



## Health & Welfare Canada Offices and Laboratories Dartmouth, N.S.

*Total Area:* ..... 60,000 sq. ft.  
*Construction Cost:* ..... \$15,000,000.00  
*Electrical Cost:* ..... \$1,500,000.00  
*Mechanical Cost:* ..... \$4,200,000.00  
*Construction Time:* ..... 24 Months  
*Client:* ..... Public Works Canada  
*General Contractor:* ..... Dineen Construction  
*Architect:*  
..... Davison Seamone Rickard Adams Architects Inc.  
*Electrical and Mechanical Consultant:*  
..... F.C. O'Neill, Scriven & Assoc. Ltd.



With four (4) suites of laboratories, each with its own unique set of design requirements, ranging from General Laboratory to a Class 10,000 Clean Rooms, and a Level III Biological Containment Laboratory, the mechanical and electrical system design demanded forward thinking use of cutting edge technology and computerized design techniques.

A sophisticated digitally based variable volume fume hood control system designed to maintain a constant face velocity of 100 fpm and a response time of three seconds forms the centrepiece of the dual duct ventilation and space pressurization control system.

Designed to set standards for environmental safety and indoor air quality, the system incorporates scrubbing techniques for fume exhaust, treatment of laboratory waste before release to the municipal system, and a 100% outside air ventilation system, precisely controlled to prevent odour and containment migration between occupancies.

To minimize the impact on energy consumption of total outside air ventilation, a combination of heat recovery and variable air volume techniques have been employed.

Even though the electrical design predated the existence of K-factor transformers, conventional transformers and feeds were appropriately de-rated to handle the non-linear loads of uninterruptable power supplies, variable frequency drives and a host of laboratory equipments.

Designed prior to the CAN/CSA-T529 standard for telecommunications wiring, this facility still boasts a full structured wiring system in compliance with the final standard. Cabling is full Level 5. Devices were installed as Level 3 (Level 5 product did not exist at the time of installation) for future upgrade when the need exists.

---