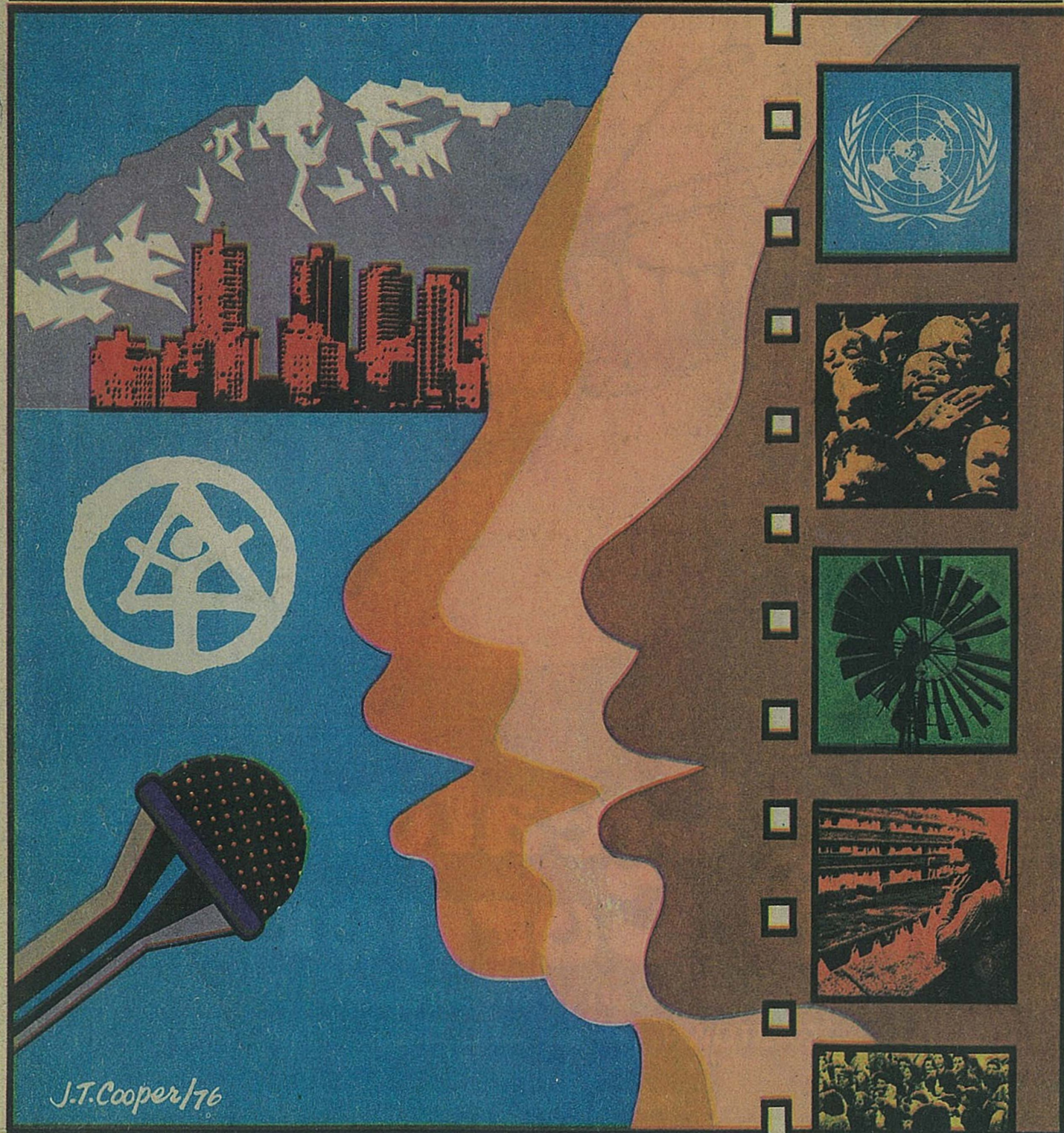


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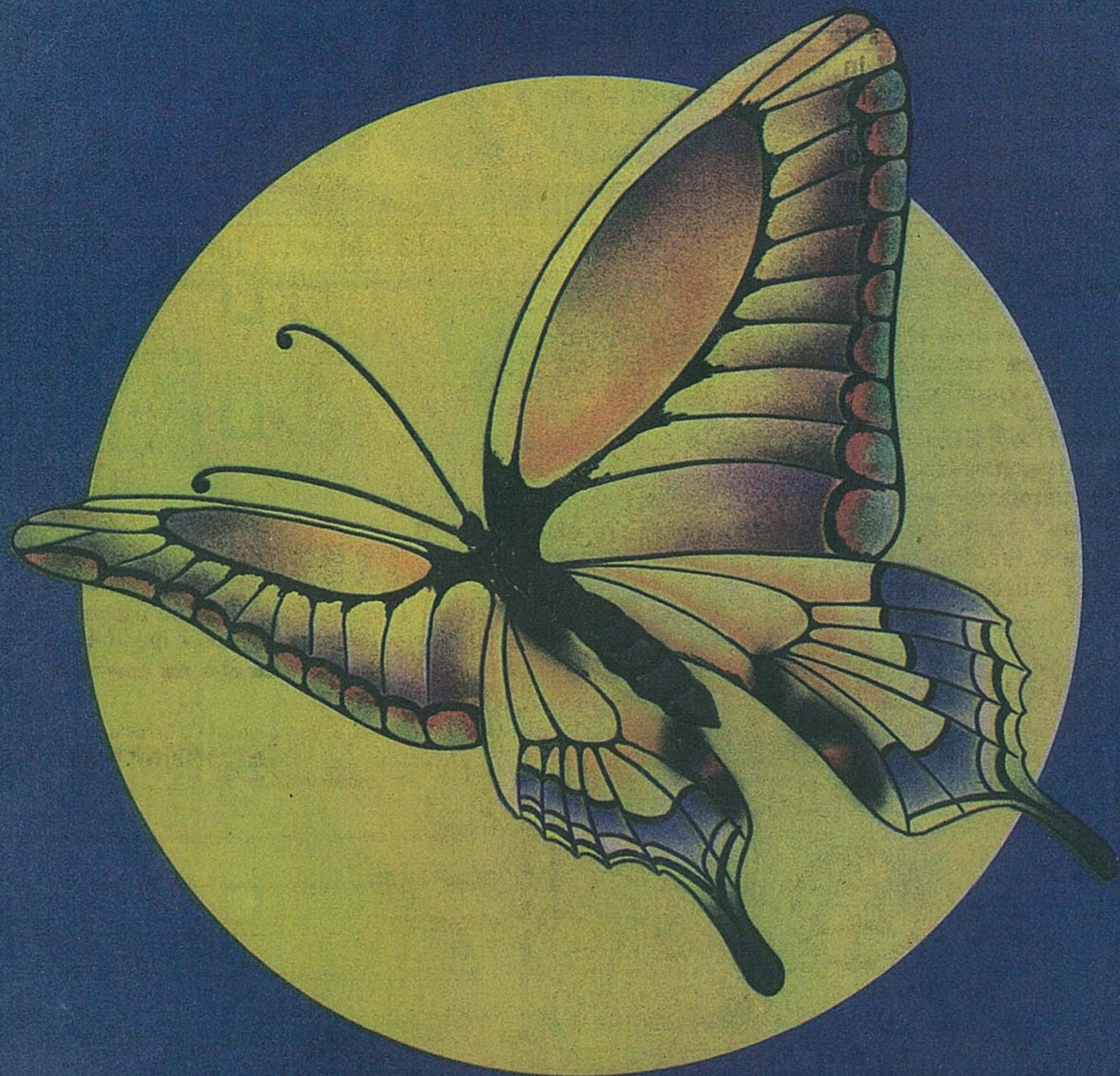
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GUIDE

United Nations Conference on Human Settlements May 31-June 11, 1976 Vancouver, Canada



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BY PETER BOOTHROYD, PROFESSORS EMERITUS, CENTRE FOR HUMAN SETTLEMENTS,
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The United Nations Conference on Human Settlements has arrived in Vancouver. This conference issue of HABITAT GUIDE interprets eight elements of discussion at Habitat, and includes a feature on each of two important human settlement topics: computer-aided planning and nuclear power.

Also in this issue, we note what some of the local community groups that we described in our 1st and 2nd issues are now doing during Habitat.

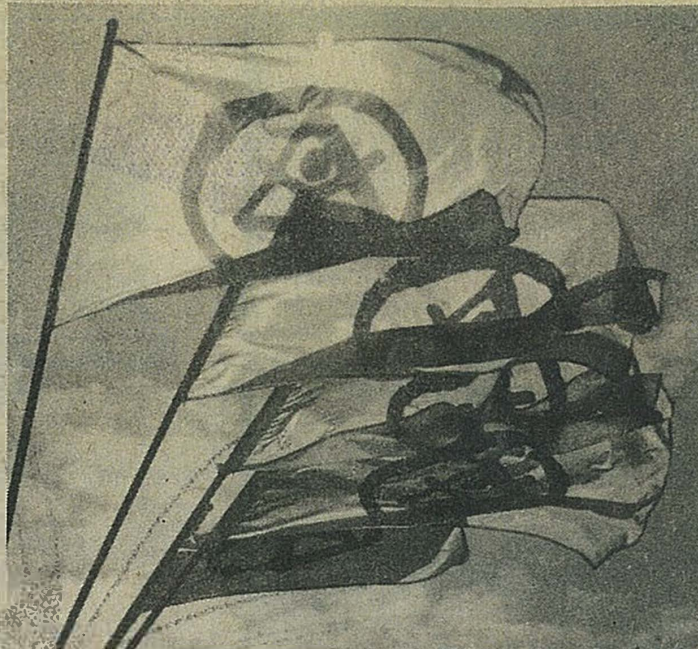
And since this is the HABITAT GUIDE, our centre-spread section displays a map of all the action, and a detailed map of Habitat Forum.

HABITAT GUIDE has been designed to help the Habitat hometown community make the most of this historical event. We hope that we have served our purpose, and that the occasion of Habitat will result in a better understanding of the problems that confront us.

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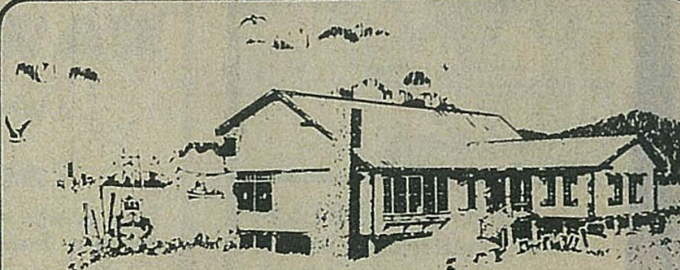
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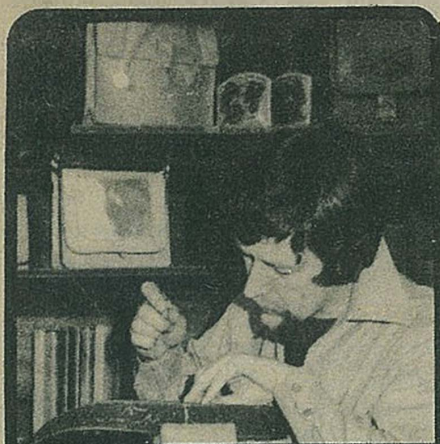
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TRAVEL HEADQUARTERS

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HOMETOWN COMMUNICATIONS

PUBLISHERS

James T. Cooper

Howard Arfin

ASSISTANT TO THE PUBLISHERS

Barbara J. Wutzke

GENERAL MANAGER

James T. Cooper

EDITORIAL DIRECTORS

Howard Arfin

James T. Cooper

DESIGN & ART DIRECTOR

James T. Cooper

CONTRIBUTING WRITERS

Howard Arfin, Penny Gurstein,
Mick Winter, Joseph Makrysta,
Dalton McCarthy, James T. Cooper

RESEARCH

Karen Meier

PRODUCTION

James T. Cooper

Barbara J. Wutzke

Anne Power, Valerie Beamish

Eric Parker, Margaret Shore

COVER ILLUSTRATION

James T. Cooper

ADVERTISING & DISTRIBUTION

Barbara J. Wutzke

ADVERTISING REPRESENTATIVES

Ronald Taylor Keller

Suzanne Walker

Dickson Loo

HABITAT GUIDE is published
by Hometown Communications.
Address all correspondence to
Box 48610, Bentall 3, Vancouver,
B.C., Canada.
Telephone (604) 684-5978.

DATE OF PUBLICATION
MAY 31, 1976

HABITAT IN CONTEXT



HOWARD ARFIN

Stockholm '72

Stockholm, Sweden — June, 1972: The U.N. Conference on the Human Environment was the birthplace of Habitat, where the Canadian government invited the world to Vancouver. The conference theme was "Only One Earth".



JAMES T. COOPER

Vancouver '76

Vancouver, Canada — June, 1976: The U.N. Conference on Human Settlements deals with the same issues as at Stockholm, as they relate to the places where we live and work. It's still the same Earth — we're just talking about it at another location.

Habitat does not stand alone as an isolated conference on special issues. It is but one in an ongoing series of special U.N. conferences that only begin to approach the big problems of this planet.

Habitat was created at the U.N. Conference on the Human Environment at Stockholm, Sweden in June of 1972. It was in Stockholm that the interconnectedness of all our problems began to be recognized.

The doctor or the ecologist-human body and planet body--can attest to the interrelationships of all the parts and functions that work together to maintain the dynamic whole human being, whole ecosystem. We are late in applying these natural laws to the sad state of our human affairs.

Looking back at the major U.N. special sessions on environment, population, food, women, the seas, some of us are beginning to recognize connecting threads--a continuity.

When this continuity, this 'in-commonness', becomes better understood by more of us, only then will all these meetings begin to have an actual effect upon the human condition.

ENVIRONMENT

The Stockholm Conference of June '72 was the first 'popular' session of the U.N., where unelected everyday people could have an influence upon World Government deliberations.

While the formal U.N. session met in Stockholm's specially-renovated Old Parliament and in the new Swedish parliament buildings, an 'unofficial' 'parallel' 'alternative' gathering continued alongside.

Sensitive planetary citizens, many of whom got to Stockholm on their own personal resources, deliberated, discussed, debated amongst themselves.

And here is where a precedent was set. NGO initiative from the Forum at Stockholm brought two specific resolutions onto the U.N. roster; ban nuclear testing; stop taking whales. The U.N. passed both resolutions. Neither have done any good in the real world. Still, a beginning.

The dissemination of Viet Nam through environmental warfare was discussed in the NGO Forum, although the official U.S. delegation did not consider 'ecocide' relevant at the Environment Confer-

ence. The fact of blackened Swedish mountain snowcaps, caused by the industrial smokes of the German Ruhr Valley, was deemed out of context. Sovereign boundaries absolute, my effluents in your rivers was your problem and my profit.

Out of Stockholm came yet another 109 well-intentioned resolutions, the establishment of a U.N. environment office and an earthwatch program to monitor the extent of pollution.

What really started at Stockholm, though, was the Forum. The people went north to Sweden out of common concerns for the land, for the seas, for the air, for all that gives us life. There was bickering and some political infighting at the Stockholm Environment Forum. Such is the tempering of human nature, a necessary process in our evolution.

But much more importantly, 'ecosystem', 'biosphere', 'planetship' were words that held great import, that demanded a natural loyalty, that carried their spirit into the official sessions and onto the floor of the World Government House.

POPULATION

The U.N. met again in special session, this time behind that tired old iron curtain, to sit down and consider the booming billions of babies, and just what to do about it all. The NGO Forum at Bucharest wasn't quite as free-wheeling as at Stockholm, as can be readily understood.

Meanwhile, the 'Third World', all those colonial-ized and well-tapped 'underdeveloped' nations, were beginning to wake up to their numbers and place within the whole. Where the West was looking for better pills and growth policies, some Third World nations did not even agree that there is a population problem, but saw the issue as a capitalistic plot to keep them repressed.

If anything has come out of Bucharest, it is the realization that poverty does not-of itself--breed babies. It is true that the poor in poor countries will make lots of children so that some can survive beyond early childhood and maybe bring in a few more pennies.

But the heart of the matter is that access to the basics, good house, good food to eat, good food for thought, work--in total, personal growth and social evolution--will immediately reduce the size of a

family.

Stockholm exposed the roots of our environmental interconnectedness, and that short-term, dirty technological, economic gain is at the price of today's health and tomorrow's wealth.

Bucharest reiterated the harsh economic reality, that there is a direct connection between economic opportunity and the rate of population growth.

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HABITAT IN CONTEXT

FOOD

At the Rome Food Conference, the same economic principle surfaced yet again. There is no real shortage of food (yet), just as there isn't an oil shortage (yet).

Politically-based economic controls distort supply and demand. Millions upon countless millions suffer the manipulations of a very disproportionate few. Who is represented? Who gains?

History records famines in the world. History records some who didn't die of starvation. They stockpiled food in times of plenty for the times of want.

In the history that we make, we have developed super technologies for war and industry, yet we have only enough food in storage for the world to eat for 25 days.

Are our priorities not perverted when we stockpile weapons, but not grain?

WOMAN

Just as the 'developing' 'Third World' nations begin to view themselves as a viable political force in their common demands for equitable access to the fruits of the earth, so too is womankind beginning to wake up to a collective consciousness.

This new wave of awareness of women amongst themselves (ourselves, to half the readers . . .) is magnified in the West through the sophistication of the mass media.

Obviously then, this is happening faster in more affluent cultures that can afford such luxuries as 'equal pay for equal work'. Yet, employment itself is the demand for the majority of the world's people.

In most of this struggling world, the very basics for sustaining life must first be established, regardless of sex, colour, religion, etc., etc. Equitable distribution of resources applies on all levels, be it from 1st and 2nd to 3rd World, or from man to woman.

WATER

Unbalanced political and economic competition underlies all problems of water quality and management. From the question of toxic industrial pollutants in lakes, rivers, streams, through to the Law of the Sea and control of the oceans, the same issues resurface again and again.

What price are we paying for short-sighted economic gains? The oceans are the final sink for all our toxic wastes. The same oceans also provide great quantities of marine food. We are going to reap our just reward one way or another.

Fishing, farming, mining the oceans—how equitable is the access, how even is the distribution of these earthly resources?

Water-based wealth is now a new focus for old values that continue to bring disproportionate gain for the few at great costs to the many.

In the ecological Big Picture, the oceanic habitat responds to the same principles as those being advocated for a New Economic Order, and also for Habitat: opportunity for self-determination by means of more equitable access to the resources for human betterment.

HABITAT

And so we arrive at Vancouver '76, where all the disparities, disillusionments, and despair amongst

the majority of humanity are focused in the places where we live our day-to-day lives.

We pump ourselves up with hope, for we have been told that Habitat is solution-oriented. So many films are being shown based upon solving settlements problems. These audio-visual productions must not be accepted as an end in themselves; but as thought-starters for honest intentions, as guidelines for the exercise of political will.

Still and again, we must return to the single basic underlying problem, and that is economic injustice, and the effects that result everywhere you look.

'Unofficial' Forums of vitalized, aware, planet citizens have established themselves as an integral part of the U.N. special conferences in four short years since Stockholm. We must make the most of such rare and important opportunities. Long live the Forum.

NUCLEAR ENERGY

Without doubt, the most horrible, short-sighted, blind economic thrust is towards nuclear power for our human settlements. We are systematically producing nuclear power plant waste by the ton—the radioactive poison of poisons that will still be plaguing us when our cities have become dust.

The mutations of our great great grandchildren's mutations will be cursing us far far into tomorrow if any one thing should ever go wrong with this fancy but untested technology.

The sun and the wind are secure as infinite sources of energy. And there are probably undreamed-of energy sources that just await research.

Phasing out such a high investment as nuclear power is indeed a difficult step to take. It's a big write-off. Even so, we simply have no choice in this matter, if we maintain any responsibility to the future of the human race at all. (cont'd on pg. 14)

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LAND

We are born, we live our lives, we draw our sustenance, we travel to and fro and we are laid to rest on the land. The land is common to all of us. Yet, this heritage has been subject to restrictions and exploitation that reduce or eliminate opportunities for self-determination upon the land.

Excepting gypsies and nomads, people have been fenced in by artificial political boundaries 'since history began'.

Without any further thought, we view land as a commodity that can be bought and sold, thereby encouraging land speculation and personal profit-taking. The use of land is then determined by who owns it rather than what it is best suited for.

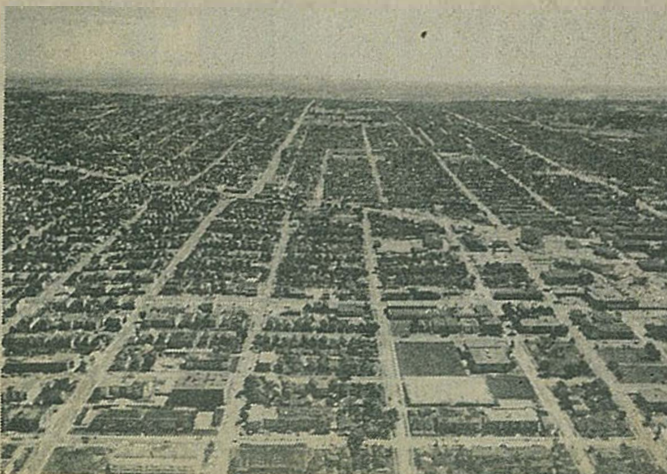
Short-term, high-gain attitudes towards land use has lead to the sprawl of cities onto farmland, to ruination of earth and waters by 'big' industries, and to development generally that holds no respect for the ecological consequences of this kind of 'progress'.

If superhistory events like Habitat happen to bring 'a new world' into being, then we must begin to think and act with care for all land in the same way we would tend a little summer garden.

Traditionally humanity's security, identity, and 'sense of place' has come from the land. If we are to feel at home again on the land, we must learn to treat it with respect. We must be true stewards of this, our common earth.

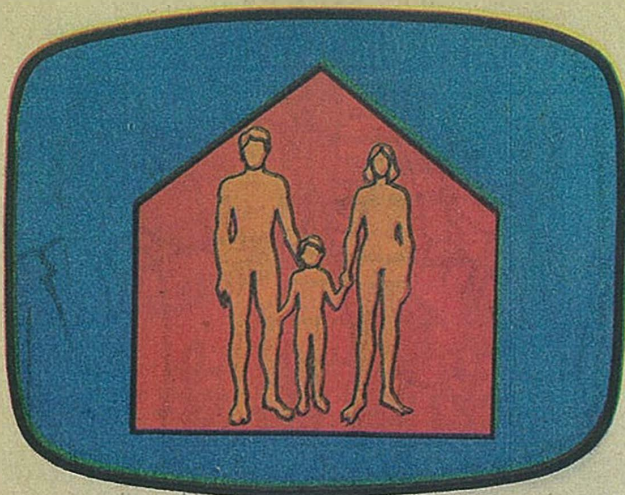


BARB WUTZKE



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HOUSING

The home is more than a physical shelter. It is the base for the growth of the family, the root of stability. It is the first training ground for the lessons of the real world outside. The sense of community is first nurtured in the home.

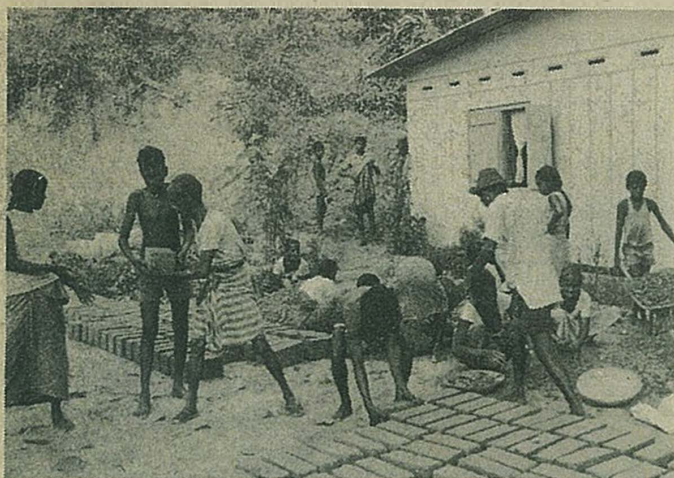
In the human environment, shelter is a basic biological need. Groupings of shelters form settlement patterns that vary from culture to culture, according to the needs and the resources of the settlement's people.

Throughout the world, great numbers of human beings live in settlements that do not meet the very minimum of standards. So many of us continue to hang upon the edge of survival without clean water or sewage disposal, without the most meagre nutrition, deprived of education, no hope for employment, empty of attention from the busy world of plenty.

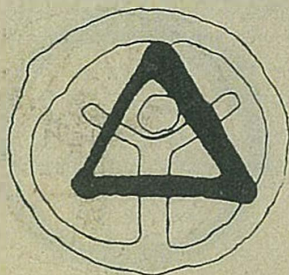
Yet any pre-planned, large-scale, total development 'solutions' for such fragile, deprived communities can be compared to cleaning a crystal vase by putting it through a car wash. The self-help ethic is a more appropriately-scaled solution, where the means for self-determination are provided for people to raise their living standards.

Equally important, we must all rethink our material aspirations and expectations. North Americans can re-set the example by emphasizing more shared community facilities, by decreasing the duplication of energy-consuming home appliances, and by re-evaluating the status of the house within the social context.

There is a need to reconsider our values, for each individual family unit, settlement and state and to address ourselves to the problems large and small as one inter-related whole.



C. LARSIMONT



PAUL ALMASY





LIFESTYLES

Lifestyles are the way we live, the social, cultural and economic values by which we guide ourselves. Lifestyles are expressed by everything we do and say, from day-to-day and in the larger patterns of societies.

Lifestyles are a reflection of a society's character, and of the degree of wealth of its people. Since the industrial revolution of the West, lifestyles reflect successful commerce based upon the processing of resources in great amounts. There is not necessarily a direct relationship between having the resources and benefiting from them.

For the populations of industrialized regions, the benefits of industrialization are consumed by life-styles geared to the present — the 'now generation' of flashy clothes, big engines and a wide array of well-advertised expensive 'conveniences'.

Not only is the West eating tomorrow today, but the lesser advantaged developing nations are making the blind mistake of aspiring to the same values.

Before a more equitable distribution of the earth's wealth can really be effective overall, we must develop and communicate a better understanding of our wholistic needs as one planetary people.

In the short term, such an understanding implies the 'conservative ethic' — doing more with less. The values of energy-conservation development, practiced universally on a scale better fit for people, can lead to a more secure and plentiful future for all people equally.

Such a change in perspective requires a re-evaluation of our lifestyles, of the intensity of consumption and of our often short-sighted values.

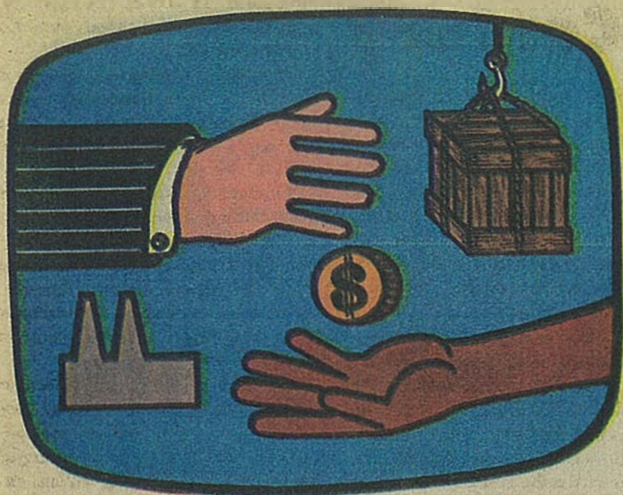


BOB OKANTA



BARB WUTZKE





THE MARKETPLACE

Traditionally, the exchange of goods and services has taken place in the marketplace. Whether it be a specific location in town or village, or the stockmarket, with today's speedy transportation and sophisticated communications, the whole world has become one global marketplace.

It has been a continuing limitation in our system of values that some have more at the cost of others. Today's constantly increasing rate of change has very greatly magnified the inequality. We are now at a stage in the history of humanity where over 900 million human beings live in utmost poverty. Of those above the poverty level, both in affluent and in poor societies, a growing number feel deprived of the means to understand and participate in their social, economic and political environment.

With increasing economic control of the means to production by giant international corporations, compounded by the ineptitude of governmental bureaucracies, we are in a period of alienation of labour, wasteful repetition of

non-essential goods, and planned obsolescence. Marketplace problems such as world inflation, the stagnating monetary system, high unemployment and the questioning of industrial values are all new developments which suggest that something is not working anymore.

What is emerging to resolve these gross inequalities is the concept of new guidelines for the marketplace, of a new economic order based upon redistribution of wealth. The emphasis is on limits to consumption in the affluent countries and self-determination on the part of developing countries. To establish such an order, new sets of rules — both nationally and internationally — must be found that will govern the international monetary system, control the extraction and transformation of natural resources, and deal with decision-making in international affairs.

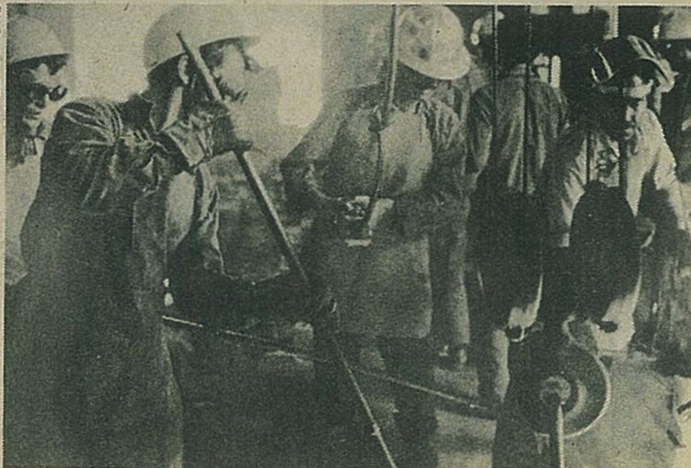
If the wholesale exploitation of primary resources and the degradation of the environment is to end, then we must bring into being a revitalized marketplace in which what is made available is a reflection of what is needed.



MIKE WEBB



UNITED NATIONS



Planning for the 21st Century

Until the middle ages very few people knew how to read and write. Consequently, the literate, the educated, were of special value to the rulers in making decisions. Societies were affected by the knowledge acquired by the privileged few who were in the position to get an education.

Gutenberg's invention, the printing press, soon changed all that. His presses stamped out hundreds of books, and knowledge began to spread. Great numbers of people began to read about their world. Many wrote about their understandings. Consequently, 'the public' began to comprehend the causes and effects that shaped their society. The freedom of information that has grown since then has given strength to free forms of government. The ballot box and the newspaper are two good examples of that.

Now a new development in human technology is having its effect on the systems and procedures for change. It's called the computer and this 'electronic wonder' is doing, today, what Gutenberg's press did in his time.

Great stores of information that would overwhelm anyone trying to deal with all the complex factors that enter into the decision-making process

are now neatly remembered by computer programs.

The analytical and storage capacity of the computer is streamlining all facets of science, industry and education. The computer's ability to retrieve the needed facts from often immense quantities of information has been of great benefit to research and development in all fields.

And in the same way the early days of the printing press allowed the citizen to know more about those things that affected his or her life, the computer of today, along with T.V., gives more access to be able to affect the world around us.

One example of the computer at work for people is the 'Bernholtz System' for planning at any scale. Designer/architect Allen Bernholtz has created a program that uses the talents of the computer to expand involvement in the process of planning the environment by the people affected by that environment.

Bernholtz's computer program 'remembers' the space or area to be developed or changed, be it a room, building, block, city, region, nation, or - in fact - the whole earth. As the space and criteria are defined, the computer builds a 'base map' that keeps in memory all the characteristics of the area to be simulated.

Symbols are assigned to represent the kinds of man-made changes being considered. A drawing of a shopping cart can represent a shopping area. Little house symbols can indicate location and density of residential zones. Other graphics represent social services, factories, transportation routes, each has a symbol that speaks for a land-use classification.

With the computer remembering the space to be simulated, and non-verbal symbols representing the changes to be made, all interested parties can then have a say in what is needed, what is wanted. All the possibilities within the given space and time reference are then 'printed out' by the computer. By this method, numerous alternatives are tested to satisfy the needs of the participants. The computer, referring to its memory, shows what's possible and what's not. Mistakes are made in simulation rather than on the construction site and the best choice that satisfies the most needs is available in fractions of the time it might otherwise take.

At all times in this process of simulation, the computer's instructions to preserve and protect environmental quality will automatically keep the social, economic and political choices within the necessary limits for maintaining desirable standards. Each

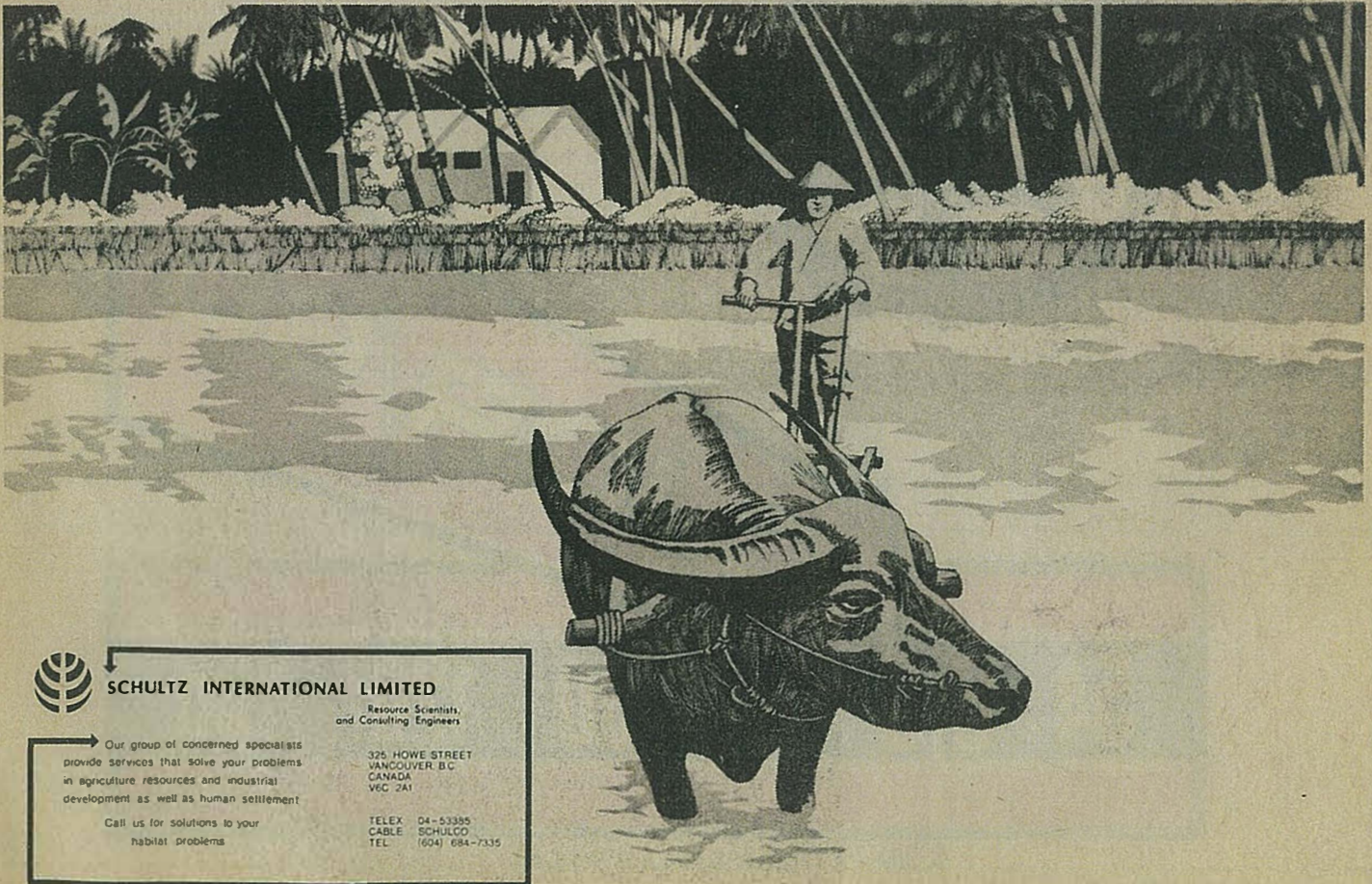
simulation will be in the form of a printed map, color-coded with non-verbal symbols.


This symbolic language, used in the Bernholtz system, transcends cultural and linguistic barriers. 'Underdeveloped' cultures can use such a system without the need for any sophisticated, intimidating, or intricate training. Older surviving cultures can jump from pre-mechanization to the 21st Century, thereby creating a scale of society better-oriented to people and a healthier environment than the 'big' industry, consumer society that we know so well.

Techniques like the Bernholtz Computer-aided design system, using 'new age' computer technologies, enable the public to meaningfully participate in planning human environments as never before possible.

It's a long way from the begging bowl to participation in local community planning. Even so, we must look at the 'total picture', when we talk of the sharing of resources. That 'picture' is a more equitable distribution of goods and services amongst all nations. What is needed are techniques for involvement in the decisions that affect our lives. Participatory planning systems can expand our choice of future alternatives and enable us to pre-test our decisions before we commit our energies and resources to the shaping of our natural and social environments.

(cont'd on pg. 13)





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Kelowna Study Project

The Bernholtz "LOKAT" program was applied to the newly-incorporated municipality of Kelowna, British Columbia, in 1974. The boundaries of the region had been expanded from 8 to 80 square miles, and now include a good portion of rich Okanagan Valley fruit orchard land.

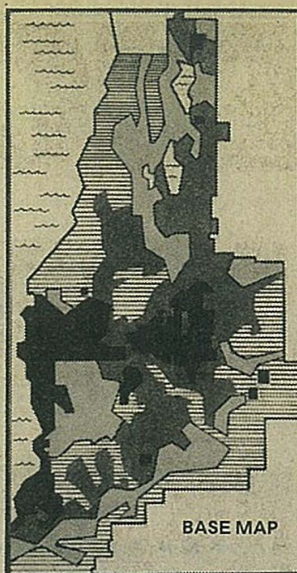
The area is experiencing a migration, and planning officials wanted to demonstrate the effects that a tripling in population by the year 2000 would have on the area.

A base map, compiled from existing geographical and urban studies, as well as from a polling of the perceptions and attitudes of the local populace, was constructed for the LOKAT program. The main criteria of the study was the preservation of agricultural land, in accordance with the NDP government's agricultural land freeze.

THE COMPUTER SIMULATIONS: With the Base Map fed into the computer's memory, it was ready to act upon commands. The LOKAT computer process then presented a series of simu-

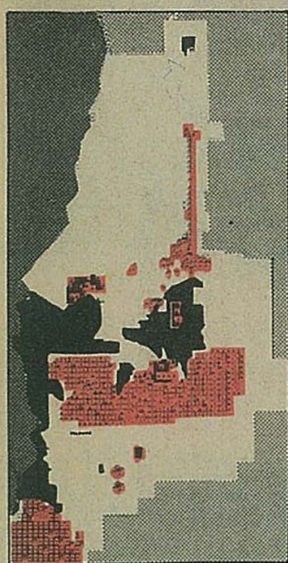
lated Urban Growth Patterns. Where the planners chose to make land available for new development, the LOKAT program subdivided the available area into land-use categories. Space was allocated for commercial, high density and low density housing, urban services, old and new industry. The computer recognized the physical characteristics that the Base Map provided from its memory about the earth's surface in that region.

The examples pictured here are just three of more than a dozen simulations produced in a few months' time. It would take a conventional planning group a year to define one or two such development patterns. Computer simulations of the LOKAT type can accelerate and expand the planning process. These demonstrations can communicate to the layperson through pictures, or through simple graphic designs, the results of complex technical decisions--thereby providing a means for true citizen participation in the decision-making process.



THE BASE MAP

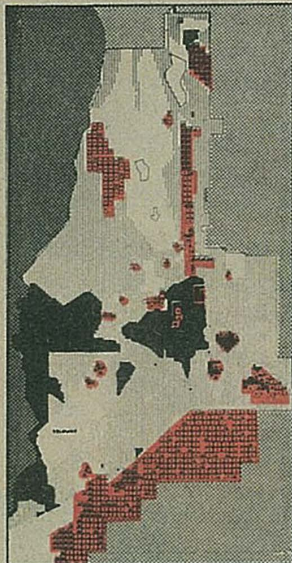
The black area represents urban development in Kelowna. The light gray tone represents the prime class 1 & 2 vegetable root crop producing soil. The dark gray tone represents class 3 & 4 fruit tree and vine growing soil. And the horizontal lines represent class 5, 6 & 7 soil, undesirable for agriculture but suitable for grazing.



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SIMULATION 3K1

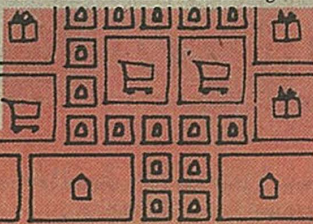
Simulation 3K1 indicates a 3 times population growth in the Kelowna region. This simulation allows all the agricultural land to be made available for urban growth and industrial development. The result is a large portion of development will occur close to the existing city of Kelowna. The simulation indicates that if constraints aren't put on urban growth then all the remaining prime agricultural land will be quickly used up.



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SIMULATION 3K3

Simulation 3K3 has the same population increase but only the choicest Class 1 & 2 agricultural land is preserved. The computer has been programmed to protect this land classification and consequently pushes urban development out to the extremities of the region.



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SIMULATION 3K5

Like the previous simulations a population increase of 3 times is simulated. Class 5, 6 & 7, the less desirable agricultural land, is made available for development. Not only is urban growth kept off prime agricultural land but it is pushed outside the region's boundaries because there is not enough 5, 6 & 7 land in the region to accommodate a 3 times population growth at current densities.

Simulation 3K5 demonstrates that if the municipal boundary is extended then prime agricultural land can be preserved and the area can accommodate more than 3 times population growth. ■

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(cont'd from pg. 6)

BEYOND HABITAT

Now, will all these printed, spoken, and duly documented words, all the resolutions passed, present in the records, and more surely to come, bring a change for the better? Will we continue to accept, without question, that solutions to our great problems are to be found in a highly-competitive, aggressive, seemingly hell-bent-for-apocalypse world social system? Can we continue to build our human settlements with techniques and technologies based upon varying degrees of exploitation?

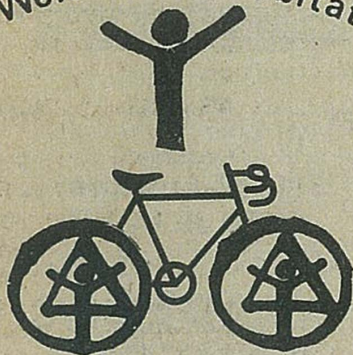
Who will take the first steps into a new future based upon people rather than closed-system material gain for the few? Who is prepared to really face the needs of the many who have long-since despaired of ever having the freedom of choice or economic means for a wholesome life--such a life for everyone that our garden can, if tended well, provide?

Economic inequality is the common thread throughout all the U.N. special conferences. Yet this disparity is not the woeful cause unto itself. The values that move us to action sit in the very heart of the problem.

Is the consciousness of the human race any more developed than that of the birds and the beasts? If the response is affirmative, then we must respond to our needs as one human tribe sharing one spinning globe in the cosmos. And this means a purity of intention, a heartfelt respect and an undying will to eliminate all strife based upon exploitative, unco-operative politics and win-lose, repressive economics, all backed up by military might that drains the life of the planet and the spirit of the people.

Nothing short of such a revolutionary re-evaluation of our common destiny can take us beyond Habitat. ■

Welcome to Habitat



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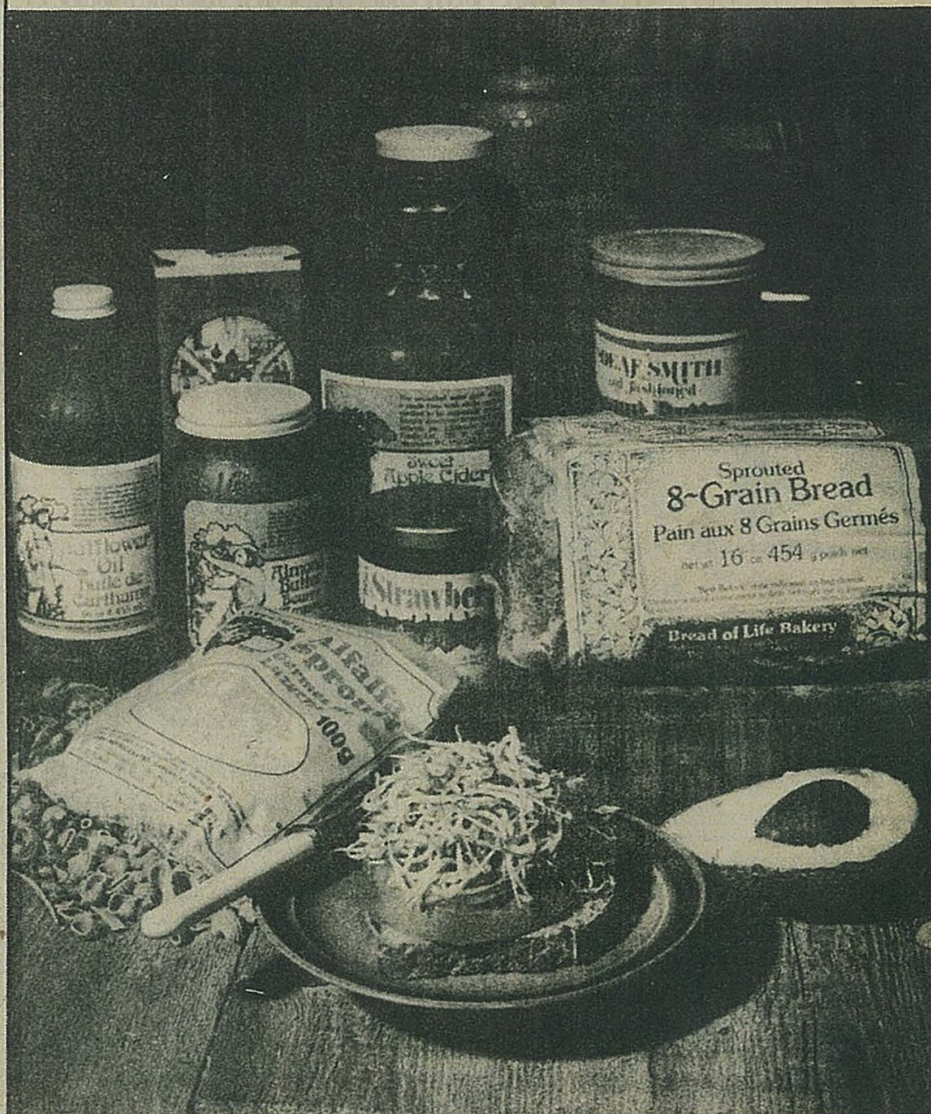


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U.N. Habitat & Habitat Forum

THE UNITED NATIONS CONFERENCE ON HUMAN SETTLEMENTS



The Human Settlements Conference in Vancouver, '76, is made up of two separate and distinct parts: Habitat and Habitat Forum.

Under the auspices of the United Nations Organization, representatives of the world's sovereign nations meet in downtown Vancouver for the official U.N. conference. Habitat is a culmination of a series of preparatory meetings, and is the end result of many formal government 'position papers'.

Three Major Documents

During the Habitat Conference, the government delegates will work out the final details and formally recognize three major documents:

- a Declaration of Principles
- proposals for action at the level of national governments
- recommendations for international co-operation

All this activity by and through the United Nations is aimed at moving the governments of the world to recognize and better understand our serious settlements problems, and the causes that underly them. Once realized, we must begin to act towards overcoming these problems co-operatively.

U.N. Habitat

Although a great deal can be learned by following the deliberations of the U.N. Conference, it is a closed session. The public has no say in these discussions.

Habitat Forum

Habitat Forum is the place and the opportunity for us to participate. The Forum is the 'NGO' conference. Any person or organization that is not representative of a national government is called an NGO, a 'non-governmental organization'. At Habitat Forum, we are all free to share in the activities.



The Forum is located at the former seaplane base at Jericho Beach on Burrard Inlet. It has been especially renovated for this event, and consists of a wide variety of exhibits, workshops, discussions and presentations on human settlement issues.

Nine Themes

There are nine main themes for discussion during the Forum. Each of these will be the major topic on consecutive days of the NGO Conference:

- The Man-Made and the Natural Environment
- Social Justice and the Question of Differing Values and Cultures
- Sharing and Managing the World's Resources
- National Settlement Policies
- People's Participation in Planning and Implementation
- Land Use and Ownership
- Community Action for a Better Habitat
- Rural Development
- Appropriate Technology

Besides the theme topics, many other workshops and presentations are happening each day at the Forum.

Habitat Pavilion

The Habitat Pavilion, located in front of the Courthouse on Georgia Street between Hornby and Howe Sts. in downtown Vancouver, is a central information point. This is where background material and day-to-day information on Habitat and the Forum can be collected, as well as daily announcements on all the related activities, entertainment and special events.

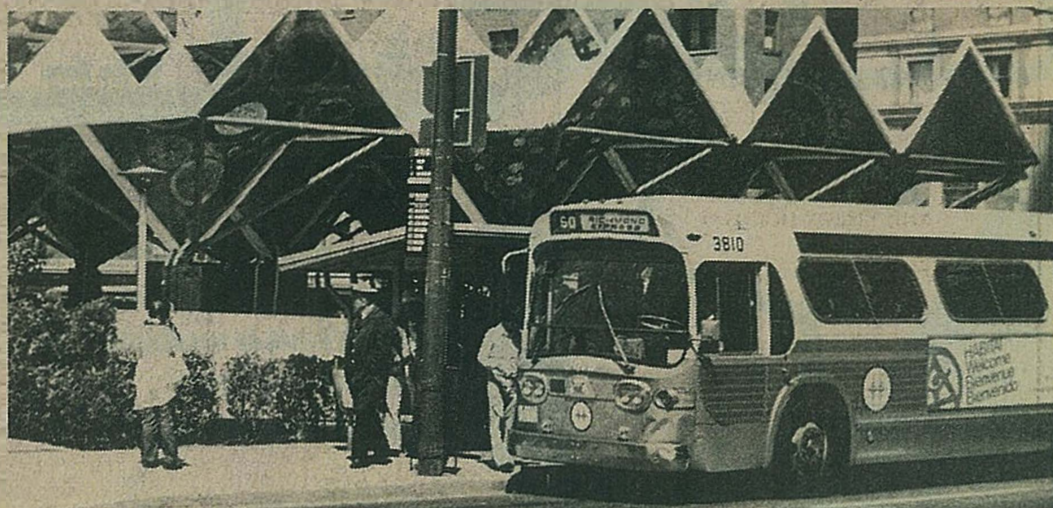
Habitat Map

The map on the next page will guide you to all the centers of activity for Habitat. The Habitat Forum Site Map on page 18 shows the different buildings and lists what's going on in them.

The hangers at the Forum have been especially prepared for people to have a say at Habitat, to explore and to learn more about the state of affairs in this world of ours.

Habitat Bus

People travelling by bus can board the "Habitat Forum Special" at the Pavilion for the ride to Jericho to see the exhibits and to take part in (or observe) the discussions.



Board the "Habitat Forum Special" in downtown Vancouver at the Habitat Pavilion for the ride to Jericho Beach. This special bus operates during the conference only, and will drive you to the Habitat Forum site, and to all the public activity for Habitat.

JAMES T. COOPER

HABITAT VANCOUVER

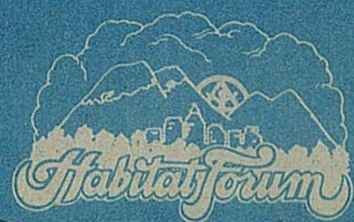


HOMETOWN COMMUNICATIONS

KEY

- A — Air West Seaplane Dock
- B — C.P. Ferry Dock
- C — C.P.R. Station*
- D — Granville Square*
- E — Gastown
- F — Chinatown
- G — C.N.R. Station
- H — Queen Elizabeth Theatre & Playhouse (U.N. Habitat & public film screening)
- I — Habitat Pavilion
- J — Jericho
- K — Walter Gage Residence
- L — Vanier Residence
- M — Totem Park
- N — Vancouver Art Gallery

*site of Festival Habitat



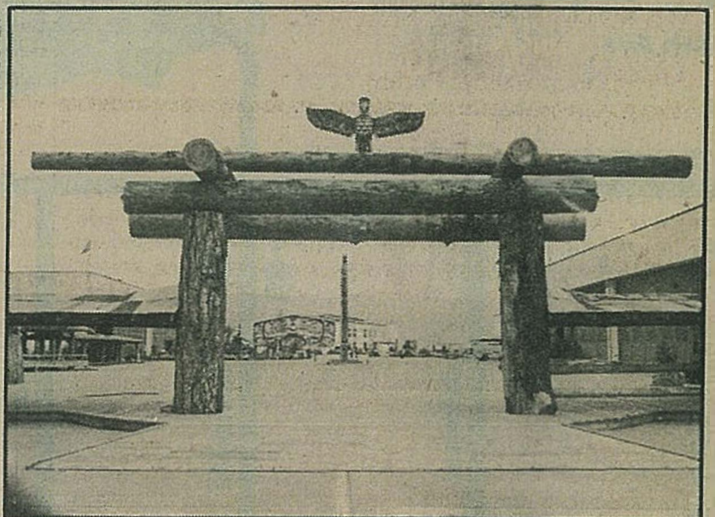


NON-GOVERNMENTAL CONFERENCE ON HUMAN SETTLEMENTS

KEY

- 13 — Media & Administration
- 3 — Theatre & Workshops
- 5 — Main Plenary Hall
- 6 — Theatre, Meeting Rooms & Public Information
- 8 — Indoor Exhibits
- 7 — Social Center & Food Services
- A — Medical Trailer
- B — Media & Reserved Parking
- C — Covered Walkway
- D — Dock
- E — Covered Walkway
- F — Outdoor Stage
- G — Service Tent
- H — Covered Walkway
- J — Taxi Stand
- L — Vehicle Exit
- M — Staff Parking
- N — Hostel
- O — Jericho Gym
- P — Aberthau House
- Q — Pedestrian Entrance
- R — Outdoor Exhibits
- S — Vehicle Entrance

JAMES T. COOPER



Habitat Forum at Jericho Beach on Burrard Inlet in western Vancouver is the site for the 'non-governmental' conference on human settlements. This is the place where anyone who's interested can come and be a part of the activity.

Untangling the Nuclear Debate

As the economic and political force behind civilian nuclear power programs has increased in recent years, and as the prospective scale of these programs has become more obvious, so has public disagreement over whether nuclear power is wise, necessary, or capable of solving our energy problems.

Due to the widespread concern about nuclear power in our human settlements, Habitat Forum will present a program to focus on this aspect of our energy needs. The intention of everyone involved in the Forum's nuclear program is to bring to Vancouver those researchers and speakers who have been involved in the Nuclear Debate so that we all can acquire the necessary information that will assist us in making the best decisions for the future of our human settlements. Now is the time for those decisions. This conference must deal with the nuclear controversy.

Are we going to use nuclear power as the energy for our human settlements? How can we proceed with such an investment if the promise is a radioactive future? This is hardly the way to inspire thinking people.

The debate is not academic or apolitical: it concerns the future of a hundred billion dollar-plus international industry to which all major governments have committed immense resources and prestige.

Amongst the many good articles that have appeared in magazines and newspapers which contribute to the general education of us all, I have chosen this work by the physicist Amory Lovins for HABITAT GUIDE after consultation with a number of scientists.

Now is the time for serious thought and discussion. Habitat Forum is a special opportunity for all of us to make up our minds on this most grave threat to the stability and security of life on Mother Earth. Now that political discussions of nuclear power are starting to mature in several countries, it is time to untangle the main threads of the controversy. This article deserves careful study.

Dalton McCarthy, Co-ordinator,
Nuclear Program at Habitat Forum

Untangling the nuclear debate by Amory Lovins

In five recent issues of Development Forum, six scientists (Edward Teller--December 1974; Hannes Alfvén--April 1975; Louis Leprince-Ringuet--June-July 1975; Sir John Hill--October 1975; and Henri-Paul Jammet and Marcel Dousset--December 1975) have considered whether nuclear power is safe, clean, economic or necessary. The great diversity of these views, and especially their failure to address the same set of issues, must be confusing to people who have not read widely in the field. Therefore, I should like to try to clarify what these six scientists were, or should have been, arguing about. But, to begin with, I must state three premises with which, with the exception of Alfvén, the other scientists do not appear to agree:

- The first duty of a scientist addressing the public on a technical subject is to call attention to professional disagreements and uncertainties so as not to create a false impression that matters in dispute are actually resolved. Disputed matters are by definition opinions, not facts, and must be so presented. Thus, statements about the likelihood and severity of reactor accidents or sabotage, the behaviour

- The most important, difficult and neglected questions of energy and nuclear policy are not mainly technical or economic, but rather social and ethical. Responsible exploration of these problems is accordingly the right and duty not merely of technical experts but of everyone. In the sphere of ethical judgements and social values, the opinion of any technical expert is entitled to no special weight.

of geological formations over tens of millions of years, the toxicity of plutonium and so forth are all opinions and can only discredit scientists who present them as facts. Differences of technical opinion must be acknowledged, then explored by reasoned analysis (which does not include refutation by emphatic dismissal). But scientific discourse cannot settle all disputes.

- Public policy decisions in democracies, even if superficially of a technical nature, should continue to be made by the common sense judgements of politically accountable generalists, after full and informed public discussion. Where such decisions are partly technical (they can never be wholly technical--that is, devoid of value judgements), experts must provide the best information that they can, and clearly state its limitations, but it is not their job or right to take the decisions themselves, nor to define the framework within which value conflicts are to be politically resolved, nor to try to exclude the public from discussion and decision, nor to claim any monopoly of wisdom or jurisdiction. It is not for them, as Leprince-Ringuet suggests, to commit "us" to nuclear power without waiting "for the public to be fully informed", nor, as Jammet and Dousset urge, to enforce official policy in the face of "astounding . . . ignorance" and "lack of logic". Such practices would sacrifice accountability and other democratic principles in favour of government by the elite. No expert has the right to be blindly believed by anyone, just as no premise has the right to go unchallenged, as Jammet and Dousset would have us believe, simply because it is government policy.

When experts disagree, as they often do, you may feel unable to resolve their technical differences for yourself. But often what look like technical differences are simply differences of personal values and are, therefore, easy for non-experts to judge.

For example, nuclear questions often turn on information that is unknown or unknowable--human behaviour, poorly understood physical or biological effects, geological or social contingencies--and the uncertainty will be construed by some people as grounds for caution, but by others as a license to plunge ahead, depending on personal temperament and professional imperatives. Many disputed nuclear hazards involve allegedly rare events or low level, long-term effects for which we lack by definition an actuarial base. Should we then assume safety because hazard is not proved, or potential hazard because safety is not proved? That is not a technical question.

The six scientists ignore technical disagreements and trans-scientific issues when they consider the long-term role of nuclear power. Only Alfvén considers the problem of distributing energy to people who need it, and only he and Leprince-Ringuet mention the extravagant waste of energy in developed countries. Hill, Teller, and Jammet and Dousset are content to offer a facile and conclusory identification of energy growth with progress (including feeding the poor), and of nuclear power with both. But Alfvén's discussion of distribution is more profound. How are reactors in developed countries supposed to help poor people in developing countries to grow and buy food? Does not such a claim indicate a remarkable ignorance of the real causes of hunger and poverty? In industrial countries too, where the amount of energy needed to produce a good or service varies by a factor of tens or hundreds, depending on which product it is, does not the energy needed for social welfare depend on what mix of goods and services citizens personal values lead them to prefer? Since careful analysis suggests that some high energy societies could produce the same output as today (if that is desirable) with about half as much energy as now--with greater social welfare, with fuller and more broadly based employment, with greater pluralism and at far lower cost--how can responsible scientists advocate further energy growth in such countries? Identification of nuclear growth with world social needs must, I think, be considered an ideological rather than a scientific argument, as no intellectually respectable justification for it has been published anywhere.

It is astonishing, too, to see the energy sector's most costly, complex, vulnerable, high risk, unforgiving, highly bureaucratized high technology advocated as an appropriate development tool.

A new report to the US Energy Research and Development Administration (ERDA-52, 1975) has systematically demolished every possible basis of the nuclear export programme, mainly on economic grounds. Even on a cost-per-unit output basis, let alone an initial investment basis, nuclear power is generally dearer than its competitors (about one third dearer in the USA in 1974, for example, according to the 15 November 1975 Electrical World)--and is incomparably dearer than non-electrical technologies or improving end-use efficiencies. It is thus not surprising that the World Bank does not finance nuclear exports because they do not meet the Bank's tests of economic soundness.

A prevalent confusion between

THE NUCLEAR DEBATE

energy and electricity, which needs to be cleared up, is propagated by several of the previous articles on nuclear power. Most of the energy flows important to humanity today are solar. The patiently evolved photosynthetic reactions in our harvested plants involve far more energy than our use of oil. Even in the more anthropocentric and industrial sense, most of the fuel flows in many developing countries are non-commercial fuels—such as wood and dung—which do not show in statistics. Finally, even in developed countries, most of the fossil fuel is used directly, and only a small fraction—typically one sixth to one fourth—as electricity. Most of the end-use energy needs are in the form of heat—and typically half is low temperature heat.

Electricity is important for electronics, telecommunications, lighting, smelting, electrochemistry, welding, mass transit and small motors, but all these together are a small fraction (five to ten per cent) of developed countries' end-use energy needs. The end-uses that require electricity in such countries already have more than enough. Further electrification only supplies heat as electricity—an extremely inefficient and costly long way round.

Electrification is proposed in many countries not because it is the best way to meet people's energy needs, but because nuclear power offers no other option. The real need is not for electricity, as Hill claims, but for energy in a form appropriate to the task at hand. Hence, the alternatives to nuclear stations are not only coal-fired stations but also conservation, direct use of fuels and "energy-income" technologies—those which rely on the natural energy flows that are always there whether we use them or not.

In making this wide choice, we should bear in mind that each environmental or biophysical risk of nuclear power brings with it a socio-political risk.

For example, there is no scientific basis for calculating the likelihood or the maximum long-term effects of nuclear accidents or sabotage, nor for guaranteeing that the effects will not exceed a particular level. We know only that all our precautions are, for fundamental reasons, inherently imperfect in an unknown degree. But different people will assess the hazards differently, and both to deal with that dissent and to reduce the imperfections that give rise to the hazards, we would need social engineering. We can already see that the inability of our political institutions to cope with nuclear risk—insensible, exotic, long-term, catastrophic, disputed, unknown, unknowable—is straining both their competence and their perceived legitimacy. Trends towards dirigiste autarchy and elitist technocracy are appearing.

Likewise, if we want to protect nuclear wastes from geological contingencies for at least the first moments of the required geological, or rather theological, periods (tens of millions of years, so that no responsible geologist can guarantee any storage site), we shall need hierarchal social rigidity or homogeneity so that the technological priesthood can go about its business undisturbed by social unrest. Likewise too, if we want to make nuclear violence and coercion more difficult, we shall need more repressiveness and abrogation of traditional civil liberties. There is a growing professional and lay literature on all these issues. It shows that the greater our technical success in reducing the hazards, the greater must be our political loss.

But let us suppose for a moment that all these worries are unfounded and that nuclear power is, in fact, as safe, clean, cheap and socially benign in

the Persian Gulf can afford ever to electrify most of its economy. Nuclear power, like coal synthetics, oil shale and tar sands, is so complex and costly that nobody can afford it on a big scale. It is a future technology whose time has passed.

Because of this great capital intensity, if we try to build many reactors, electricity must become so dear that people cannot buy much of it; or else not enough money will be left over in the economy to build the non-energy devices that were supposed to use all that electricity; or both. For example, President Ford's 1976 to 1985 US energy programme would cost a current GNP-year, or one million million in today's dollars, three quarters of it for electrification; thus nearly two thirds of all money traditionally available for US investment in houses, roads, schools, hospitals, factories, national parks and everything else outside the energy sector would have

use energy become politically remote from those who supply and regulate it. Central authorities must impose energy facilities and their perceived risks on people who want neither (particularly as the operators are unwilling to bear the risks themselves). Inter-regional conflicts intensify. A divisive form of centrifugal politics comes to dominate national energy decisions.

Centralized electrification has other political effects, too. An energy system so complex and costly that only a privileged technical elite can run it hardly seems a good way to enhance distributional equity within rich but inequitable nations—let alone in a world where two or three billion people have no electric points nor anything to plug into them. It is curious that appeals for more electricity with which to help the poor come often from utilities companies that have consistently charged the poor several times as much per unit as they have charged big industrial users.

Big electrical systems are the most prone of any to technological dependence and commercial monopoly, and they cannot be transferred without bringing with them inappropriate cultural values and patterns. The scale and complexity of big electrical grids, coupled with the difficulty of storing electricity in bulk, also make them uniquely vulnerable to disruption by accident or malice—hence, to inducing stringent social controls, or perhaps drastic and sophisticated police action, to discourage disruption. How far would governments go to protect from physical risks—even from political risks—a basket full of such costly and essential eggs? What are the political consequences of committing such a large fraction of a society's capital to technical, economic and political risks outside that society's control?

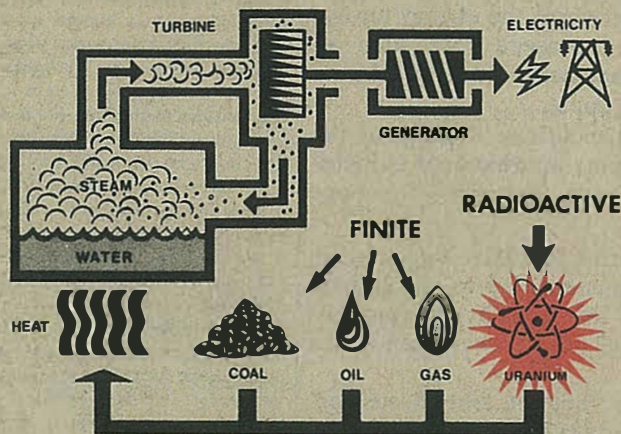
Finally, because centralized and electrified high technologies take so very much time, money and skill to develop and deploy, any commitment to them tends effectively to foreclose other options, both directly and indirectly (for example, by developing influential constituencies dedicated to continuing such a commitment, or by discouraging good technologists from devoting their careers to areas lacking perceived political support).

These arguments suggest that if nuclear power were in itself environmentally and socially admirable, it would still be a bad idea because of the sort of energy system it would lock us into. And even if—which is not the case—nobody perceived this to be so, nuclear power could still not possibly do what we expect of it.

Its proponents talk loosely of needing it for the next few decades because we are short of fuels. Since these supporters give no numerical data, I shall. If world conversion of commercial energy grew by only three per cent

cont'd

James T. Cooper



"Electricity is important for electronics, telecommunications, lighting, smelting, electrochemistry, welding, mass transit and small motors, but all these together are a small fraction (five to ten percent) of developed countries' end-use energy needs."

itself as some of its advocates would have us believe. Let us suppose further that they have published all the relevant technical and economic data—now secret in most countries—so that we can be satisfied of this. What then? What are the social and political implications of the kind of centralized, electrified energy system that nuclear power entails?

To start exploring this important question, let us observe that nuclear power is about 50 to 100 times as capital-intensive as the traditional direct fossil fuel systems on which industrial economies have been built. The investment needed today to deliver a kilowatt of nuclear energy to consumers in the mid-1980's is at least \$3,000 in today's dollars, and more likely \$4,000 to \$5,000, if we count the whole system and not just the reactor. This capital intensity is much greater than for big fossil-fueled electrical systems, but both kinds are so costly to build that as the strategic planners of the Shell Group in London (among others) concluded several years ago, no major country outside

to be consumed by that sector alone. It is for such fundamental economic as well as political reasons that I think nuclear power is already dead in the USA.

What are the social implications of such capital intensity? Clearly, attempts to divert scarce resources to electrification (hence away from social priorities with weaker constituencies) require a strong central authority, bypass traditional market mechanisms, create severe political stress, and greatly concentrate political and economic power. The enormous investment requires near optimization of use, so the nature and patterns of energy end use must be made to conform to the requirements of the source of supply. Settlement patterns, hence political power, must thus become more urbanized. It is then politically possible to impose the separable social costs of electrification on a politically weak minority of rural agrarians, producing inequities that later find political expression. Control over who will have how much energy at what price becomes centralized, and people who

THE NUCLEAR DEBATE

per year (about half the historic rate), and if we could commission (not just start building) one new 1000-megawatt nuclear station per day, starting now, then in 2000, we should still be getting over two thirds of our primary energy from fossil fuels, burnt nearly half as fast again as now. Moreover, such a large nuclear system would cost tens of millions of millions of today's dollars; would encounter formidable resource, manpower, political and land-use constraints; is probably ten times as big as we could actually build in that time; would reject enough heat to warm the earth's whole freshwater run-off by two degrees Centigrade; and would make about enough plutonium for a bomb each minute. Finally, if somehow we could build reactors so quickly, it would take so much energy to build and fuel them that the nuclear programme at 2000 would probably have consumed more energy than it had produced—a transient effect, but an important one—and we would still have too much electricity but too little oil and gas.

Is there a different sort of path that is able to meet our energy needs, particularly in developing countries? I think there is. First, I must make a basic point about strategy and timing. Many advocates of nuclear power say we need it as a stopgap, combined with coal and fluid fuels, until "ultimate sources" (fusion, or solar with or without geothermal, or both) become available at some hazy time in the next century. But I contend that:

- Conserving energy, especially in developed countries, is a much cheaper, more benign, more effective supplement to fossil fuels than is nuclear power during the period of "bridging" to whatever comes next, and is indeed essential if the situation is to be tractable at all;

- A diverse range of "soft" energy technologies—those that rely on energy income rather than energy capital, are relatively decentralized (on a house or neighbourhood or village scale), are relatively low-technology (which does not mean unsophisticated), and meet end-use needs directly at high efficiency (supplying electricity only for end-uses which require it)—could, if we wished, meet practically all our energy needs about 50 years from now, at reasonable cost and with essentially zero risk of technical failure;

- Because these "soft" technologies are comparatively small and simple, we could build them much faster than an equivalent capacity of big high technologies;

- Enough "soft" technologies are already available, and enough others soon will be, so that we could start deploying them now;

- If, however, we continue with nuclear power, its direct and indirect demands on our money, time and skills will effectively foreclose the "soft" option by delaying it so long that we

shall no longer have enough readily available fossil fuels to form a credible bridge. Thus we must jump for either the "soft" or the "hard" path before they diverge much further, and we cannot pursue both simultaneously with sufficient priority to make either feasible.

Thus I can envisage a three-pronged energy strategy of which the first part is wide-ranging energy conservation, particularly in developed countries. Its economic and social benefits have already been mentioned. Its environmental and geopolitical benefits are obvious. It does not require or imply privation, repressiveness or coercion. If done properly, it will substantially increase social welfare.

Later, this strategy would entail grass roots value changes which I think are already occurring in Western Europe and North America, and which are a natural result of realizing the consequences of not conserving energy. For the moment though, we need only a commitment to improve social welfare with little or no growth in primary energy conversion and, if

conversion (especially to methanol for the transport sector), and sophisticated wind technologies (including the promising non-electrical ones).

Progress with such "soft" technologies, and even with "harder" ones such as geothermal and photothermal conversion, has been very rapid lately, and people who say soft technologies are all far in the future are very much out of touch. Efficient solar heating, for example, is commercially available and is now cheaper than electric heating in the US, most of Europe, and even southern Canada. In some areas, it is cheaper than direct fuel heating. The barriers to its use are no longer technical or economic but institutional—mortgage regulations, building codes, out of date architects. In four or five decades, it can meet, even in most cities, a substantial fraction of all our energy needs; about half, in much of Western Europe, for example.

Thirdly, during the 40 to 50 years it takes to construct an economy of energy income, we should use fossil fuels in "transitional" technologies, adaptable to the soft technologies so

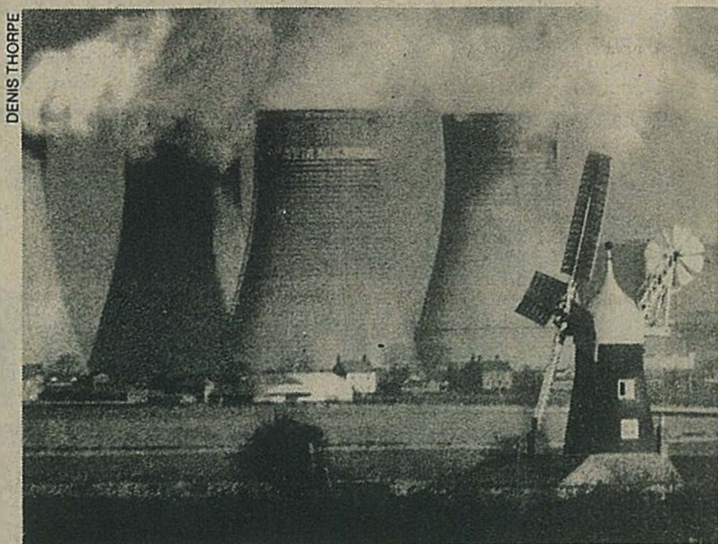
mark, Sweden, Canada, the United States and the United Kingdom. But the same basic principles are as sound for developing countries, which also tend to have more year-round solar input. The needs of people in all countries are much the same—heating, cooling, cooking, lighting, pumping, travelling—and can be admirably met by relatively small-scale technologies based on sun, wind and conversion of organic wastes to clean fuels. Such technologies require good but straightforward engineering. We know they work. They can use local skills and materials to suit local conditions, are understandable and easy to maintain, and fit modern ideas of "eco-development", rural and agricultural development, and local autonomy. Technical cooperation with industrial countries working on soft technologies would be useful but need not lead to dependence or stifle local initiative: self-reliance is inherent in the nature of the technologies.

There is also an important geopolitical dimension to this strategy of entirely bypassing nuclear energy. To Teller, Alfvén and Leprince-Ringuet (Hill and Jammet and Dousset do not mention it), proliferation of nuclear power—originally a quasi-civilian spin-off of military technology—implies the eventual re-emergence of the military technology in the public or private sector.

Leprince-Ringuet's answer is to worry and hope. Teller's is "not to abstain", but rather to find out "how to prevent war", spreading strategic materials around the world under safeguards that are ineffectual or repressive, or (probably) both, whilst we seek to solve the basic problems of human aggression that have plagued our species throughout its biological history. According to this bold vision, the risk that "the elimination of the causes of war" might continue to elude us whilst the matériel for even more devastating war reaches ever more hands is a risk we should and must take. It is all right, we are told, to have in 20 years some 20,000 bombs' worth of strategic material each year in transit as an item of commerce within the same international community that has never been able to stop terrorism, bank robberies, hijackings, or the black market in heroin. Somehow we shall not get blown up, or if we do, it will be for our own good. Similarly, it was argued around 1950 that if hydrogen bombs were built, people would be so frightened that war would cease. Yet armed conflict is said to continue today in some 200 parts of the world. And the threat of the accidental or deliberate use of hydrogen bombs is still with us. As might have been expected, giving guns to a roomful of quarrelsome men did not stop them from fighting, but only increased the risk of their shooting each other.

Can we do better? I think we can. I think it is possible, indeed can be made likely by internal and external

Cont'd



MILL POWER: An old village windmill, a working monument to the forces of natural energy, stands defiant, beneath the concrete cooling towers of the modern power station.

desired, with no significant changes in lifestyles. Then we can consider the possibility of longer-term structural changes that could result in dramatic energy shrinkage in many industrial countries while continuing to improve the quality of life—for example, by retaining voluntary mobility whilst decreasing involuntary traffic, where we work to buy a car without which we can't get to work (owing to the settlement patterns created by cars).

Secondly, we should start without delay a large programme to develop, demonstrate and deploy a wide range of small-scale energy-income technologies, making full use of existing technical resources (such as the automobile industry), but taking care to encourage local initiative and innovation, too. Top priority should go first to solar heating and cooling, organic

that we can plug them in as they arrive.

A fluidized-bed coal burner that operates both turbines and neighbourhood-scale district heating is an example of an attractive, economic, appropriately scaled transitional technology that is now available. The object of such technologies would be to use fossil fuels briefly and sparingly for the sole purpose of building a 50-year bridge to an economy based on energy income. Our fossil fuels, especially coal (which we know how to mine and burn far more cleanly than we do now), are ample for this purpose, and we need not burn them much faster than today.

So far I have considered mainly a strategy for developed countries. It looks attractive when calculated for countries as diverse as Japan, Den-

pressures, that the US will move, in the next five or ten years, to turn off nuclear power all over the world. Such an effort could succeed because essentially all countries' nuclear programmes depend on each others', and ultimately on the US's for either technical or (more importantly) political support. The domestic, technical and political base for their own nuclear programmes has not yet fully metastasized. Such a unilateral US policy should, I think, be part of two broader and equally principled policies: first, to help other interested countries (both directly and by a strong example at home) to conserve energy and use "soft" technologies; and second, to start to discuss control of civilian fission technology, non-proliferation, and strategic arms reduction as inter-related parts of the same problem. That is the best chance I can see of breaking the cycle of hypocrisy that has prevented arms control from getting anywhere.

In essence, I am proposing a prompt redirection of national resources towards the wise and efficient use of energy, and towards its extraction from renewable flows. I believe that even such dependent countries as Denmark and Japan can do this at least as quickly and cheaply as they

could switch to nuclear power, and that this would be a far wiser investment of the cheap capital and cheap fossil fuels that we shall never have again. Such a policy clearly involves much social change, as does any long-term energy future.

The question is what kind of social change do you want. I have already outlined some of the social consequences of a high-energy, centralized, electrified, nuclear policy. Research in several countries is now suggesting that those kinds of social change are considerably less pleasant, less plausible and less consonant with traditional values than are the kinds of social change that could make a lower-energy, "softer" path work. For this reason, people in your country should be studying the implications of a very wide range of energy choices, using the very latest information available (much of which is not even published yet, because it is so recent that it still just circulates amongst the people doing this kind of research). Vigorous grass roots exploration of these issues is essential. Energy planners have tended to work forwards through time by incremental ad-hocracy, one power station after the next, without seeing (until too late) where the sum of micro-decisions was leading them. What we

need instead is to think backwards from where we want to be 50 years from now. Then we can discover the existence of radically different and previously invisible policy paths before it is too late to adopt them.

We still have time--though barely enough--to choose technologies that reflect human values under human control, not those promoted by technologists who cannot distinguish "can" from "should". We can still recycle the dormant traditional values--thrift, neighbourliness, craftsmanship, diversity, simplicity--that built lasting societies not so long ago. And we can still come to see more clearly an important difference in perspective about man and his works, one that underlies the whole nuclear controversy. Some people, impressed and fascinated by the glittering achievements of technology, say that if we will only have faith in human ingenuity (theirs), we shall witness the Second Coming of Prometheus, bringing us undreamed of freedom and plenty. Some other people think we should plan on something more modest, lest we find instead undreamed-of tyrannies and perils, and that even if we had an unlimited energy source, we would lack the discipline to use it wisely. Such people are really saying two things: first, that

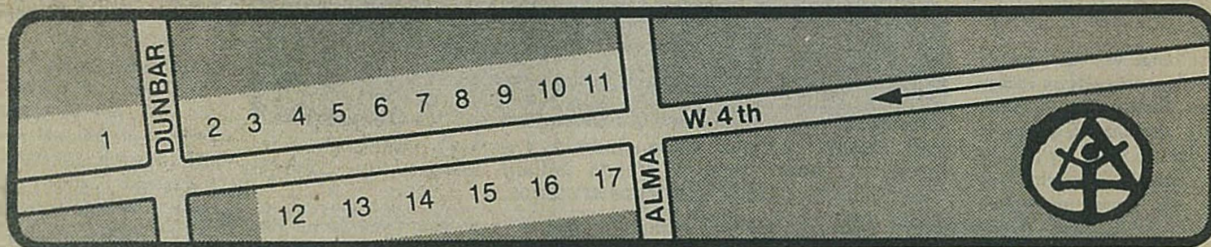
energy is not enough to solve the ancient problems of the human spirit; and second, that the technologists who claim they can satisfy Alfvén's condition that "no acts of God can be permitted" are guilty of hubris--the human sin of divine arrogance. We have today an opportunity--perhaps our last--to start to foster in our society a greater humility, one that springs from an appreciation of the essential frailty of the human design. ■

Amory Lovins is a consultant physicist concentrating on energy and resource strategy. He has collaborated with several UN Agencies, OECD, the International Federation of Institutes for Advanced Study, the MIT workshop on Alternative Energy Strategies and the Science Council of Canada.



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TECHNOLOGY

Technology is the means by which the creative human mind has an effect upon the world, by which we use the planet for our continuing survival. Every tool we use at every scale of activity is a function of technology.

From knife, fork and spoon through to six-story-high strip-mining earth-eaters to intricate micro-mini computer circuitry, all are devices of technology. In tribal societies, technological tools are vital in the perpetual struggle for survival on the land. In the industrialized world, techniques continue to be evolved that aspire to transcend the human condition of work as we have known it.

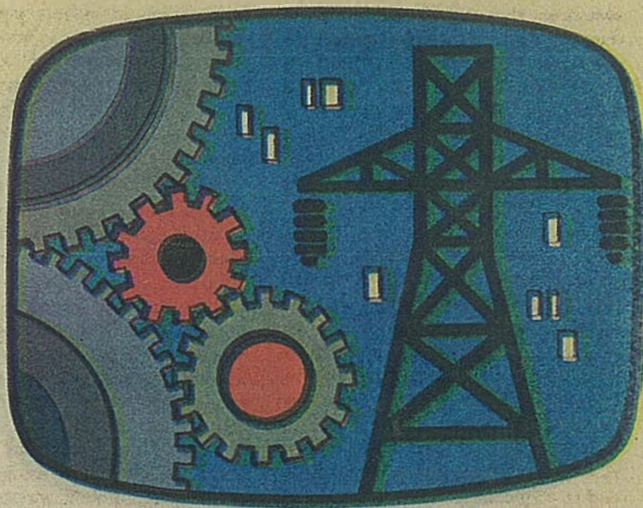
On one end of the scale of technology, industrialized nations tend towards giantism and mass production. Far on the other end, the poorest of the poor need the most simple techniques for making

survival a little easier.

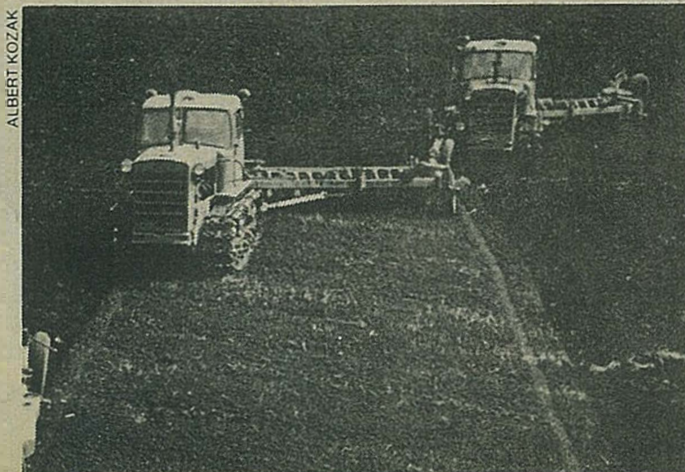
A balance must now be found that reduces the demand upon fossils fuels and the rapid depletion of finite natural resources, and of providing the means of progress to destitute people at a scale 'appropriate' to their needs.

Intermediate technology advocate E.F. Schumacher has defined four criteria for balancing the scales: a) smallness; b) simplicity; c) capital cheapness and d) non-violence (i.e. ecological sensitivity).

Criteria such as these call for more equitable distribution of the means for development overall. In poor societies, this can mean — simply and basically — a better life. In terms familiar to North Americans, appropriateness-of-scale infers a re-orientation of our values that can lead to a revitalized social system — a rhythm that can feel better, that is closer to the earth.

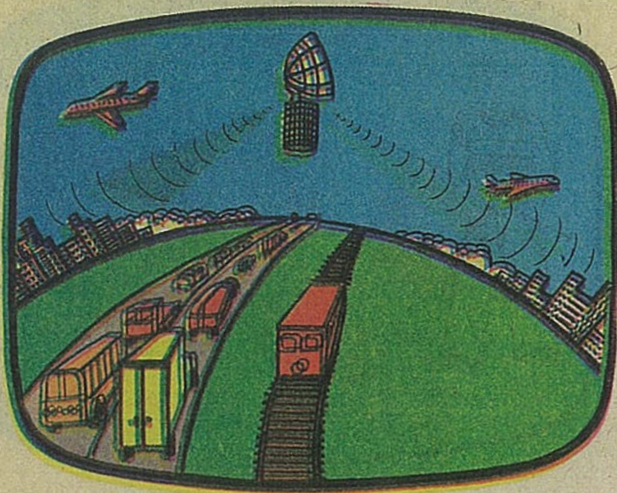


SEISUKE FUKUOKA



ALBERT KOZAK





TRANSPORTATION AND COMMUNICATION

Transportation is the vehicle for commerce and the physical link between people. By land, water and through the air, our modes of transit connect settlements together. And while transportation is the network for moving goods and people, communication is the exchange of ideas and information at rates approaching the speed of light.

Historically, human settlements have grown up around transportation routes and points of transfer. Where settlement patterns used to be compact and pedestrian-oriented, the introduction of the automobile has stretched and expanded settlements at a fantastic rate of growth.

Until recently, cheap fossil fuels have supported suburban sprawl and its partner, the highway. The North American commuter lifestyle has contributed to traffic congestion, air pollution and inefficient city office cores that sit empty between 5 p.m. and 8 a.m.

Also, quick road construction has encouraged land speculation and exploitation, thereby distorting natural relationships between the 'character' of a land area and the actual use to which it is put.

An emphasis is needed on more public transit, and the discouragement of the car in dense urban areas. Better still, social services and employment opportunities can be decentralized and located closer to residential neighbourhoods. (This, of course, implies clean industrial technology.)

Transportation routes should support livable regions for people. People, in turn, must define for themselves the elements of a healthy community. And this is where the recent developments in communications techniques and technologies can play an integral role — in making available all the information that is necessary for complete and truly representative decisions.

Computer storage of pertinent facts, simulation displays of planning options (transcending the written and spoken word), transmission of information anywhere by satellite, all these 20th century 'marvels' can now be applied to solving our most immediate problems.

For the resolution of disparity amongst the people of Earth, the more efficient application of transportation technology and a more universal access to communication techniques each have an essential role to play.



UNITED NATIONS



PAUL ALMASY

PLANETARY BIRTHRIGHT

Within the ideal, every person born onto this plentiful planet has certain inalienable rights to the basics of a wholesome life. These are: food & water, shelter, clothing, healthcare, education, opportunity and choice for meaningful employment.

While the means to accomplish the ideal standard for everyone are real enough, our value system greatly distorts the end results.

Westerners eat large portions of meat while some four hundred million children are starved of protein. Massive industrial complexes and our lavish '5-gallon flush' toilets consume and spoil great quantities of water, while so very many do not even have clean water to drink.

City office cores are empty and desolate at night while millions sleep in hovels. The heights of fashion consume all sorts of advertising energy and call for daily change of apparel, while great numbers live in tattered rags.

University complexes house so-called 'students', many of whom are sleepy, spoiled and removed from the street reality, while the great majority of humanity

is illiterate and completely without choice.

Machines are developed to do the work of a hundred hands (meaning more profit for the few), while a hundred million scramble for scraps and any opportunity to work.

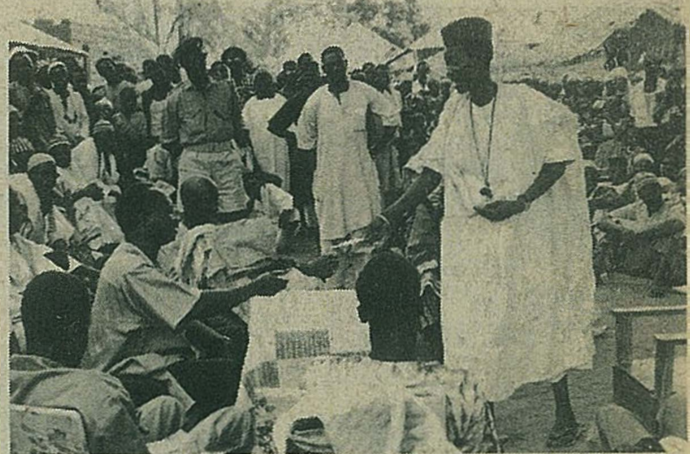
The extremes of such inequality are quite understandably beyond the comprehension of most of the well-fed. How can such injustice and disparity be happening?

Answers must come in the same breath as solutions. No political, philosophical, or economic panacea will suffice.

In a world where we can send human beings to the moon to pick up rocks, we must surely be able to distribute the earth's great wealth more evenly for people everywhere.

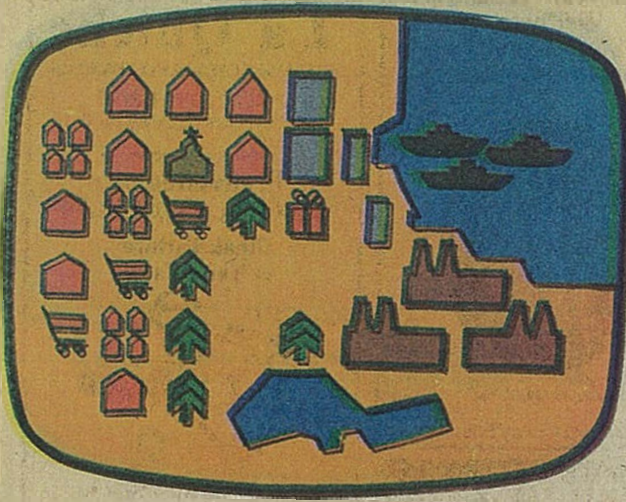
Realizing a planetary birthright for all inhabitants is just the start. The real step forward is providing the means for self-determination, where we can contribute to the quality of communities fit for nature-sensitive human beings.

Can anything less be called 'civilization'?



UNITED NATIONS





PLANNING

Planning is the process of interpreting the needs of the future and then shaping development to fit that interpretation. Decisions for planning are based upon the information and values that are considered important to those in position to effect development patterns.

Economic development guided by the ideal of most-rapidly-achievable-rate-of-growth has resulted in over-concentration of populations, uncontrolled environmental toxins, disparity of opportunity from region to region. The guarded value of 'big profit now' planning decisions are made by the few but affect the much greater majority. The planning process has been a one-way communication, whereby the 'profes-

sionals' interpret the needs and wants and then tell the people what they are going to get. When the people affected by the decisions made are brought into the planning process, conflicting and complex problems enter along too. Conventional planning methods are quickly seen to be outdated, overloaded and incapable of truly reflecting multi-dimensional input.

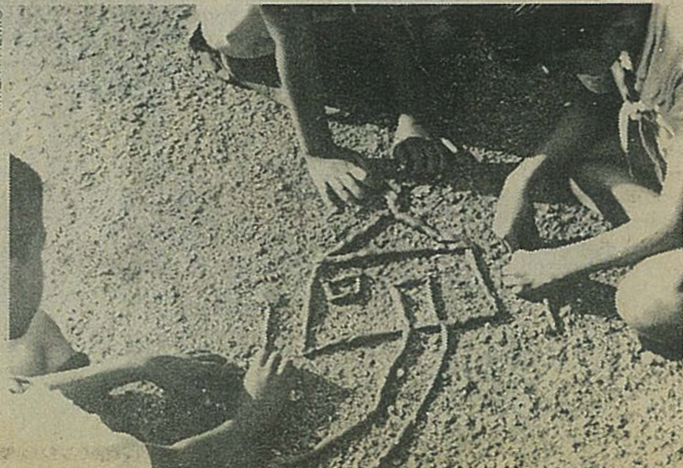
New planning methods are needed whereby the pertinent elements can be placed in understandable 'patterns of choice', so that the most appropriate decisions can be made at any scale of development. Within our world of rapid technological growth, every person can now be involved in the decisions that affect their life. All that we await is the 'political will'.



MANFRED ERCLERLURAU



PRIMERPREMIO



LOCAL HABITAT

In the first two issues of HABITAT GUIDE, we reported on the many local groups and activities in and around Vancouver that were ongoing in the spirit of Habitat.

With this, our special conference issue, we are noting what some of these groups are doing at and for the conference itself.

We have kept the information general--and brief--because a list of speakers, topics and detailed program descriptions would fill our entire magazine all by themselves.

Please note that we may have missed including somebody along the way because of space limitations or simply because we didn't hear about you in time for publication. If this is the case, we extend our apologies.

However, the first issue of HABITAT WEST, to be published after the conference, will contain continuing information on local community-oriented groups, organizations, activities, programs, etc., as well as featuring a review of the conference itself.

If the coming of Habitat has increased your interest in the world around you, then turn to page 3 to get your first issue of HABITAT WEST.

Specific times and locations for those Habitat Conference programs which are sponsored by local people can be found in several ways. The same sources provide the overall grand schedule of events for everything related to Habitat:

1. The Habitat Pavilion is located in front of the Courthouse in downtown Vancouver on Georgia between Hornby and Howe. It has been built especially as an information centre and can provide all the details on the U.N. Sessions, on Habitat Forum activities, on Festival Habitat, the Crafts fair, all the film screenings, and on every special event. Our centre-fold map shows all roads and routes leading to the Habitat Pavilion, as well as the special bus routes to the Forum and to U.B.C.

2. Habitat Station broadcasts conference activity all day every day on the community channel for cable T.V. subscribers.

3. Building number 6 on our Habitat Forum map contains an information centre for the Forum proceedings. Once you are down on the site, there's lots to see and do.

4. The special telephone number for all questions about what's happening where and when for Habitat is 689-6222.

A special effort should be made to take part in some aspect of this super-event. Habitat is the first of its kind in the history of North America. The range of cultural and educational activities is truly remarkable. Don't let Habitat pass you by.

CABLE COVERAGE

From 7 a.m. until midnight every day until Habitat ends, all the community cable channels in the Lower Mainland form a special network called Habitat Station.

This far-ranging cable network broadcast includes the famous Habitat Films, live coverage of the governments' and the people's conference, and special news updates.

If you don't go downtown or out to the Forum at Jericho Beach, then watch the action of Habitat on Habitat Station.

ART GALLERY

Night Shift, the Vancouver Art Gallery's contribution to Habitat, is an innovative late-night programme of performing arts. Three times every night between June 1st and 10th at 10:00 p.m., 11:30 p.m. and 1:00 a.m., Vancouver artists will perform.

As co-ordinator Dorothy Metcalfe describes it:

"The Night Shift at the Gallery was conceived not only as a salute to Habitat and a tribute to the many artists who choose to live and work and grow and contribute to this city's cultural landscape. It's also a special invitation to Vancouver's often-overlooked 'night people'--the shift workers, the insomniacs, the gregarious, the lonely, the 'just-no-time-in-my-day-for this' sort of people. Now there's a Night Shift at the Gallery and it's mostly for you."

The Gallery is located in Vancouver on Georgia street between Bute and Thurlow.

LIVABLE REGION

The Greater Vancouver Regional District is looking ten years ahead at the growth and development of this area. Towards planning the shape and size of the G.V.R.D. for 1986, a public information display and questionnaire has been made available to citizens in Lower Mainland municipalities over the past months.

This exhibition will be open to consideration and inquiries at the Forum for the duration of Habitat, so that local people can express their views on the future of this region and for visitors to see such a process in action.

WESTWATER

The Research Institute's book on the deteriorating condition of the Fraser River, including recommendations on how to maintain the health of this great water body, becomes available in June. It is entitled *The Uncertain Future of the Lower Fraser*, and will cost \$3.50.

Westwater provides a series of informative bulletins on water ecology. For more information, phone 228-4956.

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HABITAT WEST
see page 3

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KANOLE H00ATAI



LOCAL HABITAT STREETS FOR PEOPLE

June 5th is World Environment Day. It is one day chosen for people to think about the condition of the planet and our possible futures.

Since this date falls during Habitat, a world-wide event is happening that relates to the earth's environment through the themes of human settlements.

Some 140 countries around the world are closing streets to vehicular traffic on World Environment Day this year. When added to those settlements that already have traffic-free zones for pedestrians, some 300 cities and towns will be part of a global Streets for People celebration for Habitat.

Here in Habitat hometown itself, streets in three separate parts of Vancouver will be filled with festivity on this Special Saturday, June 5th. As part of Festival Habitat, the ethnic community of Chinatown has prepared a special program that even includes the ancient Dragon Dance.

The cobbled streets of Gastown will be alive with music, dance and extra attractions.

And the merchants of Robson Street Internationale open a special marketplace, complete with street-theatre, hands and wandering minstrels.

CCNR

The Canadian Coalition for Nuclear Responsibility co-ordinates more than forty anti-nuclear groups across Canada. The primary objective of the coalition is the full disclosure of all information pertinent to Canada's technological and economic involvement with nuclear energy.

Atomic Energy of Canada is a Crown Corporation engaged in the exportation of plutonium-producing CANDU reactors to non-nuclear countries—giving even more governments in an unstable world the means to produce atomic weapons.

Such nuclear sales contracts lock Canada into a nuclear future. CCNR demands a complete public accountability of Canadian nuclear energy policy. Phone 263-7831.

NSA

The Neighbourhood Services Association of Greater Vancouver welcomes its international counterparts to this city during Habitat.

The International Neighbourhood Services Conference will take place at U.B.C., parallel to Habitat Forum.

The subject of this 12th International Conference is Participation in Local Development, and is based upon the belief in the ability of people to govern themselves and to be integrally involved in management of community services.

For more information, phone 731-6511.

HABITAT WEST

Hometown Communications, the publisher of HABITAT GUIDE, announces a new magazine. It's called HABITAT WEST and is designed to keep you in touch with the groups and activities that have appeared in the three issues of the GUIDE.

As well as reporting on our local human settlement in and around Vancouver, HABITAT WEST will continue to follow-up on the intentions set during the U.N. conference.

To receive your copy, complete the "clip-out" on page 3. If you have any information that deserves public attention, send that along too.

HOPE VILLAGE

Hope Village is a program at Habitat Forum centered upon Spirit in Community. A collection of temporary structures will house discussions, displays and an area especially for meditation.

The schedule includes an idea exchange on spiritually-based communities such as Auroville and Findhorn, notable speakers from a wide range of followings, and a series of seminars on sacred music and architecture.

Consult the Forum program schedules for details.

SOCIAL EDUCATION

The Symposium on Social Welfare in Human Settlements takes place at the School of Social Work at U.B.C. and is being held in conjunction with Habitat. The purpose of the Symposium is to bring people experienced in helping the disadvantaged together for an idea exchange. The Symposium will promote the implementation of more effective social welfare policies by organizations and governments at all levels.

For more information, phone Prof. Marg Hill or Prof. Richard Splane at 228-3251.

INTERFAITH

Interfaith Habitat Forum is an ecumenical representation to the non-governmental program at Jericho Beach. The primary emphasis of Interfaith is on the spiritual aspects of people meeting each other.

IHF maintains a booth during the conference to co-ordinate activities such as:

- invitations into congregational communities
- special Habitat Worship services
- requests for attending groups or individuals to visit locally
- personal tours for guests to Vancouver

For further information, phone 261-5011 or visit the booth at Jericho Beach.

LOCAL HABITAT

COM/PLEX

The fourth regional conference of the Pacific Coast communications community sponsors a special exposition on communications tools for human settlements at Habitat Forum on Monday evening, May 31st at 7:30 p.m.

The program includes a graphic introduction to today's world of communications, as well as workshops on people-oriented videotape, shortwave radio and microcomputers.

The size and price of such technology is now within range of individuals and small organizations. Although simple to operate, such equipment is capable of wide-ranging communications.

Among the local groups participating in COM/PLEX are Video Inn, ISIS Women and Film, Vancouver Co-op Radio, and the Pacific Women's Graphic Arts Co-op.

For more information, write to Brian Livingston, COM/PLEX, Cascadian Regional Library, Box 1255, Eugene, Oregon, 97401.

FESTIVAL HABITAT

Throughout the Conference and beyond, until July 5th, the streets and entertainment halls of Vancouver are alive with activity in celebration of Habitat. Performing arts from across Canada are included in the programme, as well as craftspeople, innovative film-makers, our ethnic communities and a wide selection of local Vancouver artists.

Every single day is filled with Festival Habitat events. To find out what's happening on any given day, visit the Habitat Pavilion, or phone 689-6222.

IDERA

IDERA is a non-profit resource centre with films and print materials on international development issues relating to the Third World. It coordinates information for groups such as Oxfam, CUSO and the United Nations Association, as well as assisting them in their various educational programs.

For Habitat Forum, IDERA is providing films on various alternate development models proposed by Third World countries. IDERA's outreach program has organized meetings on Habitat-related issues across the province in such communities as Nanaimo, Castlegar, Trail and Kimberley.

(It should be noted that the public discussions outlined in the previous issue of Habitat Guide have been organized under the sponsorship of the United Nations Association, not IDERA.)

IDERA provided films on human rights issues for that event.)

For further information, please contact Jim Monro, Doug Coward,

Betty-Ann Buss or Susan Evans at 732-1496.

NFB

The National Film Board of Canada has provided several settlements-related films for Habitat. Among the titles are the Board's special production, *A Sense of Place*, as well as *Cree Hunters of Mistassini*, a film about native Indian displacement at James Bay, and *New Bargain*, on the controversial New International Economic Order.

These and other films will be shown at the Forum as well as at the N.F.B. Theatre at 1155 W. Georgia. Consult the program schedule that is available at the Habitat Pavilion or that is broadcast on radio and cable television during the conference.

UNA/SPEC

The United Nations Association, working in co-operation with the Canadian Scientific Pollution and Environmental Control Society, hosts a local habitat display at the main branch of the Vancouver Public Library during the conference.

Included in the exhibit is SPEC's audio-visual presentation on urban expansion in Vancouver and the Lower Mainland and the consequent effects on the ecosystem of the Fraser Valley.

Also on view for the public is a series of programs specially prepared by local students on Habitat themes.

The Library is located at the corner of Burrard and Robson in downtown Vancouver.

TRAILS

A series of walks through and talks in the University Endowment Lands are scheduled for Conference-time.

Proposals for a major park on the U.E.L. are now being considered by B.C.'s provincial government. Park advocates describe these 1700 acres as a truly great forest area, lying between the city of Vancouver, the University of B.C., and the sea at the mouth of the Fraser River.

A decision to permanently save this untouched forestland can be an action of historic importance for Vancouver equal to the founding of Stanley Park 87 years ago.

For further information, phone 681-1141.

B.C. ECOLOGUE

A handbook for ecology action in B.C. will be available for public use by the summer. Entitled *B.C. Ecologue*, it will serve as an introduction to environmentalism generally, and will focus specifically on the eco-problems confronting British Columbia. The handbook will provide resource information on issue-oriented groups and on possible government directions.

For more information, phone Arthur Gladstone at SPEC, 736-5601.

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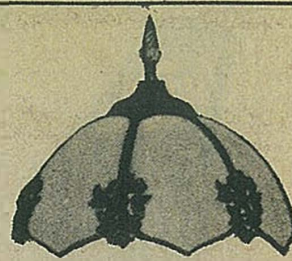
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LOCAL HABITAT

GREENPEACE

The Greenpeace Foundation continues to show strong leadership and is still somewhat ahead of its time on that all-encompassing question of planetary responsibility. What follows is the Greenpeace Nuclear Resolution for Habitat:

A review of the Habitat preparatory Conferences in Caracas, Teheran, Cairo, Geneva, and New York reveals that there has been no serious consideration of nuclear power as a factor in present and future human settlements. It can only be concluded from this that the U.N. Conference on Human Settlements intends to avoid discussion of what is seen by many to be the most serious threat to the security and stability of the entire earth.

One is reminded of the United Nation's reluctance to address the problem of continued atmospheric nuclear testing by France and China at the 1972 Conference on the Human Environment in Stockholm. Only through strong representation by the NGOs, in particular the Greenpeace Foundation, was the issue finally brought before the official U.N. Conference by the delegation from New Zealand. The result was a resolution by the official conference condemning the continuation of atmospheric nuclear testing.

It would appear that similar pressure must now be exerted by the NGOs in order to assure full discussion of nuclear power as a present and future energy source for human settlements. Among the many pressing issues that must be discussed are the following:

1. Nuclear reactors are proliferating at a tremendous rate. More and more cities are turning to fission power as a source of energy. If present trends continue, every city in the industrial world and many in the developing world will have one or more nuclear plants in their vicinity by the end of the century.

2. All nuclear reactors discharge radioactive contaminants into the environment. Radiation causes genetic defects and cancer in all forms of life. There is no "safe" dose of radiation—any increase in the level of radiation to which people and other species are exposed will result in a proportional increase in the number of genetic defects and cancers.

3. The problem of nuclear waste disposal is unresolved and is becoming more critical as the number of operating reactors increases. These wastes will be dangerous for many thousands of years. The production of these substances constitutes an inexcusable act of global immorality when one considers the potential impact on hundreds of future generations.

4. Plutonium is being produced at an ever-increasing rate. It is the most

dangerous substance on the planet as it is the raw material for nuclear weapons, the most poisonous element known to man, and has an effective life of 240,000 years as a radioactive contaminant. Again, it is an act of global immorality to produce this substance.

5. If terrorists were to obtain the plutonium resulting from nuclear powerplant operation, they could hold whole cities to ransom. This could disrupt the social fabric in a manner that is unprecedented in history.

6. If a nuclear powerplant is disrupted for any reason, (malfunction, earthquake, terrorists), the resulting radiation could kill thousands of people and render large areas of land uninhabitable for centuries.

There can be no doubt that the prospect of continued proliferation of nuclear power is one of the most serious threats to the stability and security of human settlements. The nuclear industry, with the cooperation of many national governments, is actively and forcefully promoting fission power as the solution to future energy requirements. The economics of uranium, plutonium, and nuclear powerplants has become a very significant factor in international trade and relations. Successful opposition of the trend to nuclear power will be difficult due to the massive investments already made in the industry. The United Nations could add considerable weight to the absolutely necessary elimination of this form of energy production. In the opinion of the Greenpeace Foundation, the U.N. Conference on Human Settlements is obliged to address this issue as a top priority item of discussion.

The N.G.O.s should work towards making the strongest possible representation to the official conference on the matter of nuclear power for human settlements. A resolution along the lines of the following would adequately express the position of the Greenpeace Foundation in this matter:

Whereas nuclear fission as a source of energy poses a serious threat to the present and future security and stability of human settlements and,

Whereas an extensive program of energy conservation in conjunction with the development of alternate energy sources (solar, wind, geothermal, etc.) could eliminate any dependence on nuclear power,

Let it be resolved that there be no further construction of nuclear powerplants and that those powerplants already in operation be phased out of operation as soon as possible.



.....HABITAT WEST

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WE DRIVE big cars, use throw-away products, flick on heating and air conditioning switches with thoughtless abandon. We're on an energy binge and shortages are inevitable if we don't cut back on our growing consumption.

That's one argument for conservation. There are others: soaring capital costs, environmental impact, social distortion...

THE SIMPLE TRUTH is that we cannot live in the future as we have in the past. If we continue to gobble up energy at recent rates of increase, we'll need twice as much of it in just 12 years. *We won't have it!*

In terms of oil and gas production, our best years appear to be behind us. Most of our readily accessible hydro-electric sites are now in use. Coal deposits are difficult and costly to develop. Other forms of energy—biomass, solar, wind and nuclear for example—will have a role to play, but can't be depended upon to solve all our problems.

Conservation is the only energy option open to us which can work quickly and at low cost.

The goal: a saving of 40% by the year 2000.

A 20% cut in projected consumption by 1985 is a saving equal to 75% of

our current oil imports. A 40% reduction by 2000 equals the output of 10,000 conventional oil wells or 55 nuclear stations.

This will not mean drastic changes in lifestyle. It's possible with modest savings in daily living, industry and transportation.

Is all our consumption and convenience really worth the price?

Other countries seem to have found comfortable standards of living without extreme energy consumption. In Sweden, a highly-industrialized country with a climate and living standard like ours, they use *one-third* less energy per person than we do.

France, Germany, Finland, the United Kingdom, Denmark and Italy all use less than half our energy per person.

By saving energy we can not only avoid future shortages but also improve our quality of life.

Efforts to lower consumption—through smaller cars, more mass transit, better built homes, more efficient industry, less waste production, more personal effort—will all save energy. And help our environment. And help to fight inflation. And help to make us more self-

reliant and appreciative of simple pleasures.

In short, energy conservation can improve our overall quality of life.

Yes, it will take some effort because we've grown accustomed to waste. But is there any sensible alternative? **If you're not part of the solution, you're part of the problem.**

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