10 October 2016

Fraser Property Australia
Level 3, 1C Homebush Bay Drive
Rhodes NSW 2138

Attention: Mr. Paul Solomon

Development Manager, Infrastructure & Approvals

Dear Paul,

Re: Proposed Office/Warehouse Facilities LOT 3 IN PROPOSED LOT 5 DP 1212087 Letter outlining Cooling and Heating Systems for DOP for SEARS requirements

Further to your request please outlined a description of the cooling and heating systems proposed for the above mentioned project.

Cooling and heating systems are proposed for the Office areas for this two staged Office / Warehouse facility. The installed systems shall comply with the requirements of the National Construction Code (NCC) and relevant Australian standards and the required Minimum Energy Performance Standards (MEPS). Warehouse areas shall be ventilated to meet the requirements of the NCC as no cooling and heating or cooling systems are required.

The systems proposed for this project are as outlined below:

1. Inverter Type Split Air Cooled Systems
2. Geothermal Systems (subject to appropriate ground conditions being present)

Geothermal refers to the method of heat rejection. The a/c systems proposed for this development comprise of the following components:

- Refrigerant Pipework
- Compressor is enclosed in a box with all the relevant refrigeration components required for cooling and heating modes
- The indoor units (fan coil unit) are of the conventional type that shall be connected to air distribution ductwork and air diffusion systems
- Controls shall be of the Direct Digital Control type to allow all systems to be controlled centrally
- Heating shall be achieved by reversing the refrigeration effect (initiated via a reversing valve in the compressor unit)

- Co-efficient of performance (cooling/heating output divided by electrical input) is approximately 3.3 for inverter type splits and 5 for the geothermal systems.
- Each thermal zone shall have a separate indoor unit for simultaneous cooling and heating requirements as required. Thermal zones shall include office perimeter, office centre, lunchrooms, meeting rooms, boardrooms, training rooms, and Comms Rooms.
- Heating shall be achieved by reversing the refrigeration effect (initiated via a reversing valve in the compressor unit)
- Co-efficient of performance (cooling/heating output divided by electrical input) is approximately 3.3 for inverter type splits and 5 for the geothermal systems.
- Each thermal zone shall have a separate indoor unit for simultaneous cooling and heating requirements as required. Thermal zones shall include office perimeter, office centre, lunchrooms, meeting rooms, boardrooms, training rooms, and comms rooms.

If you have any further queries please do not hesitate to contact the undersigned on

0411 473 518.

Yours faithfully,

Peter Souflias BE, Fellow IEAust
Director and National Engineering Manager
FOR GROSVENOR ENGINEERING GROUP