

# **NSW Department of Commerce**

## **RIVERINA/WESTERN REGION – WAGGA WAGGA OFFICE**

### **EXTENT OF WORK**

#### **1.1 PROJECT DETAILS**

**Location:** Murray High School

**Description of the Works:** Air-Cooling.

#### **1.2 TRADE QUALIFICATIONS**

The Contract must only use qualified tradespersons who hold a current trade licence for any trade works carried out under this Contract.

The Principals Representative must approve any exception to this requirement.

#### **1.3 CONTRACT DOCUMENTS**

The Contractor must notify the Contact Officer before the tender closing date and time if any discrepancy, error or omission is found in the documents.

#### **1.4 CLEAN UP SITE**

The Contractor must keep the site clean and tidy and dispose of all rubbish and surplus materials promptly.

#### **1.5 PROJECT DESCRIPTION**

##### **1.6 Gymnasium Room BR0001**

Install to the roof area over room BR1024 a side discharge evaporative cooler, mounted on "Duragal" support stand, install insulated ductwork to penetrate existing skylight window and extend to position as indicated on the drawing.  
Install a transition to spiral duct to extend in both directions along the Southern Wall, sized as per the drawing.  
Install Double deflection "Air Grills sized and positioned as per the drawings,  
Install electrical & water supply with drain pipe to adjacent gutter.  
All water supply pipes to be insulated where exposed to reduce freezing in winter.  
All exposed ductwork, hangers & brackets to be painted in a colour to match existing adjacent surfaces.

### 1.7 Room BR0021

To the roof area over the walkway on the Western end of the building install 2 x side discharge evaporative coolers, mounted on "Duragal" support stands.

Install insulated surface mounted duct from both the units to penetrate room BR0021 through existing windows on the North & South walls. Install Supply Air grills as per the drawing.

Install to the existing walkway at a 50 x 50 RHS vertical support to provide additional support to the structure at each cooler, as per detailed on the drawing.

Install electrical & water supply with drain pipe to adjacent gutter.

All water supply pipes to be insulated where exposed to reduce freezing in winter.

All exposed ductwork, hangers & brackets to be painted in a colour to match existing adjacent surfaces.

# **NSW DEPARTMENT OF COMMERCE**

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## **MURRAY HIGH SCHOOL**

KAITLER'S RD LAVINGTON NSW 2641

### **AIR CONDITIONING UPGRADE**

### **MECHANICAL SERVICES BRIEF**

Document: 2900-M-B01  
"TENDER ISSUE"

Dated: 20<sup>th</sup> January 2009

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**Building Services Group**

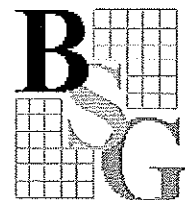
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## **01 - SCOPE OF WORK - MECHANICAL SERVICES GENERALLY**

This section of the brief covers the installation, testing, commissioning and maintenance of Mechanical Services proposed for the air conditioning upgrade of a Classroom and the Gymnasium Area within "Murray High School" located in Kaitler's Rd, Lavington NSW 2641.

### **SCOPE OF WORK "SUMMARY".**

The work associated with this project is located on Ground Floor of Building B.

**Building B** has two areas of interest Classroom "BR0021" and the Gymnasium "BR0001". These areas shall be served via Evaporative Coolers "EC-01, 02 & EC-03".

Evaporative Cooler "EC-01" shall be roof mounted in the area adjacent the Gymnasium skylight windows.

The supply air ductwork shall penetrate the glazed area and serve the room via an exposed spiral ductwork with a number of double deflection supply air diffusers.

Evaporative Cooler "EC-02 & 03" shall be mounted on the veranda roof adjacent to the Classroom being served. The veranda shall be reinforced to ensure a safe and secure mounting. Supply air duct shall wrap around the corner and penetrate the room windows at high level.

## **02 - EXTENT OF WORK - MECHANICAL SERVICES GENERALLY**

### **REQUIREMENT:**

#### **New Equipment & Systems.**

- Supply & Installation of One (1) off Side Discharge Evaporative Coolers "EC-01" serving the Gymnasium "BR0001", as shown on the tender drawing.
- Supply & Installation of Two (2) off Side Discharge Evaporative Coolers "EC-02 & 03" serving Classrooms "BR0021", as shown on the tender drawing.

#### **Associated Miscellaneous Items.**

- Air diffusion equipment (Diffusers, Registers & Grilles) and ductwork as shown on the tender drawing.
- Supply & Installation of volume control dampers for balancing as required.
- Support bracing & hangers for ductwork, straddle purlins where applicable.
- Supply & Installation of Support Stands "Duragal" for all plant, as shown on the tender drawings.

## **02 - EXTENT OF WORK (Continued).**

### **Associated Miscellaneous Items (Continued).**

- Supply, Installation & Connection of water supply from suitable points adjacent each evaporative cooler complete with isolating valves. Contractor to visit site to determine suitable connection locations. All cold water pipes shall be insulated where exposed to weather.
- Supply & Installation of hose cocks adjacent evaporative coolers for servicing as required.
- Supply of overflow drains from Three (3) off Evaporative Coolers to down pipes or suitable drainage points adjacent each unit.
- Supply & Installation of Electrical Supply from EDB within the buildings being served, complete with isolators for each unit as shown on the tender drawings. The contractor shall confirm appropriate electrical supply is available from within the board prior to commencement of any contractual works.
- Supply & installation of control wiring between all equipment and their associated control panels as required. IE: All control & instrumentation. Locations shown on tender drawing are approximate only the contractor shall liaise with end user for final suitable locations.
- Provide all over flashings to all major roof & wall penetrations. Also provide deck-tights for minor pipe work penetrations.
- The contractor must allow for all associated works that "MAKE GOOD" the installation, including any other associated works, such as plumbing, electrical, structural & cosmetic works etc... completing the installation.
- Provide Painting to both interior & exterior ductwork, colours to be confirmed by the client prior to application. The contractor shall ensure that all ductwork is adequately cleaned via washing down with "sugar soap", applying one coat of Galvanised Iron Primer, then two coats of Exterior Acrylic equal to "Dulux Weather Shield".
- Supply & Installation Ladder hitching brackets & harness hitching points as nominated on tender drawings.
- No shop drawings shall be required BUT the design drawings are general, the contractor shall allow to visit the site and adjust the design to suit the practical needs gathered during the site investigation.
- Air balancing and commissioning of plant.

## 02 - EXTENT OF WORK *(Continued)*.

- Preparation of operating & maintenance manuals.
- Warranty and maintenance during the 12 month defects liability period, commencing at practical completion shall be the responsibility of the contractor.

The yearly "Start Up" and Shut Down" shall be the responsibility of the school maintenance department.

In General any non fault work shall be completed by the school maintenance department.

- If and where relevant all mechanical services components nominated herein shall be installed in accordance with all relevant Authorities having jurisdiction over the site. The contractor shall comply with the Building Codes of Australia "BCA", Australian Standards / guidelines **AS-1668 Part II** and all other relevant guidelines.

## 03 - EQUIPMENT DUTY SPECIFICATIONS

ITEM	DUTY	ACCESSORIES
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<b>EC-01</b> <b>Evaporative Cooler.</b> Side Discharge <b>BR0001</b>	Cooling Air Volume – 13,200 L/s System Resistance – 140 Pa. (Estimate) Centrifugal Fan. Op weight : 255 kg	Off / Vent / Cool High / Low Fan Speed Draft shut off louvre's
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Aira AL30 090 (or similar).

<b>EC-02</b> <b>Evaporative Cooler.</b> Side Discharge <b>BR0021</b>	Cooling Air Volume – 3350 L/s System Resistance – 140 Pa. (Estimate) Centrifugal Fan. Op weight : 117 kg	Off / Vent / Cool High / Low Fan Speed Draft shut off louvre's
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Aira AL18 015 (or similar)

<b>EC-03</b> <b>Evaporative Cooler.</b> Side Discharge <b>BR0021</b>	Cooling Air Volume – 1670L/s System Resistance – 130 Pa. (Estimate) Centrifugal Fan. Op weight : 94 kg	Off / Vent / Cool High / Low Fan Speed Draft shut off louvre's
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Aira AL15 007 (or similar)

### IMPORTANT NOTE:

The above Makes & Model numbers have been noted for a guide only, it shall be the responsibility of the successful tenderer to ensure that the makes and models selected, suit the intent of the design. Eg ensure that the resistances and airflow etc. are achievable. If the contractor finds that the Makes & Models do not match that of the duties nominated, the contractor shall have duties clarified or allow the more expensive option.

## **04 - DUCTWORK**

### **INSULATION (Aluminium foil laminated type), (Mineral Wool & Glasswool).**

Physical Properties to SMACNA Fibrous Class Duct Construction Standard.  
Standard: To AS 3742  
Maximum Thermal conductivity: 0.036 W/m<sup>2</sup>K at 20deg.C.

### **SHEET METAL**

#### **Material**

Zinc-coated steel, coating class G2/Z275

## **05 - AIR GRILLES**

**GENERAL:** Manufacture: Provide proprietary grilles.

### **EVAPORATIVE SUPPLY AIR GRILLES:**

#### **Duct Mounted Registers.**

- Double deflection "Air Grilles Model SH2" or similar 32mm Blades.
- Size as nominated on tender drawings.
- Painting Powder Coating. (Colour to be advised prior to ordering).

#### **Supply Air Plenum Diffusers**

- Diffusers "Air Grilles Model JD-1" (or equivalent).
- Size to suit air volume.
- Painting Powder Coating. (Colour to be advised prior to ordering).

**Note:** Make & Model Numbers for grilles, diffusers etc. have been nominated for a guide only, the Mechanical Services Contractor shall confirm mounting details of all air diffusion equipment prior to final selection & ordering.

## **06 - EXTENT OF ASSOCIATED WORK BY OTHER TRADES:**

### **REQUIREMENT:**

The contractor must be aware that there are no other contractors associated with the works described herein.

The contractor must allow for all associated works that "MAKE GOOD" the installation including any other associated works, such as plumbing, electrical, structural & cosmetic works.

## **07 – GENERAL**

Generally this document is a “Brief” allowing Mechanical Services Contractor to price a “Scope or Works” for this project, **NOT TO BE USED FOR CONSTRUCTION PURPOSES**. A further review of both this Brief & the associated tender drawings shall be performed prior to the ordering of plant & or the commencement of shop detail drawings.

## **08- PERFORMANCE - MECHANICAL SERVICES GENERALLY**

### **EQUIPMENT CONTROL:**

1. The primary control of all plant shall be via proprietary type wall mounted Off / Vent / Cool, High / Low fan speed controllers located within each area being served. The mechanical contractor must coordinate the final location of the control points with the end user prior to installation.

## **09 - WIRING - MECHANICAL SERVICES GENERALLY**

### **ELECTRICAL WIRING:**

To AS 3000 and AS 1668.1 Clause 4.10.2

### **REQUIREMENT:**

- Connect power supply & control wiring to Three (3) off Evaporative Coolers from Electrical Distribution Boards located within each building being served.
- Power Isolators shall be fitted in close proximity to all Coolers.
- All other equipment as described with the tender specification & drawings.
- Power supply for each item of plant shall be provided from the distribution board within each area being served. A separate circuit shall supply all new circuit-breakers and, where fitted to existing distribution boards, be selected to match existing equipment.

Item	240v / 415v	Amps	Quantity
EC-01	415v	14.0	1
EC-02	240v	8.5	1
EC-03	240v	5.2	1

### **Note:**

The above electrical loads are approximate only. The successful tender shall verify and confirm electrical loads prior to installation.