Saskatchewan
Municipal Affairs,
Culture and Housing

Building Officials Newsletter

Building Standards
October 1999

Changes at CMHC

CMHC has made a few changes recently. You may have noticed, for example, that there are fewer CMHC inspectors on construction sites. At one time, all properties with CMHC-insured mortgages were subject to construction inspections that were usually carried out by CMHC inspectors.

Today, CMHC inspects a property only if an inspection is warranted by the risk analysis done by the corporation's mortgage loan insurance underwriters. As a result, CMHC carries out far fewer inspections, and has eliminated most of the CMHC inspector positions in Saskatchewan. Only two CMHC inspectors remain in Saskatchewan, and they cover the entire province from their base in Saskatoon.

The public seems largely unaware of this change. Municipalities continue to be accused that they are "duplicating the inspection services that CMHC provides," or worse, that they are "charging permit fees just to make money because CMHC really does the inspections."

Some municipal councils are also unaware of this change—a situation which can cause problems. If a municipal council mistakenly assumes that "CMHC looks after inspections," it might inadvertently cause costly construction problems and delays by choosing to wait until much later to deal with its responsibilities under *The Uniform Building and Accessibility Standards Act*.

CMHC is working hard to inform potential mortgagees about the changes in the inspections process, and about mortgage loan insurance. The following excerpt from CMHC's publication *Homebuying Step by Step* explains the corporation's current services and charges:

When you need a mortgage loan that is more than 75 per cent of the purchase price of your home, you must buy mortgage loan insurance. It protects the lender and, by law, most Canadian lending institutions require it. Having mortgage loan insurance means that if you, the borrower, default on your mortgage, the lender is paid back by the insurer—CMHC or a private company. With the risk of losing their money removed, lenders have the confidence to make mortgage loans of up to 95 per cent of the purchase price of the home. That means your down payment can be as little as 5 per cent of the house price. With mortgage loan insurance, many Canadians who might be unable to obtain a 25 per cent down payment can still buy a home.

What does mortgage loan insurance cost? First, you pay an application fee. If you provide a valid appraisal, the fee is $75; otherwise, it's $235. Neither the $75 or $235 application fee covers inspection or appraisal services. Your interest is best protected by obtaining these services through your own independent consultant. Mortgage loan insurance premiums range from 0.5 per cent to 3.75

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What's Inside…

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(Changes at CMHC — continued from page 1)

per cent of the amount of your loan (additional charges may apply), depending on the size of the loan and the value of your home.

You may have heard people talking about **emili**. Emili is CMHC's on-line mortgage loan insurance approval service. It uses a sophisticated risk management program and the latest data to make decisions as to whether to accept or reject an application for mortgage loan insurance. CMHC charges $165 to electronically process an application for mortgage loan insurance using emili, rather than the standard $235 fee. CMHC also offers FAXemili for a processing fee of $185. As of June 28, 1999, all mortgage loan insurance applications from Saskatchewan are processed by CMHC's business centre in Calgary. Another change you may have noticed is that Saskatchewan Housing (a division of Saskatchewan Municipal Affairs, Culture and Housing) is now delivering all social housing programs in Saskatchewan. Up until several years ago, much of this was CMHC's responsibility.

With all of the changes happening at CMHC, you might be wondering just what the corporation does do. On its website, CMHC describes its business in the following way:

Canada's housing industry is a significant contributor to our national economy. CMHC helps it stay strong with programs that support its development and international competitiveness. We ensure a competitive mortgage system to help Canadians buy homes and create jobs. With our information products and services, CMHC assists Canadians to maintain the excellence of our housing and helps markets work efficiently in a changing environment.

Today, more than one-third of all mortgages in Canada are insured by CMHC—but there's more to CMHC than mortgage insurance. We're continually looking for ways for the building industry to provide Canadians with more efficient and affordable housing, and to make information about housing available to you. In fact, CMHC is Canada's most comprehensive source of information on housing, whether you're a homeowner, a potential buyer, a do-it-yourself renovator or builder, or if you have special housing needs.

If you'd like to learn more about CMHC or find an answer to a housing-related question, call CMHC's Canadian Housing Information Centre at 1–800–668–2642 or visit their website at www.cmhc-schl.gc.ca. §

Municipal Policy and Liability

The following court case was reported by Carole Lee in the *Construction Law Letter*, Vol. 15, No. 1 (March/April 1999). For a more accurate description, this report or the official records should be consulted.

Hilton Canada Inc. v. Magil Construction
In Mississauga, an owner built a 9 storey addition to a hotel. Within 5 years, serious structural faults led to closure of the addition. The contractor declared bankruptcy. Both the architect and engineer admitted negligence and settled the claims brought against them. The owner pursued its case against the City, claiming that the City contributed to damages because it permitted construction to begin based on deficient plans and because it confirmed compliance of the final plans with the applicable legislation. A partial building permit had been issued by the City based upon preliminary drawings that were prepared and stamped by a professional engineer. The owner was required to submit final architectural and structural drawings prior to issuance of a completion permit. However, it was long-standing policy that the City would provide only cursory examination of structural aspects of a proposed building. This practice had been in place prior to 1972. Although the judge concluded that the City owed a duty of care to the owner, the judge ruled that the City was not negligent. The City reasonably relied on the involvement of design professionals in the structural aspects of the building, and followed their policy regarding plan reviews. The case against the City was dismissed. §

SPAG News

by Tim Macaulay, Saskatchewan Health

NOTE: The Saskatchewan Plumbing Advisory Group (SPAG) has not met since our last newsletter. They are ready to start consultation about new regulations that adopt the National Plumbing Code of Canada (NPC) 1995 with amendments. Those who are interested in receiving a copy of the proposed new Saskatchewan Plumbing and Drainage Regulations or have questions regarding SPAG should contact Mr. Tim Macaulay, Saskatchewan Health at (306) 787–7128, fax (306) 787–3237, or e-mail tmacaula@ health.gov.sk.ca.

More "No more water, please!"

The Spring/Summer 1999 issue of IRC's *Construction Innovation* contained an article about the impact of over-watering concrete. Based on that article, are the following statements true or false?

Over-watering concrete can increase its strength and stability.	T	F
Contractors sometimes add extra water to concrete to allow it to flow more easily.	T	F
Adding water to concrete increases its slump.	T	F
CSA CAN3-A438 permits on-site addition of 120 litres of water per cubic metre of concrete.	T	F
Cracks in concrete will not affect the dampproofing materials.	T	F
Contractors who over-water concrete may gain an economic advantage.	T	F
Structural failure will not result from excessive shrinkage cracking.	T	F
Over-watered concrete is more vulnerable to freeze-thaw deterioration.	T	F

Sloped Glazing

Glass is a brittle material with variable mechanical properties. The selection of appropriate glass for a given location is the result of applying one or many criteria. These might include static strength, impact strength, thermal stresses, deflections, fire-resistance and flame-spread requirements, consequences of breakage, reliability, safety, visual appearance, daylight transmission, solar shading, thermal insulation, and acoustic insulation. Subsection 9.7.3. of the National Building Code of Canada (NBC) 1995 requires compliance with the appropriate standard for the type of glass (i.e., tempered, flat clear sheet, wired, etc.) and with CAN/CGSB-12.20-M "Structural Design of Glass for Buildings" for glass in windows, sloped glazing, and skylights in houses. The related appendix note provides some glass specifications for windows in several wind load scenarios based on the standard. However, for selection of glass that will be installed on a slope, design calculations and special provisions in the standard must be followed.

The standard advises that "Whenever glass is sloped at an angle greater than 15° to the vertical it … must be treated as a roof or skylight." This leads us to conclude that the tables included in A-9.7.3.2. could not be used for most sloped glazing installations.

The standard continues "Two areas require special attention. Firstly, snow loads impose sustained loading on the glass. In many cases this necessitates the use of heat-strengthened or tempered glass." Different types of glass have different strength characteristics. *The User's Guide – NBC 1995 Housing and Small Buildings (Part 9)* notes: "Tempered glass, for example, is much stronger than an equal thickness of ordinary annealed glass. On the other hand, wired glass or laminated glass is considerably weaker, although neither creates a hazard when it breaks."

"Secondly, sloped glazing represents a potential safety hazard if it is located above public areas. Consequently the design must have some provision for preventing any broken glass from falling. This is usually achieved by the use of laminated glass. It is also possible to use wired glass or to provide a small gauge screen under heat-strengthened, tempered or annealed glass." The standard prescribes use of wired glass or laminated glass with minimum 0.76 mm thick polyvinylbutyral interlayer in sloped glazing and skylights over areas normally occupied by people.

To verify compliance with the NBC and the applicable standards when glass is used or proposed for use in a sloped application, testing, listing, or certification of a product or window assembly and reliable manufacturer's information can be accepted. §

You Wanted to Know…

Does the entrance door on a private kindergarten have to swing out and does it need panic hardware? The kindergarten is going into a one storey unsprinklered, multi-tenanted building. The kindergarten will be occupied by not more than 30 children and teachers at any time, and no overnight care will be provided.

Article 3.4.6.11. of the National Building Code of Canada 1995 addresses the direction of door swing. Assuming that we are not talking about sliding doors, this requirement says that *exit* doors need to swing in the direction of exit travel. So we need to figure out how many *exit* door(s) are required and which one(s) will be *exit* doors (not just other ways to get in and out). For that we go to Article 3.4.2.1., Minimum Number of Exits. This requirement says that all floor areas must have at least 2 *exits*, unless they can meet the criteria for one *exit*. If the building has not more than 2 storeys, and the occupant load is not more than 60 people, you go to Table 3.4.2.1.A for an unsprinklered building. The kindergarten, as described, would be considered a Group A occupancy. If the proposed kindergarten has less than the listed floor area and travel distance, the kindergarten could have only 1 *exit* door. If not, at least 2 *exit* doors would be required. And because of Article 3.4.6.11., all the *exit* doors would have to swing out. Even if only 1 *exit* door is required, it would be possible to also have an entrance door that swings in as well as the *exit* door that swings out. However, since people usually try to get out at the same place that they came in when an emergency occurs, there are some negative safety implications of locating the only *exit* door away from the normal entrance.

"Panic hardware" is not a building code term. In common usage, it means a door locking device that can be released quickly by pressure on a horizontal bar. This type of hardware is covered by Sentence 3.4.6.15.(2). The kindergarten, as described, would not fall into any of the three situations where "panic hardware" is required. §

Change Pages for the NBC 1995 — Binder Version

Change Pages for the First Revisions and Errata to the NBC 1995 are available for download (PDF format) from IRC's Web site codes.nrc.ca/codes/home_E.shtml. This 90-page update package contains information identical to that in the original Errata and Revisions package issued to all users in July 1998, but in a replacement page format that facilitiates the updating of the NBC binder.

IRC's *Construction Innovation*
Spring/Summer 1999

Battery Backup for Electromagnetic Locks

Electromagnetic locking devices in Saskatchewan must comply with Sentence 3.4.6.15.(4) of the National Building Code of Canada (NBC) 1995 as adopted and amended under *The Uniform Building and Accessibility Standards Act*. We have heard that Clause 3.4.6.15.(4)(c) has sometimes been interpreted to mean that when the building suffers a power outage, these locks must release and remain released. This interpretation creates a security issue for those buildings where an electromagnetic lock secures an exterior door. For the entire time of the power failure, the door would remain unlocked and the building would be vulnerable to unwanted or unauthorized entry.

Sentence 3.4.6.15.(4) was revised during preparation of the NBC 1995. The explanation provided when the change was proposed reveals that the lock does not necessarily have to release when there is a power failure to the building, as long as it will release when there is loss of power to the lock. The lock may be powered by emergency power or batteries, and may remain closed until released by pushing the door opening hardware. The version of this Sentence that was included in the published version of the NBC 1995 is slightly different than the proposed change, but it appears that the intent is equally applicable to the final version.

Additional support for this conclusion comes from the NFPA "1997 Life Safety Code Handbook." Although this code is not in force in Saskatchewan, it is often a useful reference. Clause 5-2.1.6.1. applies to Delayed Egress Locks. In the commentary that accompanies this clause, there is an explanation that unlocking required by loss of power need not automatically open the door and the door is permitted to remain latched. §

Costs and Benefits to Municipalities of Mandatory Residential Fire Sprinklers

Earlier this year, CMHC released a long-awaited research report in their Housing Affordability and Finance Series titled "Costs and Benefits to Municipalities of Mandatory Residential Fire Sprinklers."

The scope of the study was to examine the benefits and costs of automatic sprinklers and estimate the effect of mandatory sprinklers on the cost of providing municipal fire protection services, and on the cost of housing development, construction and maintenance. Six municipalities across Canada were used to develop and test the economic model upon which the results are based: Burlington, Ontario; Barrie, Ontario; Edmonton, Alberta; Pitt Meadows, British Columbia; Gatineau, Québec; and Kawacatoose First Nation, Saskatchewan. Included among the assumptions in the model were: fire departments would not undertake major changes other than to accommodate the effect of mandatory sprinklers; the mandatory sprinkler requirements would not be retroactively applied to existing buildings. The implications of sprinklers for life safety or property protection were not included in the analysis.

"The results of the analysis of the case study sites show that direct municipal cost savings for fire protection services may be achieved through the introduction of mandatory residential fire sprinklers for new development, although these savings are considerably less than the related additional costs which would be incurred for the installation of sprinklers in the new housing."

To obtain a copy of the study please call CMHC at 1–800–668–2642 or visit their website at www.cmhc-schl.gc.ca. §

Saskatchewan's Code Change Proposals

Attached to this newsletter you will find several pages that describe and explain proposals for changes to the National Building Code of Canada 1995 as adopted and amended by *The Uniform Building and Accessibility Standards Regulations*. Since the proposed wording has not yet been finalized, we would appreciate comments and suggestions for improvement. Please note that two proposed amendments, for residential care facilities and for stucco, are not included. We are working with affected groups to develop requirements that will be acceptable to them before we consult with you. Please contact us if you would like more information about these amendments. §

Canada's Construction Codes Are Changing

(by the Canadian Commission on Building and Fire Codes)

When new, objective-based codes are completed in Canada — likely near the end of 2003 — users can expect some beneficial effects from them.

They will find the documents written with greater clarity and containing specific statements of objectives that will make it easier to introduce innovative designs based on a common understanding of requirements.

This is how the Canadian Commission on Building and Fire Codes is responding to a request from users to make the national model codes more flexible, especially concerning innovation, while keeping codes as similar as possible to those they are familiar with.

Code committees, therefore, are looking at every requirement in the present codes and clearly identifying the intent of each. It is this bottom-up approach that will result in new codes written in a new, objective-based form.

The new codes will contain objectives and functional requirements in one part, with direct referrals to solutions in another part — which at first will be an updated version of the familiar 1995 National Model Codes.

Thus a design, system or product that doesn't meet the prescriptive requirements could satisfy the clearly stated objective and functional requirements, thus opening the door even more widely to new, acceptable solutions.

Building and fire officials will continue to be faced with situations where they must accept or reject alternative solutions based on their judgment or on third-party opinion. And since they are the ones responsible for issuing building construction

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(Canada's Construction Codes… — continued from page 5)

and occupancy permits, they come under the most pressure. But they will still be able to require the proponent to prove that the proposed design, system or product meets the intent of the codes.

There will, of course, be some differences between old and new, which is why training will be available to ease the transition. This will most likely take the form of one- or two-day seminars to show the construction industry how to take advantage of the added flexibility being written into the new codes, and make code officials familiar with the new format.

Code users should watch for opportunities to comment on the new codes during a public consultation on objectives sometime in 2000 and on the draft codes in 2002.

In addition, the Commission and provinces and territories are working on a single, coordinated review and development system. It will retain the best features of the process in use until now, but will allow provincial and territorial concerns about the development of provincial codes to be heard and addressed at the same time as concerns regarding Model National Codes. The result will be more widespread participation by code users, and a coordinated public consultation procedure.

Further information may be obtained by contacting the Canadian Codes Centre at (613) 993-9960 (voice); (613) 952-4040 (fax); or by e-mail at codes@nrc.ca. §

Comments, suggestions and constructive criticism about this newsletter are welcomed.

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