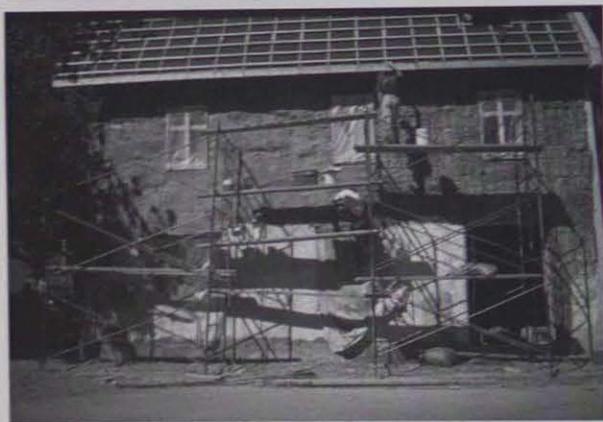


## The Straw-bale House

Andrea Merrett



TUCKED AWAY ON rue Lartigue, a cul-de-sac which mostly acts as a back alley, is a small house that challenges the possibilities for infill housing in Montreal. The small, green, stucco building appears incongruous in a neighborhood built mostly of brick, but with its thick walls and modest windows, it reflects a traditional form of housing found in historic neighborhoods of the city. What is significant about this house is that it is built of straw.

All references to the little pigs aside, straw is an excellent building material. It is inexpensive, readily available, non-toxic, relatively easy to manipulate, a good insulator, and is a renewable resource. It can be used structurally, with post-and-beam construction, or with a wood-frame structure. A byproduct of grain production, straw is burned by the ton as waste material. The U.S. Department of Agriculture estimates that there is enough straw harvested annually in the States to build as many as four million 2000 square-foot homes each year. Although the cost of building in straw is often equivalent to a conventional wood-frame house, straw walls provide such good insulation (an R-value up to R-50), and can last for such a long time with minimal maintenance that the long-term savings are significant. What is more, the decision to build with a material that is renewable and does not need to be transported long distances acknowledges that homebuilders are starting to examine the impact that construction has on the environment. All these things considered, it is no wonder that building with straw is becoming more and more popular.

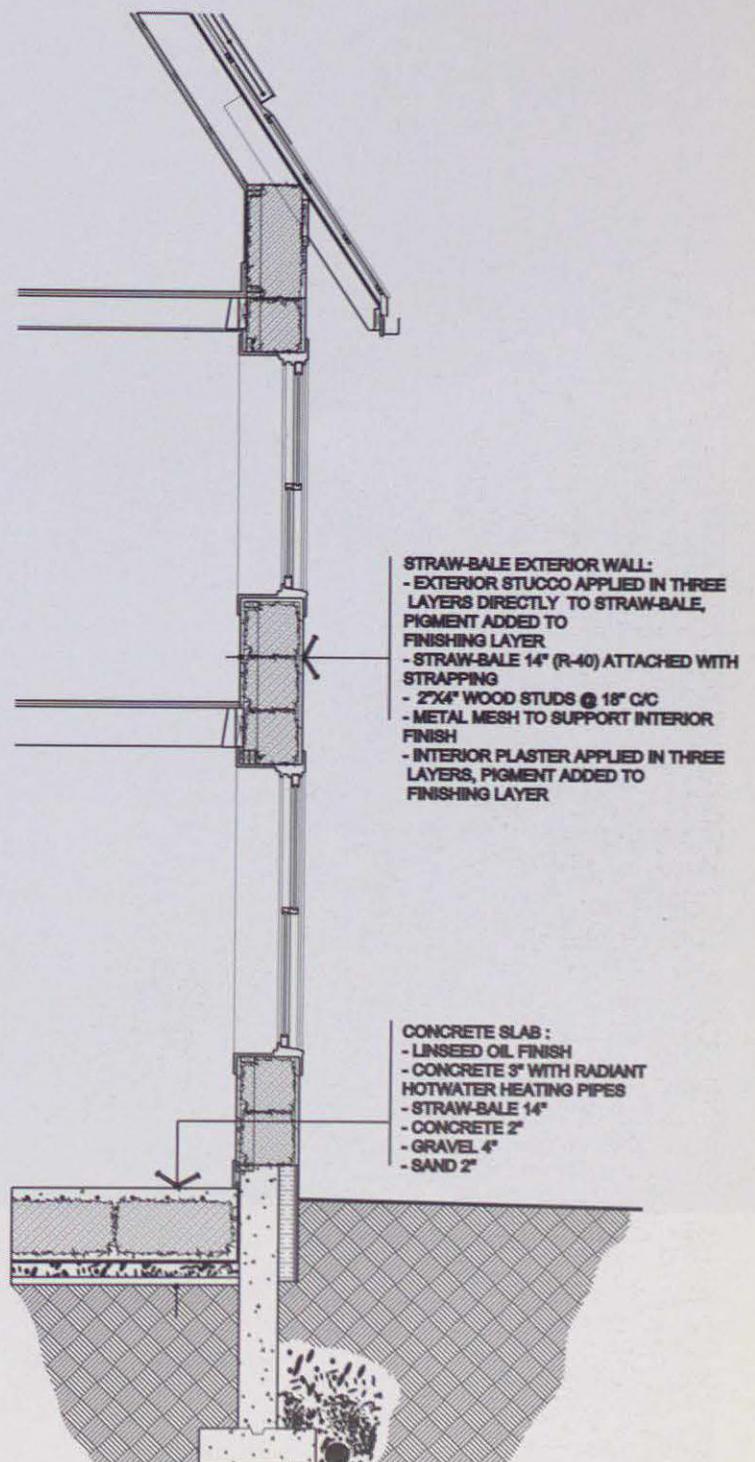
In the province of Quebec there are several examples of straw-bale construction, but the house on rue Lartigue is the first project built in an urban context. The house is a two and a half storey single family home built by architect and McGill professor Julia Bourke for her family. The structure is wood frame with studs spaced to accommodate the size of the bales. The straw makes up the bulk of the wall, with stucco applied directly on the outside and plaster on the inside. The roof has large overhangs to protect the walls from water damage and is designed for optimal sun exposure. Initially the intention was to include solar panels on the roof, but these were cut from the plans for budget reasons; however, they may be added at a later date.

Not only do the thick, straw-bale walls offer a high insulation value, they also provide thermal mass that helps regulate temperature fluctuation between

day and night. The ground floor is a heated concrete slab which allows the interior temperature to be kept lower without compromising the comfort of the inhabitants. Throughout the design and construction process decisions were carefully considered for both affordability and environmental impact.

A significant factor in the price of a house is the cost of the land. The straw-bale house is built on a 35 x 50ft lot. The original lot was 50 x 106ft and spanned from rue Panet to rue Lartigue, with a house built on rue Panet. Building on a small lot reduces the overall cost of the project, and contributes to the densification of the neighborhood. Urban densification helps counteract sprawl, which so many North American cities are trying to curtail. The Centre-Sud district of Montreal, where the house is located, would benefit from more infill projects since much land has been left vacant after decades of fires which have left holes in the original urban fabric.

The house on rue Lartigue demonstrates an innovative approach to new residential construction in the city. As it becomes evident that we must evaluate the impact our actions have on our environment, straw-bale construction provides an appealing alternative for home builders.



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