

mer as part of the government's comprehensive review of all government programs. These were the Arctic Vessel and Marine Research Institute to be established in St. John's, Newfoundland, and the Industrial Materials Research Institute to be located at Boucherville, Quebec. Following the review, approval of both projects at their original cost estimates was confirmed in September, 1979. Engineering and architectural planning for the Arctic Vessel and Marine Research Institute is well under way with start of construction planned for April 1981. Completion of the ice tank facilities is scheduled for April 1983, with the remainder of the installations to be completed the following year. The Industrial Materials Research Institute is also in the engineering and architectural planning stage. A 35-acre site in an industrial park adjoining the Trans-Canada Highway at Boucherville, Quebec, has been procured for the laboratory. Start of construction is scheduled for early 1981 with completion expected in 1983. Temporary quarters for the institute's staff now being recruited are being provided at Longueuil and in St. Henri, a district of Montreal....

Fire research

Fires in Canadian buildings cost around one-quarter of a billion dollars each year, not counting social costs. The expense of providing fire protection roughly equals this amount. Designing the fire protection of buildings involves many considerations and because an actual fire is the only true measure of effectiveness, safety judgments are largely qualitative. The tasks of assessing fire hazard to life and property and planning effective fire safety systems are further complicated by changes in building materials and components, in the patterns of use of buildings, and in architecture, particularly increasing building height, size and complexity. Current major concerns are the hazards presented by smoke movement in high buildings, the fire and smoke hazards associated with plastics and evaluation of systems for ensuring life safety when fires occur.

Because of these complexities, theoretical and laboratory studies on fire safety must often be complemented by experiments in realistic, though controlled, fire situations that simulate real life conditions. To improve Canada's very limited capabilities in this area, NRC's Division of Building Research is constructing a fire research field station, to be completed in

November 1980. Located near Ottawa, the station will comprise an experimental high-rise building, a "burn hall", and a small ancillary building housing support services.

The ten-storey tower contains, in a minimum plan area, the structural features and mechanical systems needed to reproduce smoke movement patterns found in high-rise buildings during fires. It is designed as an experimental tool to endure without damage the many controlled fires that will be conducted during the course of a major research program. The purpose of this work is to produce design data for smoke movement control measures referenced by the National Building Code of Canada....

International activities

The National Research Council is responsible for Canadian representation in several international scientific and technical organizations through national committees that reflect Canadian interests in almost every discipline, with members drawn from industry, government and universities.

NRC is the Canadian member for the International Council of Scientific Unions (ICSU) and for 16 of the 18 constituent unions, for six of the scientific committees and four of the ICSU scientific associates: the International Federation for Documentation, the Pacific Science Association, the International Union of Quaternary Research and the International Federation for Automatic Control.

Since last year, NRC has represented the Canadian scientific community in the International Union of Physiological Sciences, the International Union of Pharmacology and the International Mathematical Union, succeeding the Medical Research Council of Canada and the Canadian Mathematical Society in this role.

In the field of engineering, NRC is the Canadian adhering member to eight international associations and shares with the Canadian Engineering Societies' Committee in the activities of the World Federation of Engineering Organizations (WFEO) and the Pan American Federation of Engineering Societies (UPADI).

In addition, this year, following the disbandment of the Associate Committee on Heat Transfer, NRC has authorized the formation of a Canadian National Committee on Heat Transfer to maintain existing links between the Canadian scientific community, the International Heat

Transfer Conferences and the International Centre for Heat and Mass Transfer.

Last summer, NRC hosted the general assemblies and international meetings of two ICSU members: the International Astronomical Union, which met in Montreal in August 1979 and the International Biochemical Union which met in Toronto in July 1979.

These events benefited from the enthusiastic co-operation of the Canadian Astronomical Society and the Canadian Biochemical Society.

On January 1, 1980, the co-operation agreement between NRC and the Centre national de la recherche scientifique de France was renewed automatically, as provided by clause 14 of the March 1971 agreement.

Increasing contact between Chinese and Canadian research institutions has been reflected in the number of Chinese visitors to NRC laboratories and in the number of NRC scientists and engineers visiting China, often at the request of Chinese authorities. In response to a request from the Department of External Affairs and in concert with the Council of Ministers of Education of Canada, which manages a program that allows scholars from the People's Republic of China to come to Canadian universities, laboratories and research centres, NRC has accepted the responsibility of finding accommodation for Chinese scholars in federal government laboratories and industry, as the need will arise.

Canada/Saudi Arabia agreement

Under a co-operative agreement between NRC and the Saudi Arabian Centre for Science and Technology, an NRC astronomer has designed instrumentation to test the quality of "seeing" in Saudi Arabia. Instrumentation is currently being manufactured to test four sites in the Kingdom simultaneously. These sites have been selected on the basis of an initial reconnaissance mission by a team from NRC's Dominion Astrophysical Observatory near Victoria, British Columbia.

The year 1979-80 saw the signing of an agreement between Canada (represented by NRC and Environment Canada's Atmospheric Environment Service) and the U.S.A. for co-operation in research on weather modification.

NRC scientists and engineers participated as members of official Canadian delegations to the United Nations Con-

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