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HISTORY

ROBERT BULLIS

IRC celebrates 50 years: consortia speed pace of innovation

The National Research Council's Institute for Research in Construction has developed a reputation as a centre for innovation over its 50-year history; today, its government-industry consortium initiatives are accelerating the pace of that innovation.

A relatively new mode of research funding and management, consortia bring researchers together with those operating on the vanguard of the industry: manufacturers, contractors, suppliers, consultants and industry associations. The result is productive exchanges of practical experience and scientific research that over the past 10 years have contributed better products, techniques and knowledge to the industry.

IRC consortia involve large-scale research projects underwritten not only by private-sector firms, but by government agencies involved in construction. And they have become a key entry point for industry participants seeking early access to the kind of knowledge that provides a competitive edge in a market where innovation can mean lower costs, larger profit margins — and success.

"IRC was one of the early agencies to make the move into public-private co-operation," says George Seaden, Ph.D., P.Eng., IRC's director general. "Two driving forces made it happen: government deficit reduction, and the challenge inherent in transferring technology from the laboratory to the building site."

Over the past decade, IRC's budget has shrunk by approximately 40 percent. Seaden notes, however, that its research activity has never diminished. "That provides an indication of the change in the funding mix that has taken place, thanks largely to the consortium process."

With the continued cutbacks to public funding, IRC realized it needed to find other ways of funding research. Asking the people who benefited from the research to help fund it seemed logical, but the request came as somewhat of a shock to those used to the long tradition of gov-

ernment underwriting most Canadian construction research. Today, collaborative-type research efforts account for 60 to 80 per cent of IRC's budget, with consortia forming an ever-increasing portion.

One reason for the interest lies in a consortium's capacity to facilitate technology transfer. The old way involved IRC researching new technologies, and delivering them to potential industry users who often needed convincing of the innovation's practical worth. With consortia, the industry is involved in funding, guiding and conducting the research process, so the research results arrive with credibility and proven applications. Because consortium members have immediate access to the research results, they become leaders in the new technology, with other users picking it up from them.

According to IRC analysis, early access to research results is one of the most important reasons for industry's consortia participation. Many participants also seek to learn from each other and from the researchers in a co-operative environment.

Les Richardson agrees with this observation. A senior researcher with Forintek, the wood industry's research arm, Richardson is involved with two IRC consortia studying the noise-control and fire-resistance ratings of wood-frame wall and floor assemblies. "It is a large enough project that the wood industry would never have done it on its own," he says. "But by dealing with IRC, we have brought together all the affected industries — not just the wood industry, but the steel-framing industry, gypsum-board manufacturers, insulation manufacturers and concrete interests — into one huge program in which an unbiased evaluation of all our products can be carried out."

Other consortia concentrate on a common problem, rather than an improved product. In western Canada, for example, longitudinal sidewalk cracking is a persistent problem. Because no-one could explain the mechanism underlying the problem, six western Canadian municipalities

joined IRC several years ago to underwrite a study seeking solutions.

Some consortia develop out of the need for shared facilities, since testing may require large, expensive, specialized set-ups, with experts to run them. While such facilities may be far beyond the reach of individual organizations, a consortium can pool resources to provide the necessary funding. IRC's indoor-environment facility is an excellent example: IRC proposed to industry that it help underwrite the cost of a laboratory in which one could investigate and measure the various factors — lighting, air quality and acoustics — affecting the indoor environment. Today, the shared facility works with other research organizations around the world to further our understanding of the optimum indoor conditions.

Of course, consortia exist primarily to increase knowledge, create better construction guidelines or encourage higher standards. One of IRC's early consortia dealt with both a common problem — deteriorating parking garages — and the need for better product knowledge.

Most IRC consortia get their start the same way: IRC approaches industry with a research proposal it believes is of value to all potential partners. In other cases, one consortium breeds several related projects as participants see first-hand the benefits of the collaborative process.

While it was difficult to get the first consortia going, they are now so successful that future consortia are almost overcrowded. The industry as a whole benefits from the knowledge gained and the new products and technology developed. And IRC obtains a wealth of information, including hard engineering data, which it uses to develop predictive models. This helps it fulfill its mandate, namely to help the industry deliver its goods and services at the highest quality possible at the most reasonable cost, while protecting public safety through improvements to fire and building codes.

