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Abbott Point-of-Care Cartridge Assembly 1 & 2

Corkstown Road, Ottawa.

Project Statistics

Area description:	Class 10,000 Clean Room
Area size	9,500 sq. ft.
Project budget	$2,000,000

Responsibilities

Complete design of a close temperature and humidity controlled, class 10,000 clean room for the assembly of this company's various blood gas analyzer cartridges.

Services Provided

- *Design management*
- *Architectural design*
- *Mechanical design*
- *Electrical design*
- *Project commissioning*

Project Objectives

To provide a class 10,000 clean room area for the assembly of cartridge components.

Provide redundant systems to support uninterrupted, 24/7 operation of the assembly lines that produce a high value, medical device product.

To adhere to strict temperature and humidity specifications that would pass Abbott's strict validation requirements.

Challenges

To build a class 10,000 clean room area with strict temperature and humidity requirements that would have n+1 redundancy of all equipment.

To design systems and select materials capable of maintaining humidities of 11.5% +/- 2% RH and close temperature control during the most humid of outdoor conditions (140 gr/lb).

Devising a system of utilities racks and service drops that could be added to the cleanroom as assembly lines were moved into place, without breaking the room envelope.

Ensuring that the methods, materials and systems operation all met the very strict and exacting requirements of Abbott's Global Standards, The Food and Drug Administration and Factory Mutual.

Solutions and Successes

- Provided finished space in strict timeline constraints to enable the client to start assembly of final product.
- Used close tolerance design to ensure proper fit in the very restricted space of the ceiling.
- Used non-permeable materials of construction and sealing techniques to limit humidity gains.
- Developed a comprehensive commissioning plan to test and prove each system individually and as an integrated system prior to releasing space for validation. This process helped ensure that the design conditions were met and operational efficiencies were at their best.