

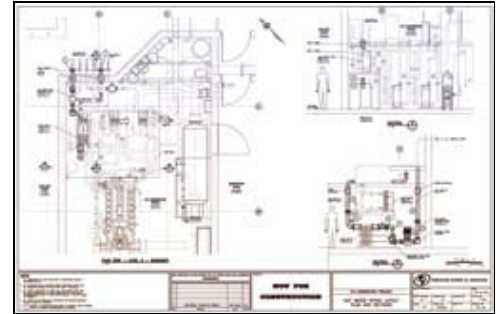
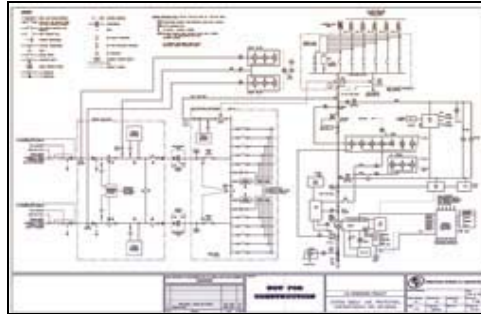


Conestoga-Rovers & Associates Project Summary

KEY PROJECT ELEMENTS

- Preliminary Design
- Detailed Design
- Vendor Pre-Selection and Negotiation
- Integrated Pumping Controls
- Integrated Cooling Tower System Controls
- Integrated Ventilation System Controls
- Utility Interconnection
- HMI Interface

CAMBRIDGE MEMORIAL HOSPITAL COGENERATION PLANT CAMBRIDGE, ONTARIO



CLIENT: JOHNSON CONTROLS L.P.
DURATION: 2002 TO 2004

Johnson Controls L.P. has proposed the construction of a cogeneration plant for Cambridge Memorial Hospital. The cogeneration plant will provide electricity, hot water, and steam for the hospital. The 820 kWe of electrical power will be connected to the hospital's low voltage electrical system and will operate in parallel with the utility. The thermal power (1.1 MWt capacity) will be provided in the form of steam and hot water for use in the hospital complex for building heating, domestic hot water pre-heating, boiler feed water pre-heating, and other miscellaneous steam uses within the hospital. The plant will consist of one 820 kWe reciprocating engine generator set, thermal heat transfer equipment, thermal heat rejection equipment, low voltage switchgear, motor control centre, control panel, utility interconnection (protection, metering, communications), and ventilation system.

CRA undertook the design of the embedded cogeneration plant at Cambridge Memorial Hospital, including preliminary design, detailed design (engine cooling, hot water heat recovery, steam recovery, cooling tower, gas distribution, HVAC, lube oil, and coolant systems), vendor equipment pre-selection, design management, and utility interconnection design. Negotiations and coordination with the local utility authority as well as interface with the hospital systems designers was required.

Subsequently, funding for this project was not secured by the hospital so the project has not proceeded to implementation.

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