

RESIDENTIAL RENOVATION CODES

A BACKGROUNDER

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A BACKGROUNDER

The need for a national renovation code is an issue which has been raised by the industry on various occasions. CMHC has held a long-standing interest in this question of appropriate regulations for renovated buildings. This study identified the major issues involved in regulating renovations and developed proposals for equivalencies.

The key question at present concerns the approach to be taken. On the one hand, some provinces and municipalities have experimented with special regulations for renovation, involving equivalencies and alternate measures. Examples include Part 11 of the Ontario building Code and Section 3.8 of the City of Vancouver's Building Bylaw. Both renovators and building officials have found this approach to be generally successful. On the other hand, the Canadian Commission on Building and Fire Codes have been developing a somewhat different approach for the past several years. They do not believe it is appropriate to have different standards for safety in new and existing buildings, and instead are developing guidelines for building officials on how to apply National Building Code requirements to existing buildings.

The choice of approach will impact other issues surrounding the regulation of renovation, such as determining when the regulations apply; distinguishing life safety requirements from other requirements; determining the extent of liability for building officials, owners and designers; how best to preserve the character of historic buildings; and how to ensure uniform interpretation from municipality to municipality.

While there are differences in the approaches preferred by the industry and by the Canadian Commission on Building and Fire Codes, the two approaches may not be mutually exclusive. There are far more similarities than differences in the two approaches, and a compromise position should be possible. For example, if the guidelines being developed by the code committees were augmented by either a series of worked examples of typical situations likely to be faced, or by a listing of equivalencies, then building officials would have a stronger foundation on which to base their judgements. These augmented guidelines would be nearly identical to a model renovation code. They could be adopted by provincial authorities, while providing for provincial and local flexibility. The goals of removing obstacles from the renovation process and of ensuring greater uniformity in the application of code requirements would be achieved.

CODES DE RÉNOVATION RÉSIDENTIELLE

DOCUMENT D'INFORMATION

L'industrie de la rénovation a soulevé à maintes reprises la nécessité de compter sur un code national de rénovation. La SCHL s'intéresse de longue date à la question de la réglementation appropriée des bâtiments rénovés. L'étude relève les principaux enjeux entourant la réglementation des travaux de rénovation et présente des propositions d'équivalence.

À l'heure actuelle, la principale préoccupation concerne la démarche à adopter. D'une part, certaines provinces et municipalités se sont dotées de règlements particuliers en matière de rénovation, faisant appel à des mesures d'équivalence et de substitution : à preuve, la partie 11 du code du bâtiment de l'Ontario et l'article 3.8 du règlement de construction de la ville de Vancouver. Autant les rénovateurs que les agents du bâtiment trouvent cette démarche généralement fructueuse. D'autre part, la Commission canadienne des codes du bâtiment et de prévention des incendies envisage depuis plusieurs années le dossier sous un angle quelque peu différent. En effet, estimant qu'il est tout indiqué de soumettre les bâtiments neufs et les bâtiments existants à différentes normes de sécurité, elle préfère plutôt élaborer à l'intention des agents du bâtiment des directives concernant l'application des exigences du Code national du bâtiment aux constructions existantes.

Le choix de la démarche influera sur d'autres enjeux entourant la réglementation des travaux de rénovation, comme déterminer à partir de quel stade les règlements s'appliquent; distinguer les exigences de sécurité de la vie des autres; établir l'étendue de la responsabilité des agents du bâtiment, des maîtres d'ouvrages et des concepteurs; déterminer comment mieux préserver le cachet des bâtiments du patrimoine; et indiquer comment assurer l'interprétation uniforme des règlements d'une municipalité à l'autre.

Des différences distinguent certes les démarches respectives de l'industrie et de la Commission canadienne des codes du bâtiment et de prévention des incendies, mais les deux ne se révèlent pas incompatibles. Au contraire, elles ont bien plus de similitudes que de divergences. C'est donc dire qu'une solution de compromis est toujours possible. Par exemple, si les directives que mettent présentement au point les comités des codes étaient amplifiées par soit une série d'exemples travaillés de situations types vraisemblables, ou encore par une liste de mesures d'équivalence, alors les agents du bâtiment disposeraient d'une assise plus solide pour fonder leur jugement. Ces directives amplifiées correspondraient ni plus ni moins à un code de rénovation modèle. Elles pourraient être adoptées par les autorités provinciales, tout en accordant une marge de manoeuvre aux provinces et aux municipalités. Ainsi on parviendrait à supprimer les obstacles du processus de rénovation et à assurer une plus grande uniformité dans l'application des exigences des codes.



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RESIDENTIAL RENOVATION CODES: A BACKGROUNDER

The renovation industry has raised the need for a national renovation code on various occasions, particularly through Canada Mortgage and Housing Corporation's recent consultation on renovation.

This paper provides some background information, identifies the key issues involved, outlines the positions and views of the major actors, and suggests a role for CMHC in assisting to resolve the current debate.

Introduction

The application of building regulations to an existing building can be triggered in several ways. An owner may voluntarily wish to rehabilitate a building, change its use or build an addition. Through his application for a permit to do any of these, which is normally required by law, he sets in motion a process by which his building and what he wishes to do with it are scrutinized by authorities in the light of prevailing building legislation. On the other hand, the owner may not wish to initiate changes, but some enforcement authority may decree that the building must be altered for the public good. The triggering process could be a provincial or municipal law directed at a special class of buildings, or a complaint or periodic inspection revealing an unsafe condition. These situations could result in the imposition of building regulations by the enforcing authority to ensure public safety.

Where buildings are renovated, or their use changes, there is obviously a need to establish minimum acceptable levels of safety to protect the occupants. Most building codes are concerned primarily with new construction, however, and the design solutions specified for new construction may not be reasonable for existing buildings. The cost of making changes to existing construction may render many provisions specified for new construction to be unrealistic for existing buildings.

Relative Importance of Requirements

Not all requirements have the same degree of influence on life safety, the principal concern of building codes. The relative importance of code requirements regarding life safety varies greatly from requirement to requirement. It should also be appreciated that most code requirements have a property protection component as well as a life safety component, and it is sometimes difficult to separate the two. An example would be fire-rated assemblies, which allow sufficient time for occupants to evacuate a building and also serve to protect the building itself. This relationship between life safety and property protection varies substantially from requirement to requirement. A regulatory authority wishing to establish requirements for an existing building faces a formidable challenge. Each building is unique and requires individual assessment taking into account not only its particular design and construction, but effects of aging and its state of repair. In considering the cost-benefit equation, it is much easier to deal objectively with matters where property protection is the principal component. Where life

safety is the main issue, moral and ethical considerations restrain departures from the intent of codified requirements if there is any doubt about significantly increased risk.

Special Requirements for Existing Buildings

In spite of these difficulties, however, a number of jurisdictions, including the Province of Ontario and the city of Vancouver have developed specific requirements directed at existing buildings.

Part 11 of the Ontario Building Code (Residential Renovation), has been specifically developed to accommodate the renovation of residential buildings. Part 11 began as a brief, independent document in 1984 and has since been greatly expanded and incorporated into the Ontario Building Code. The underlying philosophy is a four-fold approach: matching or improving the existing level of life safety, using compliance alternatives, proposing other alternate measures, or complying with the building code. Part 11 consists primarily of a detailed listing of compliance alternatives for code requirements, specifying where alternatives may be used and where existing conditions can be accepted. Construction indices and hazard indices have been developed to categorize existing building performance and the life safety hazard of the proposed occupancy.

A brief survey of renovators and code administrators has indicated a generally high level of satisfaction with Part 11. Laverne Brubacher, a leading renovator, Jerry Gotkin, former head of the Ontario Renovation Council, and Dave Henderson, OHBA's staff member on the ORC, all expressed that Part 11 has

been a major improvement over the situation which existed beforehand, in which buildings were allowed to fall into disrepair, because code compliance made renovations uneconomic. Those interviewed had no complaints about the code. Similarly, Michael deLint at the Ministry of Housing indicated that the Ministry is generally pleased with Part 11. The Ministry feels that the organization of the code could be made more "user friendly" and that additional minimum standards need to be gradually introduced, such as for basement heights and exiting requirements. Richard Desserud, Head of NRC's Codes Section, feels that Part 11 is too inflexible and ties renovators' hands.

Vancouver has also developed specific requirements for residential renovation as well as provisions for the seismic upgrading of buildings. Section 3.8 of Vancouver's Building Bylaw, "Alternative Requirements to Assist in the Rehabilitation of Existing Buildings", encourages a reasonable degree of compliance to full Bylaw requirements. Many requirements can be waived when sprinklering is provided. Relaxations in seismic upgrading requirements are often permitted. A "Housing Renovation Centre" has been created to facilitate the renovation of single detached units. Robert Lemon of the City of Vancouver has indicated that their system is working well, and emphasized the role of the Housing Renovation Centre in providing advice and making discretionary judgements.

Some jurisdictions have passed special acts to require certain existing buildings considered to be of a more critical nature (such as hospitals and theatres) to meet specific health and safety requirements. These acts tend to be limited in scope and do not cover a wide range of building uses or all aspects that infringe on health or safety. Fire codes are also concerned with

safety in existing buildings, but relative only to fire danger. They do not concern themselves with structural or health matters. They are principally concerned with regulating the function or use of buildings, as distinct from renovation. Although prescriptive requirements have the advantage of being readily enforceable, they tend to establish a level of safety different than is required for new construction, and add to the proliferation of yet another family of requirements in a much regulated industry.

Residential Rehabilitation Assistance Program (RRAP)

Canada Mortgage and Housing Corporation has over the years developed standards for existing buildings in support of various housing programs sponsored by the Corporation. These include the "Minimum Property Standards for Residential Construction" (NHA5017) as well as "Standards for the Rehabilitation of Residential Buildings" (NHA5132) used in relation to the Residential Rehabilitation Assistance Program (RRAP). These requirements were a mixture of performance and prescriptive measures, and permitted deviations from existing Residential Standards if conditions warranted such deviations, provided of course occupant safety was not unduly compromised.

The Approach of NRC and the Canadian Commission on Building and Fire Codes

The need for a more comprehensive set of model requirements for renovating existing buildings has been evident for many years. When NRC's Associate Committee on the National Building Code, now known as the Canadian Commission on Building and Fire Codes (CCBFC), took up the challenge in the 1980s, they

decided against developing yet another set of minimum requirements. They decided instead to develop a set of model guidelines for enforcement officials for the selective use of current building code requirements to attain reasonable levels of life safety in existing buildings.

As an interim measure, explanatory material was included in the appendix to the 1990 NBC describing the need for balancing the cost of implementing a requirement with the relative importance of that requirement to the overall Code objectives in the case of existing construction. The note points out the difference in approach required between new and old buildings in applying the requirements and directs the reader to an NRC publication (CBD230) for further information on how the Code requirements should be applied to existing buildings.

CMHC has helped pave the road to the preparation of such guidelines. When the decision was taken a number of years ago to develop model guidelines for the application of the NBC to existing buildings, CCBFC directed each of its standing committees to develop guides that would be appropriate to the particular part for which the committee was responsible. To accelerate the development of these guidelines, CMHC financed a research project in 1984 to develop an approach in determining how "equivalency" guidelines for Part 3 of the National Building Code could be developed. This culminated in a report prepared by Brian Dickens, former head of NRC's Codes Section, entitled "The Application of Part 3 of the National Building Code to Existing Buildings." The report served as the starting point for NBC technical committees and eventually led to the production of the "Guidelines for the Application of Part 3 of the National Building Code of Canada", which is now being

circulated for comment. (Part 3 was considered to be the most critical part for which application guidelines were required. Guidelines pertaining to other parts of the National Building Code are scheduled to follow shortly.)

The Guidelines provide a good description of the rationale and intent underlying current code requirements. Requirements are tabulated with respect to compliance difficulty in existing buildings, impact on life safety and property protection. Discussions with officials at NRC's Codes Section, such as Richard Desserud, Head of the Codes Section, Mark Walsh, Secretary of the CCBFC, Alastair Aikman, author of the Guidelines, and John Haysom, have confirmed that the Commission and NRC's Codes Section believe their approach is preferable to a renovation code, in that it allows greater flexibility and avoids having to create two different standards of safety. They feel that a guideline approach creates an opportunity for an intelligent dialogue between two parties: renovator/owner and building official.

While this approach does allow a great deal of flexibility, it also requires that the enforcing official be able to make many value judgements on alternative design solutions. The degree to which the model guidelines provide assistance in making such judgemental evaluations, therefore, is a key element to the eventual success of this approach. In jurisdictions that have adequate technical support services, this approach would seem to be manageable. Where support is not available, however, the enforcing official would have to rely on advice from professional experts. There is little doubt that the intelligent use of model guidelines requires a higher level of expertise than is required for the application of a specific set of minimum requirements. It also requires that the enabling legislation provide the enforcing official with the necessary authority to accept alternative design

solutions. Since the original Ontario Building Code Act did not provide local building officials with such authority, this may have been a factor in determining the direction taken in developing Part 11 of the Ontario Building Code.

The technical competence of enforcing officials in evaluating equivalencies, who have an appreciation of the cost effectiveness of alternative design solutions would appear to be a key factor, therefore, in the successful application of the guideline approach where these functions are not delegated to private design professionals. The need for such competence, it may be noted, was also recognized in a recent CMHC study of performance codes where decisions on equivalencies must be made in the case of new construction.

As an alternative solution, it may be of interest to note the approach being applied by the Vancouver building department in permitting the transfer of responsibility to private designers who have successfully completed appropriate code related courses.

CHBA officials, such as Bob Sloat, have expressed the need for building officials to have some basis for accepting equivalencies, and for code interpretation to be relatively uniform across the country. The renovation industry therefore generally favours renovation codes over NRC's guideline approach. Marc Denhez, of the Association for Preservation Technology, has advised the Canadian Renovators' Council that the proposed guidelines leave too much uncertainty for building officials to make discretionary judgements, and has recommended the codification of alternate measures.

Future Development of Codes

No attempt is made at this stage to assess the value of the new guidelines in facilitating the intelligent application of the Code to existing construction. It is too early to say whether the CCBFC guidelines will be successful in providing the user with appropriate tools to allow adequate evaluations to be made, or if it will eventually overcome the need by regulating authorities to publish separate standards for existing buildings.

One of the recommendations made in the recent CMHC study on performance building codes, was that clear statements to explain the objectives of individual code requirements be developed to facilitate the evaluation of alternative design solutions. Unless these objectives are known, it is difficult to evaluate alternatives or indeed to develop performance requirements. If such statements are reasonably specific, they could also be of valuable assistance to the enforcement official in assessing alternative design solutions to existing buildings as well as new construction.

The "Building Code Assessment Model" developed by TROW-IBI in a project jointly sponsored by NRC and the Ontario Ministry of Housing may also have a future role to play in assessing the safety level in existing buildings and allow a systematic assessment of alternative solutions. This approach, however, requires further development for general application, and may eventually prove to be too complex to allow its economical use as a day-to-day tool in applying the NBC to existing buildings.

Other Studies

A thoughtful review of the problems associated with the regulation of existing residential buildings was recently prepared under the auspices of the Affordability and Choice Today (A-C-T) program. This is a joint program of the Federation of Canadian Municipalities, CHBA, the Canadian Housing and Renewal Association and CMHC. Their report, entitled "Technical Code Update for Residential Renovation" was prepared for the A-C-T program by the Association for Preservation Technology. It includes sixteen specific recommendations for facilitating the renovation of existing residential properties. It apparently does not concur with the approach being taken by the CCBFC in preparing guidelines for applying the NBC to existing buildings but seems to prefer the Ontario and Vancouver approaches for listing acceptable alternative design solution. In addition to identifying the issues and problems facing residential renovation, the study proposes a model approach to regulating renovation.

A number of the report's recommendations, however, would appear to be more appropriately directed at the model Administrative Requirements for Use with the National Building Code, rather than with the NBC itself. The latter document which used to form part of the NBC has proven to be the most difficult one on which to achieve national uniformity since each province has its own individual enabling acts based on the perceived needs of each province. The triggering mechanisms for bringing building code requirements to bear in a renovation project, such as the ratio of the cost of the renovation to the total cost of the building, for example, are administrative in nature rather than code related. They are, however, extremely important

in affecting the economic viability of many renovation projects, and should be addressed by the appropriate committee responsible for the development of model administrative requirements.

A significant portion of the report is a compilation of equivalencies from the Ontario and Vancouver codes which the report suggest should be made part of the NBC requirements for existing buildings. It may however be more appropriate to provide such a listing as an appendix to the NBC and thus go a long way in meeting the concerns expressed in the report. Any "equivalent" design solutions would normally be processed through appropriate code committees, but if they are accepted as true equivalents there would appear to be little justification for restricting them to existing buildings. This is somewhat similar to the position taken when consideration was being given to including special requirements for mobile homes in the NBC. It was considered at that time that if experience showed that certain practices unique to mobile homes provided acceptable performance, they should be permitted for all structure (within the limit of that experience.) Similarly if the Ontario and Vancouver experiences have a proven track record for their equivalencies then they too could apply to new buildings within the limit of that experience (i.e. size, occupancy).

Summary of Key Issues

Need for Uniform Interpretation: The lack of renovation codes throughout most of Canada has meant that the interpretation of requirements varies greatly from municipality to municipality. Renovators operating in urban areas in

several municipalities become frustrated when certain practices are allowed in one area and not in another. The implementation of national or provincial renovator training is hampered by this lack of uniformity in code application.

Need for Agreement on Equivalencies: At present, there is no common base upon which building officials can accept or reject proposals for alternate measures. While this is also true for new buildings, it is particularly acute for renovation, since the range of as-found conditions is almost infinite. Each building requires a unique and often highly innovative approach to meet the intent of the code requirements. The lack of agreement on equivalencies results in long time delays and considerable reluctance on the part of building officials to accept alternatives.

Life Safety Versus Other Requirements: There would appear to be general agreement that there is room for compromise on requirements pertaining to matters other than life safety. For example, it may be permissible to waive requirements for barrier-free design or building durability, where the enforcement of such requirements would involve major structural changes to the existing building and be prohibitively costly. With life safety requirements, however, it is difficult to justify deviations from current standards. Where compliance is impossible, other alternative measures need to be implemented to achieve the same level of safety, such as adding sprinklers.

Two Levels of Safety in New and Existing Buildings: The Canadian Commission on Building and Fire Codes does not consider it appropriate to have a two separate codes - one for new buildings and one for existing - since they believe that this would imply that it is permissible to have two different levels of safety in buildings. While this is a valid concern, everyone

acknowledges that new buildings are built to higher standards. To take the position that it is not possible to have different standards would be to deny future improvements in building codes. At present, there already exists a defacto double standard, in that municipal occupancy bylaws prescribe minimum standards for existing buildings which differ from the standards for new buildings.

Regulation Versus Economics: The need to improve the performance, particularly the safety, of the existing stock must always be balanced against the costs. While imposing higher requirements for new buildings may involve only minor cost increases, retrofitting such measures to existing buildings may be so costly as to make the renovation uneconomical. This could lead to situations where buildings are either left to deteriorate or are simply torn down. The costs to society are high for both situations. It should be noted that a renovation which enhances life safety but may not meet all current code requirements will contribute to more lives saved than onerous regulations which create obstacles to renovation and thereby perpetrate existing conditions.

Triggering of Code Requirements: The administration of code requirements is often more problematic than the requirements themselves. Determining when a renovation project is large or complex enough to invoke the application of code requirements is left to the discretion of local officials. Usually, this is influenced by the cost of the renovation as a percentage of the assessed value of the existing building.

Liability: Municipalities are concerned with incurring liability if they accept existing conditions which fall short of current standards, especially

for life safety. Similarly, professional designers and building owners may be averse to taking on such liability.

Building Official Training: A study of renovation regulation in the US by Rolf Jensen found that the single most effective measure was better training for building officials. In Canada at present, there is no national or even province-wide certification for building officials. Without sufficient training, most building officials tend to insist upon a literal interpretation of code requirements, and are reluctant to exercise the option provided by most building codes of permitting other design solutions that provide equivalent safety.

Preserving the Character of Heritage Buildings: Buildings which have been officially designated as having historic significance should be allowed to be renovated in a manner which prevents the building from deteriorating and improves life safety, while preserving the distinctive character of the building.

Two Sides - Two Philosophies

The essence of the current debate over renovation codes can be summarized as follows:

Industry: Most representatives of the renovation industry, including renovators, CHBA, the Canadian Renovation Council and the Association for Preservation Technology, are in favour of a renovation code, preferably a national one. They feel that this would create a "level playing field" and

would encourage local building officials to accept more equivalencies. Some provinces, such as Ontario, and some municipalities, such as Vancouver, clearly support this position also, having had positive experience with their own renovation codes or bylaws.

Code Commission: Representatives from the Canadian Commission on Building and Fire Codes and from NRC's Codes Section are of the opinion that a renovation code "ties the hands" of building officials and creates two different standards for safety in new and in existing buildings. Their approach has been to develop guidelines to aid building officials in selectively applying requirements for new buildings to existing buildings. Most provinces and territories, as represented on the Provincial and Territorial Committee on Building Standards, would appear to support this position.

Compromise Positions: While the proponents of codes and guidelines have fundamentally different philosophies underlying their approaches, the net result is not all that different. Most readers of the CCBFC's "Guidelines", Ontario's Part 11 and APT's "Technical Code Update" cannot help but see great similarities. Ultimately, the central position and authority of the CCBFC needs to be recognized with respect to all code development in Canada. The prime question is whether CCBFC's current approach can be modified or augmented to satisfy the needs of the renovation industry for a more tangible approach to regulation. One solution would be to enhance the guidelines with an appendix of accepted equivalencies or worked examples of typical situations. This would provide a much stronger base upon which local officials could make judgements.

Possible Directions for Action

As indicated in the previous section, the respective positions of the renovation industry and the Canadian Commission on Building and Fire Codes have more similarities than differences, and a compromise position may be possible. Therefore, one very positive action would be the holding of a workshop or symposium to bring together representatives from the various parties involved, such as the Canadian Renovators' Council, CHBA, the Association for Preservation Technology, the Canadian Commission on Building and Fire Codes and the provinces and territories. This meeting could serve to identify the key issues, to propose compromise alternatives, and to develop a consensus on an approach and a timetable which will best satisfy all parties. Such a symposium could be held in the fall of 1992.

Other directions for action could include the following:

- development of a catalog of accepted equivalencies, based on work already undertaken by Ontario, NRC, Vancouver, APT, US agencies and others;
- assembly of case study examples of the most common non-complying conditions found during typical residential renovations;
- assessment of the renovation-related training needs of provincial and municipal building officials and development of a national training program on renovation for building officials, if desired by the provinces and territories.

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