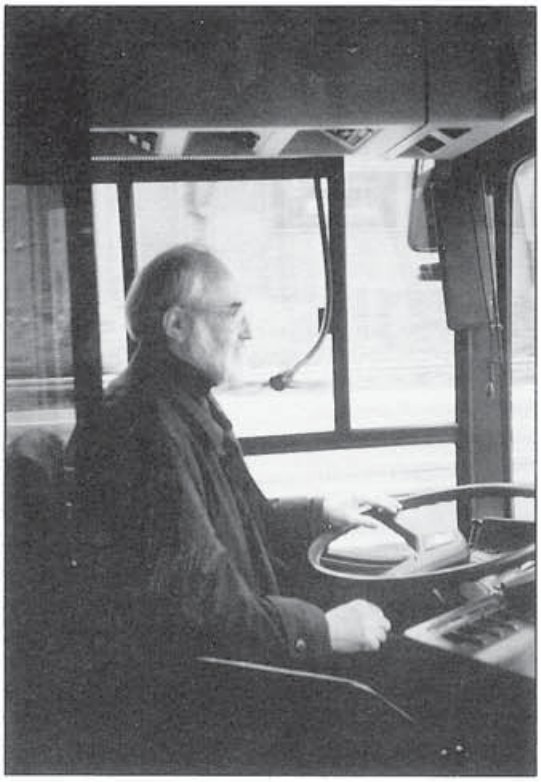
WINTER CITIES

DESIGN

VOLUME 8
NUMBER 2

PUBLISHER'S REPORT

SUMMERTIME AND THE LIVING IS EASY. BUT THE FALL EQUINOX SIGNALS THE TRANSITION TO OUR COMMON CLIMATIC HERITAGE AND THE TIME TO PUT INTO PLACE OUR NEW ASPIRATIONS.



THE RAPID DEVELOPMENT of both the winter cities movement and the Winter Cities Association has encouraged WC A's publication board to introduce the following Winter Cities publication changes:

- **"WINTER CITIES"** in an expanded format, quarterly rather than bi-monthly, reconciling the irreconcilable sayings, "Less is more" and "Bigger is better".
- **WCA UPDATE** consolidating all WCA Membership and Affiliate News into a pull-out format.
- **GUEST EDITORIALS** by previously unpublished but thoughtful, often controversial persons on current winter cities issues.
- **FUTURE ISSUES** will have a theme or focus:

  Experiences from the Arctic Rim - November Issue
  The Fun and Business of Winter Tourism - February Issue
  Sustainable Development and Its Relevance for Winter Cities Community - April Issue
  Your thoughts on areas to be covered or future topics are most welcome. Of course, papers and mini-editorials in the form of letters to the editor continue to be actively encouraged

- **ADVERTISING SOLICITATION** for the obvious potential economic benefits to the magazine but also to support the products and services responsive to the winter city's needs.

WINTER CITIES magazine provides innovative and practical information to enhance living on top of the world. Join in the odyssey of northern communities self-discovery.

H. Hanen

Harold Hanen

DOWNTOWN RIVER TRAIL OPENS

WINNIPEG'S DOWNTOWN RIVER trail opened in mid-January in conjunction with the annual Riverborne Winter Festival. The two-kilometre long trail runs on the Assiniboine River from the Osborne Street bridge and onto the Red River to the Tache Promenade/Forks National Historic Site.

The River Trail was launched in 1988 as a project of the Winnipeg core Area Initiative as part of its Riverbank Enhancement Program. Manitobans are invited to walk, ski, skate, snowshoe or bike on the River Trail any day of the week, but on weekends in January and February the Trail really comes alive with a series of winter recreation activities for the whole family. Starting with the Riverborne Winter Festival, programming includes "Northern Parks Weekend", "Kite Day", "100 Years of Winter", "The Great Canadian Skate Challenge", sled dog races, harness horse races and the Beatrice Red River Ski Fest.

This last event, scheduled for February 17, includes the 15 km. "Forks Relay" event on the Red River loop to Whittier Park. Funds raised by participants in The Ski Fest will go to the Association for Community Living in support of Manitobans living with a mental handicap.

PAVILION ON THE PLAZA OFFICIALLY OPENS

THE PLAZA AT THE FORKS MANITOBA WAS officially opened in late 1989, just in time for skating season. The main winter feature of the Plaza, adjacent to The Forks Market, is a circular outdoor rink, eighty-five feet in diameter. An artificial ice surface allows an extension of the skating season to early fall and late spring.

"Ice in winter; concerts, dance, theatre in summer"

The central feature of the Plaza is a massive natural gas fireplace donated by ICG Utilities. The copper hood of the fireplace adds to the cozy atmosphere of the room, which on Sunday afternoons is the site of "Tales from the Hearth", a story-time for children with legends of Manitoba's history and multicultural heritage brought to life through story and song.

ECONOMIC DEVELOPMENT

THE NATION'S LARGEST SHOPPING MALL, which is to include about 88 stores, 100 restaurants and 18 movie theatres is due to open three years from now in Bloomington, MN. The megamall, officially dubbed "Mall of America", will cover 78 acres on three levels and include an entire amusement park offering overnight stays in first class hotel facilities for family vacationers expected to come from beyond the day trip radius. The mall's drawing area includes the Twin Cities.

Part tourist attraction, part gathering place, the megamall, counts as its ancestors the covered and outdoor market places of Europe and the bazaars and suks of the Middle East which bring people together for commerce, entertainment and social activity.

The co-developer, along with Indianapolis-based Melvin Simon Associates, is the Triple Five Corporation of Edmonton, Alberta, Canada, which has created Canada's West Edmonton Mall, currently the larges in North America. The 110 acre mall now includes 823 stores, 110 restaurants and 19 movie theaters, the Fantasyland amusement park and a hotel, even a copy of Columbus' Santa Maria. Business is said to be booming.

FOR 10 YEARS WOMEN HAVE APPLIED THEIR WISDOM TO NORTHERN LIVING

"Let's make living in Hokkaido (Japanese province) richer," with this motto, the women of Sapporo City have been struggling with consumer research for the past ten years.

The themes include living in winter, clothing, food, and housing. Each year the Society focuses on one research subject for the year, conducting an investigation into the actual conditions and distributing questionnaires on the subject. Citizens submit a variety of ideas on each theme.

"Let's make living in Hokkaido...richer"

The themes they have addressed cover a wide range of subjects. The Clothing Division conducted research on children's outdoor playclothes for winter in 1982.

The Food Division is continuing its activities in order to enrich and enliven the diet of those who live in the north country, fully utilizing local foods. They make jam and sauce from lilac, the city flower of Sapporo, to add a sense of season and to entertain visitors to Sapporo.

The Housing Division has been concerned with energy conservation and the creation of a more comfortable housing environment for the north country.

The research findings are annually summarized in a pamphlet entitled "Northern Living", which is easily understood. The report is distributed to citizens and read by households, groups of housewives, and schools.

Some of the suggestions drew the attention of industries for their innovative ideas, among these is Seibu Department Store, which is presently selling a winter clothing line under the brand name, "North Tech."

FORUM '91 UPDATE

By: Karen Lapointe

SAULT STE. MARIE WINTER CITIES FORUM '91 office is bustling with activity in preparation for the January 21-25 conference. Forum '91 organizers are anticipating an international delegate population exceeding 500. In addition to the delegate program, interesting local tours for non-delegates are being planned to entice delegates to bring their spouse or friend to enjoy a true Northern Ontario winter experience.

Forum '91 delegates will have the opportunity to hear highly qualified international experts in the area of sustainable development in cold climates. Topic areas to be addressed include:

1. Energy, Technology and Conservation
2. Recycling of Businesses, of Cities and towns, of Waste - 3 Dimensions
3. Transportation and Communication - Decentralization
4. Natural Resources - Industry & Opportunity
5. Livability: Recreation and Tourism
6. Planning and Architecture

Topic areas will be elaborated on during Community Showcase and Tradeshow. Participating communities will be given the opportunity to show and tell their success stories during Community Showcase presentations and Tradeshow displays.

Space has been allowed for thirty-six Trade booths. Booths are available to winter communities, businesses and government agencies with services and/or products related to sustainable development in cold climates.

Forum '91 organizers are ensuring that delegates are exposed to a wealth of up-to-date information. To complement the learning sessions an exciting entertainment package is in the making. A variety of entertainment will be available to delegates from a cocktail social featuring chamber music to the Algoma Arts Festival special Winter Cities presentation.

A must for all is the "Northern Reveillon" Bash at Searchmont Ski Resort. Participants will travel to the popular resort via the Algoma Central Railway Snow Train. After a warm-up on the train Searchmont Resort will take over with a traditional French Canadian/Northern Ontario party serving cultural foods and featuring the Juno award winning "Boutine Souriante" from Montreal and Northern Ontario's very own "Wakami Whalers".

Winter cities Forum '91 is a conference worth attending. Join us!

For more information contact: Winter Cities Association, Forum '91, 360 Great Northern Road, P.O. Box 787, Sault Ste. Marie, Ontario P6A 5N3 Phone: (705) 945-9986, Fax: (705) 945-7607

SAPPORO WOMEN'S GROUP STUDIES

ARTISTIC AND DECORATIVE USES OF WINDOWS

"WE WOULD APPRECIATE RECEIVING information or illustrations you might have on windows," wrote Ms. Akiko Sugioka, Secretary-General of the Northern Intercity Conference Committee, Sapporo, and Director of the Sapporo International Communications Plaza. We forwarded the latest high tech information in our possession — Low-E glazes, pultruded frames, heated and vacuum windows, etc. We were wrong.

Ms. Sugioka, acting for a committee of young women, was looking for information on artistic and decorative uses of windows and on means used

to make windows attractive and "homey". The committee is connected with the Sapporo International Communications Plaza and is identified as SACOM-G.

The published report on the committee's work has now been received — an attractive profusely illustrated 30-page booklet showing windows and describing window treatment in many countries.

...window architecture, traditional in various cultures, and modern.

Illustrations show a range of window architecture, traditional in various cultures, and modern. They show a variety of arrangements of curtains and drapery. They also show the use of plantings, and flowers, exterior and interior, to add charm and variety. There are windows with interesting styles and appearances in summer and winter, in restaurants, shops and residences of all types. The booklet lists 103 examples shown in its pages and also displayed on walls of large exhibit rooms in the Communications Plaza.

BETTER CITY PLANNING COULD MAKE WINTERS SEEM SHORTER, PROF SAYS

By Margaret Terol

WE CANADIANS ARE A FUNNY PEOPLE.

We live in a sub-Arctic climate for about six months of the year yet we have a "summer mentality" that tries to deny that winter exists, says a University of Waterloo planning professor.

Norman Pressman told members of the Grand Valley Society of Architects that many Canadians have "a summer state of mind" year-round. In winter, we either travel south on vacation or spend time dreaming of tropical locations with warm sandy beaches, balmy air and palm trees.

Pressman blames the media for giving winter a "bad press".

In an illustrated talk on the subject of cities in winter, he said Canadian values "are impregnated with southern elements" and this shows up in the designs of our cities.

They are not designed to adapt to the rigors of Canadian winters. Canada in winter experiences northern Siberian conditions and is the third coldest country on earth.

...we have a "summer mentality" that tries to deny that winter exists,...

Pressman who has studied urban planning techniques in Sweden, Norway, Belgium, Russia and Japan, said these countries have designed their cities to provide protection and comfort for the inhabitants in winter. But innovations to minimize the bad effects of winter are seldom used in Canada.

Countries like Norway and Sweden have had pavements heated by waste steam since the 1950s. They have also developed covered city core areas and covered complexes of shops and homes, schools, restaurants, theatres and libraries.

In Canada, ramps have been built to help people in wheelchairs get around. But Pressman, co-founder of Winter Cities Association and co-author of Cities Designed for Winter, said this is dangerous, especially when the ramps get iced up.

Countries like Norway and Sweden have had pavements heated by waste steam since the 1950s.

In Swedish cities there are no curbs, he said. The heated sidewalks are extended across intersections and the roadways are gently sloped up to the sidewalk.

To extend the outdoor season, he suggested implementing "microclimatic designs" in residential and city core areas. These outdoor areas protect residents from frigid winds by using southern exposures, windbreaks such as taller buildings on the northern exposures and coniferous trees.

"With microclimatics you can extend the outdoor season by six weeks, three weeks in the fall and three weeks at the end of winter."

A WINTER CITY'S BOTTOM LINE

LULEA IS SWEDEN'S 'WINTER CITY' LOCATED CLOSE TO THE ARCTIC CIRCLE, a community of 55,000 characterized by harsh temperatures and only a few hours of daylight in the winter, Lulea has a pedestrian city center with a roofed shopping mall, designed by noted architect Ralph Erskine in the 1950's, a first rate public transit system and heated sidewalks, warmed by hot water conduits connected to the municipal district heating system.

Bus shelters with three 'comfort levels' to suit a range of weather conditions and user preferences have been installed. Lulea has miles of brightly lit jogging paths that double as cross country skitrails, playgrounds and outdoor skating rinks. Bright new ideas that resulted from last year's 'Erskine Winter City Seminar' that have now been put into effect include providing more social 'heat spots' with public access where pedestrians drop in to warm up, and increasing the number of supervised outdoor log fires provided by the city throughout the downtown area. Outdoor public spaces have also been protected from the winter winds through screens, walls and vegetation. Glazed-over winter gardens managed by the city and more ice sculptures in the central area, along with the extension of the sidewalk heating project are on the drawing boards.

"If the city is better adapted to winter's demands, it will also function more effectively all year round".

Ralph Erskine has a special relationship with Lulea - and Lulea with him! Looking back these past 30-odd years, it seems fair to say that Ralph really hooked Lulea with his Shopping complex. Be that as it may, Shopping has meant a great deal to Lulea, and especially to those who are young in the period from the mid-fifties to the mid-seventies. On its dance floor, around the many cafe tables and on various perches in the multi-storey complex new social networks were established among the city's teenagers - networks that today make up the fabric of adult society, contributing to the town's vitality and helping its people resist the magnetic force of "jobs down south" during the recession of the seventies.

Everyone in Lulea is well acquainted with shopping and nearly everyone knows who Ralph Erskine is. This singu-

lar relationship between a specific building and a community, the young people of that community, and an architect's vision of the social function of his buildings merits special acknowledgement in this age of decorative mannerism, as we search for reminders of how buildings and man-made environments can contribute to the quality of daily life. Buildings that generate vitality in the public at large -not just in the privileged groups whose needs architects have traditionally catered for.

Lulea has matured since the fifties - its growth is recorded in the cityscape like the rings in a tree trunk. Many new branches and sprigs have sprouted, especially these past few years. Meanwhile, there is a growing awareness of the need for something of what Shopping represented when it was first built - before renovation, when "culture" was chucked out "commerce" was ushered in. Lulea today lacks many of the amenities a city of its size should have. Lulea also suffers from a problem shared by many other coastal cities, postwar motorways have cut it off from its shoreline.

In April 1989 a group from Lulea visited Ralph in his studio outside Stockholm. The municipality was represented by Ulla Vanhaniemi, chairman of the Building Commission. Ralph responded immediately to the idea of producing a concept for a building in Lulea that might be displayed at the Winter Cities conference in Tromso.

During the Fall and Winter of 1989-90 Ralph visited Lulea on four occasions to present his ideas on the project from every conceivable angle in seminars and public meetings. At the outset Ralph was given free rein to set his own priorities. The problem he chose to tackle first was finding a way to bring the northern harbour into contact with the centre of town. This problem had been attacked in two previous studies, and he could use the ideas presented there as his point of departure. Ralph's motive for choosing this aspect was the challenge it posed: a neglected area highly exposed to the elements, but which played a vital role in the functioning of the city, its traffic, its culture, not to mention its appearance. A new structure here could play a multifaceted role with a particular sensitivity to the undeveloped potentialities in long northern winters. A lot like the challenge that Shopping met in its day - and equally vital to the city, if not more so!

THE EFFECTS OF LIGHTING, COLOUR, AND ROOM DECOR ON THERMAL COMFORT

Dr. Frederick H. Rohles, Jr.Dr. Corwin A. Bennett, Dr. George A. Milliken

SEVEN FACTORS AFFECT MAN'S RESPONSE to the thermal environment; the dry-bulb or air temperature, water vapour pressure or relative humidity, the mean radiant temperature, air velocity, the physical activity and clothing of the occupant and the temporal characteristics of the exposure. During the past 16 years, the effects of these variables on thermal comfort have been studied extensively; however, in several experiments evidence has suggested that factors which may be considered as being "non-thermal" may also contribute to the thermal sensation.

First, it poses serious questions concerning the generalizations that can be made from thermal comfort studies that are conducted in a stark and somewhat sterile laboratory setting. The setting in which they are conducted is unrealistic and not at all like any interior space that might be experienced in everyday life. In short, these studies have ignored such factors as lighting, colour, group size, room decor and other non-thermal features of the indoor environment.

For years artists, architects and interior designers have attributed moods and feelings to colours and lighting configurations.

In probably the most comprehensive study of its type to date, and certainly the major stimulus for the Present experiment, Flynn and Spencer evaluated the "subjective responses to colours of 'white' light that are produced by commonly available electric light sources in interior spaces." Their results showed that the distribution of light in contrast to the colour had a moderate influence in producing feelings of pleasantness. Moreover, it is conceivable that they also could affect feelings usually attributed solely to the thermal environment.

In view of this, it appeared only logical to examine the effects of light and colour on the thermal sensation. The purpose of this study was to study the interaction of lighting, colour and temperature on the thermal response.

Questions such as these are posed constantly: Does colour have any effect on how we respond to temperature? Is 72F in an intimate restaurant lighted by candles perceived the same thermally as 72F in a restaurant brilliantly lighted with chandeliers? Is 72F in the same intimate restaurant perceived the same as 72F at a football stadium? The mechanistic approach would say yes to all questions. In other words, 72 deg is 72 deg is 72 deg. The psychological approach might suggest that different levels of comfort may exist. The purpose behind this study was to answer some of these questions; namely, are there such things as non-thermal factors which may affect our thermal response?

The study also points out the need

for measuring both the thermal sensation and thermal comfort. As indicated in previous work the two, while comparable, are not identical. Beyond these comments, the following conclusions are suggested from this study:

1. In a condition of thermal neutrality there is no difference in the thermal sensations of men and women; in an environment that is cooler than neutral, women feel cooler than men.

2. The thermal sensation is not affected by the starkness or "plushness" of the environment.

3. After 1 hr, the orange work stations were judged to be more comfortable than the blue work stations, however, beyond 1 hr. the difference was not significant.

4. In general, little difference in comfort was experienced in the blue work station when the walls were dark or light or the orange work station when the walls were light; however, these three conditions were all less comfortable than when the work station was orange and the walls were dark. In a thermally neutral condition, more women preferred the temperature to be warmer when in an environment with white walls than when in an environment with dark walls; the men did not exhibit this preference.

5. At neutral temperature conditions the treatment of the wall had no effect on comfort; however, in a cooler than neutral environment, the subjects were more comfortable when the walls were dark than when they were light.

6. In a thermally neutral environment, comfort is not affected by the luminaire. In an environment that is cooler than comfortable, lighting with a warm-white fluorescent lamp creates a more comfortable environment than lighting with daylight or cool-white lamp. While Sex and Exposure duration were related to luminaire and thermal preference, in general, when the environment was illuminated with cool-white or daylight fluorescent lamps more of the subjects stated they preferred a warmer temperature than when it was illuminated with warm-white lamps. Conversely, when the space was illuminated with warm-white lamps there was a tendency to prefer a cooler temperature. However, this preference was not as pronounced as with the cool-white warm-preference relationship.

7. At the same temperature the starkness or "plushness" of the environment does not affect an individual's skin temperature or thermal sensation; however, a greater degree of thermal comfort is experienced in the enriched environment than in the stark environment.

8. For the results to be applicable to real-life settings, future research should be conducted in an environment that simulates the setting in question, whether it be office, school, or residence with the appropriate age groups as subjects.

COLD CLIMATE MOTIVATES CONSTRUCTION CREATIVITY!

ERECTING THE EXTERIOR WALLS and windows on an 18 storey condominium, 10 storey office and 4 storey parkade in Yellowknife, N.W.T. - 40F winter can be a real challenge! Realizing how slow and potentially dangerous it would be to accomplish this in cold temperature, blowing arctic winds and near total darkness around the clock, Clark-Bowler Construction of Edmonton devised a pre-fabrication system that saved hundreds of thousands of dollars and months of time.

The exterior walls were designed to be modular in sizes that would fit on a transport truck, survive a trip from Edmonton to Yellowknife and provide a pleasing exterior architectural appearance.

An assembly/manufacturing operation was set up to prefabricate various size modules consisting of interior drywall finish, vapour barrier, steel studs, fibreglass insulation, exterior grade drywall, rigid insulation and a high grade exterior acrylic stucco finish. Window sections were installed in the modules complete with glazing.

By utilizing this approach there were several quality benefits that were realized at the same time; a consistent colour and texture to the exterior finish, better attention to vapour barrier details and higher level of sealing around windows.

The completed modules were crated to protect the ends and sides and hauled to Yellowknife during the middle of winter. The modules were unloaded at site, laid out in a pre-assigned sequence of installation and were hung in place with the tower cranes on site.

Clark-Bowler Construction is the largest resident contractor in the Canadian arctic and has constructed projects in virtually every community in the N.W.T. and Yukon during its 17 year history.

SNOW CONNECTIONS

By Edna Hadley

AS SUPERVISOR OF "SNOW CONNECTIONS", Ms. Hadley connects with students, or handipersons, to clear snow from front walks and driveways of senior and handicapped citizens. The system with limited municipal and federal funding appears to work extremely well.

Snow Connections program for seniors and disable adults began in the winter of 1982 to find shovellers to clear their snow. The program is funded for administrative purposes only by the City of North York, as its logo says, "the City of a Heart".

The Executive Directors of five Senior Centres in North York work, in co-operation with the supervisor, to co-ordinate this program has grown and evolved but the original goals have been retained, to provide

1. Assistance to seniors and disabled adults.

2. Employment opportunities for students and shovellers.

3. Community interaction between students and seniors.

During the winter season of 1989-1990, over 1300 seniors and disabled adults were served by 633 students, 10 handipersons and five contractors.

"The telephone rings ..." and so the story goes on and on.

Many communities across Canada have implemented similar programs - some at no cost to the home owner. For information on the North York program write: Ms Edna Hadley, Taylor Place Senior Adult Centre, 1 Overland Dr., Don Mills, Ontario, Canada M3C 2C3.

THEME
INTRODUCTION

HAROLD HANEN

THIS ISSUE IS DEVOTED TO WINTER CITY DESIGN. Very few of the circumpolar regions of the world have a distinctive northern planning or building character, only a faint sketch not yet developed.

The philosophy and principles of modern urban design have, during the last half century, proven to be increasingly inappropriate for winter communities.

The real culprit appears to be the notion of a single international planning, architectural or industrial design style rather than an evolving design pluralism reflecting authentic regional concerns. Most western world designers, including their proponents in the winter city movement, are currently re-evaluating the appropriateness of the principles of "modernism." Our efforts are being affected by the emerging new attitudes inherent in the demand for more interactive design processes and the ecological movement. These social forces are fueling the process of political decentralization and more locally responsive environmental solutions.

...significant conceptual inertia is housed in theurban design professionals and their clients.

Accomplishing a vibrant regional built environment cannot be done without attitude changes. There still appears to be significant conceptual inertia housed in the urban design professionals and their clients. This inertia is binding local solutions to meek elaborations of prototypical designs usually developed in southern big cities elsewhere.

Winter cities are about people, the art and practice of living together. It is the role of the built environment to support communities' social aspirations and to reflect their connection to their unique, natural surrounds.

This issue of "Winter Cities" cannot deal with all the issues of winter city designs however, in our view, it is the most developed, published discussion of appropriate principles which should underly all thoughtful winter city design.

Three authors Robertson, Matus and Lehrman urge us to capture our precious sunlight by diverse means through atria, greenhouses and thoughtful design. Colour and its effects on our humour is explored by University of Waterloo students and in another section through an innovative study.

Imitating mother nature and the successes of others are presented as possibilities by our Scandinavian authors Borve and Berge. Socializing in the public square can be both physically possible and heart warming according to Gehl. And new thoughts on old problems are brought into sharp focus by authors Hough and Pressman, Gethein and Blumenfeld dealing with the general themes of design for winter cities.

I am firmly of the opinion we must make use of the richness of our own locales to shape stimulating, diverse and humane cities, linked to the emerging social visions and to the spirit of our place or else pass on to the next generation, the evidence of our failures.

AVOIDING ARCHITECTURAL ESPERANTO

FREDERICK GUTHEIM

THE CITIES WE KNOW INHERIT 10,000 YEARS OF URBAN DEVELOPMENT that has moved from south to north, especially in the years since the Renaissance. The wide boulevards, civic spaces, monumental buildings at focal points that were characteristic of the "city beautiful" movement have their origins in the Mediterranean. The significance of these origins to "the livable winter city" has received little critical analysis.

"In the struggle to find a universal language, THE INTERNATIONAL STYLE, we have ignored a lot of things -particularly the regional realities."

In their infatuation with Italy, the British Victorians thought to reproduce the piazzas of that charming land, complete with their fountains. In the pages of the London Brickbuilder of 1856 one can read a cautionary response that is equally applicable today.

"Better than a memorial fountain, given the realities of the British climate," a correspondent wrote, "we should create an eternal flame."

Everywhere our cities suffer from what Arthur Koestler has called "architectural esperanto." In the struggle to find a universal language, the International Style, we have ignored a lot of things - particularly the personal realities. And, as the Greeks said, "when the gods wish to punish us, they answer our prayers." Our urban environments are what we have made them.

That we cannot escape environmental reality seems the first conclusion to draw from experience. That we have the ability and agility to adapt to environment is the second. That intelligence, imagination, and creative art will lead us to the best adaptation is the third. One may also conclude that creating synthetic environments both postpones the ultimate reckoning and cripples the human ability to grow through adaptation.

In terms of social planning the winter city will be relatively dense and compact. It should further round-the-clock urban life, especially in public environments. The urban firms and institutions which can promote such an urban life must be found and encouraged. If new solutions appear radical it will be in contrast to city building practices derived from warmer climates. Because the cities we have were developed in a unique period of cheap land, cheap energy and an unrealized cost for municipal services, it was possible to overcome environmental conflicts with the Mediterranean urban model by brute force techniques. It is unlikely that we can continue to pay the cost of these techniques.

With the greater awareness of ecology and environmental impacts, a special burden has been imposed on northern cities in their energy and transportation arrangements. In the short run this will probably have an adverse effect upon the region's growth. But northern settlement cannot be restrained, and technological development is on its side - although perhaps not for another twenty years or so. At least northern cities will not have those exorbitant costs for air conditioning. Cities like Minneapolis will respond to development in the Arctic north, just as a rising tide lifts all boats. Not only do such cities provide the natural bases for northern expansion; they also share in the technological advance.

The livable winter city has detail as well as broad strokes in its design. What should we consider at domestic scale? Improving the welcoming, cheerful appearance of our homes and other buildings need not be reserved for the Christmas season. In Finland the advent of winter is announced by city dwellers returning from the country with pine boughs that are trimmed into a green doormat that brushes the snow from the feet and manages to last most of the winter. Such touches are useful reminders of the human bonds of the city, the togetherness that winter conditions promote.

This human closeness is more vividly brought home to me on every trip to the north. Against the severe climate, human cooperation becomes a spontaneous imperative. A mechanical breakdown of a snowmobile is a life-threatening situation demanding and receiving community priority. The wayfarer is sheltered without question.

The livable winter city must look to the arts. Much of our winter's leisure is spent in concert halls, museums, galleries and other places of culture and entertainment. In the artistic imagination are born many of the most useful individual and social adaptations to the climate. Most important is the role of the arts in the celebration of life in "the livable winter city." The animating and invigorating element must be the celebration of the human condition, the unique province of the arts.

Those who would discover the secrets of life in the north should not settle for the standardized, machine-produced environments of the present, but turn to the great ages of the past. Consider literature. Those frost-etched Siberian winter scenes in Dr., Zhivago, with snow-plastered trains, filmed in fact on the Canadian prairie, are a powerful visual statement. Even more than the snow-packed streets of 1909 Petrograd, this image of the endless steppes cannot be erased. What the film provides as an image is deepened by Pasternak's novel, an ageless classic of love in a northern climate.

Those who doubt the effect of environment on character may consider W.H. Auden's poem, "Good-bye to the Mezzogiorno," which concludes:

"...if we try
To 'go southern' we spoil in no time, we grow Flabby, dingily lecherous, and Forget to pay bills..."

Perhaps the greatest visual theme for the winter city is the oldest. In the Norse sagas, perhaps more in Beowulf, one finds both the architectural formula and the psychological adaptation to the winter environment. Color it gold, is the advice they give. Gold is the color of the banqueting halls, gold to echo the living flames of the hearth, gold reflected in the polished steel of armour and shields that hang the walls. Gold, the color of the sun these northerners worshipped, preserved by art the year long.

But designing the environment and inventing appropriate technologies was not the end of the Viking response to the climate. The heroic posture they contrived, of which the sagas themselves are an expression, offered the plunge into the icy waters and other equally chilling behaviour as evidence that they were undeterred. If you think we are not effete, read the sagas of Beowulf. There, little is heard of snow and ice, and much of plunging into mid-winter's raging ocean waters, steel armour, sword, battle-axe, and all.

And what of the built environment in the ninth century, the Gold Age of the Vikings?

That architectural glory, the stave church, had not arrived. The great building was the Banqueting Hall, the club of ruler, soldiers, distinguished visitors, and seafarers. Under its great golden rafters and rooftree, the chamberlain organized feats. The opening sections of Beowulf describe "the erection of a building that should be the greatest banqueting hall ever known, in which (Hrothgar) could apportion to young and old everything God had entrusted to him, with the exception of public lands and human life ... Tall and wide-gabled, the hall towered overhead." Here one heard "the harp-music, and clear song of a poet relating the creation of man from earliest times." In this timbered hall, "embellished with gold," was the seat of Hrothgar, and the most celebrated building in the world, whose splendour blazed abroad over many lands, the glistening home of heroes. The doors were secured by wrought iron

bars, and the hall was stoutly braced with iron clamps "forged by skilled craftsmen. Its interior was inlaid with ivory, and even the benches were inlaid with gold." Further, golden tapestries gleamed along the walls." Adding to the decorative effect were polished shields, swords, helmets, and corselets, all reflecting the blazing open fires.

Gold - the color of sunlight, and living flames, reflected everywhere from mirror polished surfaces - is the theme of these great halls. What greater contrast to the northern darkness, the perilous sea, the gothic forest? It was a contrast as great as the hearty fellowship of the banquet gatherings to the lonely dangers of combat or the hunt.

I offer these responses as enduring ones. Have we improved upon them in the north today? In place of the banqueting hall and the Viking gold we have the climatic bubbles of northern settlement, the megastructures, the enclosed shopping malls, the educational complexes like the University of Duluth or Lethbridge. The roots of these environments are more likely to be found in the psychologically-oriented, synthetic interior design absolutely detached from the environment of the earth. But hanging plants, whether real ones or of plastic, are less a constructive response to the northern environment that a pitiful recollection of a faraway temperate zone.

We have not resolved the human problems of such design. The search for a livable winter city must recognize that it is not ergonomics or hardware, but people who are the heart of the matter - living in artificial environments, in certain juxtapositions with each other, at high population densities, under peculiar stress.

Our present circumstances, for a variety of reasons including the "heat island" canopy over many large cities, snow removal practices and the increasing pollution load, have produced a dark and dirty urban scene for much of the winter season, slushy roadways necessitating overshoes rather than mukluks, heavily moving traffic, something between seasons rather than a

crisp winter character. The answer to this is obscure, but it is probably the same as for urban visual litter - to attack the problem rather than to add to it with touches of synthetic cheer. Would more snow be better? Perhaps we need snow machines in the winter city as well as on the ski slope. Would it help to zone the city into snow and non-snow districts?

The problems faced by the "lower northern cities" has been greatly complicated by auto and truck traffic. The individual may have attained comfort and convenience; the public environment has not. Farther north, where snow stays after it falls, it can be rolled down or sculptured into a fairly reliable part of the urban environment. In the Yukon, it has been estimated that snow highways can be built over the tundra for $200 per mile. In Finland's winter war of 1939 the ice road between Helsinki and Petsamo carried trucks for hundreds of miles over land and lakes. Within the memory of many, snow was not scraped away, or removed with chemicals or salt, but smoothed and used as a traffic bed. Each successive snowfall (in many parts of the north an almost daily increment), powered and refreshed the snow pack. Then the winter city at least looked clean and it was possible to think seriously about a winter wonderland of sleighbells and steaming horses, if not reindeer.

Let us be specific about what is needed. Before we can address with reasonable precision the livable winter city, we have to define more closely just what makes the winter city different from other cities. Is it the cold, the dark, the snow? Is it transportation or communication differences? Is it the higher cost of public or environmental services?

How should the environment of the livable winter city be expressed in housing, community development, the work environment, the central business districts, and other distinctive parts of the city including its suburbs, in transportation and communication, in its water and sewer systems, and in other environmental arrangements? In each of these sectors we need to ask specific questions about the winter conditions that make this a distinctive environment.

Have we a technology appropriate to these conditions, making the most of them and meeting their specific requirements, or are we using standardized designs and solutions developed elsewhere for other and different conditions? Does the livable winter city have different standards for recreation, room sizes in housing, the design of express-way ramps, and other details of the city? Do we need to take the conception of city parks indoors, as at the vast Winter Club in Winnipeg? Stockholm is almost entirely served now by central district heating, but many northern cities in America have had such systems for

decades - Oak Park, Illinois, for nearly half a century. How should this experience be reevaluated in terms of energy conservation or today's higher costs of fuel?

The snowbelt/sunbelt question is not a matter of longitude or of climate. It is a question of people. It must be looked at in terms of social fluidity, or migration. If we are to strike a blow against total social fluidity, it must be in the north; let it be there that we assert the values of stability, continuity, the three-or more - generation family, community life and established institutions, heritage and patrimony, the past. And assert these values against the rootless, dusty, sprawling, cultural aridity and inadequate public services of the more southern regions. The past has endowed the north with great institutions, universities, medical services; inherited architecture and great parks; libraries, symphony orchestras, operas, and museums; the investment of generations in the good life. We should build on these foundations.

Northern resources, transportation, and defense considerations have today stimulated national, bilateral, and regional interest in exploration, research, and technological development and urbanization. New institutions have appeared in very recent years that express this interest: the Institute of Northern Studies at Walcott, Vermont; the Centre d'Etudes Arctiques, Paris; the University of Alaska's Man in the North program; the Scott Polar Trust in Cambridge, England, are representative developments. Urban development in the north is characterized by the new northern Swedish town of Kiruna, a center of stainless steel production; the northern Quebec settlement of Fermont, a key centre of iron ore production; the emerging new capital city of Alaska near Willow, just north of the transportation defense, and resource metropolis of Anchorage; or any one of scores of Soviet Northern settlements of which Novosibersk is the most celebrated.

From these developments important new urban technologies and development strategies are emerging. We must look to this body of experience not simply as it relates to snow, ice, and cold, but as it deals with more universal problems of cities in arid climates, in isolated locations, or as parts of larger urban systems. A specialized agency such as the U.S. Geological Survey can afford to focus narrowly on a single problem, such as perma-frost construction, but those facing the larger concerns of urban development and design must embrace the broader fields of urban ecology, metropolitan planning, human biology, and fields of equal complexity. Here we are at the frontiers of human knowledge. Urban ecology is hardly more than a concept - yet one that can be translated into the economic-environmental tradeoffs in urban areas. Human biology knows relatively little about the human body, its health and life expectancy as they are affected by northern conditions or the constraints of artificial environments. Nor do we know much about the urban stresses to which northern populations are exposed.

The snowbelt/sunbelt question is not a matter of longitude or of climate. It is a question of people.

In terms of broad urban strategies, northern cities can move in two well-defined directions. They could take as a model the nuclear submarine that stays submerged for months at a time, or the space craft totally separated from the earth, and in this fashion strive for a wholly independent, detached self-contained environment, one that within itself satisfies every biological and psychological requirement, that disposes of all human wastes and pollution. Alternatively, they can develop the model of an urban settlement that is highly integrated with the surrounding environment. The dimensions of such development and its feasibility are suggested by a winter visit to popular parks: thermal clothing, snowmobiles, winter camping equipment are only a part of it. By half-track vehicles, aircraft, mobile homes, and the larger technology, the north is being conquered - or at least changed - in more fundamental ways.

In modern times in the U.S.S.R., a vast demonstration of more than a hundred northern settlements has produced a significant laboratory. The initial big plans for new towns were supported by the not inconsiderable powers of the Soviet state over employment and the migration of population. A turnover of 100 to 200 percent a year in the population of these towns has proved as intractable as putting a ceiling on the growth of the city of Moscow.

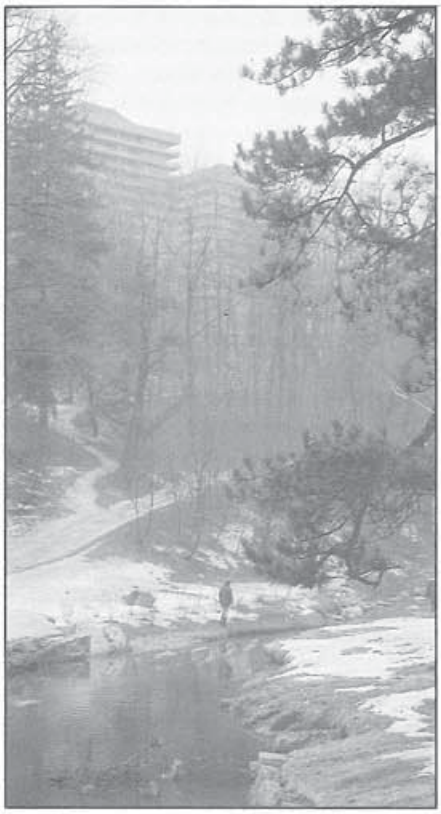
Nothing less than the recycling of nearly all of these towns, now in progress, will suffice to produce more humanly acceptable settlements, which as they are now, represent a step backwards. Many of these northern settlements are now being treated as "construction camps." They are inhabited largely by men who periodically are given leave to join their families farther south. This is an environmental "cop-out", a less goldplated version of the Alaska pattern where intensive northern labours are alternated with periods in Hawaii or southern California.

We must abandon the "construction camp" approach to the design of winter cities as surely as we must abandon the attempt to create synthetic southern environments in the north. We must remember that we can fashion our urban environments closer to our hearts' desire. When we speak about the "livable winter city" we are talking about concepts that can be formulated in terms of design, that can be tested and that can be executed.

CLIMATE, LIVABILITY & PLACE

MICHAEL HOUGH

Toronto's ravines are its most identifiable natural feature, shaping and supporting its recreation that changes from season to season.



IN 1850 DR. JOHN GORRIE UNWITTINGLY SET OFF A CHAIN OF EVENTS that would forever reshape perceptions of environment in cities. As a physician working in a small Florida cotton port, situated on the Gulf of Mexico, he had been asked to report the effects of climate on the population. Among his recommendations was to establish a hospital to treat the town's endemic fever that sailors and water-side workers endured every summer. Gorrie had noticed the malaria seemed to be connected with hot, humid weather, and so he began by using ice, circulating the cool air around the rooms by means of fans. Ice, however, was prohibitively expensive, so he constructed a steam engine to compress air, which when cooled, rapidly expanded, and could then be circulated through a room. Gorrie's subsequent commercial venture ended in failure and he died in 1955, a broken and disillusioned man. Ice making and refrigeration machines, however, evolved from his invention and were used to transport frozen meat from Australia and for making German beer. The domestic thermos flask and refrigerator for keeping food and drink cold, became the precursors of the modern air conditioning unit.

Its effects on cities have been profound. Today more than any other technological innovation, climate control shapes ways of living and urban form. Life in northern cities has become a series of air-conditioned experiences as a solution to cold and hot weather. The home, the office, the movie theatre, the school, the bus that takes the children there, have all been sealed off from the outdoors. Indoor climate has created a world that is divorced from issues of health and comfort in the outdoors. Proposals for covering entire cities with geodesic domes continue to be discussed seriously as a solution to northern climates which takes the problem a step further to the ultimate utopian solution. Where lifestyles were once influenced by climate, climate is now adapted to suit lifestyles.

Los Angeles region:
transforming the desert into the Garden of Eden. The utopian dream realized at the expense of nature. The contrast between the lush plants imported from high rainfall regions elsewhere and the native vegetation of the hills beyond is a powerful expression of climate ignored, lack of connections to the place, and nonsustainability.
Florida in California.

ISSUES OF CLIMATE TRANSFER

THE EFFORT TO BECOME INDEPENDENT of the variables of the environment has, by today's standards, been successful. Most people can live in comfort wherever they happen to be. Cultural responses to the variations of climate have traditionally been a primary determinant of regional identity, as the diversity of built form in places like Switzerland, Sweden, and Norway clearly show. But the transfer of climate and environmental experience from their places of origin is a universal phenomenon of contemporary urban life, and a major contributor to the sense of placelessness that massive urbanization has helped create. The perpetual sunshine and unchanging temperatures of the northern urban entertainment shopping complex have had a profound effect on perceptions of place and environment. Urban life becomes a series of isolated worlds of experience denying sensory contact with the variables of climate and the environment as a whole.

Some principles for design

Open spaces are the controlling elements of climate in cities. Of great importance, however, is the unassailable fact raised by Roger du Toit in a previous article, that winter livability has to do with many factors besides climate; factors that include a variety of urban functions such as streets and traffic, convenience, social values and behaviours. Recognizing these connected issues, however, the following principles are important to consider.

Hills and valleys, rivers and streams, open water and plants determine local climate patterns and affect, in great measure, the environment of the city. Although the extent of this influence may be local, the retention and enhancement of natural features for climatic reasons are essential parts of open space planning. Where the unique land characteristics of a place have been acknowledged and integrated into the city's physical and social fabric, climatic benefit and regional identity are established. One example is Stuttgart where the hills surrounding the city have been maintained as forested parkland and agricultural production. Their purpose is to ensure the unimpeded movement of Katabatic winds that flow down the vegetated slopes and minimize air inversions.

Another example is Ottawa, whose special image as a national capital lies in both in its natural and cultural patterns. Its sense of place is revealed by the parliamentary Precinct and other important buildings that crown the escarpment and overlook the Ottawa river, the greenways and canals that wind their way through the capital. These natural and manmade features provide the basis for celebrating the outdoors in ways that are entirely in tune with the city's climatic environment. Winter festivities, skating to work on the Rideau Canal, the changing character and drama of the river, summer walks and cycling, year-round recreation in Gatineau Park, are all part of a cultural way of life that has been shaped, in part, by landscape and climate.

Vegetation and water have a major effect on the maintenance of an equable micro-climate within cities. Since the large areas of paved and hard vertical surfaces in the city generate the greatest heat in summer, establishing canopy vegetation reduces the adverse effects of the urban heat island. Dense canopies are much more effective than current practice often allows, where trees are seen as individual specimens. In Davis, California, it has been found that trees lower street temperatures by 10 degrees F. in summer, reducing electricity used for air conditioning by half. The retention of water and ponds in parks is also critical to restoring the energy balance by direct evaporation. The protection of forestland and natural waterway systems also increases the amount of overall surface areas available for cooling.

As an example, Toronto's deep and densely wooded ravines, created by stream erosion cutting into plateau land, are today unique remnants of the original forest landscapes that once covered southern Ontario. They

***Stuttgart:** a city that acknowledges its landscape and climate. The forested slopes maintain the Katabatic winds that modify the city's micro-climate and reduce air inversions.*

***Edmonton:** a densely woods courtyard landscape is an appropriate response to cold and the creation of benign micro-climate.*

are one of the key elements that make Toronto different from other places, both as identifiable landscape form and for the uniquely adapted seasonal recreation they support. Protected by dense woodland below the level of the city that eliminates winter winds and provides a markedly cool summer climate, they are ideal places for winter skiing, walking and jogging, bird-watching, and nature study. Like Ottawa part of Toronto's recreational and cultural life has been shaped by climate.

At a very different scale and context is the University of Alberta in Edmonton. Like much urban development in the prairie north, it's early form had been dictated by conventional grid-iron block planning, its buildings isolated from each other by large open areas which reflected prevailing atti-

***Ottawa:** climate and landscape help shape cultural life that responds to the contrasts and opportunities of the seasons.*

tudes and nostalgia for the wide open prairie landscape that had long disappeared. One of the most critical objectives of the 1960's and 1970's major expansion plan was to create an appropriate campus environment for living and working during the winter months. The inappropriateness of the existing model of urban development for the climate and environment of the prairies was expressed by people cutting through buildings (not designed for the purpose) to avoid the unpleasant conditions created by unimpeded winds gusting around tall structures, and the permanent shade cast by ill-placed buildings.

Two critical factors affecting winter design in Edmonton are very cold winds and low sun angles. A variety of climatic criteria became guiding principles for growth. Among these were the principle of campus expansion by infilling rather than by additional land acquisition; permitting academic buildings to be linked by sheltered pedestrian routes during winter months, reinforcing a high mix of uses, social integration, and accessibility to services and functions that isolated buildings tend to discourage; north siting of tall structures on open spaces to ensure maximum sunlight; locating outdoor activity areas on the south side of buildings: adding low buildings to reduce wind downdraft and gusting; planting in courtyard spaces and walkways that used a dense woodland approach to vegetation as a key to wind control, rather than the traditional isolated horticultural planting.

There is much to be learned about the effects of natural systems on city-wide climate and how the scientific data that have been accumulated may be applied in determining optimum patterns of open space. We must, however, be careful to avoid the temptation to create cookie-pattern solutions for every urban situation. Many planning theories in the past attempted to seek standard solutions to cities, ignoring the individuality and uniqueness of each city and each place. Individuality, in both physical and cultural terms, binds together the imperatives of climate and regional identity, imperatives that lie at the heart of sustainable and livable cities.

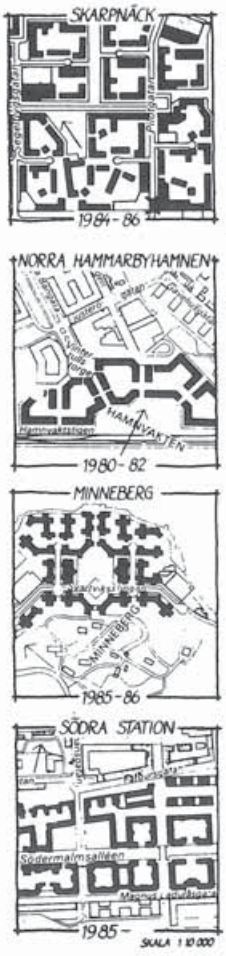
EMERGING

URBAN DESIGN FOR THE NORTH

Norman Pressman

THE HUMAN ENDEAVOURS TO GENERATE CLIMATE RESPONSIVE northern urban form are part of a relatively recent phenomenon and field of investigation despite the fact that both urban and rural life have existed for centuries in northern latitude settlements. These attempts - and the international winter cities movement - have firmly established the need for explicit, systemmatic inquiry which analyzes national and local strategic action directed toward improving the comfort and life-styles of northern dwellers. Despite a lengthy history of winter living, particularly in rural areas, the related literature has been sparse, lacking emphasis on how to deal with newly developing problems stressing human comfort indoors, out-of-doors, and in that elusive in-between zone of "inside-outside".

Since the international tendency to "atriumize", "galleria-ize" and "privatize" urban space, regardless of climate or geographic location, city life has become more sterile resulting in a stead-state thermally-neutral environment (constant temperature and humidity) where there is little meaningful relationship between outdoors and indoors. According to Prof. Jouko Mahonen of Oulu, Finland, "the high international tide of this movement seems to be over". Such phenomena spawn buildings and spaces epitomizing "placelessness", usually isolated from prevailing cultural and landscape factors. Therefore, in the face of accelerated architectural homogeneity (in arctic as well as temperate climatic zones), spacial efforts will have to be made if regionally-based and culture-linked, northern urban form is to ultimately emerge, possessing symbolic meaning and a true sense of place.



4 recent Stockholm-region projects which utilize the enclosed residential courtyard (and gridiron pattern) as the major design idea. Improved micro-climatic conditions result as well as the potential for better social networking.

Source: "Building Stockholm" Swedish Council for Building Research, Stockholm, 1986.

The physical environment of the winter city can either support or impede the formation of social activities in outdoor public space. Social activities are particularly important to mental health in winter due to isolation and other multiple stresses that impact on people during the cold, dark season. Life in urban public space can be encouraged by providing a high quality aesthetic environment.

Urban public space should be designed using micro-climatic principles that block winter winds and allow sunlight to penetrate between buildings. Application of these principles can extend the summer and marginal seasons and even allow summer-type activities (e.g. sitting in the sun) to take place on mild winter days. Architects Ralph Erskine and Boris Culjat from Sweden have suggested that the outdoor season could be extended by up to six weeks by simply using micro-climatic planning and design principles.

While not all "summer" outdoor activities must be abandoned during the winter, micro-climatic control of the environment is nevertheless, essential if some human animation and life is to be retained outside.

IMPROVING COMFORT AND ENHANCING WINTER LIVABILITY

To improve quality of life in winter cities, we shall have to reduce inconvenience, offer protection from the excessive negative stressors associated with winter, and optimize exposure to its beneficial aspects. This can be approached at three scales:

1. Micro-scale (dwelling unit, cluster)
2. Meso-scale (city block, street, neighbourhood)
3. Macro-scale (town, district, metropolitan area)

Optimizing exposure to the beneficial aspects of the winter season demands a more creative and innovative approach since only a few excellent case-studies express a positive attitude toward winter. Present experience, in most cities throughout the 'winter city' world, has attempted to create "summer city" conditions throughout the year instead of highlighting those characteristics which are unique to norther communities.

The main principles which are to be incorporated should be year-round useability, contact with nature, user participation, and cultural continuity - implying that the chosen shapes, volumes, textures, colours, materials and urban spaces between buildings should reflect the landscape and cultural heritage of the environs.

NEWLY EMERGING GRAMMAR FOR THE NORTH

It is not only the broader theoretical tendencies of international planning and design that will influence a "new grammar", but also principles which have evolved over centuries of town building and urban life. Among others, the following trends constitute a powerful driving force in the evolution of a new northern grammer.

Compact urban form

Inhospitable surroundings should be "walled-out" by clustering buildings and using vegetation, windscreens, snow fences, shelterbelts and a spatial configuration which is relatively compact. These techniques will assist in achieving a favourable micro-climate, which can be improved through appropriate and skillful fitting of buildings to the natural terrain.

Orientation of footpaths, streets and dwellings

These should be designed so as to mitigate against adverse climatic forces impinging on the site and to maximise passive solar gain wherever possible.

Enclosed residential courtyard concept

By arranging multi-family dwellings around interior courtyards, a more pleasant micro-climate is produced whereby wind turbulence and velocity can be significantly reduced. Resulting privacy will minimize intrusions from noise, traffic, etc.

Climatic simulation modelling

During the initial design stage, wind tunnel testing and shadow pattern impacts (through application of the heliodon) are advised. The results should be integrated within design development and urban policies.

Energy efficient principles

District heating (where most economical for designated areas) should be considered. Residential clustering, higher densities, mixed land-use, multi-purpose buildings, reduced dependence on automobile movements, increased emphasis on transit and walking, and a spatially cohesive town centre linked to major activity and community-oriented nodes will produce the best energy-conserving and livable environments. Heliothermic concepts should be stressed.

High-order community services

To maximize satisfaction of personal, family and group needs especially where winters are lengthy and oppressive - both "hard" and "soft" community services are prerequisites to promoting life-style diversity and social well being. (This includes indoor as well as outdoor recreational facilities for all age groups).

Mixed-Use Streets and Buildings

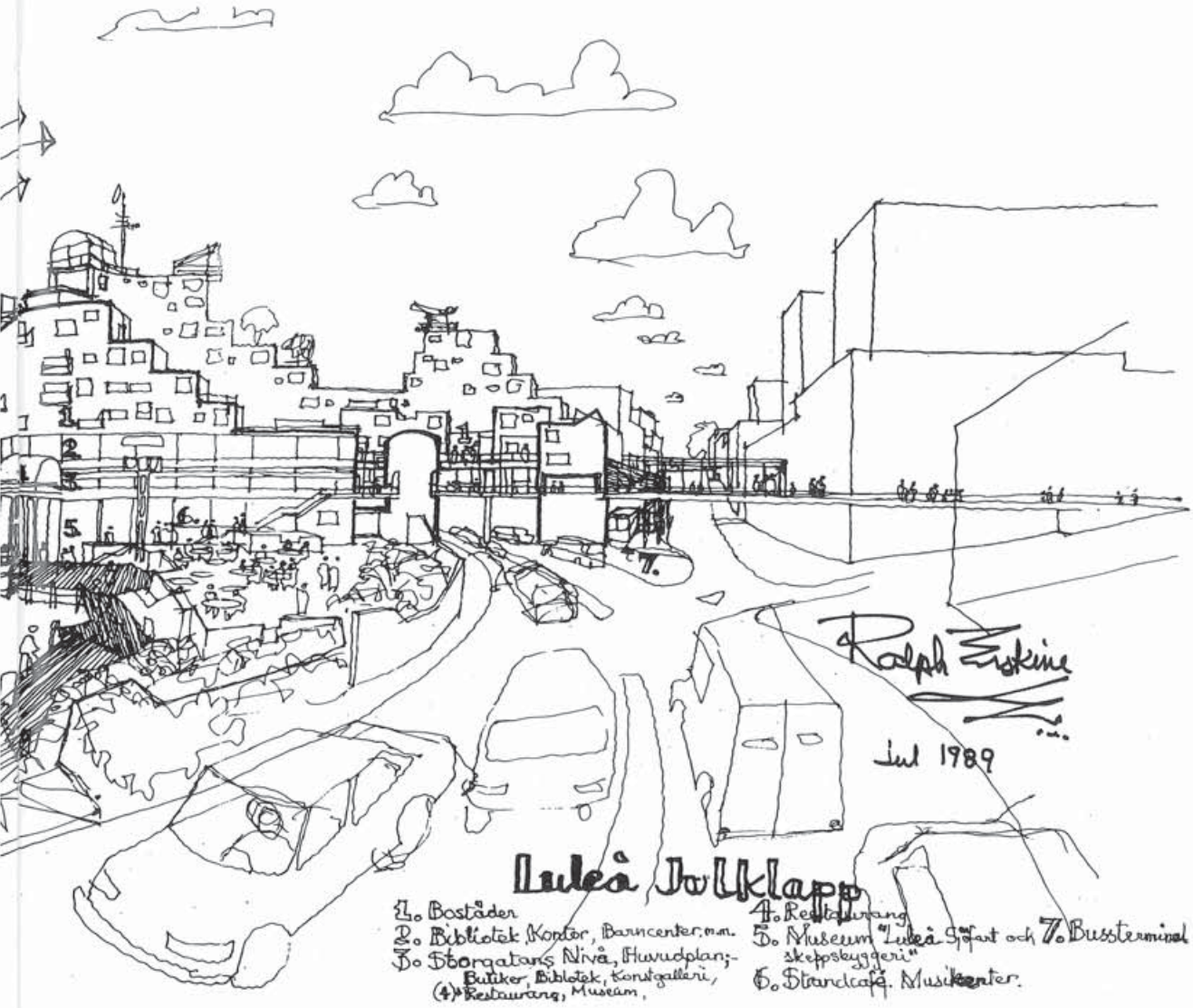
Buildings integrating office space, shopping facilities, housing and recreation/entertainment functions combine to reduce the need for spatial displacement. Mixed-use streets, similarly, create a richer urban texture thus forming a vital determinant of activity and civic life in towns.

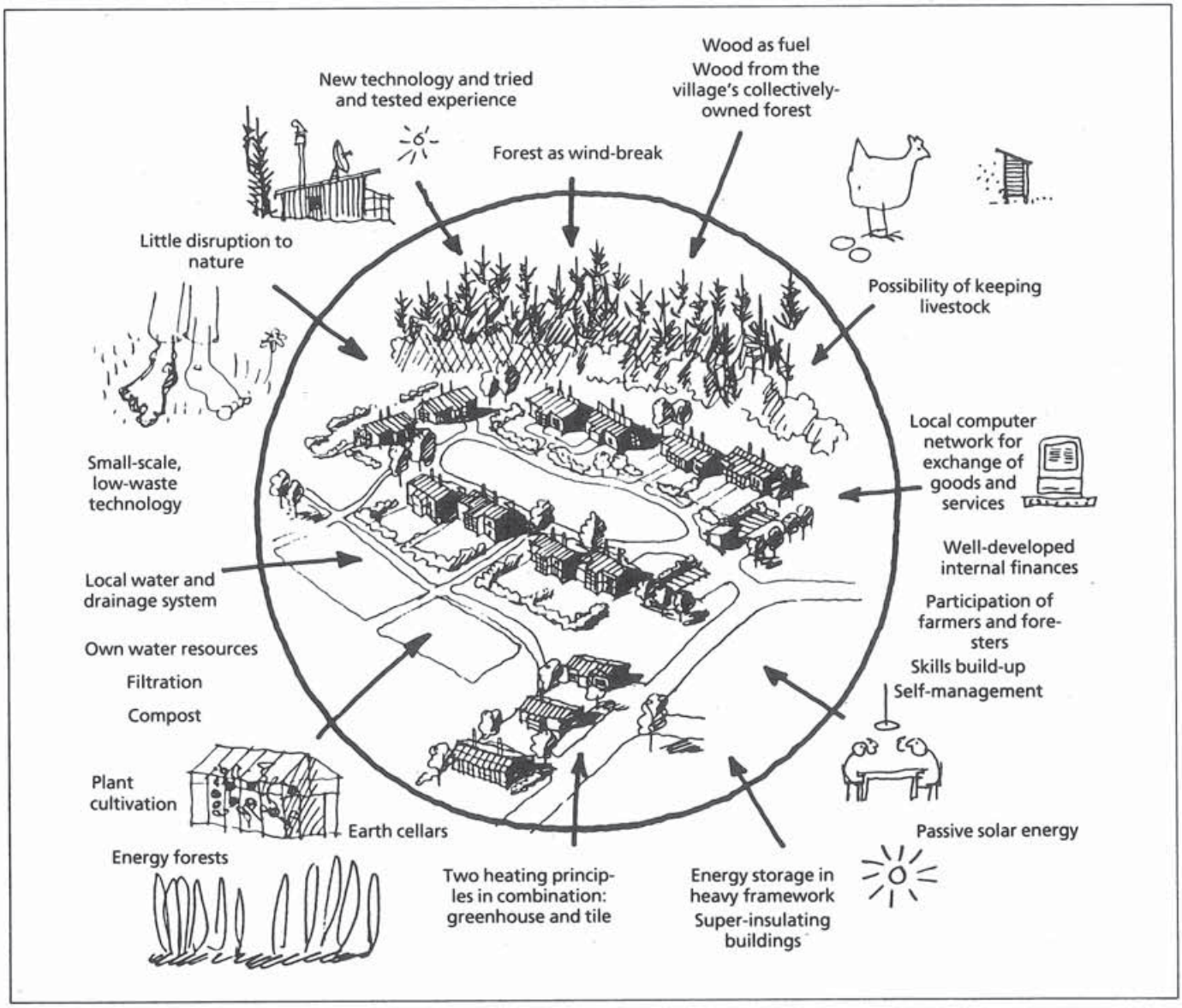
Total or partial climate-protection

In certain high-use areas, encourage the connection of buildings via gallerias, arcades, passages, canopied (or even glazed-in) pavements and pedestrian networks leading to primary nodes of activity such as shopping, schools, cultural centres and transit stops (with well-designed, heated bus shelters). Simultaneously, create welcoming outdoor public space for use in marginal seasons.

Social determinants to form the design backbone

For meaningful, user-responsive designs to evolve, it is imperative to fully comprehend family structure, friendship networks and patterns, and community goals, and include them as determinants of community form.





Develop an "aesthetic for the north"

Buildings and open spaces - including landscape treatment - should possess an aesthetic which reflects or fits the land and surrounding climatic and cultural constraints. Sensitive design always derives from materials, sense of purpose, scale and the built and unbuilt features. This should be consistently applied and embody an inherently northern character respectful of the potential and actual users.

Test innovative ideas

New urban developments provide opportunities for implementing and monitoring progressive innovation in the social and physical realms - especially in land-use concepts and open space planning, geared to climatic demands. Advantage should be taken of such opportunities in site selection, planning and urban design. Competitions are excellent vehicles for innovation.

The search will continue for new built forms, more appropriate to northern requirements than the current conventional vocabulary - largely predicated upon formal, classical elements of architectural composition and urban imagery. New set pieces or "objets" will be identified with such composite buildings and spaces interpreted as solution-directed instruments based on the most progressive "scientific" (future) and "historic" (past) principles of urban spatial organization. They will be viewed as a type of contemporary vernacular which simultaneously collaborates with the future and invokes the past. All of the most valuable sources of inspiration will be analyzed and harnessed in the attempt to mediate between organic regionalism and internationalism, on the one hand, and romanticism and pragmatic realism, on the other. One can expect a wide variety of expression embracing a range of ideologically rooted approaches merged with elements of practicality, playfulness, folk tradition, and an association with classical concepts.

NATURE ADAPTED DESIGN

IF YOU CAN'T BEAT THEM - JOIN THEM!

ANNE BRIT BORVE

Nils Kjaer, the Norwegian author, has written in his Letters from Brekkessto ("Epistler", Gyldendal 1949):

"The harbour doesn't take up much space in those narrow chasms. For up on those hills no-one has dared to build for fear of the roaring winds. And that is why all those small, friendly little houses cuddle up together and only a few, out towards the coast, have been brave enough to grow up to be two storeys high."

This description of the author's home on the coast of southern Norway was written at the beginning of this century (1908 - 1924). Kjaer has written much about how our human endeavours to build often contrast with nature's own creations, both in function and volume, but which nevertheless have adjusted to their environment.
Through his discerning perception and engaging descriptions of his world he has managed to awaken our awareness of the gravity of that which we humans do to our natural environment.

Yet if we try to find those pictures today in Norway or in other countries, we would find them only in those few untouched places where time has stood still, where no-one has built, sometimes where homes have been left desolate or perhaps are just awakened to life during the short summer holiday.

The structures of our time scream out for attention in sharp contrast to nature, arrogant, brazen houses that no longer "cuddle up together". We live in a society that has forgotten the laws of nature and ignores knowledge handed down from generation to generation. And this is happening ... despite all the wise words about ecological balance and the need to conserve energy, and despite our constantly expanding scientific knowledge.

We build as if we lived in an undifferentiated world. Our lives and homes are dedicated to the latest fashions, not dedicated to the demands of our environment, changing with the seasons and with time.

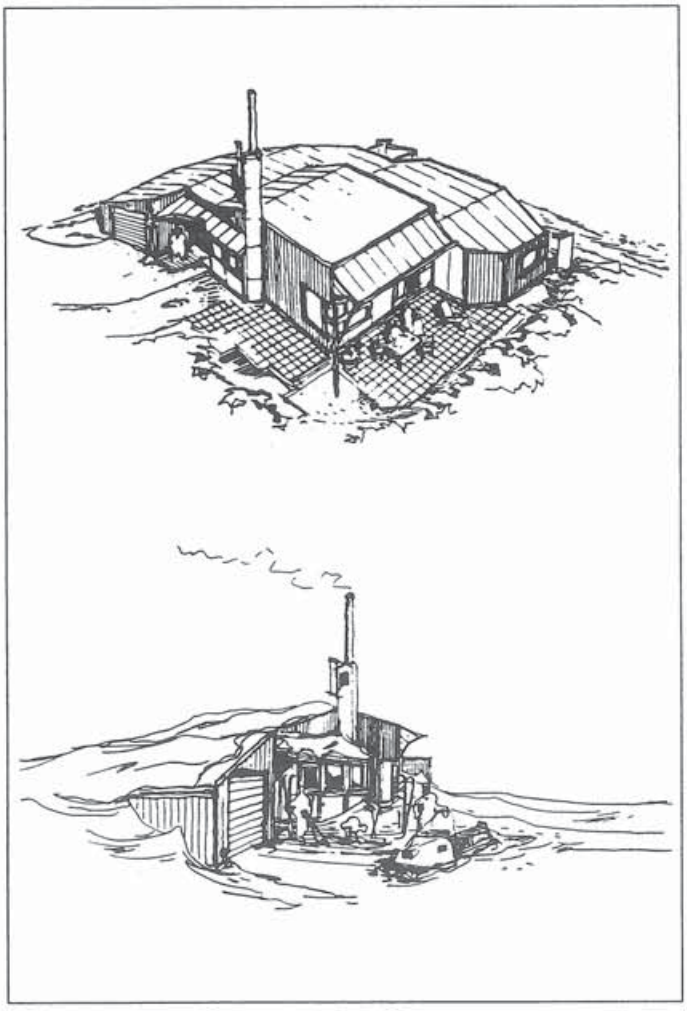
In the Nordic countries, we plan as if it were summer all year round. These fashionable, decorative houses surprise us again and again with heavy maintenance costs and expensive repairs. Although we read of environmental damage in Norway and other countries, the criteria for repairing this damage varies. It may be cost evaluation, a lack of skill or extensive damage which will influence a decision to restore the environment.

We do not yet have the skills to win the battle against nature. To achieve the best possible results we need to adjust our buildings to the demands of our natural environment and play along with the multitude of demands which the elements place upon us.

ENERGY SAVING AND THE ENVIRONMENT

Energy saving today is more than just glass, insulation, ventilation, calculations for heat saving and other new technologies. The World Commission on Environment and Development's report "Our Common Future" takes up the subject of energy consumption and the consequent damage to global climate without going into detail about how planning and building contribute to waste and damage. Our responsibility as professionals is to preserve local skills and holistic concepts, passed down through the ages. This is vital when planning for ecological balance between man and his natural environment.

In all that has been written about energy saving only clearly measurable results are considered valid. The charm of environmentally friendly windmills may make popular headlines, but too many other aspects of ecological planning are rarely, if ever, considered; such as energy loss through disintegration of the outer membrane of a building due to rain and wind, loss of heat through leakage, snow drift and accumulation and extra running costs caused by poor design. Little attention is paid to available research about building climactically adjusted housing in areas with different geographic, climatic and geological conditions. One needs to come up with measurable data to be convincing. But comparisons are not always available and it is not always easy to come up with exact calculations about a reduction in snow accumulation or wind damage.



We do, however, have practical examples of local traditions in planning and building using energy saving techniques and environmentally friendly concepts which do give an improvement in the quality of life.

Several planning analyses in central Europe deal with the need for fresh air in cities to reduce pollution accumulation. These conclude with planning guidelines and give some interesting examples of methods used.

In addition some research done into building in harsh climatic conditions in northern Norway indicates some of the criteria which should be taken into account.

The Bo i Nord exhibition has had a detailed set of guidelines for climatic adjustment. Experience in the meantime has convinced us that designers lack the necessary skills. In some examples climatic adjustment is considered only after house type and plan form have been chosen, which basically only rectify those unfortunate consequences which the building itself has created. There are also some good examples in which skill and intuition solve some, but not all, aspects of climatic adjustment.

If we wish to find examples where environment and climate adjustment are the main criteria and are directly applicable in Norway, we need to look to the past.

PLACES AND LIFE STYLES

In the remains of earlier settlements and buildings we find a choice of site, form and materials which display a unique craftsmanship in adjusting to the Nordic climate.

The houses along the southern coast of Norway, facing the open sea, are built in small groups hidden in protected lee zones in the landscape. Neighbouring buildings and jutting out rock formations create a wind break for sheltered yards and public areas.

An example of this is the house in the Jaer district on the west coast. It is exposed to heavy wind, rain and sun which leads to degradation of the outer protecting facade. The gables largest area is protected by external storage and wood sheds and living areas are given further shelter from the outside by small interconnecting rooms leading from the porch. The entire building is surrounded by closed porches or galleries, which provide a slow transition from cold to warm zones.

There are some examples up along the west coast where houses are placed so that the shortest wall, consistently faces the direction of the strongest weather. In the fjords and valleys beyond we again find the same phenomena where closed gable walls meet the incoming weather. Here we find that both the trade winds as well as the specific local mountain draughts and air streams define the orientation of the building.

Further north on the coast of Tromso and Finmark we find that entire farm activities take place in one single buidling. Homes, workshops and outhouses are under one roof because nine months of the year snow and heavy wind stimulated the need for more space for indoor activi-

ties. Outdoor activities and sunny yards have been less relevant in that climate.

Inland we find settlements on the sunny lee zones just below the more exposed areas, yet above the cold air stagnation on the valley floor. Buildings in mountain areas and inland plateaus are localised in small dales and hills to avoid areas where cold air settles.

What has happened to these old skills that took account of local variations? Today we tolerate worsening conditions without even trying to achieve the quality that we know is available.

The temperature difference between valley floor and the warm, sun catching lee slopes can be a high as 10C to 15C. The floor of the valley may have far higher wind frequency and strength throughout the year than up in the lees side. Understanding these factors can give large energy savings as well as improving life quality and usage of the outdoors.

It is perfectly possible to map weather and local climate when planning and shaping our buildings. This country has large topographic variations which means that meteorological observations can rarely be used directly in evaluating a site. This data must be considered together with a regional landscape analysis and contribute to an analysis of the actual site.

There are five landscape types with different climatic conditions which affect human activity and settlement: open plateau landscape, open hilly landscape, mountainous landscape, steep inclines and valley landscape. NBI (Norges Byggforskningsinstitutt/The Norwegian Building Research Institute) report Nr. 14, 1978 provides examples of the definition and analysis of these climatic zones.

Any change in the shape of the landscape in the form of buildings or construction will create new variations in the climate. It is possible to learn how to make a prognosis of the effects of the changes we make.

Studying how snow collects around buildings can tell us how one or more houses change the wind conditions on a site and create protected and exposed zones and wind tunnels.

Studying the frost damage to potato plants can tell us something about cold air stagnation in certain areas.

Vegetation and features of the physical landscape can tell us a lot about wind and weather in the form degradation of undergrowth patterns, wind pressure forming the crowns of trees, exposed grass roots, erosion and a collection of loose top soil in lee zones and so on.

Those who still live in tune with our natural environment can tell us a lot about such small details which define local climatic conditions. Planning economic energy use cannot be done by studying maps and meteorological data alone, much can be gained from studying the area itself and making use of local skills.

THE PRINCIPLES OF PLANNING

There are different principles which apply to building in the five different types of landscape and their characteristic climatic conditions. These principles are presented in the NBI Working Report nr. 26, 1981.

Climatic conditions can be improved with protective walls to reduce the effects of wind and weather or opening up the area to create wind tunnels and air circulation which counteract stagnation.

Different human needs lead to different effects both on the immediate neighbourhood and the surrounding district.

Residential areas need to be protected from wind, they need sunny clean air and the least possible exposure to drifting snow. Generally few negative factors are generated by residential buildings. Industrial areas, workshops and construction sites may often require air tunnels to reduce an accumulation of pollution. These sites can often have unfortunate effects on the immediate surroundings and demand careful environmental research to minimize this threat.

All planning and projecting ought to include a full analysis of the climatic changes which they will create. Will the building create an improvement in the local climate by providing wind protection for outdoors areas, or will it create wind tunnels and draughts in sunny areas or even block out sunlight? Perhaps the building may even create an accumulation of cold air thus lowering temperatures and extending the winter period.

THE SITE AND FORM OF BUILDINGS

We can create a deterioration or an improvement in local climate by defining how we open, close or guide air circulation. In a harsh climate it is not enough to define how a structure itself is situated. An outer buffer zone should be created to absorb the major influences of wind and weather. In both the individual building as well as the entire area energy can be saved by planning new terrain forms, trees or sheltering walls.

Specific wind patterns which are created around solid built volumes are dependent on orientation, shape, roof type etc. These create clearly defined protected and exposed zones. By using this knowledge we can direct and guide local wind and weather to provide the conditions required in a given situation. Thus we can soften the destructive elements of wind and with vegetation and protective walls further desirable results can be achieved. By specifically shaping the protective barriers we can influence this further.

The shape of the crown of a tree continually exposed to wind can give us a hint about the optimal form of the object we want to build. The exposed side will be leaning away from the wind, the crown bending and the branches stiffened to form a protective wall. On the protected side there will be free spreading lush branches and the wind is guided past whilst the sun filters through.

HOT TIME IN THE COLD TOWN

JAN GEHL

SOCIAL ARENAS IN WINTER CITIES. MANY PLACES AND SETTINGS come into mind. The landing dock for fish and seals in a town in Greenland? A very important social arena. An outdoor Winter-Skating rink in Calgary? The cross country tracks in the Norwegian Mountains? A Concert Hall? A Community Hall? A covered shopping mall anywhere? Removing snow in front of one's house together with the neighbours?

The Streets and Squares.

Among all these various types of arenas I shall speak about one particular setting. The most widespread, and the most frequently used and most important of all the Social Arenas: The Streets and Squares. The Public Spaces. The use of the "City" as a Social Arena in our Winter Cities.

The Public Spaces.

1. THE DANES ARE NOT ITALIANS - but have started to act as if they were!

In the European tradition, life in the Southern countries - like Spain, Greece and Italy - has been oriented towards the Society and the City - with the Piazza being the undisputed centre of culture and life.

The use of the "city" as a social arena.

In this same tradition, life in the Northern countries - in Britain and Scandinavia - has been oriented towards the home and the fireplace. "My home is my castle". (And many candles being the modern substitute for the fireplace).

These different cultural orientations are still evident in areas like Design. Seeking good Design for public spaces, for elegant pavements and outdoor furniture Southern Europe is the place to go. Looking for nice interiors, fine furniture and lamps Danish, Swedish and Finnish Design comes to mind.

So traditionally the Italians went to their civic Piazzas, and the Scandinavians went to their homes for the highlights of their lives.

When in 1962 the Copenhagen Main Street was pedestrianized - as the first such scene in Northern Europe the whole idea of having Public Spaces in Scandinavia was vigorously contested and discussed under newspaper headlines such as "We are Danes NOT Italians. Streets and Squares for people will remain absolutely empty."

However, Copenhagen got her alluring system of carefree Streets and the Danes turned out in great numbers to use these new types of Streets reserved for people and not for cars. Actually it has been found in a recent survey, that the Street Life in the carfree centre of Copenhagen has increased by 300% over the past 20 years. (Bergdahl & Gehl, 1987). During the summer period every city space of good quality is filled to capacity.

Throughout there appears an increasing need for using the public spaces, for enjoying the cities and the activities and people gathering in these civic spaces. There appears to be an increasing need for having access to well functioning social arenas. The societies are changing - and "Piazzas" appears to be in increasing demand.

CHANGING SOCIAL PATTERNS IN A CHANGING SOCIETY:

A number of important changes in our industrialized societies are influencing the patterns for social life and the needs and demands for social arenas.

The households are becoming smaller and smaller. In Denmark the average household around the turn of the century would be 4.9 persons. By 1990 the average Danish household is down to 2.1 (and in the major cities the household size is down to 1.7 persons by now).

Further important changes are going on concerning the working situations and the role of "work" in our lives. Many working situations are due to stress rationalisations, repetitious work and monotony, being empty of satisfaction, creativity and social contacts.

These elements must in an increasing degree be fulfilled during the "non-working" hours. For many groups "Work" used to represent the meaning and fulfilment of life. For many people the non-working hours have become much more important for fulfilment and the meaning of life.

A great variety of social arenas are available - from community house to concert halls, from playgrounds to amusement parks, from cafes to shopping places. The most widespread and most used of them all is, however, the public spaces - Streets and Squares, the "piazzas", the "city".

It is the most accessible of all, everyone can go there, no admission, invitation or membership is needed. Everyone can just go there, stay there, look around, take in the scenery, stay passive - or be tempted to partake in this or the other activity. A wide open ever present and every changing social arena.

Before taking a closer look at the social arenas in the Winter Cities, two important developments influencing city life should be mentioned.

One being the increasing pressure from the car traffic creating endless conflicts with the traditional social uses of the public spaces in the cities. Accidents, fear, fumes, noise and taking up the space needed for human activities. If not checked the traffic (and the parking) will in itself make any use of the city spaces as "Piazzas" impossible.

Another influence being the immense increase in the buying power of the people visiting the cities. An increasing number of people visit the cities and spend more time there because more money is around. Shopping - the spending of money has become a city activity of hugh proportions. This in itself could lead to a livelier and richer city life, with more people coming to town and enjoying each other in the process. However this development tends more often to lead to a situation where city visitors are seen as - and treated as customers only. The inspiration to transform cities into 100% Shopping Centres are becoming increasingly tempting!

Thus not one but three conflicting interests can at present be seen to reach out for the spaces of the cities: A changing Society needs more and better social arenas. The cars want to turn the city into traffic corridors. And the merchants want the city turned into an efficient Shopping Centre.

Winter cities have treated this set of conflicts in two very different ways:

- The Multi season city ... "One city - four seasons"
- The one season city ... "One city - one season"

CASE STUDY A: THE MULTI SEASON CITY

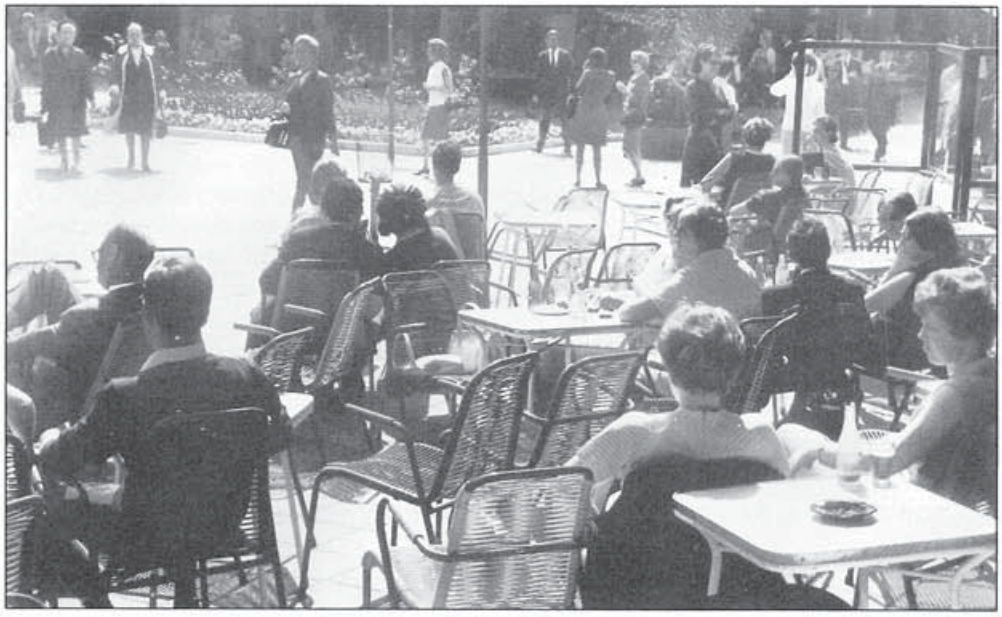
Copenhagen the capital of Denmark, a city of 1.5M has made the decision to stay the way she always was. A flat, low city with almost everything happening at ground floor level alongside public streets, which were always public - and still are.

To accommodate the new needs the city centre has gradually been closed down to cars over the past 30 years. 3 (soon 4) kilometres of pedestrian streets, 60,000 square meters of carfree streets and squares. Furthermore, all streets in the city centre, which are not pedestrianized, have been made into slow speed, low traffic volume streets. Car parking in the city centre has been reduced by some 3-4% per year - over 20 years. The Copenhagen traffic peaked in 1972!

The city centre policy could be labelled. "People oriented" Though the city population has remained steady over the 30 years in question, the central city spaces has seen a steadily increasing use during the summer period. The lesson from Copenhagen is, that if public spaces of

good quality are available they will eagerly be used - because we need these social arenas very much in our present day society.

Copenhagen is a summer city. The main street will have 65,000 pedestrians on a good summer day. On an absolutely awful winter day with snow and freezing temperatures the street will carry some 30,000 people. Some 50% less than the optimal summer day.



The people sitting and standing in the city on a winter day will indeed be very few - while on the good spring or summer day every single space will be filled to capacity. An average of 3,500 persons standing and sitting in the downtown public spaces at any one time between 10 a.m. and 6 p.m.

Copenhagen is indeed a 4 season city. The spring nice and full of promise. The summer splendid (when it is not raining). The fall tolerable and the winter the time for enduring the climate. And waiting for the good season. The city definitely has a good season.

It is extremely nice on the good days because it allows you to enjoy the good parts of the climate PLUS a rather nice town-scape. Further this model is cheap and has low cost maintenance. This type of city does not use much energy for cooling and for heating. The citizens are asked subtly to look after their personal comfort.

Endure the winter in order to have a really enjoyable summer!

CASE STUDY B: THE ONE SEASON CITY

In a number of winter cities the conflicts between social activities, traffic needs and commercial interests have been approached in more radical ways.

And the problems of "winter" have been addressed in the same process. One gets the feeling that the winter problem has been the major motivation - or in some cases may be the pretext for the radical reshaping of the cities.

"The indoor city", "The underground city", and "The Skyway city"

Basically these "We have solved the winter problem" cities come in three versions:

"THE INDOOR CITY" ("THE SWISS CHEESE SYNDROME") (Creating extensive systems of shopping arcades and galleries inside the buildings/urban blocks. Turning the "back" to the streets. Example: Eaton Centre, Toronto but nearly all western cities have used this method of creating interior shopping concourses - making voids and holes in the city fabric).

"THE UNDERGROUND CITY" ("The mole syndrome") (Taking a major part of the city functions underground and linking them with extensive systems of underground passages and shopping galleries. Examples: The Underground cities of Montreal and Toronto).

"THE SKYWALK CITY" ("The high wire act syndrome") (Taking a major part of the city functions upstairs and into the interior of the buildings and linking the various buildings by bridges. Examples: The skyway systems of Minneapolis and Calgary).

The cities which have approached their city centres in these drastic ways can mostly be found in northern America and are generally characterized by heavy traffic pressure, heavy pressure for commercial expansion and climate problems aggravated by the city planning. Tall buildings have taken the sunshine away from the streets and created gusting winds which really have made the winter "felt" as a major problem. A somewhat self-inflicted winter problem, one could subtly add.

Moving the pedestrians off the street, indoors, downstairs or upstairs is a traffic separation system. Leaving the streets for the cars. Moving the pedestrians indoors is further considered a very efficient shopping concept. Keeping the customers warm/cold and out of the way of the traffic hazards. And furthermore these new systems can be totally controlled by the merchants.

The control of the spaces move from public to private interests. Only certain shops, certain categories of people and certain types of "harmless" (sales-conducive) popular

activities are allowed in, down or up!

The privately employed security guards sees to that.

The suburban shopping mall has been turned to a concept for city centre planning. The glassed in-one season- "winter city".

On the PLUS side is the fact that you are removed from the hazards and pollution of the traffic.

Happy merchants, no cars and no cold, wet or windy days anymore.

On the NEGATIVE side more problems arise.

The systems are costly and heavy investments are needed thus you must have the customers away from the streets and into your systems. No room for social experiments here and no time for waiting for the people to find new exciting ways of using their cities. An instant inflow is needed.

The systems are expensive in maintenance and natural resources. Energy is needed for heating and for cooling.

A doubling of movement systems have been created. The city streets are still there, but street life is by now drained out. Shops located upstairs or downstairs do not vitalize the streetscape. So the streets tend to be deserted by people and shops and turned into uninteresting, underused corridors of movements. Walking these semi-emptied streets after dark is no piece of cake either. (And walking the deserted indoor systems just before they close at midnight is not very pleasant either).

Adding to the slight uneasiness may be the fact that nearly all of these indoor systems make orientation almost impossible. You never have a clue about where you are in the city ... or in which city you are. The walkways meander happily in criss-cross patterns in and out of the street grids.

Because the Shopping Mall concept is universally used you are also constantly in doubt as to which city you are actually visiting: Same shops, same decorations, same piped music, same details and same smell of french fries as in all the other super markets and Malls you have ever been to.

As all privately controlled shopping places these glassed in winter cities work poorly as social arenas. You definitely get the idea that you are not really welcome to sit, to stand or hang around. The benches are so few and so badly placed that they convey the message keep moving, keep shopping.

As for spontaneous, popular activities street vendors, street music, street artists and the general exchange of viewpoints and opinions (which in Copenhagen is such an important part of the attractions in the street scene) these glassed in "cities" are definitely not the place.

So far, these new Winter city concepts has not added any new fabulous dimensions to the social arena question. On the contrary they have succeeded in ruining quite a number of hither to useful social city arenas.

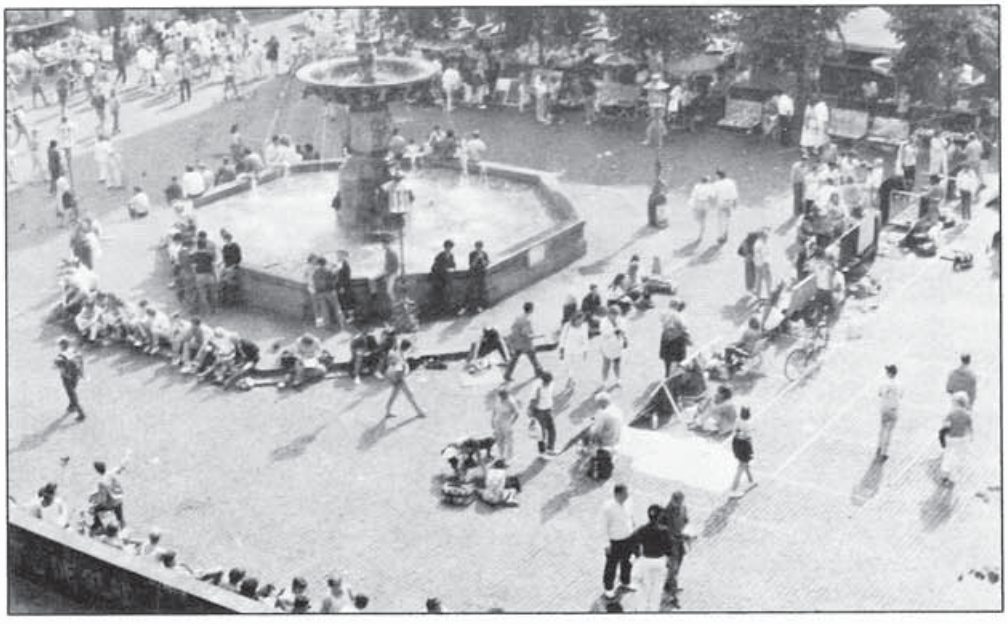
The new glassed in winter cities "have taken the problems of winter away." Unfortunately and here comes the biggest drawback of them all - "they have succeeded in taking all the joys of the good days away also".

A once four season city - has been turned into a one season city, preventing the enjoyment of the good days and the celebration of the seasonal differences.

Quite a price to pay for protection on a few days. And quite a price to pay especially in the winter cities where the pulsation of the seasons can be seen as one of their major attractions.

THE "THIRD" SOLUTION

Two models. Two approaches. Somewhere between the summer oriented and the winter scarred one a THIRD MODEL ought to be developed.



A model which makes an effort to protect against the very worst parts of the climate without ever losing sight of the all important attraction of the northern cities: The seasonal changes and especially our immense love for the good season.

Using the word "WINTER CITIES" is actually misleading. It would make much more sense to talk about our northern cities as "SUMMER CITIES" or every more precise "SUMMER CRAZY CITIES".

Naturally there are regional differences here and I speak with the voice of a Southern Scandinavian (a location somewhat north of Edmon-

ton, Canada). Soft low sun, long shadows, a very long, very dark, very sunless winter with a lot of wind cooling down the people outdoors even if the temperatures are not very low. In short, a long, dark miserable, sunless winter followed (hopefully) by a wonderful spring, a short wonderful summer and mixed fall.

Because the winter is grey and dark and the summer sunny and green some strong climate determinated cultural patterns have developed. Sun, Summer and Greenery. The entire culture is rotating around these three.

Sun is all important whenever it is out. I do not know about mad dogs but Englishmen and other "winter sufferers" have good reasons to stay out in the midday sun. And they do. A general cultural orientation towards the summer is evident. (In Denmark nearly 50% of the folksongs talks about the joys of summer and sunshine. And the few winter songs inevitably ends by assuring that spring is just around the corner so just WAIT).

A general orientation towards greenery, flowers, gardens and nature is likewise a strong northern cultural trend. When the plant season is short everyone wants to enjoy every minute of it, to be close. Row-Houses and detached houses are found in Europe only in the northern countries. Let the Italians have their city flats if we can have our Nordic gardens.

One of the greatest joys of living in the North is actually the pulsation of seasons.

One of the reasons for the immense popularity of the northern summers are the distinct differences between the social life in the two seasons.

The winter - traditionally - is the season for the more formal organized social events: The season of the "time managers":

School and education
Theatre and concert season
Meetings and associations
Dinner parties at home

The social winter arenas being school, university, cultural institutions, community buildings and the homes.

The summer is - traditionally - much more fun. It is the season for the informal, spontaneous social life. The carefree season.

Kids playing in the streets
Small talk over the garden hedges
People watching and bench flirts
Lying about in the parks and on beaches
Garden parties and bonfires

The social arenas being a wide range of mainly outdoor locations.

Streets and squares
Parks, playgrounds and gardens
Amusement parks

No wonder then that the summer is so immensely popular with the northerners. All the small unplanned, informal social activities is in itself a symbol of life and vitality.

A rebirth - every year.

Returning now to the question of social arenas in the winter cities (characterized by their strong summer orientation and the very unique social patterns of the summer season) it becomes evident that the Glassed-in Winter City solution (which does away with the summer and the seasons in the process) is in no way a solution to the Northern social and cultural patterns. The "Summer" city actually comes much closer.

Yet somewhere between the two new solutions, what will improve our cities may be found. Of course by sensitively using new technology and new materials we may come up with solutions which will secure us a city which works extremely well as a social (and commercial) arena in the good season, and yet offers some protection from the worst parts of the winter climate.

It is alas difficult to find examples showing how this could be done in a city scale.

However, in the area of housing we already have quite a few useful examples. We have "summer oriented" housing schemes which works in the summer and ignores the winter. And we have "winter oriented" schemes with glass covered interior streets or other types of internal communication spaces. Concerning these two models we know, that the "Summer schemes" generally works much better than the "Winter schemes" because the summer is the season where social networks are most easily established. We even have a saying concerning housing areas in Denmark "If it works well during the summer, everything will be well". The good memories of a nice summer, will keep the inhabitants occupied during the bad season.

As for cities I have one example which can explain the principle "The Parisian Sidewalk Cafe". During the summer the open air sidewalk cafe is sprawling on the Sidewalk of the exiting Boulevards of Paris. During the winter the sidewalk cafe is still sprawling on the very same location but it is a glassed in sidewalk cafe.

So, one system, one street, one shop, one cafe, one location but two "overcoats" - one for summer and one for winter a flexible system which, and this is the main point, respects the city fabric. AND the seasonal changes. Elegant. N'est Pas?

Examples are seemingly scarce, however, the main point is the way of thinking. To think not in summer or in winter but to think about combinations of solutions which will respect the culture of the northern communities.

So something can be done for the social arena through building and construction. And let us so do. In a sensitive way, respecting seasons and culture. I would like to challenge the winter cities of the world to do much more to celebrate the uniqueness of the winter cities -to celebrate our seasonal changes.

Please give the winters a chance to be a good time of the year, by giving the people a chance to have a good winter time - together.

ISSUE #1
AUGUST 1990

WCA UPDATE

I WAS PRIVILEGED TO AUDIT AN enthusiastic dinner discussion between three WCA members during our recent Annual General Meeting. (Art Buck, Moncton: Telesfor Paszek, Calgary: Les Casey, Nepean). Conversation revolved around the topics "This worked for us"..... "Have you tried this"....."We had problems with". Each member shared his city's unique approach to "winter". The dynamics were stimulating.

Through the pages of WCA UPDATE, we invite all WCA members to participate in our "after dinner conversation". What insightful books have you read? What great speakers have you heard? What innovative winter ideas have you discovered? What conferences are you planning?

Professional style is not a pre-requisite. Our volunteer editorial staff, professional editors and writers, will be pleased to give your article the finishing touch if required.

I look forward to your input!

Myrna

PRESIDENT'S MESSAGE

BOBSKATES TO SPEEDSKATES CHARACTERIZES the winter cities movement and the Winter Cities Association's development over the course of the past decade.

The legacy of the Winter Cities Association pioneers is a dazzling array of precedents and procedures for stimulating peoples awareness of the importance of winter cities.

I believe the associations historical role, at the leading edge of the winter city movement in the service of all winter city citizens, will be further enhanced by our most recent planned innovations.

This new section of "WCA Update", is an integral part of this evolution.

"WCA Update" is specifically designed to keep WCA members and supporters informed of the increasing activities of the Board, affiliates and members. We hope highlighting their plans and accomplishments will stimulate authentic, creative local solutions applicable for each of our own winter cities and indicate the ways we can all be at the vanguard of the winter city movement.

The editor of "WCA Update" and WCA's affiliate coordinator is Myrna Grimmon. I invite you to contact her with your suggestions and contributions. Your opinions matter!

Darcy

REPORT ON WINTER CITIES ASSOCIATION ANNUAL GENERAL MEETING

MEMBERS FROM ACROSS CANADA gathered in Calgary on June 15, 1990 for the 1990 Winter Cities Association Annual General meeting.

Out-of-town guests were welcomed by WCA President, **Harold Hanen,** Alderman **Ray Clark,** Chairman of the Calgary Winter City Committee and presented with gifts from members of the Calgary affiliate.

The Nominating Committee consisting of **Jack Royle, Sheila Pepper** and **Myrna Grimmon** presented its nominations noting that particular attention had been paid to balanced regional representation. The slate of officers as presented was unanimously approved. We believe both the new and returning Board members will enable the Association to have a most productive year. You will find an introduction to our new Vice Presidents and Board of Directors under a separate heading.

President Harold Hanen stated "The Winter Cities family has expanded its presence around the circumpolar world while at the same time enriching its regional sensitivity."

Administratively our systems have been streamlined to provide greater stability and continuity for future executives.

Harold also noted that during the past year we have seen a strong emergence of conferences, both general and specific, such as Winter Cities Tromso '90 in Norway and Forum '90 in Ottawa; we welcomed the cities of Anchorage and Tromso to our winter cities affiliate family; several new research projects have been initiated and our promotional campaign resulted in significant growth in municipal memberships.

Our Winter Cities magazine has undergone a dramatic shift to a more accessible and expanded format. Many positive responses to our "new look" have been received.

In progress are new institutes, new publications, new conferences and new initiatives for improving the winter environmental design curriculum. The winter city movement's agenda within the five circumpolar regions and forging institutional linkages were also marks of progress.

Priorities for the coming year will be discussed in depth during a Strategy Workshop to be held the following day. The results of this workshop will be reported in this section in the next issue.

Harold concluded by inviting all members to help develop a format for expanding the winter city family and its activities which will retain the openness, humanness and values that have characterized the Winter Cities Association's efforts to date.

A special note of thanks was extended to Calgary affiliate member **Harry English,** C.A., for donating his expertise to the Association in the preparation of our financial statements.

Jack and **Dorothy Royle** were then presented with small tokens of appreciation for their ongoing support of WCA undertakings.

At the meeting's conclusion, Calgary affiliate members hosted a western barbecue, Calgary style, which allowed members from east and west to share their visions and become better acquainted.

1990 ELECTION OF OFFICERS

The following slate of officers were unanimously elected during the Winter Cities Association Annual General Meeting held June 15, 1990.

President: Harold A. Hanen, Calgary

Past President: Jack Royle, Toronto

Vice Presidents: Weiming Lu, Minneapolis; Michael Robinson, Calgary; Guy Gerin-Lajoie, Montreal; Charlotte Matthews, Sarnia; Are Johnson, Tromso; Norman Pressman, Waterloo; Leo Zrudlo, Quebec; Arthur Buck, Moncton;

Board of Directors: Jeff Nash, Minneapolis; Gail Manning, Minneapolis: Arni Fullerton, Edmonton; Jean Anderson, Edmonton; Ken Balmer, Calgary; Tang Lee, Calgary; Alderman Les Casey, Nepean; Nils Larson, Ottawa; Anthony Eardley, Toronto; Frank Theakston, Toronto; Al Sutton, Toronto; Roger Gratton, Montreal; Horace Hunt, Anchorage; Tom Gillespie, Sault St. Marie; Mayor Pat McMahon, Yellowknife; Boris Culjat, Stockholm;

Chapter Presidents automatically on **Board of Directors:** Sandy Robertson, Newfoundland; Bryce Klug, Anchorage; Rudy Friesen, Winnipeg; Sheila Pepper, Ottawa; Robbins Elliot, Nova Scotia, Roger Peterson, Minneaplois.

AFFILIATE NEWS

MINNESOTA PLANS NORTHERN BUILDING CENTER:

Chapter Chairman **Roger Peterson** reports planning is underway for a permanent Year-round exhibition of building products, materials and methods for northern climates. This non-profit Center would serve central U.S.A. and Canada, provide referrals to manufacturers and distributors, provide seminar facilities and host events for the building industry.

"Winter Cities" will keep readers informed on the development of this facility.

A.G.M. PARTICIPANTS WELCOMED WITH TRUE SPIRIT OF WESTERN HOSPITALITY

Calgary affiliate member extended their world famous western hospitality to WCA members gathered from across Canada to participate in our WCA Annual General meeting. The overwhelming spirit of enthusiasm expressed by all members will enable WCA to have a most productive year. Watch our next "Winter Cities" issue for proposed action plans resulting from a Strategic planning Workshop that formed part of this two day event.

WCA MEMBER INVITED TO U.S.S.R.

WCA member, **Joe R. Kelley**, Vice President of Marketing & Sales for Surface Systems Inc. of St. Louis, Mo has accepted an invitation to participate in policy discussions with Soviet officials and counterpart representatives in Moscow, Volgograd and Leningrad. Sponsored by People to People, an organization founded in 1956 by President Dwight D. Eisenhower, these discussions will include all aspects dealing with the feasibility of co-venture activities. Look to future issues of "Winter Cities" for an update from Mr. Kelley on the results of these discussions.

WCA ESTABLISHES FIRST HONOURARY LIFE MEMBERSHIPS:

A rousing standing ovation followed the announcement that **Jack Royle, Bill Rogers** and **Mayor Itagaki** had been selected recipients of the first WCA Honourary Life Memberships.

Jack Royle and Bill Rogers were pioneers in the formation of the Winter Cities Association and continue to be leaders in the further development of the winter cities movement internationally.

Mayor Itagaki, as Mayor of Sapporo, introduced the vision of Hobboken, symbolizing the benefits to winter cities of recognizing and utilizing their natural climatic setting. He extended his vision to other city Mayors which was formally realized in the Northern Intercity Conference.

VOLUNTEERS RECOGNIZED

The first Winter Cities Association Service Awards were presented to recipients attending our Annual General Meeting.

Recognized for their long-standing commitment to WCA objectives were **Jack Royle**, co-founder and WCA Past President, **Dorothy Royle**, an enthusiastic WCA supporter and **Sheila Pepper,** President of the Ottawa Affiliate.

This program will enable us to honour future significant contributions to the WCA.

TROMSØ AFFILIATE

Svein Kristianson, and **Mayor Evlend Rian** of Tromso report that the first meeting of their board will take place in August. A winter cities housing conference and participation in Montreal '92 will be on the agenda. Svein will launch a project for a joint presentation of high tech in northern Norway, Sweden, Finland and USSR. Funding will be through national and regional sources and the first joint meeting in mid-September will be in Oulu, Finland.

THE CITY OF MISSISSAUGA TENTH ANNUAL URBAN DESIGN AWARDS

Architects, designers, planners, landscape architects, engineers, developers, contractors, consultants, owners and the general public are invited to submit projects located within the City of Mississauga and totally completed prior to August 1990. Submission deadline is Friday, September 7, 1990. Entry forms and further information are available by contacting Karen Atherly at 896 - 5516.

SEVENTH INTERNATIONAL HYPOXIA SYMPOSIUM

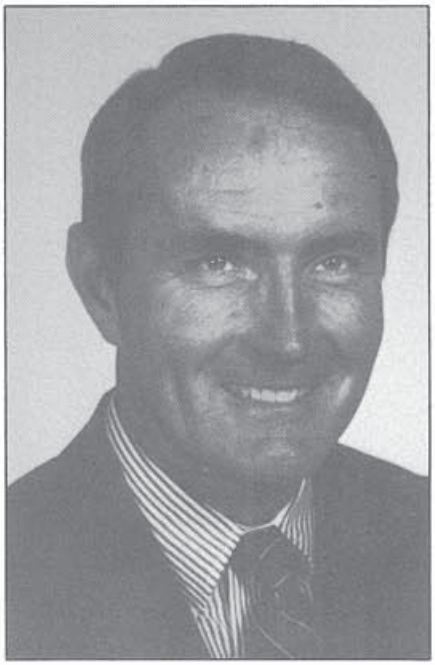
Chateau Lake Louise, Alberta
Februrary 26 - March 2, 1991

Sponsored by McMaster University and the Arctic Institute of North America this biennial event has attracted international speakers and participants. Abstracts are invited - deadline November 1, 1990. Please contact the Conference Coordinator 1M10, McMaster University, 1200 Main Street West, Hamilton, Ontario, Canada L8N 3Z5, Phone (416) 525-9140 ext2182 for further information.

WE WELCOME OUR
NEW BOARD MEMBERS

Horace C. Hunt Jr.: Director

Anchorage, Alaska, U.S.A.
Currently President of the Anchorage Chamber of Commerce, Horace is a graduate of the University of Alabama (Business) having had 23 years experience in public relations and marketing with leading engineering and construction companies.



Mr. Rudy Friesen: Director

Winnipeg, Manitoba
The City of Winnipeg has expressed an interest in hosting a major international winter event. As Chairman of the Winnipeg WCA affiliate Rudy is currently addressing the need for the development of strong local organization to promote and coordinate winter programs. As an architect, Rudy continues to further the winter cities movement in his extensive professional and community involvements.

Ms. Pat McMahon: Director

Yellowknife, N.W.T.
To her position as Mayor of Yellowknife, Pat has brought a wide range of knowledge and experience. She has been involved with municipal government since 1981 as an Alderman, Deputy Mayor then Mayor. Her personal commitment to the community she lives in has resulted in appointments to various local, regional, territorial and national committees and organizations over the past years.

Bryce Klug: Director

Anchorage, Alaska, U.S.A.
Bryce is the co-founder of our Anchorage affiliate and an active participant in the winter cities movement since 1985. As a lifelong resident of Anchorage he is an avid fan of winter sports -Alpine and Nordic skiing, sledding and ice skating. Currently he is a volunteer with the efforts to bring the 1992 Winter Olympics to Anchorage.

Ms. Gail Manning: Director

Minneapolis, Mn, U.S.A.
One of the founding members and current Treasurer of the Minnesota affiliate, Gail actively pursues winter city issues as a practising architect. Her views on winter city issues have been published in ARCHITECTURE MINNESOTA.

Mr. Frank Theakston: Director

Guelph, Ontario

An enthusiastic WCA supporter, retired Professor and well known researcher in snow and wind, Frank continues to be involved in the development of a Canadian "Snow and Wind Institute". His inventive nature has led to the development of many new and exciting products one of which is a solar operated refrigerator.

Mr. Norman Pressman: Vice President

Waterloo, Ontario

founding President of the WCA and Professor at the University of Waterloo, where he teaches a unique course on winter planning and design, Norman is an internationally renowned lecturer and has published widely in fields directly related to winter cities research and practice. He was a member of the team which received the International Winter Cities Award of Excellent at Winter Cities '90 in Tromso, Norway for the design of a satellite community in the subarctic. Since its inception he has been an active participant in all winter cities activities sponsored by WCA within Canada and worldwide.

Dr. Charlotte Matthews: Vice President

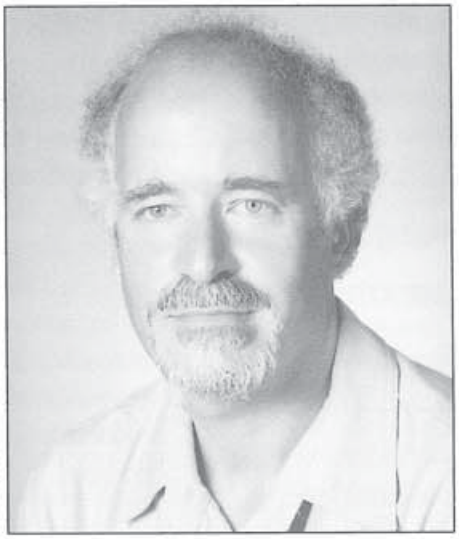
Sarnia, Ontario

President of the National Advisory Council on Ageing and noted author, Charlotte has been honoured by the City of Sarnia and the Province of Ontario for her outstanding contribution to the citizens of her province. As a Consultant in Gerontology she has been a past columnist in our "Winter Cities" magazine and continue to further her special interest in improving the quality of winter living for senior citizens.

Mr. Michael P. Robinson: Vice President

Calgary, Alberta

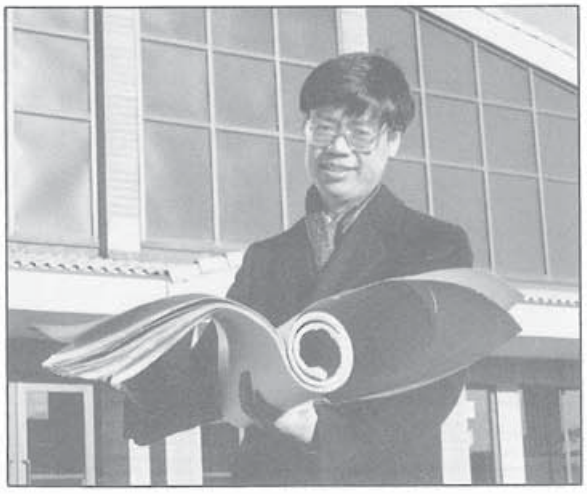
Trained in law and anthropology Mike is the director of the Arctic Institute of North America, Canada's national northern research institute and an active participant on the City of Calgary's Winter City Committee. For the past 15 years his publications and research interests have centred on frontier development, community based economic development and social justice issues involving aboriginal people.



Mr. Ken Balmer: Director

Calgary, Alberta

President of the western arm of Canada's RETHINK GROUP, Ken specializes in strategic planning and management with a strong emphasis on foresight - consideration of probable futures as we build organizations and facilities designed to last for decades. In 1988/89 he worked as a Strategic Planning Consultant on two main projects: an economic development strategy for Calgary ("Calgary into the 21st Century") and "CALGARY 2020" (a vision for future excellence).



Mr. Tang Lee: Director

Calgary, Alberta

Associate Professor of Architecture in the Faculty of Environment Design at The University of Calgary and author of over 50 publications including the EVDS/WCA jointly sponsored "Calgary in Winter" book, Tang also continues to practice as an Architect. Many of his buildings incorporate some innovative aspects of building science such as solar heating, energy conservation, indoor air quality and acoustics.

FEATURE *AFFILIATE*

ANCHORAGE, ALASKA

THE ANCHORAGE WINTER CITIES ASSOCIATION was established September, 1989 through approval of the constitution and bylaws by the membership. The co-founders of the chapter; David Bryant, Allen Kemplen and Bryce Klug had achieved this goal after a ten month promotional/educational effort. In February 1989 they organized a roundtable forum on winter cities. Community leaders spoke on the impact winter makes on their professional and personal life and the opportunities Anchorage has as a winter city.

In February 1989 they organized a roundtable forum on winter cities.

In March 1989, the co-founders were interviewed by one of the local newspapers on the purpose of the AWCA. The article provided an opportunity to discuss the positive ways Anchorage deals with winter and ways in which Anchorage can improve itself as a winter city.

Since the Anchorage affiliate's founding, the group has begun a survey on how other winter cities provide shelter for pedestrians in winter. The first presentation of the information gathered was made in January 1990 to Anchorage's Planning and Zoning Commission. Another committee has begun preliminary planning for a one day winter festival in January 1991 that would focus on and highlight the winter recreation opportunities available within the city limits. Sports/Activities to be promoted include nordic skiing, figure skating, hockey, curling, dog sledding, sleigh rides, ski-joring and sledding.

Bryce Klug has been an active AWCA representative to the city's committee that is preparing a bid for Anchorage to host the 1994 Winter Cities Showcase and Northern Intercity Conference.

The AWCA has a preliminary agreement with the Municipality of Anchorage's Loussac Library for the formation of a Winter Cities Resource Collection. The collection will be dispersed throughout the library in appropriate subject areas and will be located by a "pathfinder". The AWCA will be extending the pathfinder to include citations of material in other library collections, such as the University of Alaska Anchorage and Fairbanks collections.

As the AWCA becomes established and expands both its membership and projects, we anticipate enthusiasm for the winter cities movement to grow rapidly in Anchorage.

WCA AFFILIATES

St. John's, Newfoundland
Toronto, Ontario
Edmonton, Alberta
Calgary, Alberta
Anchorage, Alaska
Sault Ste. Marie, Ontario
Minneapolis, Minnesota
Ottawa, Ontario
Winnipeg, Manitoba
Montreal, Quebec
Tromsø, Norway

MEMBERS NEWS

ANOTHER FIRST!

Typically, architectural research has been limited to quantifiable items such as lighting levels, air quality, building materials and market analysis. There has been little research on the performance or impact of buildings as complete entities. Calgary's climate, for example, necessitates many cultural and aesthetic design constraints. Compounding this problem is the particular difficulty architects face when attempting to obtain financial support for research. To address these and many other issues, academics, professionals, researchers and government representatives converged at the University of Calgary from May 10-12 to participate in The First Canadian Symposium on Architectural Research.

Research Institutes, professional organizations and all ten Canadian schools of architecture were represented at the symposium. The keynote speakers included **Professor Colin Clipson** of The University of Michigan, who spoke on a broad theme: "The Nature of Architectural Research".

Delegates unanimously agreed a national steering committee should facilitate a future meeting, tentatively scheduled for the Fall of 1990. **Tang Lee and Jim Love,** organizers of the fist symposium, have agreed to provided organizational and administrative support until December, 1990.

Details on the availability of the proceedings will be published at a later date. If you have any questions, please call (403) 220-3636.

TAKESHI YAMAMOTO NAMED DIRECTOR OF NORTHERN REGIONS CENTER

Mr. Naokazu Sato has written to advise that he is stepping aside as Director and Secretary General of Northern Regions Center in Sapporo, Japan. Mr. Takashi Yamamoto, formerly with the government of Hokkaido Prefecture, has assumed the position.

Mr. Sato has been Director of the Center since its formation in 1979 and will continue as a Special Advisor. He has been closely involved in the Winter Cities movement and under his direction the Center provided a venue for conferences and meetings and a resource base and facilitator of research.

WCA Vice-President Arni Fullerton and President Harold Hanen have presented papers on Winter City issues to the Centre's membership.

After 20 years in office, **Mayor Itagaki** of Sapporo, Japan has announced he will not seek an additional term as Mayor when his current term ends in May, 1991. An Honorary Life Member of the Winter Cities Association, Mayor Itagaki plans to continue his enthusiastic involvement with the winter cities movement.

Norman Pressman, WCA Vice-President will be attending NordForm '90 to be held in Copenhagen/Malmo, Denmark in August. Our readers can look forward to his report in a forthcoming issue.

Xenia Zepic, principal investigator and former Director of the Winter Cities Association is nearing completion of the WCA's "Senior's and Winter Mobility" study funded by the National health and Welfare Department's, Senior's Independent Program. We look forward to publishing her findings when compiled.

The city of Sapporo has announced that it will employ WCA Director and IWCC Chairman **Arni Fullerton** as a temporary consultant to advise the city on its corporation image. Sapporo has initiated a program to increase local awareness and active support in the city's internationalization drive as well as to promote greater international exposure for the city.

FRIENDS OF THE EARTH TO MEET IN CALGARY

Friends of the Earth, founded in 1978 and one of Canada's leading environmental organizations, with over 17,000 members across Canada, will be holding its next board meeting in Calgary.

This November meeting, will be the first held in Western Canada. Winter Cities Association board member, **Mike Robinson,** is the Alberta representative on the board and a member of the executive.

NEW COURSE SET

Board member **Mike Robinson** in his capacity as executive director of the Arctic Institute will team teach with Professor Stephen Ameyaw. Their course "Developmental Planning in an International Content" will be in in the fall of 1990, under the Faculty of Environmental Design at the University of Calgary.

This new course contrasts northern and Third World development case studies and will develop a community - based approach to land use planning, environmental stewardship and economic development.

OCCASIONAL PAPERS

THE PUBLICATION BOARD OF THE WINTER CITIES ASSOCIATION is inaugurating the "Occasional Paper Series". This series will make available papers of outstanding merit on winter city issues.

The first of the series are by ***Dr. Norman Pressman,*** *one of the foremost writers and researchers on winter city issues.*

1. "Harsh Living Conditions .. A Research Agenda" (10 pages) Reviews the definitions currently used in winter city research, classifies research categories, outlines recommendations for future research needs, identifies the opportunities, limitations, and priorities.

2. "The Search for Northern Settlement Form .. Dilemmas and Directions" (11 pages) Reviews current research dilemmas, settlement pattern trends, and the forces to improve winter communities. It also develops a "Winter Grammar", identifies emerging design prototypes and leitmotifs for a northern humanistic form.

3. "Final Report", UN/ECE Research Colloquium on Human Settlements In Harsh Living Conditions (7 pages) A review of the 1988 UN/ECE colloquium held in Finland. The themes addressed were problem definition, settlement form, design, building, construction and technology, socio-cultural, psychological and health issues, economic, environmental and administrative planning considerations. Suggestions are also made for further action.

The above papers are available at $3.00 each + $3.00 handling cost per order (Canadian funds) from winter Cities Association Publications Office, 1933 - 5th Street S.W., Calgary, Alberta, Canada T2S 2B2.

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COLOUR IT LOCAL

Glen Radway and Kevin Eby

THE TYPICAL CANADIAN CITY IN ITS WINTER ELEMENT OF COLD, snow, ice and slush has been thought of as a "boring blend of cold grays". The seasonally low sun angles and reduced solar penetration, dirty white snow, salted pavement, bland concretes and faded building facades create an unchanging and monotonous display of "urban ugliness". This continual presentation of unaltering visual stimuli, along with repetitive daily routines and reduced access to the outdoor environment, increases the likelihood of boredom or depression developing amongst the residents of the winter city. (Persinger, 1980)

It is these feelings of depression that lead to the negative attitudes that people have towards the winter season. This "overload" of negative stimuli does not have to exist.

One method of improving the visual environment is to introduce more colour into the drab winter streetscape.

This paper answers "Why" increased colour is important in the winter environment, "What" colour schemes to used, "Where" to introduce these colours and possible implementation strategies.

Colour cannot exist without light. The presence of light is viewed positively, whereas an absence of light is perceived negatively. People, in general, are uncomfortable when unable to distinguish who or what is around them. Illumination of the surroundings can reduce feelings of insecurity, but illumination by sunlight can do more. It is associated with warmth and pleasantness.

"Years ago the citizens had decided that they had better do something to offset the drabness of the north, so they agreed that each man would paint his house some individual and brilliant colour ... purple, and cerise and ocher and golden yellow. Tromsø was a fairyland of colour." (Michener, 1971)

Colour too, affects the way in which the environment is perceived. Differences in perception between the variety of colours has been studied for years and a hierarchy from warmest to coolest has been well defined. The "warmest" colours are considered to be the variations of the yellow and red hues, while the greens, blues, violets and their respective derivatives are perceived as being the coolest. These feelings of warm and cool are not related primarily to the physical characteristics of the colours but more to the association that one makes between the colour and a familiar object. For instance, the viewer may see orange and relate it to fire, or the sun, which is then associated with warmth.

Further testing has revealed that different colours, and their inherent effects, can evoke various moods and emotional states. For instance, warm colours such as yellow or peach can cause a person to direct attention outwards, leading to greater muscular exertion and a more cheerful disposition. The cooler colours such as blue or green may create a more subdued and sombre person with thoughts focusing inward. (Birren, 1969).

Prof Kumagai of Japan has been instrumental in studying the use of alternative colour schemes for the winter city. He coined the phrase "eco-colours." An eco-colour could be the colour of a local tree's leaves, its blossoms or even the hues found in a nearby rock outcropping.

He believes eco-colours can be integrated into the urban environment much more easily than the artificial colours which are so often difficult to coordinate. The natural hues, represented by eco-colours, are also found to better reflect sunshine, a property which can be used to remind the winter pedestrian of the warmer seasons. In addition, these colours stand out boldly against the gray and white backdrop of winter while blending naturally into the summer surroundings. The Japanese feel that the use of eco-colours within the urban environ-

ment result in a more vibrant yet harmonious winter city.

Eco-colours can change dramatically from one location to another and therefore there can be no predetermined colour scheme. Every city, town or even village should choose a limited number of local colours which can be incorporated into its streetscape to create a congruent visual backdrop for its streets.

Brighter, artificial hues and more prominent eco-colours can also be used, in lesser degrees, to create interesting contrasts to the more subdued backdrops. These can be especially effective in areas of low light or shadows, where dramatic contrast is necessary or desirable.

The adoption of colour schemes which create the warm and favourable impressions, has long been the goal of livable winter city advocates. Through the use of eco-colours and carefully selected artificial hues this goal may be achieved.

One of the major problems of today's use of colour is that it is primarily applied as a mask to cover the dull hues common in modern construction materials. The sensitive introduction of properly selected colour into these materials could have a dramatic effect upon the visual and cognitive impact of the urban environment.

The sidewalks, roads, buildings and open spaces must receive the bulk of this attention. Sidewalks can be changed from the grays of poured concrete to warmer colour by the use of interlocking paving stones, the addition of coloured pigments into the concrete.

While it may be inconceivable to colour roadways throughout the entire urban setting, rust coloured bricks or pavers can add colour while hiding oil and tire marks from the automobiles. The building materials of the larger Canadian urban settings are too often poured concrete in the core and white aluminum siding in the suburbs. Through the incorporation of warm eco-colours into building facades, a colour base for the area can be developed and street aesthetics can improve. Local gravels for exposed aggregate surfaces, various shades of brick or even coloured marble can be used as exterior building materials, especially at the pedestrian levels.

Recent building trends can enhance winter colouring. For example, many new office complexes incorporate internal atria into their design. These atria areas when placed next to the sidewalks, add fresh and reviving colours to the pedestrian experience.

Within larger urban centres, high-rise office towers often feature silver tinted glass exteriors. Although the reflective properties of this material can provide enjoyable visual effects when displaying images of clouds and blue sky, it can also result in dull, cold perceptions. This is especially true during the most trying gray days of midwinter. Care should be taken to encourage increased use of gold, green, blue and coral tinting in these structures. These coloured "mirror-like" exteriors can create magnificent displays on the sides of the buildings, and can at some time be designed to redirect some of the limited solar rays down onto the pedestrians.

Much of the North American suburbia is guilty of the "white siding syndrome". The introduction of colour variations into the siding or the application of darker eco-colours to fences will smartly enhance the street winter snow scape.

Refurbishing of existing buildings throughout the winter city has no potential to significantly increase the amount of winter colour stimuli, by painting windows, trims, doors and eaves in eye catching colours that are coordinated with facades.

Amazing variations which complement each season can be created. The introduction of colour into natural open areas by using vegetation with multiseason display and evergreens can ensure colour in the winter landscape. Species such as mountain ash and various rose bushes, retain colourful bark and berries in the winter, while oak trees retain their leaves longer than other deciduous species.

The above suggestions revitalize the colour palette of the background urban infrastructure, upon which more visually exciting colour schemes for specific high profile elements can compliment and contrast. Light poles, telephone booths, bus shelters, playground equipment or even fire hydrants can display brighter eco-colours, flags and banners, hung from light standards and on the walls of buildings, can capture the sunlight and be replaced to reinforce seasonal variations. Bright and colourful murals, by local artists or school groups can be commissioned to enliven drab walls adjoining open spaces will further the winter city's color enrichment.

Stores and shops greatly enhance the winter city visual delight with bright, colorful canopies and window displays. Efforts should be made to get away from the backlit "Coke" type displays, replacing them with lighter, naturally coloured wood signs using bright lettering, effectively announcing the presence of the store while keeping within an eco-colour theme.

Due to the length of darkness in the Canadian winter, attention must be given to colouring the night. Artificial lighting can be strategically placed to illuminate banners, signs and murals as well as the colourful shop windows. A season long "Festival of Lights", especially within heavily used pedestrian areas, can keep colour in the city long after the regular holiday season. Less powerful, coloured lighting can illuminate streets and bus shelters at selected nodes, to create warm coloured, glowing beacons to attract people and increase social contact within the city.

Attracting people outdoors during winter will, in itself, bring colour to the urban streetscape. Clothing manufacturers have recently employed virtually every bright colour imaginable. Groups of people dressed in such clothing at an outdoor skating rink, at a winter festival or during normal street activities will successfully add colour in the city. The Calgary Olympics was noted for the "rainbow of colours" that people brought to the streets both day and night, showing how successful a special event can colour the city.

Due to the length of darkness in the Canadian winter, attention must be given to colouring the night.

Implementing climate responsive recommendations, including colouring of the urban environment, is one of the difficult problems facing planners. It is important that those who focus upon winter livability maintain a realistic perspective. How can proposals to implement urban colouring obtain attention and support of politicians and private developers? Groundwork must first be laid which will lead to future large scale implementation.

- Urban colour should be seen as one element in an overall climate-responsive program for urban development.
- Develop expertise within the Planning and Design Department about urban colour or make available the resource people required to assist with its planning and implementation.
- These individuals must actively attempt to educate politicians, merchants and developers about the potential benefits that can result from implementing urban colour strategies.
- Develop an eco-colour chart based on naturally occurring colours specific to the region.
- Develop colour implementation guidelines for private and public development within the urban environment. Requesting legislative compliance with these guidelines is virtually impossible when one considers the demands already made of private developers. There should however be encouragements for compliance, within selected zones, through the use of negotiation tools such as "Bonus zoning".
- The Public sector must lead the way by including within future development, the use of colour. Only through demonstrated leadership of the public sector can we hope to recruit private sector support for such schemes.

Colour, by itself, will not make a livable winter city. To conclude otherwise would be to ignore the many climate responsive adaptations that are necessary to create a comfortable urban environment. It can, however, be used to add visual stimuli to the streetscape. This is of great importance in helping to relieve the boredom and depression associated with winter. By reducing these negative aspects, a more positive approach will lead to a greater appreciation of winter in urban life.

WINTER WIGWAM

Robert Janes

THE FOCUS OF THIS STUDY IS GROUP OF SLAVEY DENE WHO CALL themselves the Willow Lakers. Their name is taken from a lake situated north-northwest of Fort Norman, NWT, where they reside for four to six months a year hunting, trapping, and fishing. The use of a geographic location to differentiate one group of people from another is a practice which is assumed to have great time depth in this region.

When the bulk of the ethnoarchaeological observations were made in 1975, the Willow Lake group consisted of families. These individuals ranged in age from one month to about 78 years. Although these people collectively are known as the Willow Lakers, individual and family histories are traceable to various regions in the Mackenzie Basin, such as Great Bear Lake, the Fort Wrigley area, and the Mackenzie Mountains west of Fort Norman. Flexibility and mobility are characteristic, with no family necessarily spending the same amount of time each year at Willow Lake.

Social organization among the Willow Lake Dene retains the characteristics of the aboriginal system. Kin connection, affinal or consanguineal, with an existing member is considered to be sufficient justification for group membership. This model accounts for relationships among four of the seven core families at Willow Lake.

The Willow Lake Dene are not directly comparable to their hunting and gathering forefathers, and as yet there is no unbroken historic link between their present cultural adaptation and the prehistoric record of the area. Nevertheless, they engage in activities which can be considered transitional, if not traditional, within the context of the twentieth century. Many of these activities, such as hunting, meat processing, land travel, hide processing,

Figure 1. Map of Northwest Territories and Canada.

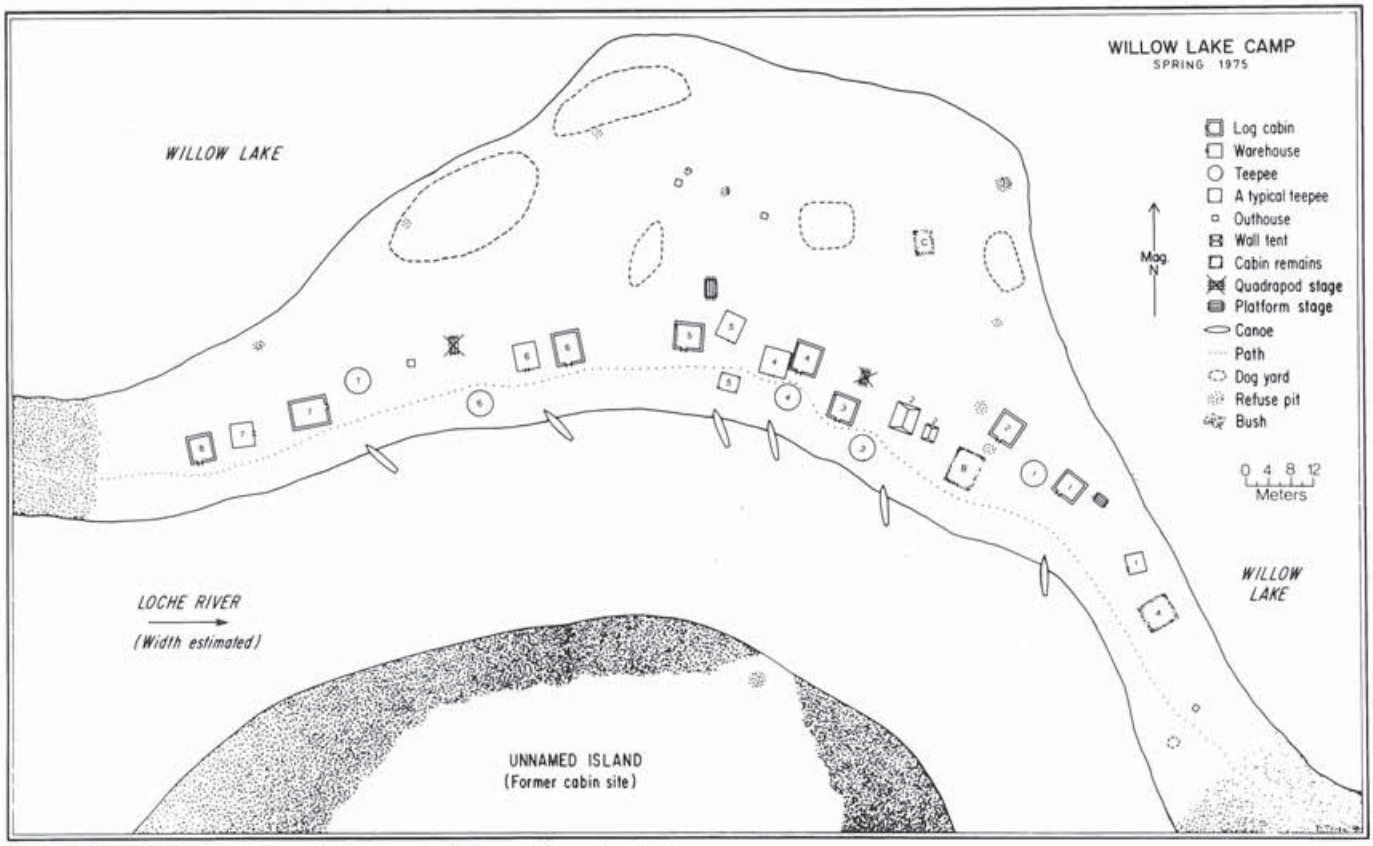


Figure 2. Plan of the Willow Lake residential camp as it appeared in spring, 1975.

cooking, water travel, shelter construction, and gathering represent forms of adaptive behaviour that appear to have been altered only superficially since Euro-Canadian contact.

However, the Willow Lakers make extensive use of such things as high-powered rifles, snowmobiles, outboard motors and nylon gill nets, integrating them with an indigenous material culture which includes snowshoes, moccasins and a well-developed wood technology. Meat and fish obtained in the forests, lakes and rivers constitute the bulk of their diet in the bush.

The community of Willow Lake is a cluster of separate households situated on a spit of land, largely surrounded by Loche River and Willow Lake. It is linked to Fort Norman by both water and overland trail. The community at Willow lake can be described as a residential camp, with hunters ranging out from this location in search of meat and furs on a regular basis, returning after absences of one to several days. The seven household complexes at Willow Lake consist of varying combinations of tipis, log cabins, warehouses and stages.

People are often surprised to learn that tipis are still in use among the Dene in the late twentieth century. Tipis remain an important part of the domestic architecture at Willow Lake, even though some of the Dene are clearly aware of how their form and use have changed through time. An elderly male described the "old-time" tipi as requiring 75 to 80 caribou skins and being large enough to house up to four families, with each family occupying a specific area within the structure. Tipis of this size may, in fact, have belonged to chiefs. Other individuals commonly emphasized how much more squat in profile and large in diameter the old tipis were compared to the ones used now.

An elderly male described the "old-time" tipi as requiring 75 to 80 caribou skins and being large enough to house up to four families,

The average diameter of the tipis in use in 1975 was 4.48m. Although structurally they were essentially the same, they exhibited great variety in terms of their covering, use and internal arrangement. The pole framework of each tipi remains standing throughout the year, but the type of cover is determined by household economics and season of use. Temperature and wind conditions appear to be important considerations. When

we arrived at the camp in April of 1975, the tipi belonging to household 6 was completely covered, as the family had been using it in early winter. All the rest of the tipis were partially covered or uncovered, as they had not been used that winter and the families were waiting for warmer weather before preparing them for regular use. Coverings include canvas, polyethylene plastic, sheet cardboard, burlap, spruce boughs, and birch branches, in any combination. The last two materials are also used to build windbreaks a meter or so in height at the bases of the tipis. Such windbreaks provide the occupants protection without the need for a more elaborate cover, as well as offering a modicum of privacy.

Because a tipi is elegantly simple in design and therefore very flexible, its appearance is as changeable as the weather.

Because a tipi is elegantly simple in design and therefore very flexible, its appearance is as changeable as the weather. When the wind was up, the temperature was down, or it was raining, more covering was added and held in place by vertical poles laid against the superstructure. This variability true of the location of tipi doors. Observations at Willow Lake suggest that door locations often vary as a result of wind direction, and undoubtedly also for other reasons. Some tipis had permanent doors, although their locations differed depending upon the family. In addition, some tipis had more than one door; multiple doors were sometimes used simultaneously and sometimes not. Tipi coverings can easily be rearranged to allow such flexibility.

Tipis are a multifunctional form among the Willow Lake Dene, and should not be thought of solely as dwellings. A tipi frame at Willow Lake was used as a canoe stage before it was prepared for human use in the spring. Tipi frames covered with brush, which may be spruce boughs or the branches of deciduous trees such as birch or poplar, are also used as outhouses and doghouses and for making dryfish. That the brush tipi has retained its adaptive value as a shelter in the twentieth century is clearly illustrated in the following account given by a middle-aged Willow Lake man. He was travelling in the Great Bear Lake area, in the early spring, with three dogs carrying dog packs, when the dogs ran after a moose. Two of the dogs, one carrying the man's bedroll, did not return. He spent the next 20 days without his bedroll, living in a spruce-bough brush tipi heated by a fire. He slept during the day as that was the warmest time. Apparently brush tipis are most effective in winter and summer, as he said that when the spring thaw began he was always getting wet inside the shelter. On the twentieth day he found the dog pack containing his bedroll lying on the trail.

Tipis have been retained for ideological, aesthetic, and functional reasons, and have been integrated with more modern forms. It can be described as an evolutionary capsule of Dene house forms. The tipi, the historically transitional canvas wall-tent, and the log cabin were all in use at the same time, each for essentially the same purposes.

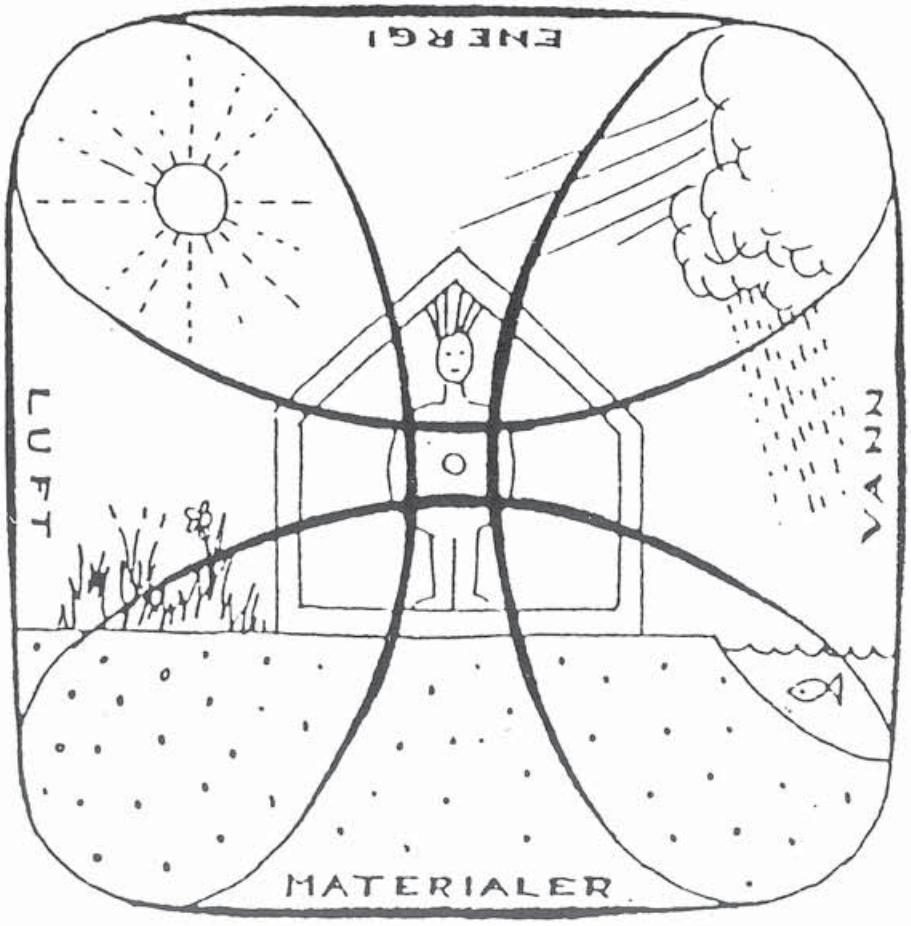
According to Willow Lake Dene, tipis are "part of the old days" and are valued for that reason. It was also repeatedly stated that it was preferable to be in the fresh air of a tipi than in a stuffy log cabin. Tipis are required for drying the meat and fish upon which the Willow Lake Dene depend. The constant supply of smoke, necessary to prevent flies from contaminating the meat and fish with their eggs, makes cabins singularly inappropriate for this activity. Tipis are also used for skinning, butchering, hid processing, and the making of drymeat and dryfish, activities which are messy despite an individual's meticulousness. The tipi is well suited to this dirty work, with its good ventilation and replaceable spruce-bough floor.

IMITATING MOTHER
(NATURE)

BJORN BERNE

RECENT RESEARCH SUGGESTS THAT CONTACT WITH RELATIVELY untouched nature is vital for human well-beings. There is little doubt that the natural biological evolution of humans and nature is much slower than industrial civilization.

The only "house" that completely satisfies these criteria is the womb.



We have lived for a long time in a polluted environment to which we are culturally adapted but which is in direct conflict with our nature. Modern bio-rhythm research indicates many processes in the human body, such as blood pressure, heart beat, body temperature, oxygen intake etc., have definite day and year rhythms.

A well known example of this is the influence of daylight on the secretion of melamine from the epiphyses and thereby on our state of awakeness.

Our natural environment for example in the form of a natural pulse, is of great importance for our physical and psychological well-being.

Our next question is therefore whether to solve the problem by correcting the house or the human being today quite possible, and has been used with success.

Norwegian GAIA Architects are developing the concept of the house as an active part of the ecosystem, where the house is closely integrated in the natural processes that surround it. This concept initially influences the type of construction system used, and also the type of materials. Such a house;

Is based on products that have been processed as little as possible, that retain their original structural and chemical identity, and do not pretend to be anything else.

Uses natural potential in an unrefined way, i.e. sun, wind, differences in air pressure and temperature as energy sources. Also plants and running water for air purification, and the self-renovating qualities of water and microorganisms for cleansing spill water and sewage.

Is open to the flow of natural pulses, such as light, moisture, air pressure and temperature rhythms. One should avoid strong electro-magnetic fields that block natural cosmic radiation or the earths natural electro-magnetic fields.

The only "house" that completely satisfies these criteria is the womb.

GAIA's experiments in this direction have today been mainly with construction systems that allow the passage of damp and air. The houses are also sited and constructed in accordance with the check list.

The moisture transfusive house. Conventional constructions aim to stop all moisture penetration. We use damp proof courses in roofs, walls and floors, and remove excess moisture in the house with the help of ventilation systems. This is a very vulnerable building method, partly because of a high risk for perforation of the damp proof course while building and plastic materials that do not keep, and partly because insulation materials of mineral fibres have little ability to absorb moisture.

In the moisture transfusive house, moisture is allowed free passage. To do this we must use porous materials. They will absorb excess moisture and release it when the relative air moisture content is lower, i.e. at night or in summer. Such materials are i.e. lime rendering, plaster, porous brick types and wood that has not been treated with dampproof painting or varnish. Condensation of moisture will not exist in homogenous walls made with such materials. In many cases they may also be used to regulate the moisture in walls consisting of different materials.

The air-transfusive house. The outer surfaces in this type of constructions are very porous. Fresh air is drawn into the house through these surfaces because of lower indoor air pressure created by a tall chimney or at times a small fan. The intake of fresh air is spread over the entire outer surface and therefore eliminates draught problems. In addition the wall is efficiently ventilated in the usual condensation points and rot is avoided. The usual dry indoor climate in winter is avoided with the help of moisture regulating materials. Amongst other materials are various types of wood fibre panels that are able to absorb from 5% to 500% moisture. On its way through the walls and roof the air meets transmitted heat on its way out. The wall acts as a heat exchanger and preheats the air on its way in. The air speed through the wall should at least be 1 m/h to give a useful effect. This means an air change rate of approx. 0.8 pr. hour. Higher air change rates ensure fresher indoor air and a reduction of heat loss.

The air-transfusive house is in many ways a development of the old Scandinavian timber building, where fresh air was drawn in through cracks between the logs. This wall also functioned as a heat exchanger, although much less efficiently. In addition these houses most certainly had draught problems. In this modern solution highly porous materials such as wood wool cement panels, compressed wood shavings, recycled wood pulp and non-impregnated porous wood-fibre panels are used.

Testing and further investigation of strategy. GAIA Architects have several houses under monitoring. Both energy consumption, moisture content and other parameters in the indoor climate will be measured, and also possible particle losses from materials used in the various parts of the wall. It should also be possible to measure health and well-being in comparison to more conventional building.

We are well aware that we have only just begun on one of the many ecosystem factors and are working towards more integrated systems. In connection with a bakery outside Oslo we may be able to create internal nutrional cycles that consist of water, plants, fish and microorganisms.

To create an indoor climate better suited to the human organism, and that today's somewhat banal problems associated with the concept of "sick houses" are probably only the tip of an iceberg.

REFLECTED SUN IN URBAN SPACES

LET THE SUNSHINE IN!

VLADIMIR MATUS

THROUGHOUT HISTORY HUMANKIND'S PROTECTIVE SHELters were the product of local climate, local materials, the level of technical skill, craftsmanship, survival techniques and lifestyle in general. The aesthetics of structural engineering and of regional prototypes became an inherent part of local culture. Solutions were discovered, memorized, ritualized and passed on as a treasured heritage to subsequent generations to ensure their comfort and survival. But when a group resettles into an area significantly different from their original environment, the satisfaction of their secondary or "cultural" needs can work effectively against the satisfaction of their primary human needs.

Reflected winter sunlight has an enormous potential for enriching the urban environment.

Many areas in northern latitudes were settled by immigrants from the south who had definite images of what constituted a home, a community and a city. Thus, these deeply embedded images of southern houses, streets, and public spaces keep appearing, despite their high cost in terms of energy, municipal services, their insensitivity to the fragile northern environment and, more difficult to measure, their cost in terms of human health and comfort. Mortality statistics, complied by Statistics Canada, indicate that over a recent 15-year period, over 1,621 deaths could be directly attributed to excessive cold, an average of 108 deaths per year. On the other hand, cataclysms, earthquakes, tidal waves, and other natural events claimed 17 lives per year. Furthermore, there has been extensive study done and literature on the effect of cold weather on the old and infirm.

Even in today's rational, pragmatic society, basic needs tends to be overshadowed by secondary, irrational ones. We happily buy fashionable shoes that ruin our feet, clothes that don't protect us against the cold and houses deprived of adequate sunlight. And we build plazas and public spaces which create an outdoor climate even a hardy northerner would consider inhospitable.

Since public spaces are very expensive to construct and maintain, a deserted public space should be of great

concern. Their use and enjoyment is closely related to local weather dynamics, particularly in Canada, given a weather profile characterized by prolonged winters, two unpredictable shoulder seasons and a relatively short, albeit hot, summer. Climatically-controlled public spaces are acceptable strategies to help circumvent bad weather conditions, especially in densely developed metropolises, but these below and above-ground artificial environments, such as the +15 system in Calgary or the -15 system in Toronto, were never meant to be, nor can they ever be, a completely satisfactory substitute for open air urban spaces.

The design objective for open urban spaces should be to provide thermal comfort throughout the year.

Since urban space is created by the surrounding buildings each building, by virtue of its shape, height, the materials and street level design, is partially responsible for the quality of the space and its microclimate. The design objective for open urban spaces should be to provide thermal comfort throughout the year. In summer, there must be some shade and moderate air movement. During the rest of the year, maximum exposure to the sun and protection against the wind is required. Fortunately, these objectives are not mutually exclusive. Proposed developments can be tested in wind- simulating laboratories to ensure the right degree of comfort at street level, and there is a considerable amount of literature available on sun access and shadow casting. But overshadowing inevitably does take place, particularly in densely developed areas, and certain public spaces will occasionally, or even permanently, be deprived of sunlight. But while the low angles of the winter sun are responsible for extensive areas of sun deprivation, the very same angles, in conjunction with the large vertical surfaces of a building, can compensate for the absence of direct solar radiation.

Reflected winter sunlight has an enormous potential for enriching the urban environment. It can illuminate and warm large tracts of the urban streetscape which might otherwise remain dark and cold for most of the year, brightening the environs around buildings and softening the effects of an oppressive mass of urban structures. Professional literature seldom investigates how to benefit from the relationship between reflected sun radiation and building form, despite its importance for Canadian urban settings. On the contrary, reflected sun radiation is often perceived as a nuisance which blinds motorists and raises adjacent buildings' cooling bills. What follows are some initial indications of how a building can help to optimize an urban space and how some of the negative effects of high density urban development can be mitigated.

Figure 1 illustrates the nature of reflected sun geometries in an urban environment. An observer looking north on an east-west street sees a blast of sunlight bounced from the reflective surface of a south facade. The latitude is 43N, the time is 10 a.m. on March 21, the sun altitude is 39.3, and the sun azimuth is 139.8. Reflected images continuously change as the sun moves across the sky. Although it may appear complex, the construction of reflected sun paths is not a difficult exercise. By introducing the "phantom world" concept (the illusion of a three-dimensional world as seen in a mirror) the drafting task becomes as easy as shadow casting. Figure 2 illustrates, in very simple terms, the temporal characteristics of the relationship between sun and street.

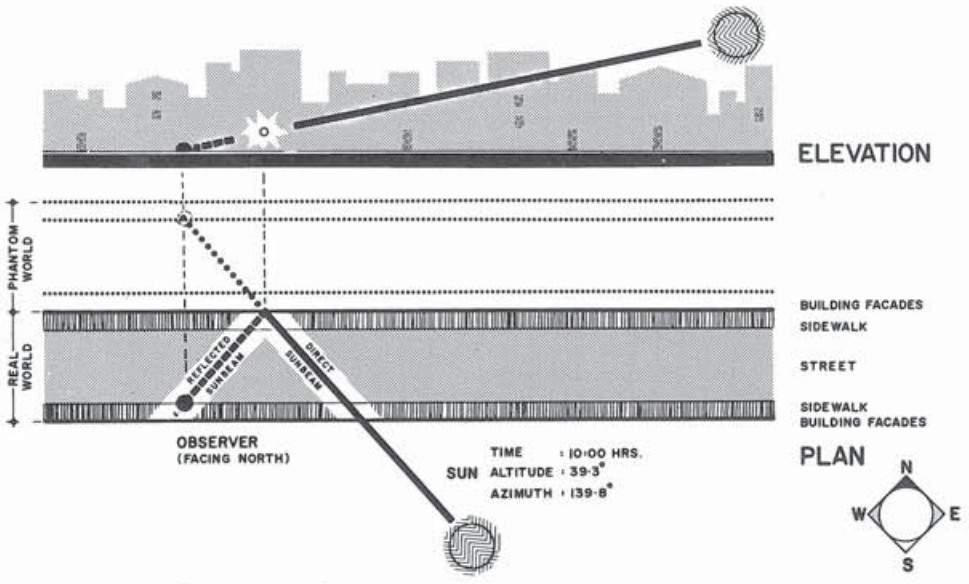


Figure 1. The reflected image of the sun in an urban street situation at a given time.

Reflected radiation is generated by both horizontal and vertical surfaces. At a given time, a point on a horizontal surface and one on a vertical surface simultaneously receive and reflect direct solar radiation. Under special

Percentage of Reflection of Various Surfaces.

NATURE OF SURFACE	PERCENTAGE OF REFLECTION
Ground	
dry	10–25
wet	8–9
Sand	
dry	18–30
wet	9–18
Rock	12–15
Glass	32
Green grass	3–15
Green leaves	25–32
Bricks	23–48
Asphalt	15
Snow	up to 90
Water pool	up to 90

Figure 3, Table 1.

In northern latitudes, a sufficiently wide east-west street has its south side exposed to the sun throughout the year. The north side of the street, except during early morning and late afternoon in the summer, is practically deprived of direct sun radiation. Each latitude requires a different ratio between the width of the street and the height of the building to ensure that the sunny side is indeed sunny. In the intensively developed areas of the city, this ratio is usually lost, and the sunny area is often overshadowed.

A north-south street has a different set of opportunities and constraints. The side which is exposed to the sun before noon is called the morning side; the opposite is the afternoon side. At noon solar time the sun runs parallel with the street axis and begins to cast light on the afternoon side. Thus, the north/south street is symmetrically divided, although because of the general daily temperature profile, the afternoon side is usually much warmer. In this and the previous case,a higher buildings with reflective facades may reverse the light and dark cycle (Figure 7).

True, focused sunlight can be achieved with the use of curved mirrored surfaces. Using the calculated curvatures of mirrored facades, a spring, even summer-like microclimate could be produced in a designated area for the winter sun hours. A model shown in Figure 8 illustrates opportunities for climate modification using solar energy. The target area - a solar pit - is lit by direct and reflected sunlight between 9 a.m. and 3 p.m. throughout the year. In reality, this would be desirable only during the cold period of the year, which, in most localities, would not exceed six months. The size of the reflective facade can therefore be cut by approximately half.

circumstances, these two streams of reflected radiation may be equal, but usually they are not. Colour, surface, texture, reflectivity (see table, Figure 3), and the angle of incidence can make one stream of reflected energy stronger than the other. The designer must be aware of these variables in order to deliver sufficient light and warmth to the street, especially in areas that can be reached only by reflected sunlight (Figure 5).

For an urban designer, it is useful to know that reflecting and impact points can exchange functions if the direct sun can reach both points. For example, a point on a horizontal surface, say a white stone pavement, or a reflecting pool of water or ice, can become a reflecting point. Any object placed between these two points would receive light from three sources, one direct and two reflected (Figure 6).

Each latitude requires a different ratio between the width of the street and the height of the building to ensure that the sunny side is indeed sunny.

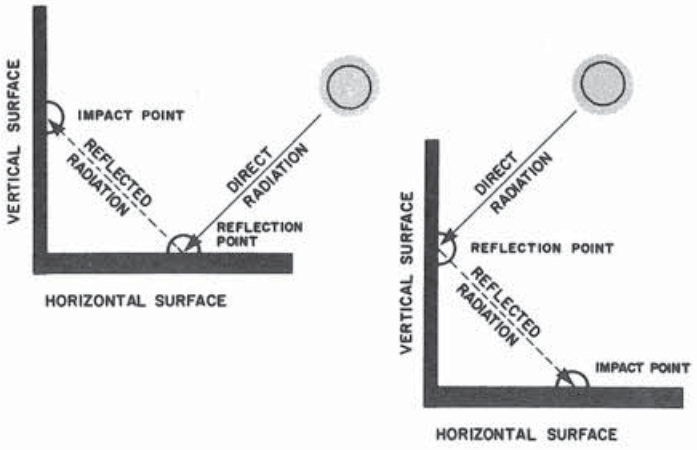


Figure 4. Reflected radiation from horizontal and vertical surfaces.

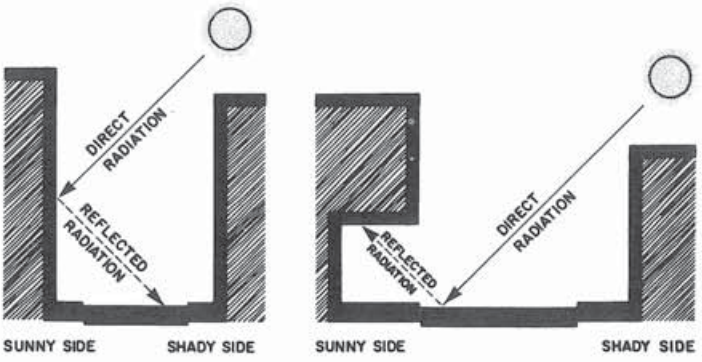


Figure 5. Certain urban surfaces can be illuminated only by reflected radiation.

Consciously designing with reflected sunlight opens doors to new ideas and imaginative solutions and helps to address many problems encountered in design and planning practice that thus far have barely been acknowledged; mirrored facades may be used to help thaw snow and enhance landscape design; curved building surfaces can deliver the amplified light and heat of the sun to public playgrounds or pools. During the cold season, a heliomorphic urban space would continue to radiate warmth as if it were possessed of an internal source of energy whenever the sun appeared in the sky. With the application of sun reflection concepts, the urban form can emerge as a complex optical instrument and as an engineering and artistic statement capable of making outdoor spaces comfortable throughout the year.

What is genuinely worthwhile will hopefully also be perceived as being beautiful.

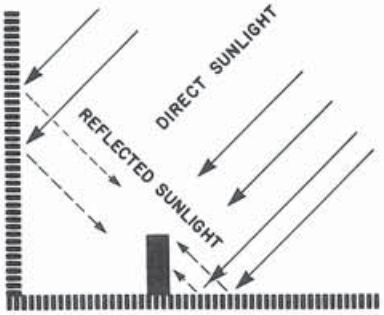


Figure 6. Object lit by direct and reflected sunlight.

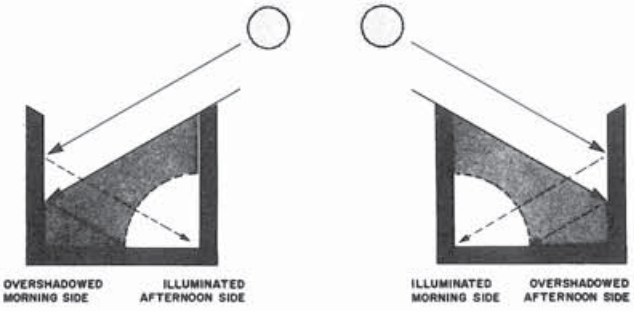


Figure 7. High-rise development on two sides of a north-south street.

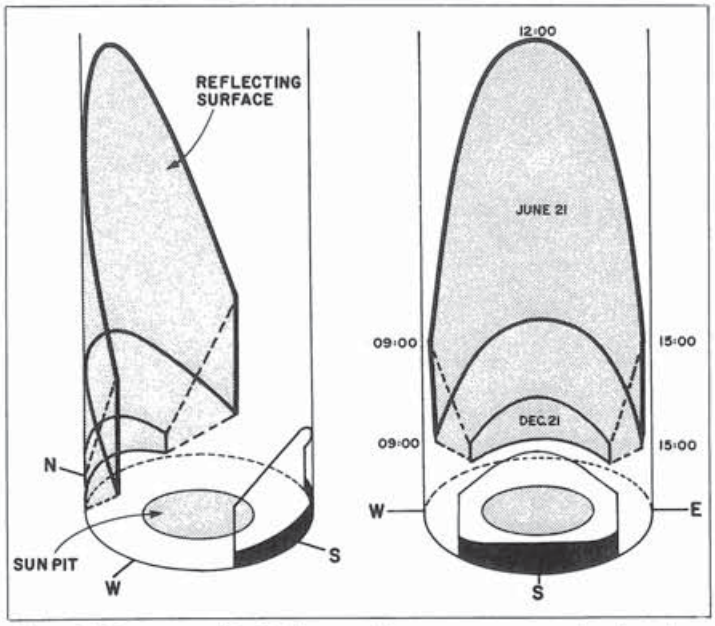


Figure 8. Sun pit model. Such a spatial arrangement can inspire a large number of architectural and urban design solutions, such as swimming pools, playgrounds, parks and public spaces.

This brief exploration into how the basic need for warmth and sunlight can be better addressed through design, also suggests that the same process may have a profound effect on our cultural needs. What is genuinely worthwhile will hopefully also be perceived as being beautiful. In our frenetic times, aesthetic speculations that are divorced from genuine human needs are of questionable merit, and this is becoming strikingly obvious through the current debates over the environment, affordability and sustainability. Consequently, this may be an appropriate opportunity for our profession to renew its interest in the joys of meeting basic human needs and thereby improving the quality of life in our northern environment through architecture.

THE LIGHT TOUCH

JONAS LEHRMAN

Atriums & Architecture

LIKE ARCHITECTURE, THE ATRIUM MAY BE DEFINED AS A spatial expression of human activity, one that is created by simple means. Today's landscaped atriums also attract the public, a factor recognized in commercial calculations. Atriums are now found in many building types which include banks, hotels, offices, apartments, hospitals and shopping malls.

In Canada the atrium responds to climate by admitting into the building the more acceptable parts of the exterior environment. It is a spatial form that is popular, and in its development in this country has shown a remarkable degree of originality.

Today we refer to an atrium as a focal indoor courtyard or plaza that is climate controlled and often more than one storey in height. It may be skylit, and if not wholly enclosed by building, it may be glazed from one or more sides.

A role of the atrium in the US is the creation of a social environment detached from the bustling life of the city street. In Canada the objective may be more the recalling throughout the year of summer's pedestrian street life. The focus of an atrium is an urban space, albeit inside, as distinct from the solid volume of a conventional building. Its contribution to the city is a climate-controlled town square where eating, shopping and people watching may take place. For this reason, its urban significance is major. An atriums' views are also controlled. Parking lots and traffic dominated streets can be excluded; or views may be selected to focus on, for example, an arts complex or a church.

The setbacks and plazas of the 1950s and 1960s which have edestroyed the historical attributes of the street now give place to buildings that conserve street lines and retain traditional city character. An atrium building with its wide range of shape and generally low profile fits more easily into its context while reducing wind turbulence and overshadowing.

By providing midblock passages at, below, or above street level, atriums add to a city's pedestrian spaces. Many atrium buildings now link adjacent streets with shops, parking and subway station although public and private uses are usually discreetly separated. In a single purpose building, this issue does not arise. At Toronto's Royal Bank Plaza, banking functions take place at or above grade while below are subway, shops, restaurants and pedestrian connections with a strong visual link between the two provided by light wells.

A further urban role is provided by an atrium located between buildings, in a sense heralded by Milan's Galleria. The intervening roofed space provides not only weather protection but an urban social reorganization and integration of activities previously considered separate (HUB, University of Alberta). It is this weather-protected public area providing welcome relief from exterior turmoil (yet with a dichotomy between inside and out, enclosure and openness, protection and freedom - in effect a plurality of meaning) that amounts to the multiple experience of the atrium. In an office building, it provides more occupants with a window to an interior view which is often better although it is a matter of choice whether a work space is directly connected to the atrium or glassed off from it. Certainly floors that recede as they go up provide an attractive view down on to each other.

There is sometimes opportunity for the interplay within one building or more than one atrium such as at circulation interchanges or elevator staging points. Two atriums through several floors may give place to one at the top or several atriums may be stacked one over the other.

Older buildings can be renovated and provided with an atrium if their main functions such as structure, orientation, entry, circulation, insulation and lighting work well. A major example is Washington DC's former Pensions structure, now the National Museum of Building. Found more often than an existing atrium is an old courtyard that can be simply glazed over (Coutts Bank in London by Sir Frederick Gibberd). Air shafts and light wells are also convertible into atriums when large enough.

Providing more complex yet imaginative solutions are older buildings that can be hollowed out, especially if the existing floor areas are deep and dark. Boston's Mercantile Wharf building (John Sharatt) had its centre third removed for a new atrium with shops and cafe at floor level and gallery-access apartments at its periphery above.

Any large glazed area needs attention to orientation, overheating from excessive solar radiation and shading from glare. The material through which the daylight passes may be of glass or acrylic, translucent composite material with a high insulating value, or lightweight fabric, as found in a tensile or pneumatic structure although in such case light transmission and durability are lower. Mirror glass reflects sunlight down to floor level but more often used on atrium walls are diffusing, highly reflective surfaces such as white concrete or, as found on early light wells, white tile. These increase the impression of sunlit space, although balcony planting somewhat detracts from this.

The method by which light is collected and brought to the working surface is important. The quality of light is more important than its quantity. Artificial light must be integrated (a skilled task). Apart from avoiding glare, the atrium's whole atmosphere is affected by its lighting quality.

Glazing construction may vary from welded steel truss to space frame. Movement must be fully tolerated since roof glazing is subject to solar gain and night cooling. The shape of an atrium roof also determines its ease of cleaning. Snow must be collected or melted by coils; rainwater must be channelled; and interior condensation collected or prevented.

Atrium buildings are often low, have less exposure to wind, and with less chimney effect have less of a cold air infiltration load. Conversely, an internal atrium can trap warm air to use as insulation in reducing heat loss.

The atrium can be regarded as an intermediate or buffer space providng a steady condition that does not fluctuate

or it can be deliberately environmentally controlled. By itself, passive control is insufficient. An atrium can passively modify site climate but must be integrated with mechanical and electrical systems.

The degree of comfort required is also a factor. The admission of daylight is closely related to heating strategy. For example, an adjustable blind system could accept sun in winter and filter it in summer.

Baffles or louvres control loss by radiant energy through the skylight at night.

Unassisted natural ventilation may be sufficient since an atrium's stack effect enables heated air to be vented at roof level. This method's effectiveness depends on the area of opening and temperature differential between interior and exterior. There could also be mechanical cooling. Fans in Frank Lloyd Wright's Larkin offices pulled fresh air through the building and cooled it with water.

At the psychological level, occupants tolerate more temperature variation if an atrium has a full view of the outside than if it were wholly enclosed or if diffusers and reflectors obscured the sky. The selection of finishes, furnishings and planting also affects psychological tolerance.

An atrium's seeming "extravagance" and "waste space" provide a special attraction and marketing edge to what could otherwise be a conventional building.

If not designed with care, an atrium may be unsafe. It is an unconventional building form from a code standpoint and consents are necessary. Fire safety is best worked out from first principles with emphasis on standards of performance rather than on existing code interpretation. In contrast to conventional cellular buildings, fire and smoke soon spread vertically in an atrium. However, if an outbreak occurs, an atrium offers superior visibility to locate and obtain access to the fire. Escape routes are clear and the atrium's large volume may dilute smoke.

Since smoke is the greatest threat, measures must be taken not only to limit the size of fire (with sprinklers) but also to remove the smoke. Enough clear space should be available above ceilings of surrounding accommodation through which smoke may be extracted. Surrounding enclosed floors will need an extract space over the ceilings that vent into the atrium. If the floor edges are set back successively as they go higher, smoke from a fire on the atrium floor will be discouraged from entering those floors.

An atrium's seeming "extravagance" and "waste space" provide a special attraction and marketing edge to what could otherwise be a conventional building. The larger floor area can accommodate a more economical office layout as well as facilitate interdepartmental contacts. The greater land coverage may be not more than required by a high-rise building with setback.

If the atrium is centrally placed in the floor plan, it provides enough window space with natural light for surrounding offices and meets the critical corridor-to-window distance. The rental value of a building is in any case increased by the attraction of its atrium. Surrounding shops register increased sales for which a higher rent may be charged. The extensive site perimeter is available for greater commercial frontage. All this is enhanced when zoning incentives (as in New York City) allow a considerable increase in allowable rental space for every square metre of a covered public pedestrian space.

Maintenance is easier for a low rise building and larger floor areas are cheaper to clean and maintain. The reduced construction cost for heating and cooling has been demonstrated.

The atrium building does have shortcomings. It may bestow on to the street a blank frontage and so discourage street life, leaving it merely to service functions, cars, and what may be termed undesirable elements. The continuity of the street is preserved but there are conversely fewer exterior "breathing" spaces. Those spaces are now indoors but are private and selective, the domain of owners and tenant/occupants. They are controlled, closed at night and on holidays. Any social life is restricted by management and security. The advantages of the atrium still remain considerable but some drawbacks are inherent.

On the debit side, an atrium building may be unsuitable for smaller sites because of the greater land coverage required. The floor area of the atrium itself may only have a limited functional use and cannot be rented. Furthermore, if upper level office floors have many small tenants, uneconomic access corridors may be required, yielding an inefficient net-to-gross ratio. A larger roof area is entailed, glazed roof costs are an extra, fire prevention systems may be more complex, interior landscaping has to be provided, interior finishes to the atrium itself are of a high standard, and surrounding screens and balustrades often have to be installed. However, with careful planning and design, these costs may be far outweighed by the savings inherent in the atrium plan.

BLOOMING SUCCESS

ALEXANDER ROBERTSON

TWO PROMINENT COMMERCIAL HORTICULTURists from St. John's, Newfoundland, Canada addressed the January meeting of the Winter Cities Association at City Hall in St. John's. Michael Murray, of Murray Horticultural Ltd., spoke on the growing business of interior landscaping while Egbert Limberg, of Cabot Produce Ltd., spoke on technical aspects of large-scale commercial hydroponics at the controversial $22 million greenhouse complex in Mt. Pearl. This article is based on their talks plus the authors's personal comments.

INTERIOR LANDSCAPING BRIGHTENS OUR WINTER

Despite ancient origins, modern applications of interior landscaping in public places is relatively new and has caught on in winter cities since the early 1970's. Plantscapes soften the harshness and sterility of modern architecture with its over-extended use of concrete, glass, plastics, and steel. We are beginning to see an increasing use of plantscaping as an essential humanizing element of modern (and renovated) interior building design in such places as hospitals, hotels, shopping centres, offices, industrial and college settings. Undoubtedly the most popular local, interior plantscape is the atrium at the new Hotel Newfoundland which includes not only a magnificent rockery but also a magnificent view of Signal Hill and the historic area known as the Battery. Mr. Murray, involved in its design and maintainence highlighted the evolution of the design process and many of the techniques and skills required in a complex interior plantscape.

Interior landscapes are integrated into the decor principally to highlight focal points, provide a screen between areas, and to purify the air. The latter is particularly important where there is a high density of people and also to absorb slightly noxious chemicals given off by synthetic materials common to most modern buildings, furniture and clothing. In short, there are considerable economic, psychological and environmental benefits associated with the installation of attractive, well maintained, plantscape schemes.

Mr. Murray emphasized that plantscape concepts should be incorporated into the earliest stages of the design process to ensure that proper lighting, drainage systems, and even special access for planting and maintenance schedules are fully integrated.

Apart from the many technical considerations, including light, water, temperature, growing medium, plant species selection, fertilization, etc., perhaps what is not always considered are the impacts of human activities upon a plantscape. Pedestrian activity raises such concerns as acts of vandalism or picking at plants for mere curiosity. Interior gardens are also convenient depositories for chewing gum, pop bottles and cans, plastic bags and paper wrappers and cigarettes. So plantscapes have to be designed with appropriate species to withstand a fair bit of punishment. On the other hand public safety is an aspect of interior plantscaping. For example, Yucca plants have stiff, serrated leaves which can cut, and snake plants with their sharp leaves and misplaced cactus can do harm to those who brush against them. We would no more discourage planting these beautiful plants than we would the thorny roses.

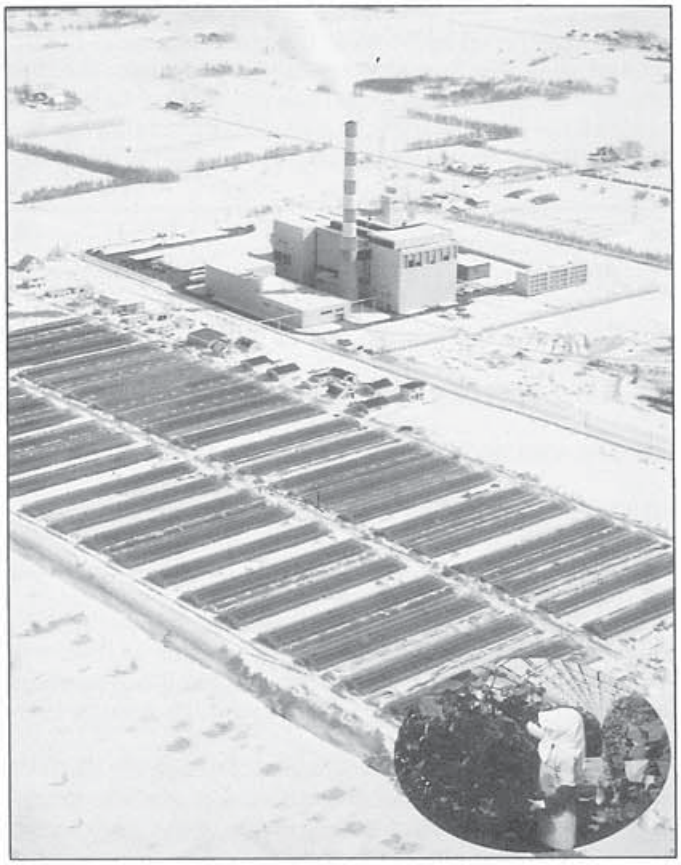
We are beginning to see an increasing use of plantscaping as an essential HUMANIZING ELEMENT of modern (and renovated) interior building design...

Mr. Murray emphasized plantscapes are not static entities, but continue to grow, blossom, occasionally bear fruit and eventually die. Change plants once in awhile to maintain interest. Good interior landscapers try to emulate the seasons by growing daffodils and tulips in spring, roses and iris in summer, and introduce plants with fall colours to brighten up our dreary winter.

In the interests of environmental safety Mr. Murray described alternatives for weed and pest control in interior plantscapes, such as biological control using parasite and insect traps with pheromone, and safer insecticidal and fungicidal soaps, and a greater variation of insect and disease resistant plant strains.

Interior plantscaping for home and public places has come a long way in scale and sophistication and has become an established part of winter city business in Newfoundland. Horticulturists need to exert greater influence on architects to encourage more exciting and daring concepts more responsive to the desires and needs of winter city residents.

WINTER CITY FARMING WITH HYDROPONICS



HYDROPONICS IS CONSIDERED AN EXOTIC, HIGH-TECH CONCEPT. Yet it is based on nature's aquatic ecosystems. Mangrove swamps, peatlands, tidal marshes, swamps all have plants which grow in watery medium which contain nutrient solutions. The Indians of North America have harvested wild rice from aquatic ecosystems for thousands of years and perhaps rice paddies are among the oldest hydroponic crop production systems.

Hydroponics enables growers of certain vegetables to have more control of plant physiology through regulation of the growing medium, light quality, nutrients, oxygen and carbon dioxide, and elimination of pests and diseases. Good control of the plants and their environment maintains consistent quality and quantity of crop and less dependency on the vagaries of climate than conventional farming.

The major constraints to hydroponic crop production in the north as a year-round activity has been the high cost of installation, energy and suitable lighting systems. Although hydroponics has been around for centuries it is only within the last decade or so that science and technology have provided us with the ability to engage in large-

scale hydroponic farming. The fact that Cabot Produce Ltd., has broken even on their costs under the most difficult circumstances is cause for optimism.

Countries like Spain, France and Holland have successfully practised large-scale hydroponics for years. No other commercial hydroponic installation is more controversial than the massive greenhouse complex built in Mount Pearl at a cost of more than $22 million dollars. Despite all the political intrigue and media hype this massive installation is one of the most advanced in the world and has some unique features. Furthermore, it is particularly suited to winter cities technology inasmuch as it directly influences the nutrition, and hence the health, of northern inhabitants by providing truly fresh, high quality vegetables in winter.

Horticulturists need to exert greater influence on architects to encourage more exciting and daring concepts more responsive to the desires and needs of winter city residents.

At the time of writing the Greenhouse complex has been closed and will be relocated to another part of Newfoundland. According to Mr. Limberg low sunlight, high energy costs due to wind chill, defective lighting system (installed by previous owners), inefficient and inappropriate greenhouse layout, and inappropriate water supply caused the move. Mr. Limberg's knowledge and prior experience in Europe, includes hydroculture mediums with sand, peat, clay balls, oasis, sawdust, lava rock, Rockwool (stone and slabs) and agrifoam.

From an environmental perspective Nutrient Flow Technique is essentially a closed system with very little chemical waste disposal or drainage; it is a clean operation with almost no waste material to be disposed of. Added flexibility comes with recirculating water since there is much less demand on water consumption and energy to control temperature, and oxygen. The incidence of pests and diseases are considerably reduced.

What makes the Mt. Pearl structure unique in hydroponic greenhouses is the covering material made of a lighter grade of the fabric used in the Olympic Stadium in Montreal. The lighter grade material allows greater light transmission of photosynthetically active radiation (PAR) or visible light suitable for the type of crops being produced. And is cheaper, stronger and more suited to aerodynamic greenhouse shapes than glass, plexiglass and polythene. Cooling is achieved by watering the outside of the greenhouse to lower the dew point inside to induce condensation. Condensation, combined with the large plant mass, creates optimum growing conditions such as in a humid tropical forest.

The relatively low cost of construction, cheaper energy and water costs plus competent staff and geographic isolation from agricultural zones, plagued with major pests and diseases are among the reasons to be optimistic about large scale hydroponics in Newfoundland. We should consider that trans-continental shipments of fruits and vegetables arrive in the north not only from Mexico and California but also from New Zealand, Australia and other countries in the southern hemisphere. By the time they arrive their nutritional value is highly questionable.

Newfoundland is strategically located to make timely shipment of hydroponically grown fresh fruit and vegetables to North American and European winter city markets.

So, with a wee bit of courage and dexterity we should make every effort to avail ourselves of these international markets with a year-round crop production system such as hydroponics offers.

GET THE DEVIL OUT BY DETAIL

HANS BLUMENFELD

WHEN WE TALK ABOUT THE "LIVABLE WINTER CITY" WE ARE really thinking about making an all-year-round city more livable in winter. To make a city in eternal winter more livable would present a different problem. In some ways the possible improvements would be more limited; on the other hand, some proposals which might be valid for winter, such as very high concentration or a completely synthetic atmosphere, are not acceptable for a city which is also lived in during other seasons.

Evidently most of the characteristics which make a city livable -safety, prosperity, variety, accessibility, beauty - are for all seasons. Specific measures to enhance livability in winter can be sought in two directions: increase in the enjoyment of winter's positive aspects, and protection from the negative ones.

The positive aspects are basically two: the visual beauty of snow and ice, and the opportunities they offer for a variety of sports. The diffuse light reflected by snow lightens shadows and creates landscapes and townscapes of unique beauty which can be enjoyed by looking out of a window. This requires preserving snow-covered surfaces - generally lawns in summer - and an unpolluted atmosphere which, of course, is desirable anyway for breathing. Snow-covered branches of trees and shrubs enrich the image. It is also important to admit into inhabited rooms as much as possible of the limited amount of sunshine available in winter. This requires southern exposure which, in combination with a balcony keeping out the rays of high-standing summer sun, is also preferable to east-west exposure in summer. The windows on the north side of a building provide a view of a sunlit land or town-scape. The beauty of ice is displayed primarily by icicles. We might create more of these by spraying trees or specially designed structures, which may or may not also be sum-

Blumenfeld says God and the devil live in minor details.

mer fountains. Snow and ice are most intensely enjoyed by winter sports, skating, skiing, and sledding, with their many variations. We could have much more winter sport activities in our cities by making them more accessible, both geographically and financially. In Moscow, skates, skis and boots can be rented for a nominal fee in a number of city parks.

HOWEVER, MOST ATTEMPTS TO MAKE OUR CITIES MORE LIVABLE IN WINTER have been directed not to enjoying it, but to fending off or mitigating its negative aspects. These vary in various climates. At high latitudes in an oceanic climate, in Glasgow or Bergen, it is lack of daylight which makes winter depressing. Canadian cities are located considerably farther south, between the latitude of Rome (Windsor) and of Blackpool (Edmonton). They enjoy a good deal of daylight and even of sunshine in winter. But being exposed, with few exceptions, to the extremes of a continental climate, cold is the feared enemy, especially in alliance with strong winds. To this have to be added the impediments to movement, both on foot and by car, created by ice and snow, and the unpleasantness of their dissolution into slush.

...many people dream of cities which are forever separated from winter's cold by a roof or membrane...

It is therefore not surprising that many people dream of cities which are forever separated from winter's cold by a roof or membrane - indoor cities with unchanging degrees of temperature and humidity. This is hardly desirable. It would impoverish experience in all seasons; do we really want to atrophy the marvellous feedback facilities by which our body maintains homeostasis? Moreover, such an indoor city would have to be compact, severely limiting the potential for vegetation and for views, light, and sunshine, not to mention the deep-rooted and quite reasonable preference for a single-family house with a private garden.

Complete exclusion of winter from the city is therefore not a serious option; partial exclusion has to be sought. It can pursue two routes, jointly or separately. First, part, but not all of winter's negative aspects can be eliminated throughout the city; second, all can be eliminated from parts of the city.

Winter temperatures are a few centigrade higher in the cities than in the countryside. It is hardly feasible to increase this difference. But it is possible to greatly reduce the "chill factor" by reducing the speed of air movements. It is equally possible to provide protection from falling snow by a roof which also keeps out rain as well as excessive radiant heat from a high-standing summer sun.

Past periods of city building have paid far more attention to both of these methods, in practice as well as in theory. In many old cities the direction of streets, their widths, length, and curvature has been carefully and successfully designed to break strong winds, as well as to admit cooling breezes in summer. This is very difficult to achieve in streets which have to serve fast vehicular movements which necessitate long sight lines and also substantial width. This is a strong reason for separating channels of pedestrian and vehicular movement, in addition to the demand for safety. The large dimensions, vertically as well as horizontally, of many contemporary buildings have greatly increased the danger of excessive funnelling of wind; this must be counteracted by careful siting and design of all big structures, supplemented by windbreaks in the form of low structures, walls, or dense plantings.

The second method, protection of pedestrian street life by a roof, was widely practised by the ancient Greeks in the form of the Stoa. In Hellenistic cities such as Ephesus and Palmyra, practically all streets were lined with continuous colonnades; similar "arcades" were frequent in medieval Europe and still survive in Bologna, Bern, and other cities north and south of the Alps. Their elimination from the 16th century on was due to two considerations, which have long lost their validity; fear that their heavy columns would serve as hiding places for criminals on unlit streets, and depriving window displays of light. There is no reason why arcades should not line every continuously built-up street. Their attractiveness in winter could be greatly enhanced by radiant heating of their floor to a temperature somewhat above zero, which could be provided at modest capital and operating cost.

There is no reason why arcades should not line every continuously built-up street.

Such an arcade, if it is sheltered from high winds, could be quite a pleasant environment on all but exceptionally cold days in most Canadian cities. A person in winter clothing will feel more comfortable in them than in a completely enclosed environment at room temperature. Such environments, mostly shopping centres, have been created in many Canadian cities, at, below, or above street level. They have, of course, the great advantage for retail sales and services of eliminating the need for separating the space of sale from the passerby. For visitors who drive in

indoor clothing, from their home garage, to the garage of such a centre they are just perfect. But do we really want to adopt this pattern of moving exclusively by car as our universal life style?

When the pedestrian systems are located above ground level, as are the "plus fifteen" in Minneapolis and Calgary, or at level, as the "Galleria" in Toronto, they allow for some visual access to both the sky and the surrounding area. Underground systems may threaten their users with mole-like existence. This can be avoided if they provide some access to "sunken gardens", as in Philadelphia's Penn Center. However, such openings to the sky do not register if they are too small, as in Montreal's Place Ville Marie.

Probably the most serious complaint by Canadians about winter is the impediment to driving because of snow or ice. As far as a real blizzard is concerned, the only way to make it livable is to "Stay home!" Which may remind us that a livable home is by far the most important ingredient of a livable city.

By and large, Canadian cities do a remarkably good job in keeping streets open for driving. Unfortunately, the salt used for this purpose damages, cars, shoes, clothes and plants. On garage ramps, melting is achieved more effectively by heating. Considering all direct and indirect costs of snow clearance plus salting, it might be worth considering their replacement by pavement heating, at least in city centres.

One of the most unpleasant - and most avoidable - effects of winter is created by its exit, when melting snow forces pedestrians to step through deep puddles of slush in order to cross the pavement at street intersections. This would not be the case if we redesigned the longitudinal profiles of vehicular streets so as to place the storm sewer-inlets at least three metres away and fifteen centimetres below the points of crossing.

A minor detail? Certainly; but, as has been said, God lives in the detail. So does the devil. We may never succeed in driving him out of all the nooks and crannies and create The Livable Winter City, but we certainly can do better than we do now to make our cities more livable in winter.

JANE JACOBS

AND WINTER CITIES

"DEATH AND LIFE OF GREAT AMERICAN CITIES", Jane Jacobs has given the world enduring insights into the functioning and structure of large cities. Her teachings' broad effect on the planning and policies of North American civic governments at all levels, even influences attitudes and lifestyles at street level.

Her message may have been aimed primarily at the biggest cities, but there are lessons for cities and towns of all sizes, including winter cities.

Ms Jacobs has consented to evaluate the Winter Cities Association current research project, "Seniors and Mobility in Winter". Her evaluation will be part of the final report to be published a few months hence; we welcome this important contribution by so esteemed an authority. Ms. Jacobs presently makes her home in Toronto having previously lived in New York for a number of years.

In "Death and Life of Great American Cities", using plain language, good humour, and numerous colourful and apt examples, she sets out basic principles for the regeneration and healthy growth of great cities.

Jacobs states that within an urban neighbourhood or district, there must be diversity, including commercial, entertainment, cultural, probably small industrial and various other "work and non-work" elements. Such mixed use generates a continuous come-and-go on city streets and sidewalks. This is good for merchants, for social exchanges. The constant presence of many people (including idle watchers) assures the safety of the streets and "assimilation" of restless youngsters into the constructive life of the city.

City blocks should be short — long blocks make for monotony, repetition and dullness. Short blocks, on the other hand, create more variety to the streetscape and add to the sense of liveliness. Many older buildings should be retained , not alone as heritage pieces, but to provide low rental bases for new businesses and low income ventures that add character to the district.

She points out a need for a mixture of low and medium-rise residential buildings and enough street-level space left for wide sidewalks, cross streets and small parks, for sunning, lounging and play. The parks should be strategically placed close by the bustle and activity of street life. Helpful also is an assortment of "public characters", merchants, policemen or others who take personal interest in the district and act as points of contact and friendly conveyors of "street news".

Massive redevelopment is to be avoided since "cataclysmic" injections of funding and sweeping changes serve only to upset people and uproot businesses, young and old, that are in the process of growing. Preferred is small-scale bit-by-bit supply of funds judiciously advanced to unblock and assist hopeful projects and activities.

One suggestion for injection of "gradual money" is the subsidizing of rents for low income residents up to the level where they can afford to pay their own way. Slum areas that show signs of developing self-confidence and vitality should be helped to help themselves . Border areas such as along superhighways or large parks are difficult to keep alive and should be minimized. Where unavoidable should be strengthened by encouragement of mixed-use activities and diversity.

Automobiles, rather than being encouraged by building wide streets, expressways and ample parking, should be discouraged by processes of "attrition" — fewer traffic lanes, and parking facilities. Grandiose civic and cultural complexes should not be set apart and closed off from the city's pulsating life but should be broken up and scattered through the urban area of contribute to the diversity.

Overall, we should change our way of thinking about cities, regarding them inductively — starting from the individual, the local and the specific, rather than "deductively" from the big picture and grand concept.

Above is the scantiest summary of some high points in the 448 pages of "Death and Life of Great American Cities". All of the ideas may not apply to winter cities and small places, but advice that we should begin to look at cities differently than we have in the past — applies to all urban places.

What is good for temperate regions cities, may be even better for northern cities and towns with special problems because of climate, higher costs, and, for some, isolation. A recent sampling showed that for some winter cities, winter streets budgets on average were 50 percent higher than summer streets budgets. Such extra costs are unknown for cities 1,000 miles further south, paving, construction and utilities costs are also higher because of seasonality, frost heaving and deeply frozen ground.

Jane Jacobs condemns urban sprawl as being destructive of vibrant city life. In winter cities sprawl is still more to be resisted because of higher original costs (see above) plus the costs of servicing and using the spread-out subdivisions — mothers chauffeuring children back and forth over the extra mileage using gasoline at 60 to 80 cents per litre.

Author Jacobs reminds us that urban residents are not separate and distinct from Nature, but are part of Nature. The city is not anti-Nature, but is a natural phenomenon as much as is a beehive. City growth, health and development cannot be superimposed from above, regimented or legislated but must be understood and nurtured as with a growing plant. Cities are worth the effort:

"Dull, inert cities, it is true, do contain the seeds of their own destruction and little else. But, lively, diverse, intense cities contain the seeds of their own regeneration, with energy enough to carry over for problems and needs outside themselves.

Winter Cities, more affected by Nature's extremes, need special care and knowledge, and have more to gain by taking Jane Jacobs' teachings to heart than do Pittsburgh, St. Louis and San Francisco. For starters, winter cities leaders who have not read Jane Jacobs' "Death and Life of Great American Cities", should do so.

PROFILE BY JACK ROYLE

BOOK REVIEW

COMING IN FROM THE COLD

ENERGY-WISE HOUSING IN SWEDEN

A report sponsored by The German Marshall Fund of the United States and the Swedish Council for Building Research

SWEDISH HOMES USE LESS ENERGY FOR HEATING than those in any other country in the world. Furthermore, they maintain the highest standards of indoor comfort, even at the higher temperatures Swedes prefer.

How do the Swedes do it? In "Coming in from the Cold", the U.S. scientists look closely at the building practices and routine technologies, along with the interaction between consumer demand and government incentives, that have made Swedish homes a model of high quality and low fuel consumption. In the course of a two-year study, the authors interviewed leaders in every sector of the Swedish housing industry, from typical homeowners to members of the national planning and housing boards. The result is not only an intrinsically fascinating success story, told here for the first time, but a set of practical lessons for those U.S. architects, builders, and policymakers who have been asking, "If in Sweden, why not here?"

Available from Seven Locks Press, P.O. Box 27 Cabin John, MD 20818

"OUT OF PLACE — RESTORING IDENTITY TO THE REGIONAL LANDSCAPE"

by Michael Hough, 230 pp., Yale University Press, New Haven Conn., and London

THIS IS A HANDSOME, WELL-PRESENTED BOOK, well written and packed with interesting and instructive illustrations. It's message is for those who feel humans must struggle against the mechanical repetitiousness of buildings and urban infrastructures proliferating around the world. Sprawling subdivisions, highrises and super highways, too much in the same pattern are shutting us off from the unique and special elements that give our cities and regions character and identity.

"Sense of place" is achieved by drawing closer to our natural environment and by emphasizing attractive features of the area's terrain, history and its differences and specialities. Besides generating more awareness of the landscape, it promotes self confidence and local pride, adds variety and interest to life and is wholesome as well as helping to assure a sustainable future.

Hough gives a Cook's tour of the world, using his camera and visual perceptiveness to show locations that have lose "sense of place" and others that have found ways to preserve or restore theirs.

He asks: "Why are the abandoned but naturally regenerating places one finds everywhere behind the formal civic landscapes so much more interesting than the ones designers are taught to admire and create? What is it about historic cities and old vernacular landscapes that attracts people? Why do modern cities, suburbs, industrial and farming landscapes all tend to look the same? Why is so much intellectual effort spent on hiding modern objects, like electrical transmission towers in agricultural landscapes while we immortalize the old windmills of a bygone era?"

Being closely involved with one's region gives "stability and a sense of investment in the land", he notes. One problem is "top-down" planning that ignores local values and knowledge as well as significant environmental conditions."

Areas that do cherish their own unique appeals may find themselves becoming attractive to tourists, but examples of tourism that become too overwhelming. "...use and preservation of natural areas and scenic places presents not conflict but opportunity for a new harmonious relationship between man and nature. "Rather than exploiting natural resources, tourism, in a modern view, "focuses on conservation as the basis for growth." The whole tourism industry must take a more enlightened and disciplined attitude towards rare and special natural resources such as exceptional bird watching locations, remarkable forest and lakeland resources. Local people must establish their own priorities in the process of benefitting economically from tourism. Hough gives de-

tails of a tourist management plan instituted at Manteo, North Carolina where this has happened with great success.

Final chapters set out recommendations for creating a "sense of place". Natural assets such as rivers, ravines, hills, woody areas etc., must be identified, protected and featured. Management of key resources needs to be handled with sensitivity and flexibility to meet changing needs and permit citizens to share in the exercise, accommodating their variety of interests. Historical and unusual situations need to be emphasized. Overall a good rule is to do as little as possible and start where it is easiest. This low key approach discourages sweeping plans and high powered projects that result in intrusion by humans into nature's miraculous processes.

Michael Hough, in addition to being the author of several books, is a leading Canadian landscape architect and an active member of the Winter Cities Association. Copies of "OUT OF PLACE" may be obtained from Ballenford Architectural Books, 98 Scollard St., Toronto, Ontario M5R lG2 $42.50 Cdn.

UPCOMING EVENTS

CONFERENCES

Second International Conference on Ice Technology

18-20 September 1990, Cambridge, England

Contact: Liz Newman, Conference Secretary, CMI, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, S04 1AA, U.K.; phone (0703) 292853.

Canadian Indian/Native Studies Association 1990

Annual Conference - "Coming Full Circle; Responsibility and Reciprocity in Native Studies" 12-14 October 1990, Ottawa, Ontario Contact: Organizing Committee, Institute of Canadian Studies, Carleton University, Ottawa, Ontario K1S 5B6; phone (613) 788-2366.

1990 Arctic Science Conference

8-10 October 1990, Anchorage, Alaska

Contact: Dr. Thomas Newbury, Conference Chair, c/o Minerals Management Service, 9490 E. 26th Ave. (Room 110), Anchorage, Alaska 99508-4302, U.S.A.; phone (907) 261-4604.

Symposium on the Physics and Chemistry of Ice

1-6 September 1991, Sapporo, Japan

Contact; Norikazu Maeno, Institute of Low Temperature Science,

Hokkaido University, Sapporo 060, Japan

6th International Symposium on Ground Freezing

September 1991, Beijing, China

Contact: Hans Jessberger, Ruhr-University Bochum, P.O. Box 102148, D4630 Bochum 1, Federal Republic of Germany; phone: 02 341700-6135; telex: 0 825 860 UNIBO D.

Antarctic and Global Systems - A Conference on Antarctic Science

23-28 September 1991, Bremen, Federal Republic of Germany

Contact: Prof. Dr. G. Hempel, SCAR Antarctic Science Conference, Alfred-Wegener-Institute for Polar and Marine Research, Columbusstrasse, Postfach 12 01 61, D-2850 Bremerhaven, Federal Republic of Germany

36th Annual IDA Conference
Edmonton, Alberta, Canada
September 8-12, 1990

"Learning How to Compete Effectively"! This conference theme embraces all the essentials of planning and implementing results to vitalize your downtown - and goes straight to the heart of the fundamental issues affecting all city centres. For more information contact: International Downtown Association 915 - 15th Street N.W., Suite 900 Washington, D.C. 20005

INTA 1990 Conference
Randstad, Holland October 7-12, 1990

Many regions in the world have succeeded in accepting the challenge of modernizing their physical, social, economic and cultural climate. What is the key to their success? What opportunities and hazards lie in store for regions which take up the challenge? For more information on this conference contact Organization INTA 1990, P.O. Box 6699, 3002 AR Rotterdam, The Netherlands, Phone: +31-10-489.5150; Fax: +31-10-489.5105

4th Annual International Winter Weather Workshop
St. Louis, Missouri
October 10-12, 1990

Surface Systems Inc. (SSI), host and sponsor, invites airport and highway maintenance officials to an informative 3 day workshop. Experts in the transportation industry from different geographical areas will discuss specific ice and snow control management techniques. For registration or information please contact: Ann Buchmann, Surface Systems Inc., 10420 - Baur Blvd. St. Louis, Missouri 63132-1905 Phone: 1-800-325-SCAN; Fax: (314) 569-3567

Winter Cities Forum '91
"Sustainable Development for Winter Cities & Communities"
Sault Ste. Marie, Ontario
January 21-15, 1991

The state of global environment tops on the public agenda. Experts say 1990 must be the decade of decision and turnaround for the biosphere. Winter cities must accept this challenge if they are to be economically successful and environmentally sustainable in the long term. Join international delegates as insightful speakers share action plans for implementing sustainable development in cold climates. Pre-registration is available by contacting: Winter Cities Forum '91, Villes d'Hiver Forum '91, 360 Great Northern Rd., P.O. Box 787, Sault Ste. Marie, Ontario P6A 5N3

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