



This is the second edition of the CCA Research & Innovation Bulletin. In this edition, we are providing you with a brief synopsis of some of the research that has been carried out or that is being planned by the Institute for Research in Construction (IRC) and by the Industrial Research Assistance Program (IRAP).

PREFABRICATION AND AUTOMATION IN CONSTRUCTION – A STRATEGIC TECHNOLOGICAL ROADMAP FOR CANADA

Earlier this year, the National Research Council of Canada (NRC) commissioned a preliminary study on the extent to which prefabrication, modularization and automation techniques are employed in the construction sector nationally and internationally. The study documented the benefits as well as the barriers to their wider adoption by mainstream industry, and it provided some insights on the areas that could benefit from increased R&D, innovation and technology transfer.

The study suggests that prefabrication, modularization and on-site automation hold a great potential to dramatically change the Canadian construction industry by boosting productivity and exports while reducing environmental impacts. While the opportunity is large, there are many social, economic and technical issues standing in the way of its realization.

The analysis indicates that a more comprehensive and in-depth study of the long-term prospects of prefabrication and automation in construction would be useful. The NRC is prepared to work with industry leaders/champions to:

- Develop a long-term vision on the use of prefabrication and automation in construction;
- Describe the future technologies and R&D needed to support their development; and
- Propose a plan detailing how the vision and its full potential can be achieved.

For more information, please contact Guy Gosselin (guy.gosselin@nrc-cnrc.gc.ca / 613-990-0458).

MAJOR RESEARCH INITIATIVE TO ASSESS CANADA'S CORE PUBLIC INFRASTRUCTURE (CPI)

Infrastructure Canada and NRC-IRC have signed a Memorandum of Understanding (MOU) with Engineers Canada, representing members of the National Round Table on Sustainable Infrastructure (NRTSI), to undertake a collaborative research project to assess the state, performance and management of Canada's core public infrastructure.

This project may lead to a framework for objective and validated metrics to aid decision makers, owners and operators of public infrastructure to assess the state and performance of their infrastructure, which could serve as a model leading to harmonized assessments and effective management of Canada's core public infrastructure.

For more information see http://irc.nrc-cnrc.gc.ca/ui/cs/cpi_e.html

RESEARCHERS CONCLUDE EVALUATION OF CORROSION-INHIBITING SYSTEMS ON CONCRETE BRIDGE BARRIER WALLS

A long-term assessment of the field performance of bridge barrier walls built with reinforced concrete containing commercial corrosion-inhibiting systems was recently completed by NRC-IRC researchers. It concludes that a concrete system combining low-permeability concrete, a 75-mm-thick concrete cover, a corrosion-inhibiting admixture and a concrete sealer would provide an excellent defence against corrosion.

For more information see http://irc.nrc-cnrc.gc.ca/pubs/ci/v12no3/v12no3_12_e.html

COMPOSITES IN CONSTRUCTION

IRAP is undertaking a state-of-the-art study on composites in construction, possibly leading the way to suggested opportunities in this area.

Anyone with expertise in this area is invited to contact Roger Willoughby at: Roger.Willoughby@nrc.gc.ca

ROAD TUNNEL FIRE PROTECTION

Tunnel fire safety measures are being questioned throughout the world following a number of fatal fires. However, information on the performance of fire detection systems used for road tunnel protection is still limited. A recent NRC-IRC study will help authorities to select the most appropriate tunnel fire detection technologies, to assist standards-writing agencies to determine performance requirements for road tunnel fire detectors, and to improve fire detection technologies for tunnel protection.

For more information see http://irc.nrc-cnrc.gc.ca/fr/pfdss/detecttunnel_e.html