned to ensure 1000mm clear access is provided in front of the switchboard
- Be fitted with a 3 phase copper bus bar assembly to suit equipment including spaces for future equipment.
- Have brass or copper neutral and earth links with the same number of terminals as there are active poles and numbered to correspond.
- Have full size neutral conductors and bus bars.
- Have a minimum 25% spare space capacity for future circuit protection and control devices.
- Where installed externally, provided with a concrete foundation plinth.

Switchboards are not to be constructed until detailed shop drawings of each switchboard have been submitted and reviewed by the Superintendent.

#### **5.2 Circuit Breakers**

##### **5.2.1 General**

Circuit breakers shall be used for all circuit protection.



### 5.2.2 *Miniature Circuit Breakers (MCB).*

Miniature Circuit breakers shall have the following requirements:

- Minimum fault interruption capacity of 6000amps symmetrical at 240VAC.
- Shall be DIN type moulded case type.
- Enable full discrimination and cascading with upstream/downstream breakers of the same manufacturer.
- Be identified with an I.P.A. marker showing correct colour coding and circuit number.
- Floodlight circuits shall have "D" curve tripping characteristics.

## 5.3 **Switchboard Components**

### 5.3.1 *Contactors*

All Contactors shall be suitable for the required duty. Contactors shall be rated AC5 for discharge lighting loads. Contactor coils, unless otherwise specified, shall be 250 volt.

### 5.3.2 *Isolators and Switches*

All Isolators and switches shall be load break contacts and be cabled to be switched on to the maximum fault current available at the point of installation.

### 5.3.3 *Marking and Labels*

Labels shall be:

- Laminated plastic engraved to approved size, wording and design, clearly indicating the function and/or circuit designation of the component
- Of white background white with black machine engraved lettering for general items
- Provided with bevelled edges.
- Not be fixed to removable covers and lids.
- Of 5mm minimum lettering height.

### 5.3.4 *Switchboard identification label*

Provide a label fixed to the front elevation of each switchboard to detail manufacturer's name, fault rating, form of construction, submain cable type and size and source of supply.

### 5.3.5 *Switchboard Legend*

Provide two type written legends (one secured in the switchboard and in maintenance manual) detailing:

- description of services connected to each circuit
- rating of each protective device
- cable size of each circuit

### 5.3.6 *Busbars*

The line side connections to all protection equipment shall be made with high conductivity, hard drawn copper busbar.

Each busbar shall have sufficient capacity to carry the current shown on the drawings or where no current rating is shown the full connected load plus 50% without exceeding a temperature rise of 60 degrees Centigrade, after allowing for derating due to the degree of enclosure in accordance with Appendix C of AS 3000.

Busbars shall be completely insulated with colour coded heat shrunk sleeving, or otherwise protected by clear polycarbonate barriers to IP2X, in accordance with AS3439.

### 5.3.7 *Internal Wiring*

Internal wiring shall be:

- Installed in vertically and horizontally installed slotted P.V.C. cable duct, fitted with clip on lids and sized for 25% expansion.
- Fitted with soldered or compression type cable lugs where cables are terminated on bolt or studs.
- Terminated using compression type lugs where suitable strip terminals are not provided.
- Labelled to identify active neutral, and earth conductors using numbered and phase coloured printed type coded ferrule.
- Labelled to identify all control cables to correspond with terminal numbers on the control single line diagrams.

Cables terminating on bolts or studs shall be fitted with compression type cable lugs.

## 5.4 Shop Drawings

Submit shop drawings detailing the switchboard design, as specified elsewhere in this document, for all new switchboards and switchboards requiring modification.

All switchboard designs shall be endorsed by the switchboard manufacturer.

Show all label wording, positions, details, and clearly indicate the fault ratings of all protective devices and busbar assemblies on shop drawings. Submit detailed control diagrams for all control circuits, complete with termination and cable schedules.

Shop drawings shall be produced using Autocad or an equivalent electronic drafting package, be of minimum 1:10 scale and include the following information, as a minimum;

- Manufacturer's drawing sheet title block identifying the project name, project number and drawing number,
- Fault rating
- Form of segregation,
- Equipment materials list with part numbers,
- Label schedule including size and colour of lettering and background,
- Switchboard general arrangements including front elevations with escutcheons fitted and without escutcheons, vertical and horizontal sections,
- Diagrams for all control equipment, (eg, lighting controls) complete with terminal strip numbers;
- Schedule of construction details, including material type dimensions, paint finishes, handle types, locks and all hardware.

Where protective devices are fitted with adjustable settings, the settings shall be noted on the drawing.

All switchboard shop drawings must be checked and endorsed as approved by the Contractor prior to submission to Superintendent.

## 6. CABLE AND CABLE INSTALLATION

### 6.1 Cables

#### 6.1.1 General

Cables shall be of the size, type, voltage and insulation grade as specified and shall:

- Comply in all respects with AS/NZS 3000, AS/NZS 5000, Western Power, relevant Australian Standards Specifications,
- Be PVC insulated V90 grade 450/750V, with stranded copper conductors complying with AS/NZS 5000 except where indicated otherwise.
- Be installed between items of equipment without any joints and, when installed or during installation, ensure the cables are not bent beyond their minimum bending radii, and in a manner such that they may be readily withdrawn for replacement purposes.

#### 6.1.2 PVC Insulated PVC Sheathed Cables (PVC/PVC)

PVC insulated PVC sheathed, thermoplastic cables shall be circular with orange coloured PVC sheathed overall. installed in accordance with the manufacturer's instructions.

PVC insulated PVC sheathed cables shall be PVC V90 insulated SV90 PVC sheathed grade 450/750V, with stranded copper conductors complying with AS/NZS 5000.2 except where indicated otherwise.

#### 6.1.3 XLPE Insulated PVC Sheathed Cables

XLPE insulated PVC sheathed cables shall be circular single core cables to AS3198 rated at 90°C, supported and fixed as specified for PVC/PVC cables.

Be XLPE X90 insulated SV90 PVC sheathed grade 450/750V, with stranded copper conductors complying with AS/NZS 5000.1.

### 6.2 Underground Wiring

Install underground wiring in accordance with AS3000 and as indicated on the drawings.

Where underground wiring requires trenching;

- Make all appropriate enquiries to determine extent of existing services prior to trenching.
- Cable scan the area to identify existing underground services prior to excavation.
- Hand dig where existing services may exist.
- Remove the existing turfed areas with use of a turf removal machine and allow to re-instate upon completion.
- Excavate trenches and remove rubbish fill from site.
- Complete backfilling of trenches using clean fill and compact to match surrounding material.
- Make good to bitumen surfaces after back-filling.
- Notify Superintendent of any damage to existing services
- All trenching is to be backfilled at the end of each day or banded off with hazard warning tape.

Excavate trenches straight and true and to an adequate depth to provide the required cover for conduits.

Where underground wiring is proposed to take an alternative route to design drawings, hand mark-up proposed route and send to Superintendent for approval. Ensure "As Constructed" drawings are amended to document final route.

Damage to existing services, caused by the digging of trenches shall be repaired at the Contractor's expense.

## **7. CABLE CONTAINMENT**

### **7.1 Conduits**

All underground conduits shall be approved heavy duty Category A electric orange rigid P.V.C. conduit for low, medium and high voltage services, complete with approved accessories for joins, bends, etc.

### **7.2 Civil Works**

The supply and installation of the 80mm conduit from the north end of the car park to the west switchboard will be done by the civil works contractor.

Extend the conduit into the north pit and the west switchboard for the submain and control cables.

### **7.3 Underground Conduits**

Install conduits at minimum depth, to top of conduit, of 500mm (LV cable) below finished ground level, except where shown otherwise.

All underground conduits shall be approved heavy duty Category A electric orange rigid P.V.C. conduit for low, medium and high voltage services, complete with approved accessories for joins, bends, etc.

Cable pits shall be used at changes of direction and at intervals not exceeding 65 metres. A maximum of two bends shall be allowed in any conduit run between pits.

Ensure the bottom of trenches are flat and clear of protrusions such as rocks, tree roots and the like, prior to installation of conduits.

Cover conduits with 300mm depth of rubble free yellow sand and place an identification tape, 200mm above the conduit, along the entire length of the installation. Use orange plastic tape, approximately 150mm wide and indelibly marked "DANGER ELECTRIC CABLE BELOW", at not more than 1 metre intervals.

All underground conduits shall be provided with a 7/0.67 (2.5 mm<sup>2</sup>) green /yellow PVC covered draw wire, irrespective of the extent of cabling installed in the conduit.

Where external conduits are entering or leaving cable pits and switchboards seal conduits internally with an expanding foam on completion of works to prevent water and insect/rodent ingress.

### **7.4 Cable Pits**

The following minimum requirements shall apply:

- Cable pits shall be from approved manufacture and sized to suit number of specified conduits + 25%.
- Secure the immediate area with orange tape and hazard warning cones until compaction has taken place to avoid damage from vehicles.
- All pit lids shall be medium duty (minimum 5000kg static wheel load for pedestrian areas) engraved "ELECTRIC"
- All cable pits shall be integrated ducting systems, ACO Cablemate or Fibre Concrete Industries.
- Provide a layer of blue metal, of 200mm depth, immediately beneath the cable pit to improve stability and drainage from the pit.



## **7.5 Testing and Commissioning**

### **7.5.1 General**

All materials, equipment and workmanship shall be subjected to and shall withstand satisfactorily such tests and inspections as are listed, together with any such tests that are customary, or may reasonably be required by the Superintendent to provide compliance with the requirements of this Specification.

Supply all labour, equipment, materials, tools required to prepare the installation for testing, for carrying out the tests, and for recording the results, including the consumable and expendable items.

Fully test and commission the completed installation including carrying out adjustments, trimming and setting of all electrical, mechanical devices and apparatus necessary to place all equipment into operating condition.

Testing and commissioning shall be undertaken primarily during the hours of darkness.

## **8. FLOODLIGHTING**

### **8.1 General**

The scope of work includes the design, delivery to site, supply, installation, commissioning, and subsequent maintenance for the stipulated period, for all works associated with the floodlighting of the west courts of the East Fremantle Lawn Tennis Club. Tender drawings are diagrammatic and do not necessarily indicate exact location of equipment.

The work shall include, but not be limited to:

- Design, supply and installation of floodlighting.
- Design, supply and installation of floodlighting mounting crossarms.
- Design, supply and installation of poles suitable for existing footings.
- Checking of engineering for re use of existing footings.
- Design, supply and installation of submains cabling.
- Design, supply and installation of subcircuit cabling.
- Design, supply and installation of book a court cabling.
- Testing & commissioning.
- As built drawings and maintenance handbooks.
- Maintenance during the defects period.

The Sports Lighting System will consist of all new light poles, luminaries, electrical connection to the supply and control system. The total number of luminaries and poles required shall be dependent on the lighting equipment chosen to meet the specifications. In order to reduce the operating budget, the lighting system shall be energy efficient and cost effective to operate.

## **9. FLOODLIGHTING REQUIREMENTS**

### **9.1 General**

The design of the floodlighting and luminaire selection shall include the following key objectives:

- The safety and comfort of spectators and competitors
- Lighting quality including uniformity, glare control, colour temperature and rendering
- Minimising obtrusive light spill to neighbouring residential areas

### **9.2 Floodlighting Reference Documents**

The following documents give recommendations for floodlighting pole locations, height and illuminance:

- AS2560 part 2. Section 2.11 Tennis

### **9.3 Floodlighting Design**

Engage a specialist flood lighting supplier and designer to provide the flood lighting system. Supply and install the luminaires, crossarms, poles, bases and control.

Computer modelling of illuminance levels shall be prepared using approved software. Luminaire photometric data used by the program shall be certified by an N.A.T.A. registered laboratory or an internationally recognised photometric testing laboratory.

The luminaire photometry shall be specific to the luminaire used and its optical system.

The specified illuminance shall be maintained values at ground level which include the light loss factor of 0.88.

Computer models of illuminance and other specified data shall be presented in PDF format.

Provide the following calculations.

- Principle playing area lighting horizontal illuminance to AS 2560.
- Spill Lighting to AS/NZS 4282.

Provide spill lighting calculations using initial values without light loss factor.

#### 9.4 Lighting Systems Design Report

The Tenderer must prepare a Lighting Systems Design Report and address all the requirements set out in this technical specification document. All required calculations, luminaire data sheets, test reports/certifications shall be provided in the design report when requested by the Superintendent.

#### 9.5 Light Technical Parameters

The design maintained illumination levels for each area are:

SPORT	STANDARD	MATCH LEVEL Lux	UNIFORMITY
TENNIS HARD COURTS (5 COURTS)	AS2560.2.2.11	350 (Club competition standard)	$U_1 = 0.6$ $U_2 = 0.4$

#### 9.6 Colour rendering

The sports lighting shall provide a minimum colour rendering Ra8 (CRI) of 75.

#### 9.7 Colour Temperature

The sports lighting shall provide a maximum colour temperature (TK) of 5700K

#### 9.8 Lighting Glare

Glare shall be calculated according to the glare rating (GR) in AS2560.2.3. Glare shall be calculated according to the glare rating (GR) in AS2560.2.3. The maximum GR shall be less than 50, details shall be provided.

#### 9.9 Obtrusive Light

The proposed floodlighting design must consider the residential buildings around the sporting fields. The floodlighting luminaires shall have good optical control to limit the spill lighting during non-curfew hours to comply with AS4282. The environmental zone used in the calculation is zone A3 medium district brightness of table 3.1.

AS4282 requires assessment of light spill from the proposed installation.

- Spill light received around the site – at residential property boundaries pre-curfew and at windows of habitable rooms post curfew

#### 9.10 Lighting Control System

Switching of floodlights shall be controlled using the “Book a court” system already in use at the Club.

Provide contactor switching of the floodlights in 2 groups of courts.

#### 9.11 Minimum Luminaire Requirements for Luminaires:

All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.

Flood light luminaires shall be fully cut off asymmetric flood light mounted with minimal tilt to prevent sky glow/spill light onto neighboring properties.

Flood light luminaires shall have zero candela Intensity above 90 deg wrt horizontal.

Flood light luminaires shall have less than 10% intensity above 80 deg wrt horizontal.

Luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers and external shields.

All exposed components shall be constructed of corrosion resistant material and/or coated to prevent corrosion. All exposed aluminium shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel of 316 grade for protection against corrosion.

The lighting equipment shall be suitable for the operating environmental conditions of the site and ensure that the lamps operate at the correct colour temperature and light output characteristics.

All luminaires and external control gear must be IP66 certified to prevent ingress of fine dust and water.

All luminaires must be certified for operation in ambient temperatures ranging from 5°C to 40°C.

All wiring shall be enclosed within the cross-arms, pole, or electrical components enclosure to prevent damage from birds or other forms of wildlife. Any exposed cabling from the pole to the floodlight shall be enclosed in Anaconda AEF flexible metal UV resistant conduit.

#### **9.12 LED Floodlight Luminaires**

LED luminaires must be Zhaga approved and comply with relevant international standards.

LED luminaires must have thermal management implemented to keep the junction point temperature at or below the SSL manufacturer's specifications. The manufacturer must clearly specify and be able to demonstrate that SSLs operate within a safety envelope.

All materials must be UV stable. All aluminium finishes must be anodized to a marine grade of 25 microns.

There must be no bare or exposed wiring of any kind.

All fixed application luminaires must not have any light emitting surface that would accumulate dirt, dust, water or similar. Notwithstanding this, accumulation of all elements must be assumed, and performance must be tested under those conditions.

In all long-life SSL fittings, priority must be given to preventing permanent damage. Therefore, all effects of excessive dirt and debris on performance of the luminaire must be tested and demonstrated.

- High Optical Control Factor (OCF)
- UL recognized component (E349212)
- Thermal resistance; junction to solder point (degree C/watt):2.5
- DC forward current (mA) not more than 3000
- LED junction temperature max 150 °C

A stainless-steel protractor scale and pointer shall form part of the luminaire to indicate the angle of tilt.

Gaskets should be selected that do not dry-out or break-down under constant "severe" condition exposure.

All external luminaires should be tool-less entry with lanyard supported lenses.

All accessories and drivers shall be housed in a remote-control box at the ground level or inside the pole readily accessible behind cover panels.

Wire harness connecting the fixtures to the control gear.

#### **9.13 Durability of Aiming Angles and Aiming Points and Maintenance Safety**

The luminaire design shall allow for ease of aiming.

A long-term durability of maintaining the aiming angles and aiming points shall be achieved by floodlight design and LED module replacement design.

#### 9.14 External Louvres, Visors

Where a tenderer offers solutions with external louvres, visors, etc, any impact on efficiency shall be taken into account in the tenderers' calculations.

Tenderers shall provide details of louvres, visors, etc, with their tenders if required by the design.

#### 9.15 Drivers:

Floodlight drivers shall be:

- 200-277 V AC (plus or minus %10)
- Frequency: 50hz
- Power factor: >.9 (load > 50%)
- EMI: Internal noise filter
- UL ambient temperature rating: 40-degree C
- Cooling: free convection cooling
- Operating ambient temp range: -20 C to +40C
- Over temperature protection with automatic restart after cooling down
- Approval Standards: IEC 61347-1; IEC 61347-2-13; IEC 62384; EN 55015 (CISPR 15); IEC 61000-3-2; IEC 61000-3-3; IEC 61547; UL 8750; UL 1310 and relevant Australian Standards as detailed in Section 3 – Lighting Design Criteria.

#### 9.16 Electrical Components Enclosure for Drivers:

Provide enclosures where drivers and other necessary equipment are not integral to the luminaire. Built-in mounting hardware should allow for easy attachment to existing structures without the need to weld or alter them.

- Factory built and tested as a unit
- Colour coded wires and terminal blocks for phase wire distribution
- RCBO per circuit
- 2mm thick, powder-coated aluminium
- Enclosure ratings: IP66
- Designed to operate in up to 55 C ambient temperature
- Full length stainless steel hinge
- All stainless-steel fasteners passivated and coated
- Surge protection included

Enclosures for drivers, circuit protection, surge diverters shall be IP55 rated with thermal rating and ventilated to ensure heat dissipation.

#### 9.17 Lighting Poles

Design, supply and install flood lighting poles, headframes and fixing details.

Lighting poles shall be of the tapered, multisided galvanised steel base plate mounted type. The poles and associated headframe supports, fixings and arms for luminaires, and the like shall be designed in accordance with the requirements of AS1170.1 and AS1170.2.

After fabrication the columns shall be acid descaled and finished by hot dip galvanising. The galvanising shall be equivalent to an average of 800g of zinc per square metre of surface area.

Provide a chartered structural engineer's certificate stating that poles, rag bolt and concrete footing system have been designed and tested to comply with the requirements of AS1170 when subjected to the site service conditions.

Full detail drawings of poles and headframes shall be submitted for comment.

#### 9.18 Surface Preparation and Protective Coatings

External equipment surfaces shall comply with:

- AS 1627 Metal finishing – Preparation and pre-treatment of surfaces
- AS/NZS 2312 Guide to the protection of structural steel against
- Atmospheric corrosion by the use of protective coatings
- AS/NZS 4680 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles

#### **9.19 Pole Locations**

Utilise the existing footing locations for the basis of the design and installation.

#### **9.20 Footings**

Engage a chartered structural engineer to check the suitability of the existing concrete footings for use with the new poles and luminaires. Submit the engineer's report on completion.

#### **9.21 Testing and Commissioning**

##### **9.21.1 General**

All materials, equipment and workmanship shall be subjected to and shall withstand satisfactorily such tests and inspections as are listed, together with any such tests that are customary, or may reasonably be required by the Superintendent to provide compliance with the requirements of this Specification.

Supply all labour, equipment, materials, tools required to prepare the installation for testing, for carrying out the tests, and for recording the results, including the consumable and expendable items.

Provide all instruments which shall be certified as to their accuracy, date when calibrated, by whom, and of type approved.

Fully test and commission the completed installation including carrying out adjustments, trimming and setting of all electrical, mechanical devices and apparatus necessary to place all equipment into operating condition.

Testing and commissioning shall be undertaken primarily during the hours of darkness.

Marking out of the 10m x 10m grid points across the field shall be included in the tender price.

On completion of commissioning, measure and record full details of the lighting system and submit these in a final test report to the Superintendent. This information shall be added to the court lighting plan and included in the as built documentation.

Illuminance measurements shall be made in order to verify that the calculated values have been attained.

The granting of practical completion will depend on the acceptance of this report by the Superintendent.

During the measurement of final lighting levels, and spill lighting levels the Superintendent will require to be in attendance to witness measurements taken. For this reason the specialist lighting supplier must advise the Superintendent two weeks prior to carrying out final tests of the dates on which the tests are proposed.

##### **9.21.2 Test Instruments**

Light meters used in the verification of lux levels shall be NATA certified and accurate in the range of 1 to 2000 lux.

##### **9.21.3 Audits and Measurement Records**

The following details shall be included into the measuring record:

- Date and time of measuring.
- Type and geometric details of the lighting installation.
- Type and number of luminaires.
- Climatic conditions.
- Type of measuring unit, make, serial number, class.
- Values measured.
- Evaluation of calculated and measured results.

Measure and evaluate the calculated illuminances including spill lighting against the audit results. Measurements shall be taken at grid points corresponding to the design calculations.

On completion of commissioning, measure and record full details of the lighting system and submit these in a final test report to the Superintendent. This information shall be bound into a hard cover manual.

#### **9.22 Defective Luminaire Replacement**

During the 12 months defects liability period replace any floodlight luminaires which fail, without cost to the Principal, within 2 weeks of notification of luminaire failure by the Principal.

Failure shall be deemed to include the malfunction of any component of the luminaire including driver, LED module or any other part that causes the lumen output of the luminaire to fall below its published parameters at that stage of its operational life. All costs associated with defective equipment replacement shall be included within tendered price.

**9.23 Illuminance Light Levels and Luminaire Aiming Checks**

The contractor/manufacturer shall be responsible for an additional inspection twelve (12) months from the date of commissioning of the lighting system.

During maintenance, checks on the aiming angles of the floodlights should be made using sighting devices; comparing the angles to those listed in the design/maintenance manual.

The aiming checks and lighting levels must be conducted with a professional calibrated illumination meter. Evidence of calibrations, (current to within 6 months of commissioning) must be provided. The instrument sensitivity must be such that the values being read constitute a significant proportion of the full-scale reading.

The results shall be compared to the prescribed standards in relevant Standards and Guidelines.

As a result of the check, appropriate rectification/maintenance works shall be carried out prior to end of maintenance period.

**10. BOOK A COURT SYSTEM**

The site has an existing Book a Court system. Provide an additional programming module (allow a PS in the contract of \$2000 for supply of this) and a multicore control cable from the module dry contacts in the clubhouse control panel to the west floodlighting switchboard. Provide a 24V power supply in the switchboard for the controls and switching contactors for the court floodlighting circuits.

**11. TENDER FORMAT**

The electrical services tender prices shall be submitted in the following breakdown format;

**TENDER BREAKDOWN - ELECTRICAL SERVICES**

**EFLTC Electrical and Floodlighting Upgrade**

I/We \_\_\_\_\_ hereby tender for the supply, installation, testing and maintenance of all work in accordance with the tender documents.

Item	Tender Amount
Demolition and removal of existing.	\$
Switchboards	\$
Conduit and cabling	\$
Supply and installation of floodlighting	\$
Supply and installation of poles	\$
Book a Court PS	\$2,000
Miscellaneous	\$
Sub Total	\$
Goods & Services Tax (GST)	\$
<b>TOTAL</b>	<b>\$</b>





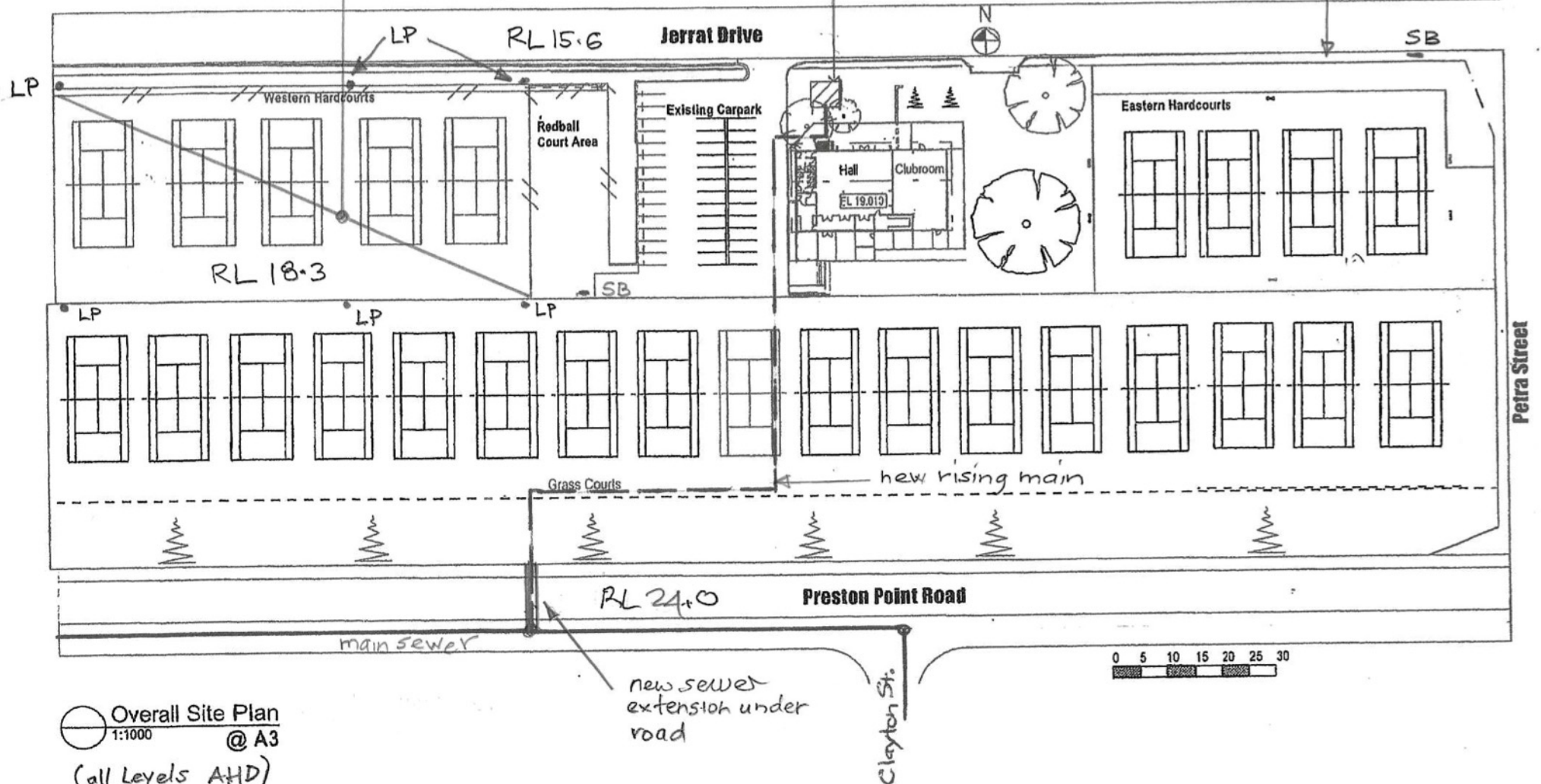


SWAN RIVER (below)

western  
courts to be  
flood lit (refer EOI)

new pump station RL 16.4  
(Commissioned July 2023)

refer to EOI for  
location & details of  
power cable upgrade



**EAST FREMANTLE LAWN TENNIS CLUB**

SP1 July 2023



Your Ref R/RSB3  
Our Ref SRT439-04  
Enquiries Jacey Mills



Town of East Fremantle  
Doc No: ICORR23891  
File: R/RSB3  
Reg Date: 23 SEP 2010  
Officer: STUART  
JANINE  
Attach:

Mr Stuart Wearne  
Chief Executive Officer  
Town of East Fremantle  
PO Box 1097  
**FREMANTLE WA 6959**

Dear Mr Wearne

**PROPOSED REFURBISHMENT OF SIX HARD TENNIS COURTS – LOT 15722  
(RESERVE 7800) PRESTON POINT ROAD EAST FREMANTLE – EAST FREMANTLE  
LAWN TENNIS CLUB**

The Swan River Trust (the Trust) considered the above mentioned development application at its meeting held **13 September 2010**.

In accordance with Section 76(1)(a) of the *Swan and Canning Rivers Management Act 2006* please find enclosed a copy of the final report which has been forwarded to the Minister for Environment for determination. The Trust's report and recommendation is also available for viewing on our website:

[www.swanrivertrust.wa.gov.au](http://www.swanrivertrust.wa.gov.au)

Should there be any queries regarding this matter, please contact Jacey Mills, Environmental Officer, Swan River Trust on 9278 0923. In all correspondence on this matter, please quote our above reference number.

Yours sincerely

  
for

Rod Hughes  
**GENERAL MANAGER**

17 September 2010

Encl.

CARING FOR THE SWAN AND CANNING RIVERS

Level 1 Hyatt Centre 20 Terrace Road East Perth Western Australia 6004  
PO Box 6829 Hay Street East Perth 6892 Telephone (08) 9278 0900 Fax (08) 9325 7149  
[www.swanrivertrust.wa.gov.au](http://www.swanrivertrust.wa.gov.au)  
[wa.gov.au](http://wa.gov.au)

FILE No. : SRT439-04

TRUST MEETING : 9 August 2010

## SWAN RIVER TRUST REPORT

PROPOSAL : Refurbishment of six hard tennis courts  
COST : \$324,000  
LOCATION : East Fremantle Lawn Tennis Club – Lot 15722 (Reserve 7800)  
Preston Point Road, East Fremantle  
APPLICANT : East Fremantle Lawn Tennis Club Inc.  
OWNER : Town of East Fremantle  
LOCAL GOVERNMENT : Town of East Fremantle  
MRS CLASS'N : Parks and Recreation  
LA CLASS'N : Parks and Recreation  
DECISION TYPE : Part 5, *Swan and Canning Rivers Management Act 2006* –  
Ministerial Determination  
RECEIVED : 28 January 2010  
ATTACHMENTS : 1: Location map  
2: DEC Contaminated Sites Branch comments  
3: Town of East Fremantle comments  
4: Existing site plan  
5: Refurbished fencing and court layout plan  
6: New car park layout plan  
7: Lighting pole layout plan  
RECOMMENDATION : **APPROVAL WITH CONDITIONS**

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## REPORT

### 1.0 INTRODUCTION

- 1.1 The Swan River Trust (the Trust) has received an application from the East Fremantle Lawn Tennis Club Inc. (the Club) for the refurbishment of six hard tennis courts within Lot 15722 (Reserve 7800) Preston Point Road, East Fremantle (**Attachment 1**). The court area is 99m x 40m at the western end of the Club car park, approximately 35m from the river.
- 1.2 The applicant is proposing to refurbish five of the six existing hard courts (HCs) with a high quality acrylic finish to Tennis Australia/ITF Standards. The sixth HC is proposed to be reconstructed into an additional 24 parking bays. The proposal also involves the replacement of existing HC lighting and perimeter fencing. Funding for the project will be received from the Department of Sport and Recreation.



- 1.3 The proposed development is on a lot that is wholly within the Swan River Trust Development Control Area. The application is therefore being processed pursuant to Part 5 of the *Swan and Canning Rivers Management Act 2006*. The Swan River Trust will provide a recommendation on the proposal to the Minister for Environment.

## 2.0 CONSULTATIONS

### Department of Environment and Conservation – Contaminated Sites Branch

- 2.1 The Department of Environment and Conservation (DEC) – Contaminated Sites Branch (CSB) advises that Lot 15722 Preston Point Road was reported to DEC twice under the *Contaminated Sites Act 2003* as a known or suspected contaminated site. The site is currently awaiting classification.
- 2.2 Reported contaminants include the suspected presence of a 50 year old landfill at the site. CSB does not hold information on the location of the landfill, nor the quality of soils or groundwater (presence or absence of contamination), within the greater site.
- 2.3 CSB recommends that if indications of landfill related materials are uncovered, the site should be investigated and managed as per the DEC published *Contaminated Sites Management Series* of guidelines. If groundwater is sourced beneath the site for irrigation purposes, analysis is recommended to ensure the quality is appropriate for the intended use. An advice note can highlight the potential for intersection of landfill at the site, and advise that works should avoid or manage such an event.
- 2.4 Given that the works include reconstruction of stormwater drains and re-connection to the existing local government drainage system, CSB recommends capturing or redirecting stormwater generated in the vicinity of the tennis courts to infiltration or storage areas at the site.
- 2.5 CSB comments also reference the adjacent East Fremantle Yacht Club and suspected boat maintenance contaminants in the river sediments. These will not be affected by the proposed refurbishment works. CSB comments are included as **Attachment 2**.

### Department of Environment and Conservation – Species and Communities Branch

- 2.6 The Department of Environment and Conservation – Species and Communities Branch (SCB) advises that light spill should not be an issue given that there are no native bird roosting areas in the vicinity of the Tennis Club and the lighting is turned off at night once play has ceased.
- 2.7 The adjacent residential area is located on a ridge above the Club and therefore should not be impacted as it is above the light spill area.

### Town of East Fremantle

- 2.8 The Town of East Fremantle (the Town) could not consider the proposal until the Town's June Council Meeting, consequently delaying the response to the Trust's referral. The Town has now advised that it has no objections to the proposed refurbishment works subject to a number of conditions (**Attachment 3**) relating to:
- works being finished to Tennis Australia, ITF, and Australian Standards;
  - lighting;
  - removal of the oleander hedge; and

- final design and construction of the car park.

### 3.0 PUBLIC COMMENT – SUBMISSIONS ON DRAFT REPORT

- 3.1 In accordance with the requirements of Part 5 of the *Swan and Canning Rivers Management Act 2006* a copy of the draft report and proposed recommendation has been provided to the applicant and other consultant agencies and a copy published on the Trust website for a period of three weeks between 16 August 2010 and 6 September 2010, with an invitation for public submissions.
- 3.2 No submissions were received.

### 4.0 RELEVANT POLICIES

- ◆ State Planning Policy 2.10 – *Swan-Canning River System*
- ◆ SRT/EA1 – *Conservation, Land Use and Landscape Preservation*

### 5.0 ENVIRONMENTAL AND PLANNING CONSIDERATIONS

- ◆ Environmental protection
- ◆ Stormwater management
- ◆ Visual amenity and lighting
- ◆ Contaminated site

### 6.0 BACKGROUND

- 6.1 The applicant has supplied a Project Document with Technical Specification which describes the scope of the proposed work. Works include:
- demolition and removal of the existing HC bituminous hotmix, court perimeter fencing and oleander hedge along the western boundary of the site (**Attachment 4**);
  - base course re-instatement, laying of new bituminous hotmix, and application of acrylic surface treatments to the courts to Tennis Australia/ITF Standards;
  - erection of chain mesh fencing around the court perimeter (**Attachment 5**);
  - construction of a 24 bay bituminous hotmix car park and access roadway at the eastern end of the refurbished HCs (**Attachment 6**);
  - construction of a new concrete box drain to convey stormwater from the courts and car park to the existing local government pipe drain; and
  - installation of four 15m tall lighting poles with lamps and two 12m tall lighting poles with lamps consistent with Tennis Australia Standards for night matches (**Attachment 7**).

### 7.0 DISCUSSION

#### Environmental protection

- 7.1 The Trust policy *Conservation, Land Use and Landscape Preservation* (SRT/EA1) promotes developments on and adjacent to the river system which maintain and enhance the quality and amenity of the river environment. The Club is judged to be remote from the river, being separated by both a roadway and the East Fremantle Yacht Club, therefore direct impacts on the river are considered unlikely.
- 7.2 The applicant has advised that the development will not result in the removal of any native vegetation. An existing oleander hedge on the western boundary of the



courts is to be removed as the roots have caused subsidence and cracking damage to HC #17. A replacement hedge of an appropriate species will be planted. A condition of approval can ensure an endemic species is chosen.

- 7.3 Limited detail is included in the Project Document on the management of potential environmental risks. At this stage the applicant has not called for tenders, however the requirement for managing environmental issues is a condition of the Project Document. It is reasonable to require the development of an environmental management plan to manage risks associated with the project.

#### **Stormwater management**

- 7.4 The applicant has advised that the current court drain feeds into the main local government stormwater drain, located underground in Jerrat Drive, via an underground pipe connection. The current drain is dilapidated, cracked and broken in sections, and in need of replacement.
- 7.5 It is proposed to deal with stormwater runoff as it is currently dealt with, including construction of a new open concrete box drain for the court area and car park, and re-connection to the existing local government pipe drain.
- 7.6 Given that the area of car park and associated input of hydrocarbons and deleterious matter will be increased, it is reasonable to request that stormwater runoff is managed according to Water Sensitive Urban Design principles and best management practices. This could be achieved through infiltration within a vegetated swale, treatment via a Humeceptor prior to discharge to the stormwater system, or treatment prior to storage of the stormwater for re-use on site.
- 7.7 DEC – Contaminated Sites Branch recommends capturing or redirecting stormwater generated in the vicinity of the tennis courts to infiltration or storage areas at the site.

#### **Visual amenity and lighting**

- 7.8 Trust policy SRT/EA1 states that the design, materials and colour scheme of development adjacent to the river and foreshores should seek to complement and protect the character and landscape setting of the river.
- 7.9 The chain mesh fencing around the court perimeter will be a minimum height of 3600mm and PVC coated black.
- 7.10 Due to the nature of the works, the footprint of the Club will not be altered. The car park extension may however impact on the visual amenity of the river foreshore. Given that the riverside boundary of the Club is currently devoid of vegetation, it is reasonable to require that the car park be screened using endemic species.
- 7.11 The proposed lighting is consistent with Tennis Australia Standards and aiming of all light fittings and illumination levels in accordance with Australian Standards. Surface illuminance calculations and diagrams for the HCs (not including the surrounding areas) were supplied with the application, along with a luminaire positioning and orientation guide which will be given to the lighting installation contractor. The DEC – Species and Communities Branch advises that light spill should not have any impact on bird roosting areas or affect residents in the vicinity of the Tennis Club. Additionally, the lighting will be turned off once play has ceased each evening.



## Contaminated site

- 7.12 The Trust policy SRT/EA1 promotes the protection of the river and associated ecosystems. Any development in the vicinity of the river, known to be located at a contaminated site, should identify the risks of disturbing the soils and measures taken to minimise the possible risks associated with its exposure.
- 7.13 The site is located within an area registered with the DEC as a 'contaminated site – awaiting classification'. The applicant has not addressed the contaminated site risks, however the proposed development is unlikely to require extensive excavation. The potential for disturbance of contaminated soils during works associated with demolition of the existing tennis courts and installation of new stormwater infrastructure, fencing (maximum 900mm deep footings), and light poles (4 x 2000mm and 2 x 1600mm deep footings) can be addressed as part of an environmental management plan, required as a condition of approval.
- 7.14 The proposal was referred to the DEC – Contaminated Sites Branch for advice. CSB recommends that if indications of landfill related materials are uncovered, the site should be investigated and managed as per the DEC published *Contaminated Sites Management Series* of guidelines. An advice note can highlight the potential for intersection of landfill at the site, and advise that works should avoid or manage such an event.

## Conclusion

- 7.15 The proposed refurbishment of the six hard tennis courts provides an opportunity to improve upon the existing visual amenity and stormwater management of the Tennis Club without altering its footprint. Provided the refurbishment works are managed appropriately to protect the river and foreshore reserve, the development is unlikely to result in any negative impacts on the riverine environment. For these reasons, the proposal can be recommended for approval subject to appropriate conditions and advice.

## 8.0 RECOMMENDATION – APPROVAL WITH CONDITIONS

That the Trust advises the Minister for Environment that it recommends approval of the refurbishment of six hard tennis courts at the East Fremantle Lawn Tennis Club, Lot 15722 (Reserve 7800) Preston Point Road, East Fremantle, as described in the application received by the Trust dated 28 January 2010, and supplementary information received on 4 February and 30 April 2010, subject to the following conditions:

1. Approval to implement this decision is valid for two (2) years from the date of the approval. If the development has not been completed or substantially commenced within this period, a new approval will be required before commencing or completing the development.
2. The applicant shall notify the Swan River Trust General Manager in writing not less than fourteen days (14) prior to commencement of works.
3. Prior to commencement of works the applicant shall submit, and have approved, an environmental management plan for the proposed refurbishment works, to the satisfaction of the General Manager, Swan River Trust (see **Advice Note 1**).
4. The approved environmental management plan required under **Condition 3** shall be implemented.

5. Prior to construction, the final car park design plan shall be submitted and approved by the General Manager, Swan River Trust, on advice from the Town of East Fremantle.
6. Prior to commencement of works the applicant shall submit, and have approved, a stormwater management plan to the satisfaction of the General Manager, Swan River Trust (see **Advice Note 2**).
7. Prior to commencement of works the applicant shall submit, and have approved, a landscape management plan to the satisfaction of the General Manager, Swan River Trust (see **Advice Note 3**).
8. The approved landscaping works required under **Condition 7** shall be completed prior to the first use of the refurbished hard tennis courts.
9. No fill, building materials, rubbish or any other deleterious matter shall be placed outside the East Fremantle Lawn Tennis Club area or allowed to enter the river as a result of the development.
10. No vegetation, besides the oleander hedge, is to be removed or interfered with without prior approval of the General Manager, Swan River Trust.
11. Upon completion of the development, all waste materials shall be removed and the site cleaned-up and reinstated to the satisfaction of the General Manager, Swan River Trust.

#### ADVICE TO APPLICANT

1. The environmental management plan required under **Condition 3** shall address, but not be limited to:
  - machinery and refuelling;
  - on-site storage and bunding of material, equipment, chemicals and fuel;
  - management of demolition;
  - details of excavation and any stockpiling of soil;
  - management of potentially contaminated soils;
  - prevention of matter entering the river (e.g. via the stormwater drains);
  - waste management; and
  - complaints and incidents.

Where relevant the plan should also include timeframes and responsibility for tasks identified.

2. With regard to **Condition 6**, runoff generated from the hard courts and new car parking area should be managed according to Water Sensitive Urban Design principles and best management practices as outlined in the *Stormwater Management Manual for Western Australia*. This may involve infiltration of stormwater within a vegetated swale, treatment via a Humeceptor prior to discharge to the stormwater system, or treatment prior to storage of the stormwater for re-use on site.
3. With regard to **Condition 7**, the riverside boundary of the Tennis Club should be vegetated to soften the visual impact of the car park from the river foreshore. Endemic species should be chosen which screen and shade the car park. Trust staff can provide advice on appropriate species and densities prior to planting. The oleander hedge should also be replaced with a hedge of an appropriate endemic species.



4. The Town of East Fremantle advises that the hard court lighting should be low level with minimal spill to ensure that it does not impact on nearby residents or have any adverse ecological consequences. In the interests of sustainability, the lighting should also be energy efficient.
5. The Town of East Fremantle advises that the replacement fencing on the western, northern and eastern boundaries of the hard tennis courts should be to Australian Standards.
6. The applicant is advised that satisfactory power supply should be provided and maintained to the hard tennis courts to the satisfaction of the Town of East Fremantle and Western Power.
7. The hard tennis courts are located within an area registered with the Department of Environment and Conservation (DEC) as a 'contaminated site - awaiting classification'. There is a suspected presence of 50 year old landfill at the site. If indications of landfill related materials are uncovered during the works, the site should be investigated and managed as per the DEC published *Contaminated Sites Management Series* of guidelines.
8. Due to the suspected presence of contaminants at the site, if groundwater is to be sourced beneath the site for irrigation purposes, analysis is recommended to ensure the quality is appropriate for the intended use.

FINAL REPORT ENDORSED

Signed: \_\_\_\_\_

General Manager, Swan River Trust

Date: \_\_\_\_\_

9/9/10

APPROVED/ APPROVED WITH MODIFICATIONS/ REFUSED

Signed: \_\_\_\_\_

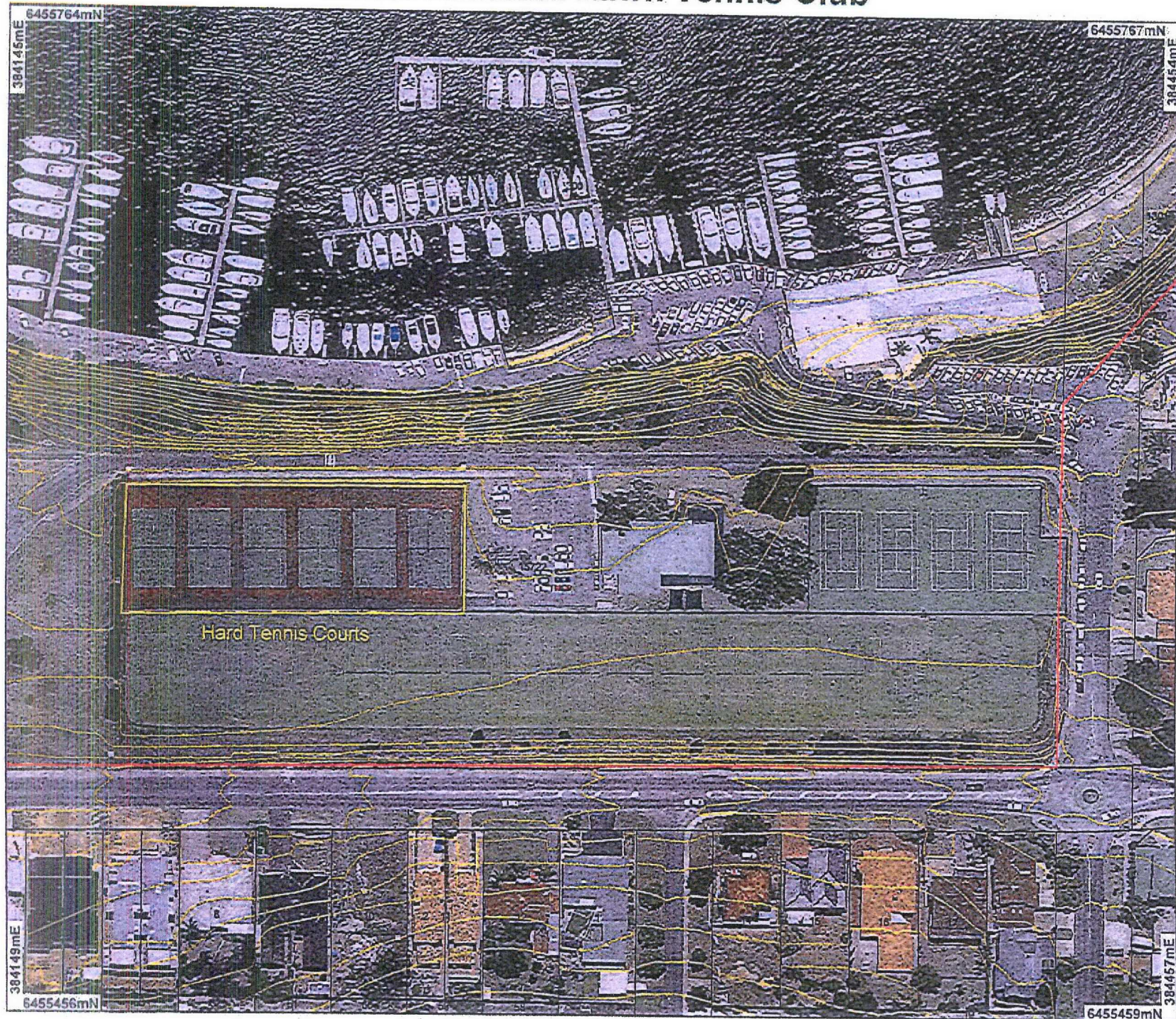
Minister for Environment; Youth

Date: \_\_\_\_\_

THE RECOMMENDATION CONTAINED WITHIN THIS REPORT MAY HAVE BEEN MODIFIED AS PART OF THE MINISTER'S FINAL DETERMINATION. REFER TO THE DETERMINATION LETTER FOR A COMPLETE LIST OF CONDITIONS/ REASONS FOR REFUSAL.



# East Fremantle Lawn Tennis Club



## LEGEND

Topographic Contours, Metropolitan Area

Cadastral

- ☐ Freehold
- ☐ Crown Reserve
- ☐ State Forest / Timber Reserve
- ☐ Marine Park
- ☐ Crown Lease
- ☐ Lease / Reserve
- ☐ Lease on State Forest / Timber Reserve
- ☐ Public Roads
- ☐ Unallocated Crown Land
- ☐ Water
- ☒ scrm\_srt\_act\_development\_control\_area \*

Swan Coastal Plain Central 20cm  
Orthomosaic - Landgate 2009

Swan Coastal Plain North 20cm  
Orthomosaic - Landgate 2009

Swan Coastal Plain South 20cm  
Orthomosaic - Landgate 2009

\* Project Data is denoted by asterisk.  
This data has not been quality assured.  
Please contact map author for details.



Scale 1:1548

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been  
projected. This may result in geometric  
distortion or measurement inaccuracies.

Prepared by: jacoym

Prepared for:

Date: 21/07/2010 10:22:48 AM

Information derived from this map should be  
confirmed with the data custodian acknowledged  
by the agency acronym in the legend.



Department of  
Environment and Conservation

Our environment, our future  
WA Crown Copyright 2002





Government of Western Australia  
Department of Environment and Conservation  
Reserve Management

Mr Rod Hughes  
General Manager  
Swan River Trust  
PO Box 6740  
EAST PERTH WA 6892

Dear Mr Hughes,

05 MAR 2010

Site Ref: SRT439-04

TRIM File: SRT439-04

Officer: \_\_\_\_\_

Scanned? Y N

ATTACHMENT 2

13

Your ref:  
Our ref: DEC200 and DEC 13200  
Enquiries: Scott Jenkinson  
Phone: 9333 7586  
Fax: 9333 7557  
Email: scott.jenkinson@dec.wa.gov.au

**PROPOSED REFURBISHMENT OF HARD TENNIS COURTS – LOT 15722 (RESERVE 7800)  
PRESTON POINT ROAD EAST FREMANTLE – EAST FREMANTLE LAWN TENNIS CLUB  
(SRT439-04)**

Thank you for your letter received at Department of Environment and Conservation's (DEC) Contaminated Sites Branch (CSB) on 22 February 2010. Swan River Trust is seeking comments relevant to CSB and proposed refurbishment of the East Fremantle Tennis Club hard courts and related infrastructure, at Lot 15722 Preston Point Road, East Fremantle.

East Fremantle Yacht Club was reported to DEC twice under the *Contaminated Sites Act* 2003 (CS Act) as a known or suspected contaminated site on 31 May 2007. The reports detail:

- Sediments – sediment and water contaminated with anti-fouling products (tributyltin known as TBT) and heavy metals, from onsite boat maintenance and slipway activities
- Landfill – the suspected presence of a 50 year old landfill at the site

The site is currently awaiting classification under the CS Act.

Sediments

A range of investigations have been conducted at the site and the following reports have been submitted to CSB for consideration.

Contaminant issues in the vicinity of The East Fremantle Yacht Club appear to relate to elevated TBT concentrations within surrounding river sediments. The highest concentrations were in sediments directly off shore and adjacent to the slipway area.

Investigations of sediment contamination were documented in the following reports submitted to CSB:

- *Tributyltin and Heavy Metal Survey in the Swan River: Sediment and Mussel Tissue Quality (Oceanica, October 2007).*
- *Review of Oceanica Report Section on Tributyltin in Mussel Flesh from Swan River Yacht Clubs (Golder, November, 2007).*
- *Tributyltin and Heavy Metal Survey in the Swan River: Sediment and Mussel tissue quality at Yacht Clubs and Marinas with slipway facilities in the Swan River - Summary Paper (Oceanica Consulting, December 2007).*

DIRECTOR GENERAL AND ENVIRONMENTAL SERVICES DIVISIONS: The Atrium, 168 St Georges Terrace, Perth, Western Australia 6000  
Phone: (08) 6467 5000 Fax: (08) 6467 5562 TTY: 1880 555 630

PARKS AND CONSERVATION SERVICES DIVISIONS: Executive: Corner of Australia II Drive and Hackell Drive, Crawley, Western Australia 6009  
Phone: (08) 9442 0300 Fax: (08) 9386 1578 Operations: 17 Dick Perry Avenue, Technology Park, Kensington, Western Australia 6151

Phone: (08) 9219 8000 Fax: (08) 9334 0498 TTY: 9334 0546

POSTAL ADDRESS FOR ALL DIVISIONS: Locked Bag 104, Bentley Delivery Centre, Western Australia 6983

www.dec.wa.gov.au

wa.gov.au

XDDECL001

13  
CSB understands from proposal information presented, that refurbishment works are to occur terrestrially and not in the vicinity of identified TBT contamination in river sediments.

Suspected Landfill

CSB does not appear to hold information on the location of the landfill suspected of being at the site, nor the quality of soils or groundwater (presence or absence of contamination), within the greater site. The Town of East Fremantle may hold further information on the location of the suspected landfill.

Please note, if groundwater is sourced from beneath the site for irrigation purposes, analysis is recommended to ensure the quality is appropriate for the intended use.

Acid Sulfate Soils

The site appears to be located within an area of no known risk of disturbing acid sulfate soils. From the information provided excavation depths appear shallow and dewatering does not appear to be required to facilitate any of the proposed works. CSB does not consider it necessary for any formal conditions relating to acid sulfate soils to be imposed on the proposed development.

CSB does not appear to hold information relating to the quality of soils or groundwater, or the confirmed presence or absence of terrestrial contamination, within the greater site.

The works appear to include reconstruction of drainage and re-connection to existing drains. This may also be an opportune time for SRT to consider recommending capturing or redirecting any drainage waters generated in the vicinity of the tennis courts areas, to infiltration or storage at the site. This, as a best practice measure, may have the potential to improve water efficiency at the site through recycling and re-use as well as reducing the potential for nutrient inputs into the Swan River via an existing drainage network (please note that CSB does make the assumption that the existing drainage network connects to a river outfall point).

CSB recommends an advice note is placed on the development that highlights the potential for intersection of an area of landfill at the site. Works should consider the potential of encountering landfill related materials and plan for this as a potential event. If indications of landfill materials at the site are uncovered during the works, the site should be investigated and managed as per the DEC published *Contaminates Sites Management Series* of guidelines.

Please contact Scott Jenkinson, Environmental Officer of the CSB, on 9333 7586 if you have further queries.

Yours sincerely



Kerry Laszig

MANAGER

CONTAMINATED SITES BRANCH

3 March 2010



YOUR REF: Application No. SRT 439-04  
 OUR REF: R/RSB3  
 ENQUIRIES: Stuart Wearne 93399339

# TOWN OF EAST FREMANTLE



Swan River Trust  
Records Management  
SRT Received

23 JUN 2010

TRIM Ref

A313607

TRIM File

SR/439-01

Officer

Scanned? Y N

21 June 2010

General Manager  
Swan River Trust  
PO Box 6740  
Hay Street  
EAST PERTH 6892  
Attention: Ms Lesley Till

Dear Sir

***Proposed Refurbishment of Hard Tennis Courts – Lot 15722 (Reserve 7800) Preston Point Road, East Fremantle.***

Council is in receipt of an application submitted on behalf of the operators of the abovementioned property seeking approval for the refurbishment of the tennis Courts.

In response to this please be advised that the Town of East Fremantle supports the proposed refurbishment works however requests the following conditions be attached to any approvals issued by the Trust:

1. High quality acrylic finishes to Tennis Australia ITF Standards.
2. Low level minimum lighting with minimal spill to Australian Standards.
3. Lighting to be energy efficient.
4. The fence to be replaced on the western, northern and eastern boundaries to Australian Standards.
5. The removal of the oleander bush/hedge that has caused subsidence and cracking.
6. The design and construction of the car park to be to the satisfaction of the Chief Executive Officer, Town of East Fremantle.
7. Satisfactory power supply to be provided to the new courts and to be provided and maintained to the satisfaction of Town of East Fremantle and Western Power.

Should you require further information or wish to discuss any issues relating to the proposal, please contact the undersigned

Yours sincerely

**STUART WEARNE**  
*Chief Executive Officer*

COMMUNICATIONS TO  
Chief Executive  
Officer  
PO Box 1097  
East Fremantle WA 6959

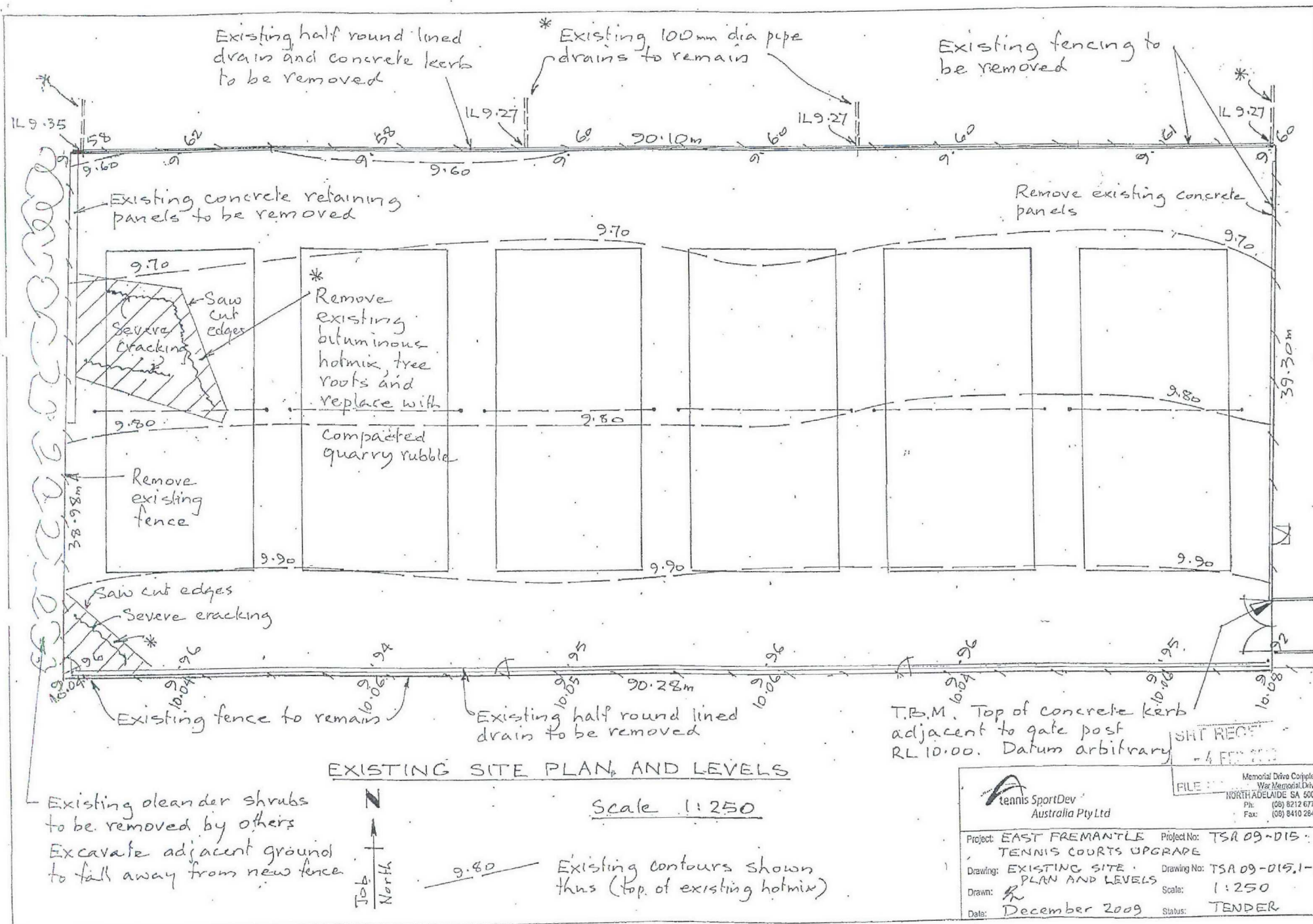
OFFICE HOURS  
Monday - Friday  
8.30am - 5.00pm

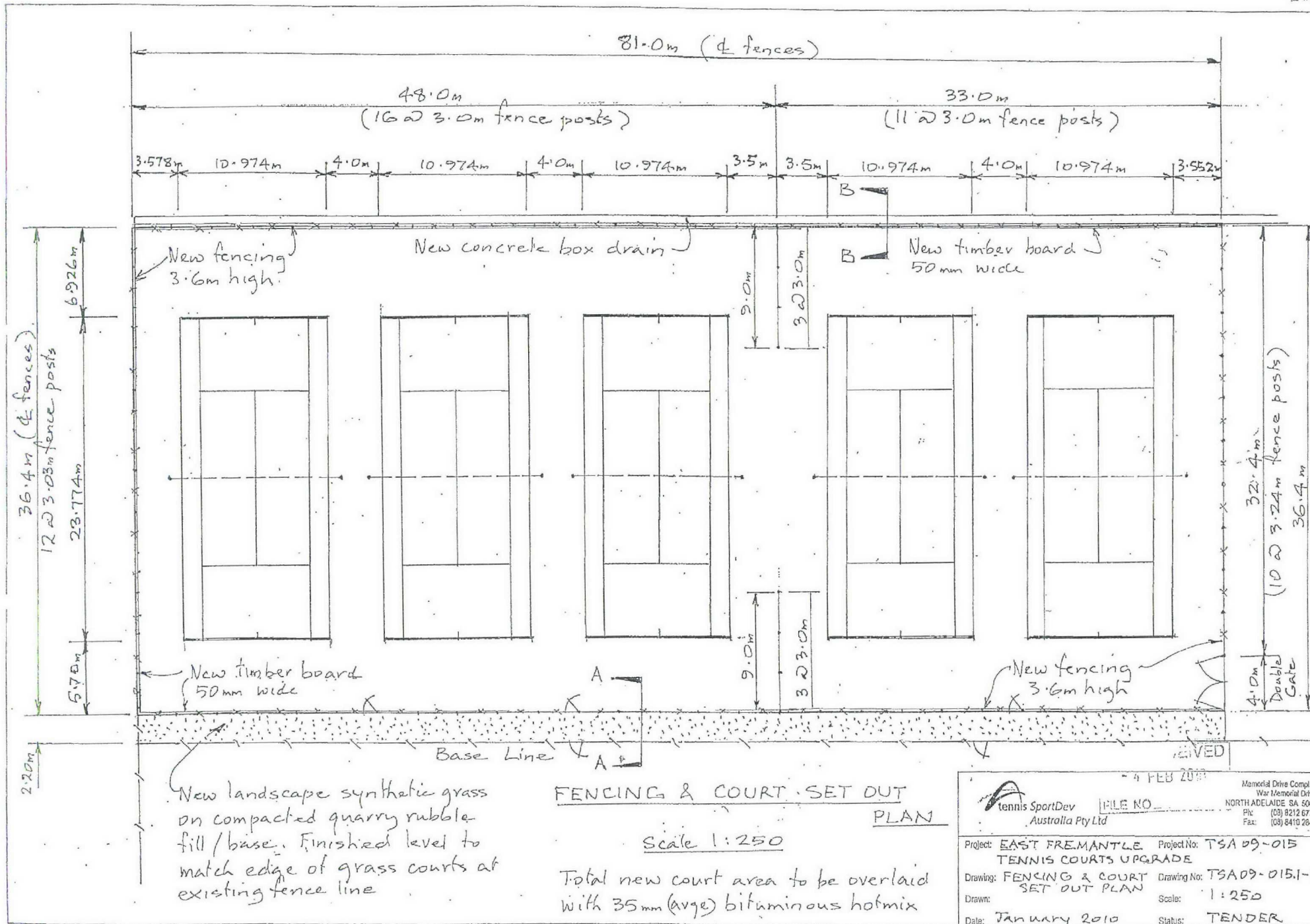
TELEPHONE  
9339 9339  
FACSIMILE  
9339 3399

EMAIL  
info@eastfremantle.  
wa.gov.au

COUNCIL OFFICE  
135 Canning  
Highway  
East Fremantle  
WA 6155







4 FEB 2010

tennis SportDev Australia Pty Ltd

Manor Drive Complex  
War Memorial Drive  
NORTHADELAIDE SA 5006  
PK (03) 8212 6777  
Fax: (03) 8410 2840

Project: EAST FREMANTLE TENNIS COURTS UPGRADE

Project No: TSA 09-015

Drawing: FENCING & COURT SET OUT PLAN

Drawing No: TSA 09-015.1-2

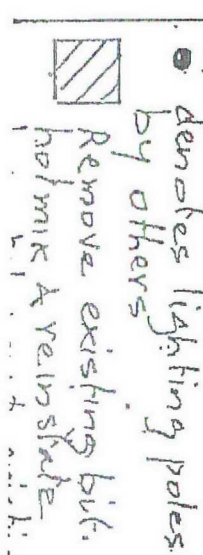
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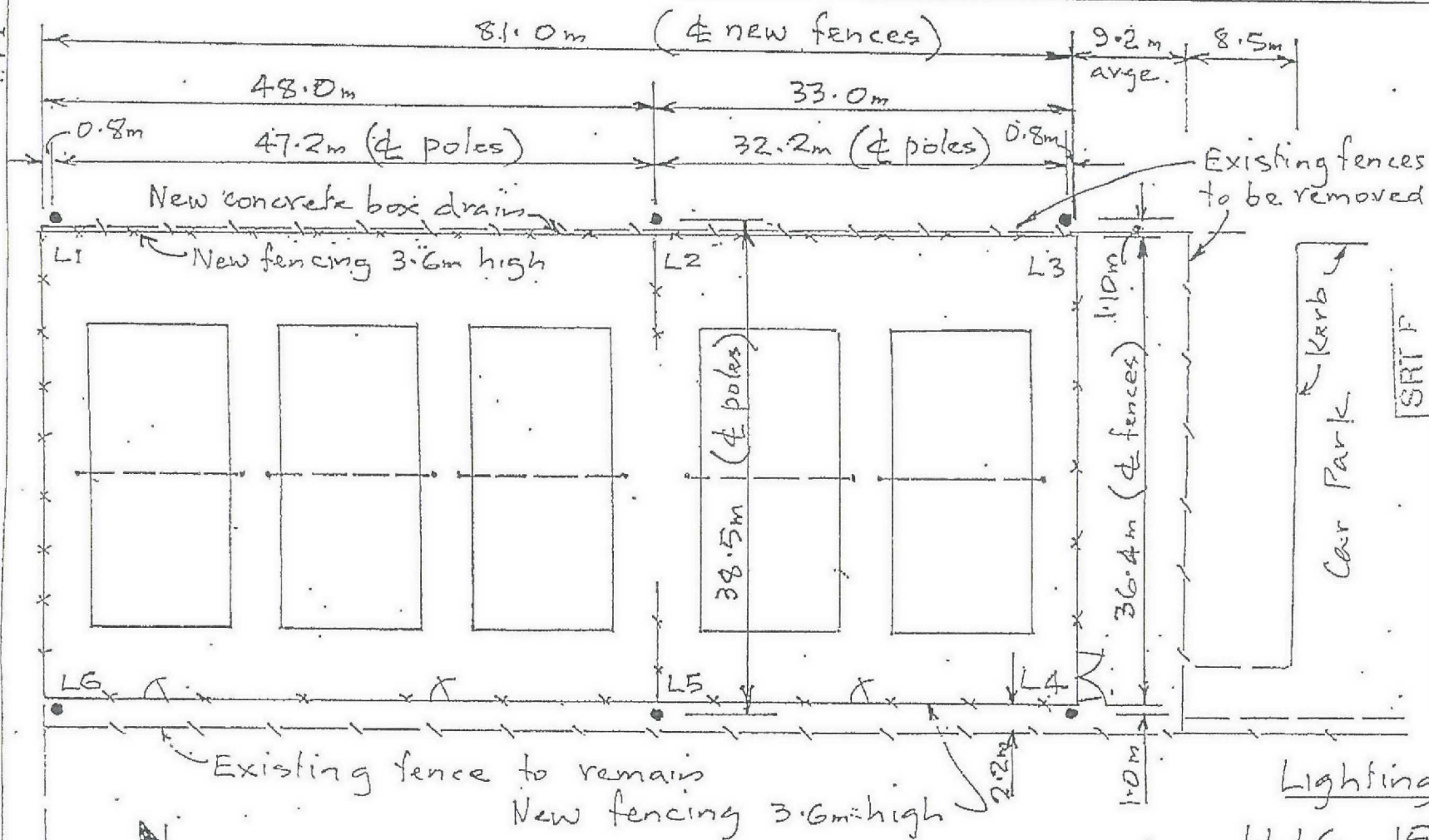
Scale: 1:250

Date: January 2010

Status: TENDER







### POLE SETTING OUT PLAN

Scale 1:500

Note: Pier footing depths L1, L2, L3 - 2000mm  
L4, L5, L6 - 1600mm  
• denotes lighting poles

### Lighting Poles

- L1, L6 15m medium duty each with 2 Optivision lamps at 15m
- L2, L5 15m heavy duty each with 2 Optivision lamps at 15m and 1 Optivision at 12m
- L3, L4 12m medium duty each with 1 Optivision lamp at 12m



Tennis SportDev  
Australia Pty Ltd

Memorial Drive Complex  
Wra Memorial Drive  
NORTH ADELAIDE SA 5006  
PH: (08) 8212 6777  
Fax: (08) 8410 2840

Project: EAST FREMANTLE Project No: TSA09-015

TENNIS COURTS UPGRADE

Drawing: POLE SETTING OUT Drawing No: TSA09-015.2-2

PLAN

Drawn: [Signature]

Scale: 1:500

Date: January 2010

Status: TENDER