Winter Cities

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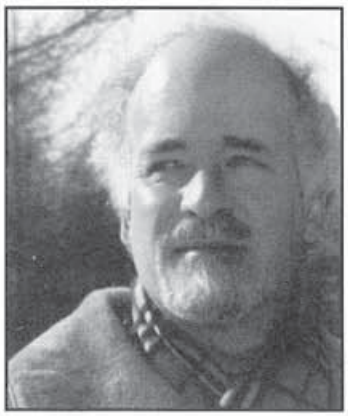

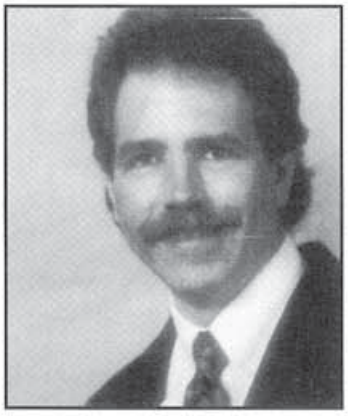

20th

ANNIVERSARY

Winter Cities

ASSOCIATION

c/o CITY OF PRINCE GEORGE, 1100 PATRICIA BOULEVARD,
PRINCE GEORGE, BC CANADA V2L 3V9

"A winter city is one in which the average maximum daytime temperature is equal to or less than 0 degrees Celsius for a period of at least two months or longer".

Pressman, Norman, 1988. "Images of the North: Cultural Interpretations of Winter", in Winter Communities Series, No. 5, Institute of Urban Studies, University of Winnipeg.

The Winter Cities Association was founded in 1983 by the late Jack Royle, a retired journalist and pioneer in the winter cities movement. The Association was incorporated in 1984. Professor Norman Pressman served as its first President.

The purpose of the Association is to bring together professional, private, commercial and municipal interest and researchers who are committed to enhancing the liveability and quality of life in communities where winter conditions present unique challenges and opportunities. The Association seeks to support, and may enter into affiliations with, other associations that supports its goal.

The Association publishes a quarterly magazine, periodically sponsors other publications dealing with winter issues, and promotes a biennial "Winter Cities Forum and Trade Show" in partnership with a host city/corporation.

The head office of the Association is currently located in Prince George, British Columbia.

Annual membership fees in the Association are by category:

INDIVIDUAL - $60.00 Cdn.

STUDENT/SENIOR (OVER 65) - $30.00 Cdn.

CORPORATE/INSTITUTION - $125.00 Cdn.

CITIES AND MUNICIPALITIES – based on population

All members receive the *Winter Cities Magazine* and municipalities receive 10 copies of each issue. Members are eligible for discounted registration fees at Winter City Forums, and may purchase books and other materials published or distributed by the Association.

Subscriptions for the magazine only are $40.00 Cdn. for one year, $75.00 Cdn. for two years and $100.00 Cdn. for three years. Visa and MasterCard are accepted. Cheques are payable to the Winter Cities Association, c/o City of Prince George, 1100 Patricia Blvd., Prince George, BC, Canada V2L 3V9

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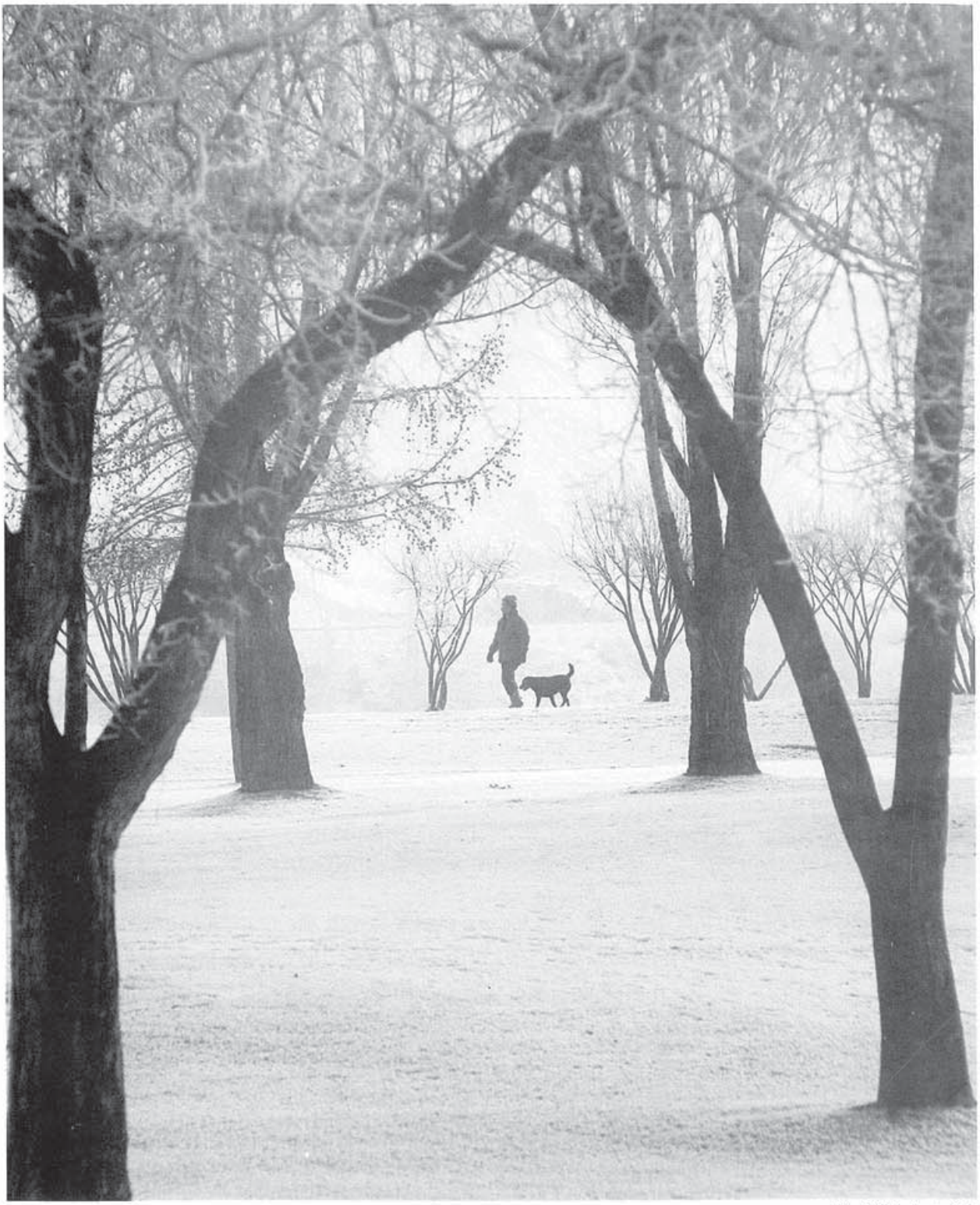
Cover photos: Founder, Jack Royle; Past Presidents, Norman Pressman (1984), Harold Hanen (1987), Pat McMahon (1991), Patrick Coleman (1998)



Dog Walk In Frosty Park

DAVE MILNE

Dave Milne has been a photographer for the Prince George Citizen newspaper for 32 years. He lives just outside Prince George, BC. Dave's interests run from photography and computers through mechanics to music and water and snow sports with the family. Photography is a lifelong love and satisfies both his technical and artistic sides. Throughout his years with the Citizen he has had the pleasure of photographing every aspect of Prince George from the seasonal and geographic changes of a growing city to capturing the faces of three generations of Prince George people. Dave also enjoys using his own time for quieter, more reflective photographs.

President's Message

This issue of the Winter Cities magazine celebrates the twentieth anniversary of the Winter Cities Association (WCA). We revisit the vision of its founders, review its achievements and look at directions for the future. The growth of the Association has paralleled that of the International Association of Mayors of Northern Cities and we are honoured to have greetings from its President, Mayor Katsura Nabuo of Sapporo.

Professor Emeritus Norman Pressman, Founding President of the WCA, reminds us that the WCA was founded to develop strategies for improving urban design and liveability in northern communities through dialogue with architects, planners, government officials, researchers and others in Canada and abroad. The 1988 Tromsø manifesto "Urban Life in Northern Regions" provided a blueprint for action that is still relevant.

The late Jack Royle attributed the origins of the WCA to the activities of Dr. William Rogers from Minneapolis, another founder of this Association. It has been a great pleasure to make contact again with Dr. Rogers and we reprint his description of the kind of winter city he wants to live in.

Professor Emeritus Hamelin, who coined the word "nordicity", is a renowned geographer and lexicographer. He shares with us his view of winterness/l'hivernité, more than just a seasonal slice of nature. He gives credit to the WCA for influencing people's appreciation of winterness. To avoid the loss of any subtle meaning through translation, we are publishing the article in French as well.

Over the past twenty years, emerging issues have been "sustainable development" and "responses to climate change". Michael Barton and Antonio Zedda, both architects practising in Whitehorse as well as WCA Board members, write about issues of sustainability in winter communities and the "green" movement. Thorvaldur Thorvaldsson and Peter Barfoed, architects from Reykjavik and Nuuk respectively, write about work being done to make their capital cities liveable. Peter Barfoed mentions the role of local politicians in this process. The article by Gerald Christie and myself, based on a limited survey of Official Community Plans in some Canadian cities, suggests that more needs to be done to make local governments in northern communities realize the importance of inclusion of winter issues in their OCPs.

The editorial committee has adopted a slightly new look with this issue of the magazine including our first contribution by a guest photographer. We invite submissions of black and white winter images from members and friends. As always, we welcome comments about the magazine and suggestions for future issues.

I thank the Directors for their hard work in 2002. Special appreciation goes to the City of Prince George for its support and to the Editorial Committee members for their valuable help. My best wishes to everyone for a prosperous and peaceful 2003.

Anne Martin
President, Winter Cities Association

Aiming for Comfortable Winter Living

I wish to offer my congratulations to Winter Cities Association on the occasion of its 20th anniversary.

Also as a friend who shares the same ambition as the WCA, I am very pleased that we were able to work together to advance the Winter Cities Movement over this twenty-year period.

Winter is our greatest characteristic as winter cities. It was previously perceived as a cold and dark season, but now winter is the feature of our cities that we are emphasizing most.

The International Association of Mayors of Northern Cities (IAMNC), of which I serve as president, also considers winter city planning at its biennial Mayors Conference, held since 1982 under the slogan "Winter is a resource and asset."

We believe that utilizing winter and enjoying it with knowledge and technology will be of benefit for not only the development of winter cities, but will make winter a rich asset for the world as a whole. I sincerely hope that WCA and IAMNC can work together even more to expand this resource.

In order to realize "comfortable winter living," it is my wish that WCA's activities will continue to flourish and contribute to the development of winter cities.

Katsura Nobuo
Mayor of Sapporo, Japan
President, International Association of Mayors of Northern Cities

ICICLES

What's Up in the Winter Cities

Ten questions posed by the Winter Cities Association formulated by Norman Pressman

1. On what moral values does the responsibility of those involved in planning and building rest?

2. How can innovations and regional identity in architecture and planning build on traditions and history while taking on a modern guise?

3. How can beauty in urban design correspond to contemporary content and also assume a timeless shape/form?

4. How can the social value of planning (as a holistic way of thinking), in relation to decision-making and design, be enhanced?

5. In what ways can sustainable planning and building protect resources and, at the same time, increase spirituality and identity in the built environment?

6. What are the major challenges facing architecture and planning in the immediate and mid-term future?

7. How should we bring cities back to a more vital life in a truly human and ethical way?

8. How are architects and planners to take a stand when political changes are required but the realities of decision-making take the same old form?

9. Should climatic concerns, especially for the northern societies, be major determinants of design and how should they be dealt with?

10. What are the most important issues facing "winter cities" both now and in the future?

2003 Western Division of the Canadian Association of Geographers

The University of Northern British Columbia will host the 2003 Western Division of the Canadian Association of Geographers meeting, March 13-15, 2003. For further information, please contact Gail Fondahl: fondahlg@unbc.ca

City of Prince George, British Columbia, Canada

Winter Cities Committee Terms of Reference

The purpose of the Prince George Winter City Committee is to promote positive Winter life-styles for Prince George citizens and the general community through:

1. The development of winter recreation and tourism.
2. The encouragement of Prince George's climatic-related economic opportunities.
3. The importation of experiences and successful technologies from other Winter Cities around the world.
4. The development of cold climate expertise in a variety of areas (e.g. urban design, transportation, etc.) through liaisons with the business, tourism and education communities.
5. The development of a strong organization capable of encouraging and hosting educational and informational events such as Winter City Conferences and Seminars.

As a City Council Committee, the Prince George Winter City Committee shall provide advice and encouragement to City Council, other City Committees, City operations and the Community at Large to stimulate the full involvement of the Prince George Community in our efforts to become a progressive Winter City.

The Committee shall consist of twelve members who shall be representatives of:

- City Council (1)
- Tourism Prince George (1)
- Chamber of Commerce (1)
- Region Development Corporation (1)
- College of New Caledonia (1)
- University of Northern British Columbia (1)
- Winter Cities Association of North America (1)
- City Administration (1)
- Community at Large (4)

Winter Cities

Past, Present and Future

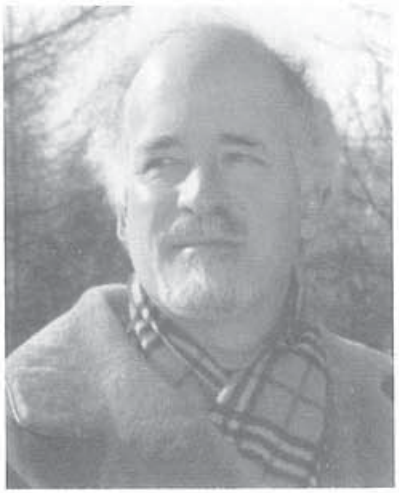
by NORMAN PRESSMAN

On the twentieth anniversary of the founding of the Liveable Winter Cities Association, this is a propitious moment to reflect on the forces that have propelled the movement in its attempt to improve conditions of winter liveability on a worldwide scale. As the Founding President of the Association, in the late summer of 1983 I wrote the first guest editorial in our Newsletter, Vol.1. No.1 entitled "The Moment Has Come For Action". The text, in its entirety, follows herewith.

The Moment Has Come For Action

In most of Canada, even in the south, winters can be relatively lengthy and harsh. Coping with winter is, for many, an ordeal of substantial proportions frequently resulting in such phenomena as cabin fever, February blahs or even psychological hibernation. The Canadian Liveable Winter City Association has been created to change these images by attempting to gain deeper and more meaningful insights into winter and its associated activity systems which are manifested in both urban and non-urban settings.

The Association will seek to develop strategies and devices whereby cities and communities can be designed and



managed in more lively and enjoyable ways thereby promoting a positive frost belt view and mentality. Creative and innovative responses in planning and development policies and projects will be sought to assist in making winter cities more liveable through the transformation of their natural, built and social environments. Some economic benefit will result in the form of work for builders, planners and designers, and the export of services, skills and special equipment.

Although the focus will be directed to the Canadian scene, efforts will be made to exchange ideas, information and experiences among winter cities in other countries such as Iceland, Sweden, Finland, Norway, USSR, USA, China and Japan which share with Canada the "northern condition". Winter is seen by many as dark, depressing and cheerless. However, it can also provide the foundations for a bright, lively and exhilarating lifestyle. The choice is ours to find a way of making the best of what we have. If supporters of the winter city movement unite, we will have little to lose but our negative dispositions.

To commence this arduous task, our new Association will endeavour to identify those unique values, ideals and constraints which are intrinsic to northern environments. We have accumulated a significant body of literature and know-how dealing with technological, social and environmental issues and impacts of development in the winter latitudes. The critical task will be the translation of the criteria into urban designs and community arrangements in which there is a balance between weather-protection and openness, contact and withdrawal, and the maximum extent possible of "joie de vivre" in urban life to protect nature from man, man from nature (under threatening circumstances) and to bring them into harmony. These are the ideals to which this new Association is dedicated.

It is hoped that we may have a significant impact through our future activities on the well-being of all of us who are subject to a cold climate. In the words of internationally renowned town planner, Constantinos Doxiadis:

It is not enough to know of the rising tide of problems and the broad trend of the colossal changes that are taking place. The moment has now come for us to define our attitudes and prepare a blueprint for action.

Twenty years later, upon reading this editorial, I must say that there is hardly a word or figure of thought that I would change. Our movement has achieved many of the goals it set for itself. We have a worldwide network of experts, researchers, practitioners, spread among community activists, professionals, politicians and municipal administrators – all of whom work diligently to gain new knowledge and apply it as keenly as possible to ecological, economic, social, political and physical settings and frameworks – focussing their efforts upon making daily life in winter cities not only tolerable and acceptable but also something to appreciate, respect and celebrate.

The International Association of Mayors of Northern Cities (IAMNC) also just recently celebrated its twentieth anniversary with the tenth Mayors Conference in Aomori, Japan. The IAMNC was established in 1982, with the first Mayors Conference held in Sapporo. While the Mayors held their meetings, the Winter Cities Association met every two years concurrently with them, in Edmonton, Tromso, Montreal, Anchorage, Winnipeg, Harbin, Lulea and Kiruna, and recently Aomori. Additionally, in alternate years, we have had smaller regional conferences within Canada and the USA, including Sault Ste. Marie, Yellowknife, Marquette, Prince George and Quebec City and one in Bratsk, Russia. In 2003, we shall meet again in Sault Ste. Marie, Ontario, where the fortieth anniversary of that City's winter festival Bon Soo will occur. And in 2004, we all meet in Anchorage, Alaska.

While the saying "the more things change, the more they stay the same" has some legitimacy, some major shifts have happened. Climate changes and globalization of cultures and economies have strengthened mutual interdependence and enhanced activities and interests transcending international frontiers. Virtual transfer of information has become a fact of everyday life. Finally, northern dwellers have come to understand and realize that winter is both an asset and a resource from which many benefits can arise. In Aomori in 2002, a joint statement of the IAMNC affirmed that "all people of northern regions must take on the challenge of constructing cities that ensure sustainable development". This is the major task facing all urban dwellers everywhere, but especially in cold-climate zones. We have to encourage people to enjoy winter not only on the weekends (when leisure opportunities are available) but also on a daily basis. We have to transform what are perceived as negative characteristics into positive ones, and integrate these within our lifestyles, values and attitudes in every realm.

Once again, looking back to a North Calotte Symposium of Architects and Planners held in June 1988 in Tromso, Norway, a ten point "manifesto" on Urban Life in Northern Regions was signed and agreed to by experts from Iceland, Norway, Sweden, Finland and Canada (including this author who was present). That important declaration emphasized the following:

1. Northern cities and urban environments should explicitly be designed with regard to the complex needs of the winter season. The direct relationship with nature is indispensable. So also is public discussion about these factors.

2. Public spaces within these urban environments must be developed so as to socially and culturally retain their true public character.

3. Design and management of the physical environment should support and enhance creative attitudes towards winter as a specific ecological phenomenon in nature.

4. Traffic systems – especially collective movement – pedestrian environments and other winter-mobility facilities of local character should be accorded the highest standards. Research on alternative modes should be undertaken.

5. Relationships between dwelling, working and public life should be supported especially for those social and economic groups that have a tendency to become isolated during the cold and dark period of the year. The intermediate space between private and public realms must be accorded importance and must provide high quality thermal comfort, integrating social and cultural needs.

6. Optimization of micro-climate should encourage greater use of outdoor public space. Contact with the outdoors during the

marginal seasons is particularly important due to isolation and confinement caused by lengthy winters.

7. Guidelines for winter urban development must be incorporated within the formal decision-making process at the local government level.

8. There is a need to link specific disciplines together in focussed research programs in the field of winter living. The results of such research should be integrated within professional education. Such education ought to be organized in cooperation with northern countries and municipalities.

9. Innovative ideas should be encouraged through competitions and pilot projects for architects, engineers and other professionals. The northern municipalities and local governments are responsible for developing these opportunities.

10. The mission of northern architecture and town planning is to preserve cultural continuity while absorbing external impulses. An aesthetic must be sought which embodies and conveys the sense and spirit of place – genius loci.

IF THE CITY IS BETTER ADAPTED TO WINTER'S DEMANDS, IT WILL ALSO FUNCTION MORE EFFECTIVELY ALL YEAR ROUND.

Signed:
Bosse Bergman,
Urban researcher, Sweden

Lars-Johan Ekelöf,
Architect SAR, Sweden

Pelle Hultén,
Architect SAR, Sweden

Gisle Jakhelln,
Architect NAL, Norway

Birgit Krantz,
Architect SAR, Sweden

Kimmo Kuismanen,
Architect SAFA, Finland

Norman Pressman,
Urban researcher, Canada

Per Persson,
Architect SAR, Sweden

Geurharthur Thorsteinsson,
Arch.AI., Iceland

Per Tobé,
Architect SAR, Sweden

There has been much discussion, and ideas have been exchanged, over the past twenty years. We have made massive progress as there is little dispute about the need for winter cities to see themselves as "special entities" within the broader constellation of cities worldwide. Cities, like most living organisms, possess a genetic code or DNA structure. Northern cities, given their unique conditions, should have quite distinctive genetic codes that are visible and representative of the forces to which they must respond. This DNA should seek expression in the design of public and private buildings and spaces through scale, materials, colour, form, detailing and the events that occur within them. We still have to strive for excellence in these realms. The projects that cumulatively compose the entire city must embody a sense of northern place. This is essential if the northern environment is to be sustainable and ecologically sound and if it is to resonate with civility, comfort and full cultural richness. As we work toward defining the elements of "nordicity", we should remember that they must be palpable in each and every season. Once this happens, northern dwellers will be proud not only to say that they come from the north but also to reside there.

The Winter Cities movement has been a critical force on the international urban development scene, particularly as it has gained momentum during the past decade. That is because it had a solid foundation and lofty goals that, incrementally, were attained. Its roots are deep and, while it has never abandoned its dreams, it has functioned as a practical down-to-earth organization utilizing every opportunity to spread the message – that comfortable living and wellbeing is fundamental in every community. All the means at one's disposal must be harnessed to eliminate winter's negative aspects and to promote its positive qualities.

To all winter cities supporters, I wish you success in all your endeavours for many years to come.

Norman Pressman is a consultant in cold-climate urban planning and design, and Professor Emeritus of Urban Planning (University of Waterloo). He has worked across the circumpolar nations and is an international authority on climate-adapted urban design. His book "Northern Cityscape" received an Award for Planning Excellence from the Canadian Institute of Planners and has been translated into Japanese (2001).

It was 5:45 p.m. on March 28, 1977, when William C. "Bill" Rogers of Minneapolis and noted architect Ralph Rapson were leaving a meeting of the Minneapolis (Minnesota) Committee on Urban Environment. Standing on the top of a parking structure in downtown Minneapolis viewing the gray, drab scene, the two agreed "we certainly don't do much for our cities in winter". That comment inspired Bill Rogers to begin his quest for ways that cities can be made more liveable during the winter.

Later that year, noted Minneapolis Star columnist Barbara Flanagan devoted an entire column to the idea of the winter city. National publicity followed, linking Bill Rogers to journalist Jack Royle of Toronto and other persons, which resulted in several conferences being held on the topic in the Minneapolis area. In 1983, the Liveable Winter Cities Association was founded as an international organization to promote improved conditions in northern communities.

Bill Rogers is now 83 years old and continues to live in his home in Northeast Minneapolis. When asked recently if he has any advice for winter cities, Bill commented to "watch out for these architects who believe that glass and aluminum is appropriate for the winter city", referring specifically to his concerns about plans for a new Minneapolis library being designed by a nationally prominent architect.

The following article is a reprint of Bill Rogers' address to the first International Winter Cities Symposium hosted by the City of Edmonton and the Liveable Winter Cities Association in February, 1986.

- Patrick J. Coleman, AICP

Winter Cities
and the Little Things

by WILLIAM C. ROGERS

I was somewhat dissatisfied with the title I was given. I always thought of myself as seeing the big picture rather than concentrating on the little things. Then I received a pearl of wisdom from Lou Holtz, the fabulous former football coach of the University of Minnesota "Gophers" who stated, "Doing the little things right is what wins the game." Although he subsequently went to Notre Dame I think he is right.

I want to talk about the kind of winter city I want to live in. First of all, I want a warm and cozy sort of city. I want things protected and close together in a good downtown, and I want a neighborhood that's not laid out on the grid-iron but with small protected streets that are not hospitable to speeding automobiles. Maybe I want to go back to the city of the Middle Ages with a wall around it. The phrase "human scale" has been used too often but maybe it's the best we have.

I also want a city full of color. The grayness of the winter is one of its worst features. I'll take color wherever I can get it – on the roofs, on the walls, downtown, in the neighborhoods, and wherever. I prefer lighter earth-colored pastels to the bright tropical colors against the everlasting snow. And it is possible to have colorful winter cities, as I can show you from my collection of slides from around the world.

Also, I want a city in which it's easy to get around. And I don't mean just driving somewhere and back, but getting where I want to get by mass transit, by foot, and why not, by taxi? If we would give taxi licenses to anybody who can pass some basic requirements we'd have a lot more taxis in our downtowns. Maybe it would sound better if we called it "para-transit", but we need it.

I also want to get around inside and outside too. I like skywalks and I don't mind tunnels and underground routes, but I also like to be able to walk in protected places outdoors and to be able to get from the outside to the inside and vice-versa. I don't want ever to be too far away from nature even when it is far below zero. Most importantly, I want the surfaces I walk on to be free of snow and ice. Doing a good job of snow removal is absolutely essential in any winter city.

I like a city with lights. Long winter days are dark and depressing. Let's splurge on lights inside and out. I don't have a fireplace anymore, so I burn a lot of expensive candles in the house and don't mind it at all. They are a lot easier to carry than wood and coal.

I want the public buildings I have to look at day after day, year after year, to be handsome. By *public*, I don't mean government

buildings. I mean the kinds of things we, the citizens, have to look at in public places. Big buildings are what a city is all about. We can have small buildings in any village. I want interesting design and decoration – not just bland colorless boxes. The Victorians had a better idea of what these big buildings should look like than we do today. Their warm colors and their elaborate ornamentation, so pleasing to the eye, can be contrasted with the modern aluminum/steel and square glass boxes which have almost ruined the skylines of our big cities both north and south.

I want neighborhoods with pleasant homes to gratify my eyes as I walk in my own door and look out my own windows. Again, this involves color but it also involves a lot of other things, too, such as good landscaping, which brings me to nature. In most winter cities, nature seems to disappear for half the year as far as green and growing things and most of our birds are concerned. I want to see a lot of evergreens which, as the name implies, give color to the winter as well as protection from the wind chill. Unfortunately, landscaping seems to be done for the summer only and for six months of the year we must get our pleasures from our garden seed catalogues. There is no reason why we can't have nature in the winter as well as those shorter seasons of the year.

And lastly, I want to have fun in the winter. I want a city with lots of activity. I want to see things going on. The big festivals are great and we need more of them. We certainly need winter sports. We also need passive activities for some of us as well as individual sports such as playing with our dog in the snow, and watching children go down their driveways on whatever piece of slippery material they can find. Winter is also the season of the arts. The theatre and other lively arts flourish in winter cities far more than in the south. Why not even have winter zoos?

There can be many joys of winter if we would shed our southern psychology and get winter out of the closet and into our imagination.

I have used a number of slides of paintings from all over the world. I believe artists can teach us a great deal about not only what things look like, but what they should look like. Artists improve upon nature. Perhaps what we need is a winter city art exhibit which would collect the best paintings of cities in winter, through the ages, and from all cultures. We could start it right here in Edmonton and take it south to Calgary and Minneapolis and then around the rest of the world. How about that?

William 'Bill' Rogers graduated from the University of Chicago with a PhD in political science and international relations. He was formerly Director of the World Affairs Center, Continuing Education and Extension at the University of Minnesota, and was a member of the City of Minneapolis Committee on Urban Environment.

In 1980, Dorn Books published "The Winter City Book: A survival guide for the frost belt" co-authored by Dr. Rogers and Jeanne K. Hanson.

Often called "Conifer Bill" because of his preaching that winter cities should plant more evergreens, Dr. Rogers was a founding member of the WCA and served as a Director for some years.

Winterness

by LOUIS-EDMOND HAMELIN

Winterness is a notion that fits the semantic extension of the word winter during the past decades. Winterness expresses the idea, the appreciation, of winter rather than the rigorous description of the visible effects of frost, snow, and ice. Winterness could define itself by the state and quality of everything dealing with winter, with the latter either in nature, in perceptions, in the everyday life of individuals or in large interventions. Winterness can be weak, intermediate, or high. It is high in the case where the individual participates in the invention of a cheerful winter for themselves and society. Winterness is weak when the individual cultivates fear of the cold season and takes a passive attitude.

Winter in Canada is linked as the most characteristic season of the year because it is the most original. Certainly, it is a question of a phemonenon, at first natural, where snow and ice produce nordicity characteristics. But, for a profound understanding of the phenomenon, the physical traits are far from being sufficient and, scientifically, while weather gives way to climatology, in effect, the human elements are again more determining than the physical reality; in reference to the Great North, after the explorer V. Stefansson, the imaginary problems are more important than the real problems. Subsequently, as the evolution of the human notion of winter has been dealt with, it is necessary to recognize the important role played by the Winter Cities Association.

Winter is becoming a complex and far-reaching occurrence. By its existence and variability, it necessarily transforms the simple winterer into a bystander; the people (just as vegetation and animals) are automatically engaged in apprenticing, adjusting and adapting to conditions; at best, the problems find some solutions in technological, social and behavioural innovations. In Canada, technological advancement brought some appreciated improvements, particularly in the areas of snow removal, clothing, construction, and transportation of energy from the ocean.

In this way, winter is not simply a seasonal slice of nature in the middle of the year. Little by little, the concept was enriched. In addition to being long, winter is a territory, more precisely an ecumene, and the latter is characterized by events of the home, activities, and also by real outdoor leisure. In this aspect of space, it goes through the appearance of landscape, that is not only natural, like the visual and resounding sights of floating ice bergs on the ocean water, but they are also constructed by man, such as architectural urban adaptations. Numerous psychological behaviours exist for winter that are just as positive as negative. The cold season is the occasion to take rational decisions. It's a call for a well-thought out place-related reconciliation. Finally, winter was made to bare an immense knowledge, announced by a precise vocabulary that is more relevant than what came from the south. The wording of a famous song, "My country, it's winter," could by completed by another, "Winter, it's my country".

By studying the distribution of winterers following what Norman Pressman called 'winter severity,' around 80% of all the winterers of the world are living precisely in "cold temperate" countries, including southern Siberia, Finno-Scandinavia and Canada.

We are, however, far from arriving at the threshold of a normality of attitudes relating to winter. Also, for example, one regrets the mess provoked by dirty snow, the weak aesthetic standards of the built environment and the mentality of winterphobia, three inconveniences that serve the general advancement of cold ecumenes. In Canada, numerous citizens are distant from the reality of their climate. Even in winter, the tourist industry again only thinks to offer clients summer conditions.

Winter defines itself in this manner. Cold, snowy, and ice phemonena interface with air, earth and water, varying according to time, place, years and even days just as it is influenced by the imagination, health of individuals, technical prowess, sports, public services, and social pressures.

A Dictionary for Winter and the North

In collaboration with linguists of Sherbrooke University, Louis-Edmond Hamelin published a dictionary about winter and the Quebec north. It appears in a computerized version in which the printed version comprises a book of more than 700 pages.

This repertoire, based on a set of notional analyses, takes advantage of a multidisciplinary convergence consisting of linguistics, history and the social and human sciences. Each of these articles resembles two types of contributions: a definition, then some information comprised of reference citations, some encyclopedia notes, numerous referrals to other entities and, if needed, some neology signs. Particular attention was given to glossary networks in order to elaborate familiar vocabulary, as it mentions 200 words that were developed to stem from the word nordicity.

Evidently, the corpus of entries consists particularly of entities in relation to the cold and relevant to common language, not specialty languages. Thus, one finds 15 entries to the word shore ice, 15 types of winter roads, 20 entries consisting of the word ski, 30 with the word winter, 50 with ice to black ice, 50 with the word snow to snowboard. 140 terms are identified in the categories *pleasures and winter sports*.

This dictionary is written in French. Nevertheless, some terms have entries in English or in other languages, like *Beaver Club*, *Bottom of the Bay*, *cabin fever*, *crazy carpet*, *French Shore*, *half-pipe*, *inukshuk* (derived from Inuktituk), *kick-sled* (from Norwegian), *nordicity*, *polynial* (from Russian), *snowboard*, *taiga* (Russian origin), *terra glacia* (derived from Latin), *timber cove*, *tundra* (Lappish or Russian origin). Some English words appear within articles, *Far North*, *floating ice*, *frazil*, *hummocked ice*, *ice skylight*, *Middle North*, *Near North*, *North Shore*, *permafrost*, *slush*, *snowdrift*, *whiteout*, *windchill*, *Winter Cities Association*, *winter mindsets*, and *winterland*.

Finally, Quebec by Words: Winter and The North, following the complete title of the work, is equally characterized for a large public audience, a language that avoids slang and dialects, thousands of citations that are not restricted to the literature, attention given to the wording of definitions, of numerous connections between the words, open-mindedness of the nomenclature to exterior terms, the neology (eg. slipperiness), and a detailed lexicology of four words: native, winter, floating ice, and north.

L'hivernité et l'hiver

L'*hivernité* est une notion qui répond à l'extension sémantique du mot hiver au cours des dernières décennies. L'hivernité exprime l'idée, l'appréciation, de l'hiver plutôt que la description rigoureuse des effets visibles du gel, de la neige et des glaces. L'hivernité pourrait se définir par l'état et la qualité du tout de l'hiver, que ce dernier soit dans la nature, dans les perceptions, dans le vécu quotidien des individus ou dans les grandes interventions. L'hivernité peut être de niveau faible, intermédiaire ou élevé; l'hivernité est élevée dans le cas où l'individu participe à l'invention d'un hiver heureux pour lui-même et la société. L'hivernité est faible quand l'individu cultive la crainte de la saison froide et prend à son endroit une attitude passive.

L'*hiver* au Canada correspond à la saison la plus caractéristique de l'année parce que la plus originale. Certes, il s'agit d'un phénomène d'abord naturel où la neige et les glaces fournissent des cosmétiques à la nordicité. Mais, pour la compréhension profonde du phénomène, les traits physiques sont loin d'être suffisants et, scientifiquement, la météorologie fait place à la climatologie; en effet, les éléments humains sont encore plus déterminants que les faits physiques; en référence au Grand Nord, d'après l'explorateur V. Stefansson, les problèmes imaginaires sont plus importants que les problèmes réels. En ce qui a trait à l'évolution de la notion humaine de l'hiver, il faut reconnaître l'important rôle joué par l'Association des Villes d'hiver.

L'hiver devient un fait complexe et d'envergure. Par son existence et sa variabilité, il transforme obligatoirement un simple hivernant en figurant; les gens (ainsi que les végétaux et les animaux) sont automatiquement engagés à faire des apprentissages, des ajustements, des adaptations aux conditions; au mieux, les problèmes trouvent des solutions dans des innovations techniques, sociales et behavioristes. Au Canada, l'avancement technologique a apporté des améliorations appréciées, en particulier dans les domaines du déneigement, du vêtement, de la construction et du transport à long cours de l'énergie.

Ainsi, l'hiver n'est pas une simple découpure saisonnière de la nature à l'intérieur de l'année. Petit à petit, le concept s'est enrichi. En plus d'être une durée, l'hiver est un territoire, plus précisément un écoumène, et ce dernier est caractérisé par des faits de résidence, d'activités et, aussi de loisirs vécus à l'extérieur. De l'aspect "espace", on passe à l'aspect "paysages"; ceux-ci ne sont pas seulement naturels, tel le spectacle sonore et visuel du déplacement des glaces flottantes sur les cours eau mais ils

sont aussi des paysages construits par l'homme, comme les adaptations architecturales dans les villes. Les expériences des hivernants sont également marquées par des attitudes qu'étudie la psychologie; il existe nombre de comportements d'hiver tant positifs que négatifs. La saison froide est l'occasion de prendre des décisions rationnelles, c'est-à-dire de conciliation réfléchie à son endroit. Enfin, l'hiver a fait naître un immense savoir, annoncé par un vocabulaire précis qui est davantage pertinent que celui venu du Sud. L'énoncé d'une célèbre chanson, "Mon pays, c'est l'hiver" pourrait être complété par un autre: "L'hiver, c'est mon pays".

En étudiant la répartition des hivernants suivant ce que Norman Pressman a appelé la "sévérité de l'hiver", on constate qu'environ 80% de tous les hivernants de la terre habitent précisément les pays dits "tempérés froids" dont les parties méridionales de la Sibérie, de la Finno-Scandinavie et du Canada.

On est cependant loin d'être arrivé au seuil d'une normalité d'attitudes face à l'hiver. Aussi, par exemple, faut-il regretter la pollution provoquée par les neiges usées, le faible niveau esthétique de plusieurs constructions ainsi que les mentalités des hivernophobes, trois inconvénients qui desservent l'avancement général des écoumènes froids. Au Canada, de nombreux citoyens sont en retard sur la réalité de leur climat. Même en hiver, l'industrie touristique ne pense encore trop qu'à offrir aux clients des conditions d'été.

L'hiver se définierait ainsi. Phénomène froid, nival et glacé des interfaces air-terre-eau, variable suivant les types de temps, les lieux, les années et même les jours ainsi qu'influencé par l'imaginaire, la santé des individus, les niveaux techniques, les sports, les services publics et les pressions sociales.

Un dictionnaire de l'hiver et du Nord

En collaboration avec des linguistes de l'Université de Sherbrooke, Louis-Edmond Hamelin publie un dictionnaire de l'hiver et du Nord du Québec. Il apparaît en version informatique ainsi qu'en version imprimée composant un livre de plus de 700 pages.

Ce répertoire, basé sur une série d'analyses notionnelles, profite d'une convergence pluridisciplinaire comprenant les sciences du langage, l'histoire et les sciences socio-humaines. Chacun des articles rassemble deux types d'apports: une définition, puis des informations comprenant des citations référencées, des notes encyclopédiques, de nombreux renvois à d'autres entités et, le cas échéant, des marques de néologie. Une attention particulière est apportée aux réseaux lexicaux ainsi qu'à l'élaboration de familles vocabulairiques; ainsi, on mentionne que 200 mots se sont développés à partir du seul mot de *nordicité*.

Évidemment, le corpus des entrées comprend surtout des entités en rapport à la froidure et relevant de la langue courante, non des langues de spécialité. Ainsi on y trouve 15 entrées au mot *batture* (rivages), 15 types de *chemins d'hiver*, 20 entrées comportant le mot *ski*, 30 avec le mot *hiver*, 50 avec celui de glace dont *glace noire*, 50 avec le mot neige dont *planche à neige*. 140 termes sont identifiés dans les articles *plaisirs* et *sports d'hiver*.

La langue de rédaction du dictionnaire est le français. Pourtant, quelques termes ont des entrées en anglais ou en autres langues, comme *Beaver Club, Bottom of the Bay, cabin fever, crazy carpet, French Shore, half-pipe, inukshuk* (emprunté de l'inuktitut), *kick-sled* (emprunté de la Norvège), *nordicity, polynia* (emprunté du russe), *snowboard, taïga* (origine russe), *Terra glacia* (emprunté du latin),*timber cove, toundra* (mot d'origine lapone ou russe). Des mots anglais apparaissent à l'intérieur des articles, *Far North* (à Grand Nord), *floating Ice* (à glaciel), *frazil* (à frasil), *hummocked ice* (à glace chaotique), *ice skylight* (à glace de lumière), *Middle North* (à Moyen Nord), *Near North* (à Pré Nord), *North Shore* (à Côte-Nord), *permafrost* (à pergélisol), *slush* (à sloche), *snowdrift* (à poudrerie), *whiteout* (à éblouissement nival), *windchill* (à gélivent et à refroidissement éolien), *Winter Cities Association* (à Villes d'hiver), *winter in the mind* (à hivernisme), *winterland* (à hivernie). Les mots mis en équivalence pourraient être utiles aux traducteurs.

Enfin, Le Québec par des mots. L'hiver et le Nord, suivant le titre complet de l'ouvrage, est également caractérisé par une destination grand public, une langue qui évite argotismes et dialectalismes, des milliers de citations qui ne sont pas restreintes à la littérature, une attention portée à la rédaction des définitions, de très nombreux liens entre les mots, l'ouverture de la nomenclature à des termes extérieurs, la néologie (p.e., *glissité*), une lexicologie détaillée de quatre mots: Autochtones, hiver, glaciel (glaces flottantes) et Nord.

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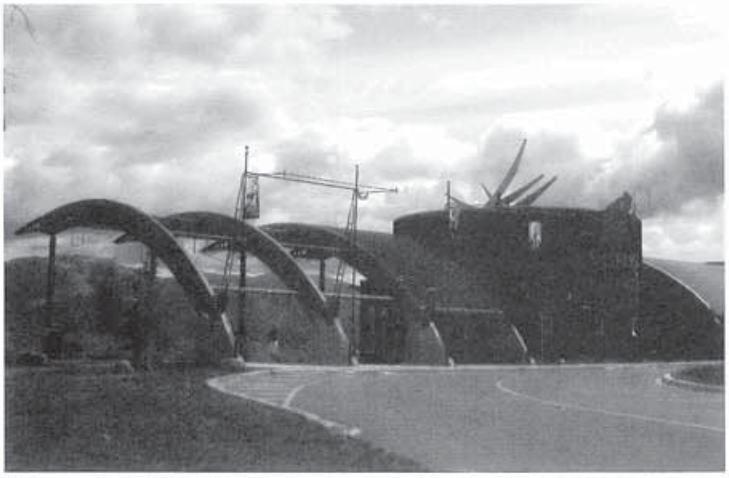
Perception of Changes in Climate Sensitive Architecture; Over a Twenty Year Period

by MICHAEL BARTON

Introduction and Background

There is little doubt that approaches to Planning and Design for architecture has changed significantly in twenty years, and perhaps especially so, in the north and far north. Traditionally, climate variations in the north are quite extreme. For, example, Dawson City, in the Yukon, has experienced temperatures as low as minus 55 celsius during the winter months, and up to plus 35 celsius in the summer months. This represents an annual range of 90 degrees celsius! As well, the diurnal range may exceed 30 degrees during the days of late winter, or early spring.



The Beringia Centre in Whitehorse, (originally designed as a Visitor Reception Centre), is an early example of "Green" innovation. The Northern appropriateness came from the Yukon Architectural Design Guidelines, which used some of the criteria from the WCA Manual.

These sorts of temperatures were common in the Yukon and Northwest Territories 20 years ago, but appear to be much less common now, especially in a sustained way. Conversely, architectural design was largely imported from the south, with little or no attention paid to the extreme northern conditions of climate and micro-climate.

This article will attempt to answer the question… What perceptions of change have been evident in "climate-sensitive architecture" over the past twenty years, and what impact, if any, has the Winter Cities Association had?

Historical Perspective

There have been many instances of adaptation to climate, in buildings, going back as far as the Thule culture in the far north of Canada, and the occupation of the Romans in Europe 2000 years ago. In more recent times, there has been an invasion of styles and types, none of which could be called indigenous, or a northern vernacular. These styles include residential types that have been imported from southern Canada, and/or Europe, and industrial/utilitarian types of buildings that are seemingly universal in North America. In the Yukon, an influx of military-style buildings appeared during and after WW2. During the '50's and '60's a large number of schools, administration buildings, community centres etc. were built in the north. Most of these buildings were southern standard designs with very little attention paid to the requirements of a northern climate. Many were hopelessly under-insulated and sealed, and consequently were also huge energy devourers.

Things began to change in the '80's, and this was partly a result of a more settled, and less transient, population base. The professional segment of this more settled group began to look at ways in which buildings could be more sustainable, and in fact, more compatible with the northern landscape. These people included engineers, architects, and planners.

Coincidentally, it was also at this time, that the Liveable Winter Cities Association, (LWCA), was founded. The LWCA in Canada started up in Edmonton, and then Calgary. These cities are often regarded as "Southern," by people that live

north of '60. However, the early pioneers of the Winter Cities movement were very instrumental in changing the downtown liveability of cities such as the two above, and then others in Northern Ontario and Quebec.

Winter Planning and Design Publications

In 1991, the City of Sault Ste. Marie, (in conjunction with the Winter Cities Association), produced a bilingual publication entitled: **Winter Cities Design Manual**. This was largely a Planning, or Urban Design guide, but also included some approaches to building design, especially residences. This publication has had quite an impact on Northern-appropriate design, and is still in circulation. Subsequent to this publication, other jurisdictions and agencies produced planning or design guidelines, including the Yukon. The Yukon publication, (written by the present writer), was entitled "Yukon Architectural Design Guidelines" and, as such, was more architecturally slanted than the Winter Cities manual, and did include a substantial amount of what is now referred to as "green". Other jurisdictions, such as the Government of BC, and the city of Prince George, for example, have produced guidelines of this type. Some of the content of these publications, as well as others, is now being acted upon. So, we can say that this is a direct result of WCA pioneering.

The "pioneers" themselves are people like the late Jack Royle, the founder of LWCA, Norman Pressman, the first President, and the late Harold Hanen, the Calgary Architect-Planner who produced many excellent Winter Cities magazines, as well as the Plus-15 system in that city.

LWCA and Climate Change Action

The first President of LWCA, Norman Pressman, is still very active in the movement. Norman is a regular presenter at conferences and forums, as well as a promoter of planning ideas for winter liveability. He has also written and produced a book on the subject, entitled "Northern Cityscape". Whilst the book is not on the best seller list, it is certainly one of the few such publications to address winter planning.
More recently, Prof. Pressman has formulated ten questions, to be used by the LWCA for a variety of reasons and purposes (see page 5). The question which is most relevant to the content here, is:

"Should climatic concerns, especially for the northern societies, be major determinants of design and how should they be dealt with?"

Well, from where I am sitting, the answer to this question is a big yes! This will be enlarged upon below. The point is that it is these kinds of questions which precipitate the right kind of thinking, which is ultimately acted upon. There are ten such questions altogether, so the potential for considerable impacting is very good.

In the north, attention to climate, and micro-climate conditions, for design purposes, is absolutely critical. The temperature range during just one day can be more than the annual variation in more southerly climes, (in Dawson, Yukon, this can exceed 30 degrees). As well, the annual range can be as much as 85 or 90 degrees. In the north above the 60th parallel, the winter sun arc is very small, lasting for about three hours at or around the winter solstice.

The entire town of Dawson is built on an alluvial floodplain, (and also permafrost). There can also be flash floods from thunderstorms, in the late summer! It is difficult to imagine a worse set of conditions for building. In spite of all these setbacks, this is where the miners were heading during the Klondike Goldrush days. Attention to any and all of these conditions was non-existent then, and the town was built in the Edwardian genre of the time; quite inappropriate for such extreme conditions, and now referred to as the "Klondike" style. It is only perhaps in the last fifteen or so years that such terms as "climate-sensitive" or "climate–adaptive" have become used, as well as "climate-adaptive planning and design".

On top of all this, we now have to also consider the incorporation of "green" technology, as well as rapid climate change criteria.

LWCA involvement in Northern Centres

Whilst the Winter Cities movement started looking at what could be accomplished in large cities, like Edmonton, Calgary, and Montreal, for example; during the 1990's smaller and more remote urban centres were looked at. This included places in the NWT, Nunavut, Northern Quebec, Scandinavia, Greenland, and Siberia.

Of course, there are degrees of remoteness, as well as size. Sault Ste. Marie in Northern Ontario has been very active in the Winter Cities movement, was a venue for the LWCA Forum in 1991, and will be again next year, (2003). A lot of good ideas, programmes, and energy have originated from this small city. Yellowknife is another good example of this type, where good examples of northern appropriate, combined with aesthetically pleasing architecture can be found. And there have been two articles on the very remote communi-

ty of Nanisivik on Northern Baffin Island. Some of the architectural and planning ideas that were incorporated into the infrastructure of this community, and subsequently described in a LWCA magazine, has been learnt about and "recycled" in other communities. For example, ideas such as:

- Linked indoor facilities, (School, Community Centre, Post Office, Store, Gymnasium, Swimming Pool, Concourse etc).
- Dome-shaped houses, giving excellent surface to volume ratio, as well as wind/snow deflection properties.
- Central heating plant and pumped water circulation.

There have also been avant garde articles written on ideal and/or sustainable communities. In fact the phrase "Sustainable Development" appeared in the Summer 1989 edition of the Winter Cities magazine, two years before Sault Ste. Marie adopted it as their Forum theme. In the December 1990 edition, an ideal community article appeared, this time for the town of Resolute in the far north of NWT. This called for an enclosed town centre with all the attributes of a self-sustaining community. (see diagrams below)

Summary Statement

Typically, this is how things start in general. Firstly, there is the idealized dream. This is followed by some conceptual plans, (eventually). Finally, the technology arrives, so that the dream can be realized. As an Architect Planner who is firmly involved in the "Green" movement, I can see that we are at the jumping off point for these exciting endeavours.

In short, I would say that the Liveable Winter Cities Association has indeed made an impact on climate sensitive architecture and urban design.

Michael Barton is an architect with Energy Solutions Centre, Whitehorse and is Vice-President, Winter Cities Association.

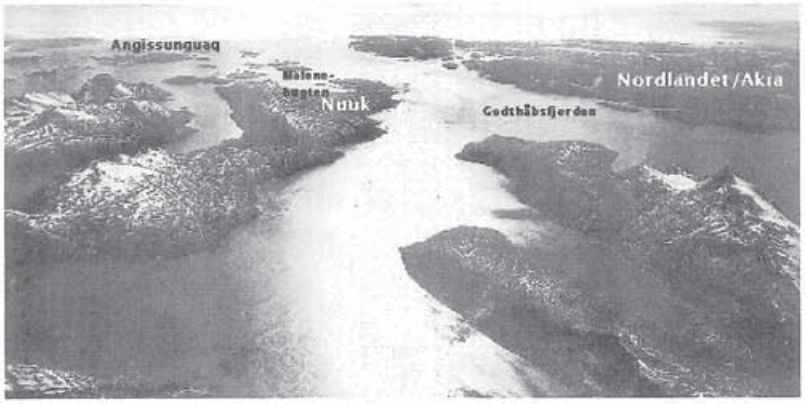
"Plan for enclosed town centre, Resolute" 1990

Nuuk - an Arctic Capital

Setting for the 21st Century

by PETER BARFOED

Nuuk / Godthåb is situated on a small cape between the outlet of two fjords, Godthåbsfjord to the north and the Ameralikfjord to the south. Nuuk is the greenlandic word for cape.



Aerial photo from northeast showing Godthåbsfjord, Nordlandet, Nuuk and Angissunguaq

At the root of the cape there are steep mountains that complicate any further expansion of the city. A part of the situation is also that Nuuk, as the capital of Greenland, needs an international airport for direct connection to Europe and Canada. The existing runway has a very bad location close to a mountain, with falling winds that affect flight scheduling. The runway can only be extended with great difficulties and at great cost, and only to a maximum of 1800 m. Without sufficient length there will be limitations in types of aircraft used, loading weight, amount of passengers and freight, especially in wintertime with snowy conditions. This is concluded in a report prepared for the Municipality of Nuuk in 1996.

New land, therefore, has to be found, both for a new airport with secure conditions, regular flight schedules and with space for future development and also for housing and commercial purposes. Tourism development is also a consideration. Nuuk has great tourism potential but so far this has not been exploited to any degree. Tourism, especially winter tourism, is expected to boom in Greenland, particularly because existing tourism facilities in Europe, especially in the Alps, are too crowded. In addition new visitors from China and other countries with growing economies will appear.

Nuuk is supplied with electricity from a hydro-power plant in the inland south of the Ameralik fjord. This is a big project with huge expansion potential. The population of Nuuk in 2002 is close to 15,000 inhabitants. As in other civilised parts of the world comparable to Greenland, for instance Iceland and Norway with a dependence on natural resources like fishing, it is expected that within 15-20 years the population of Nuuk will be maybe 30-35,000 people. Today 3/4 of the population of Iceland lives in and around Reykjavik. This situation was opposite a few generations ago. Then only 1/4 of the population was living in Reykjavik.

To many people in Greenland, supported by an OECD report a few years ago, it is a necessity to urbanise and centralise the population mainly in a few regional centres, to develop a modern market economy that can pay for education, infrastructure, hospitals and other facilities that are compulsory in a modern society.

Some will oppose these changes but nevertheless, Nuuk will grow. It would therefore be prudent to plan for that situation and become a city prepared for the future.

Three possibilities are discussed.

1. To build higher and with greater density at the Nuuk cape – and extend the existing runway.
2. To develop a new town and airport in the inland of Akia/ Nordlandet on the north side of the Godthåbsfjord, north-west to Nuuk connected with a 45 minute ferry, and a 20km road to the airport.
3. To develop new settlements on the south side of the Ameralik fjord, and with an international airport on Angisunnguaq, a big island in the middle of the fjord, connected to Nuuk with sub-sea tunnels. This would mean a 20 minute driving time to Nuuk, and connections to new settlements with dams and sub-sea tunnels as steppingstones.

The weather conditions in Nuuk are those of an arctic coastal climate often with heavy winds, snow, rain and fog. In the inland, away from the coast, the climate is more constant, with less snow, rain and wind and more sunny days. It is colder in wintertime, and hotter in the summertime, which many people find a better and more attractive climate. These conditions are certainly worth taking into consideration in future planning for tourism and in making Nuuk a better place to live.

Those who oppose the development of Nuuk believe that the density of the existing cape must be increased. This will result in a crowded city, strange to traditional greenlandic life where people prefer and adore life close to nature. Areas for recreation would also be reduced, although a city with a growing population needs more areas for recreation, not less.

In 1996 the town council of the municipality of Nuuk decided to investigate the possibilities for the construction of a new airport at Akia/Nordlandet, north of the Godthåbsfjord in connection with new settlements. Akia is the greenlandic word for "on the opposite side". Here the Godthåbsfjord is 7km wide and 300m deep. A sub-sea tunnel would therefore be probably 14km long and 350m deep, becoming the world's longest and deepest sub-sea tunnel, and beyond what seems to be possible, or at least realistic.

The airport and settlements here would therefore be dependent on a ferry connection, subject to weather conditions or icepacking on the fjord, with resulting inconveniences like waiting times, irregularity of service, cancellations, and so on. Even a weather forecasting a storm will keep people at home, especially those who have small children. The twin-cities would be disabled with a bad infrastructure and would not have the benefits of a bigger city, for instance, the job market. In many areas double facilities would be necessary. A tide of up to 4.85m combined with floating icebergs complicates the use of a ferry berth. For cultural and social life the ferry-connection would also be a burden to a twin-city, because ferries don't sail when you need them, and definitely not at night. The experience in Norway and other places is that ferry connections are very expensive, and there are efforts to replace them whenever possible. A city setting in the twenty-first century therefore should not include a connection that always will be a ferry connection.

Very shortly after the municipality presented ideas of an airport and settlements on the Akia-area, Tegnestuen Nuuk (a private architectural office) presented ideas with an airport and settlements at some island due south of Nuuk and eastward as an alternative to the municipal proposal.

The proposal called for development to begin only on the north side of the Ameralik fjord and in the surroundings around Kobbefjord, a small fjord behind Nuuk. It was received by people in Nuuk very positively. It gave people a dream of a more attractive and powerful city to live in. The municipality did not take part in the dialogue, and continued with the investigation on Akia, which people felt was a very stupid and meaningless project that would give nothing to the city. Tegnestuen Nuuk continued to develop their project.

In January 1999 Tegnestuen Nuuk introduced a proposal with a sub-sea tunnel under the Ameralik fjord, after having visited similar Norwegian projects and having consulted some Norwegian authorities and experts in tunnelling in rocks.

The proposal with the sub-sea tunnel took advantage of the fact that the Ameralik fjord is a threshold fjord. The tunnel would be placed in the threshold close to Nuuk and in this way connect Nuuk to the southward side of the Ameralik fjord, where mother nature has already planned for it.

The sub-sea tunnel is expected to be 7-7.5km long, and as the fjord at the actual place is 107m deep the tunnel will be probably 160m below sea level, depending on the thickness of gravel etc. on the bottom. The tunnel will neither be the world's longest or deepest sub-sea tunnel, but similar to many other tunnels built

Model photo of the Nuuk area seen from south-west. Nuuk to the left and the sub-sea tunnel and Angissunguaq with the airport to the right

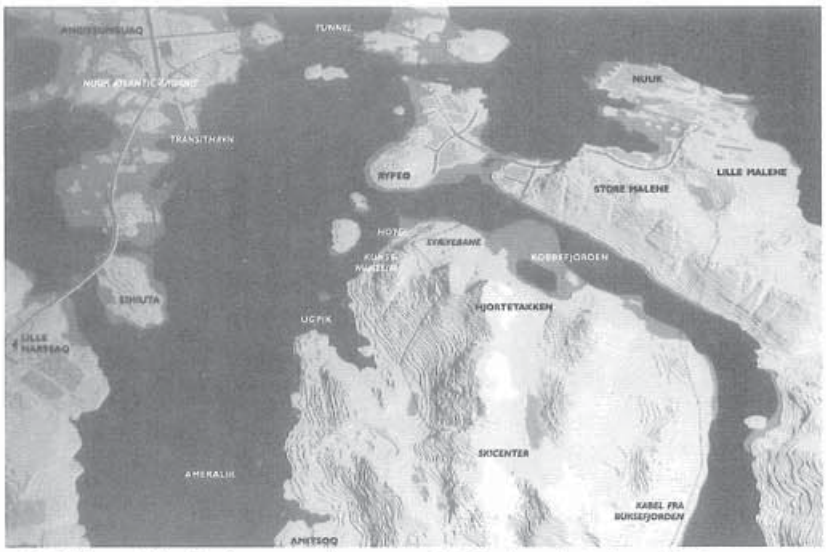
Map where the 2 proposals with airport in Akia, and airport and road to the south, are scanned together.

during the last 25 years, and to many planned in other places and at reasonable prices.

The 1999 edition of Tegnestuen Nuuk's proposal for developing Nuuk towards the south was received very enthusiastically by the citizens of Nuuk.

The major sub-sea tunnel will connect Nuuk to the island Angissunguaq, (greenlandic for: the island bigger than the others). Here it is proposed to construct an airport. Runways with 3km length are possible as well as runways in more than one direction, however one runway with 2200m north-south should be sufficient for many years. Rock masses from the tunnel can be used for "free" in the construction of the runway. We recommend a T-11 tunnel profile with 3 lanes, 2 uphill / 1 downhill. The estimated price for the sub-sea tunnel is 450 mill DKK. (60.000,- DKK/m). A similar 4.9km long sub-sea tunnel at the Faeroe Islands, opened in December 2002, was built for 240 mill DKK. (48.000,- DKK/m).

According to investigations made by Norwegian geologists, initiated by Tegnestuen Nuuk, the rock quality and the geological conditions in the Nuuk area are found to be acceptable to good. However acoustic investigations on the sea bottom should be done before further development of the project can continue. Tunnels, including sub-sea tunnels, are compared to bridges that are appropriate in an arctic climate. There are no problems with snowdrift, rain, storm and ice on the road, and they are much cheaper to construct and maintain. And you use a local building material already in situ.
From Angisunnguaq, a network with small moles and bridges, where the water level in big areas is low (3-5m) and a sub-sea tunnel or bridge in a short passage where it is a little deeper (50m), gives Nuuk access to new territories/settlements with endless areas and attractions for future development in tourism close to the ice-cap, towards areas with a pleasant climate and towards the newly-built hydro-power plant.



Modelphoto of the Nuuk area seen from east, with Nuuk to the right and Angissunguaq to the left. Christmas card 1999/2000. Aerial rope way (Svævebane). Kabel from Buksefjorden, means transmission line from Hydro-power plant, 42 km south of Nuuk.

In 2001 the Municipality of Nuuk made a so-called independent technical-economical report comparing the development of Nuuk in the Akia area with the development of Nuuk toward the south, based upon Tegnestuen Nuuk's earlier proposals with an airport on some islands south of Nuuk. The conclusion is that developing southward will be the most profitable for the city. In our opinion, Tegnestuen Nuuk's latest proposal will provide an even greater advantage for the least cost.

The choice for Nuuk should therefore be easy. The citizens of Nuuk can see the light at the end of the tunnel, but can or will the politicians? Will a historical chance be used to develop Nuuk to be a leading and attractive capital in the Arctic, or will short-sighted decisions once again spoil the right solution for coming generations? Will the decision-makers once again be put in history's corner of shame? Planning is thinking at least 50 years ahead. One has the impression that the politicians are in a phase where they are getting used to the idea. Time will show. The decision shall be taken within a very few years. And not to decide is also a decision. The future comes by it self, but progress has to be planned.

Tegnestuen Nuuk's proposal can be seen (in Danish) at www.tenu.gl and the report "NUUK 2050" by The Municipality of Nuuk at www.nuuk.gl (in Danish and Greenlandic).

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Reykjavik
The Northernmost Capital City

by THORVALDUR S. THORDVALDSSON

Icelandic poets in the late eighteenth and beginning of the nineteenth centuries often described the winter as the nation´s energizer or purifier.
They acclaimed winter and promoted it. They looked at those who lingered through the inclement winter as an elite - "the survival of the fittest".

Sagt er fyrir Vori
Vetur flúi,
Hvörgi þó hann flýr
en færist ofar-,
Vor skríður undir,
Vetrar er yfir
bringa breið
um blálopt gnæfandi.
(Bjarni Thorarensen 1786 – 1841)

They say that winter
flees spring,
but never it flees
but moves up higher-.
Spring sneaks under,
but winter's helmet
is high up
in the ever blue sky.
(English by Th.S.Th.)

Bird's eye view of the inner city. The mountains toward north.

Some people equate winter with snow and cold and its subsequent difficulties, but others associate winter with darkness and short days. Reykjavík is not a Winter City in the sense of frost and snow, but more when it comes to light and darkness, wind and seasonal change. In our planning process we are lucky to have had the possibility to enjoy the guidance of professor Norman Pressman, both personally and through his writings on the subject of Winter Cities and Northern Cityscape. Following this guidance we have pointed out design guidelines of which these are the most important:

- It is wind, low sun altitude and nature of the country that we have to pay attention to when we create our environment, especially in built areas – the man-made environment.
- It is important that our dwellings enjoy sunlight during the comparatively few hours the sun shines and that we can find shelter from the cold northern wind.
- Shelter is also important for the durability of our houses and for energy efficiency.
- The buildings themselves have to give shelter, and vegetation should shelter urban areas as a whole as well as areas that we would like to use for outdoor recreation - "The Green Scarf".

Knowledge and experience in forestry and cultivation, combined with increased awareness and enthusiasm have in many places changed the profile of the land and future efforts in that field will lead to a more profound environmental change. The aim is not to cover the land in wood, but to accommodate it among natural treasures, distinctive landscapes and other flora. That is in itself an ambitious task.

The boundaries of the city have shifted outwards and the demographic landscape of the capital area has evolved and changed. The objective of the forestation effort is to halt erosion and the loss of soil and green; to soften the face of the land; to create better conditions for outdoor recreation; to regain lost qualities, enrich nature and make it self – sustaining. An expected milder climate and a continued forestation effort will contribute to the creation of a resource which will be valued more as times pass. "The Green Scarf" encircling the capital area is a source of enjoyment and pleasure; it will keep the people

warm in days to come. These points should be kept in mind during the planning of development, design of buildings and the choice of materials.

In Reykjavík we are just finishing the first regional plan for the whole capital area together with eight surrounding communities. Alongside we have been reviewing our general plan and just finished a redevelopment policy for the city centre. The city authorities have called for an architecture policy for the Capital City – "A policy formulation which pertains to the complexion and appearance of the manmade environment". This work has been started under leadership of the city architect and the first question to ask was, why an architecture policy?
After "brain storming" meetings in the working group that was established to support the city architect we were determined that we needed a policy and that it would be of great help in future planning and policy formulation.

New housing built on a fill - "Marina ". The houses are surfaced with corrugated iron as was the tradition in the "Old City".

At the pond in the city core.

The most interesting answers were e.g.:

- The surroundings do have influence on the upbringing, the health and on people's happiness. It is therefore obviously of importance to look with concern to the manmade environment!
- It is a human right to live in a good environment!

An ever-larger percentage of the population in Iceland, as in the whole world, will soon live in towns and spend most of their life in manmade surroundings. It is the intention to produce an economical profit from good environment. The city is not a problem but a challenge. In cooperation with the citizens the preparation of the policy will open up discussions on planning matters and favour the understanding of good architecture – we hope!
The policy can be used as an educational topic on good architecture for the citizens and highlight the importance of good surroundings.

The city of Reykjavík is not a problem but a possibility!

The next questions were then:

Has Reykjavík something that makes it in any way unique or particular and has the city some noteable specialities?

And the most notable answers were:
Reykjavik is the world's northernmost Capital City, on 64°N close to the Polar Circle and the only city in Iceland. The city is very young and in continual growth and formation – in its childhood. The oldest part of the city is on a peninsula with the ocean surrounding it. The peninsula is windy but the inhabited area is now spreading to the nearby hills and valleys into the untouched nature. And the nature is quite unique with its watersides, lava, glacier made hills and river valleys with the majestic mountain chain nearby. The light is the light of far north with deepdark wintertime changing to the everlight at summer solstice. The air is clear and the geothermal water is the background for heated streets, squares, sports arenas and health centres. The "green energy" invites further innovation and options. The citizens of Reykjavík are relatively young compared to other Nordic cities.

Reykjavik – a healthy city – a young city – with young citizens – a city with growing pains.

As can be seen this is a very interesting start and if we look into the foundations for the Development Plan we can see that it is constructed on three foundations which support the policy:

Reykjavík is an ecological city, a capital city, and an international city.

Old and new in the "Old City" - corrugated iron and concrete.

New housing project close to the city core

Reflecting what the city is and what it wants to become, this foundation is linked to other development goals, such as land use and traffic. The three foundation goals are coordinated; according to the goals both for an international city and an ecological city, the density should be increased and emphasis put on the natural advantages of the city, whilst the goals both for a capital city and an international city emphasise the importance of the city centre and the creation of an urban environment which can compete with other cities. Combined, these policies, goals and objectives should strengthen the city and guide it successfully towards the future. To gain better understanding of how people would like to see future development and the evolution of the capital, as well as the possibilities of internationalisation of Reykjavik and Iceland, a number of people were interviewed including ministers, industrial and labour union leaders and national and local politicians. The interviews were conducted by the Danish architect and planner Per Riison who had been collaborator from the firm Skaarup and Jespersen in Copenhagen on the regional plan as well.

The highlights from the "Riison pamphlet":

- Iceland should remain a highly – developed welfare state with good quality of life and ample opportunities. Therefore, the country has to preserve and strengthen its magnetism and competitiveness on a global level.

- Reykjavík must follow international urban development models as a modern, international city. Job opportunities will also contribute to the future well – being of the city, and Reykjavík has to prosper both from new and existing employment. Most agreed on this point, with those younger interviewed expressing interest in employment and social development based on knowledge and its connected internationalism, placing a greater emphasis on urban quality and creative development.

- Whilst the internationalisation of Reykjavík is deemed necessary, the preservation and strengthening of what is typically Icelandic, including values, culture and environment in the broadest sense, is also emphasised.

The supplement's conclusions influenced future goals for the growth of Reykjavik put forward in the Development Plan for Reykjavik 2001-2024, not least in its definition; ecological city, and international city.

In order to enable northern urban areas to fulfill the modern day demands of an urban environment, the attitude toward planning and building design has to be well-founded during the decision-making process. We have to use the seasons, work with them and see the positive contribution each of them can make. Those who have stayed where there is little seasonal change appreciate this magnificent breathing of Nature of which we are a part. Let's work with her.

With good wishes and greetings from Reykjavík to Winter Cities Association on its 20th anniversary.

Thorvaldur S. Thorvaldsson City Architect Reykjavík Iceland.

The Icelandic department of the organisation "The Nordic Building Forum" is now preparing for an interesting Congress in the autumn of year 2005, under the working name –" The healthy country Iceland – How do we make our manmade environment better to live in and sustainable.?.

Further information through eMail : olijens@isl.is or thorvaldurs@rvk.is.- TH.S.TH.

A Norwegian Setting for Sustainable Buildings & Cities

by ANTONIO ZEDDA, MAIBC, KOBAYASHI & ZEDDA ARCHITECTS

Aerial view of Oslo and the tight building fabric of the Grønland neighbourhood.

On the east side of Oslo, a visitor to the city will find a community rich with multicultural diversity. Known as Grønland, it is one of the first stops for recent immigrants to Norway. The signage, restaurants and coffee houses reflect the transplanted culture of those from elsewhere in search of a better life. It provides a visitor with a rich mixture not so apparent in other parts of the city. One afternoon, while in search of a coffee house, I chanced upon a playfield nestled within the fabric of four storey residential buildings. The field's four edges were defined by surrounding building facades and the occasional window or balcony spectator. Though a light snowfall had blanketed the field the previous night, a group of young men were shouting and chasing after a soccer ball. Undeterred by the snow, the men had replaced the white leather ball with one painted fluorescent orange. From the surrounding buildings people looked out onto the field with the occasional cheer marking their presence.

When one thinks of winter cities, sustainability is a term that often enters the discussion. But often, the focus is on sustainable activities, spaces and modes of transportation. Buildings, for better or worse, enclose and define the edges of our built environment and the spaces we are so eager to animate with community life. But it is the placement and design of buildings within the urban environment that perhaps a greater focus of our attention should be directed.

In September, the third International Sustainable Buildings Conference (ISBC) was held in Oslo, Norway. An important part of the conference, the Green Buildings Challenge (GBC) witnessed the presentation of green buildings from 24 countries. Initiated by Canada at the first ISBC held in Vancouver in 1998, the GBC assesses a building's environmental performance using assessment software commonly known as the GB Tool. Canada's GBC team assessed and presented three completed projects: a new K-12 school in the Yukon, an urban renewal/college in Winnipeg and a Winery in Southern Ontario. As the architect for the Yukon school project, I accompanied the selected buildings to Oslo along

The Team Canada booth at the ISBC in Oslo with a view of some of the players and green buildings

with fellow architects Doug Corbett of Winnipeg and Stephen Pope of Ottawa and assisted in presenting both the design concepts and assessment results.

With over 1000 delegates attending the third ISBC in 2002, the conference has grown significantly from the first gathering in Vancouver four years ago. Yet for all the activity and energy expended in gathering one thousand of the world's brightest thinkers and policy-makers in Norway, I wonder if we are effecting change at a significant enough pace to mitigate the ever-increasing consumption of the world's finite resources. With the world's current population, the planet can provide an average of 1.7 hectares of cultivated land for each human. Canada's ecological footprint is 7.7 ha/person, while in the United States it peaks at 10.3 ha/person. The ecological footprint of developing countries averages at between 0.5-2.0 ha/person. Clearly the discrepancies around the world with respect to energy consumption and sustainability vary as greatly as political, social and economic realities.

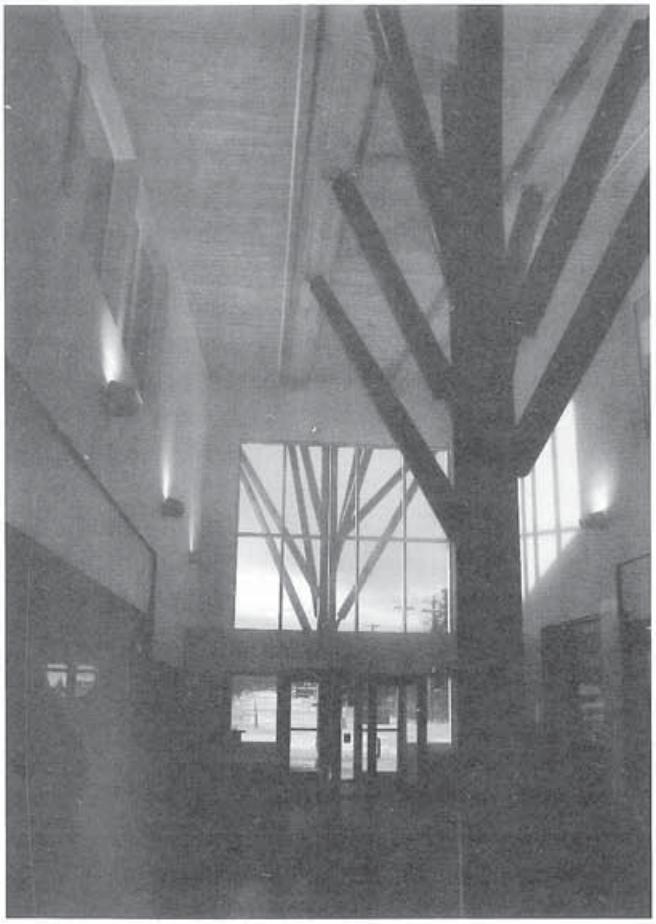
Much discussion at the conference focused on how to make buildings and communities more energy and material efficient, comfortable, safe and responsive to the environment and occupants for which they are built. Yet, in North America, green buildings are still a novelty in the similar way that wind-up kinetic powered radios and hybrid automobiles are. As long as the prevailing mindset favours unchecked consumption of resources, a truly sustainable paradigm shift is still years if not decades away.

When asked to compare the Canadian green building projects featured in Oslo to those of other developed nations, I need to reflect before providing a response. Yes, they are efficient: they maximize natural light and recycled building materials, minimize use of synthetic interior finishes with high VOC's, include grey and rain water recycling systems, utilize groundwater for heating and cooling, integrate photovoltaic and solar hot water systems, maximize natural ventilation and minimize natural site impact. Yet how sustainable can such a building be when it is surrounded by sprawling urban and suburban development and infrastructure? Even if a newly constructed single family home is considered a model of "efficiency" in design, it is less so when it encloses over 3,000 square feet of space, is located on a 500 sq.m. parcel of serviced land and forms part of a web of low-density development connected by an extensive system of paved roads. We quickly realize the larger built environment significantly impacts the sustainability of a single building.

Through Canadian Government initiatives including CBIP (Commercial Buildings Incentive Programme) and C-2000, building owners are realizing the benefits of improved occupant health, improved productivity, comfort and lower energy and facility maintenance costs. Recently, discussion surrounding Canada's ratification of the Kyoto Protocol to reduce greenhouse gas emissions has also provided an important forum for sustainability.

Street level view of typical four-storey residential building

View of Mayo School, Mayo, Yukon (exterior).



Interior view of Assembly area and Tree of Learning. Photos by Kobayashi & Zedda

In addition, however, various levels of governments in Canada need to take the lead by mandating green building design principles and benchmarks (which can be argued simply means "good" building design) in all publicly-funded projects across the country. This includes a shift toward the inclusion of life cycle and embodied energy costs as part of every design. This shift allows for longer payback periods for green measures that might otherwise appear too costly in the short term. Too often, political decision-making focuses solely on capital construction costs and short-term visions, which fit within the limited tenure of elected officials. However, they should also pass on the true costs associated with low-density development. For too long, municipalities have subsidized unsustainable suburban developments, often in the name of economic growth, and shouldered the ever-increasing infrastructure and service provision required after construction. In a northern winter city, the efficiencies of constructing compact, higher density developments warrant greater consideration as does an environment where automobile transportation is not given exclusive domain.

Ultimately, the responsibility falls on individuals themselves to make a gradual shift away from the numbing consumption and materialism that seems to shield us from both the natural and sustainably-built environments we long for. Our deep-seated fears of reduced quality of life, limited choice and discomfort are, in large part, framed within the context of unlimited progress and over-abundance. A sustainable built environment is one that connects people to each other and the environment in a way that does not compromise quality of life, but rather enhances it.

Antonio Zedda is an architect and principal of Kobayashi & Zedda Architects based in Whitehorse, Yukon.

The Mayo K-12 School has been designed to use only 51% of the energy of a conventionally-designed school.

Local Government & Winter Cities

by GERALD CHRISTIE and ANNE MARTIN

"Guidelines for winter urban development must be incorporated within the formal decision-making process at the local government level."

- Declaration of Urban Life in Northern Regions, North Calotte Symposium of Architects and Planners, Tromsø, Norway, June 1988.

Architects, engineers, planners, and other professionals are not the only groups who have a responsibility to create liveable winter cities. Elected and appointed local government officials also have a key role to play.

We surveyed several Canadian cities to see whether they promote winter city design and policy in their community plans. Several of the cities contacted have hosted forums and conferences for the Winter Cities Association and the International Association of Mayors of Northern Cities. Information was gained through personal contact and websites.

Our investigation found that most of the cities do not reference winter issues - policy or design - in their planning documents nor do they have committees that specifically address winter city issues during planning processes. The City of Whitehorse and the City of Prince George were the only two cities we found that explicitly state that they plan, through design or policy, for winter challenges in their communities.

The City of Whitehorse seems to be the most progressive regarding winter city planning. Chapter 6 of Whitehorse's Official Community Plans (OCP), lists five policies to promote planning. Whitehorse's OCP can be found at http://www.city.whitehorse.yk.ca. Policies address new developments and strategic plans. Whitehorse is in the process of rewriting its Zoning Bylaw so as to include strategies related to winter city issues and design considerations. The city's Winter City Committee has been inactive for the past couple of years. As a result city planners have become the spokespeople promoting winter city design in their community.

Prince George is, as far as we know, the only other city making explicit statements regarding winter city planning in its community plan. Within its "Vision Statement", the community plan requires future development to "build a beautiful city" accounting for local climate as well as "in all design and development decisions, encourage innovative and high quality design which expresses the uniqueness and spirit of the north, uses northern design elements such as wood and stone to express this image and build to reflect the community's pride". Design should include the use of "colour, lighting and structures" so that the winter season can be enjoyed by the city's residents. Discussion in its OCP promotes pedestrian weather protection and lighting although there are no specific policies to address general winter issues through design. The City of Prince George, in collaboration with its own Winter City Committee (see page 5), has published "Climate Sensitive Design Guidelines" that may be utilized by developers, planners, architects, city staff, and the public. Further information can be found at http://www.city.pg.bc.ca.

Fort St. John publishes "Winter City Design Guidelines." These can be found at http://www.cityfsj.com/building.html.

The other cities surveyed lack committees specifically addressing winter city issues and community plans pro-

moting winter city planning.

The City of Edmonton sees the incorporation of winter city principles as good planning (e.g. covered pedestrian walkways, south facing subdivisions, white Christmas lights in the City, bus shelters with clear glass). However it has no guidelines or policies directing such design elements. Montreal does not mention winter issues or design guidelines in its OCP, but views winter planning as an important part of the development review process. During the 1970's, the City of Ottawa was a "hotbed" of winter city design, but currently its general plan lacks policies regarding winter issues. The City of Ottawa is, however, undertaking a process of amalgamating several local communities into the Municipality of Ottawa and hence needs to update its general plan. Hopefully the plan will include some winter city design policies. The "Calgary Plan" does not mention winter city issues or design and lacks a winter city committee. The Calgary Plan does promote the continuation of above and below ground +15 type pedestrian systems offering shelter from inclement weather. Toronto has no winter city committee and there is no mention of winter city design, policies, or principles in its general plan.

After reviewing a number of community websites, there seems to be a notable absence of specific winter-related development plans. One exception is the "Yellowknife Downtown Plan" promoting many winter city design elements including the need for more evergreen trees, a year-round large "living" Christmas tree, central stove feature, winter colours, and sunlight and wind regulations. The plan recognizes that any new development must be "compatible with the existing character of downtown Yellowknife and should reflect the downtown's culture and climate" (http://www.city.yellowknife.nt.ca).

It is hard to disagree with those who say that the adoption of winter city principles is a product of good planning. However, elected local government officials are not usually planners and with changes in officeholders usually comes changes in priorities and interests. When facing tight budgets, Mayor and council find themselves under pressure to cut corners and reduce standards. In the absence of clear requirements for climate sensitive design, the most elementary planning principles of good development can be abandoned or forgotten. It's not uncommon for developers to present proposals lacking recognition of winter conditions for a significant part of the year, but containing artistic impressions of streetscapes and shopping malls with trees in full leaf and citizens walking around in shorts! Smaller cities with limited in-house resources must be particularly vigilant when dealing with planning consultants, especially those from warmer climates.

The inclusion of winter city issues, policy and design in community plans cannot be overemphasized. Its importance was recognized by the Federation of Canadian Municipalities in 1999. Responding to a resolution brought forward by the City of Prince George, the FCM resolved to encourage its members to recognize their unique climatic conditions and incorporate appropriate climate sensitive design principles and policies in its Official Community Plans. The Hon. David Anderson, then Minister of the Environment, commented that "by making climate sensitive design principles a central part of the planning process for future investments in community infrastructure, municipalities would contribute to the national effort to reduce greenhouse gas and contribute to the National Implementation Strategy on Climate Change."

If you know of Canadian municipalities promoting winter city design and policy in their Official Community Plans, or other documents, we would appreciate hearing from you.

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Winter Cities
ASSOCIATION

Articles (1,000 to 1,500 words), book reviews, events etc. may be submitted to the Association c/o City of Prince George, 1100 Patricia Boulevard, Prince George, BC, Canada V2L 3V9 or to nechakoriver@shaw.ca. The Winter Cities Magazine is published in February, May, August and November. Its contents may be used without permission but with credit to the *Winter Cities Magazine.*

BIENNIAL WINTER CITIES FORUM AND TRADE SHOW

Invitations are extended to North American municipalities to host a biennial (odd numbered years) Forum and Trade Show. Bidding criteria are available from the Association and via e-mail: nechakoriver@shaw.ca.

Web site: under development