

Composite excerpt of the solution that sought simple integration of all systems and max. flexibility for alternate space uses within a finite and irregular shell. '85 Thesis by Francis Y.P. Ng: Elementary School, Yellowknife, N.W.T.

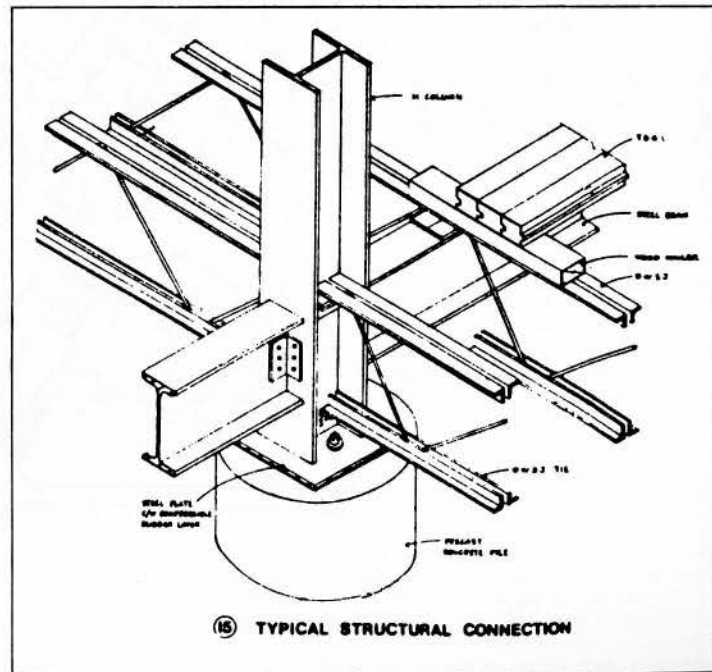
## Students of Architecture and the North

by Ojars Biskaps

As the world sees us, Canada's identity is one with the vast territories that reach high into the Arctic. In fact the northern territories, making up one third of this country, is a region which few Canadians know or understand, an abstraction as of someone else's domain.

Engineers for years have studied ways of coping with the severity of the northern climate and challenging terrain, have built roads, landing strips, run-of-the-mill as well as spectacular structures and have laid lines of all kinds. Architects on the other hand, with few but notable exceptions, have stayed out of this part of the country. Save for a rather recent and largely urban-oriented awareness program there is no shared debate in the architectural community about the adequacy of building practices in the northern latitudes.

If some members of our thinly-spread profession see the current situation in the north and contemplate things yet to come with a degree of concern, they acknowledge the ready availability of the country's research establishment for consulting on the information and options available. What is less readily acknowledged by anyone in the profession is the availability of the resources of the ten architectural schools, all located south of 60° latitude, that represent faculties with established qualifications to instruct as much as to advise on most aspects of design and construction, in whatever climatic circumstances. The body of knowledge, if not necessarily field experience, that exists is there to be considered. Although perhaps not expert on things arctic and perhaps reluctant or unable to divert actual interests or research to new directions, faculty members in Canada each year help set student study topics and guide hundreds of scholarly probes and design explorations in the form of projects and theses, suggesting a rich and recurring forum—a laboratory—for assessing testing at least some of the aspects of building in northern latitudes.



The task of inducing students to confront the challenges of northern construction will have to come from someone outside the schools, such as architects with specific problems. So far, the vintage refrain 'because they are there and they are real' has not been sufficient to change the annual reruns of these topics. In the experience of one particular architectural school, out of nearly one thousand graduates over the years of its existence, reportedly only six selected design for some part of Canada's north as their magnum opus for graduating. The situation seems to be improving: currently two graduate students are working on projects in the Northwest Territories: systems for structures on permafrost, location yet to be decided, and a birthing center, a prototypical project, near Rankin Inlet.

The emerging concerns about the sovereignty of the northern waters, the continuing process of opening up the region by more discoveries of mineral and energy sources, suggest that within the professional lifetimes of our current architectural students, this country may expect from them more than passing competence in the design of settlements and buildings for the rigours of the Arctic.

At the present it appears that design-with-climate, whether at the poles, along the tropical belt or, for that matter, anywhere else, although taught, is not sufficiently followed up by architectural schools during the design simulations at the boards. Furthermore, clues for role models—buildings designed by architects and selected for professional publications that, instead of making rational choices, for example, use windows largely as decoration—hardly help. Confusing style with substance, as if both were incompatible, graduates become dependent on mechanical support systems to compensate for the lack of climate-directed arguments in their designs. Evaluations of trends in design teaching, and their eventual influence on the design in practices are hard to measure, but widespread evidence points to a neglect of often elemental environmental issues in both instances. Soberly researched design work at schools is applauded; nevertheless, more consistency in expecting such scholarship is still needed.

There is a significant amount of largely isolated research material available, in English, on factors that in one form or another shape human settlements and affect the design and performance of buildings in the territories surrounding the Arctic Ocean. Different kinds of general and issue-oriented research and probes have been conducted by agencies and individuals, including architects, in Canada, the US, Scandinavian countries, Finland and the USSR. Much of it is repetitive. There is related work from other countries such as studies of building in the arctic and sub arctic or, as catalysts for some re-thinking of what we know, space standards for long-term accommodations on oil rigs or in underground

shelters that all have some value in understanding benchmarks in a reasoned design. Occasionally, there are insights available from basic research conducted in some other disciplines. Often the applied materials on building is almost hidden by the amount of studies available on various aspects of engineering that also deal with shelters. A search through such diverse material exposes the north-oriented architectural student to seeing what may have seemed familiar issues in a different way. This process expands the understanding of one's own role. The theses probes, in the nature of a reasoned design, would still follow the conventions of isolating and then synthesizing the least number of the more critical factors dominating the project into what could be considered a reasonable supposition. In the process, guided by relevant and tested data, the experience available for the design then would be expected to raise the utility levels of that initial hypothesis, and thus of the project itself.

The severity of building problems, amplified by the harsh climate, clarifies the design-decision to built-results connection as no other climate can and provides a rather rare setting for teaching design at a time when ambiguities are seen as something of an achievement. Models of studied designs, eventually constructed, help in theory-building for the entire industry, including schools of architecture. Expanded to equally rational multi-disciplinary experimentation — with the evasive energy accounting at some or all levels of manufacture, construction and usage integrated into the debate as it becomes better understood — the design of northern settlements and buildings could ultimately be approached and resolved as problems of total systems with performance expectations conceivably becoming more predictable as experience grows. The visual quality in all of this somewhat clinical approach must be seen as an unrelenting and expected condition, while the hostile or, rather, critical environments, and correspondingly tight margins for error demand especially deft handling of the overall design and services. Extreme climates, the cold as the hot-arid, offer no sanctuaries for architects given only to some visual fix. Unlike architecture in the moderate and warm-humid parts of the world, the choice of systems and materials where everything must be brought in from somewhere else—guided by indigenous clues for putting it all together with some form of normality—makes this a special kind of architectural opportunity with an aesthetic, conceivably, of its own.

For students of architecture who are preparing themselves for such tasks, the theses on building in Canada's north suggests more than just another, and perhaps tiresome, argument about choice between some ideology or technique. Probably more than anywhere else in the country there are some answers that are still looking for someone curious enough to ask questions. □

