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COVER STORY

ROBERT BULLIS

IRC celebrates 50 years: *the formative decades as DBR*

With the dawning of 1997, Canada's construction industry marks a significant milestone — the 50th anniversary of the National Research Council's Institute for Research in Construction, known originally as the Division of Building Research.

This organization, established in 1947, has had a profound impact on the nation — conducting important research that addresses the full range of construction-related problems; providing those in the industry with knowledge and solutions from around the world; conducting essential evaluation of building materials; and of course, developing Canada's National Building Code.

"IRC is Canada's technology source for construction, and in many ways its predecessor, DBR, was the founder of building science in Canada," says Jim Gallagher, IRC publications manager and

media contact. "The founding director, Dr. Robert Legget, insisted from the outset that DBR concentrate on problems unique to Canada, that researchers serve with dedication and distinction, and that information be transferred to industry in a planned, coherent fashion."

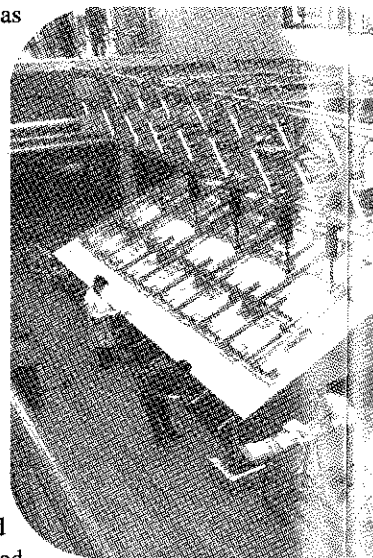
Legget's vision became reality through the work of these researchers, many of whom gained national and international renown for their accomplishments. For example, Dr. Neil Hutcheon, the successor to Legget as director and a pioneer in building-envelope research, wrote the landmark book, "Building Science for a Cold Climate." The work of Dr. Roger Brown and his colleagues in mapping the permafrost zones in Northern Canada was instrumental in opening the North for development. Still others contributed greatly in areas as diverse as soil mechanics, fire protection, structural

safety, materials science and building performance. Indeed, many of today's established construction practices have resulted from DBR research and the transfer of the results to the industry.

DBR BORN OF POST-WAR BOOM

With the end of the Second World War in 1945, and very little house construction during the war years, there was tremendous pent-up demand for low-cost, quality housing by 1947. This was a period of frenzied activity for our young country: returning soldiers were marrying and raising families (the beginning of the baby boom) and the influx of immigrants and refugees increased the need for housing. The federal government had passed the National Housing Act in 1946 to provide low-cost mortgages for housing construction and set up the Central (now Canada) Mortgage and Housing Corporation to administer the Act, manage the government-owned stock of war-time housing and engage in direct construction of new housing. At the same time, there was a recognized need to advance the National Building Code, which had first been published in 1941.

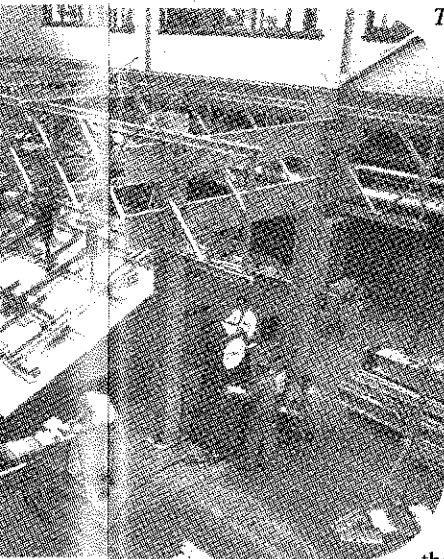
The National Research Council had been doing some construction research up to that time, but its president, Dr. C.J. Mackenzie, knew there had to be greater effort and focus in this area. He called upon Legget to set up and head a new di-



From left, C.B. Crawford (who became DBR's third director), C.D. Howe (then federal minister of trade and commerce) and R.F. Legget in the soil mechanics laboratory during the official opening of building 'M20,' October 1953.

vision, which became DBR. It was patterned to some extent after the British Building Research Station, established in the 1930s. A part of the mandate of this new NRC division would be to co-ordinate development of the National Building Code and assist CMHC with housing research.

A professor of engineering at the University of Toronto at the time, Legget was well known to Dr. Mackenzie, who had asked Legget to chair a committee conducting important war-time research on tracked vehicles. After the war, Legget encouraged research on soils, permafrost, peat, ice and snow, which led to the development of the Canadian Geotechnical Society. Geotechnical research was to become an important element of DBR's work.

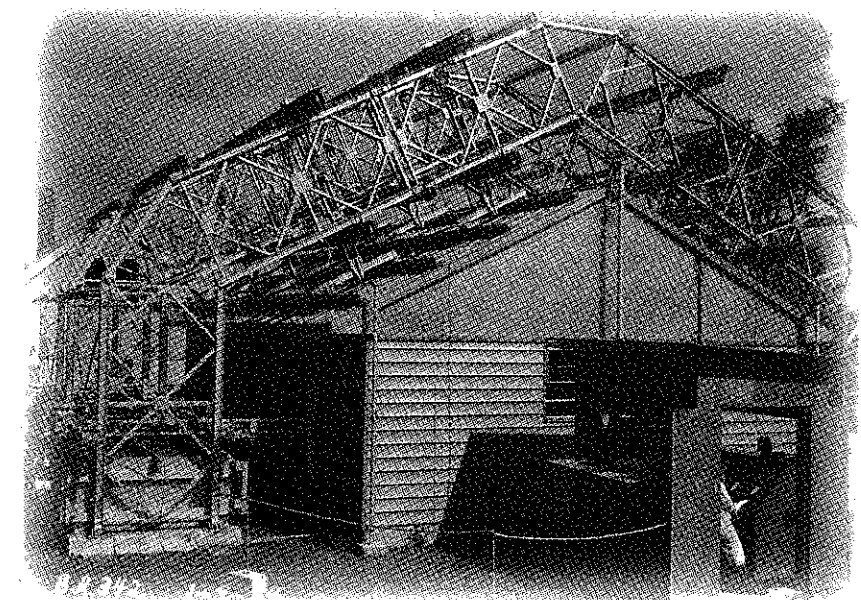


THE LEGGET LEGACY

In so many ways Legget was one of those larger-than-life figures, and DBR was really his creation: he determined its direction, dictated its mode of operation, forged its links to the industry and tirelessly extolled its benefits to the nation. "There are few people who make an impact on their profession and

personal relationships that is as deep and lasting as that of Robert Ferguson Legget," wrote Dr. Lorne Gold, researcher emeritus at IRC. "He was an outstanding practitioner and teacher of engineering, a dedicated servant of the public and an enthusiastic author and historian."

From his first day of work in August of 1947, with a secretary and a telephone in a small office, Dr. Legget tackled his challenges in a way that impressed those who knew him. "I feel so lucky to have worked with him," says Bill Schriever, who started work at DBR in 1948 and was head of the Building Structures Section when he retired in 1980. "He was hard-working, well-meaning and exceptionally gifted."



Photos: IRC

Results of snow and wind load tests on a full-scale conventional house roof conducted at DBR in 1954 led to loading tests on entire roofs in DBR's structures lab (centre photo).

Under Legget's guidance — which his friends and colleagues fondly term his "benign dictatorship" — DBR expanded quickly and was soon addressing almost every key aspect of construction. During those formative years in the '40s and '50s, some of the unique facilities that allowed DBR to become Canada's premier construction research organization were built or obtained: materials and structures testing laboratories, a unique fire-research lab and other specially designed buildings and equipment. Regional stations were also established in Halifax, Saskatoon and Vancouver, giving DBR a national presence and permitting research in environments distinct to those places.

A LASTING CONTRIBUTION

In 1986 DBR became IRC: the DBR years set the tone for the significant contribution to the Canadian construction industry it has continued to make as IRC. The organization has always understood the need to provide research support that has practical application and benefit, as well as the necessity to be a nationwide technical resource. "DBR was an important creation," says Bill Schriever. "The construction industry is very decentralized, so there was (and remains) a great need for a national technology centre to act as a co-ordinator and provider of research. Today, under the direction of George Seaden, IRC continues the tradi-

tion of DBR by providing an efficient, focused and market-driven research and technology service."

Ivan MacFarlane, who was secretary general of the Canadian Construction Research Board when he retired from IRC in 1987, agrees about the importance of IRC's work. "IRC has contributed greatly to Canada. In the early days there was little construction research going on. Fire research has been important; permafrost research permitted the development of Canada's North; and the National Building Code is a major achievement — most nations don't even have such a thing."

Allan Bennett, chairman of the IRC's Advisory Board, which succeeded the Canadian Construction Research Board, recently wrote that "Canada's construction industry, like most other sectors of the economy, has an urgent and ongoing requirement to innovate. For it is only through the adoption of innovative technologies that the industry will continue to be competitive and contribute as it has to Canada's gross domestic product. IRC is in a position to assist industry in its greater use of appropriate technological innovation. It is an organization that has responded extremely well to advice from the industry."



This article is the first in a series celebrating IRC's contribution to the Canadian construction industry.