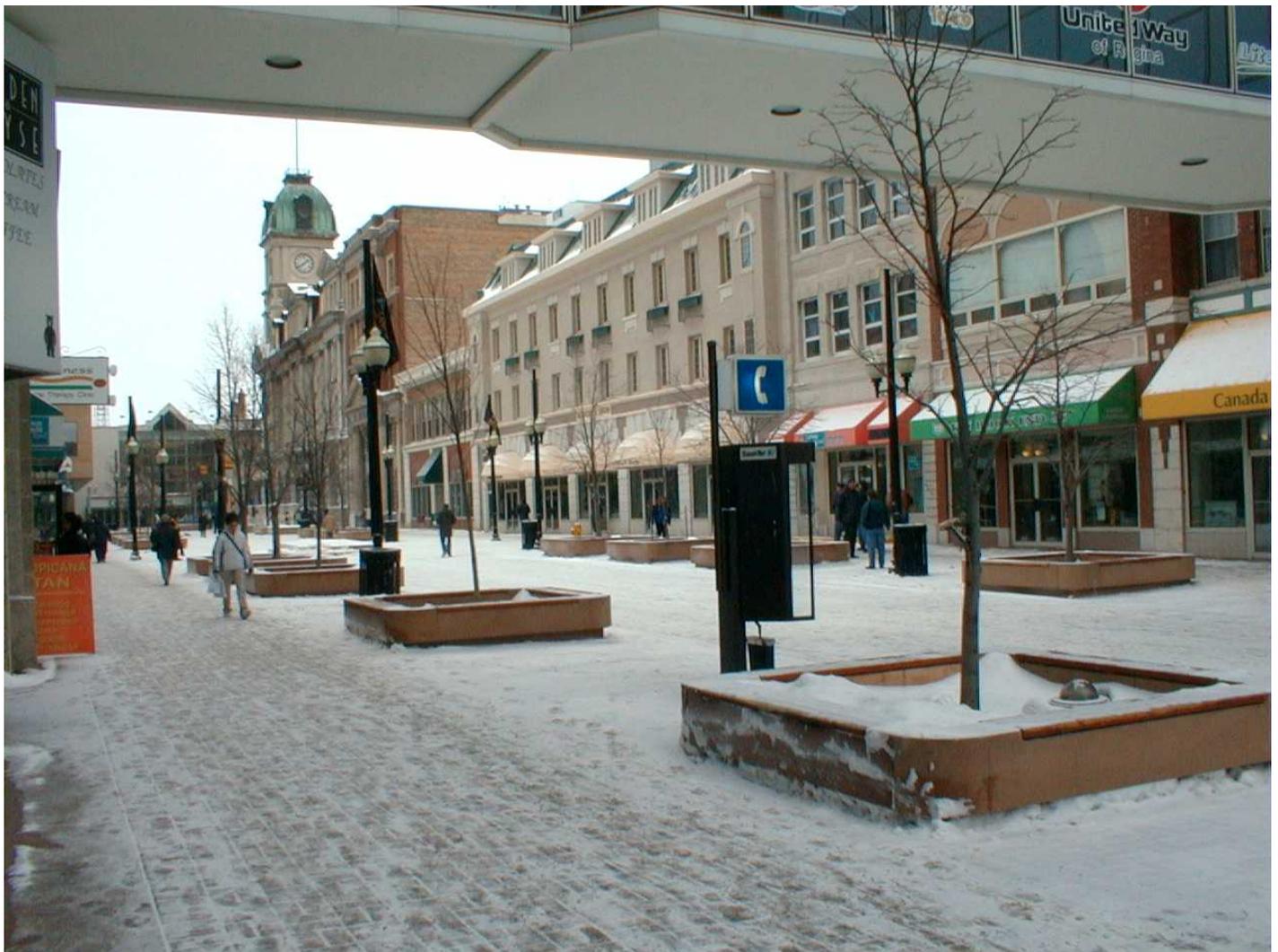


Winter Cities

VOLUME 23 * NUMBER 2 * MAY / AUGUST 2004



Regina, Saskatchewan



Winter Cities

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Members are encouraged to submit articles, book reviews, events and other news to the Winter Cities Magazine. We also welcome your suggestions for possible topics and authors you would like to see in future issues. The editorial staff may be contacted at bbraitman@accesscomm.ca.

The Winter Cities Magazine is published in February, May, August and November. The submission deadlines are the first day of the month of January, April, July and October. Articles are generally 1,000 - 1,500 words. Greyscale images are preferred in a tiff or eps format. High-resolution jpgs are fine. Scanned images should be set to 300 dpi (150 line screen) minimum.

BIENNIAL WINTER CITIES FORUM AND TRADE SHOW

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

Web site: www.wintercities.com



Winter Cities

VOLUME 23 * NUMBER 2 * MAY / AUGUST 2004

4 * Cool Knowledge

PER-ERIK OLSEN

5 * Editors Message

6 * How do Marquette Residents Feel About Winter?

PATRICK J. COLEMAN A.I.C.P.

10 * Challenging Winter Frontiers

ROSE MARIE STEINSVIK

On the Cover: The Fredrick W. Hill Mall in Regina.

This downtown pedestrian space provides an attractive outdoor setting as well as indoor links between the street level stores, on the model established by Patrick J. Coleman in Houghton, Michigan.

Photo courtesy of the City of Regina

Cool Knowledge

A new company in Sweden is addressing issues of living in a cold climate.

By PER-ERIK OLSEN
peo@progressum.se

Today's highly technological and internationalized society demands high security and safety within all of its functions. Municipal infrastructure must be continuously functional and accessible. Industries like forestry, construction and mining are also expected to function year-round.

The individuals working to maintain these societal functions face a challenging task, and even more so, for those on duty in the often frigid environment of Northern Europe. Construction and repair crews are called on for important missions in the harshest of conditions.

Transportation personnel work year-round to keep communications open to the most remote areas.

Knowledge about human capabilities and limitations, as well as an understanding of the environment's effect on judgement, work capabilities and performance limits, is crucial. Along with the knowledge of the human-technological interface, this information becomes a basic requirement if we are to continue to develop and maintain important societal functions in the North.

In a wide range of occupational areas, such as transportation,

construction work, activities in cold and freezing rooms, tourism, research and rescue, employers are constantly concerned with problems that cold may induce to their employees and workplaces environments.

Cool Knowledge in Kiruna has taken the challenge to develop an educational centre using the techniques and knowledge that has developed both locally and scientifically over the years. The cold climate training centre has a vision of becoming a centre of excellence on working and living or just visiting an area with cold or cool climate.

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We found that together with our own competence and interest, there were also a lot of skilled people that could be hired as teachers and instructors in different kinds of education. Instead of employing a large staff on a permanent basis, we therefore found that a better solution was to work in a network, and collaborate with a group of competent instructors that could be selected dependent on the actual mission. This idea has proven to be very successful for the tourist industry in Kiruna.

We also found an encouraging interest from some institutes, both medical and scientific, who were willing to cooperate in this commercial idea around climate issues. As we continue our mission, we sincerely hope that more partners can be found in the larger network named Winter Cities Association.

Business idea

As stated, our idea is to train and educate people working and living in cold environments. Recent market analysis has pointed out several problem areas and not only for outdoor workers.

An example of an indoor industry that experiences problems due to cold is the food industry with their cold storage. This means that increasing the knowledge around these issues, becomes a work safety activity, which in fact, many times are regulated in law.

The more adventurous and tourist related parts of our activities can be tailor-made for a specific occasion. One example of that is a sled dog race held annually in our Swedish mountains (www.fjallraven.se/polar), where we this year had the opportunity to give a presentation for the competitors on how to dress and act before the four days (and nights) race.

We are of course very proud to have good relations with the famous Icehotel, where we plan to have special services for their guests beginning next winter season. Like having a drivers licence before driving your car, wouldn't it be great to have a Cool License before taking off on your snowmobile.

Of course these are just some examples of different areas where we are involved. Since the company is still to be seen in its build up phase, we are of course happy to welcome comments, ideas and maybe connections which makes it possible to share our experience with the rest of the community.

Don't be cold – be cool

AUTHOR

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Editor's Message

An edition of firsts

This edition of Winter Cities Magazine represents my first outing as editor, and also the first on-line edition of the magazine. Although the medium has changed, the format and content should be familiar to subscribers of Winter Cities. Some minor changes have been necessary to accommodate the digital format, but the most dramatic change is the ability to use more **colour**.

One thing that is unchangeable is the fact that this magazine depends upon contributions from its subscribers if it is to maintain the high standard of information about Winter Cities that it has established. So please keep the articles and news items coming in. Our next edition will be out in November, and the deadline for submissions is October 1. I look forward to hearing from you!

Barry Braitman, Editor

How Do Marquette Residents Feel About Winter?

A community survey questions winter attitudes

By PATRICK J. COLEMAN, AICP

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It often seems that one of the favorite pastimes of winter city inhabitants is to complain about the weather, but how do people really feel about their climate? A community survey in Marquette, Michigan may be the first-ever attempt by a city government to measure residents' attitudes about winter. Now, city officials are using this information in a new Master Plan.

Located on the south shore of Lake Superior in Michigan's isolated and snowy Upper Peninsula (U.P.), Marquette is a winter city of 20,000 plus residents who are looking to achieve a sustainable future. City residents feel strongly about the city's spectacular natural setting and environment and are concerned about change in their community.

Like many northern communities that have developed in response to natural resource extraction (iron), Marquette's economy has struggled. A national economic development expert (from the south) who studied Marquette's economic development prospects several years ago said "It's a matter of snow, cold and isolation that is against you from the get go". Fortunately, Marquette is rejecting this kind of thinking and hopes to use its diverse four-season climate to advantage.

This article expands upon an article which first appeared in the May 2003 edition of Winter Cities Magazine

City officials and the community share the vision that Marquette's ability to sustain itself comes from its dramatic setting on Lake Superior and city livability. There is recognition that as a winter city, Marquette has special challenges and opportunities it must respond to in order to maintain and improve upon the community.

Therefore, when the City of Marquette began the preparation of a new Master Plan last year, city officials wanted winter livability addressed in the planning process.

Marquette's interest in winter livability actually began when it joined with the Livable Winter Cities Association to host a Winter Cities Forum in 1997. City officials credit a positive change in attitude about winter in the community to this event.

The Master Plan Survey

In 2002, the City of Marquette began the task of preparing a new Master Plan and selected the consultant team of Beckett & Raeder of Ann Arbor and U.P. Engineers & Architects of Marquette/Houghton to prepare the plan. Developing the Master Plan included an extensive citizen

participation program that included a steering committee of diverse representation, community visioning sessions, workshops on specific planning issues, and a survey of community attitudes.

The survey was conducted to assess residents' attitudes about a number of important issues facing the community. The survey asked 36 questions and was conducted in December 2002.

Three questions relating to the winter season were stated in the survey.

- What types of indoor or outdoor recreation activities do you participate in the winter season?
- Is winter a positive or negative attribute to living in Marquette?
- Why?

The responses to these three survey questions were a pleasant surprise to the city planners.

Overwhelmingly, most respondents (306 or 81%) viewed winter as a positive attribute to living in the community. 82% of males compared to 78% of females were positive about winter. Persons in the 65-74 age group were less likely to see winter as positive (33%), while of the eight respondents over the age of 75, 87% saw winter as a positive attribute.

To the question “why”, respondents expressed a number of common likes and dislikes. Of those who responded that winter is positive (81%), the following reasons were given:

- Winter activities (47%)
- Like snow (18%)
- Change of seasons (12.5%)
- Tourism (12%)
- Like winter (12%)

Of the persons who view winter as negative, the following are the most common reasons:

- Dislike cold (36%)
- Difficult to get around (15%)
- Dislike snow (15%)
- Shoveling snow (10%)
- Dislike activities (10%)
- Winter is too long (10%)
- Too much snow (10%)

The survey also questioned residents about the types of outdoor and indoor recreation activities they participate in during the winter season. The most popular activities are outdoor-oriented and include:

- skiing/snowboarding (36%),
- hiking/walking/ (26%),
- cross country skiing (22%),
- snow-shoeing (21%),
- iceskating (15%), and
- hockey (11%).

The most popular indoor activities include swimming (8%), indoor exercise (7%), team sports (5%), and movies (4%).

It is obvious that many Marquette residents portray a positive attitude about winter. The survey further documents that residents take advantage of the season and the

many outdoor recreation opportunities afforded by the city’s location, natural environment and climate.

Master Plan Recommendations

The purpose of the Master Plan survey questions pertaining to winter was to increase awareness of opportunities to improve the quality of life in wintertime for Marquette’s citizens. A major objective is to emphasize those factors that make Marquette’s climate unique, enhance winter lifestyles, and overcome winter challenges.

The survey results were incorporated into goals and objectives for the new Master Plan to guide city decision-making about how to improve winter livability. By applying creative planning approaches to solving winter problems, and embracing a positive attitude towards the winter season, a community can mitigate some of the discomforts and inconvenience of winter. In addition, taking advantage of the positive aspects of winter can improve resident attitudes and the city’s appeal for the attraction of business and new residents.

The input from city residents served as an important indication of the direction Marquette should take to improving winter livability. Clearly, the survey showed that people value winter outdoor recreation, particularly skiing, skating and even just walking. Therefore, efforts to improve opportunities in the city for these activities would be popular.

The survey also indicated what citizens disliked about winter.

Overcoming some of these negative aspects of winter, like the cold, amount of snow, length of winter, etc., is more challenging, as these cannot be controlled.

However, efforts to improve site and building design, reducing pedestrian discomforts, such as cold and wind, brightening up the town, and focusing on cultural opportunities can make people feel better about winter. Improved snow management can make it easier to “get around” and reduce some of the inconvenience of winter.

To address winter-related issues, a series of recommendations have been developed, including the designation of specific design guidelines and the promotion of broader initiatives. Master Plan recommendations are outlined below.

WINTER DESIGN GUIDELINES

Site and Building Design

- Utilize solar radiation in the orientation of buildings and outdoor spaces, providing a southern exposure to maximize the penetration of heat and sunlight.
- Avoid or minimize development on north-facing slopes. Structures on northfacing slopes cast long-reaching shadows, significantly reducing solar radiation.
- Use buildings to protect outdoor spaces, such as vest pocket parks, from prevailing winds. Outdoor spaces should be designed to maximize solar radiation.

- Avoid building orientation that will create a wind tunnel or venturi effect.
- Avoid creating public spaces for winter use in areas shaded from the sun.
- Design building surfaces to help reduce wind speed and downdrafts by using features such as stepped facades, balconies and irregularities in the building's exterior.
- Cover ramps or stairs to protect them from snow and ice.
- Provide handrails for all public and private walkways that exist on slopes.
- Design roofs to consider and avoid the shedding of snow on pedestrian walkways and parking areas.
- Create sheltered transition areas at building entrances to provide an area for patrons to shed snow prior to entering a building.
- Provide shelters or wind blocks in areas that serve as outdoor gathering spaces.
- Encourage a dense, compact urban development pattern.

Road Design

- Snow removal should be considered in the design of road improvement projects. Curb extensions and corner treatments should be designed with appropriate radii, rather than sharp angles, considering equipment maneuverability.

- Street cross-sections should be designed to provide for snow storage adjacent to the road. By creating this additional space between the road and the sidewalk, additional snow from street clearing is not placed on pedestrian walkways.
- Bike lanes may serve for snow storage only in areas not used by winter bike commuters.

Pedestrian Circulation

- Critical pedestrian areas should be identified to receive priority for snow clearing. Recruit citizens, neighborhood groups and businesses to maintain routes and improve pedestrian conditions.
- Transition areas, such as barrier-free ramps, curb cuts and bus stops, should be properly designed and maintained to optimize pedestrian conditions and safety. These areas are often subjected to snow from plowing operations.
- Design crosswalks to be slightly raised for positive drainage away from walking surface.
- Catch basins should not be located in crosswalk areas to prevent ponding of water and slush in these critical pedestrian areas.
- Consider heated sidewalks, steps and ramps in building and site design.
- Groom pedestrian and bike trails for winter use by compacting snow to create a multi-use surface for skiing, walking, and biking. Sand and gravel can be used to create a walking lane on the multi-use surface. Marquette has several of

these pathways that would lend themselves to this approach.

- Separate sidewalks and pedestrian walkways from roadways. This separation protects pedestrians from the spray of slush and water from passing cars.

Snow Management

- Ensure adequate snow storage space on public roads. Terraces or boulevards with adequate width are excellent for snow storage.
- Evaluate the impacts of winter winds and drifting snow on city streets and pedestrian walkways, and redesign wind-impacted areas using earth forms and vegetation to reduce drifting and wind discomfort.
- Consider snowmelt systems for high-traffic and sloped areas.
- Investigate the use of innovative technology and equipment for snow management. This is especially important where snow removal interferes with traffic calming and walkability mechanisms.

Vegetation

- Plant deciduous trees on the south-facing sides of buildings and outdoor areas. These trees will provide shading in summer and allow filtration of sunlight during winter.
- Use berms and vegetation to direct snow drifts away from building entrances.
- Select appropriate vegetation for snow storage areas.

- Living snow fences protect open roads and walkways from winds. Areas of dense evergreens act as a “wind sponge”, protecting pedestrians from wind chill.
- Tree species should be selected that offer attractive or useful winter characteristics, such as twig color, fruit and salt-tolerance.

Materials/Aesthetics

- Design municipal facilities to function and look good in all seasons.
- Consider color and lighting treatments when designing new buildings and landscapes, to offset the darkness and monotony of the season.
- Use appropriate technology and “warm” materials for outdoor furnishings, such as wood, polyethylene and vinyl coated metal. Bare metal street furnishings are not recommended.
- Encourage public art using snow and ice as a resource.
- Encourage public and private light displays and lighted building facades, for winter interest and to offset the darkness of winter. Marquette’s “City of Lights” program, where buildings and architectural features are outlined with lights, is a good example of a winter lighting initiative.

COMMUNITY INITIATIVES

Recreation Opportunities

- Create additional ski trails within the city limits by connecting existing pathways. Maintain a

multi-use surface on the snow for skiing and walking.

- Consider ways to use existing city parks for additional winter activities, such as sledding and a tube slide.
- Implement the Marquette Commons skating rink project, which will create an open-air, town square ice skating rink with a refrigerated ice surface in the downtown.

Community Involvement

- Generate local pride in the community by rejecting negative thinking about winter, focusing instead on its potential and the opportunities winter offers.
- Recognize innovative site and building design efforts, both public and private.

Networking

- Continue to communicate with other winter cities to learn about innovations that are successful in their cities. Of particular importance are the issues of snow management and ways to reduce the use of de-icing agents and salt, in an attempt to reduce the environmental effects.
- Continue Marquette’s involvement with winter cities organizations, including the Livable Winter Cities Association (LWCA) and the International Association of Mayors of Northern Cities (IAMNC).

CONCLUSION

Marquette’s identity as a winter city began in the late 1990’s, as the result of participation in several winter cities conferences and hosting the Winter Cities Forum ’97. City officials attribute a change in citizens attitudes to this participation and event.

A new Master Plan for the city created the opportunity to ask residents about their views of winter, their likes and dislikes, and activities valued during the winter season. These views help shape a series of recommendations and initiatives to make winter life even better. Winter is the dominant season in the north. In the lower 48 states, winter is generally viewed as a negative force and is culturally unpopular, as well. Despite this, it is possible to change attitudes, develop a community’s winter culture, and improve the collective response to winter’s demands.

Measuring residents’ attitudes through a community survey is a good way to determine the level of winter acceptance in your city. Winter city considerations should be a part of any comprehensive community planning effort in all northern communities.

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Challenging Winter Frontiers

Polarbo, a housing project in northern Norway at 78°N

By ROSE MARIE STEINSVIK

*P*olarbo is a housing project that in form, technically and socially is adapted to the special climate of the arctic, with low temperatures, strong winds, snowdrift, darkness, but also a fantastic light and four months of midnight sun. We have stressed creating informal meeting places indoors, for both children and adults, and also good living comforts and a magnificent view. Polarbo is used as accommodation for the scientists from the Norwegian Institute of Polar Research.

Polarbo is located in the Lia neighbourhood in Longyearbyen. The parcel drops to the north – northeast. From a climate point of view the parcel is in Adventdalen, where the dominating wind and snowdrift direction is east – west. The house has been given a shape that is adjusted to these factors, with the form of a plow towards the main wind directions, and hence the drift of snow.

Concerning the low temperatures and the amount of wind, the windshield is particularly important. Polarbo has a construction principle and care of details which aims at shielding the house from the wind in the best possible manner.

To supply the apartments with fresh air, the housing complex has a balanced ventilation system,



where the fresh air is taken from the large airspace underneath the house. This airspace functions as a pressure compensation chamber for the air, and extracts dust and sand which can be a problem during some parts of the year.

The air is pre-heated through the half climatized corridor zone. District heating pipes have open leads in the corridor, and the excess heat is preserved.

Situation

The apartments have a joint entrance through a wooden step in the south-western end of the building, facing the entrance to the central functions. Due to the mud on the ground surface when the upper layer of the perma frost is thawing, the tradition among the people in Longyearbyen is the remove their shoes in large

porches, and all other indoor rooms are shoe-free. The common corridor in Polarbo was intended as a rustic shoe-zone, but the inhabitants have decided to keep it shoe-free. The porch is therefore a bit small to accommodate all the shoes. The workroom is partly a wardrobe for scooter outfits and shoes. The common corridor is used for play and games, and at times of festivity a long table is set in the corridor.

The heavy drop in the terrain towards north supplies the apartments with an unspoiled view above the houses in front, thus securing the view of the Adventfjord and the Isfjord. Parking is solved by longitudinal parking to road 234. A parking arrangement like this, along the north side of the road close to the building, facilitates motor heaters in the most convenient way.

Layout

The building contains six two-floored apartments with built-in half climatized entrance zone and common corridor towards south. Central functions like washing room, workroom, livingroom with open fireplace and playing room are located adjacent to the entrance. There is a spacious midnight sun balcony outside the common livingroom. On the unheated loft above the apartments storage rooms have been placed. The apartments are in compliance with the norms of floor space, number of bedrooms and ability to furnish that has been laid out by the Norwegian Bank of Housing. Four of the apartments are equipped with a balcony towards south. The balcony is normally

closed with glass, but can be opened on favorable days in the summer.

Construction

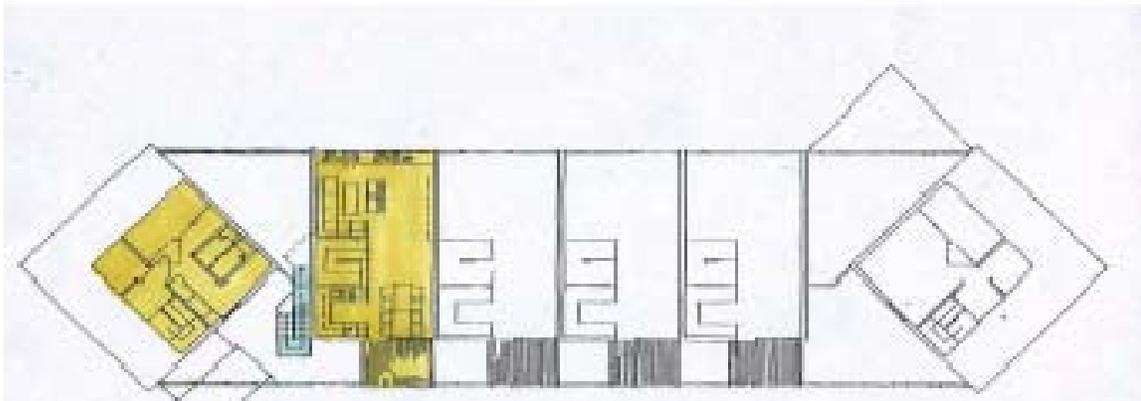
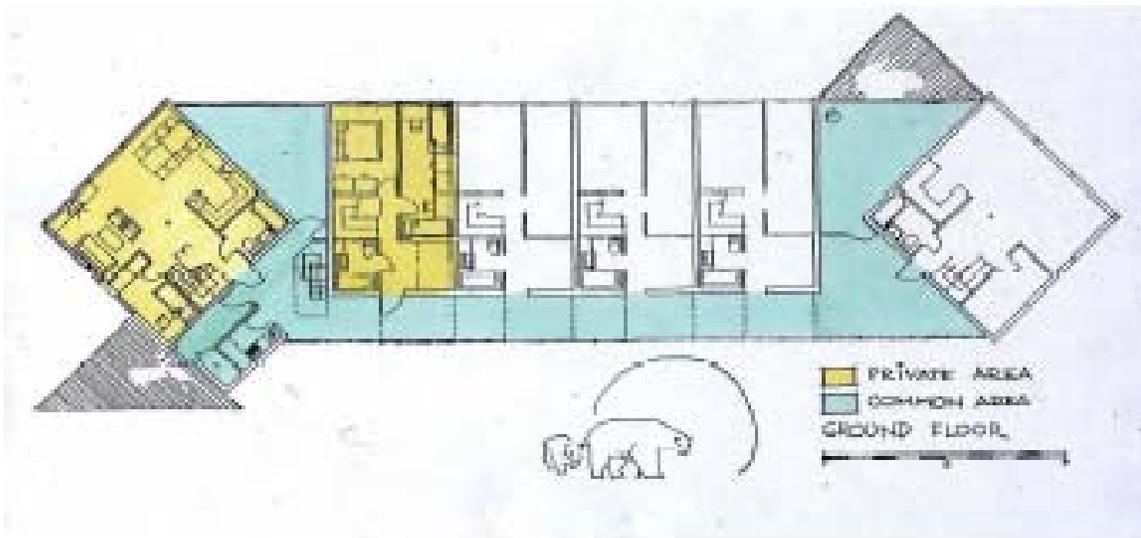
The foundations of the building has been laid out in the traditional way for houses in Longyearbyen, with impregnated wooden poles that are drilled down and subsequently frozen into the permafrost.

The building is constructed in a way that preserves the wind shielding, despite the extremely low humidity of Svalbard and the following drying/shrinking problems related to the use of wooden material. Floors and walls have 15 cm of insulation, the ceiling has 20 cm. The loss of heat

through the floor is recycled, thanks to the air chamber underneath. The windows of the living rooms have three layers of functional glass. In the common area the windows are equipped with two layers of the same glass, and in the joint entrance two layers of insulating glass.

The building has an external aerated wall covering and roofing made out of profiled, galvanised steelplates (“corrugated iron”). External steps and balcony is made of compregnated materials. The window frames and balcony are wooden, and they are painted on the external side in strong, bright colours.

...continued on page 12



Materials

In the entrance zone and the common area the choice of material is rustic with floors made out of pine plank that have been painted or lacquered. Walls surrounding the apartments are dressed with untreated wooden panel, which gives a warm, friendly light in the entrance zone during the period of darkness. Inside the apartments the surrounding walls are made out of painted plasterboards, this in order to fulfill noise requirements and fire regulations. Internal walls are of untreated pine panel. The doors are painted, and the floor is untreated pine. The bathrooms have ceramic tiles on the floor and the walls by the shower. Wooden framed windows have been used all over the building.

Technical installations

Heating of the buildings is done through a district heating central. A heat converter is placed in a room by the porch. The entrance zone has floor heating and radiation heating (minimum temperature is

+8°C; operating temperature is +18°C). In some sunny periods during the summer the entrance zone can actually become too hot, as the balcony doors are not opened when the inhabitants are away because of the sand that might blow in from the outside. The apartments have floor heating in the bathrooms and entrance, in the rest of the apartments there are both floor heating and radiators. All floor heating is water based.

PROJECT INFORMATION

Name of building: Polarbo

Address: Lia, Vei 234, 9171 Longyearbyen, Svalbard

Building year: 1994

Architects: Steinsvik Arkitektkontor AS, Tromsø

Associates: Odd Karl Steinsvik, Rose Marie Steinsvik, Karen Lene Steinsvik. Civil architects, MNAL. Consultants: Svein A. Sjørem ing.

AS (ventilation), Vekas AS (heat, sanitarian), Proconor AS w/ Ole Monsen (building technique), IGP AS, dept. Tromsø (electrics)

Project supervisor: Longyearbyen Buss og Taxi AS w/ Jan Arne Johansen

Main contractor: Longyearbyen Buss og Taxi AS

Gross area: 687 m2 (4 built-in balconies, each 5,7m2; un-insulated storage room in the loft)

Building costs: 5,8 million NOK (no VAT on Svalbard)

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Winter Cities

A S S O C I A T I O N

c/o CITY OF PRINCE GEORGE, 1100 PATRICIA BOULEVARD,
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MISSION

The Winter Cities Association is dedicated to realizing the potential of all northern communities. Through publishing, networking, organizing conferences, facilitating research and other means, the Association seeks to make available northern solutions to northern problems and to promote awareness of opportunities associated with the winter season.

HISTORY

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

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

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

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

MEMBERSHIPS & SUBSCRIPTIONS

Annual membership fees in the Association are by category:

INDIVIDUAL - \$60.00 Cdn. STUDENT/SENIOR (OVER 65) - \$30.00 Cdn.
CORPORATE/INSTITUTION - \$125.00 Cdn. CITIES AND MUNICIPALITIES – based on population

All members receive the *Winter Cities Magazine* on-line.

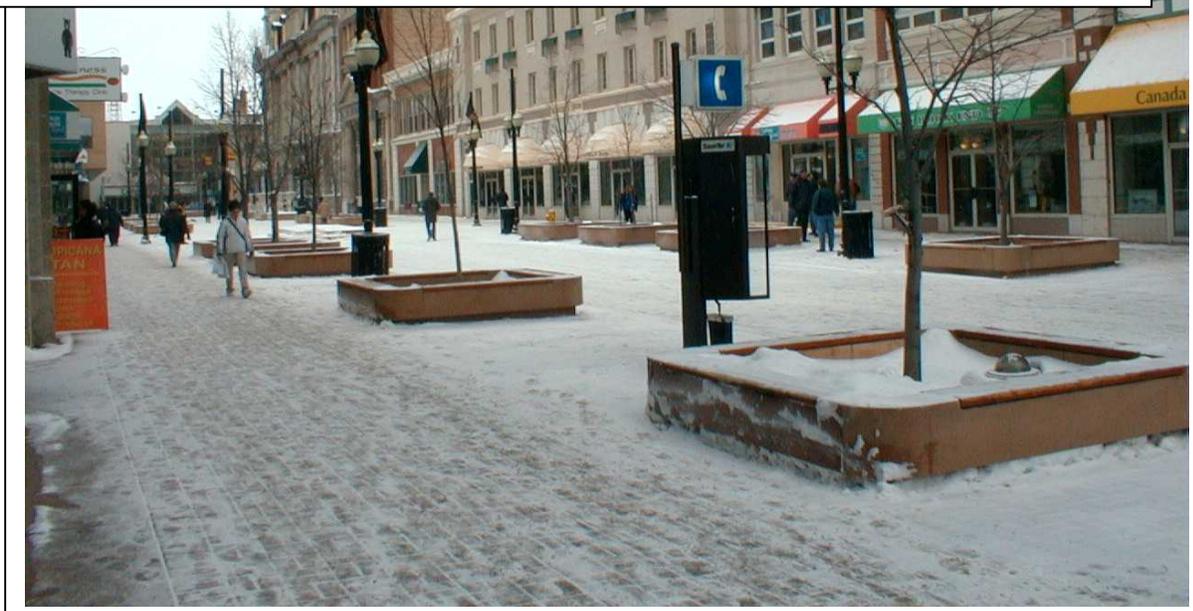
Members are eligible for discounted registration fees at Winter City Forums, and may purchase books and other materials published or distributed by the Association.

Subscriptions for the magazine only are \$40.00 Cdn. for one year, \$75.00 Cdn. for two years and \$100.00 Cdn. for three years.

Visa and MasterCard are accepted.

Cheques are payable to the Winter Cities Association,
c/o City of Prince George, 1100 Patricia Blvd., Prince George, BC, Canada V2L 3V9

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



Interior connection between stores on the Fredrick W. Hill Mall, Regina Saskatchewan
(exterior shown in the bottom photograph)

Photos courtesy City of Regina