

technology is available now. Furthermore, it appears that substantial energy savings can be achieved within a reasonable payback period for the added investment. If all of these conclusions are correct — and we have no reason to believe that they are not — then why is such housing not being constructed on a much broader scale in Canada today? Several Committee witnesses described barriers to the construction of energy-efficient housing and certain factors were identified time and time again. The proposed energy conservation study will perhaps identify other obstacles which are not now apparent.

Economics play a very large role in determining the adoption of energy-conserving construction practices and the inclusion of passive solar features. The initial capital investment can be justified by savings in energy costs over time; however, the consumer faces the problem that the return on his investment may not be realized for as much as 10 or 15 years. Certainly the current high rates of interest for loans and mortgages deter many would-be "conservers" from making such an investment. Moreover, the uncertainty of future energy prices clouds the issue of the length of the payback period.

A person's eligibility for a mortgage is based on a calculation of the proportion of his or her monthly salary available to make payments. With an energy-efficient house and the resultant lower energy costs, a person would have more money available each month — perhaps enough to cover the increased mortgage charges occasioned by adding the cost of the conservation measures to the mortgage. This suggests that the method of calculating mortgage limits should be changed to take energy saving into account. This would seem to be a particularly appropriate measure for the Canada Mortgage and Housing Corporation (CMHC) to consider when funding non-profit housing.

## CONCLUSION

**Federally-financed housing provides an excellent opportunity for the Government to demonstrate the benefits of conservation and passive solar design.**

## RECOMMENDATION

**The Committee urges that Federally-financed housing incorporate energy-conserving and passive solar design in order to demonstrate its benefits.**

In this regard, the Committee welcomes the announcement in the 1980 National Energy Program of

a \$6 million measure to promote energy-efficient housing through workshops, training programs, and the design and construction of 1,000 energy-conserving homes across Canada. If this program were extended to social housing, it would provide the added benefit of shielding those in need of such homes from increasing energy costs.

The NEP initiative provides a chance to gain much-needed practical experience in the operation of passive solar heating systems. Such systems are by no means simple and there is a complex relationship between energy collection, storage and conservation in these buildings. Unless these elements are properly balanced, a passive solar house can be a very uncomfortable place to live in.

Another barrier to the widespread use of energy conservation measures and passive solar systems is the lack of suitable building standards. In October 1980 the ten provincial Energy Ministers called on the Federal Government for improvements in the National Building Code (NBC) to ensure that energy conservation features were included. This call for action followed the publication of a set of building standards known as *Measures for Energy Conservation in New Buildings* (1978). As with the NBC however, adoption of these measures by the provinces is voluntary and, as of the end of 1980, not one province had adopted the new standards. The Division of Building Research at the National Research Council carried out a study to determine why none of the measures has been adopted and the major reason was found to be the lack of inspectors qualified to oversee the new measures. The cost involved in retraining building inspectors would have to be borne by the provinces and this illustrates the type of jurisdictional problem facing the Federal Government in its attempts to promote energy conservation through the building code.

Several witnesses suggested to the Committee that the Federal Government ought to develop a new building code based on energy performance standards. They believe that such standards are an important signal to the construction industry and to consumers that conservation is an important priority with the Government. The Division of Building Research (DBR) is in fact developing guidelines for energy budgets in four types of buildings: office buildings, shopping centres and retail stores, apartment buildings, and schools. DBR hopes to publish these guidelines in 1983 as a first step towards a comprehensive set of building energy performance standards. As the standards develop, DBR is also assessing how compliance with the guidelines can be assured as this is seen as one of the main problem areas. All levels of government will have to work together if progress is to be made.