

Natural Architect

Some might say Linda Chapman is ahead of the curve BY TERRY TINKESS



here's a saying that if you find a job you love, you will never work a day in your life. Talk with architect Linda Chapman and you're left with the impression she hasn't worked in a while.

Chapman, a member of the Ottawa-Carleton Home Builders' Association (OCHBA), says buildings have fascinated her since she was a child. "In high school I knew I wanted to be an architect, probably because I was interested in buildings and space," says Chapman. "When I was quite young I liked old buildings very much. I liked the detail and character, the enormous baseboards that are 18" high and such. That's what drew me to it, that and the fact that the new buildings I saw going up really weren't very interesting. Besides, I was always good in math and art." A Toronto native, Chapman logically began her career in the Golden Horseshoe. Around 1990 when the economy took a downturn, she chose to look on the situation as an opportunity. It was a decision that has served to guide her career. "I was out of work, and decided that I should take advantage of the situation to try and learn some different things," says Chapman. "I went down to the States to take some courses on permaculture, which is all about things like organic gardening and sustainable land design. I met some architects who were doing wacky, hippy architecture stuff as part of their environmental thing."

At one point Chapman ended up in Colorado as part of a straw bale wall-rais-



Making use of natural lighting is a key component in building an energy-efficient home. Linda Chapman has taken advantage of not only a beautiful view but the sun's rays, as evident in this Aylmer, Quebec home she designed.



ing for a farm building. It marked the beginning of a long and happy relationship with the natural building material that continues even today.

"I thought it was the neatest thing I had ever seen," says Chapman. "Here was a renewable resource, and you don't have to cut down trees, it has a phenomenal R factor, it's non-toxic, annually renewable and many farmers were just burning them in their fields. It was just an incredible building material. I wondered why we hadn't thought of this

before?" Pioneers in Canada and the US had actually built with straw bales, but as other materials became available, its use died off.

Chapman saw a future for straw bale construction, but not until some Canadian testing had been done. "I applied to CMHC for some grants to do thermal and structural testing on them. I got the grants and produced several reports that are now in the CMHC library on moisture, on the structure, the thermal value, things like that."

Her efforts were aided by testing that had been done in the US. "There was fire testing according to the ASTM E119 standard, it's a two-hour fire rating. A lot of those tests are accepted in Canada, so I was able to bring all of these tests, some that I had done and some that others had done, and get my building permit."

She was pleasantly surprised that her efforts in regard to straw bale housing began to pay off once the economy rebounded. "It kept me occupied while I was unemployed, but then the econ-

omy started to pick up, and I started to get paid commissions and some of them were straw bale." Some of the homes that Chapman has designed, from around 1994 have even been captured in book form.

Chapman has found a niche in straw bale housing, but also has more than a passing interest other kinds of architecture that share a similar philosophy. "I am really interested in architecture that improves the planet, and figuring out

Technology is advancing, and public knowledge is advancing, so many of these "strange" ideas are becoming mainstream

what we can do to reduce our footprint, to reduce the burdens that we place on natural systems. Straw bale is one method, but there are certainly others as well.

"For city houses I'm doing insulated concrete forms and structurally insulated panels that have fabulous insulation and detailing. It's a little more palatable to the urban market."

Chapman says interest in building green is greater than ever before. There are two interrelated reasons for this: green materials and building practices are becoming mainstream, and because of this, costs are dropping.

"Environmental stuff is certainly, in terms of interior finishes, not necessarily more expensive," says Chapman. "More and more people are specifying them and there is also a lot more competition. Cork flooring is a good example. Ten years ago there were one or two suppliers. Now there are about 20. There are certain levels of green and I always encourage my clients to do what they can within their budget. Not everyone can afford a geothermal heat pump, or thousands of dollars of photovoltaics on the roof, but almost everyone can afford extra insulation in their attic or the walls, for peanuts. And that has a real fast pay-back over two or three years. We have to approach things on different levels."

Chapman says the public is starting to embrace many new ideas and draw them

into the mainstream. For example, people are using tertiary waste systems that take up less space, like the Waterloo Bio-filter, the Eco-Flo and the Clearstream.

"Look at low-flow toilets. Ten years ago you couldn't get anyone to use them and now the building code says we have to. And the latest, the duo-flush, is even better. Technology is advancing, and public knowledge is advancing and many of these "strange" ideas are becoming mainstream. Others, like structurally insulated panels (SIPs) provide for a much better wall system than our traditional stick frame and batts."

Chapman says it is as important for lending institutions to acknowledge the long-term wisdom in going green. She is confident that it is only a matter of time for this to occur, and expects that "green" mortgages will be available in the near future.

"We really don't have to make the building envelopes that much better, but it is going to cost more," says Chapman. "There has to be some re-evaluation from the financing sector that the increased mortgage is really covering reduced operating costs for the next 100 years. There has to be some give and take in that regard. We can't rely on government grants for everything."

Chapman still has a few things she would like to work on. She is very interested in CMHC's EQUilibrium Home program, and a number of houses she has designed have come very, very close to that standard.

"I have done a couple straw bale homes that are net-zero, totally off the grid, are heated with woodstoves or masonry heaters and a little bit of supplementary photo-voltaic panels," says Chapman.

"They are quite small and out in the country, but what I would really like to do is to build in an urban setting. If we are ever going to meet our Kyoto targets, we have to start building that way."



Linda Chapman has found a niche market with her expertise in straw bale design. The Warburton home, located north of Toronto, shows her desire to make a house much more than a box.

She doesn't live in a straw bale home at the moment, but Chapman tries to practice what she preaches. Divorced, but currently enjoying life with a "wonderful" man, she lives in the picturesque village of Chelsea, Quebec, just across the river from Ottawa. (Chapman describes it as the "green" side of the Ottawa River.)

Her home is energy-efficient and heated by a geothermal heat pump.

"The architect's dream of designing and building her own house has yet to be realized," says Chapman, "although I have renovated quite a few that I have owned over the years. Dreaming about that perfect house gives me something to keep on working towards!"

For a person who puts so much into her work, coming home to Chelsea is the perfect way to unwind. "We live on the idyllic Gatineau River and enjoy cycling, kayaking and cross-country skiing right from our back door," says Chapman. "I've been too busy creating cool green buildings to create children, but a few cousins and a niece manage to claim some of my free time as well."

Chapman is proud to be a driving force behind the OCHBA Green Home Building Committee. She was the group's inaugural Chair, and now serves as the past Chair, assisting where and when needed. She says the committee has accomplished much in just over a year.

"November is Green Home Building month, and we have a "Green" speaker for the monthly dinner meeting. This year it will be all about

the EnergyStar program and getting the builders up to speed with that. We also have a rotating display of EnergyStar builders that we take to several different fairs.

"We've got a 'green' award instituted within the OCHBA awards and we are also trying to work on some type of rating system acceptable by the industry instead of being imposed from outside. It would be something like LEED for houses, but I think that is so complicated the builders are just going to fight it. There are more simple methods of achieving it."

Chapman says that while EnergyStar was a good beginning for green home building, there is other things can be considered moving forward.

"There are things other than energy that we can quantify when we are deciding a house is green," says Chapman. "Energy is one of them, but there are also factors such as the materials you use, how far did they have to travel to get to the site, the energy process that is used to make them. That is the next thing we are talking about and thinking about; ways that builders can distinguish themselves and promote green in the industry."

Chapman's ultimate goal is for the products and techniques promoted by the Green Building Committee to become so well accepted and "mainstream" that the committee no longer needs to exist. This, of course, would give her time to discover and explore other ideas that have been overlooked. "Construction is not cheap, and people need to get the best bang for their buck so I try to think of how we construct and the technologies we use," says Chapman.

Sometimes that means heading into the future with an old idea whose time has come again.

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5 ideas to build (and live) by

- 1** Don't be restricted by convention. Just because it hasn't been done before doesn't mean it can't be done.
- 2** Allow yourself options. There isn't one perfect choice for every situation.
- 3** Encourage people (builders, clients) to do what they can. Everyone can have a more sustainable home even if state-of-the-art technology is out of their range.
- 4** Spend your money where it will provide the greatest benefit. In designing a home, for example, basements are expensive to build and maintain, and then we don't use them.
- 5** If you find you have a limited budget, build smaller, but build better.

