This project is the development of a Working Prototype for a Sustainable Building, through a five-stage study. The final product of the study is both a building and a process. The objective is an accessible and applicable resource for developers, builders, consumers and multiple levels of government that will:

- demonstrate sustainability concepts and technologies
- develop a repeatable methodology for sustainable building design
- foster local capabilities in sustainable building
- promote development of market driven, cost effective sustainable solutions
- provide a case study for evaluating solutions and recommending improvement

**Project Description**

**Client Industry Canada and GRVD**

**Architect Busby + Associates Architects**

**Mechanical Engineer Keen Engineering Co. Ltd.**

**Structural Engineer Fast & Epp Partners**

**Electrical Engineer Flagel Lewandowski**

**Planner Mark Holland**
SUSTAINABLE PROTOTYPE

Material and Resources
In principle, no construction waste leaves the site, or it is redirected through a recycling process. Considerable time was spent examining the reduction or elimination of the "operational" waste stream to landfill, through composting, recycling and redirecting inorganic waste to create a new resource. Building reuse or adaptability is critical - what may start off as housing may become offices and daycares, in time reverting back to housing. The building is comprised of a few permanent elements with a number of flexible zones to allow for future modification. As part of the study, materials were researched and rated as to environmental impact during production / installation, lifespan, social / community benefit, ability to be recycled or reused, associated costs, initial capital costs and replacement cost. Types and availability of local / regional materials - maximizing recycled and minimizing virgin products - could influence the nature of the "solid construction", infill zones and "transparent construction".

Indoor Environmental Quality
The final study will monitor the projects adherence to its intention. Personal control of systems is central to energy efficiency and to perceived / real comfort. Comfort is a relative term and all thermal requirements should be challenged to reduce energy consumption - wear a sweater, open a window. Numerous systems are being considered to control the rate of air transfers. Materials were researched and rated as to their environmental impact, particularly in the reduction of VOC's and offgassing of materials during both production and installation.

BUSBY + ASSOCIATES ARCHITECTS