

# **NSW Department of Commerce**

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

### **EXTENT OF WORK**

#### **1.1 PROJECT DETAILS**

**Location:** Albury 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 Room CR0007**

Install a down discharge evaporative cooler mounted at high level complete with "Durgal" support mounting bracket.

Install an acoustic bend to penetrate existing window with solid supply air ductwork to the interior of the room to distribute the air via registers as per the drawings.

Install water and electrical services as per the manufacturer's recommendations and drain to the adjacent downpipe.

Paint exterior and internal ductwork, external colour to match colour on adjacent unit internal to match adjacent wall colour.

The installation to be completed as per the attached drawings and Mechanical Brief.

**Note.** The installation of this cooler to match the installation of existing adjacent units

### **1.7 Room ER0015 Gymnasium**

Install to flat roof sections each side of the main Gym area two (2) side discharge evaporative coolers mounted on a "Duragal" support stand, (total 4 coolers)

Install insulated duct to penetrate existing windows with acoustic bend from each unit to a transition to exposed spiral duct sections to each side of the transition to finish 100mm clear of existing gas heaters.

Install 4 x jet diffusers to the side of each section of duct, angled to the floor to supply air at high level from each cooler.

Install water & electrical services to each evaporative cooler, with drain from each cooler to the adjacent gutter.

Paint all internal exposed ductwork and associated brackets & supports, colour to be decided by the school.

Install ladder support bracket to the lower roof level on each side to enable safe access to the roof for installation & future maintenance.

### **1.8 Electrical Upgrade**

Install a new Mechanical distribution board to the unused cupboard space adjacent the existing distribution board situated in room ER0007, (position as indicated on the drawing).

The new distribution board to be of steel construction and complete with a main switch & breakers to supply the new coolers to the Gym, with spare space for an additional 3 x three pole breakers.

Install new 4 x 10mm<sup>2</sup> PVC/PVC submains from the existing adjacent distribution board to the new Mechanical DB

Install a new submain switch to the existing BD, circuit breaker to be of the same brand as the existing breakers on this board.

Install labels and legends as required to comply with the code to the new & existing DB.

The installation to be completed as per the attached drawings and Mechanical Brief.

# **NSW DEPARTMENT OF COMMERCE**

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## **ALBURY HIGH SCHOOL** KIEWA STREET ALBURY NSW 2640

### **AIR CONDITIONING UPGRADE**

### **MECHANICAL SERVICES BRIEF**

Document: 2900-A-B01  
Revision: B  
TENDER ISSUE

Dated: 07<sup>th</sup> January 2009

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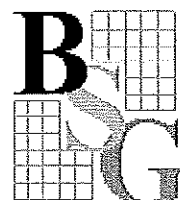
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## **01 - SCOPE OF WORK - MECHANICAL SERVICES GENERALLY**

This section of the brief covers the installation, testing, commissioning and maintenance of Mechanical Services proposed for the air conditioning upgrade of One (1) off Classroom and Gymnasium within “**Albury High School**” located in Kiewa Street, Albury NSW 2640.

### **SCOPE OF WORK “SUMMARY”.**

The works associated within this project are located on the Ground Floor of Buildings C & E.

***Building E*** incorporates a Gymnasium Area “***ER0015***”. This area shall be served via Evaporative Coolers “**EC-01, 02, 03 & 04**”.

The units shall be mounted on the roof adjacent to the space. Supply air duct shall penetrate the windows and shall reticulate the air via exposed spiral ductwork at high level through a number of jet diffusers.

***Building C*** incorporates Classroom “***CR0007***” located on the Ground Floor. This room shall be served via Evaporative Cooler “**EC-05**”.

Evaporative Cooler EC-05 shall be wall mounted adjacent to the room being served. Supply air duct shall penetrate the windows at high level and distribute air via a wall mounted grille.

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

### **REQUIREMENT:**

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

- Supply & Installation of Four (4) off Side Discharge Evaporative Coolers “**EC-01, 02, 03 & 04**” serving the gymnasium “***ER0015***”, as shown on the tender drawing.
- Supply & Installation of One (1) off Side Discharge Evaporative Cooler “**EC-05**” serving Classrooms “***CR0007***”, as shown on the tender drawing.

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

- Supply & Installation of One (1) off Mechanical Services Board **MSSB-01**.
- Air diffusion equipment (Diffusers & Register) and ductwork as shown on the tender drawing.
- Support bracing & hangers for ductwork, straddle purlins where applicable.
- Supply & Installation of Support Stands “Duragal” for all plant, as shown on the tender drawings.
- 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.

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

### **REQUIREMENT:**

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

- Supply & Installation of hose cocks adjacent evaporative coolers for servicing as required.
- Supply & Installation of all damping louvres to ensure well distributed air flow.
- Supply of overflow drains from Five (5) off Evaporative Coolers to down pipes or suitable drainage points adjacent each unit.
- Supply & Installation of Electrical Supply from EDB within the building C, complete with isolators for that 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 new MSSB complete with isolator and supply from existing EDB adjacent.
- Supply & Installation of appropriate labelling of all electrical work
- 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 required for service & maintenance.
- 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.

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

- Air balancing and commissioning of plant.
- Preparation of operating & maintenance manuals.
- Warranty and maintenance during the 12 month defects liability period, commencing at practical completion.
- 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 to 04</b> Evaporative Cooler. Side Discharge ER0015	Cooling Air Volume – 3,500 L/s System Resistance – 140 Pa. (Estimate) Centrifugal Fan.	Off / Vent / Cool High / Low Fan Speed Draft shut off louvers
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Bonaire B36 (or similar) 4 off

<b>EC-05</b> Evaporative Cooler. Side Discharge CR0007	Cooling Air Volume – 1600 L/s System Resistance – 90 Pa. (Estimate) Centrifugal Fan.	Off / Vent / Cool High / Low Fan Speed Draft shut off louvers
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Bonaire B14 (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).

#### **Jet Diffusers**

- Jet diffuser "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 registers and nozzles 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 Five (5) off Evaporative Coolers and from Electrical Distribution Boards located within each building being served.
- Connect power supply & isolator to One (1) off Mechanical Services Board from Electrical Distribution Board in building E Room *ER0007*.
- All other equipment as described with the tender specification & drawings.
- Power Isolators shall be fitted in close proximity to all Coolers.
- 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 to 04	415v	4.4	4
EC-05	415v	2	1

### **Note:**

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