Old-fashioned clean living

Architect brought healthy-house ideas to Paul King's dream of re-creating a treasured past

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All Paul King wanted was an old-fashioned house where the fresh air would come in through an open window instead of being brought in through some mechanical device.

The Montreal businessman never forgot his grandfather's farmhouse in Prince Edward Island, where he used to spend his summers as a child, and he made up his mind to have a house like that one day.

King's dream came true in a house designed by Maryse Leduc-Cummings, a Montreal architect whose specialty is energy-efficient, healthy living spaces. Set on his country property near Lake Memphremagog, the 3-year-old house was built following the standard construction principles of King's 160-year-old inspiration, but is very much a house of today.

"I didn't want any newfangled high-tech stuff. I wanted a house that went back to the basic ideas of construction," King said. He didn't want super-insulated windows, a mechanical ventilation system or forced-air heating. He had never considered himself a healthy-house enthusiast but after meeting Leduc-Cummings at her booth in a local home show, he was won over by her approach.

"When she explained her work to me, everything made sense; I made the connection between what I wanted and her philosophy about housing," he said. Now that he had found someone who understood what he didn't want and was actually implementing these ideas, King was hooked, and the two began the process of planning and building his house.

LOW-TECH DESIGN

Leduc-Cummings didn't find King's low-tech wish list eccentric, and as designs were being drawn up she encouraged him to take another leap and go for a completely ecologically correct house.

"Houses are not machines; they have a life of their own. But today most of them depend on a series of mechanical systems to bring in air for heating and cooling," she said.

Her client was open to the idea of using natural materials throughout, allowing the house to breathe instead of suffocating it with chemical-based plastics. The architect contends that the process of sealing a house to make it energy-efficient is a catch-22.

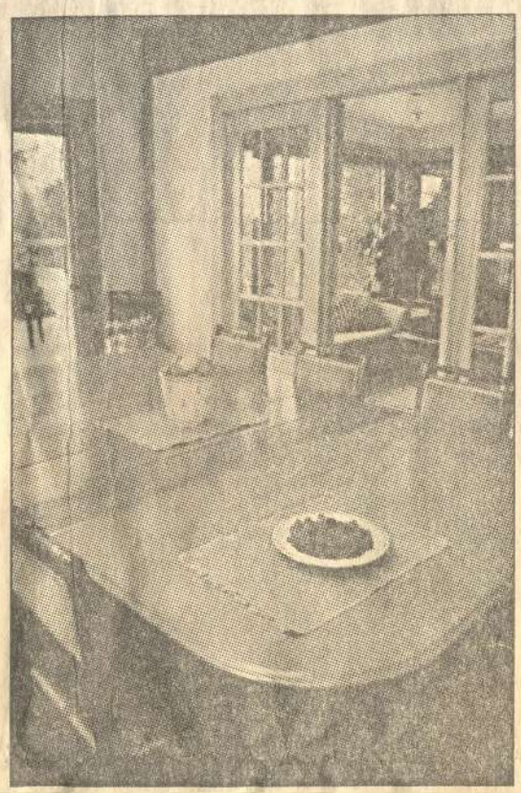
PHOTOS, PERRY BEATON

Paul King and his wood-burning heat source.

"An over-insulated house is often airtight, which creates a problem bringing fresh air inside without the use of a mechanical system. Your health depends on so many machines, which can break down," she said, adding that it is less complex going completely green.

A strong advocate of wood instead of chemical-based imitations, Leduc-Cummings prescribed cedar, stained blue, for the cladding, pine for windows, birch for floors and hemlock for the framework. She avoided using conventional plywood for the sub-flooring, choosing 6-inch spruce planks.

"I wanted to have exposed beams and probably would have saved money by using composite wood beams made from chips and glue, but Maryse convinced me red B.C. fir was healthier and would probably last longer," King said. Even the organic-based insulation and vapour barrier, made of kraft paper, are on the side of health.



When solarium doors (at right) are opened, captured heat energy warms the house.

King's desire to not have any type of forced-air heating wasn't a problem for the architect, who has used a wood-burning masonry heater/fireplace in many of the homes she has designed.

"It's a type of heating that's popular in Europe, and the top of the fireplace is usually reserved for the oldest member of the family as a warm sleeping area," she said.

The house is designed around the fireplace, which is built on the site and requires a lot of open space to allow heat to flow freely. The zooming brick structure is an efficient heating source: just one fire a day will heat the two levels of King's 2,400 square-foot house. The energy from one hot fire (which usually burns for about two hours) is stored in the masonry, then slowly released over 24 hours. The large surface area never gets too hot to touch. The system produces a comfort level unlike other forced-air systems, Leduc-Cummings said, using about $600 worth of wood a year.

"It is also a very clean system; there is no accumulation of dust and bacteria to worry about or to clean," Leduc-Cummings said.

King has also installed a backup heating system, consisting of an oil furnace and water radiators, that kicks in when he is not around to fire up the masonry heater.

NO SUPER-INSULATED WINDOWS

Unlike most advocates of energy-efficiency, Leduc-Cummings doesn't subscribe to using super-insulated windows throughout the house, and King couldn't be happier, considering what he learned from her.

"Those windows affect the total spectrum of light and will eventually kill any plants that rely on them as a source of sun, and they are not healthy for anyone suffering from depression who needs the full range of light to help their disposition," she said.

King's solarium and all the rooms facing east and south use only ordinary glass, but the north windows on the sunless side of the house use low-insulated windows.

The solarium is part of the house's natural system of energy-efficiency

"Our winters might be cold but we have lots of sun that's free and healthy, so we might as well take advantage of it," Leduc-Cummings said.

The solarium is made entirely of glass with a door that separates it from the living room. During the day, when the sun is at its brightest, the doors remain closed to allow the heat to accumulate in the solarium. When night falls, the doors are opened to let the heat into the living room.

"It's not just about saving energy and not relying on technology; it's the quality of life you get from a non-artificial environment," the healthy architect said.

The house is still a work in progress. King moved in when the shell and heating system were completed and planned to finish the interior when time and budget permitted.

"There weren't any (interior) walls, and I had to put up tarpaulins so anyone using the bathroom could get some privacy," he said. The kitchen is yet to be finished, and King is wondering how he will eventually decorate.

In the meantime, he says, "I can sit in my solarium, basking in the sun and knowing that I am getting the full impact of the sun."