

PART V REPORT

CMHC File No. 176-4-28

THE IMPLICATIONS OF ENERGY RETROFIT
ON
MUNICIPAL BY-LAWS

Prepared for
The Technical Research Division
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of
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EXECUTIVE SUMMARY

There is an impending boom in the home energy retrofit market. Driven by recently-announced higher energy prices, encouraged by information programs and assisted by government grant programs (eg. CHIP, COSP, etc), many householders are now contemplating and undertaking major retrofits of their houses and heating equipment in order to cut energy bills.

However, concerns have been raised that, as householders move beyond the "first generation" of home retrofit activities (ie. insulation, weather-stripping, caulking, storm windows and doors) into more extensive ("second generation") retrofit and renovation measures such as:

- | | |
|--------------------------|--------------------|
| - exterior double walls | - solaria |
| - greenhouses | - enclosed porches |
| - solar panels | - wood stoves |
| - window reorientation | - heat pumps |
| - new efficient furnaces | - trombe walls, |

these measures may inadvertently come into conflict with existing municipal by-laws and regulations governing such areas as:

- | | |
|-------------------------|----------------------------------|
| - lot line restrictions | - property maintenance standards |
| - setback allowances | - zoning regulations |
| - height restrictions | - heritage value |
| - building codes | - neighborhood preservation |
| - air quality standards | - noise levels |
| - assessment values | |

It was the purpose of this study to assess for CMHC the existence and extent of such conflicts and to recommend further work if justified.

A detailed questionnaire was developed, with municipal input, and mailed to 153 municipalities (over 50,000 population) and 48 specific individuals. A response rate of 33% was achieved, from jurisdictions containing 25% of the total Canadian population.

The analysis of the data allowed the consultants to draw conclusions concerning:

- the current status of upgrading: mostly first generation retrofit to date.
- conflicts to date: a significant number given the relatively low level of second generation retrofit
- potential conflicts: a substantial potential for conflict in four areas:
 - zoning by-laws
 - building codes
 - property tax assessments
 - other, such as heritage preservation and property standards and maintenance

- methods of conflict resolution: four mechanisms are used:
 - modify the plan
 - special approval of variances
 - exemptions or modifications to by-laws
 - property assesement modifications

The overall conclusion is that municipal by-laws are not currently a major barrier to energy retrofitting activities, primarily because these activities are still in the early stages. However, as upgrading advances, the actual number of conflicts is likely to increase dramatically and pose a significant disincentive - unless corrective action is taken. By recognizing the potential for conflicts now and beginning to remove the obstacles, the problem can be greatly reduced and the time required for Canada to achieve an efficient building stock will be shortened.

Recommendations for further work include:

- complementary surveys of householders and builders/renovators
- preparation of model by-laws
- training materials for property standards officers and building inspectors
- establishment of a municipal energy clearinghouse
- establishment of Home Retrofit Assistance Centers

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1. BACKGROUND AND PURPOSE OF THE STUDY

Municipalities adopt by-laws to protect the comfort and safety of their citizens. These by-laws have many different objectives, including protecting privacy, maintaining a pleasant visual environment and prohibiting pollution. These by-laws almost always provide prescriptive, standards, rather than performance standards. For example, in the case of protecting privacy they may specify minimum distances between dwellings. Although providing such a 'rule-of-thumb' makes it easier for most builders and others than would requiring them to define privacy and then build accordingly in each case, specifying prescriptive standards makes the by-law unadaptive to differences among sites where the law is applied and to changes in conditions such as new technology.

The energy field is one in which conditions have been changing rapidly over the last decade. Energy costs are rising and the technologies for meeting the energy needs of buildings are changing; solar heating, heat pumps and wood stoves are all much more popular than they were a decade ago.

This study was commissioned by the Canada Mortgage and Housing Corporation to examine whether the new energy conditions are creating conflicts between the plans of builders or renovators and homeowners to upgrade the thermal performance of their buildings, and the provisions of municipal by-laws. Where conflicts have arisen, this study examines how they were resolved. Finally, it is concerned with the potential for these conflicts to develop and be resolved.

2. SCOPE

The scope of this study is limited in the following ways:

- it is restricted to a consideration of energy use by existing buildings.
- the conclusions are drawn primarily from information provided in a mail survey by municipal officials (41), provincial officials (3) and others including renovators and public interest groups (5).
- the time and budget constraints on the project required use of an untested questionnaire and only allowed the larger communities to be requested to respond.

3. METHODOLOGY

Information on by-laws, codes and regulations affecting retrofitting activity was gathered through a mail survey. This method was the least-cost mechanism for gaining input from many persons across the country. Questionnaires were sent to all 153 municipalities across Canada with a population of 50,000 or more, as indicated in the Municipal Directory of the Federation of Canadian Municipalities. Advice was sought from FCM and the senior property standards officer for the City of Ottawa regarding the appropriate title of the person to whom the questionnaire should be addressed in each province. In addition, copies of the questionnaire were sent to a supplemental list of 48 specific individuals in municipal and provincial governments, public interest groups and building/renovating firms. (See Appendix B.)

A questionnaire was prepared after preliminary discussions with officials from the Cities of Toronto and Ottawa. Copies of both the English and French questionnaires and covering letters are included in Appendix C.

Responses were accepted until November 9, 1981 and useable responses were received from 45 municipal officials in 43 cities, three provincial government officials and five others. In addition, six responses were received from second tier municipal officials and one from a provincial official indicating that the questionnaire was not relevant to their level of government. Given that there was some duplication in the lists, the overall response rate of 33 percent is quite respectable for a lengthy questionnaire and a short response time. The administrative areas from which responses were received contain 25% of the total Canadian population.

4. BUILDINGS AND ENERGY USE

Buildings are the most durable energy using equipment. Although automobiles and appliances may operate for ten to twenty years, the life expectancy of a house is 60 years. In addition to being durable, buildings are relatively energy-intensive. It is estimated the 40 percent of all energy use in Canada is for buildings.

Many of the inefficient buildings standing today will be in use for many more years. It would be too expensive to replace them just because they are energy 'sieves'. In addition, many of these buildings have other values which will save them from demolition. There is a considerable amount of capital energy tied up in them, i.e., energy required to harvest and process the trees into timber, and manufacture the bricks, concrete and other components. The buildings may have value to some persons solely by virtue of their age, possibly because they have lived there a long time, because the buildings are historically significant or for other reasons.

Rising energy prices mean that although it may be too expensive to replace these buildings, it may also be too expensive to operate them as they are; there is likely to be considerable effort to upgrade their thermal performance.

Upgrading the thermal performance of buildings can take several forms. The simplest, most common and cheapest measures are housekeeping measures such as weather-stripping, night-setbacks of thermostats, closing drapes on winter nights and improving furnace-maintenance. Next are what have been termed first generation retrofits: attic insulation, storm windows and doors, hot water tank blankets and other measures which cause little or no change in the building structure. Finally are the second generation retrofits: additions of greenhouses or solariums, exterior insulation, solar panels, wood stoves, heat pumps or trombe walls, for example. The possibility of conflicting with by-laws increases as upgrading moves from housekeeping to second generation retrofits because changes to the building become more extensive.

5. CURRENT STATUS OF UPGRADING

It is difficult to estimate the extent of upgrading that has already occurred. Many improvements of a building require no permits or other documentation and there is no record made of these improvements. Recognizing this constraint, questionnaire recipients were requested to estimate the extent of first and second generation retrofitting activities in their communities. These estimates are presented in Tables 1 and 2. Assuming the actual extent of retrofitting within each range averages to the mid-point of the range, roughly 45 percent of all homes in respondents' areas have undergone first generation retrofits and about ten percent have undergone second generation retrofits.

Many respondents indicated that most second generation retrofitting activity is the installation of wood stove heating equipment. In 1979, Statistics Canada reported that 8.9 percent of all households used wood as a principal or supplementary heating fuel. The percentage of households using wood as a principal fuel increased from 1.8 in 1979 to 2.8 in 1980. These data seem to support the estimates of second generation retrofit activity and the assertion that most activity has been the installation of wood heating equipment.

The effect of higher energy prices has only recently begun to be felt and the building sector has not yet had sufficient time to adjust. In addition, there are barriers to upgrading energy efficiency levels, such as split incentives. For example, neither renters nor landlords are inclined to upgrade a building because the landlord does not pay the fuel bill and the tenant does not wish to upgrade the landlord's capital equipment. Similarly, a rapid turnover of dwellings makes upgrading appear unattractive because the resident may not stay long enough to recover the cost of ceiling insulation, for example, and the real estate market does not yet put a realistic premium on well retrofitted houses.

In the United States, cities with active energy programs have been able to shorten these lags. Those cities which have been successful, have several characteristics in common:

- strong leadership, actively encouraging energy efficient measures and willing to take political risks
- a tradition of open government and local resource management
- a belief that the city will accrue long-run benefits

Some of the measures that have been taken include:

- strong and active support from city council for energy conservation and solar energy

TABLE 1

EXTENT OF HOMES HAVING COMPLETED FIRST GENERATION RETROFITTING ACTIVITIES

| | 0 - 1% | | 1 - 10% | | 10 - 25% | | 25 - 50% | | >50% | | Total | |
|--------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|
| | # of Responses | Pop* 10 ³ | # of Responses | Pop* 10 ³ | # of Responses | Pop* 10 ³ | # of Responses | Pop* 10 ³ | # of Responses | Pop* 10 ³ | # of Responses | Pop* 10 ³ |
| Atlantic Provinces | | | | | 2 | 148 | | | 3 | 157 | 5 | 305 |
| Quebec | | | | | 3 | 196 | | | 3 | 177 | 6 | 373 |
| Ontario | | | 1 | 10 | 4 | 779 | 3 | 764 | 9 | 1,745 | 17 | 3,297 |
| Prairie Provinces | | | | | 2 | 678 | 1 | 160 | | | 3 | 836 |
| British Columbia | | | 4 | 269 | 3.5** | 341 | 2.5** | 364 | 2 | 154 | 12 | 1,128 |
| CANADA | | | 5 | 279 | 14.5** | 2 140 | 6.5** | 1,288 | 18 | 2,233 | 43 | 5,939 |

*Population represented by respondents

** Two responses were received from one city

TABLE 2

EXTENT OF HOMES HAVING COMPLETED SECOND GENERATION RETROFITTING ACTIVITIES

| | 0 - 1% | | 1 - 10% | | 10 - 25% | | 25 - 50% | | >50% | | Total | |
|--------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|
| | # of Responses | Pop* 10 ³ | # of Responses | Pop* 10 ³ | # of Responses | Pop* 10 ³ | # of Responses | Pop* 10 ³ | # of Responses | Pop* 10 ³ | # of Responses | Pop* 10 ³ |
| Atlantic Provinces | 1 | 88 | | | 3 | 207 | | | 1 | 10 | 5 | 305 |
| Quebec | | | 6 | 373 | | | | | | | 6 | 373 |
| Ontario | | | 10 | 2,235 | 5 | 892 | 2 | 170 | | | 17 | 3,297 |
| Prairie Provinces | | | 3 | 836 | | | | | | | 3 | 836 |
| British Columbia | 1 | 78 | 8 | 901 | 2 | 68 | 1 | 82 | | | 12 | 1,128 |
| CANADA | 2 | 166 | 27 | 4,345 | 10 | 1,167 | 3 | 252 | 1 | 10 | 43 | 5,939 |

*Population represented by respondents

- adoption and aggressive enforcement of building codes that require energy efficiency
- change in zoning policy to promote or require high-density zoning, solar installations and the construction of buildings using the most-energy-efficient equipment
- setting up audit programs and one-step energy efficiency retrofit projects
- requiring weather-stripping as a condition of approval for all home rehabilitation loans or before resale
- requiring energy impact statements
- providing grants for energy improvements

In Canada, it appears that more than half of all large communities are considering or have undertaken measures to encourage improving energy efficiency of buildings, as indicated by Table 3. However, measures adopted in Canada are not as strong. These include:

- allowing upgrading without requiring permits
- participating in provincial or federal programs (e.g., Residential Rehabilitation Assistance Program (RRAP), Ontario Home Renovation S/B Renewal Program (OHRP).
- adopting an energy policy for the municipality
- giving seminars on retrofitting or other information programs and demonstration projects
- upgrading municipal buildings
- passing solar access by-laws
- reviewing by-laws
- reviewing the development process
- adopting a property maintenance standards by-law that requires weather-stripping.

That the measures adopted or under consideration are less radical than those in some United States cities should not be surprising in view of the degree of concern indicated by respondents.* Only ten respondents reported that the degree of concern was "high" (Table 4). Persons outside the government reported that the degree of concern for some of the same cities was low.

*Canadian cities also do not have the same powers of American cities.

TABLE 3
ACTIONS OF MUNICIPAL ELECTED OFFICIALS
AND STAFF REGARDING HOME RETROFITTING

| | Considering Measures to Encourage Retrofitting | | Undertaken Measures to Encourage Retrofitting | | Total Responses | |
|--------------------|--|---|---|---|-----------------|---|
| | Number | Population Represented 10 ³ | Number | Population Represented 10 ³ | Number | Population Represented 10 ³ |
| Atlantic Provinces | 2 | 110 | 3 | 117 | 5 | 305 |
| Quebec | 1 | 63 | 1 | 83 | 6 | 373 |
| Ontario | 8 | 2,159 | 9 | 2,624 | 17 | 3,297 |
| Prairie Provinces | 1 | 521 | 1 | 521 | 3 | 836 |
| British Columbia | 5 | 791 | 7 | 510 | 12 | 1,128 |
| CANADA | 17 | 3,644 | 21 | 3,855 | 43 | 5,939 |

TABLE 4

DEGREE OF CONCERN OF ELECTED OFFICIALS AND STAFF

| | Low | | Medium | | High | | Total | |
|--------------------|----------------|--|----------------|--|----------------|--|----------------|--|
| | # of Responses | Population Represented 10 ³ | # of Responses | Population Represented 10 ³ | # of Responses | Population Represented 10 ³ | # of Responses | Population Represented 10 ³ |
| Atlantic Provinces | 0.5* | 50 | 2.5* | 198 | 2 | 57 | 5 | 305 |
| Quebec | 2 | 154 | 4 | 216 | | | 6 | 370 |
| Ontario | 2 | 272 | 8.5* | 1,159 | 6.5* | 1,866 | 17 | 3,297 |
| Prairie Provinces | 1 | 155 | 2 | 681 | | | 3 | 836 |
| British Columbia | 3 | 209 | 6.5* | 757 | 1.5* | 101 | 12** | 1,128 |
| CANADA | 8.5* | 840 | 23.5* | 3,011 | 10 | 2,024 | 43** | 5,939 |

*Two different responses were recieved from this city

**One respondent did not respond to this question

In summary, retrofitting activity to date is almost entirely restricted to first generation measures and wood stoves. Municipalities have for the most part not taken an active role in encouraging higher energy efficiency for buildings. Their activities to date have been limited to information dissemination, co-operation with federal or provincial programs, and in-house conservation programs.

6. CONFLICTS TO DATE

In spite of the relatively low number of second generation retrofits, a significant number of conflicts between proposed activities and municipal by-laws have already occurred (Table 5). This list is particularly significant because of the inherent problems in counting such conflicts. Conflicts may not be counted because:

- on discovery that a proposed modification is in conflict with a municipal by-law, the plan may be modified or abandoned
- where the infraction caused by the plan is minor and is approved by the committee of adjustment or its equivalent, the conflict, being successfully resolved, may not be counted as a conflict.

The problem of counting conflicts is indicated by the differences in reported conflicts both among different cities and between government and non-government respondents in the same city. For example, although one respondent for a medium sized city reported 200 to 400 requests and another respondent reported one or two conflicts per week, most others reported no conflicts at all. There is no reason to believe that these two cities have either more restrictive by-laws or more energy conserving citizens; the difference is probably a difference in what is counted as a conflict.

In the same city, government and non-government perception of the extent of conflicts may differ greatly. One respondent reporting on behalf of his city indicated that although there had been conflicts, there had only been a "few in many years". A renovator from the same municipality had a different story to tell. Within his own experience, five types of conflicts had occurred:

- external insulation setbacks and gross floor area requirements
- reorientation of glazing conflicting with required setbacks from property lines
- skylights exceeding height limitations
- greenhouses crossing required setbacks or exceeding gross floor areas or length of building limits
- solar panels exceeding height limitations or infringing on setbacks

TABLE 5RESPONDENTS REPORTING ACTUAL PROHIBITIONS

| Region | Number of Conflicts | Nature of Conflict/Conflicting Project |
|--------|---------------------|--|
| Que. | 2 | use of clothes dryer exhaust heat for space heating, use of new building systems |
| Que. | 1 | fire hazard posed by exterior insulation |
| Ont. | 1 | solar array in front yard |
| Ont. | 1-2 per week | heat pumps in side yards, greenhouse, solaria window orientation, exterior insulation, Urea Formaldehyde Foam Insulation |
| Ont. | 200-400 requests | primarily regarding additions |
| Ont. | not quantified | porch rebuilding, installing windows, etc. |
| Ont. | few in many years | solar collector, greenhouses, enclosed porch, alteration or addition of windows |
| Ont. | not quantified | zoning set-backs, heat pump noise |
| Ont. | not quantified | exterior insulation |
| B.C. | 10 in 3 yrs | window re-orientation, wood stoves |
| B.C. | 60 in 2 yrs | fireplace inserts, new building systems incorporating increased insulation |
| B.C. | 100 | exposure, set-backs of greenhouses, solaria, other glazing, airtight stoves |
| B.C. | ~8 in 3 yrs | passive solar, solar hot water heater, loose fill insulation, multi-layer vapour barrier |

7. POTENTIAL CONFLICTS

In addition to the conflicts which have already arisen, there is potential for considerably more. More than half the respondents indicated that there is a potential problem (Table 6). Some of these are presented in Table 7. Three types of laws provide the greatest potential for conflicts: zoning by-laws, building codes and property assessment laws.

7.1 ZONING BY-LAWS

Zoning by-laws regulate such factors as building size, height and location on the lot. Energy upgrading which changes the form or size of the house may come into conflict with zoning by-laws. Greenhouses may be prohibited by setback standards or maximum gross floor area standards. Solar collectors may be prohibited by maximum height limits.

7.2 BUILDING CODES

Building codes are designed to protect the public safety and are primarily concerned with structural stability and fire prevention. There are cases, however, where there may be conflicts between renovating for efficient energy use and the building code. Although some of these projects may violate the intentions of the code, others may violate only the rule of the code. For example, exterior insulation may keep the heat in during a fire and thus decrease the time before the internal walls burst into flame, a concern where the problem may occur. Alternatively, building codes may have requirements which are violated by some energy upgrading measures, even though these measures do not jeopardize health and safety. For example, reorienting windows to increase solar gain may not be permitted where the window will be near to the lot line.

7.3 PROPERTY TAX ASSESSMENTS

Assessment practises may be an obstacle to efficient energy use. Cities collect most of their revenue from property taxes and these taxes are usually proportional to the assessed value of the property. Many second generation retrofits may lead to an increase in the assessed value of the property. For example, some communities relate value to floor area and this is calculated by measuring the external dimensions of the building. Adding exterior insulation may increase the external dimensions of a house but not the floor area and hence the assessed value may be excessive relative to other buildings, if exterior dimensions are used as a surrogate for floor area. Similarly, adding a solar heating system may lead to a higher assessed value because it is capital intensive.

TABLE 6

**THE POTENTIAL FOR CONFLICTS BETWEEN MUNICIPAL
LAWS AND RETROFITTING FOR ENERGY CONSERVATION**

| | Respondents Reporting a Potential for Conflict | | Total Responses | |
|--------------------|---|--|-----------------|--|
| | Number | Population Represented 10 ³ | Number | Population Represented 10 ³ |
| Atlantic Provinces | 3 | 207 | 5 | 305 |
| Quebec | 2 | 133 | 6 | 373 |
| Ontario | 8 | 2,388 | 17 | 3,297 |
| Prairie Provinces | 2 | 681 | 3 | 836 |
| British Columbia | 10 | 1,067 | 12 | 1,128 |
| CANADA | 25 | 4,476 | 43 | 5,939 |

TABLE 7

AREAS OF POTENTIAL CONFLICT

| ENERGY UPGRADING MEASURE | AREA OF POTENTIAL CONFLICT | COMMENTS |
|--|----------------------------|--|
| Exterior Insulation | Zoning By-laws | Exterior Insulation may encroach into restricted areas of sideyards or extend over required set-backs. |
| | Fire Code | Exterior Insulation may lower the time before combustion of materials inside the insulation by keeping heat in. |
| | Assessment Value | Where assessments are based on floor area of the building measured on the perimeter, the assessment value may be increased unreasonably. |
| | Heritage Preservation Laws | The change in appearance with exterior insulation may conflict with heritage laws. |
| Solaria, Greenhouses, Enclosed Porches | Building Codes | Such additions may encroach upon the minimum spatial separation. The code may require overhead glazing to withstand high stresses. |
| | Zoning By-laws | Maximum permissible gross floor areas, lot coverages or building length may be exceeded. Set backs may be encroached upon. |
| | Assessment Value | Increased energy efficiency may not be sufficient to compensate for increased assessment value. |

Table 7 continued

| ENERGY UPGRADING MEASURE | AREA OF POTENTIAL CONFLICT | COMMENTS |
|-----------------------------|-------------------------------|--|
| Heat Pumps | Heritage Preservation Laws | Additions may alter the Heritage value. |
| | Zoning By-laws | Heat pumps may enter into restricted zones in side-yards or exceed setbacks. |
| | Noise By-laws | Heat pump noise may exceed allowable levels. |
| | Municipal Water Supply | Some Municipalities may be unable or unwilling to supply water to and accept discharges from water source heat pumps. |
| Windows | Building Code | Reorienting windows to increase solar gain may create conflicts with requirements for minimum distances from glazing to neighbouring properties. |
| | Zoning By-laws | Skylights may exceed the maximum allowable height. |
| | Heritage Preservation Laws | All external changes to the street facade of houses may be prohibited. |
| Solar Panels | Property Maintenance By-laws | Solar panels may be considered as unsightly objects and detrimental to the appearance of the building and hence be prohibited. |
| | Assessment Value | An increase in assessed value caused by a solar collector may make the collector uneconomical. |

Table 7 continued

| ENERGY UPGRADING MEASURE | AREA OF POTENTIAL CONFLICT | COMMENTS |
|---|-----------------------------|--|
| New Building Systems (eg. no foundation, prefab wall sections etc.) Woodstoves Wood Storage Clotheslines Condensing Gas Furnaces Coal Burning Heat Recovery Loose Fill Insulation Multi-layer Vapour Barrier | Zoning By-laws | Solar panels may protrude above maximum allowable heights or into required setback zones. Glare may be a problem. |
| | Heritage Preservation | In designated areas, all external changes to the street facade - including the addition of solar panels - may be prohibited. |
| | Building Code | Some new building systems, though energy efficient, may not conform with the existing building code. |
| | Building Code | The code may restrict how stoves are installed. |
| | Air Quality By-laws | Woodstoves or furnaces may violate pollution control By-laws. |
| | Property Maintenance By-law | Storage of wood may be considered unsightly. |
| | Property Maintenance By-law | Solar clothes dryers may be considered unsightly and be prohibited. |
| | Municipal Water | Acidity of condensate may exceed maximum allowable from residential buildings. |
| | Pollution Control By-law | Emission from coal-burning may exceed maximum allowable levels. |
| | Building Code | Some uses for waste heat are prohibited. |
| | Building Code | Potential fire hazard. |
| | Building Code | These are not allowed by the National Building Code. |

8. CONFLICT RESOLUTION

Although many respondents felt that municipal by-laws create a potential for conflicts, even more indicated that their municipalities were interested in promoting and supporting energy conservation, especially by removing barriers posed by municipal by-laws (Table 8).

There are four basic mechanisms for resolving conflicts:

- abandon or modify the plan
- appeal to the committee of adjustment or its equivalent
- modify the by-law
- change assessment criteria for energy efficiency upgrading activities

8.1 MODIFYING THE PLAN

Abandoning or modifying the plan so that it conforms with the by-laws and codes is probably the most common mechanism for dealing with conflicts between upgrading activities and regulations. For example, when the Saskatchewan Research Council wanted to upgrade a house in Swift Current as a demonstration project, it found that the porch on the house extended beyond the minimum clearance. Even though an enclosed porch can increase the energy efficiency of a house, it was decided to convert the porch into an unroofed balcony to conform with the by-law.

8.2 SPECIAL APPROVAL OF VARIANCES

Most or all municipalities have mechanisms for dealing with minor conflicts. For example, in Alberta, there are Development Appeal Boards, and in British Columbia, Boards of Variance. The powers of the bodies are usually limited to dealing with minor variances from by-laws. In Ontario, a Committee of Adjustment may approve a variance if:

- the variance from the by-law is minor
- the variance is desirable for the appropriate development or use of the land
- the general intent and purpose of the by-law is maintained
- the general intent and purpose of the official plan is maintained.

TABLE 8

**INTERESTS OF ELECTED OFFICIALS AND STAFF IN REMOVING
BARRIERS TO ENERGY CONSERVATION AND UNDERTAKING MEASURES
TO ACTIVELY PROMOTE AND SUPPORT ENERGY CONSERVATION**

| | Interested in Removing Barriers | | Interested in Promoting and Supporting | | Total Responses | |
|--------------------|------------------------------------|--|--|--|-----------------|--|
| | Number | Population Represented 10 ³ | Number | Population Represented 10 ³ | Number | Population Represented 10 ³ |
| Atlantic Provinces | 5 | 305 | 4.5* | 255 | 5 | 305 |
| Quebec | 5 | 287 | 5 | 287 | 6 | 373 |
| Ontario | 14 | 3,206 | 12 | 2,924 | 17 | 3,297 |
| Prairie Provinces | 2 | 681 | 2 | 681 | 3 | 836 |
| British Columbia | 11 | 1,067 | 10 | 1,002 | 12 | 1,128 |
| CANADA | 37 | 5,546 | 33.5* | 5,149 | 43 | 5,939 |

*One municipality sent two conflicting responses.

If any one of these conditions is not met by the proposal, then the committee cannot approve the variance.

In spite of these limitations, the committee does have some flexibility in that many of the by-laws are subject to interpretation. For example, whether or not a roof-mounted solar collector is detrimental to the appearance of the building is clearly open to interpretation. If the city has a strong statement in its official plan which advocates solar and other renewable energy sources, then the committee may feel greater justification for approving the variance.

Unfortunately, the process of applying for permission to exceed the restrictions of a by-law may reduce the effectiveness of this mechanism to resolve conflicts between the goals of energy conservation and municipal by-laws. That prohibitions are barriers to energy retrofitting may be more of a perceived than an actual barrier; the perception of many citizens may be that the committee of adjustment involves excessive administrative procedures. Some non-government respondents indicated that it was probably common to abandon the project rather than undergo the required bureaucratic procedures.

8.3 EXEMPTIONS OR MODIFICATIONS TO BY-LAWS

Exemptions or modifications to a by-law may be passed by a City Council. For example, a city may change the by-law so that solar collectors are not included when the height of a building is measured. Similarly, by-laws could be altered to permit accessory buildings or structures designed to receive, store or conserve energy to be built closer to lot-lines.

Several Canadian cities have examined or are examining their by-laws to ensure that they do not present obstacles to retrofitting. These cities include Brampton, Burlington, North York, Toronto, and Woodstock, Ontario; Edmonton, and Millet, Alberta; and the Regional District of Nanaimo in British Columbia. Other cities will be pressured into reviewing their by-laws as retrofitting activity becomes more popular.

8.4 PROPERTY ASSESSMENT MODIFICATION

There are several mechanisms for dealing with disincentives to retrofitting resulting from increased property value assessments. For example, means of assessment can be changed: assessments based on gross floor area or external dimensions could be changed so that they are based on net floor area or internal dimensions. The levy on property erected for conservation could be kept low, as is done in Edmonton. In Ontario, it has been suggested that municipalities could rebate increases in property taxes due solely to improvements in energy efficiency for a reasonable payback period.

9. CONCLUSIONS

9.1 AREAS OF CONFLICT

There are three main areas where current practise may pose a barrier to retrofitting of buildings to upgrade their energy efficiency:

- municipal by-laws;
- the building code; and
- property value assessment.

The municipal by-law most likely to interfere with retrofitting is the zoning by-law, which specifies restrictions on building size and location on the lot.

The building code may also present barriers to energy upgrading, however, it is not under the control of municipalities. Increased property values (and hence taxes) associated with retrofitted houses may prove a disincentive to upgrading. Other by-laws which may be significant in some areas include heritage preservation and pollution control by-laws.

9.2 RESOLUTION OF CONFLICT

Mechanisms for resolving conflicts between plans for energy retrofitting and municipal procedures include:

- appealing to the Committee of Adjustment or its equivalent; and
- modifying the by-law or assessment procedure.

Appealing to the Committee of Adjustment to approve a variance may circumvent the legal obstacle to a proposed plan, however, it may present a procedural barrier: proponents may choose to abandon or modify their retrofitting activities rather than pursue what may be perceived as a lengthy, frustrating and arbitrary procedure. Modifying by-laws requires the approval of City Council and thus is dependent upon a strong leadership role by Council and/or pressure from citizens or the Committee of Adjustment. Naturally, some by-law provisions may be deemed to protect factors of greater significance than efficient energy use.

9.3 EXTENT OF CONFLICTS

There have been few reported conflicts. It is not that by-laws are perceived to pose no barriers, but rather that:

- there has been little second generation retrofitting occurring (other than installing wood-burning equipment); and
- the by-laws are seen as such a large barrier that some plans are abandoned or altered.

As energy prices rise and energy savings associated with housekeeping and first generation retrofitting are saturated, the number of actual conflicts is likely to increase. The conflict will have materialized and become a barrier or disincentive. Pressure will be placed on City Councils to modify by-laws.

10. RECOMMENDATIONS FOR FURTHER WORK

10.1 FURTHER SURVEYS

This study is only a preliminary consideration of the barriers posed by municipal by-laws. To more fully assess this problem several areas need examination. Most of the information acquired was from municipal officials, a better understanding of the severity of these barriers requires a survey of homeowners who have abandoned plans when the regulatory prescriptions were discovered, and a more extensive survey of builders and renovators. In addition, an assessment of the degree of the limitations is required. Although there may be a large number of potential conflicts, there has been no assessment of how much difference, in energy units, conforming with the by-laws will make.

10.2 MODEL BY-LAWS

Municipalities may be assisted in removing barriers to energy retrofitting caused by by-laws. The first prerequisite to removing these obstacles is commitment to efficient energy use on the part of municipal policy makers. Once the commitment is made, the municipalities could benefit from several forms of assistance: an indication of potential areas of conflicts, and information on how other municipalities have modified their by-laws to remove obstacles to retrofitting, especially other municipalities in the same province and operating under the same provincial statutes. Model by-laws appropriate to each province need to be designed where there is no precedent to be followed.

Municipalities may also benefit from information on by-law provisions that could be enacted to encourage the retrofitting of buildings. Examples of such by-laws include property maintenance by-laws that require weather-tight windows and doors, and solar access by-laws.

Retrofitting may create the need for new laws to protect the health and safety of citizens. For example, the building code may need modification to ensure that woodstoves and solar collectors are properly installed and that adequate ventilation is provided in air-tight buildings.

10.3 CLEARING-HOUSE

Information about what has been and can be done needs to be made available to those who can use it. A mechanism such as an information clearing-house is needed to allow municipalities to find out what has been done in other municipalities. Building inspectors and property standards officers may need training to allow them to advise homeowners on how to resolve conflicts between laws and retrofitting activities; too often they are seen as a source of conflict and bureaucratic headaches.

10.4 ACTION NEEDED NOW

Municipal by-laws are not currently a major barrier to energy retrofitting activities, primarily because these activities are still in the early stages. As upgrading advances, the actual number of conflicts is likely to increase dramatically unless corrective action is taken. By recognizing the potential for conflicts now and beginning to remove the obstacles, the problem can be greatly reduced and the time required for Canada to achieve an efficient building stock will be shortened. Such action should include:

10.4.1. - dissemination of this report and other supporting material to municipalities in order to stimulate awareness of the emerging problem and its extent. (Specific actions should include: mailing this report to all respondents; filing it with the Intergovernmental Committee on Urban and Regional Research and the Federation of Canadian Municipalities; making presentations at the next FCM and Cities Energy conferences).

10.4.2. - complementary surveys of householders and members of the building/renovation industry to further quantify the problem and to determine their experience with such conflicts and their perception of future problems.

10.4.3. - preparation of educational and training materials for property standards officers, building inspectors, etc to acquaint them with the potential conflicts and how they can be successfully and easily resolved.

10.4.4. - research, preparation and promotion of model by-laws appropriate to each province which:

- eliminate or reduce the conflicts with home retrofit
- encourage, require or protect home retrofit activities
- provide for safe installation and operation of energy conserving equipment

10.4.5. - establishment of a municipal energy clearinghouse which would document and share information on a wide variety of municipal policies, programs, initiatives, by-laws and success stories

10.4.6. - the development and implementation of municipally-run "Home Retrofit Assistance Centers" which would provide a range of services including home energy audits, advise on retrofit planning, consumer education and protection, assistance with contractor selection, streamlined financial assistance and help with institutional/legal barriers.

APPENDIX A

BIBLIOGRAPHY

APPENDIX A

BIBLIOGRAPHY

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103 pp.

APPENDIX B

LIST OF PERSONS REQUESTED TO
RESPOND TO THE QUESTIONNAIRE

APPENDIX B
LIST OF PERSONS REQUESTED TO
RESPOND TO THE QUESTIONNAIRE

B.1 MUNICIPALITIES

ATLANTIC PROVINCES:

City of Corner Brook
City of St. John's
City of Charlottetown
City of Halifax
County of Halifax
Mun. of the County of Cape Breton
City of Dartmouth
Town of Moncton
City of Saint John
Metropolitan Saint John

QUEBEC:

Communauté Régionale de l'Outaouais
Communauté Urbaine de Quebec
Communauté Urbaine de Montréal
Cité de Verdun
Cité de Trois-Rivières
Comté de Terrebonne
Comté de Témiscamingue
Comté de Sherbrooke
Cité de Sherbrooke
Comté de Shefford
Comté de St- Maurice

MUNICIPALITIES (Continued)QUEBEC:

Cité de St-Léonard
Cité de St-Laurent
Comté de St-Jean
Comté de St-Hyacinthe
Ville de Ste-Foy
Comté de Saguenay
Comté de Rimouski
Comté de Québec
Ville de Québec
Cité de Montréal-Nord
Ville de Montréal
Comté de Mégantic
Cité de Longueuil
Comté de Lévis
Ville de Laval
Comté de L'Assomption
Cité de Lasalle
Comté de La Prairie
Comté du Lac-St-Jean-Ouest
Ville de Jonquiére
Comté de Joliette
La Cité de Hull
Comté de Gatineau
ville de Gatineau

MUNICIPALITIES (Continued)QUEBEC:

Comté de Drummond
Comté des Deux-Montagnes
Comté de Chicoutimi
Cité de Chicoutimi
Comté de Châteauguay
Ville de Charlesbourg
Comté de Champlain
Ville de Beauport
Comté de Beauharnois
Comté de Beauce
Comté d'Arthabaska
Comté d'Abitibi

ONTARIO:

Reg. Mun. of York
Borough of York
City of Windsor
County of Wellington
Reg. Mun. of Waterloo
City of Waterloo
Metropolitan Toronto
City of Toronto
District of Thunder Bay
City of Thunder Bay
Reg. Mun. of Sudbury

MUNICIPALITIES (Continued)ONTARIO:

City of Sudbury
County of Stormont
County of Simcoe
Borough of Scarborough
City of Sault Ste. Marie
City of Sarnia
City of St. Catharines
County of Renfrew
County of Prescott and Russell
County of Peterborough
City of Peterborough
County of Perth
Reg. Mun. of Peel
County of Oxford
Regional Municipality of Ottawa-Carleton
City of Ottawa
City of Oshawa
Town of Oakville
City of North York
County of Northumberland
City of North Bay
Dis of Nipissing
City of Niagara Falls
City of Nepean

MUNICIPALITIES (Continued)ONTARIO:

City of Mississauga
County of Middlesex
City of London
County of Leeds & Grenville
County of Lambton
City of Kitchener
City of Kingston
County of Kent
District of Kenora
County of Huron
County of Hastings
Regional Municipality of Hamilton-Wentworth
City of Hamilton
Reg. Mun. of Halton
Reg. Mun. of Haldimand
City of Guelph
County of Grey
City of Gloucester
County of Frontenac
Borough of Etobicoke
County of Essex
County of Elgin
Borough of East York
Regional Mun. of Durham

MUNICIPALITIES (Continued)ONTARIO:

City of Cambridge
City of Burlington
County of Bruce
City of Brantford
County of Brant
City of Brampton
District of Algoma

PRAIRIE PROVINCES:

City of Winnipeg
City of Saskatoon
City of Regina
Lethbridge (City)
Edmonton (City)
Calgary (City)

BRITISH COLUMBIA:

Victoria (City)
Vancouver (City)
Thompson-Nicola
Surrey (District)
Saanich (District)
Richmond (Township)
Prince George (City)
Okanagan-Similkameen
North Vancouver
Nanaimo (Reg. District)

MUNICIPALITIES (Continued)BRITISH COLUMBIA:

Kelowna (City)

Kamloops (City)

Greater Vancouver (Reg. District)

Fraser/Fort-George (Reg. District)

Fraser-Cheam (Reg. District)

Dewdney-Alouette (Reg. District)

Delta (Corporation)

Coquitlam (District)

Comox-Strathcona (Reg. District)

Central Okanagan (Reg. District)

Central Fraser Valley (Reg. District)

Cariboo (Reg. District)

Capital (Reg. District)

Burnaby (District)

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Energy Management Committee
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Energy Conservation Co-ordinator
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V1T 5E6
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Field Worker
Souris Energy Council
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COA 2B0
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Conservation & Renewable Energy Branch
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M5A 1R1
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Center
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Cobourg, Ontario
K9A 2M4
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City Energy Conservation Coordinator
Maintenance & Construction
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Edmonton, Alberta
T5H 2W8

- | | |
|---|---|
| <p>25. Geoff Stiles Island Energy Associates 24 Monkstown Rd. St. John's, Nfld. A1C 3T3</p> | <p>26. Michael Jesson Nelson Community Energy 202 Vernon Street Nelson, BC V1L 4E2</p> |
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| <p>35. Brian Marshall c/o Ecology House 12 Madison Avenue Toronto, Ontario M5R 2S1</p> | <p>36. Low Energy Building Association of Canada c/o Bob Argue 41 Riverdale Avenue Toronto, Ont. M4K 1C2 (416) 463-5424</p> |
| <p>37. Tom Ostler Planning & Development Dept. City of Toronto 19-E City Hall Toronto, Ontario M5H 2N2</p> | <p>38. David Peters Renovation & Energy Conservation Unit, Ontario Ministry of Housing 7th. Floor, 60 Bloor St. W. Toronto, Ontario M4W 3K7 (416) 965-4073</p> |

- | | |
|---|---|
| <p>39. Rosemary Ford Renovation & Energy Conservation Unit, Ontario Ministry of Housing 7th. Floor, 60 Bloor Street West Toronto, Ontario M4W 3K7</p> | <p>40. Frank Burcher Renovation & Energy Conservation Unit, Ontario Ministry of Housing 7th. Floor, 60 Bloor Street West Toronto, Ontario M4W 3K7</p> |
| <p>41. Tom McDonald Renovation & Energy Conservation Unit, Ontario Ministry of Housing 7th. Floor, 60 Bloor Street West Toronto, Ontario M4W 3K7</p> | <p>42. Jim Moorman Chief Property Standards Officer City of Ottawa City Hall 111 Sussex Drive Ottawa, Ontario K1N 5A1</p> |
| <p>43. Elizabeth White Alan, Drerup, White 334 King Street East Studio 505 Toronto, Ontario M5A 1K8 (416) 863 1762</p> | <p>44. Jerry Greenberg President, Renovation Council c/o Creative Home Group 534 Lawrence Ave. West Suite 201 Toronto, Ontario M6A 1A2 (416) 782-7571</p> |
| <p>45. Terry Mills Chissom & Mills 740 Broadview Avenue Toronto, Ontario M4K 2P1 (416) 463-1108</p> | <p>46. Jerry Mantle Regional Inspections Officer Atlantic Region P.O. Box 7320, Station A Saint John, N.B. E2L 4S7 (506) 658-4468</p> |
| <p>47. Chief Inspector Building Department City of Toronto City Hall Toronto, Ontario M5H 2N2</p> | <p>48. Giles Boisvin Chargé de planification Service de la restauration et logement Ville de Montréal 330 E Rue St. Paul Montreal, PQ H2Y 1C6 (514) 872 2881</p> |

September, 1981

Dear Sir or Madame:

Middleton Associates has been contracted by Canada Mortgage and Housing Corporation to perform a preliminary study of:

The Implications of Municipal Bylaws for Energy Retrofit

It is perceived that as householders move beyond the "first generation" of home retrofit activities (ie. insulation, weatherstripping, caulking, storm windows and doors) into more extensive ("second generation") retrofit and renovation measures such as:

- exterior double walls
- greenhouses
- solar panels
- window reorientation
- new efficient furnaces
- solaria
- enclosed porches
- wood stoves
- heat pumps
- trombe walls,

these measures may inadvertently come into conflict with existing municipal by-laws and regulations governing such areas as:

- lot line restrictions
- setback allowances
- height restrictions
- building codes
- air quality standards
- assessment values
- property maintenance standards
- zoning regulations
- heritage value
- neighborhood preservation
- noise levels

It is the purpose of this study to determine:

- a) the existence
- b) the extent

of such conflicts. If they are found to be significant, a subsequent phase of the study will examine and propose corrective actions which should be of value to all parties.


We would appreciate greatly your assistance in this study. We have enclosed a relatively simple Questionnaire which we are asking you to complete and mail to us in the enclosed return envelope by October 7, 1981 or as soon after that as possible. If there is a more appropriate person in your organization to provide this information, please pass on the Questionnaire or work with that person to complete it.

You can be assured that any personal opinions, data, or case study details that you offer will not be publicly attributed to you or your employer. Your answers will be assured anonymity by virtue of their aggregation into a national analysis.

As a "thank you" for participating in the study, we have received agreement from CMHC that all those completing a Questionnaire will receive a copy of the final report when it is ready.

Thank you for your cooperation.

Yours truly,


Brian Kelly

QUESTIONNAIREonThe Implications of Municipal By-Laws for Energy Retrofit

SECTION A. RESPONDENT

Name: _____

Title: _____

Organization: _____

City: _____

Province: _____ Code: _____

Telephone Number: () _____

SECTION B. AREA COVERED

Answers in this questionnaire pertain to the following
municipality(ies) or area(s):

| | Name | Population | # of Residential Units |
|----|-------|------------|---------------------------|
| 1. | _____ | _____ | _____ |
| 2. | _____ | _____ | _____ |
| 3. | _____ | _____ | _____ |
| 4. | _____ | _____ | _____ |

Please answer questions in the order they appear. Answer as
fully as possible.

SECTION C. DEGREE OF ACTIVITY

1. With reference to your municipality, what would you estimate to be the current degree of activity with regard to energy-oriented home retrofit of the following two types:

- a) The "first generation" of energy retrofit practices (ie. insulation, weatherstripping, caulking, storm windows and doors).

Degree of activity: (check one)

- commonplace (over 50% of residences) _____
- high (25% to 50% of residences) _____
- medium (10% to 25% of residences) _____
- low (1% to 10% of residences) _____
- non-existent (0%) _____

Comments: _____

- b) The "second generation" of energy retrofit activities (exterior insulation, greenhouses, solarium, solar panels, heat pumps, wood stoves, window re-orientation, etc).

Degree of activity: (check one)

- commonplace (over 50% of residences) _____
- high (25% to 50% of residences) _____
- medium (10% to 25% of residences) _____
- low (1% to 10% of residences) _____
- non-existent (0%) _____

Comments: _____

SECTION D. ACTUAL PROHIBITIONS

1. To your knowledge have there been actual cases in your municipality where proposed home retrofit activities have been prohibited by municipal by-laws, regulations etc?

Yes _____

No _____

- a) If yes, how many cases over what period of time? *

- b) If yes, provide examples identifying the proposed activity and the by-law or regulation in question.

Examples:

| | <u>Proposed Activity</u> | <u>By-law or Regulation</u> |
|----|--------------------------|-----------------------------|
| 1. | _____ | _____ |
| | _____ | _____ |
| 2. | _____ | _____ |
| | _____ | _____ |
| 3. | _____ | _____ |
| | _____ | _____ |
| 4. | _____ | _____ |
| | _____ | _____ |
| 5. | _____ | _____ |
| | _____ | _____ |

- c) If yes, could you please list, in decreasing order of frequency, the by-laws, regulations etc. which have prohibited these actions. Attach copies of relevant section of by-laws if appropriate.

most frequent: _____

least frequent: _____

- d) If yes, do you consider that these prohibitions constitute a significant barrier to home energy retrofit in your municipality?

Yes _____ No _____

Comments: _____

- e) If yes, are any corrective actions being considered to reduce prohibitions and what are they?

Yes _____ No _____

Corrective actions: _____

SECTION E. ACTUAL CONFLICTS RESOLVED

1. To your knowledge have there been actual cases in your municipality where proposed home retrofit activities have been in conflict with municipal by-laws but where the conflict has been resolved to allow the activity to proceed?

Yes _____

No _____

- a) If yes, how many cases of conflict over what period of time?

- b) If yes, please provide examples, identifying the proposed measure, and the conflicting by-law or regulation.

Examples:

| | <u>Proposed Activity</u> | <u>By-law or Regulation</u> |
|----|--------------------------|-----------------------------|
| 1. | _____ | _____ |
| | _____ | _____ |
| 2. | _____ | _____ |
| | _____ | _____ |
| 3. | _____ | _____ |
| | _____ | _____ |
| 4. | _____ | _____ |
| | _____ | _____ |
| 5. | _____ | _____ |
| | _____ | _____ |

- c) If yes, could you please list, in decreasing order of frequency, the by-laws or regulations which have caused the conflict, and how the conflicts are generally resolved in each case (eg. committee of adjustment, other form of exemption, "turning a blind eye", lax enforcement etc).

most frequent: _____

| | |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

least frequent: _____

| | |
|-------|-------|
| _____ | _____ |
|-------|-------|

- d) If yes, do you consider that these conflicts constitute a significant impediment to home energy retrofit in your municipality?

Yes _____ No _____

Comments: _____

| |
|-------|
| _____ |
| _____ |
| _____ |
| _____ |

- e) If yes, are any corrective actions being considered to reduce conflicts and what are they?

Yes _____ No _____

Corrective actions: _____

| |
|-------|
| _____ |
| _____ |
| _____ |
| _____ |
| _____ |

SECTION F. POTENTIAL CONFLICT

1. Do you perceive any potential conflicts in the next 5 or 10 years between "second generation" energy retrofit activities and by-laws or regulations in your municipality?

Yes _____

No _____

- a) If yes, what activities and what by-laws or regulations.

| | |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

- b) If yes, what methods of resolving these conflicts do you see (by-law amendment, committee of adjustment, etc.)

| |
|-------|
| _____ |
| _____ |
| _____ |
| _____ |
| _____ |
| _____ |

SECTION G. ENCOURAGEMENT FOR HOME RETROFIT

1. Quite apart from existing by-laws and regulations which may be inhibiting home retrofit, has your municipality undertaken any by-laws, regulations or activities to mandate, promote, encourage or assist home retrofit?

Yes _____ No _____

b) If yes, please give examples

Examples:

1. _____
2. _____
3. _____
4. _____
5. _____

2. Has your municipality considered any by-laws, regulations or activities to mandate, promote, encourage or assist home retrofit?

Yes _____ No _____

b) If yes, please give examples and their status

Examples:

Status:

- | | |
|----------|-------|
| 1. _____ | _____ |
| 2. _____ | _____ |
| 3. _____ | _____ |
| 4. _____ | _____ |
| 5. _____ | _____ |

SECTION H. AWARENESS OF ENERGY ISSUES

1. Would you say energy conservation was a concern to elected representatives and staff in your municipality?

Check one:

high _____

medium _____

low _____

Comments: _____

2. Would you say your elected representatives and staff were interested in:

a) removing barriers to energy conservation

Yes _____ No _____

b) undertaking measures to actively promote and support energy conservation

Yes _____ No _____

Areas of interest: _____

SECTION I. OTHER COMMENTS

Comments: _____

END

Please attach any relevant documentation. Thank you.

Septembre 1981

Monsieur ou Madame,

La société Middleton Associates s'est vue octroyer par la Société canadienne d'hypothèque et de logement un contrat en vue de la préparation d'une étude préliminaire de:

L'incidence des règlements municipaux sur les mesures de
conservation de l'énergie

Nous nous rendons compte qu'à mesure que les propriétaires de maisons d'habitation dépassent la "première génération" de mesures de conservation de l'énergie (c'est-à-dire la pose d'isolants ou de coupe-bise, le calfeutrage, l'installation de contre-châssis et de contre-portes), pour entreprendre des travaux plus considérables ("deuxième génération") et des rénovations telles que:

- | | |
|---------------------------------------|---------------------|
| - murs extérieurs doubles | - solariums |
| - serres | - porches enfermés |
| - panneaux solaires | - poêles à bois |
| - réorientation des fenêtres | - pompes thermiques |
| - nouveaux calorifères plus efficaces | - murs de Trombe |

il pourrait leur arriver d'entrer en conflit avec les règlements municipaux en vigueur portant sur:

- | | |
|---|---------------------------------|
| - les lignes de terrains | - le zonage |
| - les retraits nécessaires | - la préservation du patrimoine |
| - les limites de hauteur | - la préservation des quartiers |
| - les codes de la construction | - le bruit |
| - les normes de qualité de l'air | - l'évaluation municipale |
| - les normes d'entretien des propriétés | |

Cette étude a pour but de déterminer:

- a) l'existence
- b) l'importance

de ces conflits. S'ils se révèlent importants, une seconde étape de l'étude doit examiner et proposer des correctifs convenant à toutes les parties impliquées.

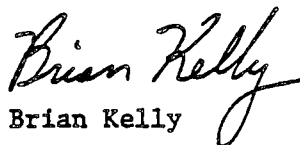
Nous vous serions très reconnaissants de bien vouloir nous aider à réaliser cette étude. Pour ce faire, nous vous envoyons ci-joint un questionnaire relativement simple, que nous vous demandons de remplir et de nous retourner dans l'enveloppe de retour fournie, si possible avant le 7 octobre 1981. Si, dans votre organisation, quelqu'un d'autre se trouve mieux en mesure de fournir les renseignements demandés, veuillez lui transmettre ce questionnaire, ou lui demander de vous aider à le remplir.

Vous pouvez être assuré que toutes les opinions personnelles, les données ou les descriptions de cas réels que vous serez en mesure de nous fournir ne seront jamais révélées publiquement comme venant de vous ou de votre employeur. L'anonymité de vos réponses est garantie par le fait qu'elles doivent être intégrées à une analyse nationale.

Pour vous remercier de votre participation, nous nous sommes entendus avec la SCHL pour que tous ceux qui auront rempli le questionnaire reçoivent une copie du rapport définitif, dès sa parution.

Je vous remercie de votre collaboration.

Veuillez agréer l'expression de mes sentiments les meilleurs.


Brian Kelly

QUESTIONNAIREau sujet deL'incidence des règlements municipaux sur les mesures de
conservation de l'énergieSECTION A. REPONDANT

Nom: _____

Titre: _____

Organisation: _____

Adresse: _____

Ville: _____

Province: _____ Code postal: _____

Numéro de téléphone: () _____

SECTION B. SECTEUR VISE

Les réponses à ce questionnaire se rapportent à la (aux)
municipalité(s) ou région(s) suivante(s):

| | Nom | Population | Nombre d'unités de logement |
|----|-------|------------|-----------------------------|
| 1. | _____ | _____ | _____ |
| 2. | _____ | _____ | _____ |
| 3. | _____ | _____ | _____ |
| 4. | _____ | _____ | _____ |

* Veuillez répondre aux questions dans l'ordre où elles se
présentent. Donnez des réponses aussi complètes que possible.

SECTION C. NIVEAU D'ACTIVITE

1. En ce qui concerne votre municipalité, comment pourriez-vous décrire le niveau actuel d'activité, lorsqu'il s'agit des mesures de conservation de l'énergie, dans les deux catégories suivantes:

- a) La "première génération" de mesures de conservation de l'énergie (c'est-à-dire la pose d'isolants ou de coupe-bise, le calfeutrage, l'installation de contre-châssis et de contre-portes)

Niveau d'activité: (en indiquer un)

- généralement répandu (plus de 50% des habitations) _____
- élevé (de 25% à 50% des habitations) _____
- moyen (de 10% à 25% des habitations) _____
- faible (de 1% à 10% des habitations) _____
- inexistant (0%) _____

Observations: _____

- b) La "deuxième génération" de mesures de conservation de l'énergie (c'est-à-dire les isolants extérieurs, les serres, les solariums, les panneaux solaires, les pompes thermiques, les poêles à bois, la réorientation des fenêtres, etc.)

Niveau d'activité: (en indiquer un)

- généralement répandu (plus de 50% des habitations) _____
- élevé (de 25% à 50% des habitations) _____
- moyen (de 10% à 25% des habitations) _____
- faible (de 1% à 10% des habitations) _____
- inexistant (0%) _____

Observations: _____

SECTION D. INTERDICTIONS ACTUELLES

1. Avez-vous eu connaissance de cas réels, dans votre municipalité, où les améliorations proposées furent interdites par les règlements municipaux ou autres?

Oui _____ Non _____

- a) Si oui: combien de cas, pendant quelle période de temps?

- b) Si oui, veuillez fournir des exemples, identifiant la mesure proposée et le règlement en question.

Exemples:

| | Mesure proposée | Règlement municipal |
|----|-----------------|---------------------|
| 1. | _____ | _____ |
| | _____ | _____ |
| 2. | _____ | _____ |
| | _____ | _____ |
| 3. | _____ | _____ |
| | _____ | _____ |
| 4. | _____ | _____ |
| | _____ | _____ |
| 5. | _____ | _____ |
| | _____ | _____ |

- c) Si oui, veuillez énumérer, par ordre de fréquence décroissant, les règlements municipaux responsables de l'interdiction de ces mesures. Veuillez joindre des copies des articles pertinents des règlements municipaux, au besoin.

le plus fréquent: _____

le moins fréquent: _____

- d) Si oui, pensez-vous que ces interdictions constituent un obstacle important aux mesures de conservation de l'énergie dans votre municipalité?

Oui _____ Non _____

Observations: _____

- e) Si oui, des correctifs sont-ils à l'étude pour limiter ces interdictions, et quels sont-ils?

Oui _____ Non _____

Observations: _____

SECTION E. CONFLITS REELS ET LEUR RESOLUTION

1. Avez-vous eu connaissance de cas réels, dans votre municipalité, où les améliorations proposées se trouvaient en conflit avec les règlements municipaux, mais où ces conflits ont pu être réglés de façon à permettre l'exécution du travail?

Oui _____ Non _____

- a) Si oui, combien de cas, pendant quelle période de temps?

- b) Si oui, veuillez fournir des exemples, identifiant la mesure proposée et le règlement avec lequel cette mesure entre en conflit.

Exemples:

| | <u>Mesure proposée</u> | <u>Règlement municipal</u> |
|----|------------------------|----------------------------|
| 1. | _____ _____ | _____ _____ |
| 2. | _____ _____ | _____ _____ |
| 3. | _____ _____ | _____ _____ |
| 4. | _____ _____ | _____ _____ |
| 5. | _____ _____ | _____ _____ |

- c) Si oui, veuillez énumérer les règlements municipaux responsables du conflit, par ordre de fréquence décroissant, et la méthode habituelle de résolution, dans chaque cas (c'est-à-dire le recours aux comités de redressement, d'autres méthodes d'exemption, "fermer les yeux", mise en vigueur flexible, etc.)

| | Règlement municipal | Méthode de résolution du conflit |
|-------------------|------------------------|-------------------------------------|
| le plus fréquent | _____ | _____ |
| | _____ | _____ |
| | _____ | _____ |
| | _____ | _____ |
| | _____ | _____ |
| | _____ | _____ |
| | _____ | _____ |
| | _____ | _____ |
| le moins fréquent | _____ | _____ |

- d) Si oui, pensez-vous que ces conflits constituent un obstacle important aux mesures de conservation de l'énergie dans votre municipalité?

Oui _____ Non _____

Observations: _____

- e) Si oui, des correctifs sont-ils à l'étude pour limiter ces conflits, et quels sont-ils?

Oui _____ Non _____

Observations: _____

SECTION F. CONFLITS POSSIBLES

1. Est-ce que vous prévoyez des conflits possibles, au cours des 5 ou 10 prochaines années, entre la "seconde génération" de mesures de conservation de l'énergie et les règlements de votre municipalité?

Oui _____ Non _____

- a) Si oui, quelles mesures et quels règlements municipaux?

Mesures

Règlements municipaux

| | |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

- b) Si oui, quelles méthodes de résolution de ces conflits entrevoyez-vous (modification des règlements, comité de redressement, etc)?

| |
|-------|
| _____ |
| _____ |
| _____ |
| _____ |
| _____ |

SECTION G. ENCOURAGEMENT DES MESURES DE CONSERVATION

1. a) En dehors des règlements existants, qui pourraient restreindre les mesures de conservation de l'énergie, est-ce que votre municipalité a entrepris la mise en vigueur de règlements ou autres activités, dans le but d'exiger, de favoriser, d'encourager ou d'aider les mesures de conservation?

Oui _____ Non _____

- b) Si oui, veuillez donner des exemples.

Exemples:

1. _____
2. _____
3. _____
4. _____
5. _____

2. a) Est-ce que votre municipalité a étudié la possibilité de mettre en vigueur des règlements municipaux ou des activités, dans le but d'exiger, de favoriser, d'encourager ou d'aider les mesures de conservation?

Oui _____ Non _____

- b) Si oui, veuillez donner des exemples, et indiquer le point où ils en sont rendus.

Exemples:

Rendu à:

1. _____
2. _____
3. _____
4. _____
5. _____

SECTION H. PRISE DE CONSCIENCE DES QUESTIONS RELATIVES A L'ENERGIE

1. A votre avis, est-ce que les représentants élus et le personnel rémunéré de votre municipalité s'intéressent à la conservation de l'énergie?

En indiquer un:

beaucoup _____

moyennement _____

peu _____

Observation: _____

2. A votre avis, est-ce que les représentants élus et le personnel de votre municipalité s'intéressent:

- a) à l'élimination des obstacles à la conservation de l'énergie?

Oui _____ Non _____

- b) à la mise en oeuvre de mesures destinées à faciliter la conservation de l'énergie?

Oui _____ Non _____

Secteurs d'intérêt: _____

SECTION I. AUTRES OBSERVATIONS

Observations: _____

FIN

* Veuillez joindre toute documentation pertinents. Merci.