

Livable Winter NEWSLETTER

VOL. 4 NO.4

August 1986

SAULT STE. MARIE, ONTARIO

A Winter City Searches for Keys to Diversification

By Jack Royle

Sault Ste. Marie, Ontario (pop. 80,000) and its hinterland municipality, Algoma Region, have launched themselves into a vigorous search for plans and options that will:

Even out the humps and bumps that result from being too dependent on a few big industries;

Give the city, the Region and their citizens greater control over their future;

Establish Sault Ste. Marie as a leader among cities and towns looking for "northern solutions". Problems of resource-based communities (and nations) promise to become more difficult in a "technology driven" world rushing towards the 21st century that is forecast to be volatile and unpredictable as well as exciting;

Improve the "quality of life" for the citizens; more attention to enrichment in cultural areas and aesthetics, better planning to improve comfort and convenience.

In the past five years, Sault Ste. Marie civic and business leaders have given thousands of "person hours" in hundreds of meetings trying to arrive at best possible long and short term plans for the city. Speakers and consultants were brought in. Civic leaders travelled the continent seeking to tap into the experiences and ideas of others as presented at confer-

ences and workshops. I spent two days in Sault Ste. Marie early this summer and was given a cram course on all these activities by Ald. Tom Gillespie, a tireless and genial guide who cares very much about every detail of his city.

Tom Gillespie thinks most Sault Ste. Marie leaders are now con-



Ald. Gillespie

vinced of the vital importance of long and short term planning if the city is to have a stable and hopeful future. They have found that few conferences or seminars are paying much attention to the plight of northern and resource-based cities and towns; also that experiences and ideas of other cities are important and useful to know about but not as important as to understand thoroughly and intimately "your own strengths and weaknesses, and then to fire ahead and build on your strengths." One other thing is increasingly obvious -- the absolute necessity to diversify economically to the greatest possible extent and as quickly as possible.

What are Sault Ste. Marie's strengths, in addition to its setting in a natural paradise amidst some of the world's largest and most beautiful lakes, its crystal clean water and air, abundance of fish and game, and its encircling wilderness offering opportunity within minutes for every variety of outdoor pleasure and recreation?

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LCWA New Address

The Livable Winter City Association now has a new mailing address, which is:

Box 5130,
Station A
Toronto, Ont.
M5W 1N4

The Organization also has its own new national offices located on the fifth floor of the Faculty of Architecture, University of Toronto, 230 College St., Ont. M5S 1A1.

Annual Meeting Date

Plan to attend the annual meeting of LWCA. It will be held in a committee room at Toronto City Hall and will begin at 6:00 p.m. November 24. The business meeting, at which new officers will be elected and other important matters dealt with, will be followed by a wine and cheese reception.

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We Breathe New Life Into Old Towns

Many small and medium sized communities are now experiencing the demise of their downtown core. This is usually brought about as a result of the increase in suburban housing and shopping developments or a community's dependence on a single industry experiencing difficult times.

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A resource-rich hinterland -- Close by are some of the most important mining areas, possibly in the world: Wawa's iron ore; Elliott Lake's uranium; the Hemlo area still with unguessed wealth in gold ore. Nearby, also, vast stands of timber suitable for processing into pulp, paper and wood products. Algoma Steel Corporation, using Wawa ore, is the city's largest industrial employer; St. Mary's Paper Company Inc., its second largest.

A transportation hub -- The city is located on the axis of the Great Lakes System containing a sizeable proportion of all the world's fresh water. Algoma Central Railway linking the Great Lakes with Central Northern Ontario is based there. The locks, by which ships move between Superior and the lower lakes, are there.

A successful tourist city -- Situated on the border of Northern Michigan, Sault Ste. Marie attracts many thousands of tourists annually from the Central U.S. and Canada. A major attraction are railway excursions operated by Algoma Central, but it is helpful to have next door the lively, promotion-minded tourist industry of Northern Michigan. Tourism and outdoor recreation are different faces of the same industry.

A sizeable research establishment -- More than 300 scientists and researchers are employed in a variety of government and private agencies. Forest Pest Management Institute and Great Lakes Forest Research Centre of Environment Canada; Great Lakes Fisheries Research branch; several branches of Ontario Ministry of Natural Resources and research facilities of private industry and Algoma University.

Best of all, surely, a traditional spirit of independence and inventiveness - City Planner Joe Sniezik gave his explanation as to the reason for this: "Maybe because we're somewhat off in a corner, geographically, the major governments and dominant

corporations tend to ignore us a bit. I think that more than most cities we're left alone to make our own decisions". Speaking this year to a hearing organized by Ontario Ministry of Tourism and Recreation, Jim Hilsinger, President of Best Western Water Tower Inn, put it differently: "We are an insular thinking, partly-isolated community...." But, on another occasion, Hilsinger said: "It's a cardinal reality that money is attracted to spirit and inventiveness. And economic diversification needs ample doses of both."

Big and daring thinking and planning have been characteristic of Sault Ste. Marie from the early days. In 1894, Francis Hector Clergue, one of the great tycoons of

the railway-building age, chose the city to be a future major industrial centre and made his home there. Clergue saw the potential in mining, timber, power development and transportation and laid the groundwork for the large enterprises that now exist.

His advice is as valuable today as it was 80 years ago: "Vision and action are the essence of enterprise. Spirit and dedication to goals are important. Concentrate on your assets and look for spin-off activities to gain greatest success."

Clergue's personality and advice have continued to influence Sault Ste. Marie's policies and thinking.

In the early 70's, Jim Hilsinger, a young entrepreneur building a *cont'd on page 4*

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J.J. Hilsinger

chain of fast-food restaurants, agitated for and then gave leadership to an umbrella agency named,

"Algoma Recreational Development Council. Aims of the organization were to coordinate tourist promotion, give leadership to conservation efforts, seek out new tourist attractions by developing historical and geological interest points, to create an 'area image' and to work at making tourism a year-round rather than seasonal business. The industry rallied behind the council and several important new projects evolved from it including the successful 'Snow-mobile Algoma', the creation of linked and groomed snowmobile trails extending for some 1,000 kilometers.

Also in the '70's Fenco management consulting firm was retained to prepare an 'Industrial Opportunities Report', to consider avenues that might help the city and area to achieve greater economic diversity.

In time, Hilsinger built the Water Tower Inn on Great Northern Road in the city and joined actively in the discussions as to possible future directions for the city. In June 1982, he and Frank Sarlo were appointed by city council to head up a group called the Economic Development Advisory Board that had been in existence but not particularly active. The need for action arose from the growing feeling the city's economy was stagnating. That the city had 'shunned diversification over the years' and that a global recession was in progress.

The Board swung vigorously into action. First it added prominent business and community leaders to its own group to create a board of 14 members. Then by naming a battery of "Think Tank" committees, it reached out into the community for the best available people in all walks of life who would take on leadership responsibility.

Jim Cayford, Regional Director of the Great Lakes Forest Research Centre accepted chairmanship of a Research Committee that included eight leading scientists and researchers. This committee un-

dertook to brainstorm means that might be used to make Sault Ste. Marie into a leading "Canadian research centre". Ted Bothwell headed a committee of five to similarly look into the health and prospects of the forest industry group; James Fitzpatrick of James Fitzpatrick Industries Ltd. took on the 'Manufacturing and Small Business' area, with a committee of six.

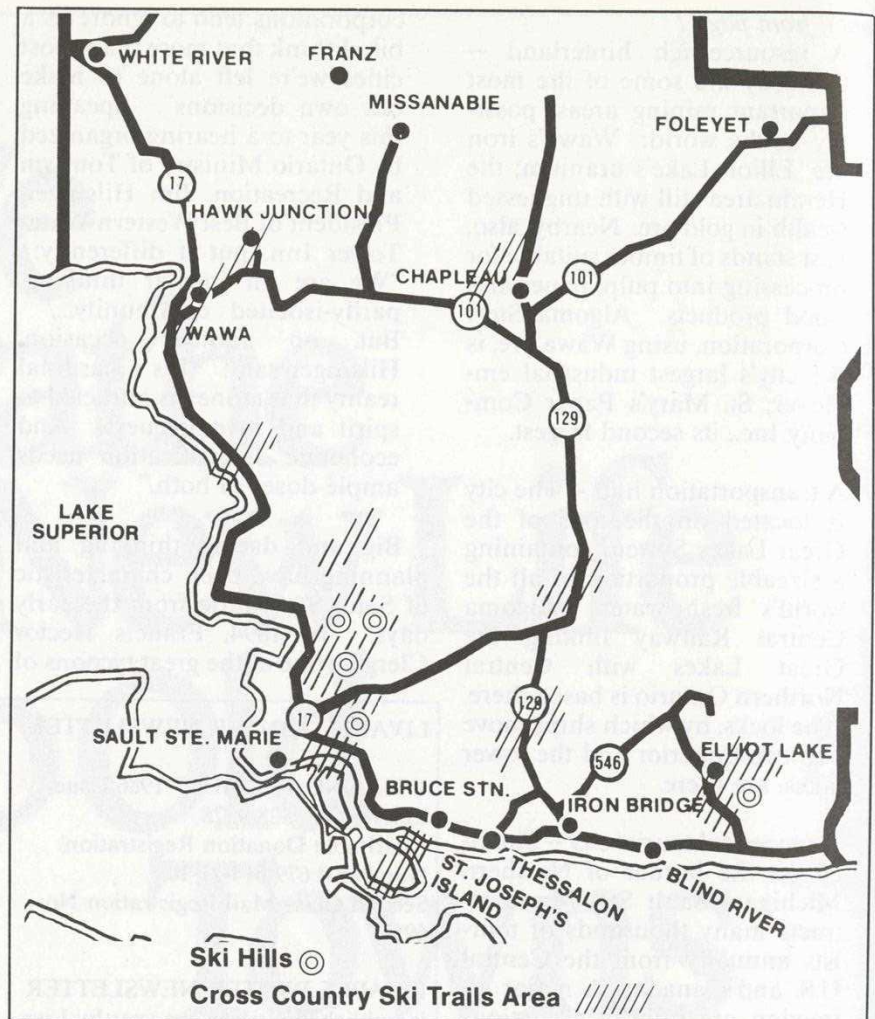
Eileen Sarich had some 14 members in her committee tackling 'Arts and Culture'; Paul Chapin, executive director of Plummer Memorial Hospital headed the 'Health' committee with ten members; Jack Cameletti, Director of Education of the Separate School Board, chaired the seven-member 'Education' committee and Harvey Snyder, the 'Sports' committee. In all, 75 community leaders took part in the exercise as leaders.

"Never before had such a dynamic team of individuals been assembled in this city. We were all committed to a major task and the speed and dedication with which this group acted was indeed im-

pressive," the Board report stated. Tourism was not included because a special organization "H.A.T.S.", (Hospitality and Tourism, Sault Ste. Marie) had been created the year before and given a mandate to bring all interested groups under one umbrella to promote tourism more effectively.

The committees were given four months to act as think tanks, analysing "all dimensions of opportunity, regardless of practicality", then rating them as to practicality, and finally prioritizing them. After four months a 'Grass Roots Forum' would be held to which all interested citizens would be invited and the committees would submit their reports. The citizens would be asked to comment and offer additional ideas and suggestions.

On June 17 and 18, 1983 the Grass Roots Forum was duly held. The suggestions and ideas put forward by the committee were so numerous it was difficult to tabulate them all and adequately prioritize them. The second day of the 'Forum' consisted of a seminar with visiting speakers. These included



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Bob McNulty of Partners for Livable Places, Washington, D.C.; and Doug Purdy, Director of the Department of Social Planning, Vancouver.

McNulty stressed the importance of the "economics of amenities" -- that aesthetics and social benefit are as essential to the well-being of a city as jobs and economic viability.

At about this time, the relative prosperity in which the city had revelled for a number of years, commenced to show more serious cracks. World markets for both steel and paper, two principal products, turned even softer. Lay-offs began to occur.

Urged on by the bad news, Hilsinger, Sarlo and other members of the Economic Development Advisory Board, after digesting the 'Grass Roots' reports and discussions, presented a series of representations to city council. The main recommendation was that an 'Economic Development Corporation' be created that would join together the political leadership with strong private sector leadership; Reasons offered:

"An extraordinary effort is required to correct...the current economic problems...and tailspin in Sault Ste. Marie;

"Effort by the best human resources in our city is required to redirect our economy;

"A corporation can be more effective as a semi-autonomous organization able to act in a more entrepreneurial fashion;

"Fresh innovative approaches based on new concepts and principles...are required for future economic planning."

The Board also recommended that a 'Department of Social Planning' be created to concern itself with the human needs of the city including planning, aesthetics and quality of life.

The whole exercise of the Economic Development Advisory Board cost the city some \$7,000 but 'provided a study comparable to \$100,000 value to the city,' the Board's summary report declared.

Civic and business leaders at the time preferred the Federal Government funded "Manpower, Assessment, Planning," program and created an organization with repre-

sentatives of the city, the Chamber of Commerce and labor organizations to implement it. Progress was made in developing programs based on the 'Grass Roots' reports but late in 1985 MAP funding came to an end. The Advisory Board's 'Economic Development Corporation' seemed the logical agency to pick up the strings and complete the job of rounding out plans for the city's future.

As a final act of 1985, the proposed Corporation was created and Donald M. MacGregor who had been mayor for the previous five years, was named first Executive Secretary. The 'Social Planning Department' recommendation was not acted on.

Directors of the new Corporation are Mayor Joe Fratesi, Ald.



D. M. MacGregor

Gillespie and nine citizens-at-large. For the first year these are being named by council, but in subsequent years the board will appoint its own citizen members from lists approved by council. Council is funding the Corporation to the amount of \$500,000 in 1986 and assuring funding for a further two years, the arrangement then to be reviewed looking to a second three-year period. But the Corporation will also receive funds in the form of memberships sold to individuals, firms and associations, also from income received from projects.

The first major challenge for the Corporation is set out as 'orderly development of our waterfront (which) is of utmost importance.' Sault Ste. Marie has four to five miles of parkland, gardens and walks fronting the beautiful St. Mary's river. A marina and yacht basin have been built. The glass-skinned modern city hall sits on the river bank as an attractive centrepiece. The large library and new art gallery are nearby (and it is proposed they be linked by glass-enclosed walkways with a new highrise residence for seniors). But also nearby are an unsightly oil tank farm, a contractor's gravel yard and a scrap yard.

More than 500,000 U.S. tourists annually cross into Canada after touring the locks on the American



side and taking scenic ferry rides. But about half as many stay in Michigan Sault without crossing the river even though the U.S. city is much smaller and has fewer attractions. How many of these would be persuaded to cross the river, if they looked across and saw a beautiful waterfront with gardens, walks and handsome buildings (in summer -- and skiers and winter sports activities in winter)?

This quick review can only touch on a few highlights of the fever of activity spread across more than five years. It is notable that Jim Hilsinger, last September, paid out of pocket for space taken up by a series of ten articles, written by himself and appearing in The Sault Star. The subject: 'Sault Ste. Marie -- Our Future'.

Also that no fewer than four civic and business leaders travelled to Edmonton last February to attend Winter Cities Forum 86 and following their return agreed to take steps towards formation of a chapter of the Livable Winter City Association. The new chapter will be the first to be organized by a medium-sized city.

'H.A.T.S.', formed four years ago through joint efforts of the Chamber of Commerce, the Ontario Ministry of Tourism and the city's Convention Centre, works to build tourism in all seasons and to eliminate duplication of expenditures and efforts. One goal is to leverage the dollars spent on promotion so that for every dollar contributed by the city and industry, two dollars in tourist revenue are obtained. Promotional impact has, as a result, been greatly increased. As example: winter vacationists spending a four-day weekend at one of ten participating resorts or hotels in Sault Ste. Marie during last winter were each presented with a Hudson's Bay blanket free of charge. Similar spectacular promotions are planned for the future. Although 'H.A.T.S.' has remained outside of the new 'Economic Development' on page 6

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velopment Corporation' for the present, the plan is that the two will be brought together in time, to increase the effectiveness of both.

Representations of the Economic Development Advisory Board repeatedly called attention to the desirability of building up the importance and effectiveness of the institutions of higher learning, Algoma University and Sault College. In several reports it was pointed out that these could make important contributions in the areas of research, social policies, and industrial diversification.

The Sault's Finnish minority has had a constructive effect on the life of the city far beyond its numbers. By example and persuasion, the Soo Finnish club has led the way in building cross-country skiing into perhaps the most popular sport in the city and area with more than 6,000 participants.

Cross-country skiing is not just a winter activity. Visiting the Finnish-operated Hiawatha club with Ald. Gillespie as guide, I met Kitty Dustin who was teaching cross-country to one of her pupils in the third week in June. Both were wearing 'roller-skis' and practising on stretches of little-used highway. In winter months, Kitty operates a 'Skivan' which moves from school to school, loaded with skis, boots and poles, to permit Kitty to give skiing instructions to students in grades 5 and 6.

The Finns have also made a key contribution to industry diversification. Tom Gillespie's son-in-law, Wayne Gartshore, through Finnish contacts, learned about improved methods for growing tree seedlings. Finnish industrialists sent their representatives to Sault Ste. Marie to instruct Gartshore on their technology and provided necessary equipment for a large-scale tree nursery producing millions of seedlings each year. These are sold to forestry firms and government agencies. Gartshore's company is said to be one of the most advanced coniferous nurseries in North America.

The city has seen to it it is well equipped with physical plant to handle any number of small new industries -- water and sewage treatment facilities are new, up-to-date and have surplus capacity. A large area in the west end has been

serviced in preparation for industrial and residential expansion that may occur.

Out of the five years of arguing and scheming have come dozens of ideas, proposals and dreams and with aggressive leadership, who's to say some of them won't be realized. Like: a 'Winter/Garden Galleria' in the heart of downtown embracing the Algoma Central tour train station; a 'recreation corridor for skiing, running, biking, extending the length of the water front'; an internal canal system (fed by water from Lake Superior) bringing marine recreation into the downtown area -- gondola rides past urban villages in summer, converted to skating in winter; a convention centre cum hotel

complex with built-in arts and culture features; a world-class northern research facility; a world-class botanical gardens featuring northern species....

Sault Ste. Marie may be a medium-sized city, but it is big enough and bold enough to think 'world-class'. And it has made some important progress towards unlocking the secrets of diversification -- It has discovered that long and short range planning are essential; that the entire community can effectively and usefully be involved and that dollars alone are not enough; 'Amenities' are also most important. The city must be seen by the citizens as 'the best place in the world in which to live' in every respect. ☐

PRESIDENT'S OVERVIEW

Things Local Chapters Can Do

by Xenia Zepic
National President



Necessary for the success of any organization including the Livable Winter City Association, is to have a strong grass root connection and support. This could be achieved, primarily, through the network of local chapters actively involved in the life of the community.

The question has been asked: what must local chapters do to be effective in influencing changes in attitudes and municipal policies with regard to living in our northern latitudes? The methods and means will vary reflecting the local economy, social and cultural individuality.

Here are some thoughts on types of activities the chapter may choose to undertake in order to gain recognition and improve the community's viability and livability.

The local chapter should:

- Initiate discussions and exchange of ideas between various groups with vested interests in the community. This could be achieved through seminars, workshops, conferences and public meetings.
- Select one or more projects to be implemented within the community with the aim of improving the quality of life during the winter season. It could be a tree planting program, establishing a cross-country ski trail, or organizing an exhibition of children's drawings on a theme of winter. Through demonstration projects which are initiated and realized by the whole community, the positive changes in attitudes and physical environment would be easier to achieve. Small interventions, when successful, will be much more effective than the grandiose schemes which require large funding and commitment over a long period of time.

The information on the state of the art in the areas of housing, transportation, recreation, social policies and new technology and the exchange of ideas between

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northern countries is essential if a higher degree of livability is to be achieved. Membership in the L.W.C.A. provides the chapters and individuals with an opportunity to plug into a communication network of the northern world. The Livable Winter Newsletter is a key element in this networking. The chapter's activities and achievements are reported in the Newsletter, thus promoting community and attracting international attention which is often translated into economic benefits.

Tromsø, Norway, population 40,000, applied in February 1986 for approval to hold a 'Winter Cities International Forum' in 1990. As a result, the whole northern world is now aware of Tromsø and new hotels and convention centres are getting ready to host guests from around the world.

Finally, for those who are eager to establish the local chapter, but are not clear on the procedure, the following guidelines are recommended:

Send a letter/application to L.W.C.A. preferably with accompanied rationale as to objectives and proposed programs of your chapter.

Approval granted - officers of the chapter are elected; committees appointed; programs launched. ☐

Toronto Chapter Plans "Cold Book"

Toronto Chapter of LWCA heard reports of a proposed new book at a meeting, June 26 at Toronto City Hall. A group of members have prepared an outline for a new publication which has been given the working title of the "Cold Book". The aim is to produce a key reference document on the philosophy of the Association. Anyone who is interested in submitting papers for possible inclusion in this book should send them to the new association address (see page 1) marked "Cold Book".

Members agreed to meet again on July 17, at Xenia Zepic's home to discuss possible funding sources. Funds would be required in the first instance, to prepare a draft outline for presentation to a publisher. ☐

Electrically Heated Clothing:

Is Plugging In The Wave Of The Future?

By Prof. Susan Watkins, Department of Textiels and Apparel, Cornell University, Ithaca, N.Y., Consulting Editor, Clothing.



Of all of the comments I made about clothing at the Winter Cities Forum 86, none generated as much enthusiasm and interest as my suggestion that we might someday be wearing electrically heated clothing that plugged into power sources in the environment. These sources could be designed into bus stops, ski lifts, or emergency phones on the highway.

Clearly, this idea appealed to the general public. Many radio stations and newspapers called to find out more. A number of people wrote to me directly to inquire about available products on the market. There was particular interest in the use of electrically heated clothing for the elderly and for individuals with arthritis, both for outdoor AND indoor living in winter cities.

Some wrote to let me know that this was not a new idea. I received a charming letter from Albert H. Taylor from Denman Island, British Columbia, in which he told of electrically heated garments worn in Europe in 1943. He says, "The Gummiwerke Richterswyl made a line of electrically heated cloth-

ing....(to combat the effects of heating fuel shortages on homes and businesses)....The indoor air temperature was kept barely high enough to keep pipes from freezing and fingers from stiffening. At home one plugged oneself in at the armchair or desk or dining room table. The Swiss butcher with electric heat had contacts on his shoes, and there were studs at the chopping block, cash register and elsewhere.

I spoke with experts at the United States Army Research and Development Laboratories in Natick, Massachusetts about their current work with electrically heated clothing. Joseph Cohen, who works with electrically heated clothing for the soldier, says that right now their work is primarily directed toward handwear. The beauty of electrically heated clothing is that bulk is not a problem as it is in most insulated garments. More heat can be added without continuing to add layers of bulky insulation. This is extremely important for the hands, where a great degree of dexterity is needed. Electrical heating does have another problem, however. As the surface area

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that is to be heated is increased, any portable power source must also increase in size and weight.

The electrically heated Arctic gloves used by the US Army can be powered by a 5 pound, 6 volt nickel cadmium battery pack. These will heat the gloves for about 2 hours. (A 2 pound, 12 volt lithium battery is currently being used by soldiers, but since the lithium presents toxic disposal problems, it is unlikely that this will present a feasible power source for the average consumer.) For larger garments, a minimum of 12 volts would be needed, and with the nickel cadmium batteries currently in use, this would mean an additional 10 pounds would need to be carried on the body to power an item like a vest.

Several manufacturers produce clothing that can be powered by a 12 volt power source. Widder Enterprises, in Ventura, California, offers a variety of items for motorcycle riders -- two vest models, chaps, and gloves -- all of which are fitted with cords that plug directly into the cycle as a power source. Widder also offers an adapter that will allow the vest to be plugged into a cigarette lighter on a car, boat or snowmobile, etc. Pat Widder suggests that individuals who want self-contained systems not tied to a vehicle consider plugging their garments into one of the many styles of battery packs being sold with home video cameras. A typical belt style rated at 100 watts can run their vest continuously for about 3 hours. However, the combination of body heat and the insulating materials in the vest add to and protect the heat provided by the electrical wires. Therefore, the vest is generally turned on half the time and off half the time, so that a typical battery pack will provide heat for closer to 6 hours.

John Breen, of Ambutech, Incorporated in Winnipeg, wrote to propose an alternative to battery belts. Ambutech produces a hollow cane in which he suggests batteries could be placed. This would take the weight of a battery pack off the body. Mr. Breen's suggestion is one worthy of consideration because it would provide both warmth and support for the elderly or others who are particularly insecure about walking in winter weather.

A number of commercial firms produce gloves and socks for hunters and skiers. These seem to get mixed reviews depending on how well they have been designed. If the heating wires are well placed away from pressure points and if the gloves or socks produce sufficient heat, they will be highly prized in extreme cold. The most frequent complaint about these items seems to be the "hot spots" and the uncomfortable lumps in the areas where the electrical wires lie. Mr. Cohen says that in the future we will probably see more printed circuits being used to solve these problems. There are a number of firms that are making printed circuits on Mylar® or Kapton® film and there has been some limited commercial success with gloves and boot inserts for skiers using thin, flat films with printed circuits rather than bulkier heating wire. Cohen says that this is the direction the U.S. Army will be heading in the future.

The problem remains one of providing lightweight, portable and ideally, rechargeable or renewable power sources. Until that ideal power source comes along, it may be possible to meet the needs of many people with a combination of electrical heating and insulation. An insulated, electrically heated coat could, for example, be plugged in when you plug in the coffeepot in the morning, and be warmed up by the time you leave for work. The combination of body heat and the insulation could then help to preserve this warmth for a good period of time. Plugs in cars, at bus stops, or other "waiting points" along the way could give a power boost to the coat when the body is inactive and most in need of extra heat. If enough environmental sources were available, this suggested scenario could parallel the "half-on, half-off" power pattern that Widder Enterprises says they find with users of their electrically heated vests.

I would be interested in hearing from any readers who have ideas about alternative power sources or who know of electrically heated products now on the market. This topic is bound to be one that continues to interest everyone who lives and works in winter cities and I will keep you informed about developments in this area in the future columns. ☐

Tromsø Takes High Technology Route In Preparation for Winter Cities '90.

A Northern Lights Observatory and companion Northern Lights Planetarium will be constructed adjacent to the University of Tromsø at Breivika, some four kilometres from Tromsø city, in time for Winter Cities 90 International Forum and Exposition. Norwegian Ministry of Industry has designated Tromsø to be a centre for space technology in Norway and the two new institutions will be important steps towards this goal. Chairman of the Board of Directors in charge of the project is Helga Otto Mathison, who has provided leadership in the campaign to organize the 1990 event.

Cameras and equipment that can turn out spectacular "Cinema 360" multi-media productions have been purchased and are being used this summer to film Arctic living and working conditions at Spitzbergen. The cameras and equipment will be property of the Observatory and Planetarium which are scheduled to be built by 1988.

The film being produced this summer will be shown at a workshop in Florida in October. Work is also being done on a 360 deg. screen presentation on Northern Lights to be shown at International Winter Cities Showcase '88 in Edmonton and the Olympic Games in Calgary.

The "Tromsø, Tromsø" show, a major hit at Winter Cities Forum 86 will also be reworked for the 360 deg. screen and hopefully presented at Edmonton's Space Sciences Centre. ☐

PLAN TO ATTEND

Annual Meeting of the Livable Winter City Association will be held Monday, Nov. 24 at 6 p.m. in a committee room of Toronto City Hall. All members are urged to be present to help in framing of important policy decisions.

DISCOVERING THAT TERRIBLE RUSSIAN WINTER

By Dr. William C. Rogers, Consultant, Minnesota International Centre
Associate Editor, U.S.

I have written about the pressing need to learn more about winter in the Soviet Union. The cities of Japan, the U.S., Canada, and Central and Northern Europe have been fairly well documented, but we are just beginning to learn about the U.S.S.R. the most wintry country of all. Fortunately, their representatives will be at the 1988 Edmonton conference. Until then, we will learn what we can.

Most of us have vague memories of reading about "that terrible Russian winter", and I thought it would be fairly easy to find copious references in Russian literature or from travel accounts. I'm afraid I was sadly disappointed.

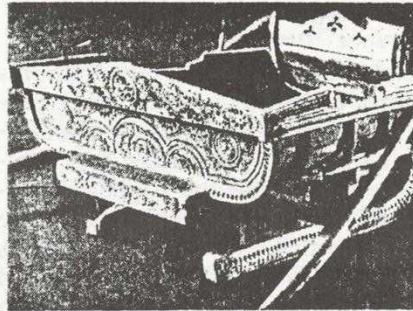
People tend to take their own climate for granted. There are no records of Central Africans complaining of heat or Egyptians commenting on their extreme dryness. Western Haida Indians never once warned early European visitors to bring their raincoats.

Knowing this, I was surprised to learn from my favorite Russian medieval scholar, Professor Thomas Noonan, that the first accounts of Russia's famous winter were written not by Russians but by foreign visitors. These included the first Swedish Vikings, who in their rush to get to Constantinople left little more than a name, Russland. Arab visitors were more literate and warned fellow Muslims that while there were furs and amber, the region was most disconcerting. Since the sun seldom rose in the winter, it was extremely difficult to know just how to pray towards Mecca.

This reticence to write about something as ordinary as winter in cities was not restricted to Russian authors, however. The same could be said of many or most of our own contemporary northern authors.

Our first European accounts of Russian winter are from German and British traders, lured to Russia by the profitable trade in furs and other products. Later, ambassadors provided lengthy accounts dealing, of course, with personal comfort. An early British visitor recounts

that what he would wear outdoors at home was considered adequate for indoor clothing in Russia.



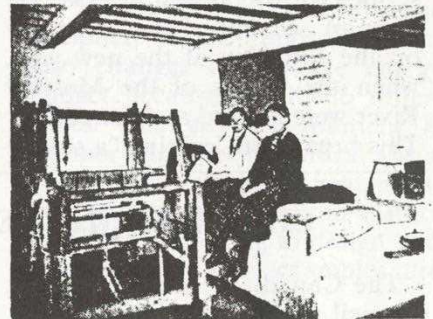
Russian Sleigh

Since these authors did a great deal of travelling, they wrote about roads, sleds and their drivers, and accommodations. Most were impressed with the problem of "getting around" in winter, just as today's winter city specialists discuss rapid transit. In Old Russia, frozen rivers were the nearly perfect solution for winter transportation. With no enclosed malls or skyways, they met downtown shopping needs very well. Everyone met happily in the middle of the Moscow River to trade and have fun.

E.R. Eastlake in "A Residence on the Shores of the Baltic" (London, 1841) wrote about his first contacts with St. Petersburg: "My English-lined fur cloaks had been held up to derision as mere cobwebs against the cold, and a fox fur, the hair long as my finger, was drawn over them. All my wardrobe had been doubled and trebled and even my friends shook their heads and feared I was too thinly clad." He found, however, that the wealthy had houses in which "not a breath of cold is experienced." He described "the frequently ornamented tower-like stoves of pure white porcelain in various graceful architectural moldings: sometimes surmounted with classic figures of great beauty, and opening with brass doors, kept as bright as if they were gold. Modern central heating, while more efficient, certainly loses in aesthetics and poetry.

Peasant houses, while not as ele-

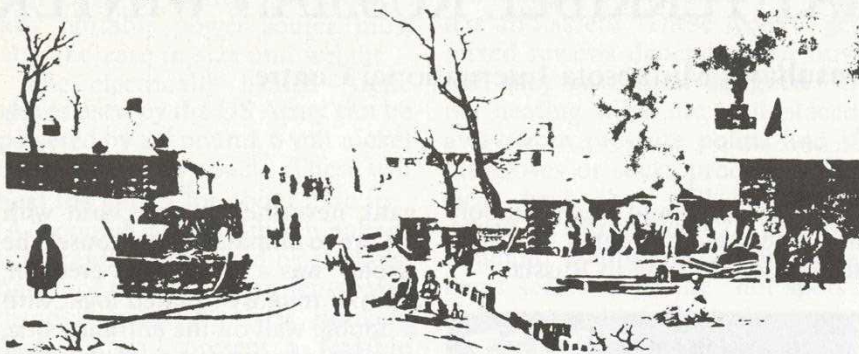
gant, nevertheless were built with an eye to climate. "The house", he wrote, "was a one-storied erection, built of roughly-squared logs...with a double wall on the entrance side, separated by a passage of about six feet (1.8 m.) wide, which greatly tends both to warmth in winter and coolness in summer. In the dark 25 foot (7.6 m.) room with a black earthen floor strewn with fur tips, the chief object was the great stove. This was a huge mass of masonry towering among the dry rafters to the roof with rough ledges of stone, up and down which children were climbing in their shifts, while on the highest ledge lay a baby fast asleep." Sleeping on and around stoves worked well, and is still practiced by peasants in northern China, and perhaps in remote parts of the Soviet Union.



Peasant Hut

Most of us think of the sauna as a Finnish invention, but early accounts stress the importance of winter baths in Russia. They were described in 1610 by William Russell, an English employee of a Dutch company. As with most observers, he commented on the large alcoholic consumption and poor diet in Russian, and wrote that "this diet would breed in them many diseases, but that they use bath stoves, or hot houses instead of all phisicke, commonly twice or thrice every week". "You shall see them sometimes (to season their bodies) come out of their bath stoves all of a froth, and fuming as hot almost as a pig on a spit, and presently to leap into the river, stark naked, or to pour cold water all over their bodies, and that in the coldest of all the wintertime."

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He credits this for their good health.

Another early author, a Frenchman on his journey to Siberia, infuriated Catherine the Great by his popular book in which he described and illustrated the Russian bath, stressing that "they come out of the baths quite naked, the two sexes are seen by each other in this condition, and often converse together in this posture...they afterwards throw themselves promiscuously into the water or among the snow..."

On a more sedate note, an early Russian religious festival was described by Robert Best in 1558. He gave an account of the ceremony on the 12th day of the new year, when the waters of the Moscow River were blessed and sanctified. This began with making "a square

hole in the ice about three fathoms large every way". Then a long procession marched onto the river, including over 100 priests, the "Metropolitan", and the Emperor himself, 'with his orderly'. After the ceremonies, over 5,000 Moscovites came to fill pots with the blessed water, "for that Moscovite which hath no part of that water, thinks himself unhappy, and very many went naked into the water, both men and women and children, and likewise many other men brought their horses to drink, and by that means they made horses as holy as themselves'. Not a bad ceremony to enliven winter! Whether it would work on the Mississippi in Minneapolis or the St. Lawrence is a question for winter city zealots to consider. ▢

CHDC Plans Major Exhibition for November

The Canadian Housing Design Council is sponsoring the first International Innovative Housing Exhibition and Conference at the Metropolitan Toronto Convention Centre next November 12-16. The aim of the event is to emphasize the vital need to maintain a strong, innovative housing industry, and to increase Canadian awareness of significant technology developments in housing.

The Conference will be opened with a keynote address by Her Excellency the Governor General on the morning of November 12th against the central theme: "How To Meet The Housing Challenge of the Future Through Innovation".

Among the Conference sessions are the following: The Economic Context for Innovation, Characteristics and Consequences of Innovation, Successful Case Studies in Innovation, Innovative Financing,

Innovative Marketing, an International Innovative Showcase, Ministers' Reception and Dinner, Innovation in Customer Service, The Role of Government in Promoting Innovation, The Role of International Building Centres, Innovative Design for Cold Climates, Innovation in Retrofit and Conversion, Innovative Approaches to 2 x 4 Timber Frame Construction, Innovation in Design, Innovation in Construction Process, Innovation in Manufactured Housing, Innovation in Building Technology in Space, Innovative Solutions to the Problem of Housing the Homeless, A Future-oriented View of Housing.

Other features will be a presentation of the R-2000 program, one on the NAHB Smart House and a panel on the Problems of Housing the Homeless by the Housing Committee of the American Institute of Architects. ▢

Building Tomorrow

An international forum on the business of building, sponsored by the Ontario Ministry of Housing, in cooperation with the Council of Ontario Contractors and some 75 other industry, trade and professional associations, will take place in Toronto from November 2-6, 1986.

A 1985 survey by the National Research Council showed that the need to transfer information and technology is a top priority in the building industry. Building Tomorrow will respond to this need by examining major trends, challenges and opportunities facing the industry.

There will be 12 theme areas and 70 workshops. Each theme will address a particular industry sector. In addition, there will be exhibits, a government information centre, a career development centre, presentation of the Ontario Renew awards, a construction communications centre, a bookstore and a film festival.

For further information contact: Building Tomorrow, Ministry of Housing, 777 Bay St., Toronto, Ont. M5G 2E5. ▢

Single Industry Towns First Annual Meeting

The first annual convention of the Canadian Association of Threatened Single Industry Towns will be held Sept. 24 to 26 at Northbury Hotel, Sudbury, Ontario. The program will open with a reception at Science North followed by dinner. Keynote speaker Thursday morning will be Hon. Benoit Bouchard, Minister of Employment and Immigration; panel discussions will be held morning and afternoon with a luncheon address by Walter Curlook, President of the Mining Association of Canada.

Doug Frith, M.P. for Sudbury will keynote Friday sessions. An important feature will be a presentation by Sandy Ivany of Buchans, Nfld., with the theme, "Life After Death -- a Community Can Fight Back."

For further information, contact: Dennis Young, Canadian Association of Threatened Single Industry Towns, P.O. Box 59, Lynn Lake, Man. ROB OWO, tel: 204 356-8663

CLIMATIC WARMING TREND/

HOW IT MAY AFFECT OUR CITIES

By Bruce F. Findley, Superintendent, Climate Assessment and Impacts Section, Canadian Climate Centre,
(Excerpts from paper given to annual conference of Canadian Society for Civil Engineering)

Within the design life of structures now being built we expect a global rise in annual mean temperature of 1.5 to 4.5 deg. C. This warming will be amplified in higher latitudes and may be accompanied by drier conditions in the continental interior. Sea level rises are expected, initially about a metre over the next century. The wind field will certainly be altered. Clearly, changes will occur in pathways for atmospheric pollutants, storm sewerage and water quality treatment needs may be different, and the insulation of buildings will be of benefit to air conditioning more than space heating. Civil and mechanical engineering will provide excellent employment opportunities for our most talented young people who will not lack professional challenges!

Most atmospheric scientists now agree that increased levels of gases such as carbon dioxide, oxides of nitrogen, methane, ozone, ammonia, and chlorofluorocarbons in the atmosphere will have a greenhouse effect on solar radiation, be-

ing transparent to insolation, but restricting the escape to space of terrestrial long-wave radiation.

In the absence of human influence our present-day trend is towards cooling as we have been experiencing the longest interglacial period of the Pleistocene Epoch. Some predictions have suggested renewed volcanic activity at the end of the century (typically producing a cooling effect) but glaciation seems unlikely for sometime as the rate of cooling caused by Earth-sun orbital relations is only 0.1 degree C per century. Human influence, however, is postponing the cooling trend for the next 500 years or so and may trigger the climate system out of the glacial/interglacial cycles of the past million years.

Throughout history man has responded, reacted and adapted to the vagaries of climate. Since the development of agriculture and cities he has enacted local changes to climate, which have become global in significance during this century. Industrialization has meant

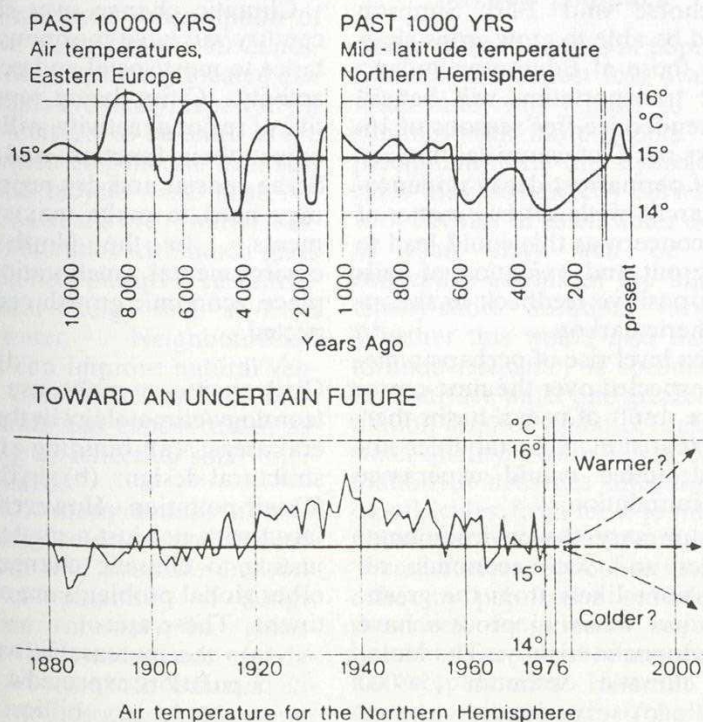
massive combustion of fossil fuels and extensive deforestation. Pollutant emissions from factories and cities have been of concern for centuries, but we continue to be shocked to discover: the enormous distance which even metals can travel in the atmosphere; the threat of significant concentration of compounds like chlorofluoromethanes in the stratosphere which can chemically remove the protective ozone layer; the synergistic effects on health of combining pollutants like SO₂ and O₃; the toxicity of organic compounds, the PCB's and vaporous forms of mercury and cadmium; and finally, the realization that our global environment is likely to be greatly changed as a result of increasing atmospheric concentrations of the radiatively-active gases.

Other important changes of climate have been induced, at least in part, by human activity. International concern has been focussed on extensive desertification in Third World countries where population pressure is encouraging over-use of soils. Removal of tropical forests releases CO₂ from the biosphere to the atmosphere, but also changes the surface energy budget because of albedo differences. The city environment is warmer and drier than rural areas, and is quite variable in heat, moisture and momentum from district to district according to design and size factors. Other examples are possible.

The Forecast: Warming

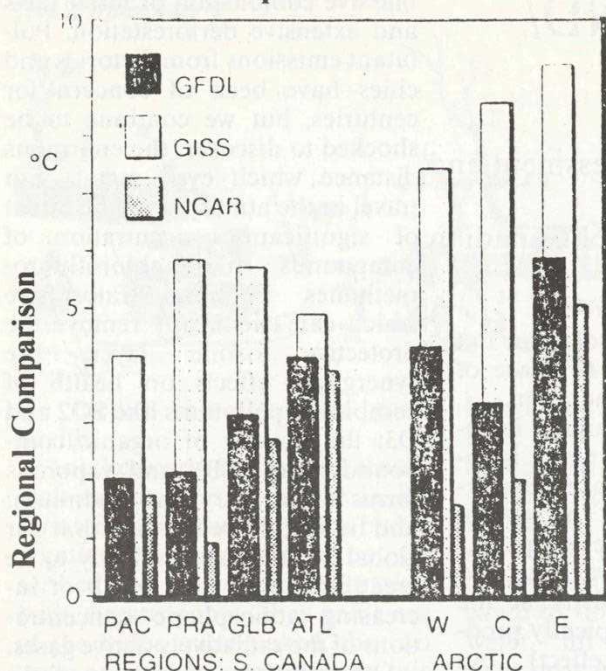
Over the past thirty years direct measurements show there has been a progressive increase of CO₂ in the atmosphere. Other greenhouse gases are also increasing. At Toronto, methane in the layer 15-25 km above the surface has increased by a factor of 1.4 over the last 10 years. While it is believed that CO₂ is responsible for 60% of the warming influence today, the longer atmospheric residence time of the other gases will make them important to the future.

The means by which these gases cause a heating of the atmosphere is through a series of feedback processes. The processes have been modelled using, in particular, global climate models, or general circulation models (GCM's). Although very useful, they are expensive to operate, and this has neces-

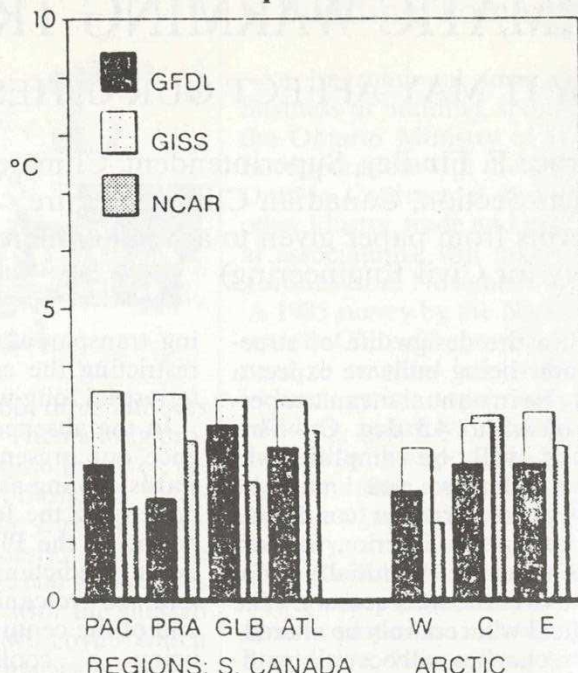


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Winter Temperatures



Summer Temperatures



Regional Comparison of CO₂ Climate Change Derived From Three Circulation Models.

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tate many simplifications to be characteristic of current GCM's. In general they indicate that a 1 deg. C change in temperature corresponds with a 100 ppmv change in CO₂ concentration. The current level is 340 ppmv, representing a 25% increase from the 18th century, and a value of 600 ppmv has been suggested for 2075 AD. Presently, about one-half of the excess atmospheric CO₂ and significant heat is absorbed by the oceans. Allowing for a lag where 50% of potential effect is realized at any instant, the hemispheric temperature rise over the past century of 0.3 - 0.7 deg. C. is consistent with the theory. However, this is within the range of normal variability due to natural causes. It is expected that the CO₂ effect will not be positively detected in temperature records until the end of this century.

Beginning around the middle of the next century, and continuing for several centuries, Canada will be experiencing a warmer troposphere and a somewhat cooler stratosphere. Seasonally, the winters may receive the greatest warmth, and it is expected that higher latitude areas will have higher temperature increases.

The regional pattern has to be speculative, as estimates of wind field changes entail many assumptions. Using the analogues of warm periods earlier in this century, a dry continental interior

through increased evapotranspiration is suggested. This is replicated by general circulation model (GCM) experiments. In the more heavily populated Great Lakes region water shortages may be exacerbated by increased consumptive uses. This impacts on hydro-electric power, and the need for irrigated agriculture, as well as transportation both by ship and land-routes.

Greater frequency of drought in the southern prairies and warmer temperatures may force agricultural activity north and places like Whitehorse and Fort Simpson should be able to grow crops similar to those at Edmonton today. Arctic transportation will benefit by extended ice-free seasons of 10-30 days per C of warming. The extent of permafrost decay under today's arctic wetlands is a matter of great concern as this could lead to drying out and oxidation of soils and a positive feedback to the atmospheric carbon.

A sea level rise of perhaps a metre is expected over the next century as a result of ocean basin thermal expansion. Coastal cities unless defended would experience some inundation.

In summary, the environmental changes and socio-economic repercussions likely from the greenhouse gas warming process have no analogue in history. The Holocene climatic optimum (5-8000 years ago) experienced annual

temperatures about 2 deg. higher than present and may have had 500 ppmv CO₂, but atmospheric circulation was probably less intense because of an extensive cryosphere, at least initially. Temperatures for this period are established mainly through the pollen record and this same type of evidence suggests that there have been rather quick responses of the environment to major climate changes occurring over less than a century and lasting only a few years.

Climatic change over the next century will have enormous importance to most social and economic activity. Cities, being representative of regional activity, will have to adjust their function and form. Some coastal and dry region cities may need to make major adjustments. In the North where environmental amelioration takes place, economic growth can be expected.

Civil engineers make use of meteorology/climatology in three general areas: (a) building and infra structural design; (b) hydrology; (c) air pollution. However, we are faced with not just a matter of adjusting to climatic change. Two other global problems are also pertinent. These are:

(a) the increase in world population, expected to increase to six billion by

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2000 AD (most of this will take place in the Third World);

(b) the prospect of soon-to-be depleted traditional energy sources. A 300-year horizon is seen for fossil fuels even under present consumption. Allowing only for population growth, energy use is seen to double by the year 2030.

Some factors which will have to be considered include: (a) the efficient use of energy and raw materials to serve multiple uses or users; (b) ensuring the environmental compatibility of design in order to reduce costs of maintenance e.g. weathering and corrosion of materials, snow and ice removal, and to reduce interference with the natural environment, agriculture, and outdoor living space; (c) adjustments to reflect changes in design loads (snow, wind, ice) and capacities (reservoirs, conduits, etc.).

Energy consumptive rates imply a pressing need to develop improved combustion systems and energy mixes to incorporate solar, nuclear, wind, alternate and synthetic fuels with traditional systems. The realization over the past 10-20 years that energy supplies are finite has encouraged progress here. Winter heating needs will be reduced by perhaps 500 HDD or more, but correspondingly, there will be increased consumption of expensive electricity for air conditioning. More centrally located district systems are likely, especially if nuclear fuels are to be used, as are plants which co-generate heat and power and recycle waste heat. Architectural trends are towards multi-storied facilities with much glass and using heat pumps to re-distribute natural energy such as from ground-water. Neighbourhood redesign can improve natural ventilation. Care in selection of color of materials and exposure can absorb or reflecting solar energy as needed.

Until now many actions to conserve energy, select renewable energy sources and promote environmental compatibility of design have been voluntary, but guidelines are likely to become mandatory as we come to balance climate/energy/resources/and popu-

lation. In structures we can expect increased synthetic materials as natural metals and other geological materials become scarce. Montreal now spends over two million dollars a year in snow removal. Considerable savings here and for reduced salt damages can be expected. Environmental assessment of proposed buildings, roadways, bridges, drainage systems will become a very serious matter as our needs for prime agricultural land, ecosystem protection, and living space outdoors will be non-negotiable.

Seeing Red For Winter Blues

Mid-winter blahs, which include lassitude, depression, over-eating, over-sleeping, agitation and even violence, seem to strike all northern residents from time to time. But there's new hope - scientists have recently discovered a remarkable and simple treatment. It involves wearing special rose-coloured light polarizing glasses. They help beat the "blues" by increasing one's exposure to red-spectrum light, which seems to be a sure cure for winter fatigue and related symptoms. If the malady persists into spring, green-polarized glasses do the trick. While the anti-depressant glasses appear to work well, nobody is sure of the exact healing mechanism.

(Taken from "Up Here - Life in Canada's North", June/July 1986, p. 11.....JR)

Water Supplies

Some extensive areas of populated Canada can expect less available water and will have to share supplies with more people. Less precipitation in the hydrological cycle may not directly correspond with savings in stormwater design, as there may well be more convective storms of the high intensity-short duration variety. Whether this would also increase tornado frequency is speculative. Less surface water and greater population implies vigilance regarding water quality. Again increased regulation of activities affecting this on all scales, from local to international, may be expected.

Fossil fuel energy conservation is offset by population growth and the need for greater industrialization to supply markets and create employment. However, sustained or increased air pollution

and the attendant damage it causes to the environment and man-made structures are unacceptable, considering the need to optimize use of resources and control population. The development of accords and conventions among nations concerning pollution and other environmental degradation is increasing as a result of pressure from international bodies such as the World Meteorological Organization, the World Health Organization and the World Conservation Strategy.

We cannot turn off acid rain immediately and in a warmer troposphere its impacts could be potentially worse. With shifts in the storms tracks and the wind fields, the relations between emission sources, pathways, and impact zones will be altered. Again, the future suggests a greater stringency of regulations extending from stack emissions, to land-use safeguards, in order to control emissions of particularly toxic gaseous organic compounds which might arise from manufacturing synthetic building materials and fuels. The subject is complex, and it is only now that we are learning of the background and rate of increase of many pollutants.

Conclusions

In the 1970s there were reasons for optimism that urban engineering in co-operation with planning and architecture were capable of producing future cities having economic efficiency, attractiveness and a healthy, environment. Climatological studies showed that there were many complex aspects of urban wind patterns, temperature, humidity and precipitation which had implications for district planning, design specifications and air pollution control. Ways of assessing these characteristics were developed, and engineers also extensively made use of climatological data from observations taken over half a century or more. Reflecting on the period, there was no lack of challenge to our ingenuity in responding to threats like air pollution arriving from great distances and containing unacceptable levels of some very toxic substances, or disputes over the extent and kind of urban development and the consequences for storm sewerage and

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water quality. Despite these problems, some of which remain, we have made good progress through hard work and an optimistic attitude.

Today, however, we are faced with very serious challenges of a different kind. Do we accept climatic change and adapt to it, costly though it will be, or do we fight it since its current causes are largely human in origin? To avoid serious disruption to natural resources and the economy, the CO2 levels must be kept below 450 ppmv and this can only be done by major policy changes regarding energy use decided by the world's nations, and regarding land-use as well, to include extensive reforestation and rehabilitation of desertified lands. This option represents a very difficult struggle, but the alternative could entail enormous costs in a few years' time.

At an international meeting held at Villach, Austria in October 1985, experts from 29 nations issued a warning to the world that many long-term projects and important economic and social decisions are being fallaciously based on an assumption that past climatic data without modification are a reliable guide to the future. Reduction of oil and gas use and energy conservation undertaken to reduce acid deposition will also reduce emissions of greenhouse gases and slow the rate of climatic change. These are matters for national government policy.

The forecast for warming is generally agreed to by authorities, but future regional patterns and timing are very speculative, and even the main estimates have some level of uncertainty because of complexities in the climate system and imperfections in GCM's.

Nevertheless, the understanding of the greenhouse question is sufficient to provoke policy action to include not only the energy and land-use matters but also research into unsolved problems, climate modelling and assessment of specific socio-economic responses using actual regional studies, such as the Great Lakes region.

Urban civil engineering is affected in all areas by climatic change. Adaptation will be the challenge of the 21st century, but the work ought to begin now. ☐

Edmonton's Canada Place / A Winter Showpiece

by Richard Dabrus



Edmonton's Canada Place designed by WZMH of Toronto comprises three low rise interconnecting structures joined by a central Atrium affectionately called the "Great Hall". Running on a north-south axis, there is a major entrance at either end addressing the existing concourse-bound 'pedway system' with ancillary entrances at one-third points on the side. The pedestrian concourse, after entering the site from across Jasper Street to the south, then turns west to connect to Edmonton's Convention Centre.

The "Great Hall" is a 13 - 17 storey Atrium that cascades down to the East and West from the central spine in deference to its lower scaled neighbours, the market and the Citadel Theatre. Street scale is established by means of a four sto-

rey podium surrounding the structure that relates to its surroundings and provides for a reduced impact at pedestrian level.

The great building bulk of 1,450,000 s.f. combined office, retail and hotel space is organized so that the furthest distance within the typical office floor space is no more than 40 feet at point from either an exterior window or a window into the Atrium. The Atrium then creates an environmentally mediated buffer for half of the building surface area, allowing for a savings in lighting, heating and cooling costs.

The "Great Hall" becomes a main street to the complex that provides a reference point to all of its inhabitants as well as an inviting interior space for the public. Unlike its counterparts, the concourse and skyway systems, the Atrium compliments the existing street network while providing a cold weather alternative. As such, Canada Place builds upon its typological predecessors, the University of Alberta's student dorm complex and Toronto's Eaton Centre and delivers some of the same qualities and characteristics to the office environment.

(Richard Dabrus is a graduate architect working in the Toronto office of Webb Zerafa Mankes HousdenJR) ☐

Ottawa Chapter Plans Busy Season

Ottawa L.W.C.A. Chapter will have four main activities this coming season. These activities are intended to meet a broad range of interests.

A series of community television programmes will be produced by chapter members with the help of local cable television companies. These programmes will follow the theme of LIVING WITH WINTER and will feature advice and news on clothing, recreation, leisure, etc. If you wish to assist or advise the project manager, please contact: Barry McMahon (613) 232-3747.

Members will be conducting a conference session at the February annual meeting of the Ontario Recreational Society organized by

the City of Nepean. Anyone interested in being involved should contact Sheila Pepper at (613) 226-5863.

At the annual general meeting of the Environmental Design Research Association, chapter members will conduct a workshop on designing for all seasons. Although this conference is scheduled for May 29-June 2, the LWCA proposal has to be submitted by October 1. Association members interested in contributing to this workshop should immediately contact Byron Johnson at (613) 997-4985 or 233-9245.

The chapter is also planning monthly seminars on topics of relevance to design professionals in the Ottawa area, for example, an evaluation of the Rideau St. covered malls and current planning directions. Persons wishing to participate should contact Susan Smith at (613) 722-5327. ☐

Winter Cities 86 Most Exciting, Important Northern Event

Proceedings of Winter Cities Forum 86 are now available from Winter Cities Corporation, City Hall, Edmonton, Alta, T5J 2R7. The Forewords and postscripts of the hefty volume provide an effective wrap-up of the most exciting and important event ever organized by and for the inhabitants of the world's northern regions.

Says the Foreword: "This preparatory forum was a 'warm up' to the International Winter Cities Showcase '88, planned for Edmonton during the first week of the Calgary Olympics. It was attended by delegates from 86 communities in 11 countries...While the preparatory event did not produce all the answers towards a "cure for the common cold" (the Forum subtheme), it certainly embraced a good part of the galaxy of issues and concerns of winter living and, perhaps more importantly, identified significant questions which could be pursued for the 1988 event..."

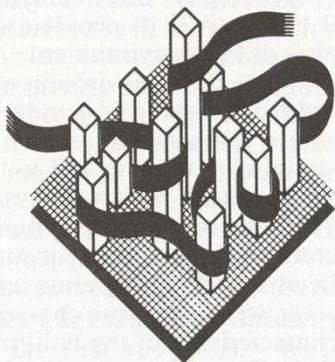
"Over four hundred participants had to leave the warmth of the beautiful Edmonton Convention Centre for the ear-stinging blasts of Northern Alberta (it was -32 deg. C.) confirming the view of futurist Gary Gappert, of Akron, Ohio, that 'up here winter is a very serious business', or perhaps, as Old Man Winter stated in Paula Jardine's pageant, The Snow Queen: 'these Edmontonians are crazy; they're so cold their brains have turned into slurpies.'

"The stage is now set for the 1988 International Winter Cities Showcase (again in Edmonton) of Olympian quality to flush out the full orchestration of the Winter Cities idea.

"Already cities are lining up to produce the 1990 and 1992 "Winter Cities events", with Tromsø, Norway and St. Paul, Minnesota leading the way.

"An International Winter Cities Advisory Committee (I.W.C.A.) was founded at the 1986 Forum.

The Edmonton-based Winter Cities Corporation has assumed responsibility as its secretariat with plans to reinforce its role through the creation of a Winter Cities Research and Demonstration Centre in Edmonton.



As postscript, editors of the Proceedings wrote: (during the Forum) "there was evidence of an evolving common ideology, of a unique technological and Northern internationalism; a sharing of ideas, techniques, yes and even love and human warmth, towards overcoming the cold misconceptions of winter's darkest days.

There followed a round-up of quotes from the media pointing up the highlights of Forum 86. Here are a few examples:

Sapporo Makes Winter an Ally (Edmonton Journal)

Mayor Itagaki represented perhaps the first city in the world with an innovative and visionary plan for winter - a plan which, he personally, has been implementing for more than 30 years: continuity is indeed power as represented by this example...In a recent survey of Japan, its citizens ranked Sapporo first in their choice of cities to live in despite an average annual snowfall of five meters.

Winter Teaches Lessons in Reality (Calgary Herald)

Dave Phillip's (Climatologist from Toronto), Climate Severity Index of Nine Elements, if combined with Dr. Persinger's (Professor of Neuroscience and Technology - Sudbury), personal, psychological and physiological findings provided perhaps the basis for developing a northern lifestyle-climate index. (Phillips and Persinger were presenters at Forum 86). Certainly Dr. Persinger put holes in the myth that a northern climate is invigorating and healthy. Both he and others pointed out the need to improve the healthiness of man-made climate moderators (buildings) in which our severe natural climate requires us to spend so much time.

Coming In From the Cold (Edmonton Sun)

"Smart developers, before subdividing, have the tools at their disposal to study snowdrifting, wind (and sun) patterns on their rawland. Now its time to build homes that acknowledge winter, make the best of what we have. Southern exposures, big windows, lots of insulation, judiciously placed conifer tree breaks (indoor winter gardens) and color, 'give me color'. Where are those old Ukrainian say it-loud-we-love-purple outdoor decors?" Vladimir Matus, presented the results of a decade of Research that adds a whole new layer of sophistication - a superb, climate sensitive design approach for Northern latitudes.

Sidewalk Malls Interim Step in Winterproofing Cities (Ottawa Gazette)

While we have become quite adept at the development of multi-building, multiblock air conditioned, continuous pedestrian environments, it has led us to turn our backs on an increasingly unlivable outdoor public world. This outdoor public domain is now dominated by the car, polluted by noise, dust, smog, swept with winter winds, cooked by summer heat and with unsafe icy sidewalks. Thus, with the advent of Scarborough College's (Toronto) path-

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breaking solution in the early sixties followed by such illustrious Canadian examples as the Calgary Skywalks, Toronto's Eaton Centre, and Ottawa's convertible sidewalks we are still left with only a partial solution.

One of the many ideas to emerge that have applicability to both smaller and big communities was the 'all weather' pedestrian system developed in Houghton, Michigan (population 7,000) that inter-connects five city blocks by walkways that (by-in-large) move through existing stores - simply requiring doors between adjacent stores.

Snowflake Fantasy (Edmonton Journal)

The Sapporo Snow Festival, perhaps the largest winter festival in the world, was initiated thirty-seven years ago as a way to encourage local people to come outdoors and socialize in midwinter. Last year the number of festival goers totalled 1,845,000 during a five day period (including 20,000 visitors from abroad). In fact the "liability of winter" has also turned into an asset pumping 100-130 million dollars into the local economy; the cities contribution being only \$120,000 to the snowfestival secretariat's \$467,000 budget.

The Ottawa-Hull Winterlude, only seven years old, is now listed as one of the top 100 tourist attraction events in North America. Perhaps even more important was the great diversity of winter events described (at Forum 86) by Sheila Pepper (a recreation planner) that takes place in 14 Ottawa region communities. "The community enthusiasm seldom falters. It is fueled by the fellowship generated amongst the participants and the pleasure evidenced by the children especially"

West Edmonton Mall, an indoor leisure centre, is on its way to attracting 8 million visitors annually in a city of 600,000 thousand. ☐

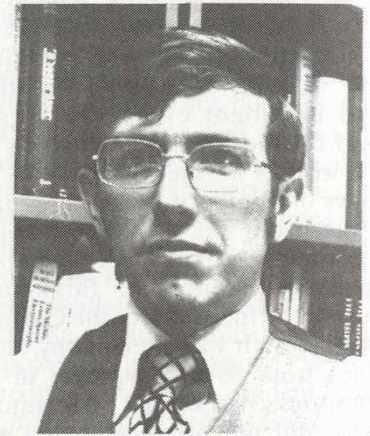
PLAN NOW TO ATTEND
LWCA ANNUAL MEETING
NOV. 10, TORONTO CITY HALL

Aversive Nature of Winter Not Just Imagination

(Excerpts from paper prepared by Dr. Michael A. Persinger, biometeorologist and full professor, Dept. of Psychology, Neuroscience Laboratory, Laurentian University, Sudbury, for presentation at Winter Cities Forum '86. Dr. Persinger is a Director of the Livable Winter City Association. Selected by Arni Fullerton, Western Canadian Editor, as being "a first class paper that deserves to be published".)

Dr. M.A. Persinger

The psychological health and personal productivity of people are a function of their environment. Although most of that environment is derived from social and family interactions, a substantial portion of it is coupled to climate and to the buildings within which we work and live. We cannot easily change the climate directly; consequently, its effects are relatively permanent. However, we can and are changing the characteristics of the buildings which buffer us from the physical environment; they generate their own microclimate. First then, what factors contribute to the aversive nature of the Canadian winter? Well, you may say that "I enjoy winter", but if we look at behavior, it is clear that winter is aversive. An aversive stimulus is any event that will be freely avoided. During the winter we look forward only to the first warm breezes of spring. We take vacations to far places, assuming they have copious amounts of sun. But perhaps the simplest evidence is the amount of time we spend outside. The average Canadian spends much, much less time outside during the winter. Since this season lasts for about six months, a substantial portion of our potential behavior is affected. There are two obvious contributors to the profound consequences of the Canadian winter. The first involves the significant alteration (shortening) of the duration and the intensity of sun. Duration and intensity of light are well-known controllers of motoric activity. Recent evidence indicates the existence of a clinical subpopulation of depressed patients who can be relieved by restructuring the daily



light/dark periods during the winter months.

There appears to be certain aspects of the homogeneity and the intensity of natural light that cannot be compensated by the more localized and for the most part dimmer man-made sources. Brightness is a key variable that evokes, reflexively, changes within the eye and hence short-term changes in ambulation and long-term changes in complicated hormonal responses. A relatively unknown portion of the optic tract allows direct access to the pineal body and to portions of the brain that influence mood.

The second powerful contributor to the aversive quality of the Canadian winter is the temperature and the biological necessity to avoid cold (or in some areas, the incessant cold rain and cloud). Even a few degrees change in temperature have profound effects upon human behavior. Chronic schedules of episodic exposures to brief cold periods have been suspected to slowly elevate body chemicals (such as those released by the adrenal gland) that are typically evoked by distressing stimuli. Maintained elevations of these chemicals contribute to decreased
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immunocompetence. Statistically, as a result, people are more likely to be afflicted by colds, flu, and the consequences of other ambient viral infections. This problem is especially pronounced after about two to three months of the Canadian winter, which means that peak immunofailure months should be between the last of January to the first of April. Not surprisingly, the occurrence of the common cold peaks in February and March. Influenza, with its distressing fever, depression, acute catarrhal inflammation of the nose and muscular pains dominates January and February; the virus does not appear in the summer.

These two variables are major controllers of the gross physiological changes to the Canadian winter. Although their presence is prominent in the problems of winter (seasonal) medicine, their significance is still often underestimated because these large changes take such a long time to occur. They are ramp-like in nature; they are slow, often below detection threshold. Yet over the course of the season, these changes evoke major alterations in the biochemistry of the body and the psychological status of the person. When the alterations are at their limits, usually during February to March, small even trivial stimuli can evoke significant instability. Psychological and frank medical ailments often follow.

Psychological Factors

There are also psychological factors that influence the response to winter. Sometimes they are even more powerful than the effects of temperature and light; no doubt they interact with them as well. The first major effect is the shift in the ratio of positive stimuli (S+) to negative stimuli (S-). Positive stimuli would be events like taking a relaxing walk during a summer evening while a negative stimulus would be turning the key in your car starter at -30 deg. C and hearing only a click. During the winter, there is an increase in the relative number of negative stimuli and hence the effects of punishment.

The effects of punishment do not stop with the immediate task in-

involved. Instead punishment generalizes to other behaviors. Although repeated trouble with the automobile may be a central source of frustration, other behaviors are affected as well. After awhile, most forms of initiative, even simple ones, such as going to the movies, visiting friends, or trying a local business venture, become less frequent. These effects not only contribute to the structure of personality but also to the characteristics of a culture.

There is also an increase in the duration of the negative stimuli. Simple responses, like walking to the store, crossing a street to another office, or starting the car, are associated with aversiveness, due primarily to cold. There are other nuisances, such as longer time to drive to work and enhanced tension driving on slippery roads. All of these are subtle, but they add their influence especially over the six months of the Canadian winter.

Secondly the very nature of winter stimuli is conservative. There are few stimulus changes. We are exposed to more or less the same stimuli day after day, especially after the first snow fall. Whereas summer is associated with a variety of multiple, always changing stimuli, winter contains fewer alterations. The environment becomes a boring blend of cold grays.

In short, we satiate or we get tired of winter stimuli more quickly than summer conditions.

The general psychological effects of prolonged satiation are pretty similar between people. Typical symptoms are low-level irritability, the feeling that there must be something more to life (hence the search for new jobs or at least the thought about looking for another job, usually in another location), and general dissatisfaction with the quality of life. Usually, there is an increase in the level of covert or hidden anxiety.

The third factor that influences the aversive nature of the Canadian winter is the consequence of coerced hypo-activity, due primarily to the physical restraint of avoiding the cold by staying indoors. Such coerced hypoactivity leads to lowered mood and general depression, the so-called "winter-blues". There is an intimate relationship between simple motoric activity (such as ambulation or exercise) and the overall mood of the person. It is

becoming more and more evident that something as simple as exercise, the stimulation of muscle, can produce tonic influences on a person's mood.

Coerced hypoactivity contributes to depression and depression is an aversive experience. People will engage in almost any behavior to remove aversive experiences. Typical avoidance responses involve alcoholic consumption. It is particularly probable in northern climates because of the side effects of warmth (vasodilation) and the misleading experience of infatigability. Irritable depression can precipitate domestic squabbles. When a large number of people display these symptoms, work production decreases and social problems increase.

Chronic depression is associated with more morbid escape responses, including thinking about suicide. Less severe responses to coerced hypoactivity include (a relatively new diagnostic category) masked depression. Masked depression is associated with a variety of visceral disturbances that include constipation, frequent sleep disturbances, bursts of hostile thoughts, and low-level feelings of paranoia.

The fourth major factor involved with the aversiveness of winter climate, again due primarily to its long duration and to its redundancy, is the facilitation of anxiety. Restraint and repeated presentation of the same aversive stimuli contribute to anxiety. Anxiety attacks include feelings of apprehension, sweating, the sensation that the walls are too close and even time distortion. Anxiety can be associated with flu-like symptoms such as the loss of emotional color, the perception that things are a lifeless gray and depersonalization - the experience that you are a spectator of your own behavior. Often it may be dismissed as the flu, which is an apt rationalization for the wintertime.

Susceptible Populations

Three major (but not necessarily exclusive) groups of people appear very vulnerable to winter climate and to the average building conditions to which they are now exposed: the elderly, the periodically depressed and the psychiatric populations.

The problem is especially frequent among the elderly who are exposed to the same, small environment day after day. Whereas during the summer time, they can hear the sounds of birds and smell the fragrances that require warmth or even attend to the varied voices of people walking by, the winter is characterized by a more redundant input. Although such summer stimuli may be trivial to the young or to people who can walk about freely, they are important boredom breakers to older members of our society. Winter usually robs them of these stimulations.

Recent research has shown an intimate relationship between the chemistry that is associated with depression and the chemistry associated with heart failure. Depletion of certain brain chemicals that contribute to depression also appear to be correlated with depletion in heart chemicals that contribute to heart failure. Anxiety and general feelings of uselessness exacerbate these changes. It is indeed ironic that the differences between survival or not may be based upon something as simple as the occasional option to move freely in a warm, bright environment.

There are indirect consequences of the winter climate that add their measure to winter within the building. The general coldness "chills the bones" of elderly people and may contribute to depressed mood and morbid thoughts. Interestingly, one of the singular factors that "make winter so depressing" are sounds of the wind from which they feel they cannot escape.

The second population includes normal young and middle-aged people who are prone to occasional depression. All of us are slightly depressed from time to time for no apparent reason; approximately 3 out of 10 of us will have a major (medically treated) depressive episode sometime during our life. The winter climate and conventional buildings have the capacity to intensify depressive tendencies. The coerced hypoactivity (staying indoors), general negative (cold or wet) environmental exposures, and stimulus redundancy (grays) facilitate rumination, less physical activity and sleep and eating problems. Perhaps the most tragic consequence is not seen in a clear endpoint like a "nervous

breakdown", but instead as the loss of personal spontaneity, productivity and sense of well-being.

The third and often ignored population involves the psychiatric in and out-patients. Winter is particularly difficult for them; they respond, even more severely to the stimuli noted previously. The marked reduction in spontaneous summer social contact and the removal of nature's comforting colors and warmth often are reported as the precipitators of remissions and breakdowns.

The Future

The design of future habitats in the winter climate should address the problems that have been discussed. Specifically, there should be primary emphasis on buildings that reduce the traditional coerced hypoactivity. This is essential for all of us but particularly important for the elderly and physically handicapped. By the first decades of the turn of the century, the mass of North American population will occur within this age bracket.

Secondly, the designs should allow easy and freer access to areas of reward. They include the fundamental services such as foods and medicines as well as the options for natural settings such as parks and trees. As the person begins to lose his or her mobility, options to still make choices and have control over the environment become a critical factor for psychological well-being and productivity.

Third, the designs should be compatible with the capacity to maintain novelty. Despite the additional color and stimulation of the future winter city, the capacity for the human being to habituate must still be addressed. Considering the quick satiation that people have, even to initially appealing stimuli, some aspect of the buildings should have the plasticity to be changed in shape or characteristic in order to minimize boredom.

Here is a warning. Changes in building design will result in some fundamental changes in human interaction. There will be a more complicated dependence upon social skills. Because more and more time will be spent in shared social space, the subtleties of social interaction will become important. People, even those who live in the smaller communities, will be forced to learn different kinds of social skills. What problems this

shift in social emphasis will unmask must still be determined.

What We Must Learn

People living in the north have been exposed to traditional housing and functional organizations for centuries; the changes we now see in our cities and towns are really a very recent phenomenon. As we gradually close and change our cities, some fundamental questions still remain to be answered.

(1) How powerful are personality factors in the response to the structure and function of habitats? Behavioral scientists are becoming more and more convinced that social and environmental conditions that foster maximum satisfaction in one person may be adverse or even incapacitating to another. This paper emphasized (implicitly) greater enclosure and simulated summering of the immediate living environment whereby the access to the winter is a free operant (a matter of choice). However, there may be some types of people who do not respond well in the setting.

(2) Given there are important personality differences that determine preference for question 1, what are the fundamental structures and functional organizations of habitats that will appeal to most people? In complex environments, personality factors become important to predict the person's feeling of well-being; it, in turn, influences health and productivity. In the past, psychologists have devised vocational interest tests to determine now your interests were shared with people who were successful (maximally productive and happy) within a given vocation. Must we develop similar assessments for people in context of designs of future buildings?

(3) What new subtle stimuli will control our moods? The nature of mood is its periodicity. Traditionally, the climate and the season were the driving stimuli. The removal of this primary factor though better design of our structure and habitat simply means that other stimuli may control our emotional highs and lows. The extremes may not be as large, but the variation will remain. Within closed buildings with modern lighting and air systems, will other factors influence productivity? Will they be subtle and unique to our new microclimate? These factors must still be evaluated. 

Calgary Planner Looks at His City

By George Steber, Jr., Former Calgary Planning Director,
now Urban Planning Consultant,
adapted from Article in Calgary Herald

Nature has a way of reminding Calgarians that we do live in the cold belt along with approximately 500 million others in Scandinavia, the Soviet Union, China and Japan.

Canada's cities have seldom been coherently planned for cold weather and a southern solution is often, in fact, the most expensive. In Calgary, we have an all-weather, Plus-15 pedestrian walkway system linking downtown office and retail buildings. It provides an attractive, comfortable environment for some of the 75,000 people who work downtown and those who visit.

Canada has had a federal incentives program aimed at improving the insulation in older homes and other buildings, among other initiatives. But what specific co-ordinated measures are there to make Calgary more comfortable and more hospitable during the long, cold and dark winters?

Certain areas downtown are subjected to Arctic downwinds caused by tall buildings and their arrangements. Walking downtown is often unpleasant as we negotiate snowy, slushy and gravelly sidewalks and wide intersections. Travel for the elderly and the handicapped is restricted.

What have we done to orient our buildings and windows to capture the abundant low winter sun, or to ensure that maximum solar warmth reaches sidewalks and open spaces downtown?

Alberta has the highest number of sun hours in Canada. This energy is free. But do we use it to heat our homes and to make them cheerier? Are our forms of housing and other structures best suited to our climate?

Much can be done to make communities more energy efficient in all seasons, even without resorting to high technology, simply by applying reasonable known solutions.

The current oil price fluctuations and the precariously fickle world economy may be the vehicles that will stir us to demand that our homes, communities and cities be-

come more efficient. It just makes good economic sense.

But don't we also have a moral duty to not waste? The time has surely come to look carefully at what kind of city Calgary may become in 10, 30 and 50 years.

If we opt for a resource-efficient urban community, then we need long-term plans and a road map. That means finding the courage to make the necessary political and financial commitments. We will need greater residential densities, an efficient and complete rapid transportation system, and new forms of housing better suited to our climate in a rapidly changing and mobile society.

If we seek world-class status, let it be in providing the leadership needed to build an efficient all-season city - a city that will pride itself on its sensitive use of its resources as well as its technology.

Population projections are uncertain and unpredictable for Calgary.

We now need a vision to strive towards: a vision that will take Calgarians beyond the 1988 Olympics.

We need visual and environmental goals to share as we adapt to the future. We need options that tell us in qualitative and graphic terms what kind of city we can build together.

We need a process to stimulate and encourage public dialogue on those issues. Long-term planning, economic and physical, has lacked credibility. Without serious alternatives, we have found ourselves scrambling for makeshift solutions to unexpected social and economic change.

In Calgary, we have our renowned chinooks. And although we have sustained cold periods, blizzards, blinding snow and high winds, there are many available rewarding winter experiences.

Developing a positive community attitude at work and at play during the months of reduced daylight can greatly enhance our enjoyment.

We have excellent forms of winter recreation in the city. Others are planned for the 1988 Olympics.

We can celebrate winter even in our unpredictable and changing temperatures. Properly dressed, in our "portable environments", we can savor the weather. We can add light, color, banners to special areas of the city. Flowers, natural beauty, fountains can adorn our buildings indoors.

We can make winter a season during which Calgarians and Albertans develop a special community feeling that leads to genuine and contagious pride and fun.

Winter cities are different. We should capitalize on our specialness. We can, in response, to a common will, create a special city with the assistance of some foresighted elected officials, professionals, and all segments of our community.

Do we have the will to pursue the ideals and solutions set out at the Winter Cities Forum? Do we really want to become world-class? 

Approval to Last Link in Toronto's Underground

The City of Toronto has agreed to donate \$200,000 towards the \$1.4 million cost of the Bay St. connection to downtown Toronto's underground concourse, completing a vital link to create what is probably the most extensive underground city in the world. The last section, between Simpson's and the Sheraton Centre, will mean people will be able to walk from Union Station to The Atrium at Bay and Dundas without going above ground. The city has plans for improved signs and information kiosks to aid people over the underground network that now covers 5.7 km (3.5 mi). 

PLAN TO ATTEND

Annual Meeting of the Livable Winter City Association will be held Monday, Nov. 24 at 6 p.m. in a committee room of Toronto City Hall. All members are urged to be present to help in framing of important policy decisions.

"A Future For Our Rivers" Conference on Waterfronts

The National Capital Commission, a Crown corporation responsible for the planning and development of federal land in Canada's Capital, announces a conference on future prospects for urban rivers and waterfronts. The conference is due to be held June 8 to 11, 1987 at Ottawa Congress Centre in Ottawa-Hull.

There will be three concurrent flows of presentations: Canada's Capital Waterways including the Ottawa river and its tributaries and the Rideau Canal, and a review of innovative ideas introduced to make these more attractive and useful; Rivers of Canada with reports on schemes to make urban waterfronts more enjoyable for citizens to use them, as an enticement for tourists and to conserve them as natural resources; and "Lessons from Abroad, International Case Studies" focussing on outstanding

riverfront development outside of Canada.

From 300 to 350 registrants are expected. There will be a number of tours and mobile workshops. The conference should have special appeal for planners, architects, recreologists, geographers, developers and others. For information contact Donna . Boulet, Conference Co-Ordinator, Planning Branch, National Capital Commission, 161 Laurier Ave. West, Ottawa-Hull, K1P 6J6, Tel: (613) 996-8393. ☐

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