Canada Weekly

Volume 8, No. 13

March 26, 1980

Ottawa, Canada

Two-hundred-and-twenty-eight years ago this week...

The first newspaper in Canada, the Halifax *Gazette*, was published.

Canada's energy-efficient housing — answers to the energy crisis

Canadian households account for 20 per cent of this country's energy consumption at an annual cost of $6 billion. Canada's planners, builders, architects and scientists are responding to this fact by developing energy-efficient housing technology and design. Canadian government at all levels is supporting their efforts with funding, research and information programs.

Using solar energy as an alternative to costly non-renewable resources seems to be the most attractive approach because its fuel costs are zero. The trend now is to emphasize passive solar heating through design elements rather than heavy reliance on the complex and expensive technology of active solar collector and storage systems. Other renewable energy resources include wind, tidal and biomass energy.

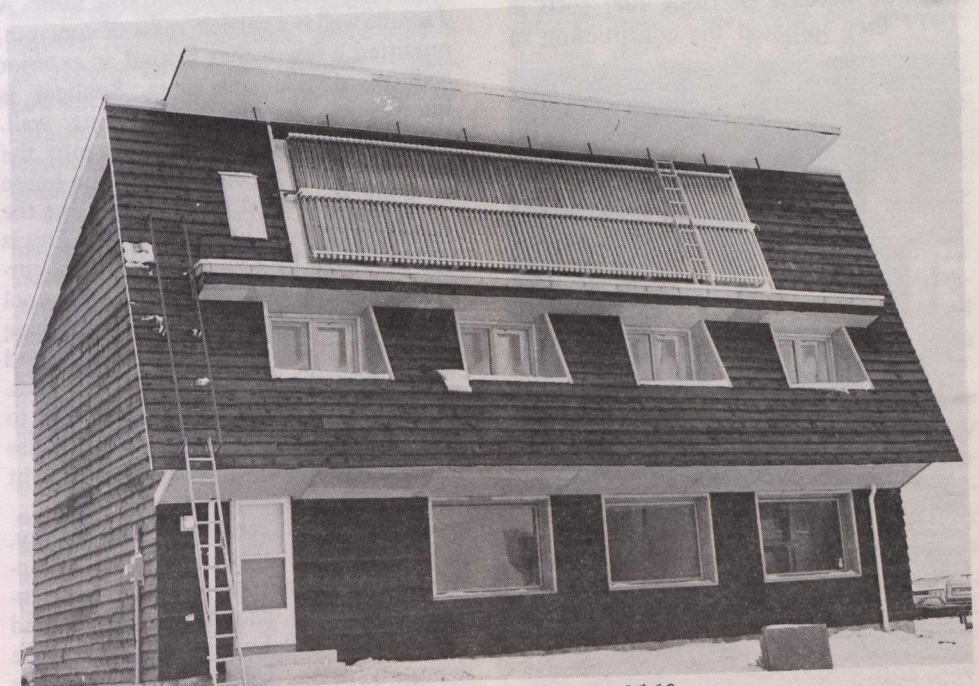
The following examples of innovative housing projects in Canada focus on the use of passive gain solar energy and the recapturing of "waste" energy produced in the normal functioning of the building. The aim of the designers was to create practical and comfortable dwellings which can trap energy and retain it for maximum use.

Saskatchewan House

No one knew how far heating costs could be reduced, until the Saskatchewan government built a research house in Regina to find out. The project was carried out jointly by the federal Department of Energy, Mines and Resources, the Saskatchewan Housing Corporation and the Saskatchewan Research Council.

This two-storey wood frame house, with a floor area of 1,835 square feet, is solar heated, principally by passive gain (44 per cent), and heat from both occupation and the use of electricity (41 per cent). An active solar collection system with 17.8 square metres of vacuum tube collector panels provides the remaining heat.

Its no-nonsense cubical shape exposes a minimum amount of exterior surface



Saskatchewan House in Regina has an annual fuel bill of $60.

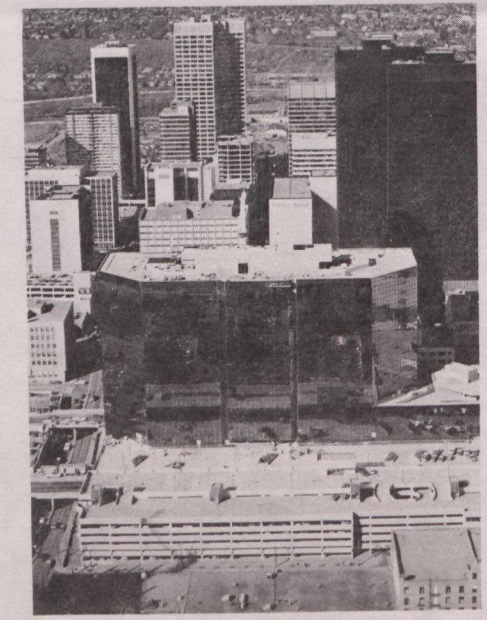
area *per* square foot of floor space. The exterior finish is dark-brown cedar siding. Darker colours absorb heat from the sun, enabling the house to act as a giant solar collector. The landscaping is also designed to increase thermal efficiency. Deciduous trees on the south side provide shade in summer and allow heat to enter the windows in winter.

The house is sealed in an airtight polyethylene vapour barrier. Special installation techniques were used to assure a near-perfect seal, with particular care around electrical outlets, plumbing stacks, window and door openings, and joints between floors. Super-insulation levels in the ceiling, walls and floor are more than double the present Canadian standard and triple the amount in most homes. An experimental waste-water heat exchanger, developed by the University of Saskatchewan, recovers heat from laundry and bath water, thereby reducing hot water requirements by 30 per cent.

The energy-saving features added about $3,500 to the building cost, and result in an annual fuel bill of $60. That's in Regina – a city that experiences considerably more cold weather (average January temperature is -17.3°C) than the majority of North America.

Kitsilano Co-operative Townhouses

The Kitsilano Housing Society in Vancouver, British Columbia, is a non-profit organization devoted to providing affordable housing for low and medium income families. Because of rising fuel costs in 1977 they initiated the construction of an eight-unit co-operatively owned townhouse complex, the first large-scale Canadian application of passive principles, and one of the few in a medium-density urban area.



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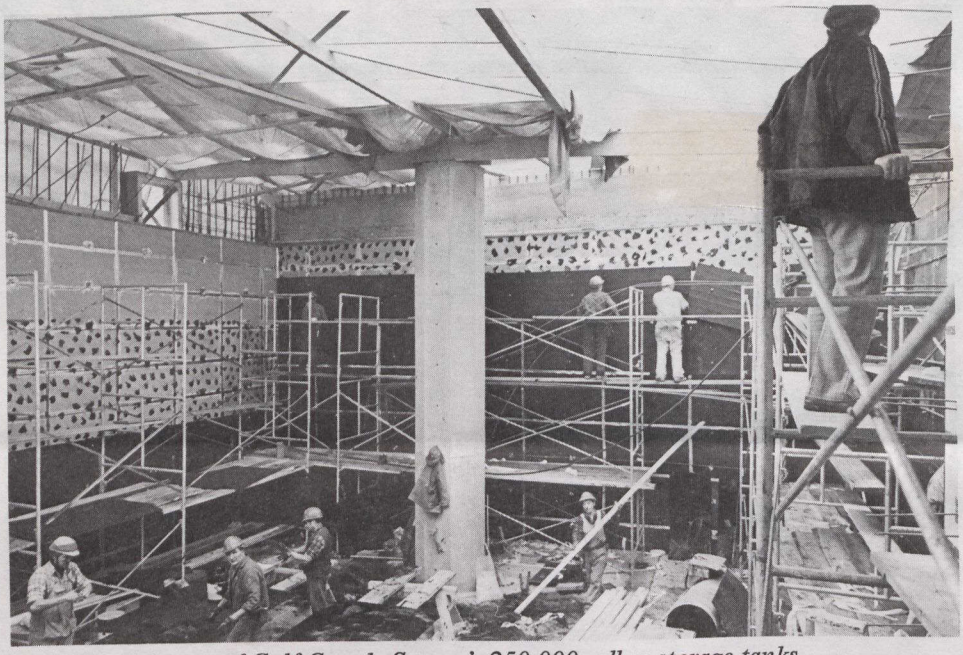
Gulf Canada Square will open July 1.



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Workers inside one of Gulf Canada Square's 250,000 gallon storage tanks.

About 95 per cent of space heating and cooling requirements will be met by passive solar systems, including south facing skylights with an automatic insulated shutter system operated purely on solar energy.

Trombe walls are a major component of the energy system and also provide an acoustic barrier to outside traffic noise. A Trombe wall is a verticle mass of concrete, mounted a few inches behind an exterior wall of double-pane glass. Sunlight is intercepted by the south-facing wall. Some of the heat is absorbed into the dark concrete, to radiate into the house at night, the rest is whisked up, over the top of the wall and into the house. This is accomplished by a natural convective current of air that is drawn off the cool floors, vented through slots to the base of the vertical slab of concrete, and warmed by the face of the wall as it rises. The openings to the wall can be closed to control the entry of heat into the house and the glass covering is insulated at night by shutters on the outside.

A Saskatoon contracting company, Concept Construction, has created an innovative method of building and installing the wall, allowing it to be poured on the site and hoisted into place. The company uses Trombe walls in their reasonably priced ($40,000 to $60,000) ranch-style homes which can be heated with less than $100 of electricity a year.

Gulf Canada Square

The Encon Corporation of Toronto built Hydro Place in Toronto. Its energy requirement is less than a third of any building of comparable size and vintage in the world.

Encon's newest project, Gulf Canada Square in Calgary will require 30 percent less energy. This seven-storey complex with twin 20-storey towers and retail mall combines a variety of energy-saving devices into an integrated energy conservation system. Without furnaces, the system gathers heat from lighting, people and office equipment and stores it in underground water reservoirs for use when needed. Heat is gathered up through the coffered ceilings, then conveyed through an intricate system of ductwork into the storage tanks.

Double-glazed panels of silver-treated glass, known as curtainwall, reflect 85 per cent of the sun's heat, insulate the building, and give it its mirror-like appearance. Air vents built into the panels continually wash the glass with streams of conditioned air, eliminating drafts. Designed for high-quality lighting with minimum consumption of electricity, the lighting system provides most of the building's heat. If the buildings were unoccupied for a long time in winter, comfortable temperatures could be maintained just by switching on the lights. A pollution-free inciner-

(Continued on P. 8)

Canadian farm aid to Tanzania

Canada has signed a $37-million aid agreement with Tanzania to help it move towards self-sufficiency in wheat production.

Large areas of Tanzania resemble the Canadian prairies and hold great promise for wheat production. The new five-year agreement is a continuation of a program started ten years ago to develop that potential.

The program is expected to put in operation a 10,000-acre wheat farm in each year of the new agreement and provide research facilities and technical expertise to train Tanzanians to manage the farms. The program has already developed two wheat farms and a third is close to completion.

Farms now in operation supply about one-quarter of Tanzania's wheat needs. It is estimated that it will take another ten years to make the country self-sufficient in wheat.

Under the program, $6 million is slated towards the building of a new research station near Arusha, in the north. The station will make it possible for Tanzania to study the feasibility of growing other crops, such as oil and field crops.

About $17 million of the $37-million-project funds will be put towards technical aid including research and training.

Forest industry forecast

By the year 2000, the forest industry can double the value of its production, create 100,000 more jobs and supply 10 per cent of Canada's primary energy demand, according to a recently-released federal discussion paper.

The paper was prepared by the Canadian Forestry Service of Environment Canada as part of a cabinet submission setting out a proposed federal policy on the forestry sector.

Federal involvement in forestry, and the complementary actions which the federal and provincial governments may take, were discussed at a meeting of forestry ministers in Toronto on January 29 and 30, sponsored by the Canadian Council of Resource and Environment Ministers.

CCREM has set a 50 percent increase in the harvest from Canada's forests as a goal for the year 2000, based largely on more intensive forest management. The Federal Government is expected to examine various measures to support its achievement.

A federal forestry sector strategy committee is expected to be established to co-ordinate federal policies and activities relating to forestry. An assistant deputy minister may also be appointed as head of the Canadian Forestry Service and chairman of the new committee.

In its review of the forestry sector, the discussion paper pointed out that nearly a million jobs depend on Canada's forest resources. In 1978, the forest industry produced $1.8-billion worth of goods and contributed nearly $9 billion to Canada's net balance of payments – more than that of agriculture, mining, fisheries and fuels combined.

International trade relations studied

The University of British Columbia will undertake a four-year study focusing on Canada's international trade relations.

A $275,000 grant from the Donner Canadian Foundation of Toronto will enable the UBC Institute of International Relations to sponsor a wide range of research studies on issues of Canada's trade policy and some external economic developments which will have important implications for Canada's future.

Dr. Mark Zacher, a political scientist who heads UBC's multi-disciplinary international relations institute, said a total of 23 experts from three faculties – Arts, Law and Commerce, and Business Administration – would be involved in 18 separate research studies to produce an estimated 50 publications.

He said that in designing the project, a major effort had been made to include studies of Canadian trade relations with Asia and the Soviet Union, and Eastern Europe, two areas which are becoming increasingly important in international economic relations and in which UBC has considerable expertise.

Dr. Zacher said the economic character of most countries and international economic relations are undergoing fundamental changes which will profoundly affect both the welfare and security of Canada as well as other nations.

He said a number of factors, including the emergence of Japan and the EEC as economic superpowers, the dramatic rise of the oil-exporting nations, the increase in Soviet international economic ties, the chronic balance-of-payments deficits of the U.S. and the growth of protectionism in many countries have all combined to upset the post-World War II international economic order, which was built on the predominance of the North American and Western European states and close policy co-ordination between them.

He said a major aspect of the project would be establishment of links with relevant sectors of government and private industry so that results of the UBC studies will have impact in Canada and abroad.

Assistance for Ugandan university

The Canadian International Development Agency (CIDA) will co-operate with Canadian universities in helping to restore higher education in Uganda.

Canadian assistance, co-ordinated by the International Development Office of the Association of Universities and Colleges of Canada (AUCC), will consist of the short-term services of a number of senior, experienced Canadian scholars and scientists who will help to rebuild certain faculties of Makerere University and bring curricula and techniques up to date. CIDA will contribute $99,190 towards the project.

Makerere, once considered one of the best universities in tropical Africa, suffered disruption, injury and neglect through most of the 1970s, and has been isolated from contact with the outside world for several years. It is operating under adverse conditions, including severe under-staffing (only 30 per cent of established posts are filled, for example, in the faculty of medicine). Makerere remains the main training-ground for the skilled people needed to carry out all aspects of Uganda's development, and has a traditional role to fulfill also as an advanced training centre for talented students from other parts of Africa.

Past Canadian assistance to Makerere has focused on agriculture and veterinary science, and has benefited from close co-operation with the Universities of Saskatchewan and Guelph. The new project, by allowing a flexible Canadian response as the most urgent needs are identified, should help Makerere develop a variety of linkages with Canadian institutions as it goes through a difficult period of rebuilding in the next couple of years.

Hope for accident victims

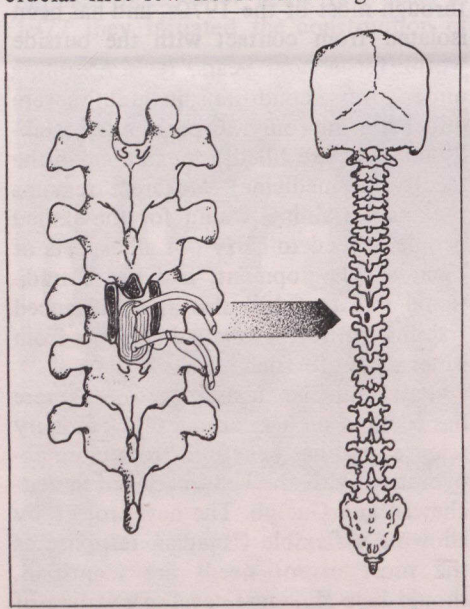
After more than ten years of research, the National Research Council (NRC) and the Montreal Neurological Institute have developed a practical method for preventing some of the crippling consequences of spinal cord injuries, reports Michel Brochu in *Science Dimension* 1979/5.

Each year in Canada, some 500 people suffer devastating spinal cord injuries in automobile, skiing and diving accidents, too often resulting in a permanent loss of sensation and muscular control in much of their bodies. Modern medicine has been relatively helpless in many such cases, the only recourse being palliative care and words of sympathy.

Now, however, a Canadian research team has developed a promising method for treatment of these injuries to the spine, a surgical "cold finger" which has already been dramatically demonstrated as effective on an injured Montreal man.

Cooling injured cord

The researchers, neurosurgeon Dr. Robert Hansebout of the Montreal Neurological Institute, Dr. Alan Tanner, Head of NRC's Control Systems and Human Engineering Laboratory, and neuroanatomist Dr. Cesar Romerro-Sierra of Queen's University, Kingston, Ontario, have spent the last ten years developing the technique, which involves local cooling of the injured section of the spinal cord during the crucial first few hours following an accident. The cooling unit was developed at NRC and tested for several years on hundreds of experimental animals.



This schematic view of a human backbone shows the site of implantation of a cooling pad used to treat spinal injuries.

Explains Dr. Hansebout: "The spinal cord is a vital pathway for nerve impulses to and from the brain; as such, it is very well protected: located in a canal inside the backbone, it is surrounded by a tough membrane called the dura and floats in a cushioning layer of fluid. If the vertebrae are displaced or fractured, however – in other words, if you break your back – the cord can get pinched and its blood supply hindered, causing swelling. At first, it might look intact, but within minutes little hemorrhages begin in the center of the cord and spread slowly. Within a few hours, large portions of the cord can suffer irreversible damage. Several other destructive processes involving the release of harmful enzymes and disruption of the nerve cell membranes can also occur."

Heat exchanger developed

In 1968, medical researchers became interested in the possibility of slowing down, perhaps even preventing some of those harmful processes by cooling the patient's body. They soon found out that when the whole body is cooled below 28°C, the heart goes into ventricular fibrillation, which can lead to death. Some surgeons tried to cool the spinal cord locally by irrigating it with cold water, but there were a number of undesirable side effects. It was in light of these background events that Dr. Hansebout sought out the help of NRC's Alan Tanner to produce a compact heat exchanger that could be placed directly on the injured section of the spinal cord to cool it at a controlled rate for a few hours.

The final design, arrived at after testing many variations, was a small pad of silastic rubber through which a cooling liquid flows. The liquid, a mixture of alcohol and water, is circulated by a "peristaltic pump", a common device in hospitals for pumping blood without the risk of contamination.

Several years of testing the system on animals followed, and by 1977 Dr. Hansebout was ready to try the new technique on selected human patients. His first candidate was Paul Rheault, a young Montreal architect who suffered a severe spinal cord injury in a three-storey accidental fall. A quick examination at the Montreal Neurological Institute showed that Rheault was totally paralyzed from the waist down, with no sensation of muscular control in the lower half of his body because of a fractured vertebra in the middle of his backbone. This kind of injury usually results in paralysis for life.

Treatment overcomes paralysis

Although his recovery took months he has now recovered to a remarkable degree. He now walks, occasionally using walking sticks to help himself, and his body functions and sensations have returned to normal.

Since that first operation, three more patients have been treated with an improved portable version of the NRC spinal cord cooling machine, with encouraging results.

The treatment's effectiveness, clearly established with experiments on hundreds of animals, involves administering cortisone to the patient and opening the injured section of the spinal column to expose the *dura,* the envelope of the spinal cord. The cooling pad is then gently deposited onto the unopened *dura* and maintained at 6°C for four hours. By not opening the *dura,* the risk of exposing the central nervous system to infection is avoided. Also, because the spinal cord is very delicate and soft it can literally be squeezed out like toothpaste from a punctured tube if this envelope is opened.

After the treatment is completed, the surgeon fuses the injured vertebrae and closes the wound to await recovery.

Time essential

Concludes Dr. Hansebout: "Last summer, we treated more patients. One of the crucial factors we recognize in these injuries is time. We have found, from our experiments with animals, that it is absolutely essential to cool the spinal cord as early as possible after an injury. If delayed for more than about four hours, the treatment loses a great deal of effectiveness. We cannot perform miracles and the whole point of the technique is to save what is left of the spinal cord and prevent swelling and other harmful reactions from irreversibly crippling the patient. This must be done in the crucial first few hours after an accident, as the technique cannot be used to treat old injuries after a period of days, months or years.

The technique, which is still at an early clinical stage, is currently being subjected to extensive clinical trials taking place in Canada and the United States.

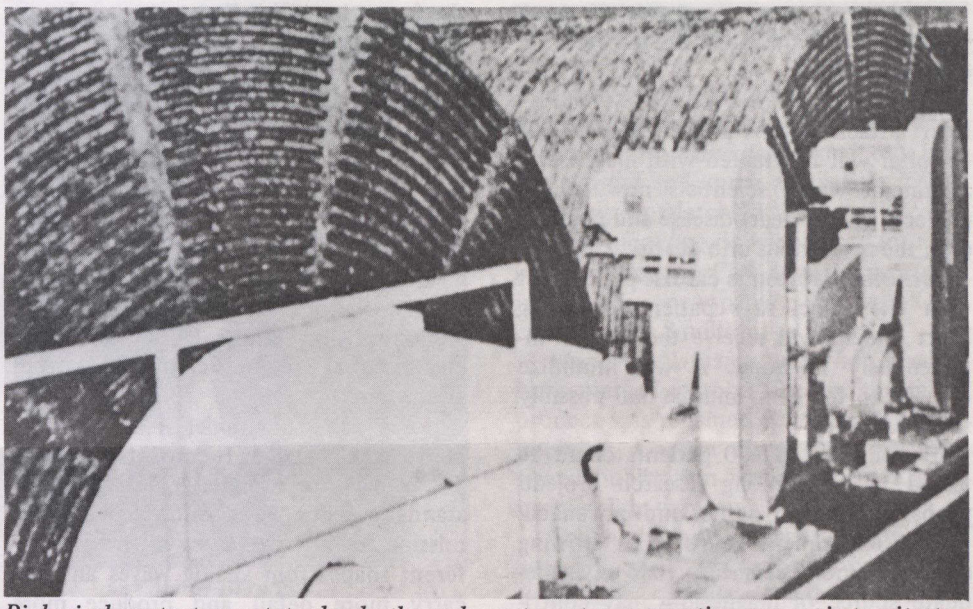
Largest water pollution plant

The city of Guelph, Ontario, will build one of Canada's most modern waste water treatment installations making its water pollution control plant the first of its kind in Canada.

The new installation will help upgrade the quality of the plant effluent and increase the capacity of the plant, which, in turn, would provide service for an additional 4,800 dwelling units to accommodate the projected residential growth in Guelph over the next five years. Total cost of the project will be close to $6 million.

The system involves assemblies of 3.6-metre (12 ft.) diameter corrugated polyethylene sheets mounted on shafts 7.6 metres (25 ft.) long. They look like huge drums. These rotating biological contactors, as they are called, are partially submerged in a concrete tank where they rotate slowly through the waste water.

As the unit rotates, aerobic biological growth develops quickly and profusely on the surfaces of the plastic sheets, providing an abundant microbe population to treat the waste water. Rotation brings the growth into contact with the ammonia and continually aerates the water, converting the ammonia to nitrate.



Biological contactors rotate slowly through waste water, converting ammonia to nitrate.

Compared to traditional installations, this new process uses less energy, takes up less space, and requires less excavation. It can, in fact, be constructed above ground, if the soil condition makes it impossible to excavate.

When the project is finished by the end of this year, it will be the largest installation of its kind in Canada and one of the largest in North America.

Home care firm growing business venture in Western Canada

A Winnipeg woman's trouble finding someone reliable to watch her house while she was out of town has led to a growing business venture in Western Canada.

Lucie Marcq found her plants dead, her cat sick and her house in a mess when she returned from a trip after leaving her home in the care of someone who proved unreliable.

The next time she had to go out of town, Marcq decided she would hire a professional to look after things. She could not find a company that offered the service she needed so she settled for the secretary of a friend.

It was then she decided there was a need that was not being met and it was then that The Homesitters was born.

Now operating in Winnipeg and Calgary and with plans to open in Regina and Vancouver, Homesitters will water plants, feed cats, birds and fish, keep bird cages clean and change the kitty litter.

The company was started in Winnipeg in January 1976 and opened its second branch in Calgary about two years later.

Marcq said it was rough going at first because the idea was new and advertising expenses were high, but by last January the Winnipeg operation had started to show a profit.

In Winnipeg, Ruth Moir runs Homesitters out of her house.

Moir says the fee she charges depends on the time and amount of travelling involved in keeping an eye on a home, as well as such things as whether pets and plants need care.

Houses in her care are checked daily to ensure furnaces, freezers, utilities and appliances are all in good order. Mail is taken in, lawns are trimmed or walks kept clean depending on the season.

For an extra charge, Homesitters will install timers to switch house lights on and off at appropriate times.

Marcq said she is considering expanding the service into the United States and is working at establishing an operation in the Minneapolis-St. Paul area.

She owns the name Homesitters, as well as the company logo, and sells them along with consulting services to local operators.

Grasping at straws

People who grasp at straws may save lives – especially if the straws are part of a coin-operated breathalyzer device programmed to record alcohol levels in the bloodstream.

The machine, the Electronic Breath Analysis, made by Alcohol Countermeasure Systems Inc. of Sarnia, Ontario, has been installed in many hotel bars and taverns throughout Canada. It is also in demand by pubs, discos, lounges and restaurants – in fact, anywhere that alcoholic beverages are sold.

Coin operated

The coin-operated electronic tester is easy to install and to use. After blowing into a straw for six seconds, the digital readout is displayed. The unit is ready for the next test in 30 seconds.

The company also produces a portable device that comes in two models. The testers provide police with reliable, objective roadside breath-testing results. They can also be of use to ambulances, hospitals, military and transport agencies, race tracks, airlines, half-way houses and research establishments.

Hospital uses magnesium for heart attack victims

Heart attack victims at the Ottawa Civic Hospital will be treated with magnesum, a mineral which scientists now believe protects against heart disease and possibly even the mysterious crib death.

Dr. Brian Morton, a cardiac pathologist with the Civic, says patients suffering heart attacks will receive the mineral intravenously in hopes it will minimize damage to the heart muscle and possibly speed recovery.

He said up to 200 patients could be tested in a year-long research project, probably the first of its kind in Canada.

The experiment stems from growing evidence among scientists that an inadequate source of magnesium may contribute to heart disease – the leading cause of death in North America.

Magnesium is found in hard water. Whole grain and liver also provide good sources of the mineral although researchers think many diets may be deficient in essential minerals.

Scientists do think that hard water with its abundance of minerals is connected with a lower incidence of heart disease.

A report by the National Research Council on water hardness and human health research shows the heart disease rate in North America and Britain ranges from 15 to 76 percent higher in soft-water areas compared with hard-water areas.

Getting the picture straight

A Toronto inventor, who gave a world television audience its first clear, live pictures of men talking on the moon, has created another device that might help him to carve out a growing share of a specialized international electronic equipment market.

The device is called a time base corrector and it turns snowy, wobbly TV images instantly into pictures that are clear and steady.

John Lowry and a small group of helpers formed Digital Video Systems in 1976. His company's revenue of $2.8 million in 1978 leaped to $8 million in 1979 and is predicted to be $20 million this year. He has a staff of 90 which is still growing.

Lowry said his initial success followed the formation of his first company, Image Transform, in 1971. He developed electronic equipment for improving TV videotape pictures so much they could be transferred to film and look as good as conventional theatrical movies. This permitted movie makers to use TV cameras instead of film cameras, with a huge cost reduction.

In 1972, Lowry's equipment was used by the National Aeronautics and Space Administration in the United States to clear up fuzzy pictures coming back from the moon.

Lowry calls the model of his time base converter the DPS-1. It converts incoming TV signals to a digital form from the standard analog wave form. Digital transmission sends waves along a wire in a different shape from analog waves and can carry more detail and produce more clarity in picture and sound.

Profits from peat

Karl Burger and Bob Donovan believe they can dig a profitable business out of a 22.5-acre peat bog in Bancroft, Ontario, northwest of Ottawa.

They are planning to build a plant to make firelogs of compressed peat. Mr. Burger says the logs will be lighter to carry and will burn longer than the pressed-sawdust firelogs now being sold.

He already has built the prototype of a machine that can squeeze out the logs like one continuous sausage that then can be cut into log lengths or chunks.

He said sample pieces show that his four-inch-thick compressed peat logs, about 14 inches long, will burn from four-and-a-half to six hours.

Peat has long been used for fuel in Europe and Mr. Burger says even the Soviet Union is experimenting with it as a fuel for generating stations.

The key for using it as firelogs is compression, and the mechanics of that is a subject Mr. Burger knows well. The son of a German terrazzo-maker, he came to Canada in the 1950s and developed a process, which he patented in the United States, for compressing rock and marble dust.

He bought 35 acres of land in 1965, which he originally planned to subdivide into residential lots. But in 1977 while selling topsoil from the site, Mr. Burger discovered his scruffy land was a peat bog.

Mr. Burger estimates the 55,000 cubic yards of peat in the bog can be turned into more than seven million firelogs over four to eight years of production. He estimates that even selling the logs wholesale for 45 cents each, to a jobber or to a retail chain, should bring a $1.5-million profit.

Popular poplars

Canadian scientists who used to call the poplar a weed among trees now are experimenting with the common hardwood to make it grow even faster and on even poorer soil to produce a large-scale source of fuel, paper, chemicals and animal feed (and perhaps even protein for the human diet, as well).

Vigorous sprouting and efficient seed distribution make the poplars leap up in cut-over or burned-out areas, but they die quickly when other trees grow up and shade them. At best, the poplars (including aspens and cottonwoods) live a relatively short 100 to 150 years. Given these drawbacks, the poplars have only one big practical advantage: they can grow almost a metre a year even without scientific help.

Cloning

At the Ontario Forest Research Centre, operated by the provincial Natural Resources Ministry, north of Toronto, poplars do much better than that. By cloning (planting cuttings of carefully selected trees to provide hundreds of trees with identical genetic makeup), forest scientists have bred trees that grew 3.7 metres (12 feet) a season.

They were planted on plots as small as 0.3 metres by 0.9 metres (about one foot by three feet). Depending on the climate, fertilizer and soil, that kind of growth could provide up to 34,500 kilograms *per* hectare (16 tons *per* acre) of dried wood every year.

In such poplar farming, the fastest growing clones are raised from one to three years, densely planted on good soil close to a market such as a pulp mill, according to Harvey Anderson, a scientist at the centre.

Apart from the lumber, there is the protein in the leaves. Dr. Anderson, along with C.P. Chen and D.N. Roy of the University of Toronto, found that 55 to 70 per cent of crude protein could be extracted from green poplar leaves.

Volume 8, No. 13 March 26, 1980

News of the arts

Canada Council gets cash

The Secretary of State Department has announced a substantial increase in the financing of the Canada Council for 1980-81. The Treasury Board has authorized an increase of $5.5 million on the Council's present budget of $39.1 million.

The Canada Council has been in a financing freeze for the past four years, which has caused cutbacks and raised the possibility of ending support for some arts groups altogether. The 14 percent rise marks the first time in five years that the Council has had an increase over the inflation rate.

Tenth Festival Ottawa salutes the music of France

Some of France's top musical artists will join international opera stars in Ottawa July 3-27 for a salute to the music of France as part of Festival Ottawa, now preparing for its tenth consecutive season.

French artists, who will attend the Festival include: tenor Alain Vanzo, pianists Jean-Philippe Collard, Michel Béroff and Pascal Rogé, the Via Nova Quartet, the Pasquier Trio, violinist Pierre Amoyal, cellist Fréderic Lodéon and harpist Marie-Claire Jamet. International opera personalities who will participate in the festival include Iranian-born director Lotfi Mansouri, Italian conductor Paolo Peloso, American singers Maria Ewing, Alan Titus, Diana Soviero and Neil Shicoff, designers José Varona of Argentina and Beni Montresor of Italy and Canadian stars Victor Braun, Maria Pellegrini, Maureen Forrester and Louis Quilico.

Debussy's opera *Pelléas et Mélisande* will open the festival on July 3, with further performances July 5, 9 and 16. Conducted by Mario Bernardi, Festival Ottawa's artistic director, and directed by the Houston Grand Opera's Frank Corsaro, the production will be designed by Lloyd Evans and will star Maria Ewing, Alan Titus, Victor Braun, Pierre Charbonneau and Gabrielle Lavigne. On July 12, 15, 18, 23 and 24 Puccini's *La Bohème* will be staged. Directed by Sonja Frisell, a Canadian associated with La Scala, Milan, the opera will be conducted by Mario Bernardi and feature Diana Soviero, Neil Shicoff, Maria Pellegrini, Allan Monk, Ara Berberian and Gary Relyea; sets are by José Varona.

Mario Bernardi

Donizetti's *La Fille du Régiment* will be directed by Lotfi Mansouri of the Canadian Opera Company and conducted by Paolo Peloso; Ruth Welting, Rockwell Blake, Maureen Forrester and Claude Corbeil will perform. The opera will be designed by Beni Montresor. All three works will be staged in the National Arts Centre's 2,300-seat opera house.

A fourth opera, Massenet's *Thérèse,* will be performed in concert version on July 27 with the National Arts Centre Orchestra and chorus under Mario Bernardi. Maria Ewing, Alain Vanzo and Louis Quilico will be featured soloists. Festival Ottawa 1980 also includes an eleven-concert chamber music series celebrating the impressionist composer Debussy and his French contemporaries.

Maria Ewing will appear as Pelléas.

Magazine format revised

The successor to Canada's two major rotogravure magazines, *Weekend Magazine* and *The Canadian,* came out in a new format and under a new title, *Today Magazine,* on March 15.

The magazine is circulated in most major markets in Canada as a supplement in Saturday newspapers and has a circulation of 2.8 million.

Weekend Magazine and *The Canadian* were merged October 27 and the initial product was renamed *Canadian Weekend.* Publisher Gordon Pape said the redesigned publication was renamed to stress its complete overhaul.

Today Magazine carries about twice as many stories as the former publication – about 18, compared with the previous eight or nine. Two stories in each issue are feature length, and the remainder somewhat shorter than those used previously.

Arts briefs

Quebec poet François Charron was awarded the 1979 Emile Neilligan prize for poetry. Charron, 27, recently published a collection of poems entitled *Blessures,* translatable as *Wounds.* The prize and award of $3,000 is named for Emile Nelligan, who lived from 1879 to 1941. His symbolist poems written in adolescence are considered by many as the beginning of modern literature in French-Canada. The annual award is given to French-language poets under the age of 35 residing in North America.

One of Canada's most famous murder case and trials – the Coffin Affair – is being recreated in a major motion picture now before the cameras in Quebec. Entitled *Coffin,* the film stars Canadian actors August Schellenberg, Yvon Dufour, Raymond Cloutier and actress Micheline Lanctot. Jacques Benoit wrote the script and Jean-Claude Labreque is directing the movie. Wilbert Coffin was accused in 1953 of murdering three American hunters in the Gaspé bush. The police set out to prove his guilt and public opinion was divided as Coffin went on trial, was sentenced to be hanged, escaped from jail, and numerous appeals were made, keeping the case in headlines before and long after his hanging in Montreal's Bordeaux jail February 1956.

Energy housing *(Cont'd from P. 2)*

ator on top of the Square burns the building's waste paper, generating heat which provides hot tap water for the entire building. A unique clause in the leasing agreement requires tenants to give all waste paper to the building manager to feed this system.

In order to maximize comfort and energy savings, a central computer orchestrates temperature and humidity adjustments. Every 20 minutes the computer monitors the entire building with the aid of 800 strategically-located sensors.

Energy consumption at Gulf Canada Square is expected to be slightly below 10 kwh a square foot a year compared with 45 for the average office building.

Other energy-conserving buildings

Many Canadian developers are applying energy-conserving principles in a variety of imaginative ways. The Cadillac Fairview Corporation has opened a retail mall (containing 170 stores) in St. Bruno, Quebec, which has extremely low winter heating requirements due, in part, to a ventilation system designed to pick up heat from store lights. Natural light from skylights illuminates the mall by day and photo-cells automatically turn on artificial lighting when needed.

Bata Footwear Ltd. has incorporated into its factory in Picton, Ontario as many energy-conserving elements as possible to determine which of them can be used in other Bata factories world-wide. Fuel consumption has been reduced by 90 per cent, largely due to an efficient heating and distribution system. Heat reclamation from the factory's air compressor provides 40 per cent of the heat needed.

On a Manitoba Indian reservation, designer Dudley Thompson has created a dwelling which combines the traditional Indian "Earthlodge" with modern intermediate technology. The lodge is essentially buried in a hillside for low-cost insulation, and is open to passive solar heating on the south side. Although building underground for commercial and industrial complexes is common, underground residential housing is a new phenomenon. John Mix is an Ontario designer who has employed this type of design to produce what he calls a "solar cave with a view" for clients. Riverheights Subterranean School in Brandon, Manitoba is another successful working model. Not only can using the earth to insulate save as much as 50 per cent on energy needs, most designs result in reduced construction and maintenance costs.

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News briefs

The spring session of the Manitoba Legislature opened on February 20. The speech from the Throne outlined a plan to revive the economy by exploiting provincial hydro resources but gave no indication that the freeze on construction of northern hydro projects is about to be lifted. Included in the initiatives were: creation of an energy authority to handle a wide range of energy problems, promotion of the use of gasohol and other renewable resources through tax incentives and continuation of the five-year freeze of hydro rates.

The Alberta Energy Resources Conservation Board has approved an application by Esso Resources Canada Ltd., a unit of Imperial Oil Ltd. of Toronto, to improve recovery at the Judy Creek oil field through carbon dioxide injection. Esso plans to inject about two million cubic metres of carbon dioxide a day into the formation, 200 kilometres northwest of Edmonton, to increase pressure and improve oil recovery. The company said the injection system, being tried in Canada for the first time, could result in a recovery rate of 73 per cent.

Major-General John MacQueen, the man largely responsible for equipping and mobilizing Canadian Forces during the Second World War, died recently in Ottawa at the age of 86. MacQueen, described as a brilliant military administrator, served as Deputy Quartermaster General at Canadian Military Headquarters in London, England, between 1941 and 1945. He was named a Commander Order of the British Empire in 1943.

Both the Nova Scotia and Newfoundland Legislatures opened on February 28. The Nova Scotia Speech from the Throne promised a new petroleum and gas act to guarantee maximum benefit to the province from exploration work and restated the claim to ownership of offshore petroleum resources. It promised property-tax rebates and rent supplements for senior citizens as well as a long-range housing strategy which includes an end to the moratorium on public housing. The Newfoundland Speech from the Throne expressed determination to alter a contract that lets Quebec buy Labrador power at bargain prices and to continue efforts to achieve control of fish stocks and offshore minerals.

The Prince Edward Island budget was introduced on February 28. The sales tax has been raised to 9 per cent from 8 per cent and the sales tax exemption has been lifted from cigarettes and soft drinks, effective February 29. Personal income taxes will rise by 2.5 per cent phased in over 18 months, starting July 1. Finance Minister Lloyd MacPhail called for a 12.3 percent increase in spending in the coming year, to be offset by a12.5 percent increase in revenue, resulting in a surplus of $776,400.

The Export Development Corporation (EDC) will provide a $20-million (U.S.) line of credit to support the sale of Canadian railway equipment to Argentina. The loan, to Banco Nacional de Desarrollo (BND), an Argentine government agency, will finance the purchase by Ferrocarriles Argentinos of Canadian goods and services to re-equip and modernize that country's railway system. Emphasis will be placed on rebuilding the railway's locomotive fleet and repairing railway tracks.

Canadian newsprint production totalled 746,000 metric tons in November 1979, the Canadian Pulp and Paper Association said. Total shipments were 741,000 tons, up 3.2 per cent from a year earlier. Exports to the United States were 544,000 tons, up 9.8 per cent.

Ten-year-old Mark Cosens is pulling in more money than his dad – at the auction block, that is. Following his father's footsteps, Mark has entered the world of bidding and seems to have captured the distinction of being the youngest licenced auctioneer in Canada. Don Cosen said his son sometimes fetches higher prices on auction goods than he does and notes that the boy's novelty value is making Mark a celebrity.