



Plunkett Orchards:  
*Refrigeration System  
Extension & Upgrade Stage 1*

# PROJECT PROFILE

## Automation Services

The roles of Cold Energy Automation during this project were;

- Design & Construction of 3 Refrigeration Automation Services Switchboards.
- Control System Design, Programming and Commissioning.
- Automation services point testing & commissioning.
- System Integration: Energy Metering.
- Create & Commission System Graphical Supervisor.

## Project Equipment

- Allen Bradley Automation System (Micro 800)
- Panel Mount Industrial Touch Screen PC's.
- Allen Bradley Panel View Display
- Allen Bradley VSD's
- Nemo Energy Meter
- Danfoss Control Valves



## Control System Communication Protocols

- Modbus RTU
- Modbus TCP/IP

## Project Overview

The existing Fruit storage and packing facility was upgraded with;

- 7 x Cool Rooms, 1 x Ammonia Screw Compressor Package, 1 x Energy Meter, 8 x Variable Speed Drives.

The room temperature control was operated by a solenoid valve and fixed expansion valve with suction pressure and fan speed controlled for optimum coil diffusion and humidity conditions. The Allen Bradley Micro 800 controllers regulated the temperature, fan speed, suction pressure and hot gas defrost. The main site supply energy meter was integrated via the Indusoft SCADA system, the site is graphically displayed on panel mount industrial touch screens and available on the network (or remotely) via the built in webserver. All alarming, logging, set points and system status can be displayed and adjusted via the SCADA system.