RESEARCH GREENHOUSE

BUILDING:	**INAF Pavilion**
OWNER / CLIENT:	Université Laval Quebec City, QC, Canada
AREA:	2,500 sf
COMPLETION:	2002

The project started early 2001 and included demolition of existing greenhouses, modification to the headerhouse design and construction of new research greenhouses. The new greenhouse facility is used by the Department of Phytology for research in plant physiology, weed killer effectiveness, and diseases & climate plant resistance. The facility includes 4 compartments of greenhouses and an access corridor. The greenhouse is part of the recently renovated Nutraceuticals and Functional Foods Institute (INAF) building.

Agritechnove was the prime consultant for this project and was responsible for the basic A & E services (Program of Requirement, the design, drawings and specifications, production of bid documents, non-resident construction supervision).

SPECIAL FEATURES - Crawl space under corridors to run services before getting to individual zones. 2-way modulating pulse-control steam heating system allowing relatively precise reactions to heat losses. Snow melt function with heat generated close to the roof to ensure structural integrity and quick melting of snow to avoid long periods of time with light obstructed. Piped electrical/control conduits mostly embedded in concrete to provide as much light as possible inside the greenhouses. Glass partition walls on grids and perimeter purlins at eave height to allow “visibility” of structural elements in any compartment: this permits addition of any suspended equipment without perforating glass. 14' High clearance under the trusses to allow longer plants growth. Fresh air taken in greenhouses through the corridor.

TECHNICAL SYSTEMS - Commercial curved roof glass structural system, vertical sash for air inlets, 2-stage insect screening, natural ventilation, high pressure fog system, benching, HID lighting system, interior horizontal automatic shading system, south wall vertical automatic shading system, exhaust fans, HAF recirculation, automatic irrigation in each compartment, tempered water system, modulating steam heating system, electrical main power, electrical distribution, computer control system tied to a weather station for all functions (over 140 points of control), communications, emergency power.

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