

Combo mechanical systems - AIMS

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Over the years we have worked on perfecting each piece of our house. We have gotten the walls and windows pretty good, and have a lot of good mechanical devices as well, but several years ago Natural Resources Canada decided to help several manufacturers to get together and see if they could not begin to combine the mechanical systems in an effort to get more energy efficiency out of the sum total of them. So the Advanced Integrated Mechanical System (AIMS) project was developed. Now several companies are finally putting their first AIMS products on the market. We took a look at one from Vebteck Research (905-479-4048). For more information about the whole AIMS program and all the participants and upcoming products, contact info@ekocomfort.com. The one we looked at has a gas burner, but it could have been made for oil. It shot flames into a sort of boiler that has a very small integrated storage tank. If you wanted to have hot water radiant heating, the water would run directly out of this boiler. The two vertical insulated pipes in the corner is all there is for the domestic hot water, no tank at all. It is an instantaneous hot water system with no storage and no stand-by losses. However, by integrating all the systems together, if you need hot water for a shower, the on board computer shifts all the energy over to the shower and lets the radiant heating slide for a few minutes. This ability to prioritise what needs energy allows for the sum total of the systems to be quite smaller than if each function had the total necessary capacity in stand-by mode. In the top there is the air handler. If you are using forced hot air to heat the house, the radiator on the end will heat this air with the hot water from the boiler below -- or the air conditioner will be connected to the same radiator. Only one fan operates both the furnace and the Heat Recovery Ventilator, which is integrated right into the top of the machine. All the integration, reduction of duplication and prioritisation of needs allows for a 30% savings in electrical energy over a set of equivalent individual systems, a super efficient use of gas or oil for a total of 13 to 20% total energy savings. Plus all of this takes up much less space in the basement. In not too many years Combo mechanical systems will be the norm.

Keywords:

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