

Canadians have long had an interest in, and a need greater than ours for, all-weather construction. Since the mid-1950's, Canada has made a concerted drive to raise the volume of winter building, and they have succeeded to a marked degree. In the process, they developed many of the all-weather construction techniques now being used on a limited basis in this country. They quickly found that the keys were advance planning, and a cheap enclosure.

It was discovered that the Canadian winter was no bar to construction of large and small buildings, lengthy bridges, tall dams, or big-scale earth-moving projects. It was also found that with proper planning, even large construction sites could be completely enclosed with plastic, creating comfortable working conditions during sub-zero weather.

Just as importantly, Canada has proved that winter construction is of as good quality as construction done at any other time of the year, and that the cost of advance planning and site-enclosure is negligible. The Canadian Contractors Association surveyed more than 100 contractors and found that the average additional cost of winter construction ranged from approximately three-quarters of one per cent to 1.5 per cent of the contract price. This small added cost was more than compensated for by the economic advantages of early completion of projects.

The Canadian Government, recognizing that the general public welfare was improved by increased winter construction, took several measures which have encouraged the building industry. One of these is the Municipal Winter Works Incentive Program which provides for rebates to localities which construct public works in the winter months. Another measure is a "bonus" system under which the government pays \$500 to the purchasers of residential units "substantially completed during the winter months."

The important point for us here is not that these are government-sponsored incentive programs, but that the Canadians decided to spur their construction industry toward increased winter work by rewarding the industry's clients.

If Canada, with winters that are longer and harder than ours, can build the year round, then it is obvious that the United States can do likewise. And if Canada has found that the economic benefits of all-weather construction outweigh its difficulties and cost, then we in the United States, where the difficulties and the cost will be less, should reach the same conclusion.

I think that we must learn a lesson from the Canadians and see that all-weather construction is "sold" to the clients of our industry. For this to be done, the construction industry must ask for leadership from architects—from the professionals who stand closest to, and indeed represent, the owners.

The rest of us in construction have a great deal to do in order to be completely ready for all-weather construction. We have to become more broadly familiar with its techniques than we are now, and contractors, suppliers and craftsmen must join in trying to make it as efficient and economical as possible.

As I mentioned previously we in the masonry industry have banded together and are actively working on our problems.

There are several specific actions which would be most helpful. One is for architects to convince their clients of the multiple advantages of all-weather construction, including most importantly the advantages of early completion. At the same time, they should attempt to dispel any fears that owners may have concerning the cost and quality of all-weather construction. Architects should act to require all-weather construction as a bid item so that bidders may include the minor cost in their bids without fear of injuring their ability to compete for the job.

However, I feel that the most important action to be taken—action that will move the building industry off dead center—is for the U.S. Government to initiate leadership in this matter and show the way. If government construction agency's were to schedule their construction throughout the year it could then set an example for private construction to follow.

That the federal government should exercise leadership in promoting all-weather construction is, I believe, both logical and reasonable. Its role in construction enables it to undertake the task and its interest in full employment and economy of construction—demand it.

I am convinced that contractors will readily bid for all-weather projects, and that skilled workers and materials will be available. In fact, contractors will have fewer manpower and material delivery problems on all-weather projects than they now have on projects which shut down in cold weather.