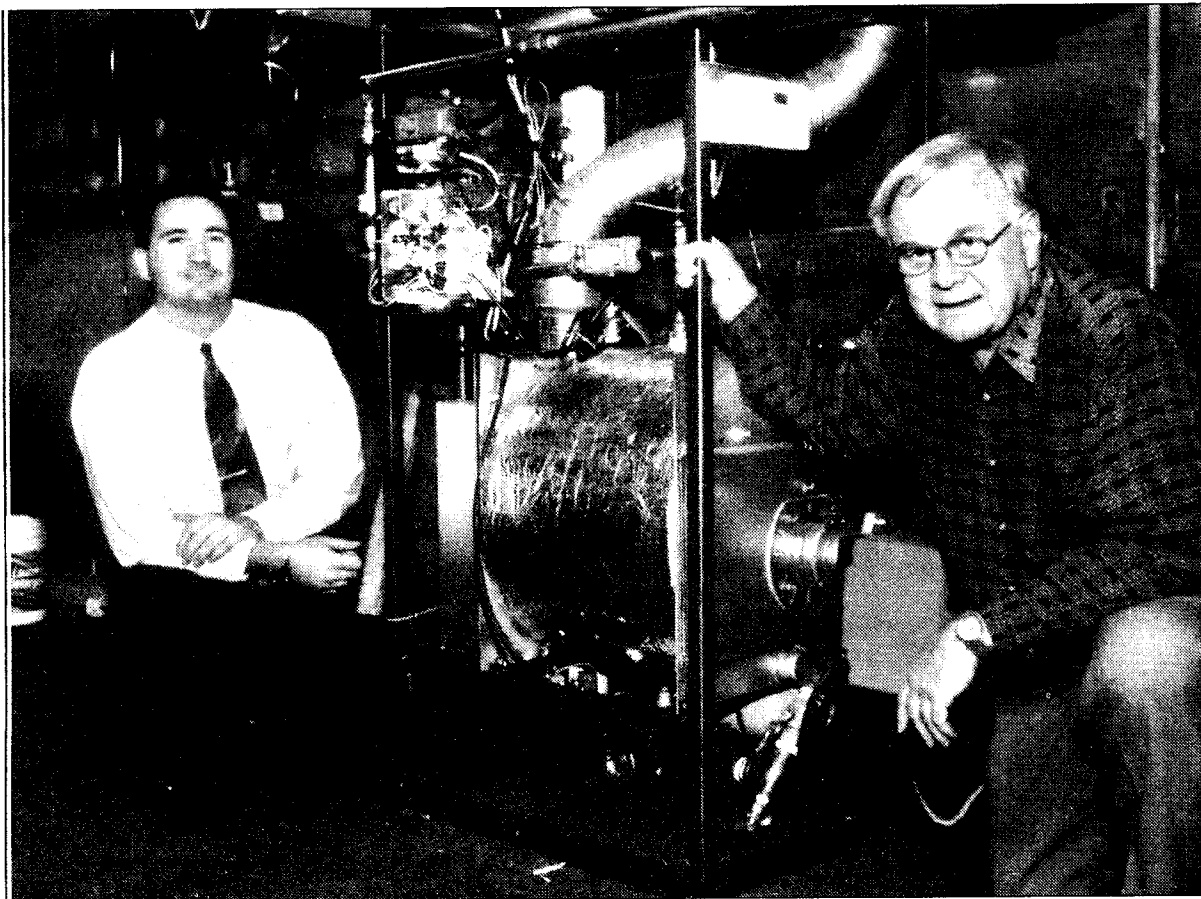


## INNOVATIONS



CHRIS MILLS PHOTO

**READY FOR BUSINESS:** Mark Offenhammer, president of the family-owned Fleetline, and Harry West unveil new age furnace system recently.

# Prototype AIMS at Canadian winters

## Product links water heater, furnace and heat ventilator

BY CHRIS MILLS  
SPECIAL TO THE STAR

Without fanfare, or even a bottle of champagne, manufacturers unveiled the first prototype of the Advanced Integrated Mechanical Systems (AIMS) project on a workshop floor in Brantford recently.

The first product to integrate a hot water heater, a furnace and a heat recovery ventilator combines the best in technology to provide what could be called a Canadian answer to indoor climate control.

"These are Canadian manufacturers who have

come up with something innovative to address the specific needs of the Canadian climate," says AIMS project leader Jamie Glouchkow, an engineer with the Building Group Branch of the CANMET Energy Technology Centre (CETC) in Ottawa.

AIMS was announced one year ago as a federal initiative to provide Canadian manufacturers funding and guidance to develop and produce a combined system for homes and apartments. A portion of the money comes from the Climate Change Action Fund, which is part of the Canadian effort for the Kyoto Protocol (the 1997 agreement in Japan to reduce worldwide greenhouse gas emissions).

In addition to AIMS guidelines to cut emissions by roughly 25 per cent, the government is working with organizations like the HRAI (Heating, Refrigeration and Air Conditioning Institute of Canada), utilities and myriad government agencies to establish installation procedures training protocols and efficiency targets.

Since then, six teams of manufacturers from across Canada have been working quietly to develop products that will dramatically cut emissions, increase fuel and electrical efficiency, and then reach the market quickly and at an attractively affordable price. Independent lab tests, controlled tests at the Canadian Centre for Housing Technology on the National Research Council's campus in Ottawa and field tests in homes will all take place over the next 18 months.

The government's funding of \$3.6 million is only a portion of the total coming from the manufacturers, their partners and stakeholders like the utilities. However, the manufacturers are attacking the project with their sights on the bigger picture. What they're developing will be utterly unique in the world. For instance, Japan has an integrated unit built around a heat pump, but it hasn't sufficient capacity for the Canadian climate.

"It's really interesting because some of the project teams are made up of a number of manufacturers with expertise in each area, while others are saying I'm going to develop all the expertise in-house," says Glouchkow.

The prototype unveiled at Fleetline Products Ltd. in Brantford combines the technology of Fleetline boilers, air handler technology with heat recovery from Nutech Energy Systems Inc. of London, Ont., cabinetry from Vebeck Research of Markham, and computer components by Etratech in Burlington.

The unit they've constructed features components like variable-speed ECMs (electronically commutated motors), which are

the most efficient available, for blowers, and a water pump designed in California. They've also patented their own version of an adapted German heat exchanger system which shrinks the hot water component from the 40-gallon version in your basement (technology that hasn't changed in 40 years) to an elaborate 4½-foot by 1¼-inch copper pipe (only in Canada, you say?).

The heart of the system is the computer, which marries each component together so that they serve the needs of the home. When hot water is needed, when warm air is needed and when fresh air is needed, the system must work seamlessly and instantly.

"But that's only one system," says Glouchkow.

"The other groups are employing their expertise and technologies to come up with their version."

Kerr Heating Products and NuAir Ventilation Systems Inc. are each developing AIMS products in Nova Scotia, while Ecologix in Kitchener and Tirino in Brampton are working individually.

**'Developing a product like this is not even half the battle'**

Some of the components they're employing, however, are expensive right now. Increased production can reduce these costs. The project mandate is to reduce the total system price for the new homebuilder or furnace repairman to somewhere in the neighbourhood of \$3,000 to \$4,000 installed. Compared to traditional equipment AIMS uses less floor space, require fewer burners and blower, and will take less time to install. These are factors in reducing the installed price for Canadians.

However, "developing a product like this is not even half the battle," says Mark Offenhammer, president of the family-owned Fleetline. "Marketing it, getting acceptance, and getting the understanding (in the home building, repair and renovating market) is basically coming from the manufacturer down."

Projection studies indicate that integrated systems may capture 55 per cent of the residential market by 2020. In the first six years alone, they forecast 43,000 new and existing homes and apartments will have them, growing by close to 200,000 every five years after that.

Perhaps that explains the excitement of the Ontario consortium at the unveiling of the first prototype. Market potential that size can handle any number of versions, plus something this technologically innovative will have markets around the world.