

**David Brault. ing. B.Sc., M.Sc. MGP**  
**Engineering Activity Resume**

**2012-2013**

**Director, Heat and By-Products**  
**Innovente, Quebec, Quebec**

*Responsibilities:*

- Develop waste heat recovery for greenhouse applications from biomass fed CHP plants.
- Identify potential partners to operate greenhouses supplied with energy from the CHP plants.
- Identify and develop applications for making use of the waste heat from the CHP plants.
- Engineering and construction support for the design and construction of the CHP plant.

*Projects of significance:*

- 2012- 2013      Energy consumption profile analysis of vine crop greenhouse to size the heat recovery system from the CHP plant and identification of optimal technology for heat recovery.
- 2012- 2013      Project: Design and construction of steam distribution system and adaptation of a belt dryer system to use the steam heat for drying wood shavings.

**2010-2012**

**Director Research and Development**  
**Les Serres du Saint-Laurent (SAVOURA), Portneuf, Quebec**

*Responsibilities:*

- Define and manage R&D budget for the organization through R&D tax credits and contracted projects.
- Work with the production branch of the company to identify and carry out pertinent R&D projects.
- Project manage activities of the R&D team consisting of 3 professionals and several technicians.
- Prepare and coordinate reports for tax credit applications (T661).
- Market, sell and execute contracted R&D project to external firms.

*Projects of significance:*

- 2010- 2012      Project: Development of intra-canopy LED lighting. The Savoura R&D team was an integral part of a GE Lighting Solutions development project for intra-canopy lighting of greenhouse vine crops. The Savoura team participated with GE engineers in the definition and design of the product (light intensity, quality and photometry), tested beta versions of the lighting and ran large in situ production tests.
- 2010- 2012      Project: Development of a CO<sub>2</sub> scrubbing system for biogas combustion gases. A system to scrub combustion gases from a gas fired boiler supplied with biogas from a landfill was developed built and commissioned. The system includes heat recovery used to heat irrigation water. The project was eligible for \$200k greenhouse gas reduction subsidy. .
- 2011 - 2012      Project: Collaborative development project for organically certified greenhouse tomato growth media. In collaboration with a media producer an organically certifiable growth media was developed and tested with a production scale experimental design, including a novel substrate oxygenation system. With organically compliant crop management results proved yields equal or superior to conventional hydroponic systems used at Savoura. The project structure was eligible for up to 95% tax credits.

## **2007- 2009**

### **Greenhouse specialist consultant**

#### **Greenhouse Engineering, division of Alex Turkewitsch, P.Eng. Ltd., Toronto, Ontario**

##### *Responsibilities:*

- Present the firms services to potential clients.
- Prepare and negotiate the professional service proposals.
- Planning, designing, specifying and implementing institutional and research greenhouse facilities.

##### *Projects of significance:*

- 2007- 2009      Project: Brooks Crop Diversification Centre South,  
Location: Brooks, Alberta, Canada  
New greenhouse complex of a total area of 57,600 ft<sup>2</sup>. 11 600 ft<sup>2</sup> of research greenhouse up to BL2P+ containment level and 46,000 ft<sup>2</sup> of Venlo glass and polyethylene greenhouses for vegetable crops. Responsible for the design, drawings and specifications for irrigation, ventilation, shading, lighting, air conditioning and heating systems. Developed evaporative cooling equipment for the project. 4 independent irrigation systems for each production zone, to allow replication of the treatments, including drainage collection of excess irrigation water. Greenhouse budget:\$6M. Project objective is to be LEED compliant. (Silver)
- 2008-2009      Project: Kwantlen Polytechnic University, New Greenhouse Project  
Location: Langley, BC, Canada  
New commercial vine crop greenhouse configured for research. 7 600 ft<sup>2</sup> divided into 4 zones. Responsible for the, overall project programming and the design, drawings and specifications for irrigation, ventilation, shading, lighting and heating systems. Greenhouse budget:\$1.3M
- 2008            Project: University of Chicago Growth Room Lighting Retrofit  
Location: Chicago, IL, USA,  
Performance review of existing plant growth rooms. Development of design requirements and specifications required to retrofit 4 rooms with high intensity LED lighting with intensity control for 5 separate wavelengths.
- 2007            Project: Roof top greenhouse addition, The Center for Comparative Functional Genetics,  
Location: New York University, New York, New York.  
Greenhouse specialist consultant or the addition of a rooftop greenhouse on an the 6<sup>th</sup> floor of an existing building. The greenhouse consisted of 3 zones totaling 1,000 square feet, with air conditioning, natural ventilation, high level supplemental light, irrigation, propagation, shade curtain, light mitigation curtains and mobile benching. Responsible for the design, drawings and specifications for irrigation, ventilation, shading, lighting and heating systems.

## **1998 - 2007:**

### **Marketing, Sales, Product Development**

#### **Controlled Environment Limited (Conviron), Winnipeg, Manitoba**

##### *Responsibilities:*

- Assess opportunities for diversification with new technology opportunities.
- Project management (marketing, technical, finance) for product development.
- Identify, meet customers, assess needs and prepare proposals for new research greenhouse projects.
- Sales support, marketing and project management for the greenhouse products.

### *Projects of significance:*

- 2007-2008      Project: Canola Breeding Greenhouse Facility (Private).  
Provision of 2,000 square feet of greenhouses for contained canola breeding. Including air conditioning with ground source heat pumps for heating and cooling. supplemental lighting, back up power, mobile benching and irrigation.  
Responsibilities: Sales, Programming and Project Management
- 2006-2008      Project: Plant Pathology Bio-Safety Level (BL3) laboratory.  
Provision of 1000 square feet of greenhouses for contained plant pathology research. Including air conditioning supplemental lighting, humidification and irrigation.  
Responsibilities: Sales, Programming and Project Management
- 2004-2006      Project: Center for Chemical Ecology, Contained Greenhouses.  
Provision of a 2 zone contained greenhouse for insect pheromone research.. Including air conditioning supplemental lighting, humidification and irrigation.  
Responsibilities: Sales, Programming and Project Management
- 2000-2004      Project: Aurora Greenhouse development project.  
Development of a new research greenhouse product including:  
- detailed market survey of research greenhouse user sites to determine features for a high performance research greenhouse;  
- development of a high performance greenhouse systems including HPS lighting, for supplemental light, DX refrigeration for cooling and dehumidification; a high pressure fog system for humidification, air handling with free cooling, air distribution, radiant heating for snow melt, natural ventilation, and controls, in a modular configuration to facilitate manufacturing and installation.  
- patent applications.  
Responsibilities: Project Management
- 1999            Project: Growth room irrigation system development  
Development of a multi-tier irrigation system for large scale plant growth room production of arabidopsis.  
Responsibilities: Project Management

### **1987 - 1998: Agritechnove, Inc. St-Anselme, Quebec**

#### *Responsibilities:*

- Principal.
- Present the firms services to potential clients.
- Prepare and negotiate the professional service proposals.
- Planning functional and technical requirements of projects.
- Greenhouse systems (heating, lighting, ventilation, irrigation, cropping) design.
- Coordinate and the mechanical, electrical and structural design specialties.

### *Projects of significance:*

- 1994            Project: Centre de Formation e t d' Extension en Foresterie ,  
Location: Causapscal, Québec.  
Job Description: 2 teaching and research zones equipped with radiant heating, natural and forced ventilation, supplemental lighting, shade system, high pressure fog, custom benching and automated motorized boom irrigation.

Responsibilities: Programming, greenhouse and mechanical systems design, specifications, structural and electrical coordination. Non resident construction services.

- 1995      Project: New Plant Science Greenhouse.  
 Location: Macdonald College of McGill University, Ste-Anne-de-Bellevue, Quebec,  
 Job Description: Design of 6,500 ft<sup>2</sup>/ 8 zone, research greenhouse complex. A frame type structure with insulated glass panel glazing, finned tube heating and forced ventilation, with supplementary lighting, shade curtain, drip and mist irrigation and roll top benching.  
 Responsibilities: Programming, greenhouse and mechanical systems design, specifications, structural and electrical coordination. Non resident construction services.
- 1996      Project: University of Minnesota, Greenhouse Consolidation  
 Location: Minneapolis, MN, USA  
 Job Description: Program review of 100,000 ft<sup>2</sup> used by 5 Departments. Preparation of functional and technical requirement for replacement, renovation and consolidation of the facilities. Budget: \$18M.  
 Responsibilities: Meet with users, determine needs, coordinate with architect to prepare the program documents and budget.
- 1997      Project: Seed Potato Laboratory.  
 Location: Setif, Algeria.  
 Job Description: CIDA project. Design, tender and shipment of Canadian sourced research greenhouse complex. 2 zones over 15,000 ft<sup>2</sup> glass structure with radiant heating, forced ventilation, high pressure fog evaporative cooling, supplementary lighting, shade and benching.  
 Responsibilities: Programming, greenhouse and mechanical systems design, specifications, tender review.
- 1997      Project: Agriculture Canada, Saskatoon Research Station Greenhouse Complex  
 Location: Saskatoon, Saskatchewan.  
 Job Description: : Design of 27 zones of research greenhouses with supplemental light, steam fed finned tube radiant heat, automated shade, roll top benching and fan and pad evaporative cooling.  
 Responsibilities: Programming, greenhouse and mechanical systems design, specifications, structural and electrical coordination. Non resident construction services.

## **COMMUNITY SERVICE**

President	MANITOBA MARLINS SWIM CLUB 5 employees, 140 member competitive swim club	2006-08
Admission Examiner	QUEBEC ORDER OF AGRONOMISTS	1992-96
Communication (CTM)	QUEST TOASTMASTERS QUEBEC CITY Vice-President (1988-89), President (1990)	1987-94
Director/Secretary	BOARD OF DIRECTORS GARDERIE LES MAGINOURS Part of a 7 person board of a non profit daycare with an annual budget of \$250,000. Part of the negotiating committee for the first collective bargaining agreement.	1991-92