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Building Codes – Why are They Developed?

By John Archer

Secretary, Canadian Commission on Building and Fire Codes

A quick scan of Canada's National Building Code could lead one to the conclusion that building codes are entirely technical. This would be wrong, however. Building codes articulate social policy. They set out what we, as a society, agree are limitations that should be placed on the private use of property in the context of acceptable levels of risk from hazards in and around buildings.

Until the Industrial Revolution, Europe was primarily rural. Cities were mostly small, with stable populations, and the traditional pace and style of building was satisfactory to society's needs. Social convention covered building practice, although written regulations for building construction did appear, usually arising out of catastrophes, such as the Great London Fire of 1666.

The Industrial Revolution changed everything. Cities grew dramatically and became centres of employment. Building became a speculative economic activity, as rising populations needed housing and other facilities. The dramatic growth of cities outstripped traditional approaches to dealing with fire, fresh water and sanitation. The 19th century in Europe saw dramatic social struggles to improve living conditions. Building regulation to address speculative property development, fire and sanitation were a result of that struggle.

The settlement of Europeans in Canada moved, in short order, through the process of using available materials and technology, the adapting of European technology to suit local conditions, the rise of towns and then cities. Prior to Confederation in 1867, what was to become Canada was a primarily rural society, much like the pre-Industrial Revolution era in Europe. There were small cities – Halifax, Saint John, Quebec City, Montreal, Kingston and Toronto – but the majority of the population lived on farms.

It was a class society, with a ruling economic and social elite in the cities. The ideology of private property was very strong and property rights were very strongly defended in the courts. The ruling elites, having control over the governing processes, had little interest in implementing regulations that might limit the productive use of their property. They also shunned initiatives that would involve the taxing of property, something viewed as paramount to theft.

The ideology of the sanctity of private property can be seen in the writing of the British North America Act in 1867. The ruling elites in the colonies were not about to give up their hard-won responsible government by handing over power to a central government. As a consequence, the framers of the BNA Act planned to give the new "Dominion" government as few powers as was feasible, only enough to meet such common needs as defence and trade. As a consequence, the Act gave sole jurisdiction for the regulation of

the design and construction of buildings to the provinces. The reference is actually quite vague, stated simply as an exclusive provincial power over property and civil rights.

For the next one hundred years, little was actually done to regulate building construction. However, the cities in the new confederation began to grow. And with growth came problems. Fire razed every major city before 1900. Waves of typhoid fever, cholera and smallpox ravaged the urban populations nearly every decade.

The 1890s were a time of dramatic change. The propertied classes in the cities came to recognize that fire and disease did not distinguish between rich and poor. Private insurance companies began to refuse coverage unless “fire resistant” construction was used. Germ theory was developed and had a dramatic impact on society’s perception of housing and urban living conditions. Sanitation engineers began a mission to build water and sewage systems. As the cities grew, so did the size of their politically active and reformist middle classes. By the end of the 19th century, the municipalities in the largest provinces won the power to write and enforce building codes. As the decades passed, and villages grew into small towns, more and more of them took up this regulatory responsibility.

However, a consequence was that by the 1930s, building regulation in Canada was a hodge-podge of inconsistency. There were rural areas with no building construction regulation adjacent to a patchwork of locally created municipal building bylaws. Some bylaws were progressive, but many were based on bad science, a codification of the local carpenters’ traditional practice. Some were designed to support local business enterprise, many were intended to exclude competition from outsiders. All of them differed in some way.

The situation was chaotic. Architects and engineers complained that they had to learn a different set of rules in each locale. Larger building material manufacturers complained that some municipalities were arbitrarily prohibiting the sale of their building products. Contractors complained that they couldn’t use the cheapest or most efficient methods of building. Economists denounced the negative impact of these “barriers to trade” on the Canadian economy at a time when the Great Depression had robbed capitalism of much of its energy and triggered social unrest.

Western Canada had been decimated by drought and the collapse of international wheat markets. Half of Saskatchewan was on what little welfare was available at the time. The unemployed roamed back and forth across the country looking for work. Homelessness became a significant issue and shanty towns began to appear in Canadian cities. Protest movements were gaining strength.

The federal government saw this crisis as a threat to national stability. Action was needed and in response it established the first federal housing program, the Dominion Housing Act of 1935. Its purpose was to both create housing and stimulate construction activity. The government found, however, that the lack of consistent (or often any) rules

for the housing construction it was supporting financially resulted in abuses and significant quality failures.

With the encouragement of municipal officials, planners, engineers and architects, in 1937 the federal government asked the National Research Council (NRC) to develop a model building code that it could apply in administering its programs, that could be used by municipalities, and that would also increase the efficiency of the construction economy. In response, NRC brought together leading engineers, architects and building scientists from across Canada to undertake the task.

The objectives of the first National Building Code (1941) are clearly stated in its foreword. It is a document setting out regulations in the distinct areas of construction requirements, fire protection, and health and sanitation. The construction requirements, in addition to setting out “safe” minimums for structural capacity, were intended to address existing deterrents to technical progress and barriers to construction productivity. The fire protection requirements were intended not only to protect a building and its occupants from the effects of fire but to prevent the spread of fire to adjacent buildings. This part of the code introduced the concept of “occupancy” and reflected the hazards associated with each occupancy type in the level of fire protection required. The health and sanitation requirements were intended to achieve minimum conditions of light and ventilation in rooms in buildings and access to a safe supply of potable water in buildings and water closets.

For its time, the 1941 National Building Code was a very progressive document, both technically and socially. Continually updated in subsequent editions by a dedicated group of volunteers, the NBC has been an important foundation for the quality of life of Canadians ever since. The evolution to an objective-based format signals a new era.

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