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CANADIAN

# BUILDING DIGEST

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CANADA

## The National Building Code of Canada 1965

by R. F. Legget

UDC 69.009.182

Since building in Canada has to be carried out in conformity with appropriate regulations, it appears to be useful to include in this series of Digests a summary statement about the National Building Code of Canada. The fourth edition of this publication has just been released and copies are now available. The notes that follow refer to the 1965 Code but no basic changes, other than those to be noted, were made from the 1960 edition. Much of what is said, therefore, applies also to the use of this earlier edition by municipalities that may already have adopted it.

Municipalities in this country have the power to regulate building within their area by reason of a delegation of authority from their respective provincial governments, usually through the Municipal Act. Control is specifically in the interest of public safety. As buildings have become more complex, so municipal building regulations have become more comprehensive, until today those of the major cities comprise fair-sized volumes. Public safety, however, remains paramount, with structural sufficiency, proper fire prevention measures, and adequate provisions for public health the three bases upon which all such regulations must rest.

Since municipalities across Canada have developed from greatly differing origins, in dif-

ferent ways and at different rates, it is not surprising that there have been wide variations in local building regulations, even between those of adjacent municipalities. "The chaotic building code situation" has often been blamed for apparent lack of progress in building when this has been under popular attack. Today, 65 per cent of the population of this country that resides in organized areas has the benefit of local building bylaws based on the National Building Code, if indeed the Code itself is not being used directly as the local regulation; and of the 161 Canadian cities, 138 now use the National Code in one way or another. With the promise of wider adoption of the new edition, Canada may be within reasonable distance of having effective uniformity of building regulations from coast to coast through the use of the NBC.

### Preparation of the Code

The Code itself is an advisory volume only, unless it is legally adopted for local use by an appropriate enabling bylaw. This can readily be passed by any municipal council under powers granted to it by the provincial government. When the Code is put to such legal use it becomes the local building regulation, with such amendments as may be necessary to take care of special local circumstances. In time, these exceptions should gradually decrease.

NRC

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OTTAWA

JUNE

1965

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The Code is naturally drafted in such a way that climatic variations across the country are taken into full consideration. Specific requirements that depend on climate are related to the basic climatic data for the locality in question. These can be provided by the Code Secretariat in Ottawa, one of the many services that supplement the document itself.

The Code is published as a public service, at the cost of printed copies, by the National Research Council. Responsibility for its preparation and maintenance as an up-to-date document has been delegated by the Council to its *Associate Committee on the National Building Code*. This is a national group of twenty-four leading members of the construction industry in all its phases, drawn from all parts of Canada. The members serve voluntarily, each appointed as an individual and not as a representative of any special group, each for a three-year term of service. The Associate Committee determines all policies for the Code and is directly responsible for its many services. Specialist committees in various technical fields are appointed by the Associate Committee to assist it with the drafting and revision of the several parts of the Code and its associated supplements.

Through the Division of Building Research, the staff of the NRC provide the necessary secretarial services, and the research officers of DBR/NRC give the necessary technical support, but only in an advisory capacity, the Associate Committee being entirely responsible for what does or does not go into the published Code. The official link between the Committee and the working staff of the Council is provided by the Chairman of the Associate Committee since, by direction of the Council, he is also the Director of the Division of Building Research.

Meetings of the Committee are generally held at about six-month intervals. Between these main meetings the many technical committees hold their working sessions, their recommendations finally coming before the Associate Committee for approval and implementation. In order to maintain the independent

position of the Code and to ensure that all who are interested in it receive exactly the same consideration, it is a fixed policy of the Committee to receive all suggestions for improvement or change only in writing.

Comments upon all sections of the Code are welcome at all times from anyone interested enough to submit them. All are most carefully considered, and drafts of new or revised documents are made available for public comment before issue. In these and similar ways the Code has steadily achieved the status of a truly national document, a continuing tribute to the voluntary work of architects, engineers, contractors, house builders, public officials, trade unionists, manufacturers and others who have served and are serving on the many committees that have now resulted in the greatly improved 1965 edition.

#### The 1965 Edition of the Code

The new edition is available as either a slim blue-bound volume or a series of loose-leaf pamphlets conveniently secured in a strong binder. The basic arrangement remains unchanged. This resulted from a major research study that led to the appearance of the 1953 edition in loose-leaf (and bound) form, an achievement generally regarded up to that time as an impossibility. Clue to the arrangement was the segregation of all those requirements of buildings that relate to their *Use and Occupancy*, irrespective of the construction material. Part Three remains the core of the Code, with the title just noted. It has been much improved over its form in the 1960 edition, but its basic approach to the functional requirements of buildings remains unchanged.

Part One provides the necessary provisions for the *Administration* of the Code when it is used as a bylaw. Part Two contains the corresponding legal *Definitions* of the main terms used in the body of the Code, grouped here as a matter of convenience. Part Five is a small section dealing with *Materials*, almost all of which are covered by standard specifications, to which an *Appendix* provides a useful guide. Removal of most of these references to other documents from the text of the Code itself

makes it a better document from the legal point of view, without interfering with the convenience of those who use it. These several administrative parts of the Code are published, for the loose-leaf version, as one pamphlet.

Part Four deals with structural *Design* and is the largest portion of the Code. It is divided into seven Sections dealing, respectively, with *Loads and Procedures*, *Foundations*, and then detailed design procedures for *Masonry*, *Wood*, *Concrete*, and *Structural Steel*, with a final short section on *Cladding*. Typical of the cooperative work that distinguishes the Code, the sections on Wood, Concrete and Steel Design are shared jointly with the Canadian Standards Association. That on Wood was prepared first for the Code and passed to CSA for their use. The reverse is the case with the Structural Steel section. For the new section on Reinforced Concrete design, a special joint committee was established by the Associate Committee and CSA. The resulting document is one of the major new features of the 1965 edition. It breaks new ground in its field in ways that will be described in forthcoming technical papers.

Parts Six and Seven required little change from their appearance in the 1960 edition other than the necessary "up-dating." *General Services*, such as heating and ventilation, are dealt with in the first of these parts, and *Plumbing Services* in the other. *Construction Safety Measures* are dealt with in Part Eight. Questions have been raised as to the correctness of including reference to safety measures in a municipal building bylaw, because such safety precautions are usually administered by provincial agencies. The Associate Committee has, however, been encouraged to continue to issue Part Eight if only as an educational part of the Code, although it is also a useful guide to proper safety measures and does not conflict with provincial requirements.

### Residential Standards, 1965

Part Nine of the new Code is somewhat unusual. It is entitled *Housing* and is quite short, yet it is comprehensive in its coverage of the main elements in residential construction.

Close examination of the document will show that the new Part Nine is truly a "performance code," of the type so often lauded in theoretical discussions of code preparation. Taken by itself, Part Nine is a useful document, though very limited in its application, since all detailed requirements are continued in one of the seven Supplements to the Code - No. 5, *Residential Standards, 1965*. This is a complete guide to good practice in residential construction, except for such major matters as structural design that are adequately dealt with in the rest of the Code. It represents a consolidation of the previous *Housing Standards*, issued as Supplement No. 5 to the 1960 edition of the Code, and the "Apartment Standards" previously published by the Division of Building Research of the National Research Council.

Originally, both the Housing and Apartment Standards were published by Central Mortgage and Housing Corporation. The two documents were used by the Corporation as their regulations for the control of residential construction under the National Housing Act, which CMHC administers. It was clearly desirable to have the responsibility for these two documents in the hands of some agency other than the Corporation itself. As a first step, they were passed over to DBR/NRC to publish. The appearance of the *Residential Standards 1965* as a part of the 1965 Code is therefore the final phase of a carefully planned development. For the first time all regulatory documents for the control of building in Canada are combined under the aegis of the National Building Code. CMHC uses Supplement No. 5 as its own regulation under the terms of the National Housing Act. Municipalities using the Code may now also use Supplement No. 5 for the control of all other housing within their borders, with no conflict between municipal and NHA requirements.

### Other Supplements

Six other special technical documents supplement the Code in a variety of ways. Supplement No. 1 presents a schedule of information regarding climatic requirements for most of the larger municipalities of Canada, together with a set of climatic maps that give a useful

general idea of climatic variations within this country. Supplement No. 2 is an entirely new document, now entitled *Fire Performance Ratings, 1965*. Instead of presenting, as did its predecessor, a long list of tabulated test results, this document gives a simple analytical approach to the calculation of fire performance ratings for a variety of building material combinations. It is of such importance that a separate Digest will be devoted to it later this year.

Supplement No. 3 is a useful compilation of shape factors for the calculation of wind loads on structures, with additional information on snow loads. The fourth supplement presents a set of sketches, which illustrate the detailed requirements of Part Seven of the Code (Plumbing), and so aid in its rapid interpretation. Supplement No. 6 is a set of recommended practices for the design of *Farm Buildings* other than houses. Published for the first time in 1964, it is a pioneer document that has already attracted international attention in view of the critical attention now being given to the better design of buildings for agricultural purposes.

The last Supplement, No. 7, presents a simple set of design requirements for making buildings convenient for the use of handicapped citizens, its exact title being *Building Standards for the Handicapped*. When it is realized that one Canadian in every seven has a permanent physical disability or an infirmity associated with aging, the need for some attention to this large group of citizens will be at once apparent. It can be said that no document yet issued by the Associate Committee has given the members such pleasure as this, even though it can now be seen that its preparation should have been initiated long before it was. The Supplement sets out desirable requirements for ramp entrances, widths of

doors to take wheeled chairs, and similar details of design that cost almost nothing if incorporated into original building plans, but which can make all the difference to the convenience of handicapped citizens. The document is advisory only, but with the support already promised for its promotion in all parts of the country, it will probably be put to good use, and on a wide scale, in the immediate future.

### How to Obtain the Code

It can be suggested with appropriate certainty that there should be a copy of the 1965 edition of the National Building Code of Canada, and of its supplements, in every architectural and engineering design office in Canada. Copies of the Code may be obtained for \$4 a copy, either bound or loose-leaf (i.e. \$8 for both versions), with the supplements costing \$2 a set. Orders and inquiries should be addressed to:

The Secretary,  
Associate Committee on the National  
Building Code,  
c/o National Research Council,  
Ottawa.

A price list for all Code documents will gladly be sent by the Secretary upon request; all Code documents are published in both of Canada's languages. Payment of this one charge ensures the receipt not only of the documents ordered but of all revision slips that may be issued before the next edition appears, as well as regular copies of the *NBC NEWS*, a bi-monthly news sheet that keeps its readers fully informed of Code developments in Canada and elsewhere, as well as about new publications of use to those who possess copies of the Code.

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