LIVABLE WINTER CITY ASSOCIATION
ASSOCIATION POUR L'ANIMATION DES VILLES EN HIVER

Winter Cities NEWSLETTER

VOL. 6 NO. 1 FEBRUARY 1988

Help The Elderly and Handicapped in Winter!

$100 for the best idea; $10 for each idea we publish.

Each of us has parents, grandparents or friends who are elderly; each of us sympathizes with those physically or otherwise handicapped. Some of us are already elderly; we all expect to be. Snow and cold make difficulties in mobility, activity and socializing for those restricted by age or handicaps.

YOU MAY HAVE AN IDEA THAT WILL HELP.

Take a few minutes and send your idea to Winter Cities Newsletter. Cash prizes will be given for the best entries. Medical experts and gerontologists will judge the winners.

CLOSING DATE:
JUNE 30, 1988.

Send your entries to:
Winter Cities Newsletter, Box 5130, Stn.'A', Toronto, ON M5W 1N4

Zepic New Managing Director



Xenia Zepic, newly-appointed Managing Director of the Livable Winter City Association sits at her desk in association office on the fifth floor of School of Architecture and Landscape Architecture, University of Toronto. Ms. Zepic has many assets and attributes that qualify her for the position.

LWCA directors affirmed the appointment of Ms. Zepic and creation of a secretariat for the organization in a vote by mail taken in advance of a meeting Jan. 21. The secretariat will function at LWCA executive offices on the fifth floor of the School of Architecture and Landscape Architecture, University of Toronto, 230 College St., Toronto. The office space was made available through the generosity of the School. At the outset, Ms. Zepic will be in the office on two days each week, Tuesday and Thursday. As the organization continues to grow, it is expected the requirement for her services will expand.

Zepic has professional accreditations in architecture, urban design and planning from The Faculty of Architecture, University of Zagreb, Yugoslavia and from Canada.

She is a member of the Canadian Institute of Planners, the American Institute for Urban Design and a co-founder of the Livable Winter City Association.

Until recently, she has worked with the Metropolitan Toronto Planning Department. There she participated in various projects dealing with Transportation issues affecting Metro Toronto such as: The Yonge Street Revitalization Study, the Eglinton Corridor Study, the Accelerated Rapid Transit Study and the Scarborough Transportation Corridor Right-of-Way Requirements and Property Management Study.

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Winter Cities '90 Host City, Tromsoe, Is Outstandingly Creative, Dynamic

"The Gateway to the Arctic Sea, the Capital of Northern Norway, the Parish of the North, the City of the Future". These are some of the names used to describe this modern dynamic city of 48,000 inhabitants that will host the 1990 International Winter Cities Forum and Showcase. At 70 degrees North Latitude the city is one of the world's most northerly cities but its climate is considerably moderated by the Gulf Stream which circles across the North Atlantic ocean and sweeps northward along Norway's coast.

Tromsoe's economic base has several main elements -- the oil and gas drilling taking place in neighboring Atlantic waters, and the fishing industry that has been a mainstay of the city for many years. The tourists arriving aboard luxurious cruise ships and combing the quaint shops for momentoes and items of interest.

But the city has energy and character that might be envied by many cities in all latitudes -- a determination to excel, a large amount of ambition, creativity and desire to be tuned into and be part

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We Breathe New Life Into Old Towns

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

Hallmark Designed Communities specializes in developing and implementing plans for the revitalization of community cores experiencing urban decay. Our designed communities bring old towns back to life by combining municipal facilities + libraries, health centres, and offices with new shopping and cultural facilities such as theatres or auditoriums. The result is a rejuvenated downtown core with a central focus, a truly livable and vibrant community.

Our ability to design a business plan that bring together financing through joint ventures between resource companies and governments enables us to develop, implement and manage these new facilities to the betterment of the entire community.

We also plan, design and implement new communities required to service the needs of resource corporations engaged at remote locations.

Whether it's the rejuvenation of an old town or the birth of a new town, Hallmark Designed Communities has the knowledge, the experience and the ability to make it work.



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Zepic cont'd.

One of her last assignments while still with the Metro Planning Department was to develop civic design guidelines to accommodate community requirements and aspirations as part of the Metropolitan Official Plan Review Programme. She has been actively involved with the Livable Winter City Association.

As a Senior Research Fellow at the Institute of Urban Studies, University of Winnipeg, and in collaboration with Prof. N. Pressman of Waterloo University, she has co-authored the publication "Planning in Cold Climates: A Critical Overview of Canadian Settlement Patterns and Policies," published in 1986.

Other activities related to the winter cities research included extensive travel and lecture tours across Canada, U.S. and Scandinavian Countries including Finland. In addition she contrbuted articles for two major books on cold climate planning: Reshaping Winter Cities (published by the LWCA) and The Future of Winter Cities (published by SAGE, California.)

Zepic's writings have been translated into several languages including Icelandic and Japanese.

This year, with her partner, Lori Molnar, designer, gerontologist and LWCA member, Zenia is involved in the renovation and reconstruction of two major senior citizens' projects in downtown Toronto. Ultimate goal of their firm, Concepts and Designs, is to create a senior citizens' project that would present the total concept of living in a cold climate comfortably and without stress.

Tromsoe cont'd.

of the newest developments in culture and technology.

Arni Fullerton, Chairman of the International Winter Cities Committee, after visiting Tromsoe, wrote:

"Tromsoe is building a network of road tunnels under the city. The City Centre is on an island with a rock hill approximately 100 meters high. The plan indicates over 10 kilometers of underground arterial roads. The first phase to connect the airport to downtown Tromsoe will be finished by the end of December. (Ed. Note; written in 1987). The cost of the road will be repaid by a 'toll' for its users.

"Downtown Tromsoe is a delightful mix of brightly colored, historic wooden shops and housing, side by side with new structures. The Downtown is compact and easily accessible by foot because there are no off-street parking lots to blight the urban landscape. Parking 1,000 cars is also under the hill in 22-meter-wide rock caverns. Access to the shopping street is an easy 3-5 minutes by foot. One of the two pedestrian access walkways emerges in the atrium of a small new three-level shopping centre. This glass-roofed atrium has sections which open in fine weather.

"A major electrical transformer located in this underground complex, provides sufficient heat to maintain a 20 de. C. temperature in part of the subterranean environment while the rest remains at a constant 8 deg. C. temperature year round.

"There are also tennis courts in one high cavern with lights that point towards the ceiling. They are coin operated to swing down and light up the astroturf for a period of time to allow a game.

"Now the city is looking at the possibility of building a Congress Hall in this rock hill."

Tromsoe will be hosting a number of eventrs in 1990 including World Cup Championship downhill skiing and PIARC International Road Congress.

Some of its attractions are: "The

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WINTER CITIES NEWSLETTER
VOL. 6, NO. 1, February 1988 Issue,
ISSN no. 0828-9328.
Charitable Donation Registration Number: 0 679 514-21-10.
Second Class Mail Registration No. 6952.
Winter Cities Newsletter is published 6 times per year by Winter Cities Association, P.O. Box 5130, Stn. "A", Toronto, ON M5W 1N4. Winter Cities Association is a nationally incorporated, non-profit organization that promotes improved adaptations to and attitudes toward living in northern climates.
Subscription price $30 Canadian per year; two years, $55 Canadian: three years, $75 Canadian. Unsolicited contributions and manuscripts welcome. Include self-addressed pre-stamped mailer if return requested. Publishers not responsible for loss or damage of same. Publisher, Jack Royle, Ste., 501, 40 Old Mill Rd., Toronto, ON., M8X 1G7 -- Tel: (416) 231-1767; Editor, Joel Rieder; Editorial Committee: Brad Daniels, Jim Meiklejohn; Western Canadian Editor, Arni Fullerton, Edmonton; Associate Editor, Dr. William C. Rogers, Minneapolis; Consulting Editors: Clothing, Dr. Susan Watkins, Cornell University, Ithaca, N.Y.: Gerontology, Charlotte Matthews, Sarnia, ON; Climatology, Dr. Stewart Cohen, Atmospheric Environment Service, Toronto; Construction Technology, David Dempster, Toronto; Wind , Snow and Solar Studies, Frank H. Theakson; Consultant, Guelph, ON, Livable Winter City Association, President, Jack Royle, Publisher, Toronto; Vice-Presidents, Alan Artibise, University of British Columbia, Vancouver; Arni Fullerton, Chairman, International Winter Cities Committee, Edmonton; Perre Gallant, Architect, Moncton; Harold Hanen, Architect, Calgary; Jim Hilsinger, President, Water Tower Inn, Sault Ste. Marie, ON; Weiming Lu, Executive Director, Lowertown Redevelopment Corp., St Paul, MN. Al Sutton, Vice-President, Hallmark Designed Communities, Toronto; and Leo R. Zrudlo, Ecole d'Architecture, Univ. Laval, Quebec. Secretary-Treasurer, Carmella Gibson Kendry, Toronto; Directors, Mary Cameron, Chairman, Winter Cities Conference Corporation, Edmonton; Ed Fife, Program Chairman, Landscape, School of Architecture and Landscape Architecture, U. of Toronto, Toronto; Pam Freeman, Edmonton; Guy Gerin-Lajoie, Architect, Montreal; Michael Hough, Landscape Architect, Toronto; Walter Kehm, Dean of Landscape Architecture. Univ. of Guelph; Vladimir Matus, Planner, Hamilton; Norman Pressman, Department of Urban and Regional Planning, University of Waterloo, Waterloo; Gary Gappert, Director, Institute of future Studies, Akron University, Akron, OH, Alina Matus, Toronto; Bruce Findley of Canadian Climate Centre, Environment Canada, Toronto Grace Strachan, Ontario Ministry of Municipal Affairs, Toronto, and Debbie Kronowitz-Martin, Planning and Building dept., Edmonton, AB., *Managing Director, Xenia Zepic.*

EDITORIAL

Whither LWCA?

This is an editorial that editors of Winter Cities Newsletter have attempted to write on several occasions. It didn't get written mostly because there were too many things happening; it was too hard to get a grip on the seething changes and interplay of forces. Who could say what directions LWCA should take with the organization still in diapers!

The beginning "group of two" and then "group of three" rapidly swelled to more than a score of groups and nuclei with several hundred participants scattered across the winter regions all around the world. LWCA members are now to be found in some 14 countries. The Board of Directors, meeting in December, set in motion a process for determining future goals, for facing up to the alternatives that can no longer be ignored.

Here are some of the questions we face: Shall we be a Canadian organization to be paralleled by sister organizations in other countries, or shall we be international with international programs, projects and viewpoint? Shall we work diligently to increase the number of our chapters and local groups which already span this continent and may soon spread to Scandinavia? Or alternatively shall we focus on being one large central body with major projects such as conferences, resource and date bases, and facilitation of research?

Shall we put more thrust into our publishing activities, our student competitions, our task forces that evaluate the "winter performance" of their winter cities? Shall we give more effort to working with the media, developing special programs for Cable TV and radio and gaining more exposure in magazines?

How should we handle the strictly "national" matter of tax deductions arising from our charitable status in Canada? How should our fee structure be arranged? What should be our sources of funds for projects, publishing ventures and administration?

President Jack Royle would like to broaden the "Goals and Planning" exercise so that all members, friends and supporters may participate. We want to have your point of view. Where do you think LWCA will be ten years down the road? Where will it be next year? How will we get from here to there?

Long (and short) term planning are an essential tool of every sizeable venture. How can an organization go anywhere when nobody knows where it is headed. It is important for those both inside and outside the organization to know what directions are to be taken so they all may plan their own lives and futures.

We invite you, reader, to take pen or dictating machine in hand and give us your ideas. Send in your thoughts, your criticisms, your comments of any kind that will help throw light on a confusing future. We invite you to join in the process we have called "LWCA Goals and Planning Project." Contributions will be published in this newsletter.

Pedestrian Mobility For Elderly St. John's Task Force Project

By Arvo McMillan

After an 86/87 season devoted to general discussions about winter living" that included visits from John Royle and Sheila Pepper, the group met this Fall and decided to proceed with task groups on Pedestrian Mobility for the Elderly and an analysis of a "health village" concept that is being considered as part of the reorganization of three hospitals in the city.

The mobility group has met to refine its terms of reference and actually undertake the work that will lead to:

1) documentation on winter mobility issues for the elderly in St. John's, which includes a literature search;
2) documentation of responses tried here and elsewhere;
3) the resolution of certain mobility concerns, which could entail the politicization of the issue.

This is a fairly ambitious agenda, but we feel that research plus action is the direction to take.

The questison from an outsider would be: "Why are they so interested in the elderly? None of them is over 49, and the youngest is still under 30!" (I won't say who). And I would reply to you, in the most patient manner possible: "Have you ever visited St. John's when there's been snow around?" It is nearly impossible. Only the good nature of the Newfoundland driver enables a single pedestrian, young or old, ill or well, sick or fit, to survive the winter months. Our reasoning is based upon the "canary in the methane" theory, if an elderly person can navigate, then so can almost anybody else. It's a test of whether in fact a place is livable 12 months of the year.

Despite the great head of moral steam, and the apparent obviousness of the solutions, it is not going to be easy to come up with credible positions on the matter. It has to be understood that City is viewed as barely doing an adequate job on road clearing, and the current snow clearing budget takes a very large portion of the City's revenues (cut-backs in other programs resulted from last year's storms), so it is going to require an understanding of how present priorities are set, the budgetary process, and the actual mechanics of snow removal. It is going to require an understanding of the nature of pedestrian mobility - purposes, destinations, distances in the specific context of St. John's, and it could well involve trying to influence value systems -- if the matter of modal choice can be put in those terms.

We'll keep you posted.

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Polar Centre, largest indoor sports centre in Norway (7,000 m2) the Polar Museum, showing the culture of the Lapps, a sea aquarium, the Northern Lights Planetarium. Leading edge scientific work is being undertaken by firms engaged in underwater engineering and in the area of photography and the study of light -- particularly the phenomenon of the Northern lights.

Tromsoe's 1990 Winter Cities Showcase will add tremendous impetus to the "winter cities movement" in Europe and around the northern world.

FRANK THEAKSTON'S THIRTY-YEAR SEARCH FOR THE SECRETS OF WIND, SNOW AND SUN

Guelph Engineering consultant Has Done Much to Assist Winter Cities

By Jack Royle

While many Canadians and other northerners may take for granted the glories and benefits of our four-season climate (usually wailing about its discomforts), Frank Theakston has been busy looking for ways to soften its severity and enhance its beauty and appeal (for his ideas on winter cities see article on the following page).

Nova Scotia born, and an engineer by profession, Theakston is known worldwide for his remarkable work in snow and wind studies. He has developed a technology so widely used that most Canadian have directly benefitted from his work, yet he has received little general recognition for his efforts. No books have been written to preserve his priceless fund of knowledge. No engineering school has as yet picked up his research in order to carry it forward.

Working at Guelph University and later in his own firm, Theakston developed the technology of using flowing water to duplicate conditions of blowing wind. White silica sand grains and colored dyes in the water duplicate blowing snow and wind. By immersing models of structures, objects or sites in the moving water, he and his staff can closely reproduce the microclimate that each project must contend with and test out theories for elimination of problems.

Readers wondering, "what has this to do with me?" might pause to think of school doors that can hardly be opened in certain wind conditions, snow- piled roofs threatened with collapse, hospital emergency entrances blocked with snow and city folk fighting perishing winds as they stagger down street canyons to their offices.

And think of the lost time, bashed vehicles, and general discomfort, inconvenience and cost arising from the fact we have basically ignored wind and snow factors in building our communities and ordering our lives.

Franklyn Henry Theakston, after receiving his Master's Degree at Nova Scotia Technical University and serving as an officer in the Royal Canadian Engineers in World War II, accepted a position in the School of Engineering, Guelph University.

In those days the university's main focus was largely agricultural and Theakston soon found himself presented with engineering problems relating to barns -- why their roofs collapse, why couldn't their doors open? Barns are normally large exposed structures and in many cases their root problems could be traced to wind and snow.

Then about 1965, one Saturday morning the roof on the arena at Listowel, Ontario, near Lake Huron, collapsed under the weight of its snow load while a hockey practice was in progress. One of the coaches and eight players were killed.



Frank H. Theakston

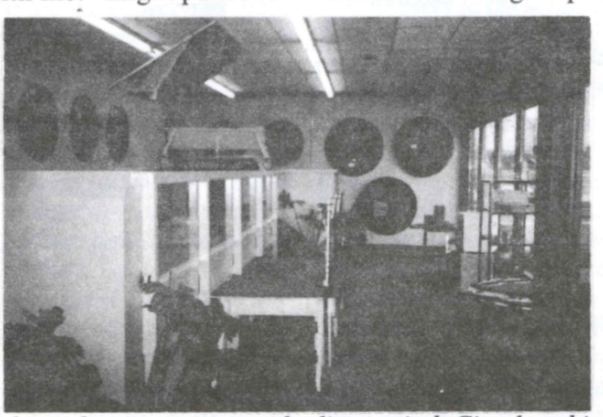
This event caused Frank Theakston to realize wind and snow were factors worthy of serious consideration, also that nobody had ever taken the trouble to find out much about them. The two could not be separated. The problems were largely winter problems - perishing winds that sent the wind chill factor plummeting, and wind-driven snow.

He set out to try to find some way to determine what the degree of slope of a roof had to do with the amount of snow it would hold. This led to experiments that sought to determine the effect of swirling winds around a building.

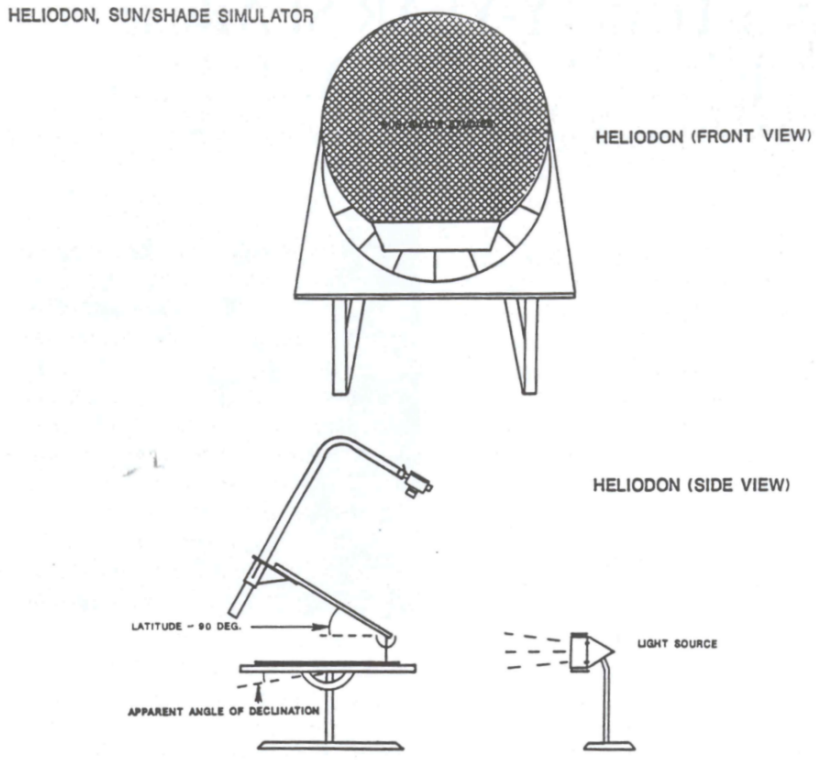
He build his first "Simulator", a 30-foot-long tank, four feet wide with water at varying depths flowing through it. It was found by constructing models on four-foot diameter circular panels, they could be turned within the current to evaluate the effect of wind and/or blown snow coming from all directions. Theakston has now built five of these "Simulators", the latest one being in his current place of business in Guelph.

Some clients wanted advice on how to construct certain buildings without blocking sunshine from other buildings. To meet this problem Theakston created an apparatus called an "Heliodon". This is again a four-foot- diameter circular panel mounted on a swivel so that it can be tipped up to 60 degrees in any direction and rotated at the same time. By placing models on

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30-foot Simulator that uses water to duplicate wind. Circular objects hanging on wall are models of specific situations that are placed in the tank to study microclimates. Theakstons firm has many such models.



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the turntable and subjecting them to direct light rays, shadow belts can be accurately predicted for any point on earth.

With these and other scientific tools Theakston began to discover certain basic rules that apply to wind, snow and sun. For instance: in coniferous shelter belts, the trees should be staggered and for best results should be at least ten feet high; trees should be tapered to the top and stripped of branches three feet up from the ground.

Snow fence should be at least 35 feet (better 40 feet or 50 feet) from the traffic lanes they're protecting and should be four feet high but with an open space at the bottom. This is to trap a certain amount of the wind and cause it to lose its energy and also to create a low snow drift on the lee side of the snowfence.

Earthen berms that are ten feet high and 35 feet apart serve as well as other snow breaks. (On a visit to China, Theakston learned some Chinese visitors to Canada had picked up this idea and he found the use of berms to be quite common.)

"Swirl chambers" situated at the corner of a building will prevent excessive snow accumulations around entrances (see illustration).

Balconies and "any other projections" will defuse winds descending down the sides of tall buildings. Conversely wind problems at or near the tops of buildings can often be corrected by placing devices or obstacles -- such as trees, shrubs, or porches -- around the base of the building.

Snow and wind control doesn't need to be all "high cost and high tech". Where possible it is preferable to use "natural" items like trees and shrubs and they should not be unsightly or out of context.

Porches or projecting roofs near the base of a tall building should have a down-turned lip or drop panel which effectively prevents the winds from swirling within the enclosure.

Theakston's first commercial projects dated from a paper he gave to a snow conference in Eastern U.S. Engineers from LaGuardia Airport, then being built in New York City, came to him after the talk to ask if he would conduct a study to make sure buildings and runways in the new airport would be so situated as to minimize snow problems. This led to a contract to carry out the same exercise for Kennedy airport when it was built. His firm has now done similar studies for dozens of airports across Canada and northern U.S.

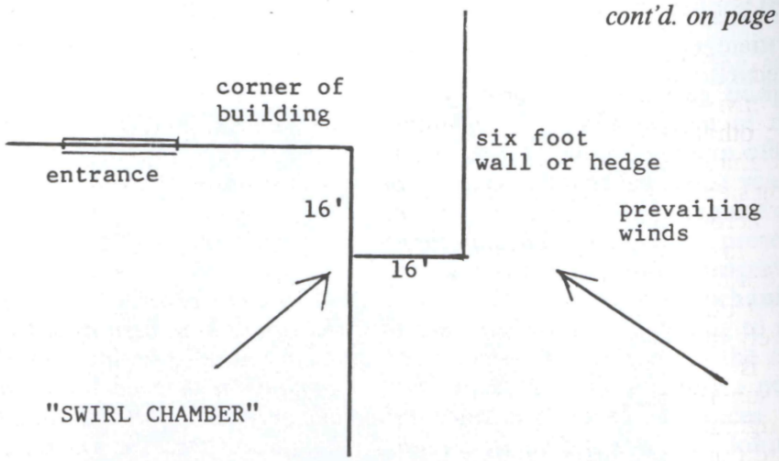
In 1983 Theakston was compelled to retire from Guelph University in order to have open heart surgery. After "lying low for a year or two" he began to feel better than ever and opened his new 4,000 sq. ft. plant in Guelph. Now 68 years of age and "feeling the best I have in years" he has a busy schedule of travel and lecturing as well as operating his business.

He has leaped enthusiastically into the computer era, setting up systems so that much of the trial and error experimentation can be done by computer simulation.

His inventive and ingenious mind continues to find new challenges wherever he turns. Studying sunlight, he came upon the idea of a "solar refrigerator". He has now perfected this device and is evaluating uses for it. If nowhere else, the sun-driven refrigerator could be used in sunbelt hospitals. Those hospitals with electricity can use electric power for backup at night or in days without sun. Those without electricity can use propane.

Recent projects undertaken by his firm show a wide range of

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"Swirl Chamber" created at the windward corner of a building will control snow drifting and prevent blockage of entrance located leeward form the corner. Composed of a six-foot-high wall or hedge, the device traps blowing snow. Ideally it should be six feet high and extend about 16 feet outward with one arm running well past the corner of the building.

WAYS FOR MAKING WINTER CITIES MORE ACCEPTABLE AND EXCITING

By Frank H. Theakson

As far as winter is concerned, it is a common occurrence for many to move away to a warmer climate just about the time some of us are settling down to enjoy it. I prefer to belong to the group who stay in our country and to take advantage of the many benefits our winter seasons offer to us. However, having expressed an opinion which is certainly not shared by everyone I must explain how cities, in particular, can be made more habitable by some pre-planning. First of all, cities have developed because of a need for centralization of many facets of our lives, education for one, since most of our towns and cities had their beginnings in schools, colleges and universities. Trade and Commerce for another since docking facilities for ocean, lake and river traffic, railyards for train shipments and highways for vehicle traffic sparked a need for uban development to accommodate the growth. First outward but now upward in an ever increasing attempt to consolidate the large numbers of people and facilities to maintain a strong, viable evonomy.

This cannot or, at least, should not occur without the full awareness of efficiency, safety and comfort of the city occupants. Of course, entertainment becomes an important criterion for city dwellers and this takes many forms, such as, theatres, athletic events, recreational facilities indoor and outdoor without which factors many cities would not thrive.

Role of Planning

City planning now becomes most interesting since there is a positive challenge in creating the modern city to perform the many functions for which it was created and, at the same time, create a comfortable, safe, enjoyable environment which our winters make available to us.

Fortunately, we have been able to assess the effects of snow, wind, smoke, gases, exhaust fumes and other particulate by using a Snow and Wind Simulator and model analysis. This is a laboratory means of observing the effects of winter, for example, by placing a scaled model of a city area in an open channel water flume and allowing the water currents to give the same patterns as that on the prototype. After that, snow patterns and depths can be determined by injecting silica sand into the flowing water to fall out again as turbulence occurs on and around the structures.

One of the more recent and important aspects of winter living in cities is the effect of location, shapes and heights of buildings with respect to pedestrian level comfort. The growth upward in downtown areas has, indeed, induced high velocity winds which are classed according to hazardous or non-hazardous conditions for people walking, running, standing or sitting. Again, while modern development has encouraged higher velocity wind conditions at the pedestrian level modern technology has permitted the developer to build in his plan mitigative devices once and for all. This often induces a new shape or surface of a new structure or has caused the design of a new entrance to eliminate high gusty conditions. Best of all, however, are mitigative devices created by landscaping, potted planting, etc., to make a comfortable snow free zone at a particular location.

High School Project

In one city, high school students have been encouraged to carry out projects which consist of modelling and testing their own school to eliminate undue snow loads on the roof, keep access roads and walkways clear of snow, prevent wind conditions at entrances to the school and particularly, prevent snow from accumulating at emergency or fire exits. In other schools it has been possible to accumulate snow at slopes around the schools for ready-made recreational areas.

Canadian cities with rivers, lakes and canals have been most fortunate to have skating facilities for the inhabitants at their back door and at little or no cost. The difficulty in these situations is the wind which creates a chill factory which certainly dilutes the pleasure of outdoor activity. Again, this can be remedied with some practical and aesthetic devices placed strategically in the surrounds of the recreational areas.

Winter induces longer shadows (winter equinox) from trees, high structures, towers, etc., and, of course, recreation in a continually shaded environment has a somber effect on the users compared with a bright sunlit area. To avoid the shadow conditions some remedial recommendations can be made with respect to location, height and shape of the buildings proposed for an area. This is best accomplished by a city planning program which permits an analysis by models as existing so that proposals may be reviewed long before final planning is authorized. The studies are done by Heliodon which permits shadow casting on a city model for any geographical location, time of day and month of the year.

Some of the coldest areas encountered in city operations are in transportation systems where passengers must await transportation at exposed locations. These areas should be convenient and comfortable by design.

While mitigative devices can be employed to deter snow accumulation on and around buildings, in streets and at entrances to major structures there are some areas where snow accumulation is desirable and a tourist attraction. Certainly park areas within the city confines are benefited by snow for recreational purposes and it is not difficult to plan cross-country ski trails or in some instances, downhill ski slopes in the city itself making the urban situation one of the attractions.

Olympic Torch Marathon

Probably no national event in Canadian history has stirred the populace as much as the Olympic Torch Marathon extending from Coast to Coast and most of the time being carried out in winter conditions culminating in the passing of the torch in a city centre. By accident or design everyone thrilled at the opportunity to participate in this event and actually revelled in the cold winter climate. This in itself is a great step forward in making the cities of winter more acceptable and exciting.

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needs for his services. Here are a few:

Proposed ski run and chair lift at Smuggler's Notch, NH; Wind problems with Mutual Life Tower, Walterloo, ON; Army base structures in Quebec; Hospitals in Markham and Newfoundland; Housing developments in Hillsburgh, ON. North York and Toronto; Airport, Rochester, NY: Coliseum, Madison WI. Expert witness in law case over blowing wood chips in Espanola, Ont.

Frank Theakston's hobby is "barns". Having studied barns for quite a few years he has developed an affection for them, "and they're fast disappearing from the landscape". He tries to take photos of all the good barns he can find. "On Tantramar marshes near Sackville, New Brunswick, there used to be thousands of hay barns. Now, they tell me there are hardly any left". He likes to track down barns that are being well maintained. "Did you know that the first farm building in North America was at Port Royal, Nova Scotia."

His firm's brochure speaks modestly of the achievements that have had world impact but are still hardly known in his own country;

"F.H. Theakston and Associates offers a unique service in engineering consultation, combining the knowledge of personnel known and respected throughout the world for research and consultation in snow and wind control, solar energy, structural design, agricultural engineering and sun shade studies".

"Many brand new concepts used in climate control and solar energy have been pioneered by principals of the Company. Incorporated in studies of large building complexes, rural and urban site development, arctic townsites, airports, highway and railway development, ski resorts, they have solved problems anywhere climate is a factor of comfort and safety."

Theakston will be featured speaker at "Snow Control Institute '88, March 15- 17 at Anchorage, Alaska. His subject: "Designing Structures for a Blowing Snow Environment".

Winnipeg Forks Development Has Many Exciting Features

The Forks is a name given to the historical CN East Yard site located in the heart of Winnipeg. The municipal, provincial and federal governments have committed $20 million in initial funding for the redevelopment of this area, and have established the Forks Renewal Corporation to own and redevelop the major riverfront site, and to coordinate redevelopment of the surrounding East Yard Area. Last November, the Forks Renewal Board released its "Phase 1 Concept and Financial Plan".

The Forks site is seen as a special and distinct all-season recreational "meeting place" at the junction of the Red and Assiniboine Rivers.

Phase 1 planning includes a public food market, an all-season leisure and recreation centre, a multi-cultural centre, a tourist interpretative facility, and a residential-marina complex. Possible locations for these facilities include historic stable buildings and a four-storey terminal building.

The 90 acre East Yard site also includes a nine acre National Historic Park being developed by Environment Canada - Parks, scheduled to open this fall and an 18 acre site to be retained and developed in conjunction by CN.

The Phase 1 plan follows several months of public consultation and over 140 submissions from individuals and organizations, as well as discussions with several prospective developers.

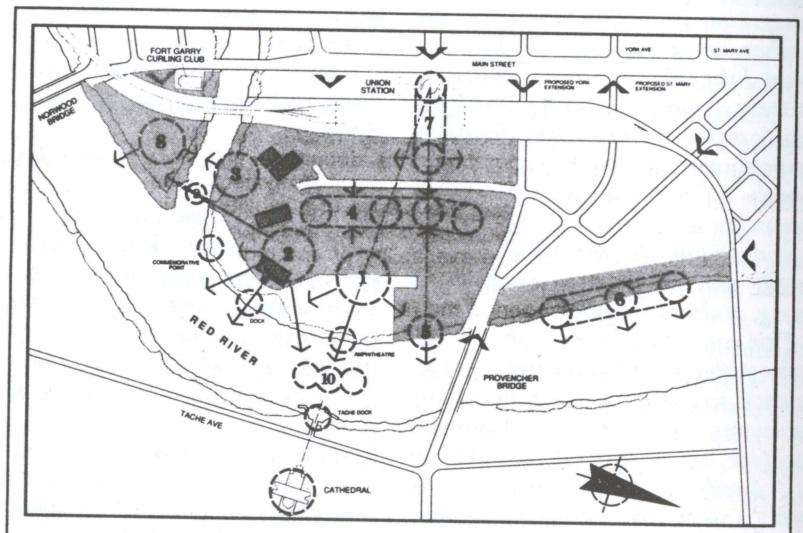


Fig. 2 MAJOR GATHERING PLACES

ACTIVITY NODE
GATEWAY PORTAL
VIEW / ORIENTATION
MAJOR AND MINOR AXES
EXISTING BUILDINGS

1 HISTORIC PARK ENTRANCE
2 THE FORKS FOCUS
3 NORTH ASSINIBOINE
4 CENTRAL SITE
5 SOUTH PROVENCHER BRIDGE
6 NORTH PROVENCHER BRIDGE
7 UNION STATION
8 SOUTH POINT
9 RAIL BRIDGE
10 RED RIVER FOCUS

Other elements of Phase 1 include developing the riverfront/quay areas for multi-use and open year-round recreation, residential and restaurant uses, re-using the rail bridge link to the South Point, establishing public archaeological excavations at the Fort Gibralter II/ Fort Garry I site, and a native center.

Phase 1 also includes 500 to 1,100 residential units, mixed with other activities throughout the site. There is also provision for significant institutional and other commercial projects on the Corporation's central lands, including a regional broadcast and performance centre, and other educational and research facilities.

For further information contact: The Forks Renewal Corporation, No. 1 Wesley, at Main, 404 Century Plaza, WINNIPEG, MB. R3C 4C6

CHIPS, FLAKES *and* GUSTS

(Which Fall on his Minneapolis Desk From All The World's Other Cold Places)

A winter column by William C. Rogers
Associate Editor,
Ideas and Suggestions from Readers will be welcomed.

COLD CLIMATE NORTHERN cities plunge downward in various recent urban population studies. Minneapolis/St. Paul would have ranked second among major areas instead of fifteenth because of our climate, according to a recent poll. On the other hand, we must think carefully about the special assets that the cold weather actually brings. Without the cold weather, who knows that we'd have been anywhere near 15th. Mayor Don Fraser of Minneapolis has written about the fact that there's more participatory democracy in Minneapolis because of its weather, which encourages people to go to more meetings. Our high level of education and cultural activities can be related to the cold as well as our up-and-coming Scandinavian population. So the assets of the North are never credited as such in these various ratings which real estate people pay too much attention to.

* * * * *

ONE WOULDN'T CALL it an atrium or even a greenhouse, but we've had great success in recent years growing lettuce and basil in our basement under fluorescent lights. It's really very simple. You leave the lights on all night, water regularly and keep the pots within 6" of the tubes. With a little help from the grocery store, which sells something called "head lettuce" (which we really think is a plastic product from Japan), we can make fairly good salads all through the winter.

* * * * *

ACCORDING TO "World News," residents of Finland drink the most coffee of any people. They consume 28 lbs. per person annually. Minnesota claims the title of North American coffee consumption. Here the beverage is called "Norwegian gasoline."

* * * * *

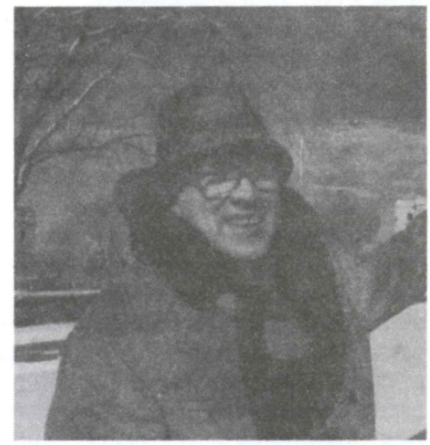
PAUL BRAND, syndicated columnist on car care was asked whether today's cars are so thoroughly rust-proofed at the factory that there's no need for car owners to pay for additional rust-proofing. He says that automobiles are much better than they used to be in this respect. They are built with more galvanized steel and a good factory painting process. Nevertheless, anything made of steel will eventually rust. So Brand still believes in professional rust-proofing but only after the car has been driven several hundred miles, which opens up small paint cracks in the various seams. That insidious salt that's used on the streets gets in the smallest nooks and crannies so drive your new car a bit before you go back to have it rust- proofed.

* * * * *

WHEN CRITIC William S. Whyte recently returned to Minneapolis and walked down Nicollet Ave. Mall, which he has frequently mentioned as a model for urban America, he said "Frankly I'm disappointed." He was unhappy about the over-abundance of skyways and the blank walls at street level. He prefers to see the city streets thronged with people at all seasons of the year and thinks that the skyways tend to separate the white-collar worker from the rest of the city's people and are thus rather elitest. He refers to the lively Dallas downtown which results from a subterranean system of retailing that reduces street traffic. I'll go along with him. I enjoy the hustle and bustle of a lot of people walking downtown on crisp winter days enjoying lively storefront window displays and eyeing one another.

* * * * *

ADVENTURE ROAD, the magazine of the American Automobile Association, features "Winter in the Great Lakes" on its cover, showing a handsome couple in a red sleigh. An article by P.J. Kersten lists winter fun and games on the U.S. side of the lakes, including such events as the Duluth Winter Sports Festival, with a sled dog marathon; the Snowmobile Derby in Eagle River, WI; the American



Birkebeiner in Cable, WI; and of course the St. Paul Winter Carnival. The Three River towns in Illinois have a Special Olympics Winter Games for mentally retarded and Lake Cadillac, MI. has the North American Snowmobile Festival in February. The U.S. Snow Sculpture Competition is held in Milwaukee. The list ends with reference to the Winterfest in Hamilton, Ontario and the Royal Agricultural Winter Fair in Toronto, thus indicated for U.S. readers that the Great Lakes does have a northern side too.

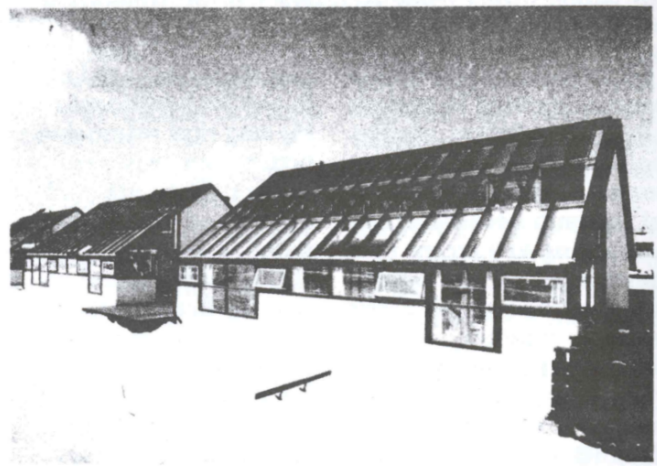
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OUR MINNEAPOLIS FIRE marshall went on the air recently to warn people about having their fireplaces cleaned and stated that around 10% of the 480,000 homes in the metro area of 2 million people have a fireplace or a stove using wood. The big danger is creosote collecting in the smokestack, which can catch fire. Leaks in old chimneys are also dangerous. Most fireplaces aren't good heaters he said, losing most of their energy through the chimney. For the most part, fireplaces seem to be found in the more prosperous parts of the city, indicating that they have a higher value for decoration rather than utility. It took us 25 years to realize that the fireplace in our old home was not making us warm. What we loved was looking at the leaping flames on cold nights.

NORWAY'S IMMENSE "SINTEF-NTH" COMPLEX IS UNIQUE RESEARCH LINK BETWEEN STATE AND UNIVERSITIES

Newest Construction Technologies Are Tested In Experimental Housing Subdivision At Heimdal.

By Dr. Sigmund Asmervik and Prof. Hans Granum



Solar-Heated Homes at Heimdal, 63° North Latitude.

SINTEF Group is a not-for-profit research organization counting about 2000 people engaged in all aspects of contract research for industry, government departments and other clients.

The organization is located in Trondheim, the third biggest city in Norway, and is closely associated with The Norwegian Institute of Technology (NTH). A significant part of the Group's research activities are conducted on premises belonging to NTH and researchers from both institutions often cooperate closely on the same project. The SINTEF-NTH model is internationally acknowledged to be a unique solution to the problem of contact between society and a university environment. The SINTEF foundation have more than 20 different divisions. Many of them engaged in research dealing with problems of living far up north, with energy problems, construction, icing problems. The SINTEF Group's offshore Icing program is one of the largest in the world.

The Division of Architecture and Building Technology, with Sigmund Asmervik as leader, has been engaged in housing and energy conservation for about 20 years.

The largest and most famous project is 14 experimental family houses at Heimdal just outside Trondheim.

LOW-ENERGY HOUSES, HEIMDAL

The project includes 14 experimental houses in a dense group outside Trondheim. The houses (10 frame, 4 masonry construction) were built in 1980-81 to test and evaluate the technical and economical feasibility of a number of energy saving possibilities in detached dwellings. The houses were monitored, and data was compiled on energy consumption for various purposes, heat loss, room temperatures, air tightness, outdoor climate etc. This data was analyzed through a 3-4 year period 1981-1985. "Energy-savings cost" based upon measured and calculated data through cost-benefit analyses were used to evaluate the different energy-saving measures. The synergetic effect of interplaying measures must be considered in evaluating the feasibility of the various energy-saving techlogies.

The following energy-saving measures have been tested and evaluated:

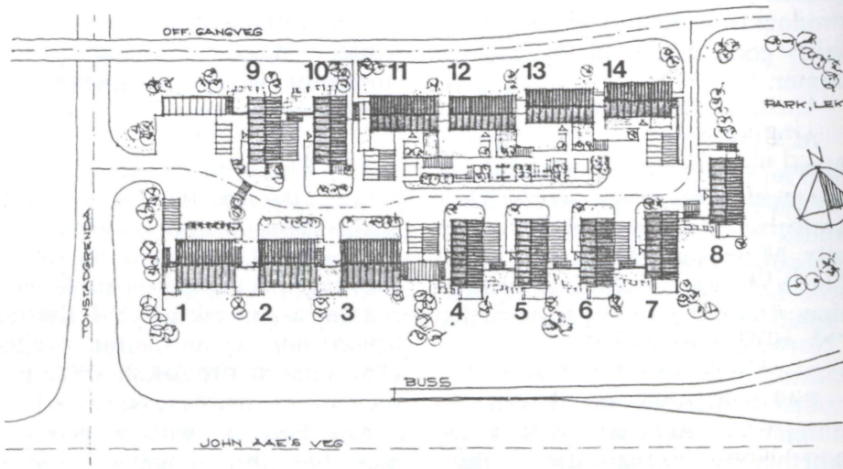
1. **Thermal insulation optimal U-values**
   Optimal thermal insulation in Trondheim climate, based upon the presently recommended real rate of interest (7%) for public spendings were found to be:

   Exterior walls 150 mm mineral wool 0.25
   Roof and floors 250 mm mineral wool 0.18
   Floors on the ground 80 mm polystyrene foam
   Windows (wooden) 2 glass, inner LE-glass (coated), sealed, argon filling

   For private economic considerations (2-5%) real rate the following U-values are recommended.

   Exterior walls U= 0.20 W/mK (200 mm mineral wool)
   Roofs, floors U= 0.15 W/mK (300 mm mineral wool)
   Windows U= 1.4 W/mK (3 layers, inner LE-glass)

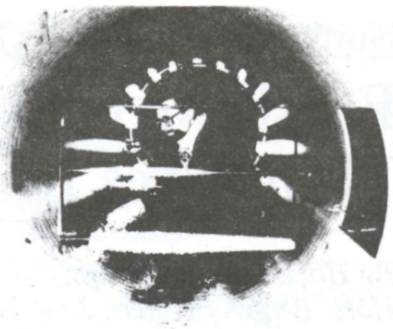
2. **Ventilation system**
   Gravity ventilation with



Site plan of 14 Experimental Houses at Heimdal.



Sintef-NTH main offices and laboritories.



"Icing Tunnel" to study phenomenon of ice build-up.

outlet ducts from kitchen and bathroom over roof and inlet vents in window frams (or exterior walls) does not give adequate ventilation in air-tight houses.

Mechanical exhaust ventilation (which is commonly used in newer residential houses in Norway) do not require more airtight houses than called for by the present building code (4 airchanges per hour by 50 Pa pressure difference). The system may be combined with a heat pump feeding the hot water tank (see later).

Balanced mechanical ventilation combines with a heat exchanger, efficiency 50-80% will give the best ventilation, but from an economic point of view it is somewhat too expensive.

3. **Air tightness**

Requirements should be based on exterior climate (wind speed) and ventilation systems. For exhaust ventilation (bryant mechanical) present requirements in the building code seem adequate. In houses with balanced, mechanical ventilation it is good economy to secure better air tightness.

4. **Heat pumps**

Four different systems have been tested in the project. From an economic point of view the best result was obtained by small air-to-air heatpumps with the condense (heating element) in a central position in the house and no special distribution system other than a simple fan. Condition for efficient distribution of the heat is an open plan together with good thermal insulation and air tightness. A small exhaust-air heat pump feeding the hot water tank built into a cabinet gave an overall reduction of about 50% of the normal energy consumption for water heating and was acceptable from an economic point of view. Larger heat pump systems, coils in the ground or air to water heat pumps backed up by an oil burner were too expensive to be economically feasible.

5. **Solar heating**

Three of the houses were designed for partly solar heating, of which two were built according to a so-called "double shell" system (patented by SINTEF). The third had a conventional active solar heating system with a water storage tank. Although the systems gave approximately the expected energy saving, the investment cost was too high to be economically feasible for Norwegian conditons. The semiclimatized area in the house where the air solar collector was situated gave a very attractive living space, especially valuable in the severe and cool climate in Trondheim.

6. **Microprocessor control of indoor temperature**

Four electrically heated houses were equipped with micro-processor controllers, which may be used for periodic set-back of room temperatures according to an optional program. Each heating element or group of heaters may be used according to a selected priority scheme.

Such control systems are attractive both from an economic point of view and from a comfort point of view.

SECOND R/UDAT REPORT FEATURES ST. ALBERT, SMALL ALBERTA CITY

A sequel to "Livable Winter Cities" a R/UDAT report prepared by an international team of architects during Winter Cities Forum '86 in Edmonton will be produced during Winter Cities Forum/Showcase '88. The first edition featured the City of Edmonton but was a generic report applicable to other larger winter cities. The second report will feature the smaller Alberta city, St. Albert, and will also have general application.

Once again a team of architects drawn from the Royal Architectural Institute of Canada and the American Assocaition of Architects will carry out the four-day research/assessment blitz during which the report is developed, and written. Again, Charles Redmon of Cambridge, Ms. will head the team.

All 1500 copies of the first report have been sold. LWCA arranged that its members would receive copies free of charge through courtesy of the Alberta Association of Architects. The second edition will cost approximately $10 per copy to produce and a charge will be necessary. LWCA once again will offer copies but will need to levy a charge of $10.

Copies will be available within a few weeks of Forum/Showcase. To receive your copy quickly, send your order now to this newsletter. You will be billed when copies are available and will receive your copy shortly after payment is received.

Fabric Membrane Structures Have Proven Themselves In Growing Number Of Applicaitons

By Horst Berger, Partner,
Horst Berger Partners, New York

Over the last decade fabric membrane structures have entered the permanent building market. More than 25 major structures have been completed, using Teflon coated, fiberglass membrances. New materials such as Silicon coated fiberglass, improved design methods, and acceptance by owners and designers are moving the new technology ahead.

This paper gives a short history of lightweight membrane structures, describes the materials, and structural forms, and gives insight into the design and behavior of fabric tension structures.

A decade ago, only one tension structure and two air supported structures had been completed and the Pontiac Silverdome was under construction.

Today more than 25 major permanent facilities with fabric structure roofs are completed and successfully in use, and there is no longer any doubt about the important role structural fabrics are beginning to play in the built environment. A second generation of materials has been developed. New forms and building types have been created, making use of integrated properties of strength, seamless construction, translucency and reflectivity to produce building spaces never achieved before.

Since the completion of the Pontiac Silverdome, no major stadium has been roofed with conventional materials. Traditional structures become cost ineffective at 200-300 metres. The Haj Terminal of the Jeddah International Airport, with 430,000 square meters of plan area, is the world's largest roof structure, and is a success not only as a superior means of covering a large area, but as a totally new environment. Its spaces are bright and naturally lit. There is no need for expensive, energy consuming machinery. The structure, by its nature, transforms the violent heat of the desert sun into a pleasant, soft climate, by means previously encountered in forests only.

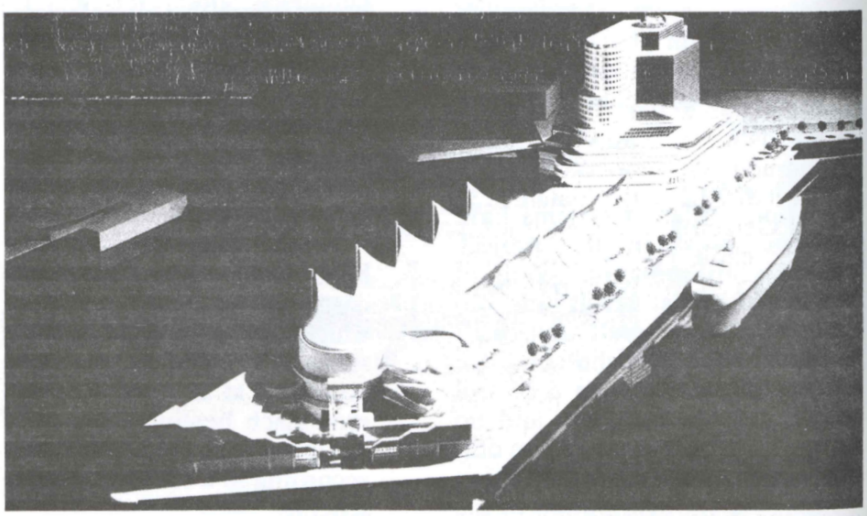
One of the main obstacles of the wider application of fabric tension structures is the lack of familiarity with their nature and their design. The assumed limited life span and vulnerability associated with the words "fabric" and "tent" obscure the fact that these structures are safer, and more reliable than conventional systems, because they are practically weightless and provide a continuous watertight skin. Their three-dimensional, curvilinear configuration hides the underlying simplicity of the structural system, which relies only on curvature and tensile stresses for its capability to carry loads, a simplicity which in fact makes the visible membrane form a true image of the force flow itself. Tents were the original dwellings of the human race.

The engineered fabric membrane structures of today are the result of a number of distinct developments. Surface structures such as the domes of the Arabs and Romans, first explored the use of shape to help span large spaces more economically and more gracefully. The concrete shell structures of the 1930's continued that tradition. Suspension bridges of the last century using high strength steel cables demonstrated the power of tensile structures.

Walter Bird's air structures in the 1950s demonstrated the first significant use of pure membrancs to enclose large volumes. His strict application of engineering principles combined with a thorough understanding of material behavior and a precise sense of detail created a new species of structures, which in many copies and variations have spread around the globe.

Tensile structures as architectural forms were first explored and presented by Frei Otto. His most magnificent permanent tensile structure for the Munich Olympic Stadium (1972) is a cable net structure with an acrylic sheet roof covering.

The development which resulted in the design and construction of fabric membrane structures for permanent building applications came in the wake of David Geiger's design for the U.S. Pavilion in Osaka (1970) which started him on the search for a permanent material and launched the firm of Geiger Berger Associates on its long and determined pursuit of fabric membrane structures.



Vancouver Convention Centre, Canada Place

MATERIALS

In order to use fabric membranes in permanent buildings, the fabric had to be durable, and non-combustible, in addition to having reliable strength properties within the temperature range of outdoor exposure.

The first available material which satisfied these requirements was Teflon coated fiberglass. Its additional advantage was high translucency (up to 16% light transmission) and low heat absorption. The inert nature of Teflon, furthermore, made the surface self-cleaning in most circumstances. The combination of heat-sealed and mechanically clamped seams resulted in watertight structures superior to most roofing systems.

Recently, Silicon coated fiberglass has been added as a material for permanent applications, having similar basic properties, except that much higher translucencies (up to 50% for structural fabrics) are available, with somewhat reduced dirt rejection. It has higher tear strength and is more flexible.

Inner liners with high sound absorbence are available. A recent development using spun glass fibers for insulation allows the construction of translucent insulated roof membranes, which is particularly applicable for the higher translucency materials, and is essential for construction in colder climates.

Fabric membrane structures derive their stability and capacity to carry load directly from their shape. Therefore, structure and architecture are one and the same. The most critical element in the design process is the structural form.

AIR SUPPORTED STRUCTURES

Since 1975 five large stadia and many smaller arenas have been enclosed using air supported fabric roof structures. Almost all of them follow a design system patented by David Geiger. It consists of a low profile, cable reinforced membrane with superelliptic ring beam and cable net. The oldest of the stadium roof structures is the Pontiac Silverdome completed in 1975. The construction cost is less than half of that for conventional rigid structural systems for very large spans. The stability of the system depends upon the maintenance of air pressure by mechanical equipment, and on the functioning of snow melting systems.

TENSION STRUCTURES

Fabric membrane structures have practically no weight and are made of totally flexible materials. Gravity and rigidity, usually the basis of structural stability, are, therefore, not available to create a load bearing system. Without internal air pressure as a stabilizing force, tension structures depend entirely upon shape and prestress for stability and their capacity of carrying superimposed loads.

The configuration of the membrane is found by giving the geometry of the supports and edges as well as a stress pattern of the membrane surface, which will result in one particular equilibrium shape.

The following description of structures will illustrate these and further aspects of fabric tension structures:

TENTLIKE STRUCTURES

Tentlike structures belong to the family of center supported structural systems, together with suspension bridges and double cantilevers. One or several peaks supported by central masts are the most common form.

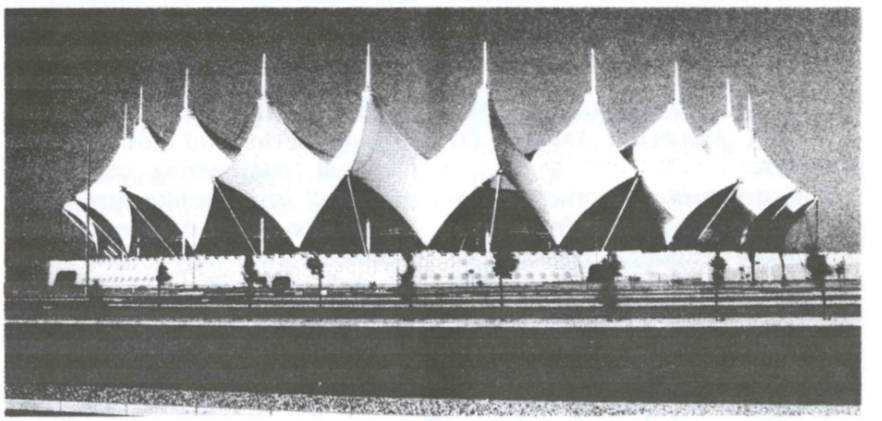
ARCH SUPPORTED STRUCTURES

When an internal support is undesirable, an obvious solution is the introduction of arches to support the fabric membrane. The result is no longer a pure tension structure system since it introduces curved compression members as the main supporting elements. However, it creates a free span with least height in a form often most acceptable; and if skillfully designed, it results in an economical structural system.

For one-way arch supported systems an important aspect is the lateral stability of arches. The author introduced a cross-arch system in a department store in San Jose to solve this problem.

Numerous cross arch structures have been used since. Roofs of unlimited length can be created

cont'd. on page 14



Jeddah Haj Terminal, Jeddah, Saudi Arabaia



Riyadh International Stadium, Riyadh, Saudi Arabia

cont'd. from page 13

without need of an expansion joint, since the double curvature of the membrance can easily absorb the thermal expansion or contraction.

FREE SPAN POINT SUPPORTED SYSTEMS

To create free spans without the use of arches, special geometric arrangements of the supports must be devised. A very simple approach creates a free span by using a large A-frame supporting the main structural peak in combination with peripheral posts restrained by stay cables. The A-frame uses carefully optimized truss masts to bring the large compressive force to the ground. The membrane is supported by a central ridge cable and restrained by edge catenaries with no additional cables in the membrane surface.

Another method of creating a free span is the use of stayed edge pylons. The most recent application of this method is the roof structure for Canada Place, a convention center in Vancouver, Canada. The parallel tents are arranged in a 45 deg. skew with a free span of 55 m. (180 ft.) . Combined with the tall pylons, this is a very dramatic roof sculpture.

THE HAJ TERMINAL OF THE JEDDAH AIRPORT IN SAUDI ARABIA

This structure takes another approach to create a free span membrane structural system. The 430,000 sq. m. roof system consists of 210 tent - shaped radial membrane structures of square plan configuration with 45 m. sidelength. The center of each tent unit is suspended from four adjacent pylons which are located in the corners of the tents. They also are the anchor points for the edge catenaries and ridge cables, which form the edges of the tent units.

INTEGRATED FRAME MEMBRANE SYSTEMS

End supported structures as the one used in Jeddah or in Canada Place require substantial end pylons, stay cables, and anchorages. The use of A-frames, as outlined earlier, creates a better force flow. Combining this principle with the idea of a closed structural system allows free span tension structures of considerable scale with reasonable support costs. The principle of such a system balances horizontal forces due to prestress above the foundation. This integrated frame membrane system (Inframembrane) has triangulated supports on the sides which are held in place by a compression ring at the top. The fabric membrane spans between alternating ridge and valley cables, which connect to the low and high points of the triangular supports. The structures can have any number of poligonal sides.

DESIGNING TENSION STRUCTURES

Since form and structure are identical, engineering cannot be separated from architecture. Engineering becomes the design tool. However, since only tensile forces are utilized to carry loads (except for the rigid support members) the structural system is extremely simple and quite visibly expressed in the shape of the structure itself. The key is the understanding of a three-dimensional form and its behavior. For design studies, therefore, the best medium is the use of stretch fabric, which can be easily used to model conceptual structures.

The stretch fabric study model is of further use in showing the configuration to the client and in assisting with the generation of the computer models for the equilibrium shape and for patterning.

CONCLUSION

The structures discussed represent only a portion of what has been achieved in the last decade, yet demonstrate that fabric tension structures for permanent buildings work, can be economical, and can be very beautiful. The new technology, beyond achieving conventional goals better, opens the way to totally new architectural concepts.

The roof structors of the new Horticultural Center of Callaway Gardens near Atlanta, Georgia, with approximately 50% light transmission of its Silicon coated fiberglass fabric indicates one of the new directions. Cost reductions due to lower fabric costs, modular construction, easier design and increased production volume promise an increase of the use of fabric tension structures as they enter more areas of construction. *Beyond* building applications, there are potentials for industrial uses such as cooling towers, storage facilities, industrial plants, and tank covers. It is, therefore, this author's belief that the next decade will show a substantial expansion of this new technology.

POLAR BEAR FUR MAKES MOST EFFICIENT SUN TRAPS

Scientists at Northwestern University (Chicago) have discovered that the hollow-clear hair that makes up the Polar Bear's thick coat is about 95 percent efficient in converting the sun's ultra violet rays into infra-red heat waves. This compares with 65 to 70 percent efficiency, on a cold winter's day, of the best solar collectors developed by human technology. If humans pay little heed to the importance of designing their communities so that winter sunlight is maximized, it seems our polar creatures have been equipped by nature to take better advantage of their environment.

Each hair in the bear's pelt is like a hollow tunnel with transparent but reflective sides. Sunlight bounces down the tunnel with the sides acting like mirrors to reflect the light around bends. When short wave rays strike the black skin of the bear they convert into heat waves.

The discovery was made by Scientist Richard Grojean after he learned that Canadian aerial photographers looking for polar bears were able to detect them with ultraviolet photography when ordinary cameras failed to find them because their white coats blended into the snowy landscape. Infra red cameras were useless because the fur coats efficiently prevented escape of heat from the bears' bodies.

The ultra violet cameras worked because snow reflects a large proportion of the sun's ultra violet rays while thanks to the hollow hairs that make up the fur, these rays are absorbed and bears appear to be dark blobs on the white snow. Grojean points out the individual hairs of the bear's pelt are really transparent, but the manner in which they trap white light makes the bear appear to have a white coat.

(Adapted from Christian Science Monitor)

SMALL-TOWN CAMPBELLFORD ADOPTS REVITALIZATION MASTER PLAN

By Joel Rieder

Campbellford is an historic milling town of 3400 on the Trent River in South-Central Ontario. In recent years town officials, merchants and residents have seen the need for a restructuring of Campbellford's development policy, and with this in mind, in 1982 the consulting firm of Totten Sims Hubicki Associates of Cobourg was hired to undertake a core area study.

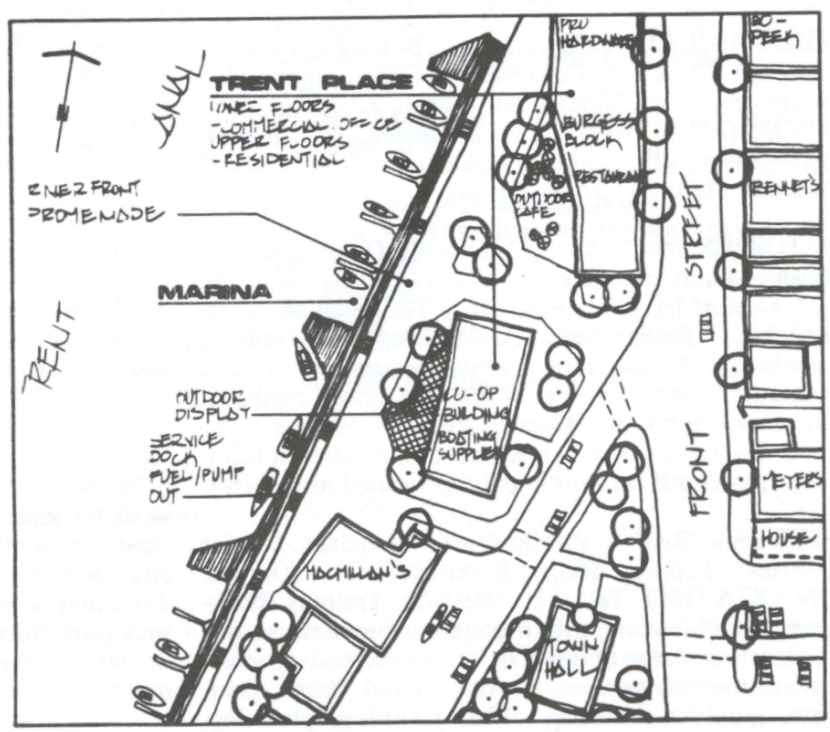
The study, completed in March 1983, was required for a review of the Official Plan and creation of a Secondary Plan of the core area, both seen as necessary in the Town's revitalization program.

The following are some of the planning and policy recommendations put forth in the study.

* The principle reason for updating policies and designations is to restructure and bring the Town into step with reality, both existing and anticipated. The Town is faced with an extended slow growth period, and consolidating the core area and supporting it with an appropriate community improvement strategy is essential.
* It is a prime goal of the core area study to rekindle the spirit of "old Campbellford," to enchance the cultural identity of the Town and prepare the way into the future.
* The Trent River which passes through downtown Campbellford represents opportunity and challenge, as a prime recreational resource.
* All available on-street parking spaces have been developed in the core area. A major part of the solution is to develop off-street parking lots...Land has been released for other uses and convenience and safety have been enhanced. Visual aesthetics and directional signs will greatly improve the image of the entire area.
* The Town must make every effort to attract recreational boaters on the Trent River/Canal and encourage overnight stays. This includes:
  - a firm and coordinated promotional/marketing effort.
  - implementation of a development concept to strengthen Campbellford's attraction to river/canal and automobile traffic.
  - development of tourist attractions on a continuous or special events basis.
  - development of a full service marina together with boat moorings for Town residents, which will help promote Campbellford as a four-season recreational residential community.
* The intent is also to make Campbellford a more energy efficient municipality through the concept development plan and proposed planning documents. Key to this is ensuring a compact urban form is maintained not only for the core area but for the entire Town. Infilling and intensifying land use should be encouraged. In this way, existing infrastructures can be used with more compact shopping reducing auto usage. Individual buildings can save through shared walks, wind shielding, recycling of existing building, and increased densities. Environmental benefits for pedestrians include sheltered walkways and sun traps.

Land-use policies for energy conservation, include:

1. Increase apartment accommodation, Including upper floors of stores, to increase population density in core areas and reduce auto usage.
2. Encourage pedestrianization of the core area, including sidewalks, walkways and bikeways linking residential areas to facilities in the core and adjacent recreational areas such as the river. Appropriate weather-shielding landscaping is encouraged.
3. Site plan review should be mandatory for all proposed development within core areas. Mutual objectives must be facilitated.
4. Policies should preclude encroachment of retail and entertainment facilities in industrial and fringe areas as well as higher density residential development outside the core area.
5. Regulations should recognize importance of protecting solar access through setbacks, height restrictions and siting of buildings.



Riverfront development and four season recreation are key recommendations.

THE WORKING NETWORK

(Complete and return form on opposite page to be included in "Winter Cities Networking Directory". Tearsheets will be sent to networkers for checking before final publication.)

CHARLES SIMON, Simon Architects and Planners, 92 Shaftesbury Ave., Toronto, ON M4T 1A5; Tel: (416) 323-9646 (Bus), (519) 856-9921 (Res.). **Training, Background:** architecture, urban design; **Areas of Interest:** aesthetics, design methods, energy, environmental stress, housing, human factors, office planning, post occupancy evaluation, recreation, social behavior/personal space, urbanism; **Current Projects:** "Climatic design work ranging in scale from house renovations through multiple housing institutional and commercial projects to new communities. Projects include: Canada's first passive solar house, a 22-unit passive solar housing project, a university research greenhouse, master plan for a new resort community, and site planning of tourism facilities in the subarctic Polar Bear Provincial Park, Ontario. Research includes: technical investigations into energy efficient building technologies, alternative servicing systems, social and recreational surveys and post occupancy evaluations; 1988 Jury Chairman of the Ontario Ministry of Energy, R-2,000 Student Design Challenge."

HANS HUCH, Regional Municipality of Sudbury, Planning dept. 200 Brady St., Sudbury, ON P3E 4P2. **Training, Background:** urban affairs, urban design, urban and regional planning; **Areas of Interest:** housing, planning, urbanism.

IRENE MERRILYN PISULA, Wascana Centre Authority, 2900 Wascana Dr., Box 7111, Regina, SK S4P 3S7; Tel: (306) 522-661 (Bus.), 545-299 (Res.). **Training, Background:** public administration; **Areas of Interest:** communication, human factors, recreation.

THOMAS J. KOROSEI, City and Borough of Juneau (Alaska) Dept. of Community Development, 155 South Seward St., Juneau, AK 99801, USA; Tel: (907) 586-235 (Bus.), 364-3571 (Res.). **Training, Background:** architecture, urban and regional planning; **Areas of Interest:** planning, urban design.

W.J. McKENNA, Executive Director, Ontario Association of Landscape Architects, 170 Donway West, Ste. 120, Don Mills, ON M3C 2G3; Tel: (416) 443-1785. **Training, Background:** Climatology/Meteorology, Landscape Architecture, Urban Design, Urban and Regional Planning; **Areas of Interest:** design methods, planning, recreation; **Current Projects:** We are presently doing preliminary research into minimum landscape standards for municipalities located in Ontario.

SHIBAN K. RAINA, Public Works Canada, C-588 Sir Charles Tupper Bldg. Riverside Dr., Ottawa, ON K1A OM2, Tel: (613) 998-7839. **Training, Background:** architecture, urban design, urban and regional planning. **Areas of Interest:** design methods, energy, environmental process, environmental stress, futurism, graphics, housing, office planning, planning, transportation, urbanism.

KEITH DRIVER, Keith Driver and Associates Ltd. 9251 Strathearn Dr., Edmonton, AB T6C 4E1; Tel: (403) 465-5843 (Bus.), 465-4607 (Res.). **Training, Background:** urban and regional planning; **Areas of Interest:** housing, planning, urbanism; **Current Projects,** General plan for the City of Yellowknife, -- Lecturing in urban design, subdivision planning and development -- policy review for government departments on cottage development.

BRUCE MARTIN COLEMAN, R.A., Foit-Albert Architects, P.C. 700 Main St., Buffalo, NY 14202, USA; Tel: (716) 856-3933. **Training, Background:** architecture, urban design; **Areas of Interest:** participation, planning, transportation; **Current Projects:** Commercial, residential and institutional design, retrofit of buildings and systems (functional, thermal,) Cogeneration, hydro power, peak shaving, Development of cold climate (temperate zone) architypes, including rediscovering historical successes. Conservation of resources and arable land. Planning and development of appropriate infrastructure ...Dreaming... Acting on good ideas.

STEPHEN BASIL JEWCZYK, Town Planner, St. John's Metropolitan Area Board, P.O. Box 8897, Stn. "A", St. John's, NF A1B 3T2; Tel: (709) 753-7280 (Bus.), 753-6265 (Res.). **Training, Background:** urban and regional planning; **Areas of Interest:** futurism, planning, urbanism.

JAYNE MARIE TOLLEFSEN, Waterfront Project Coordinator, Corporation of City of Hamilton, 71 Main St. West, Hamilton, ON L8N 3T4; Tel: (416) 526-2762 (Bus.), 648 0604 (Res.). **Training, Background:** Urban and Regional Planning; **Areas of Interest:** Climate, Weather information, programming, recreation; Current Project: "The City of Hamilton is presently refining plans and designs for a major tourist/recreational waterfront proposal for its West Harbour. We are, of course, interested in certain aspects of the plan to be operational year round while at the same time maximizing the seasonal features of the site."

JOHN HIX, John Hix Architect Ltd., 511 Bloor St., W., Toronto, ON, M5S 1V4, Tel: (416) 533-8529. **Training, Background:** architecture.

CHIRSTOPHER SHARP, Human Evnironment Resources, 21 D'Arcy St., Toronto, ON, M5T 1J8, Tel: (416) 599-5255. **Training, Background:** psychology; **Areas of Interest:** housing, office planning; **Current Projects:** "Currently operating, 'Human Environment Resources' a research and consulting business specializing in Environment and Behaviour issues, and publishing two newsletters on design research, housing environment research and office environment research."

LWCA NETWORKING – SURVEY FOR MEMBERSHIP DIRECTORY

Complete and return with your membership order to: Livable Winter City Assn., P.O. Box 5130, Stn. "A" Toronto, ON M5W 1N4

(For publication in future "WINTER CITIES DIRECTORY")

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• CIRCLE TO INDICATE YOUR MAJOR FIELD OF TRAINING AND EXPERIENCE:

- ☐ ANTHROPOLOGY
- ☐ ARCHITECTURE
- ☐ ARTIST
- ☐ CLIMATOLOGIST/METEOROLOGY
- ☐ ECONOMICS
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- ☐ PUBLIC ADMINISTRATION
- ☐ SOCIOLOGY
- ☐ URBAN AFFAIRS
- ☐ URBAN DESIGN
- ☐ URBAN & REGIONAL PLANNING
- ☐ OTHER .....

• CIRCLE UP TO THREE TO INDICATE YOUR AREA(S) OF INTEREST:

- ☐ ARTIST
- ☐ AESTHETICS
- ☐ AGING
- ☐ CHILDREN
- ☐ CLIMATE/WEATHER INFORMATION
- ☐ COMMUNICATION
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- ☐ ENERGY
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- ☐ ENVIRONMENTAL PROCESS
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- ☐ HOSPTALS
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- ☐ HUMAN FACTORS
- ☐ OFFICE PLANNING
- ☐ PARTICIPATION
- ☐ PERCEPTION/COGNITION
- ☐ PLANNING
- ☐ POST OCCUPANCY EVALUTATION
- ☐ PRISONS
- ☐ PROGRAMMING
- ☐ RECREATION
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• PLEASE WRITE A 100 WORD STATEMENT ON YOUR CURRENT PROJECTS OR RESEARCH

ADON -- THE CONNECTED ADDITION

Modular, prefabricated structure can be attached to existing house.

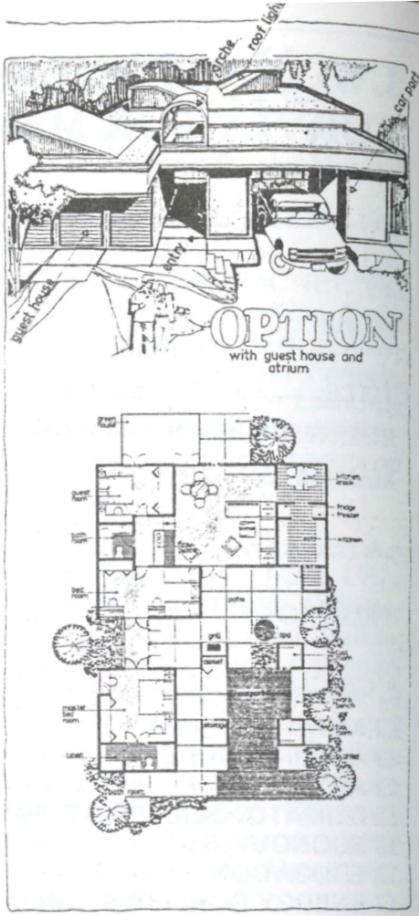
"Adon" is an opportunity for the homeworn to improve, alter, or add to his lifestyle, economically, with minimal disruption. The ADON system is a modular, prefabricated building addition with self- supporting structure and, if required, mechanical system. Instead of being attached, ADON is connected, with prefabricated modules offering flexibility and economy.

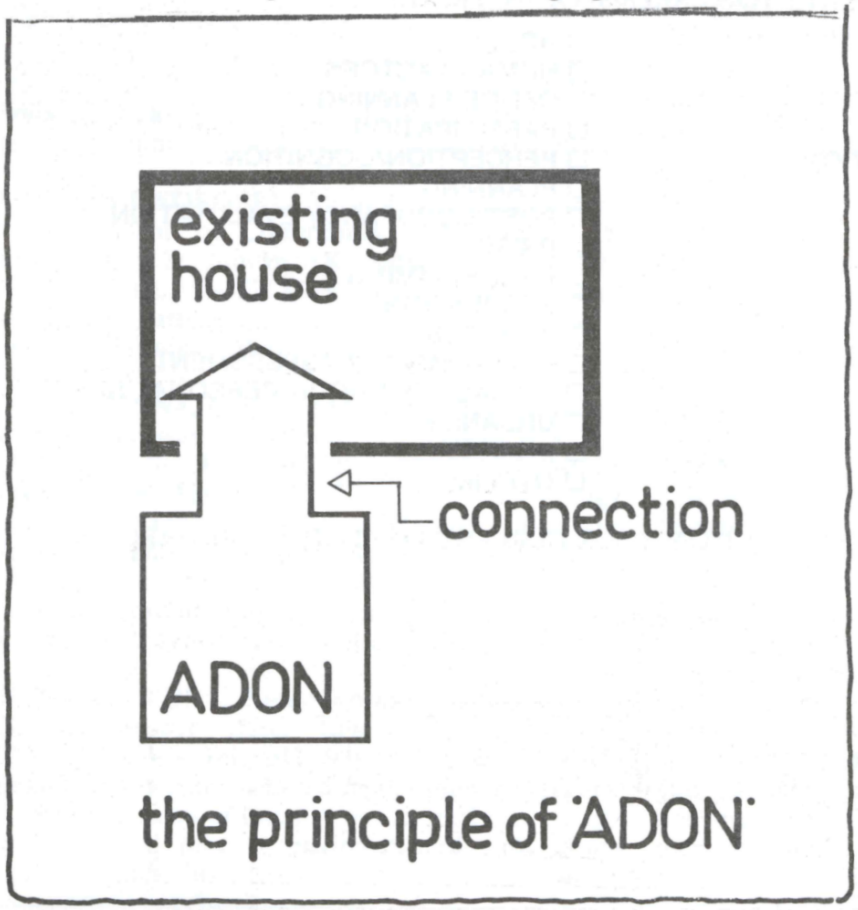
W.W. Environment Team Ltd., under President and Creator, Wolf Wilbert of Edmonton is a team of architects and builders dedicated to answering many of today's needs regarding residential expansion that is both flexible and convenient. In developing ADON, WWET worked to eliminate traditional expansion and renovation problems including delay, unexpected costs, and household disruption.

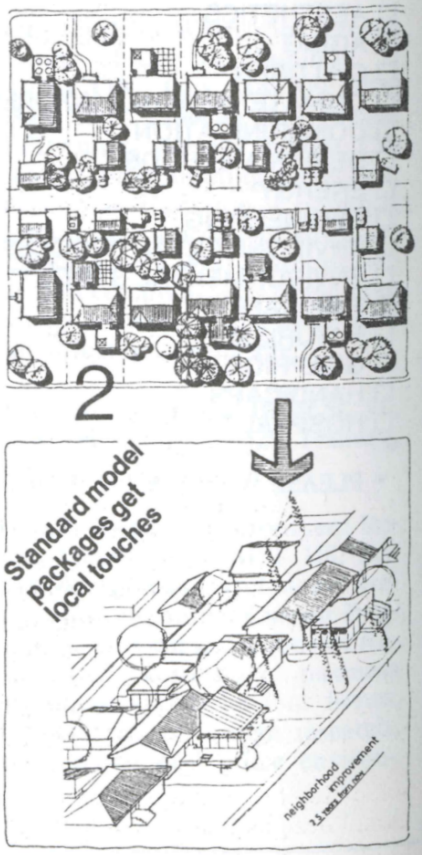
ADON is 36 sq. metres (400 sq. ft.) of prefabricated, prefinished modular and flexible space enclosure with endless design variation. The price is fixed, and more competitive than traditional additions, with fewer surprises. Included in the service in the design team's expertise in design suggestion and problem solving.

The system may be a self-contained unit attached to an existing building or may be a series of connected and inter-connected units in combination forming its own entity. Construction is of laminated wood post and beam, with interchangeable roof, floor, and wall panels on modular arrangement. ADON may also allow homeowners to take advantage of local government incentive grants made available for home improvements.

Homeowners are free to choose their own roof system, from flat, gable, shed, cottage or even combination roofs, with skylights or clerestory windows added if desired..ADON can be used to enclose almost any type of activity, including a greenhouse, swimming pool, family room, office, sauna, workshop, bedroom, etc. Wall panels are interchangeable, and patios, decks, landscaping, and solar packages are also available. The system is simple, low-cost, immediate and effective.







Environmental Observations

Do We Need House Designs That Are Fine-Tuned For Diverse Regional Climates?

Houses in St. John's and Saskatoon Face Sharply Different Conditions.

By Dr. John W. Evans
Biology Dept., Memorial University, St. John's, Nfld.
(One of a Series)

BEYOND THE STANDARD HOUSE

I am a biologist with a special interest in applied ecology. During the 1970s I experimented with a variety of energy conservation, waste management and food growing technologies. In 1978 I had the opportunity to build a house in which I could incorporate, my more successful designs, into an ecologically responsible dwelling.

As explained in my previous columns the housing stock in St. John's, at that time, consisted of uninsulated old houses and houses with standard levels of insulation. The former are solid healthy houses that have good air but which are energy inefficient, drafty and cold to live in, the latter are relatively energy efficient and comfortable but subject to unhealthy and costly moisture damage.

In 1978 I set out to design a house, called the "Newfoundland Greenhome", that would combine the energy efficiency of super insulated houses with the permanence of good air of old houses. The resulting house is a good example of appropriate technology in that it is designed to work well in the St. John's environment but may not work in other places.

In Canada we have national building standards and apply them evenly across our huge country with its many different climates. This results in houses that look alike but do not function equally effectively in all locations. An example is the R-2000 program, where superinsulated houses that were originally developed for Prairie conditions, are being built all across the country. Would it not be better and more interesting to develop functionally appropriate regional designs that were fine tuned to the local climate?

Since the completion of the Newfoundland Greenhome in 1980 a number of details have been changed to optimize its function. In the paragraphs that follow I will describe the house as it looks and works today.

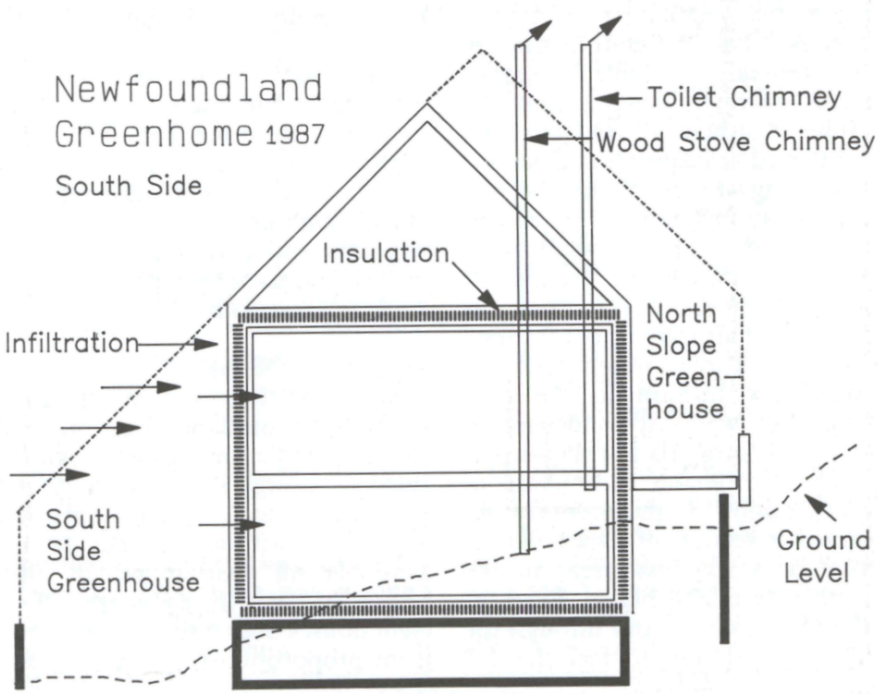
THE NEWFOUNDLAND GREENHOME

The Newfoundland Greenhome is a roomy (2300 sq. ft.) two story house with a simple rectangular form. Most of the windows and doors open into a huge 2 story high greenhouse that is attached to the south side of the house. There are few windows on the other walls. The lower level is partially buried in a hillside, so the main entrance, which is on the north side, opens into a big live-in kitchen on the upper level. The main entrance is protected by a large and very high glass sun porch that encloses most of the north wall and the north slope of the roof.

When laying out the floor plans several principles were kept in mind. Most windows are oriented toward the south to maximize solar gain. The outline is simplified to minimize external surface area. The principal comfort zones, kitchen and living room, are located in the center of the house and the peripheral rooms are allowed to experience greater than normal temperature fluctuations.

The design and structure of the Newfoundland Greenhome combines features of passive solar, superinsulated and double envelope houses. The windows are designed and oriented to capture free solar energy when the weather is clear. It is also like a passive solar house in that its operation is very simple. Features like solar panels, thermal storage, thermostats, distribution fans, etc. that are common to active solar houses, are absent.

The house is somewhat like a double envelope house in that the living areas are partially shielded by a glass envelope which protects the vulnerable windows and doors from the wind. This envelope is composed of the greenhouse that protects the south wall and the north facing sunspace that protects the north roof and wall (See Winter Cities Newsletter V4, #5, pg. 13).



Like superinsulated houses the walls, ceiling and floor are filled with a foot or more of insulation. It was my original objective to build an air tight vapor barrier into my house, I believed that this was important both for energy efficiency and to prevent structural condensation. It turned out that it is a lot easier to imagine a tight house than to build one. Architectural complexity, the two story design and the settling that inevitably occurs after completion of construction all conspired to produce a rather leaky house.

Then there was the problem of chimneys. True superinsulated houses have none, their designers reason that it makes no sense to build a heavily insulated house with super tight vapor barrier and then put a big hole up through the ceiling. But I wanted three chimneys, one to ventilate the composting toilet and two for the wood stoves which would supply my auxiliary heat.

Having violated two of the basic principles of superinsulated design I was not very optimistic when I moved into our hosue in 1980. I knew that our air-vapor barrier leaked, so I expected structural condensation problems and energy loss from excessive infiltration. I feared that the warm air lost up the chimneys would severely reduce our energy efficiency. But after living in Newfoundland Greenhome for 7 years I am pleased to report that the walls have remained dry and the house has been very energy efficient. In order to explain these happy but unanticipated circumstances I had to rethink some of the generally accepted theories about energy efficiency and the causes of structural condensation.

I started to suspect that there was something wrong with the idea that condensation problems are caused by moisture diffusing out through faults in the vapor barrier. It seemed more likely that as exfiltrating air moving out through the walls it carried water vapor in a piggy-back fashion to the cold sheathing, where it condensed to its liquid form. To test the importance of diffusion as a cause of condensation I purposefully removed a section of vapor barrier from a windowless area on the north side of the house. Every so often I stuck my hand through the 12" of insulation to feel the 1/2 inch plywood that separated me from the outside cold. If diffusion were the cause of condensation, water should have settled on the plywood, but after 6 years it is still dry.

Studies performed about 8 years ago by Ms. M.Z. Rousseau of the division of Building Research at the National Research Council of Canada also suggested that preventing exfiltration is the best way to avoid moisture related problems. Plywood sheathing carefully installed and sealed on the outside of the wall makes a very adequate air barrier. A couple of coats of enamel paint on the interior walls is all that is needed in the way of a vapor barrier. Should these ideas catch on the polyethylene air-vapor barrier could become extinct.

FRESH AIR AND MOISTURES CONTROL

The chimneys and greenhouses of the Newfoundland Greenhome act together to: reduce condensation causing exfiltration, provide fresh air and encourage energy efficiency. The chimneys exhaust used air from the house, this has the effect of reducing the interior air pressure, which in turn inhibits exfiltration and encourages infiltration.

The greenhouses deflect the kinetic force of the wind from the vulnerable windows and doors. As a result the main energy source that usually drives infiltrating air into houses is eliminated, a pleasant consequence is that there are no perceptible cold drafts within the house.

The used air that is expelled through the chimneys must be replaced by fresh air. This is gently drawn into the house from the greenhouses through the many cracks and crannies around the windows and doors. The infiltration is motivated by the slight negative pressure within the house.

SOURCES OF HEAT

There are three sources of heat in the Newfoundland Greenhome; solar, intrinsic and wood backup. Intrinsic energy is the waste heat that is generated by all electrical appliances within a house. It is available all year round in all houses, but only in very energy efficient houses does it supply a significant proportion of the heat. During sunny weather solar energy can supply most of the heat in the Newfoundland Greenhome. Even during cloudy weather it still supplies some energy. With a few exceptions the Newfoundland Greenhome is heated entirely by solar and intrinsic energy from late March through late November.



Newfoundland Greenhome

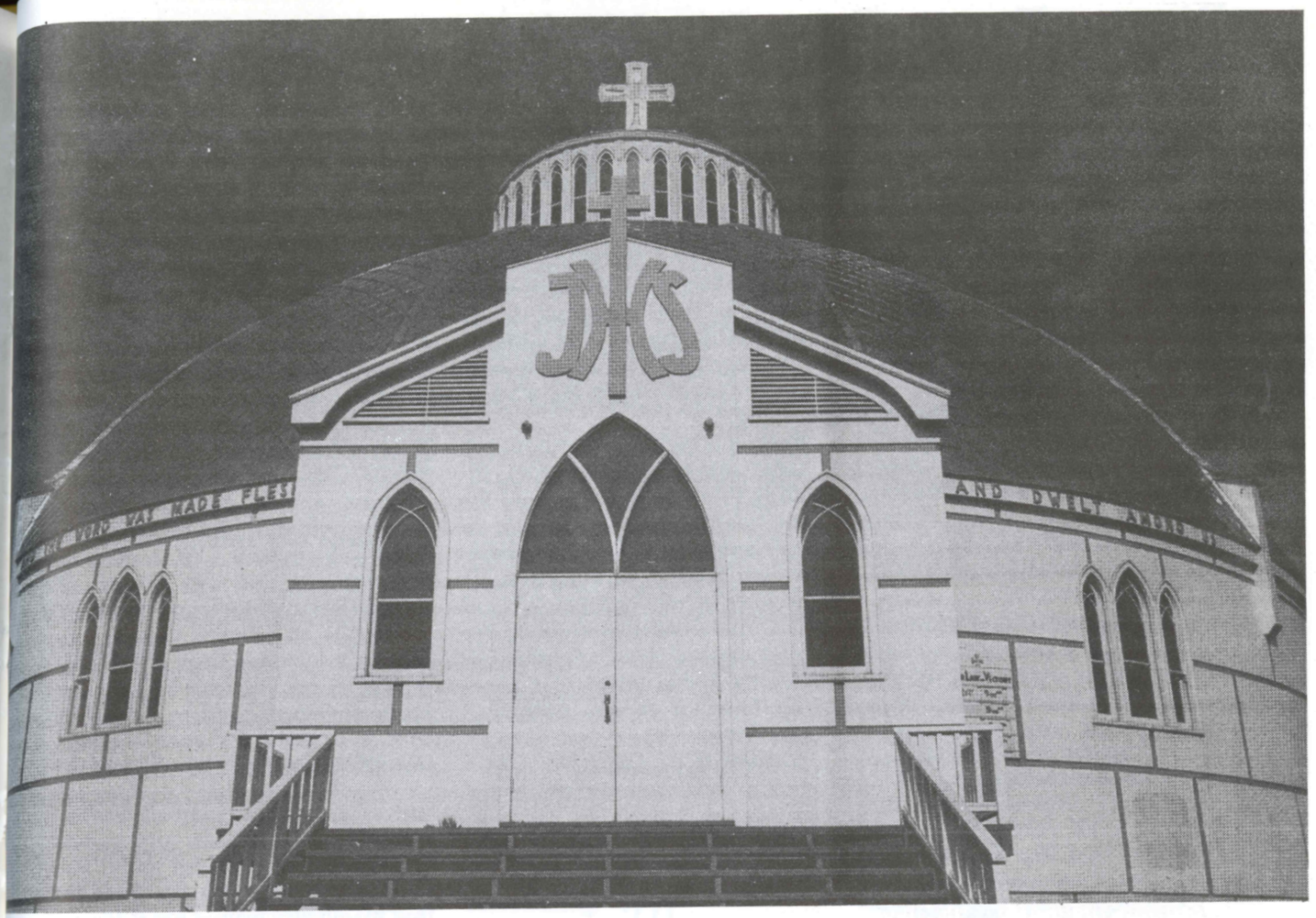
Wood heating provides significant auxiliary heating from December through February. Our auxiliary heat requirements are very modest, amounting to about 20% of that used by a similar sized standard house. Normally we use between 1.5 and 2 cords of soft wood to cover our heating needs for the whole year. This high level of energy efficiency is due to: the very heavy insulation, the elimination of wind driven infiltration and the partial preheating of the fresh air supply in the solar warmed greenhouse before it infiltrates into the house.

SUMMARY

The Newfoundland Greenhome is a functionally excellent house in the windy, wet and foggy maritime conditions that are prevalent in eastern Newfoundland. The greenhouse envelope reduces the chilling effects of the wind and partially preheats the infiltrating air. The southern orientation of the windows gathers free solar energy and the super insulation hoards warmth within the house efficiently. The chimneys ensure a constant circulation of fresh air through the house, and by reducing interior air pressure, minimize exfiltration and associated structural condensation.

CHIPS, FLAKES *and Gusts*

Those of us who are late putting away Christmas cards will be struck by the winter scenes they depict. Until Currier and Ives romanticized New England winters about 1860, artists seldom painted winter scenes. French Impressionists became enamoured of winter paintings later in the century..



INUVIK'S "IGLOO CHURCH," DESIGNED BY PRIESTS, HAS NORTHERN ARCHITECTURAL MESSAGE

"Our Lady of Victory Church in Inuvik seems to rise out of the Arctic landscape, expressing an appropriate yet noble and uplifting response to its society, setting and purpose."

Combining creativity and craftsmanship in an unrelenting environment, Inuvik's "Igloo Church" is a testimonial to the spirit of the two missionaries who designed and built it almost thirty years ago.

Inuvik, "Place of Man", is a planned community in the high Arctic, a pocket of settlement built from nothing in the 1950's to house technicians and government officials. In 1958, the Roman Catholic Church wanted to build an edifice reflecting Inuvik's far northern setting and indigenous way of life, and the bishop chose an Oblate missionary, Brother Maurice Larocque, as the man for the job.

Larocque, with no architectural training or formal education, had acquired building skills through experience. He and another Oblate missionary, Father Joseph Adams, designed the church and carried out its construction, with their only blueprints being the inspired and detailed ideas in Larocque's mind.

Many uniquely northern problems had to be addressed. Inuvik lies on "blue ice", or deep permafrost, which cannot be allowed to melt either during construction or by the building itself after completion. Standard solutions involve raising buildings on piles above the ground - the Igloo Church, however, rests on a large pad of imported gravel, (the only building in town not on pilings) and to the credit of its builders it remains standing as tall as when built.

Larocque's quite confidence quelled fears of his lack of formal training. The result was a small perfectly crafted and exceedingly well-constructed church of calm repose. The outer wall sits on a rim of structure circling the gravel-filled depression; a second inner wooden dome was built of 123 intersecting arches, representing the apostles. The effect is peaceful and contemplative.

The church injects an air of fantasy into the bleak surroundings. Its multi-faceted dome bounces summer's long low light off its silver surface, and is blanketed with a mantle of snow in winter. Gothic shaped windows cast a golden light into the Arctic night. The dome's curve is rooted to the earth, familiar and comforting, echoing a traditional Inuit snow-house. Images of both shelter and mysticism prevail.

Our Lady of Victory Church was built on the dreams of one man, yet strikes harmonious chords of recognition and appropriateness in all who see it. Larocque also built a Teepee Church in Fort Franklin in 1962, then again in 1979 after the original was destroyed by fire.

Directors/Toronto Group Joint Meeting Names Committee To Plan Winter Event

Meeting Jan. 21, more than 30 members of LWCA Board of Directors and Toronto area members and supporters voted to proceed with plans for a "Winter Celebration" to be held in Toronto in the next few years.

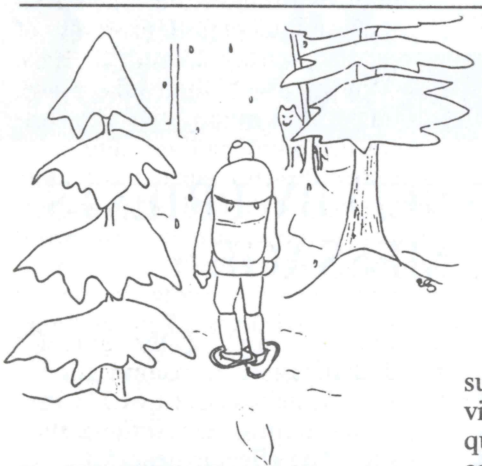
Xenia Zepic, newly-appointed Managing Director, outlined her thoughts on some of the components that might be included in such an event. A committee was chosen to begin organizating the project Members: Xenia Zepic, James Bell, Gary Gappert, Pamela Sloan, Jo-Anne Egan, Mark Gladysz, Grace Strachan and Carmela Gibson-Kendry. Others will be added.

Zepic suggested the proposed conference be a people event with involvement of artistic and cultural groups. Scandinavian and other ethnic groups with winter backgrounds could be approached. There could be participation by native groups and a large fashion and clothing component. Gary Gappert suggested there could be competitions -- such as for products best suited for winter use -- and that awards presentations be featured in order to attract the attention of the media. The committee arranged to meet in early February to carry forward the work of planning.

President Jack Royle announced a large majority of directors, including those unable to attend the latest board meetings because of travel and scheduling considerations, had had opportunity to study a number of motions put forward at the annual meeting and had approved most of them unanimously including appointment of a Managing Director in the person of Xenia Zepic.

Additional motions were brought forward from the Executive Committee. One proposal was that a special fee schedule be created to permit cities and other municipalities to become members of LWCA. Other motions: that Weiming Lu, Chairman, Minnesota Chapter, be named Vice-President accentuating the international character of the executive, and that Sheila Pepper, Ottawa Chapter, be named Chairman of the Task Force project. These motions will be circulated to all directors for their consideration.

Prof. Leo Zrudlo, Directeur, Ecole d'Architecture of Laval University, Quebec City, reported some officials of local business groups and governments had indicated interest in forming a LWCA chapter or group in that city. Board of Directors had announced plans for a meeting in Quebec City to explore this idea and Prof. Zrudlo reported he would follow up with the local officials to confirm a suitable time and venue for such a meeting.



SOLO in the *Snow*

By Elizabeth Gutteridge
(From "Bruce Trail News")

I am addicted to solo hiking. But I do not have a radio transceiver, and my friends do not always know where I am. This came to mind on a backpacking trip from Tobermory to Dyer's Bay when I was caught in a tremendous thunderstorm. Nevertheless, I do take reasonable care.

For some time I had longed to go camping in the winter but didn't think I should try it solo the first time since it would be difficult to let people know exactly where I might be. Also, it is one thing to enjoy a winter day and then go hone to a warm house, and quite a different thing to crawl into a sleeping bag in the snow. After a lot of persuasion and fast talking I convinced a friend to come to Algonquin Park with me, turning a deaf ear to comments about motels.

We found a place to park the car, went a little way into the park and made our camp. At dusk we went for a walk and were thrilled to hear the howl of a wolf.

In the morning we discovered a wonderland. It was bright and very cold, the sky was blue and the snow was drifting through the trees at the slightest breeze. We saw the wolves had watered a tree, and found tracks of a rabbit which may have been their breakfast.

I was delighted, stopping and looking, peering into the trees, while my friend, still dreaming of a warm motel, pushed forward with a single minded purpose. Once, to my amazement, I saw a wolf. I stayed very still. It had that wonderful, seemingly smiling face that wolves have. My camera was inside my jacket, but I knew any movement would startle him away. Finally, he melted into the trees in that magic way wolves have. It was a very private and personal moment.

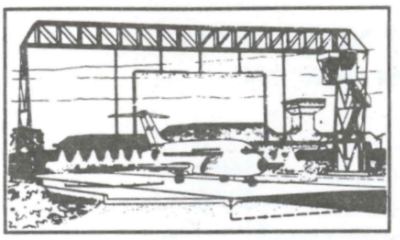
After that winter, I camped solo. Walking alone, there is a freedom and feeling of mysticism. It is also a test of character to continue on when you are tired, or wet, or fed up; or on the other hand, to give up and make a sensible decision to call it a day.

One afternoon I returned to my car to find the battery dead, I had to walk up to the road to find help, which turned out to be two young men with a jump cable in their car. I amused them by feeding the Canada Jays, which I love, in spite of the fact that one of them stole my last slice of bread. They are so amazingly friendly.

I also love to feed the chickadees, and feel their suprisingly warm little feet clinging to my fingers. One day while feeding them I had taken off one of my boots. When I was about to put it on again, there was a chickadee inside, busily pecking up some fallen seeds.

One of the delights of solo camping and walking is the things you see, I have a lot to remember.

Computerized de-icing First Used by Northern Swedish Airport



Automated system recycles airport de-icing chemicals

During the winter 600 northern airports rely on de-icing to protect airplanes from snow and freezing rain. Until 1984, de-icing was a manual operation almost everywhere, but in that year Kallax airport in northern Sweden became the first to install a computer-controlled automated de-icing system developed in the early 1980s by a SAS efficiency engineer. Last year, Toronto's Pearson International airport became the first to install such equipment in North America.

The system can de-ice the entire body, wings and tail of an aircraft in just one minute, compared to the half hour or more required to do the job manually. Also, the computer leaves no room for error in neglecting key spots that are hard to reach. Furthermore, all the fluid used is collected instead of being allowed to run off and contaminate ground water.

The system consists of an overhead gantry with 172 high-pressure jets for spraying an aircraft as it taxis to the runway for take-off. Amounts of chemicals are precisely calculated by computer. The Swedish de-icing system not only adds safety, but also speeds up departure time, lowers material costs, and eliminates an environmental hazard.
(from "Public Innovation Abroad", December 1987).

Adding Resonance Sources Shuts Out Highway Noise

Opening this March in Hokohama will be Japan's first "soundscape" footbridge, next to the main railway station. The Nishitsuraya bridge, which spans the Katabira River, will respond to footsteps of passing pedestrians with the sound of wind chimes.

The idea for a "singing bridge" arose because of the overpowering presence of the Shuto Expressway which runs overhead. Musical sounds will be created by eight resonance sources located near the protective railing, which wll amplify and modify vibratIons produced by pedestrians' footsteps; hopefully forcefully enough to mask the expressway noise.

The 25 metre bridge will also be lined with 12 light poles specially designed to create a forest ambiance. Local businesses are sharing part of the $1.6 million U.S. cost of remodelling.

Buffalo Strikes Compromise In "Windgates Argument

In Buffalo, NY, the Niagara Frontier Transit Authority felt it had to do something about the bitter winter winds which whip off Lake Erie. One attempt was the erection of a wind screen at the downtown end of its new 10 km. subway connecting Buffalo with the south campus of State University of New York, to protect riders emerging from subway cars.

COVERED STREET HAS "CHARACTER"

Mankato, Minnesota, population 29,000, roofed over a portion of its downtown, including two and a half blocks of Front St. to form a mall. Old buildings remained and new stores were created. A developer was given air-rights above the street, and he did the rest. According to Mall Manager Julia Kroubetz, "It's hard to imagine that the common area once was the street. But because of the combination of older and new store fronts, this place has character".

LETTERS

Congratulations! to Scott Konkle on an excellent article highlighting the City of Kitchener's efforts to revitalize its Downtown (pp. 7-9 December 1987 issue Winter Cities Newsletter).

I would hope that a copy of the article will be placed on the next agenda of the Downtown Revitalization Committee. In addition, a copy should be sent to Members of Council . . . . .Tom McKay, Chief Administrator, City of Kitchener, Ontario.

National Sutdent Competition Judging

Prof. Norman Pressman, School of Urban and Regional Planning, University of Waterloo, Chairman of the LWCA committee organizing the 1987-88 National Student Competition, has announced the names of judges and dates when judging will occur.

Judges are: Ernest Balmer, President, Hallmark Hotels Ltd; Prof. Annick Jermain, Faculte de l'Amengagement, Universite de Montreal; Harold Hanen, Architect, Calgary; Mme. Annie Luttgen, Directrice Cabinet du Maire, City of Hull, Quebec; Charlotte Matthews, President, National Advisory Council on Aging, Ottawa; Raymond Moriyama, Architect, Toronto and Ron Soskolne, Vice- President Planning and Development, Olympia and York Developments Ltd.

Entries will be assembled at the School of Architecture and Landscape Architecture, University of Toronto, on May 20 and 21, 1988, and judging will then take place. Names of winners will be announced following the judging.

Those desiring further information may reach Prof. Pressman at University of Waterloo, Tel: (519) 885-1211 ext. 2149.

Task Force Presentation Is Model

Sheila Pepper, Chairman of LWCA Task Force project announces the project will have a "multi-media" presentation at Winter Cities Forum/Showcase in Edmonton Feb. 13-15. The presentation will include a model and slide show. Themes to be covered will include urban transportation, design and construction (housing, structures) and personal/psychological impact and consequences of the winter experience.

Purpose of the model and presentation is to create a tool to be used by Winter Cities in evaluating how well they are serving their citizens in the context of the season of snow and cold. Cities of St. John's NF. and Edmonton have worked with Ottawa LWCA chapter in developing and preparing the material. Ottawa Aldermen Michael McSweeney and O'Neil have given active leadership.

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use this convenient form

LIVABLE WINTER CITY ASSOCIATION MEMBERSHIP / NEWSLETTER

To Livable Winter City Association, P.O. Box 5130, Stn. "A", Toronto, ON M5W 1N4

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Plastic Houses That "Look Conventional"

Engineers of General Electric Co. laboratories at Pittsfield, Mass., are building a house out of plastic that will look like a conventionally constructed house but have advantages in life cycle cost and maintenance. Presently plastic is two to ten times more expensive than wood, brick or concrete, but if enough builders begin to build with plastic, costs would predictably come down.

The aviation industry uses plastics in construction of aircraft and all new houses have an increasing number of plastic components including piping, bathroom and kitchen components and other items. One way plastics offer advantages is making possible more prefabrication than now takes place. If wood, steel and brick become more expensive or difficult to obtain, it will give impetus to increased use of plastics.

GE engineers believe experimental plastic houses of the past have been too futuristic in shape and design. The program now begun is to design houses of plastic that look like the familiar frame or brick houses that line urban streets. In the Arctic, plastics and fiberglass have proven themselves to be superior construction materials from most points of view.