



## UNIVERSITY COLLEGE of CAPE BRETON CAMPUS CENTRE EXPANSION

Total Area.....140,000 sq. ft.  
 Total Project Construction Cost. ....\$18,000,000.00  
 Electrical Construction Cost .....\$2,000,010.00  
 Mechanical Construction Cost .....\$4,300,000.00  
 Construction Time ..... 24 months  
 Client ...University College of Cape Breton  
     Attn: Mr. Don MacIsaac, P. Eng.,  
     Director, Buildings & Grounds  
 Construction Manager ..... Mr. Ken Baker, UCCB  
 Architect ..... Trifos Design Consultants  
 Mechanical Consultants .. F.C. O'Neill, Scriven & Associates Limited  
 Electrical Consultants ..... F.C. O'Neill, Scriven & Associates Limited



The University College of Cape Breton's Campus Centre Expansion consisted of mixed use spaces, comprised of public and student spaces. The project involved the renovation to approximately 20,000 square feet of existing space, as well as approximately 120,000 square feet of new construction. The complex, situated in the heart of the existing campus, included a new Student Union Centre, a Tourism & Hospitality Laboratory, an Educational/Teaching Centre consisting of classroom, office, and lecture theatre spaces, and a Cultural/Heritage Centre consisting of a new art gallery as well as storage and display space for the Beaton Institute Archives.

The design of the HVAC systems involved a host of different user requirements particularly with respect to air handling and air conditioning systems. Some of the different user requirements included separate air treatments for the art gallery and the archives, special exhaust and heat recovery systems for the new cafeterias and student food courts, and air-conditioning for the classroom and office spaces due to the predominant use of these facilities during summer time months. Specialized design and engineering was required to implement the heating systems for the complex which were primarily hot water based and which required the connection to an existing coal fired central heating plant. A particularly challenging design requirement was the incorporation of HVAC equipment in mechanical rooms/penthouses, which were not of standard rectangular configuration due to the architectural features of the building.

The design of the electrical systems involved diverse lighting systems for standard classroom and office lighting, dimmable art gallery lighting, specialized remote controlled lecture theatre lighting, courtyard/quad exterior lighting, and banquet hall and lounge lighting. Entire new electrical power services were required for the complex, complete with emergency generator back-up capability.

This university required innovative engineering skills to implement the various specialized systems required. These included a new automatic addressable fire alarm detection and warning system designed and laid out to not only service this complex, but to incorporate other buildings and facilities located throughout the campus under future phases of construction. Particularly challenging was the design of the audio-visual systems for a major lecture theatre with capability for off-campus video conferencing. In addition, the information technology requirements of the complex required extensive Category 5 Data/Voice infra-structure, employing numerous satellite communications rooms, all connected back to the university's central computer centre via a fibre-optic backbone network.