

From: [REDACTED]
To: [Site C Submissions BCUC:EX: Clive Justice](#)
Subject: Re: A Plea for the Peace
Date: Friday, September 8, 2017 10:42:53 PM
Attachments: [PeacePlea.pdf](#)

Please see our revised and improved edition, attached.

On Wed, Aug 30, 2017 at 6:17 PM, BC Bigleaf [REDACTED] wrote:

submission from Clive L. Justice, Landscape Architect FCSLA
and Jill Whitelaw, PDC 1999

[REDACTED]

Thank you for receiving this contribution.

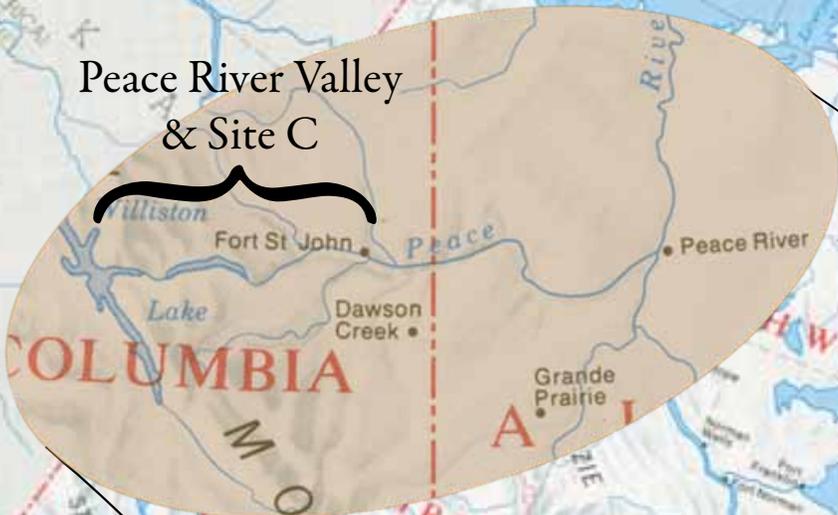
A Plea for the Peace

by Clive L. Justice, *FCSLA*
& Jill B. Whitelaw, *PDC 1999*

*Canada's
World Refugee
Obligations Met by
British Columbia's
Peace River Valley's
Site 'C' Settlement*



Peace River Valley
& Site C





**All great civilizations have had their beginnings in River Valleys beside great rivers.
Africa's Rift Valley remains as the origin of the world's peoples.**

*T*he Peace River is one of Western Canada's Great River Valleys. Unfortunately its position on globe earth far from Africa's Rift Valley leaves it out of the loop of history becoming home to one of the world's civilizations. The Peace River's less than benign climate has not been conducive to serious year round settlement, although with global warming this may change. We will just have to let nature take its course.

*H*owever the Peace like all the world's River Valley holds the elements for sustainable human settlement, access to continuous running fresh water with an obtainable source of protein in its fish and visiting wild fowl ducks & geese. In addition, the flooding annually of the valley uplands with receding silt & soil deposits provide rich & fertile plains for growing annual pasture grazing grasses and woodland forest trees for fuel and construction.

*W*hile not specific to the Peace, the description of North America's continental evolution of its climate modifying physical features as described by writers Jones and Cushman in the Peterson Nature Series The Prairie. I have copied the part of it that expresses North American evolution much better than this presenter ever could:

A New Canadian Settlement

* 1000 refugees Settlement Grounds
Should Site C not be built as a dam, it's land would need to be regenerated, an opportunity for refugees who in turn would be helping Canada to see with a wider perspective.

Our proposal:

- * Refugees to be accomodated on arrival in Canada settled & housed in the Site C Contractor's existing large camp.
- * all quarters UN operated and managed.
- * Refugees learn: by taking training in land husbandry, Tree Keeping, food and craft tree management & forest management, Permaculture; along with learning English, our Canadian history & cultural heritage.
- * PM Trudeau & his Minister of Indigenous Affairs with Tribal Chiefs of the Peace Region to meet & welcome the new immigrants

“Prior to the Northern Rocky Mountain uplift the entire central North American climate had been dominated by warm moist air masses that swept east from the Pacific from the Gulf of Mexico. The rising mountains created a barrier that blocked the Pacific storms squeezing out most of their moisture before it reached the plains. This rain shadow helped to create the more arid conditions that favour growth of grasses over trees.

Fossils of camels, rhinoceroses, horses and other grass eating herbivores unearthed on the plains suggest an erratic progression. Recent analysis of plant micro-fossils indicates that the extensive grasslands covered parts of the great plains even earlier perhaps beginning in the late Eocene Epoch, 35 million years ago.

These early grasslands were dominated by “cool season” grasses, species that thrive under relatively mild growing conditions. The quintessential Tallgrasses, including warm season bluestems and switchgrasses did not begin to appear until about 10 million years ago. Even then, forests continued to cover much of the Great Plains with grasslands spreading during drier climactic periods, and contracting during wetter periods.”

The warming and drying trend continued for several millennia reaching its maximum intensity between 8,000 and 5,000 years ago. During the height of this hot & dry period the prairie pushed eastward replacing forests in parts of present day Indiana Nebraska, Ohio and perhaps Pennsylvania [and also North into the provinces of British Columbia and Alberta. The sands of Western Nebraska[Probably North into B.C. & Alberta also]. All but a few isolated groves of conifers disappeared from the Western Plains. *Bos Bison* a smaller more agile species than the great plains, prairie dogs and ground squirrels proliferated, and Pronghorn populations climbed into the tens of millions.

About 5,000 years ago the Climatic Pendulum began to swing back toward slightly cooler & wetter conditions. By the time the first white explorers stepped out into the grasslands the forests had begun to creep westward filling

quoted from Peterson Series *The North American Prairie* by Stephen Jones & Ruth Carol Cushman; Houghton & Mifflin Boston 2004

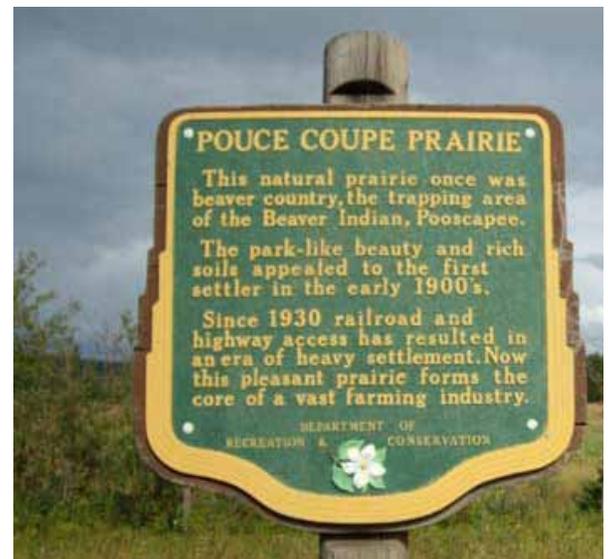
Implementation

Employment

* Team of consultants (-see A Modest Proposal to follow) to select suitable site C land location to establish orchards, prairie water dugout locations throughout site C area lands suitably contoured to build permanent Refugee Settlements based on the Mongolian Model. It is one of many Site C settlement schemes possible that can be implemented. Ian McHarg model recommended. Complete site analysis.

* Tree keeper/management family to include 1 male or female adult, head of household, 4 or less children - can have 2 babes in arms if the head of house is female.

* Orcharding: Model to have 32 soft fruit & hard fruit (edible nuts) orchards & Willows, *Corylus/Filbert*, pollarding canes for woven baskets. (elm, hardy elm), willow & garden stakes & woven wooden fences now fences.



the pockets of prairie on the Great lakes region & the upper Mississippi River Valley [and Northward to the Peace River Valley]

Nevertheless, all of these early travelers marveled at the expanse of grass that seemed to extend forever beyond the last islands of forest. Nineteenth-century author Washington Irving characterized the landscape as being “inexpressively lonely” and like “a desert world.” Writer Francis Parkman referred to it as “a barren, trackless waste.” In contrast, nineteenth-century artist George Catlin extolled a land of “soul-melting scenery... where I Heaven sheds its purest light and lends its richest tints.”

Whatever their opinions, writers & artists realized that the Canadian Prairie Landscape as opposed to the settled Landscapes of Britain, Europe and Eastern North America - it, the Canadian Prairie remained an evolving landscape. The BC Peace River, Grasslands with those of Alberta that blend into the Alberta is: hidden lakes and wooded rolling prairie lands extend East to meld into a background of the Caribou Mountains, Buffalo Head Hills & Birch Mountains complex. East of the hills & mountains lies the Athabasca River, the tar sands, the tar sands extraction rendering works & the open pit mines-holes around the Fort McMurray Settlement.

The Peace in the North winds & snakes around the south end of these Caribou Mountains and flows into Wood Buffalo, now the home of Canada's *Bos Bison* and the endangered Whooping Crane *Grus americana*. It is the second largest of Canadian National Parks.

It continues to the east where it becomes a series of lakes at east and of Lesser Slave River flowing North to Great Slave Lake. It one of the Canadian Arctic's Great Lakes that remain from the melting of glaciers that once covered Canada's part of the North American continent.

The first attempt at human settlement of the BC Peace River open grasslands, Alberta wooded rolling land, hidden lake & small lakes, prairie occurred just after the end of WW1

The Mongolian Settlement Model has the components to provide 1000 refugee families with sustainable year round food supply via an adequate and sized family shelter warmed throughout the winter by our endless supply of affordable natural gas, passive solar, and chickens which can be used for food, and also give off heat.

* to sustain 100 refugee families in construction buildings followed by a transition to greenhouse living, and a possible larger Arcology, see Miscellanea

* Each 100 family settlement to have living quarters:
48 - 4 and 8 block settlements, Each one of the blocks are either 4 homes or 8 homes, with cross corridor to entrance, connected to 32 year round greenhouses. Each greenhouse operated and managed by 1 refugee family.

* Site:

Site selection: These writers favours Ian McHarg's book *Design with Nature*, the key to maximizing the refugee & indigenous settlements, their numbers, & locations on the Peace; and Tasmania's Bill Mollison's Book, *Writings on Permaculture, A Designers' Manual*.

* In addition each 100 family settlement area includes 32 or more separate Prairie water dugouts and strings of combined dugouts.

* as the Settlement ground contour dictates settlement grounds amount 250 hectares more

in 1918-19, was by the Canadian Federal Government. The Peace and Alberta lands were called the Dominion Soldier Settlement Lands and were also subdivided into 10 and 20 acre plots to be sold to returning veterans and their families at very low prices with long periods & payment at very low interest rates to Veterans and their families. There was a minimum of infrastructure, veterans could earn enough working on roads, gravel roads, settlements sites, school sites and the like. It was not only other Valleys in Southern BC that were opened for soldier's settlements. Whereas not only in other valleys Keremeos in the adjoining east side of the Okanagan Valley and the adjoining Similkameen Valley. The Fraser Valley's Lower Mainland the program continued in 1945 for veterans of WW2 in Richmond, the Cowichan Valley on Vancouver Island, and Vernon in North Okanagan.

*T*he Dominion Soldier Settlement scheme on the Peace River lands was never very successful in attracting settlers; it's harsh Northern winters and remoteness, probably the main dissuading features. The Alberta Woodland lake land did prove attractive to settlement to veterans & other non veterans previously in settlements such as Beaverlodge where the Dominion Government established a crop and plant experimental station. See Vic Chanasyk, page 1 of Miscellanea.

*O*ther successful prairie land settlements in Alberta produce Grand Prairie, Spirit River & other smaller settlements on the Alberta side, with Dawson Creek and Pouce Coupe on the BC side.

*I*n this Landscape Architect's opinion, British Columbian Peace River valley grasslands are ready and waiting for the settlement. Not for veterans who are fighters of wars but their children and grandchildren remanent of their families who are victims of wars.

*I*n preparing Site C, that part of the Peace lands for the damming and flooding, BC Hydro, a provincial company, has built accommodations for it's fort's employees & prepared the ground for dam construction to flood Site C. By fortunate coincidence is made ready to take the first wave of 1000 or so refugee immigrants.

or less (rough guess by water could be larger or smaller well dugout.

* Dugout or string of dugout, string of lakes, drainage ground lake and prairie dugout ground slope.

* Woodland for fibre & tree wood, hardwood trees for lumber, woodlands located as shown in Mongolian Model see miscellanea image of site and greenhouse and adaptation for Site C.

* Tying together site with sounding lake & hillside, woodlands, an open prairie, grasslands, strings of lakes, bands of forest woodlands to give each Site C settlement a natural landscape, pleasing visually.

* Restored Landscape - using trees, swales (a tree system), ornamentals as well as edibles.

Transportation

* Look to town of Churchill, Manitoba & Bombadier Company as examples.

* Find ways to include Canadian communities & companies to provide a transport system to residents - Bombadier fleet of snowmobiles, maintenance teams, crews & staff to teach operation & maintenance. Churchill, Manitoba to provide knowledge of polar bear proof snow vehicles; where they solved their bear problem by devising safe work and transportation equipment.

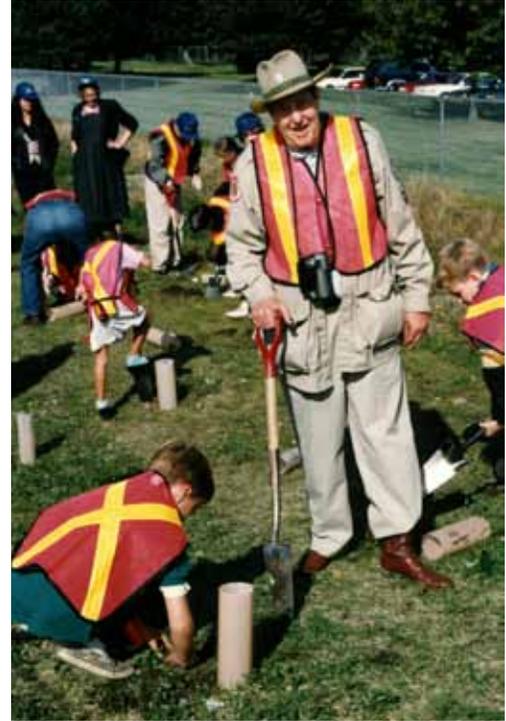
A start to settle, house & feed the world's current great human disaster. Those thousands of children and families who have lost everything, their homes, family members, and perhaps worst of all, their country. These people have lost their place in the world along with their hope.

*M*y proposition is: Canada through the United Nations for Our Country to redeem its place in the world, a place where hope can return and regain for the war ravaged immigrant, a place back in the world in Western Canada's Peace River Valley.

*T*he process could begin almost immediately. BC Hydro, Peace land owner, a BC Provincial body, could cede the land & preliminarily preparation land work and existing worker housing to the Canadian government, who then would give it to the UNHCR, United Nations High Commissioner for Refugees, who would 'Run the Show', or most of it. From selecting the immigrants to transporting them to the Peace, building additional housing and infrastructure. It would become the one **Grand Canadian Gesture** for humanity. Take up where we left off with newly funded mandate, for the Blue Berets in Peace Keeping.

Let's Do it Now!

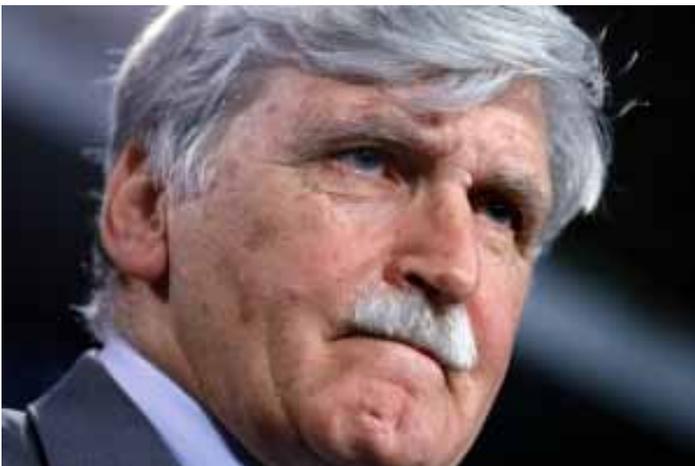
Respectfully, with due Canadian **Caution & Consideration** our two most Canadian traits.



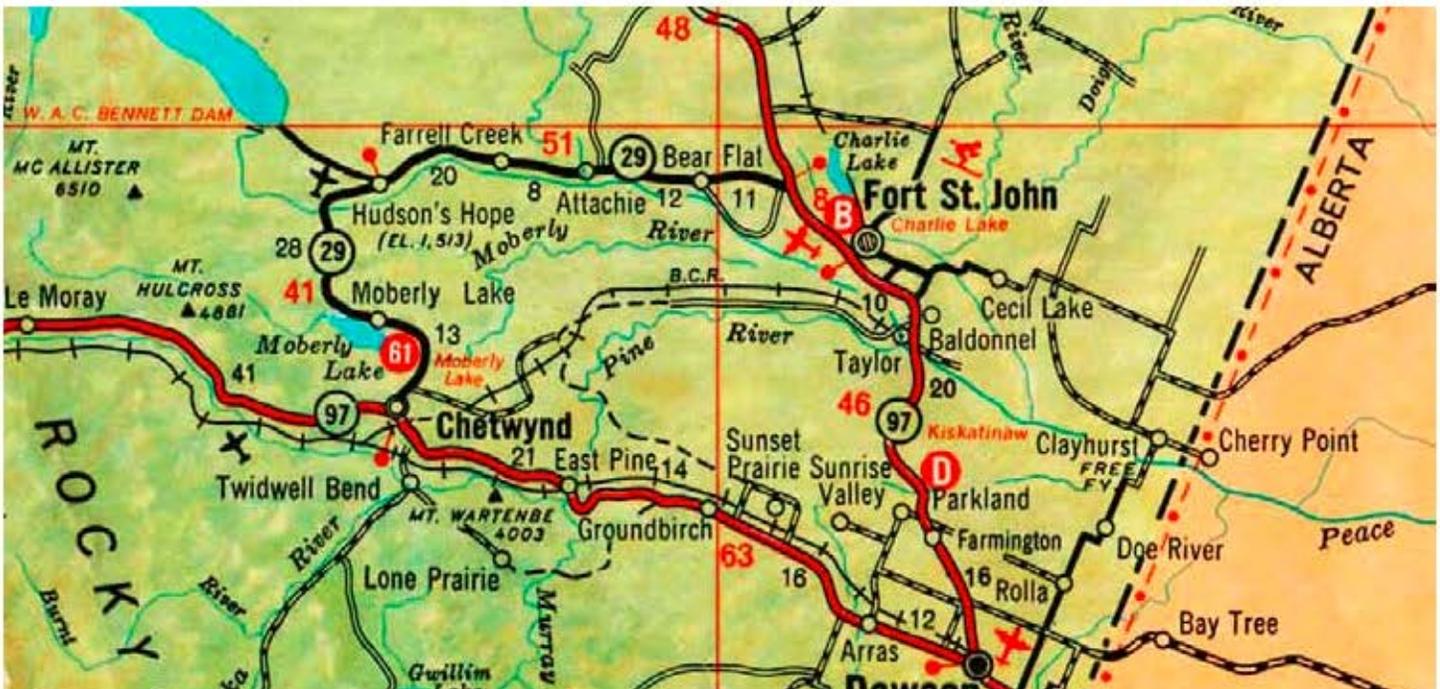
Planting Trees:

Treekeepers planting the Rotary Heritage Forest on the Cassiar Connector in NE Vancouver, 1996

Clive Justice seen here as site co-ordinator, Vancouver South Rotary



Canadian Senator, General Romeo Dallaire, Canadian Force Commander of UNAMIR, wearing the blue beret of the UN.



LEGEND

TRUNK ROUTES

- Divided Highway with Interchange
- Paved
- Gravel (Improved)

OTHER ROADS

- Paved
- Gravel
- Dirt
- Trail
- Under Construction
- Proposed
- Restricted Road

MILEAGES

- Mileage between towns and junctions
- Total mileage between red symbols

POPULATION SYMBOLS

● Prov. and State Capitals	⊙ 2,500 to 5,000	⊙ 25,000 to 50,000
○ Under 250	⊙ 5,000 to 10,000	⊙ 50,000 to 100,000
⊙ 250 to 1,000	⊙ 10,000 to 25,000	⊙ 100,000 and over
⊙ 1,000 to 2,500		

MAP SYMBOLS

- Provincial
- Federal
- Campgrounds
- Ski Areas
- Points of Interest
- Scheduled Airline Stops
- Other Airports
- Open 24 hours
- Inquire locally
- Ports of Entry
- Fish Hatcheries
- Time Zone Boundaries

ROUTE MARKERS

- Trans-Canada
- Interstate
- Provincial and State
- United States

SCALE OF MILES

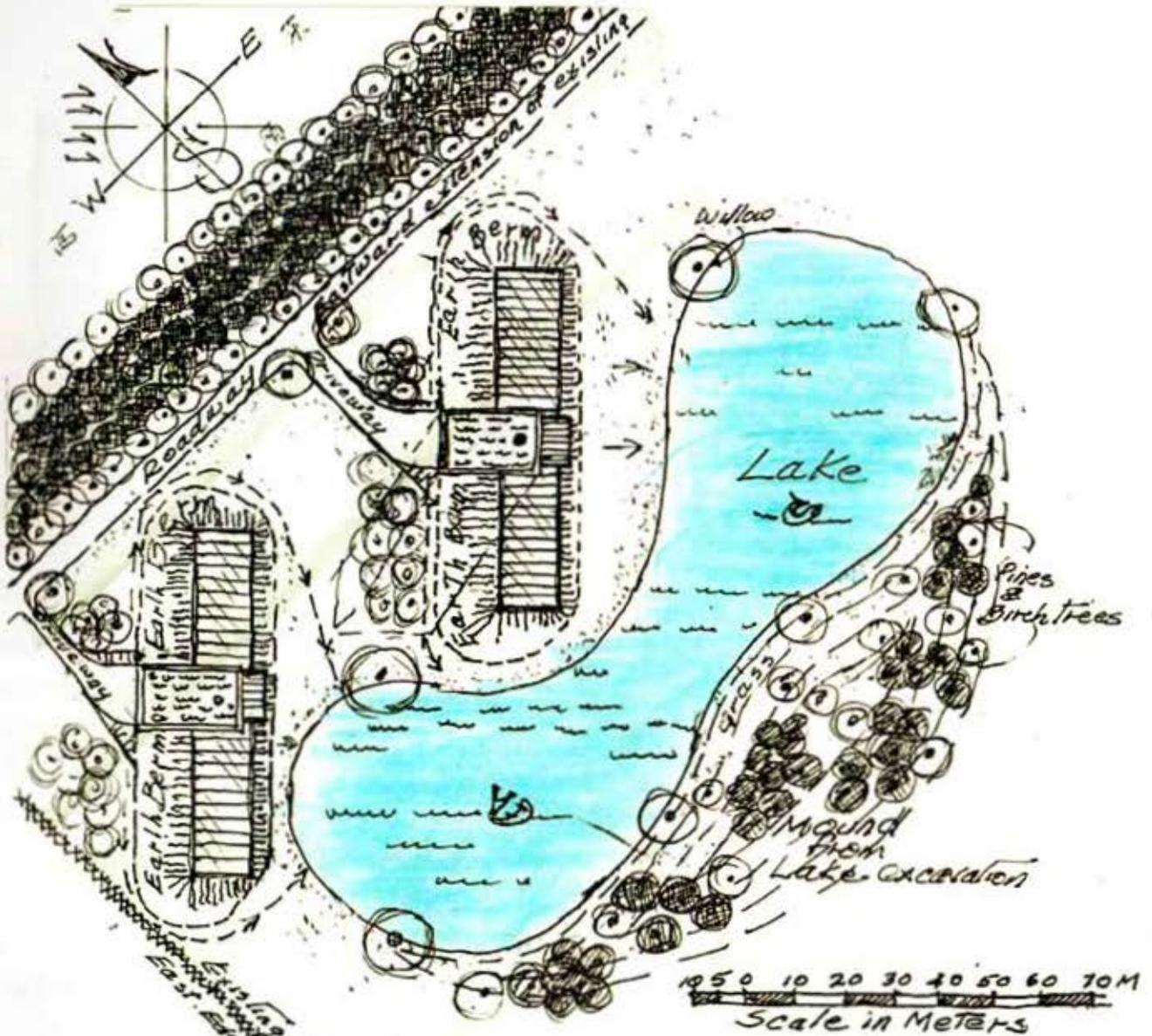
0 5 10 20 30 40 50 60

ONE INCH EQUALS APPROXIMATELY 34 MILES

NOTE - Distorted scale in northern area of the Province. Use mileages shown between towns.



Mongolian Model

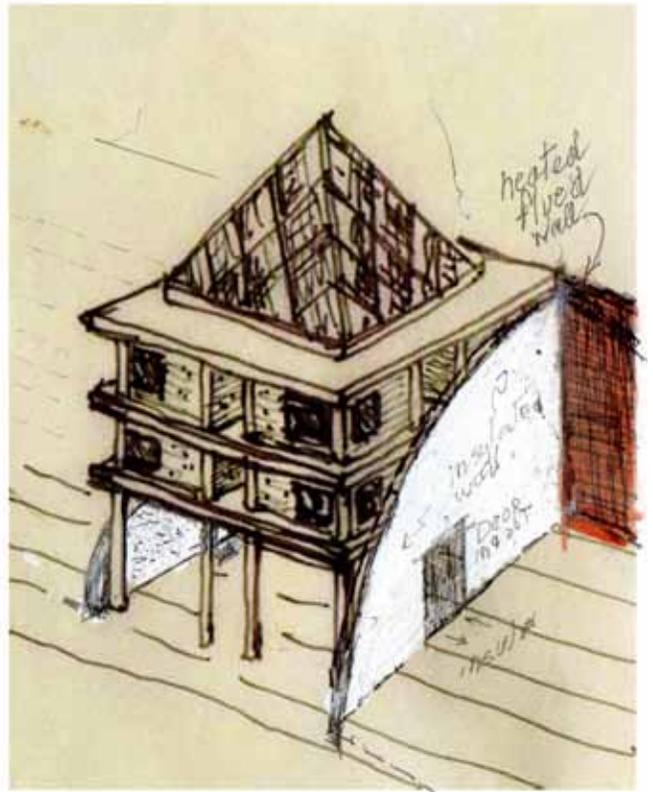
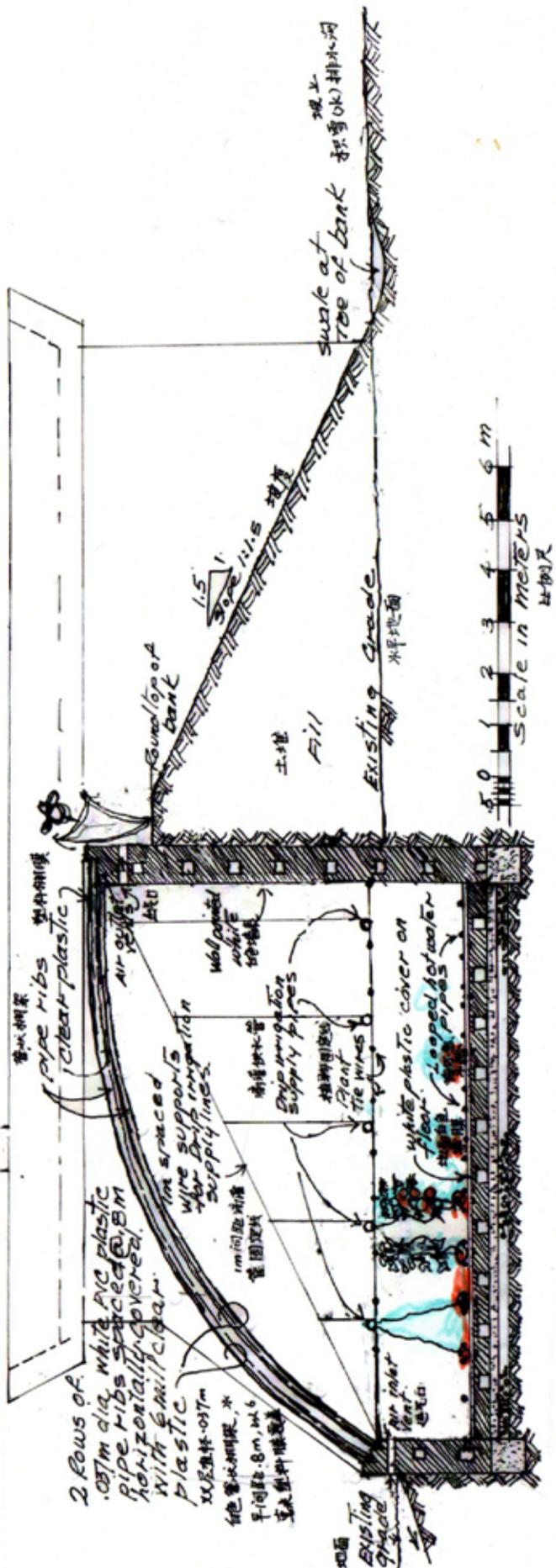


South - North
West - East

Siting of Greenhouses
for protection from
North-West Winter
Winds on the
Jan She Village
Site

Greenhouse

1 Mongolian Settlement Unit - Hailar, Jan She Village Site as Model



The site C modification accommodation between the greenhouses. Drawing by Stephen Sinclair, Architect, Landscape Architect.

Greenhouse Section

图1. 温室横截面图

比例尺



Carpathian Walnut
Juglans regia var *carpathian*
see story page M1

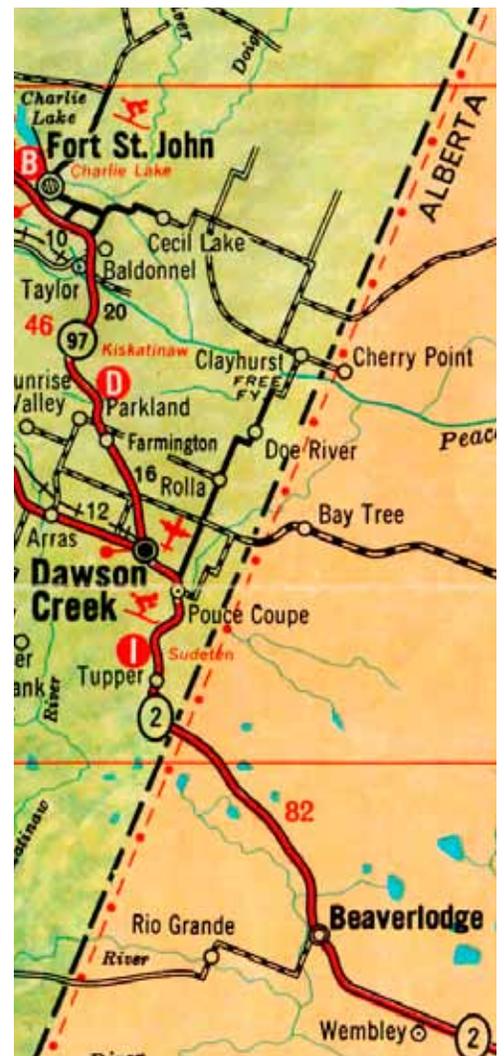
Greenhouse for 建设 Jan She



View of the Peace Canyon Dam bridge site including Highway 29 suspension bridge to Hudson Hope. photo CLJ

Victor (Vic) Chanasyk was born in Alberta the son of parents & grandparents Ukrainian Peasant farmers who had emigrated from the Russian Steppes, driven out in one of many waves that occurred in the Nineteenth & early 20th century. After graduation from a rural Alberta highschool, Vic Chanasyk enrolled in the University of Alberta, in the Province's capital city of Edmonton in the faculty of Agriculture and Horticulture program under Dr. Robert J. Hilton, professor of Horticulture, authority on Amelanchier, the Canadian Prairie native Saskatoon berry and other native prairie berries. [Several were the ingredients with plains Bison fat of Pemmican]

On graduation Dr. Robert Hilton saw to it that Vic got employment in Alberta's Experimental Station in **Beaverlodge**. It was not long after that Vic made superintendant of the station. In the 50's Dr. Hilton again stepped in on Vic's behalf & arranged for his favorite student to take the 4 year course in Landscape Architecture at UC Berkeley. Vic was the first Albertan [second western Canadian to become a Landscape Architect. Again with Dr. Hilton's influence Guelph school of Agriculture was selected to be the first school of Landscape Architecture in Canada to teach a full 4 year program in landscape Architecture. Victor Chanasyk became it's first Dean, or Superintendent, again with Dr. Hilton's help who was tending his Carpathian walnut trees.





the Peace River in Spring by Tuchodi /flickr

A Modest Proposal
To Use the Site C De-Treed Areas of the Peace River Lands
for Silviculture and Permanent Agriculture

by Clive Justice & Jill Whitelaw

Site C is now cleared and graded, lying fallow, and awaiting development proposals from sustainable environmental believers & practitioners with vision and initiative. Greenpeace, Sierra Club BC, the Wilderness Committee & the David Suzuki Foundation are all globally active, locally founded, environmental protection offices in our Province. BC is now working together across political party lines with the Green-NDP Coalition to support appropriate eco-sustainable options for our energy. Let it continue. One suggestion is autumn seeding in Fall 2017, before the first snowfall with Helio-hydro seeding of winter hardy rye grass, *Lolium perenne* var. 'Olds, alta', followed in the spring planting Poplars, *Populus trichocarpa* in the forest, in swales, woodlots, clumps and thickets along the valley bottom and hillside stands.

What if the pulp were then sent through a pipeline, perhaps even an existing or approved one, through an extended network of woodchip-slurry pipes? What if it were powered by wind generators or solar all the way along?

These Cottonwood hybrids are selected because the wood fibre makes a long-staple fibre suitable for **newsprint, copy, kraft & fine papers, books, periodicals, cartons, packaging products, paper towels, tissues & toilet paper**. One in particular, the Crown Zee Tacoma Cottonwood Poplar

tree *Populus trichocarpa* Torr. & Gray is one of the best. Another hybrid with very white wood can be manufactured into white paper using little or no bleach.

The BC Society of Landscape Architects / BCSLA's land management, professional commitment entails a full understanding of each of the provinces tree species palette [species of conifer & deciduous]: specifications for arrangement of stands of trees for forests, copses, 3, 5 or 7 tree clumps, lone tree landscapes, and edges: fall colour, density of colour, size, scale, how it fits into the landscape or into the meadow. Or, for example, initial planting of a temporary landscape of introduced different *Populus* species which will be harvested and made into pulp.

What if a Pipeline linked to the existing operational processing mills, and even closed mills & new paper and pulp mills up and down the BC Coast & Islands: Prince Rupert, the new Kitimat mill, the existing mills in New Westminster, Nanaimo, the Albernis, Crofton, Cambell River; and mills closed, mothballed or contemplated in process of being built or planned, throughout the Pacific Northwest, and our neighbours to the South: the mills in Everett, Tacoma, Idaho, Portland, etc.? A **Pulp and Paper Pipeline** for a myriad of **Paper Products**, serving not only our country, Canada, but also the rest of the world with our forest resources, technology & experience. Canada has more of this resource than any other part of the world.

We were so distracted by gas, drilling, fracking, LNG, bitumen, and extracting oil and gas from our Canadian prairie, Arctic & subarctic surface lands ruining, destroying & laying waste to our Northern Tundra surface landscape. We should have been ashamed but instead we buried them! We Canadians 'shilly-shally' on this issue and want to trust our government to make the right choices, to face up to the fact that fossil fuels are carcinogenic and non-renewable. The future of our world ought to remain pristine, natural and beautiful for 7 generations. We have a lot of bio-remediation to get this world back in shape after the promise of the 'American Dream'.

Each region has its own micro climate, species and visual landscape. What is needed is an Aesthetic, Education and Management Group for deliberating and guiding reforestation and sustainable harvesting. The BCSLA working group with the region's tree and resource experts, the BC Forestry Service (BCFS), UBC Silviculture, SFU Resource & Environmental Management, local agronomists, Indigenous Land Management and permaculture farmers to set planting standards for spacing and species, for the planting and maintaining

of pulp tree forests, clear-cuts, other forests, copses and woodlots, thickets and hedgerows, lone tree aesthetic landscapes, plantings by the rivers, and pasture feeding lands for wildlife.

A great practice would be to modify the arable Peace River Valley into grass hillsides, and rolling slopes with a series of berms and swales along contours, where trees are planted. Debris such as leaves collect in the swales to support the tree crops, as well as rainfall or water released from small earth dams or bodies of water above and channeled into them. This aids retaining the beauty of our landscape by inter-cropping our fast growing trees with nitrogen fixing trees and plants, cold-hardy and useful vegetation, cash crops, native plants, edge and companion plants for pest management, wildlife foraging, flowers for bees, creating a polyculture rather than a monoculture, all eventually succeeded by replanting a natural selection of Canadian trees of that region.

This land has been disrupted, and needs to regain biodiversity and balance. Mature forests have mushrooms and shade loving groundcovers, shrubs and native wildflowers under the tree canopy. The more mature the forest the more there is in it. Paul Stamet's has a product called the LifeBox, a box filled with Pacific Northwest tree seeds as well as mushroom spores. Stamets, from Oregon, also migrates through this region and may even help us design a very local LifeBox. Trees and mushrooms make up the bottom most and top most elements of a forest. In between are the other layers of the forest, such as shrubs and vines, which if they were native edibles such as small berries, or native potatoes-like plants could be highly productive for edible species and wildcrafting the commons and allowing even more opportunity for a balanced economy for all Canadians.

There is a need for improvement throughout the Peace Valley lands & unflooded bottom lands from just below the Site 2 dam structure to just below the site C area with the reservoir area, and the surrounding areas to the natural boundary at the BC-Alberta boundary. The top water line to the lower water line we can't landscape, but all of the lands around and above, that will be these gardens. Plant on cleared areas or in valleys on rolling terrain in plantations or in designated large farm areas.

Different ornamental gardens could be added. For celebrating Canada's Confederation of 150 years, for example, honouring pioneers, explorers, settlers and natives could include landscape heritage gardens from England's settlers, the Garden in Memory (CWLA, CLJ Chapter 11, 2013.) which they brought to Canada to live in this harsh landscape as pioneers, learning from Canada's landscape and plants and First Peoples to

survive. To celebrate this vast tract of land in good commemoration & try to reflect the made improvements.

Capability Brown, was nicknamed “Capability” because he would tell his clients that their property had “capability” for improvement.” (wiki) He was an English landscape architect. He is remembered as “the last of the great English 18th century artists to be accorded his due”, and “England’s greatest gardener”. He designed over 170 parks, many of which still endure. He Each park farm or garden to contain heritage plants, such as trees, flowers and ornamentals developed by Canadian horticulturists, Frank Skinner of Dropmore, Manitoba for roses and lilacs, and Isabella Preston of Dominion Agriculture for lilacs and lillies, and the ornamental crabapples, *Malus niedzwetzkyana* hybrids.

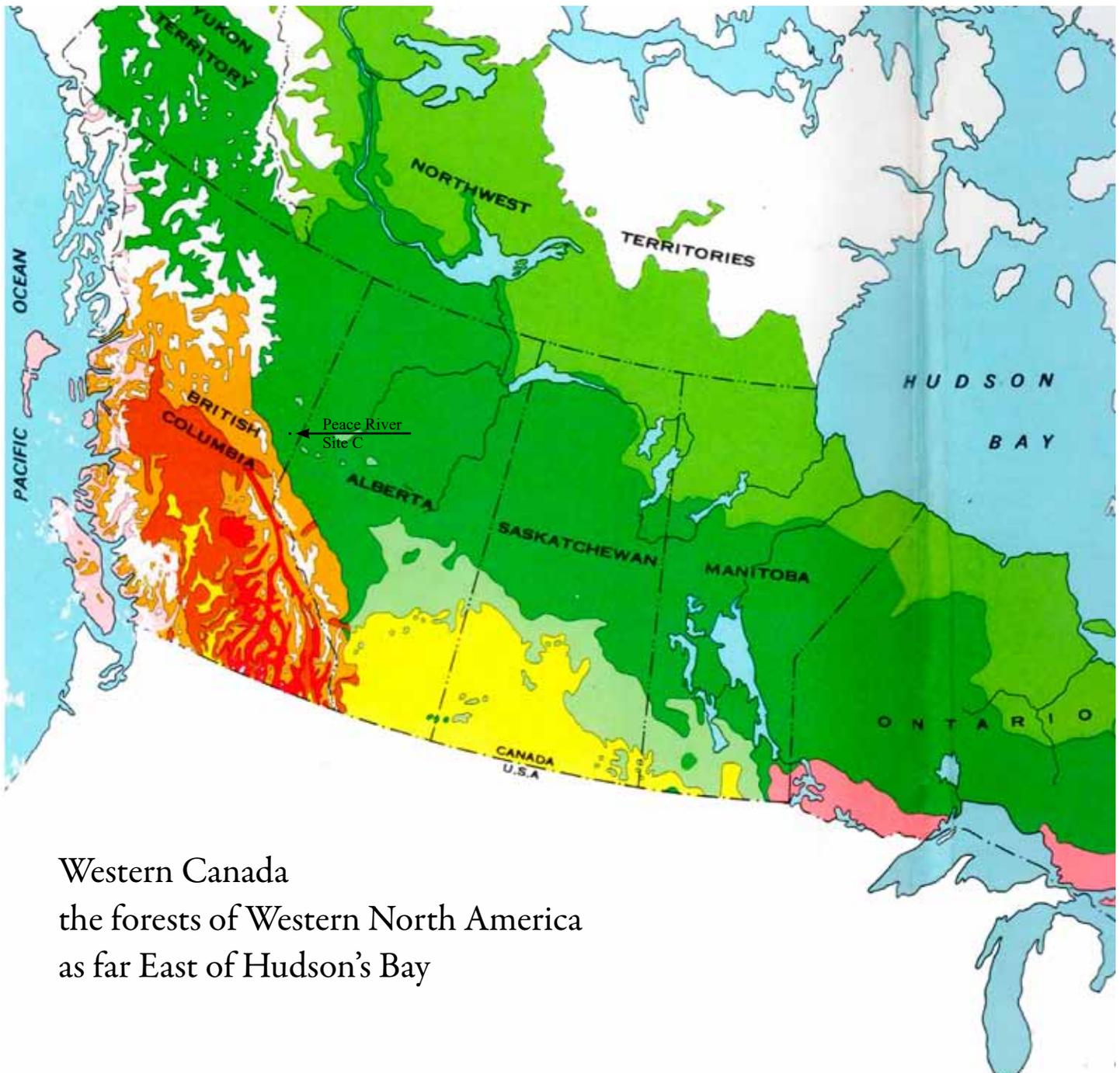
With the onset of computer technology everybody thought we were going to a paperless society, when in fact we could become the greatest paper, wood, fibre society ever. Look around, there are more newspapers than ever before, we still use and read books, give birthday cards, send and receive mail, ship globally and in cardboard boxes, ad infinitum. Canada, especially BC has experience with paper production technology and could be a market leader throughout the world. Pulp & paper technology puts Canada in a position to be one of the largest pulp & paper producers & exporters in the world, with the possibility to become very rich, a very un-Canadian idea, however, The pulp & paper industry, is a low carbon industry. By sequestering carbon into trees, and keeping that carbon in solid carbon form, that is, not burning it, but by turning it into pulp and paper, as well as furniture, shelter, garden trellises & structures, books, etc., we bring down the global carbon balance closer to 350ppm, a place where our storms subside, and our climate and biosphere may return to normal, pre-industry levels of atmospheric carbon, recreating our natural ozone layer. The **Clayoquot Sound Biosphere Reserve** is a great example of sinking carbon indefinitely.

Clive Justice is Landscape Architect, Urban Planner & Garden Historian. He lives and works in Vancouver BC.

Jill Whitelaw is a Graphic Designer & Book Publisher with BC Bigleaf Maple Books. She is also a Permaculture Consultant & Educator living in East Vancouver.

*links are found on the pdf /digital version for further info. See <http://bcbigleafmaplebooks.ca>

Landscape photo can be found on flickr at <https://www.flickr.com/photos/tuchodi/3551991021>



Western Canada
 the forests of Western North America
 as far East of Hudson's Bay

FOREST REGIONS		LEGEND PRINCIPAL TREE SPECIES	
Boreal			
Predominantly Forest.....	White Spruce, Black Spruce, Balsam Fir, Jack Pine, White Birch, Trembling Aspen.....		
Forest & Barren.....	White Spruce, Black Spruce, Tamarack.....		
Forest & Grass.....	Trembling Aspen, willow.....		
Subalpine.....	Engelmann Spruce, Alpine Fir, Lodgepole Pine.....		
Montane.....	Douglas-fir, Lodgepole & Ponderosa Pine, Tr. Aspen.....		
Coast.....	W. Red Cedar, W. Hemlock, Sitka Spruce, Douglas-fir.....		
Columbia.....	W. Red Cedar, W. Hemlock, Douglas-fir.....		
Deciduous.....	Beech, maple, Black Walnut, hickory, oak.....		
Great Lakes-St. Lawrence.....	Red Pine, E. White Pine, E. Hemlock, Yellow Birch, maple, oak.....		
Acadian.....	Red Spruce, Balsam Fir, maple, Yellow Birch.....		
The Grasslands.....	Trembling Aspen, willow, Bur Oak.....		



Research Stations: Experimental farms around Canada for the cultivation of hardy plants

The Forest Regions

from Native Trees of Canada R. C. Hosie

The forests of Canada can be divided into nine regions based on marked differences caused by terrain, soil and climate. A composite map of the regions is re-produced (on the next page).

The Boreal Forest Region This Region comprises the greater part of the forested area of Canada. It forms a continuous belt from Newfoundland and the Labrador coast westward to the Rocky Mountains and northwestward to Alaska. White Spruce and Black Spruce are characteristic species; other prominent conifers are Tamarack which generally ranges throughout, Balsam Fir and Jack Pine in the eastern and central portions, and Alpine Fir and Lodgepole Pine in the western and northwestern parts. Although the Boreal forests are primarily coniferous, there is a general admixture of deciduous trees such as White Birch and poplar; these are important in the central and south-central portions, particularly along the edge of the prairie. In turn, the proportion of spruce and larch increases to the north and, with the more rigorous climate, the close forest gives way to an open lichen-woodland which finally changes into tundra. In the eastern section, along the southern border of the Region, there is a considerable intermixture of species from the Great Lakes-St. Lawrence forest, such as Eastern White Pine, Red Pine, Yellow Birch, Sugar Maple, Black Ash and Eastern White Cedar.

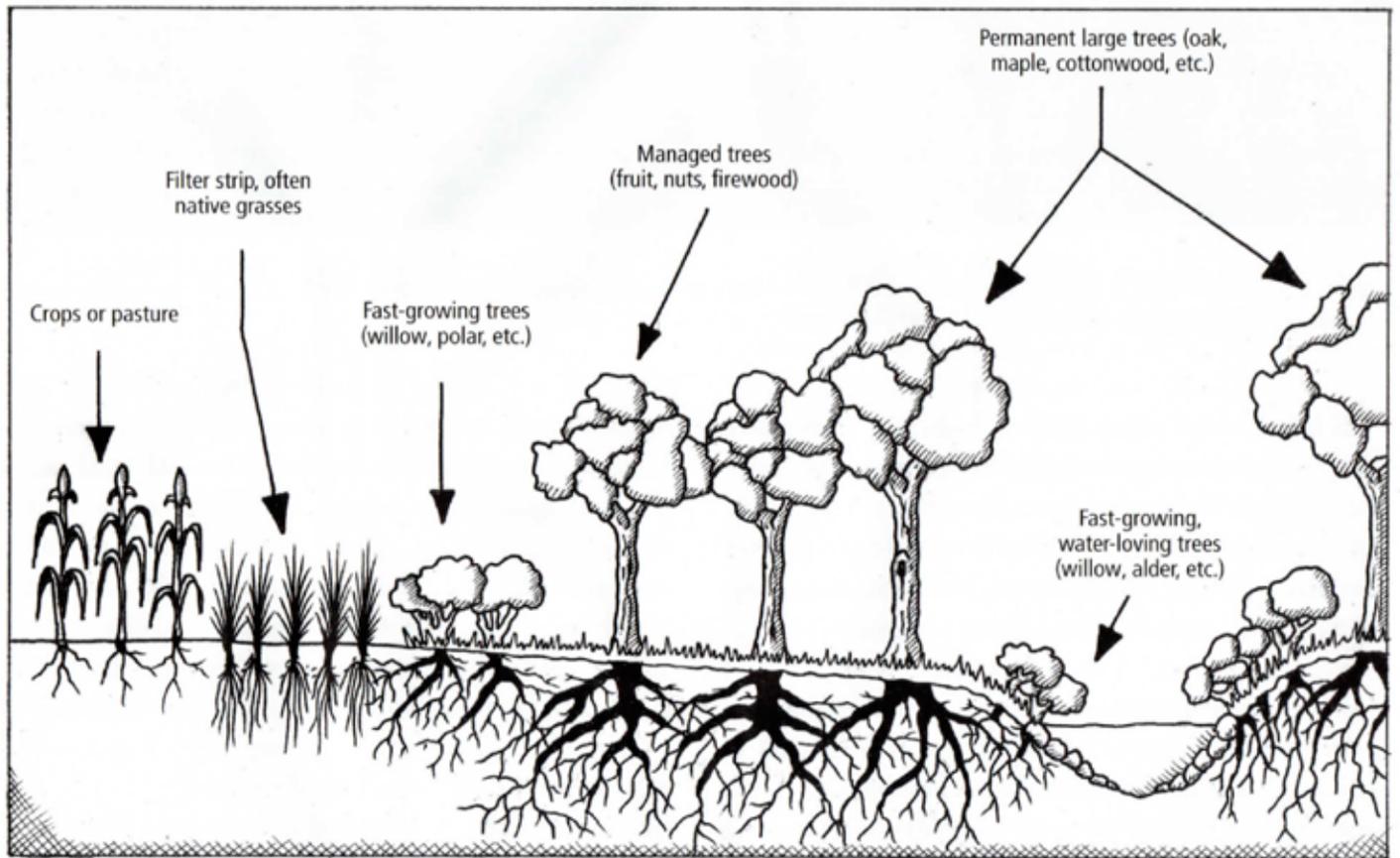


Figure 1.4. Riparian and upland buffers are usually a gradient of vegetation, with each "zone" performing a different function to slow and gradient runoff from neighboring agricultural fields. Even if cropping isn't occurring, creating tree corridors along waterways is a good idea. Illustration by Travis Bettencourt

Permaculture in the Peace River Valley

Permaculture is permanent agriculture, permanent culture, Deep Ecology, a fairshare sense of abundance moving in renewable, foundationally good ways to provide for the future and the present. Permaculture is a way of life; it is a cycling of life, collecting energy from the sun and wind and water and using it as many times as possible before releasing it into entropy, in water's case, the ocean. Looking at the Permaculture Flower, we see a full spectrum of life is possible through living in a cyclic harmonic way.

Key boons of Permaculture include farming on swales, along contour, planting tree systems, using keyline dams, and succession. If we could farm Canada, we could mulch-in the hardy edibles, the fuel crops, and the tender food crops. Massive greenhouse domes could allow us to produce tropical fruit and warm our houses as done at the Rocky Mountain Institute in Boulder Colorado. Other tried and true ways have persisted through the ages and the cultures, such as the Yeomans Plough, and endless variations of small earth systems, are here for learning and creating with. It is happening around the world, this funny word Permaculture. I like it more and more. I think it means we like ourselves.

Building soil is an ongoing process, and a wonderful one which yields fruit and nut, seeds and greens, and is served by farm animals' manure, seaweed, biochar to name a few. Could we have a small herd of nomadic goats on Vancouver Rooftops and lawns that replace loud and polluting mowers, when the grazers have always done this

job, leaving gifts of natural fertilizer in their wake? Joel Salatin has an amazing book called *Folks This Ain't Normal* in which he describes his experiences farming with animals, grazing them in different areas of land and moving them around to get the goodness they find of the soil and plants, leaving behind what they don't need (fertilizer).

The people are suffering right now. Some people don't seem to realize that Earth is worth saving, and that all people are redeemable, in a good way, can regenerate, most especially if he or she is willing to go through healing and wellness, with the support of friends, family and community. We are collectively living through truth and reconciliation here on unceded Coast Salish Land and Waters and in Canada, in a process of regenerating culture, and people, to find some resolve and better ways of life. We also have new tools in our toolbelts, tools to use to talk about how we are feeling and what we are needing. Non-violent communication, or Compassionate Communication, thanks to Marshall Rosenberg, is a language of observations, feelings, needs and requests, so we can speak for ourselves, for inspiration, and come and work together for a greater good.



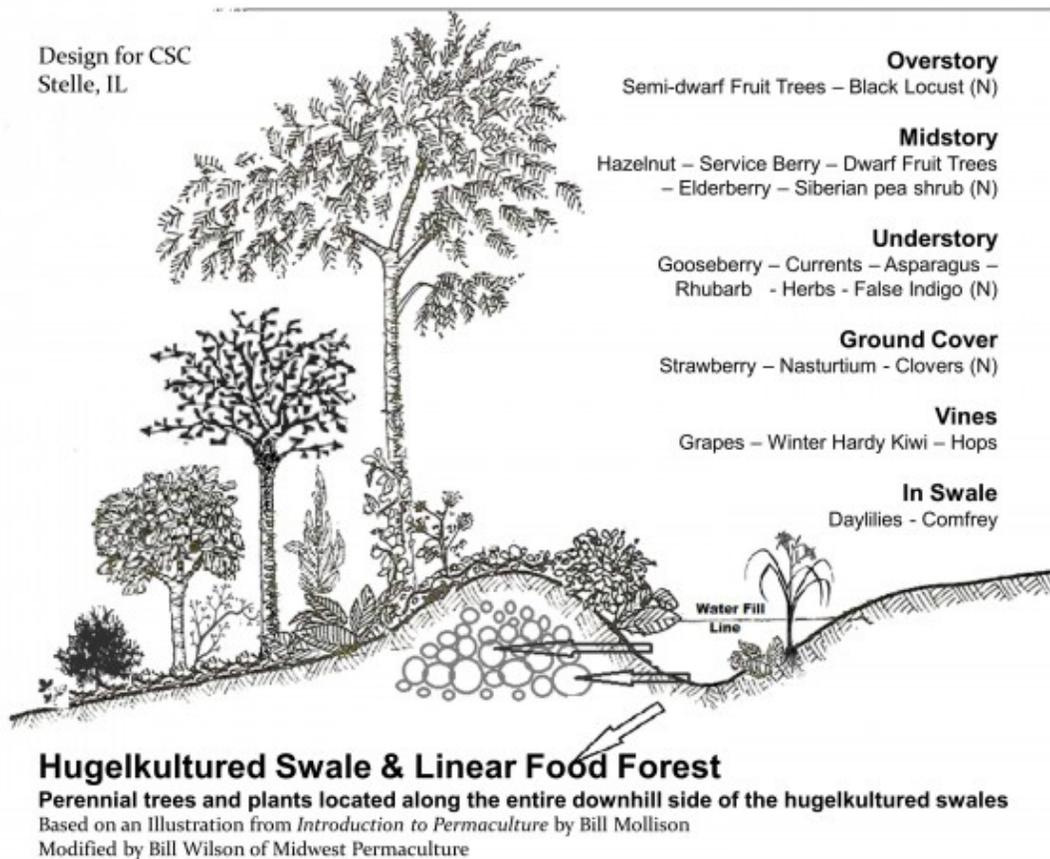
Forest Fires in BC and How Swales Harvest and Sequester Water

As our climate warms, we are seeing more smoke in BC. This week we had a good week or two of

forest fires affecting the Vancouver environs and weather with the smoke.

One idea is to dig swales every 25- 50 yards along contour on crown land, on clearcuts, private land, etc to catch and retain water.

Swaling Site C could restore the land and be a model for a new Experimental Demonstration Farm.



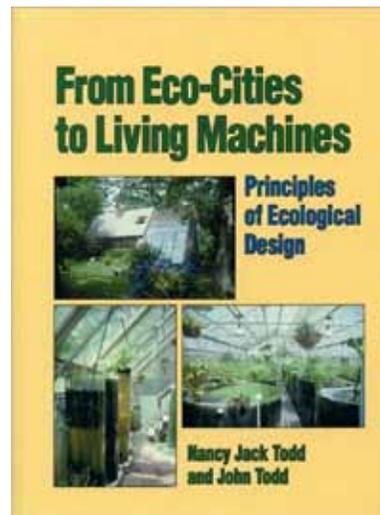
from: <https://permaculturepower.wordpress.com>



Bristol's Bio-Bus is powered by fuel derived from food waste and sewage. Image Courtesy, Wessex Water

Biofuel In the Twinned Pipeline and Solutions for Renewable Energy BC Hydro could Adopt

Poop powered buses are coming to Vancouver – and many more cars could run on alcohol. Chinampas, as grown in Mexico in freshwater lakes, for growing food or biomass in a wetland, is one of the most highly productive systems. Bucky Fuller did similar under a geodesic dome greenhouse with a pond installed in the centre, keeping the microcosm warm and wet. John Todd took these concepts into a ship life mentality of survival with his company Ocean Arks International. He and his team developed eco-machines to clean water, filtering off the sludge then using reeds, rushes, and Irises, to grow other plants, out of those nutrients, provide animal fodder, houseplants & clean water using all 5 kingdoms – crustaceans, fungi included. Todd grows in water but seems to eliminate the substrate as he is working to clean water. However, in growing food, as in soil or in chinampas, a base of straw bale



or straw piled into mounds upon a low wetland gives extra nutrients and serves as a great mulch. Algae has incredible possibilities.

A note about biofuel. Natural gas may be like biofuel but not fracktured natural gas, as the process used to retrieve it is toxic. There is enough natural gas to last us 50 years. (CLJ) See Fractured Land movie with Caleb Behn.

Biofuel can be produced out of nitrogen rich compost, including biosolids, or algae. A pipeline devoted to 100% mixed biofuel suitable to run in cars and engines – would be a better option than that of

trying to harvest hard to get carcinogenic petrochemical bitumen or fractured gas. Vancouver's buses are rumored to be run on Biofuel in the near future, as are Bristol's buses now are.

There are many options for a non-polluting renewable biofuel. Canada has renewable resources which managed and harvested, at sustainable rates, can provide much for us and to share with the world.

For local farming and energy production with lots of leftover as an industry/jobs/economy: Swales and Algae. Swales and mulch will help us collect and direct water and we could likely grow algae in a swale. But in case not, David Hazelbeck of Global Algae Industries is learning how to use it as a significant food source. Run as a co-op it may do quite well.

Thorium is worthy of being mentioned as well, as it could produce electricity through much less use of water. Thorium is a nuclear power which has the potential of giving much, with many less side effects than traditional nuclear energy, and the material, thorium is abundant and everywhere. Each person's lifetime use is about the size of 3 smarties.

BC Hydro would be good to bury electrical lines underground as recommended by Dr. Clive L. Justice, as Landscape Architect & urban planner. Immediate jobs for those displaced workers from Site C to put wires underground – England and other countries have done this – good for the visual landscape and good for the people – the earth / ground grounds energy while our bodies are sensitive water – bagged emotional

mental physical beings.

Manoj Bhargava and his extensive team are changing lives for many families with a stationary bicycle that powers homes using 1 hour of human power to give electricity all day. Small scale renewable energy where exercise is a by-product. Good News.

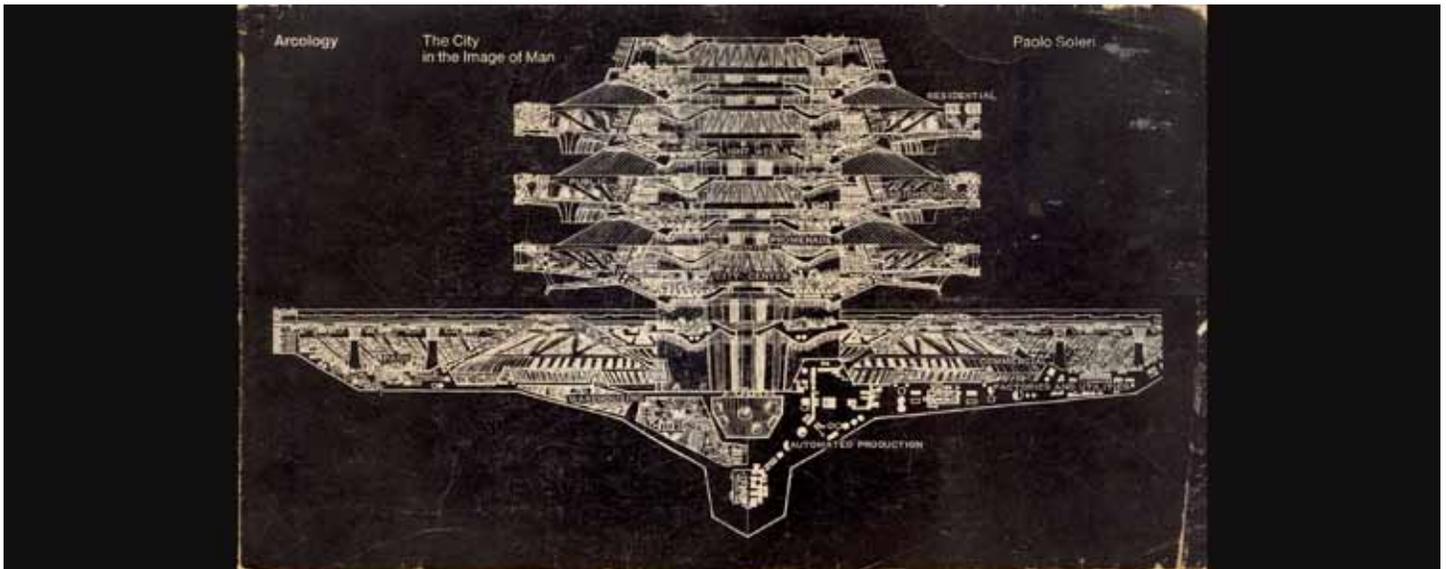
Algae farms may be the big game-changing solution. Thorium? Well, maybe too.



Vancouver's district heating - Global News

One legacy of the 2010 Vancouver Winter Olympics is the False Creek Energy Centre, which provided heat to the Olympic Village. It does this by drawing heat from raw sewage.

The raw sewage is warm because of the hot water from people's showers and kitchens, which they wash down the drain, says Brian Crowe, director of Water, Sewers and District Energy for the City of Vancouver. As it flows through Vancouver's sewers, it's usually between 12 and 20 degrees Celsius. When it reaches a sewage pump, some of the warm sewage is diverted, screened, and directed into a heat pump. The heat pump, with a little electricity, heats up some water, which is then pumped into radiators around Southeast False Creek.



Book: City In the Image of Man - Paolo Soleri 1st ed. MIT 1971

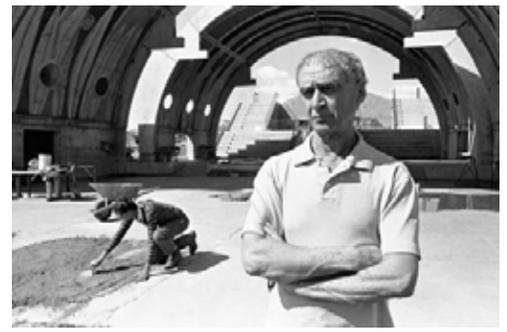
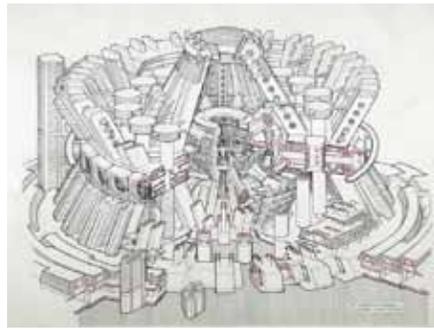
Arcology - A Permaculture Response to Refugees in the Peace Valley

When Paolo Soleri started Arcosanti, an Arcology — a term he coined as the marriage between architecture and ecology — and modest and humble “City of the Future” — he chose a spot high upon a mesa, with a plan to cover the south facing slope in greenhouses and direct the heat through a tunnel to heat the apartment complex surrounding the amphitheatre. Arcosanti was designed for 6000 people and 40 years later is still in the process of being built, and is surrounded by wilderness as Arcosanti leases 870 acres of land and leases it out to graze cows. The entire building footprint sits on 15 acres. The principle concepts of arcology are miniturization, complexification, simplification and duration. Paolo was an artist - Arcosanti’s amphitheatre and grand skywatching steps and vaults - rooves on top of the city where you see the stars, Cat casts and siltcasts on many a wall invites the guest to want to make this place a home.

Looking at a city like Arcosanti and Arcologies like Paolo’s successor Jean Jerde is co-creating all around the

globe, we might wonder if this new development could be an arcology. Planners, designers, Architects & engineers are already using eco-architecture and to bring those ideas to the Peace River Valley (hyperbuilding/arcology) as well as allowing farming settlements for treekeeping and regenerating the landscape could be an interesting mix.

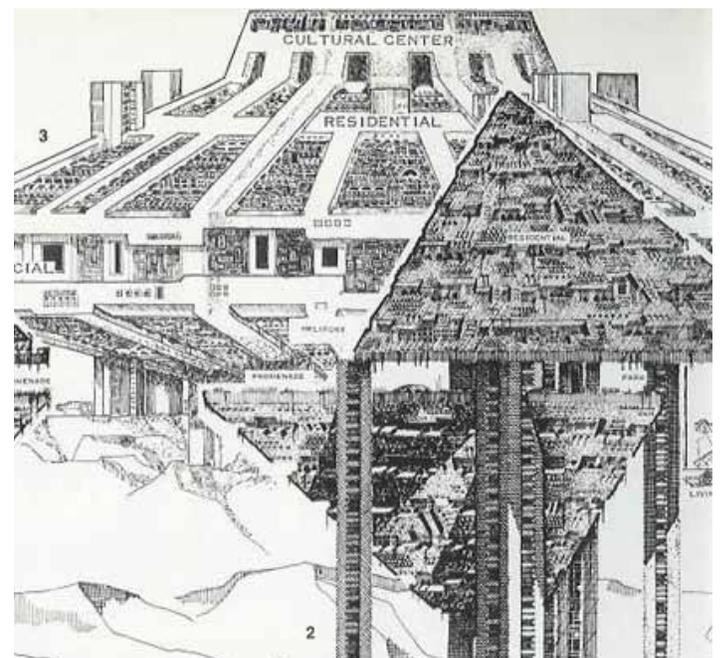
A benefit of living at Arcosanti beside the spectacularly breath-taking skies and architecture, was they made it very affordable to live there, as we were building the city, and working there to build the city, you got paid — not too much, and you also didn’t need much — so you had some extra money, or at least a good bit to get through as our rent came off our check before we even got it, and at only \$200 which was actually called co-use fee, which meant you were entitled to use tools on site, use the lab in off hours etc. The idea was that the newcomer, after doing a workshop, could also pay a more normal rent and work in this beautiful city on their own terms, in the dot comm industries, let’s say.



The Peace River Valley region is extremely rich in lush green plants and is home to many species, and many of those are endangered. In Vancouver's case, we are situated in the middle of the estuary with our cars and constant waste. To be up a hillside is good as it takes us out of the water way. Fort St. John is right on the other side of the river.

If an arcology were built on site C, it may be a place for many more to settle. Local First Nation refugees from around our country may find a place here, as well as other refugees, citizens or travellers who needed a place. A general population guideline of 6 Canadians per 1-2 refugees to help their transition into Canada, as well as provide a new development in the North which aimed to welcome many different people, offering an affordable lifestyle for people building the city or planting trees.

Arcologies are designed cities which can hold 6,000 to 10,000 to 1,000,000 people. Jean Jerde saw Soleri as his mentor and continues to build Arcologies worldwide. <http://jerde.com/places> <https://arcosanti.org/>





Permaculture News

How to Build a Swale on Contour Successfully

from <https://permaculturenews.org/2015/07/24/how-to-build-a-swale-on-contour-successfully/>

July 24, 2015 by Jonathon Engels

Swales are amongst my favorite permaculture projects. Though they can be laborious, especially for a shovel and pick fellow like me, they show results quickly and look amazing, texturing the landscape with both purpose and beauty. They are easy to explain: Everyone understands the concept of plants needing water. Swales are also perfect for those of us wanting to build no-dig garden beds, as digging the (swale) paths provides the necessary topsoil.

There are so many more reasons. Modern inclination is to get rid of rainwater as quickly as possible, ushering it into gutters and drainage systems, which often lead to a plethora of contaminants, including sewage getting into fresh water sources. Afterwards, when there's a dry spell for a few days, the sprinklers come out. Instead, swales stop the deluge and allow the water to slowly, passively enter the soil and keep stuff working, preventing overflowing drainage systems and the need for compulsive watering. What a concept!

Learn from leading examples in the field of regeneration...

So, with such an endorsement, surely everyone is salivating at having a swale of their very own, even those who still aren't quite certain what a swale is. Well, if that's the case, hang on for another paragraph or few, and let's get to it.

The Swale on Contour

For the sake of swale newbies, the basic concept of a swale on contour is to catch water as it drains and hold it in place until it absorbs into the ground. It looks a bit like a massive ditch with closed ends, trapping all of the water as opposed to having it flow anywhere. Other swales systems, also known as diversion ditches or soil conservation swales, are meant slow down the movement of water in order to allow it to partially absorb, catch sediment, and/or prevent erosion while slowly ushering it elsewhere, like a reservoir. However, a swale on contour aims to keep all the water in place until it is absorbed. YouTube! Video: [Permaculture Water Harvesting through Swales](#)

“On contour” simply refers to the fact that this sort of swale works on the principle that by keeping everything level, such that the path of the swale moves along the contour, or elevation curve, of a slope. Doing this means that the water absorbs evenly into the land below as opposed to flowing to the lower end of the swale. Without following the same elevation level, the water would flow to one side or the other, and preventing this flow is what makes the water become passive rather than destructive, as is the case with water draining en masse and quickly in one direction.

Lastly, another nearly ubiquitous feature of swales is the result of all the soil that is removed to create them: the berm. The berm sits on the downhill side of the swale and is the perfect place to grow trees and deep rooting plants like strawberries, rhubarb, asparagus, comfrey, and dandelions. The deep roots will keep the berm stable, as well as suck up the moisture from below so that the newly hydrated soil doesn't become overly saturated.

The Right Tools for the Job

In a world with greater money sources than spring from my pockets, as well as more technological knowledge than I currently retain, swales can be fairly hi-tech operations. Laser levels can help find the contour lines of a property, and major league digging equipment can be brought in to quickly, painlessly (at least from the human side of things) excavate. For a massive swale, something more river-like than what most of us will attempt, this makes sense. For me, however, the world of swales is a bit more rudimentary.

To be completely frank, half of the reason I got into gardening and, subsequently, permaculture is that I enjoy being outside and on a project, getting dirty and fixing problems. If there's a hole (or swale) to be dug, I want a shovel. If there's something that needs to be level, like the bottom of a contour swale, well then, a water level will suit me just fine. And, when it comes to finding that contour line, I was both happy and enlightened to discover the simple but effective A-frame. YouTube! Video: [How to Make a Permaculture A-frame Level](#)

An A-frame is called thusly because basically one must build a capital “A” out of wood to make it. The two legs need to be of equal length, just as our elementary school teachers taught us, and about midway down, they'll be

connected by a third piece of wood, equidistant from the bottoms of the legs. Aim for the open end of the A to be between three and six feet. Then, there are two options:

1. Mark the exact center of the crosspiece and hang a plumb line from the center point at the top of the A. When the plumb line hits that centerline on the crosspiece, then the two feet of the A are on level playing fields.
2. Or, simply strap a water level to the cross bar so that when it's level the two pieces of ground upon which the A is resting are the same elevation.

Choosing the Right Place

Before digging anything, it's important to carefully determine the rough location of where to place a swale. In doing so, it's imperative to consider the gradient, as a swale should only be installed on something with nothing more than 15% gradient, or a slope that climbs roughly 1 meter for every 7 meters it moves horizontally. Following this rule prevents mudslide problems that steeper gradients would cause, and that could potentially be devastating to a property.

Other things to consider are that the longer the swale can stretch the wider reaching the water absorption will be, and the higher its placement the more space in which the water will have to expand underground. So, ideally, a swale will be installed at the highest point possible but still low enough, downslope, to catch water run-off. From here, spread the water out on level plain by extending the swale on contour for as long as possible, that way water can absorb evenly into the land downhill. [YouTube! Video: Full Swales](#)

Lastly, what I've noticed in my successes and failures of playing with swale systems is that, if there isn't a noticeable flow of water to feed the swale, it may not fill, rendering the effort much less advantageous than once hoped. I've built several swales, some of them absolutely required a passive overflow, others never held more than a couple of inches of water in the middle of a rainstorm. I now make sure I know where a significant source of water will be coming from before putting in the effort.

Putting the Right Tools to Use in the Right Place

Once the general area is decided upon, it's time to get more specific, which means pulling out that A-level we built a couple of sections ago. Use the A-level to stake out the contour line and the exact route the swale will be taking. This will likely not be a straight line, but rather a sexy, curvy number that'll give the system some personality, like those amazing terrace gardens in Asia. Mark the entire thing out, including a safe area for water to passively overflow should the swale fill up completely.

Using the marked contour line, dig vertically into the hill, piling the dirt on the downhill side of the swale. The depth of the swale should remain the same and can be measured from the established contour line then leveled with a

water level or the A-frame later. The general idea behind digging the swale is that it should be about three-times as wide as it is deep, and the berm—the pile of excavated dirt—should be mounded to create the upper part of the bottom side of the swale. Make sure that the base of the swale is level so that the water disperses evenly.

Other than catching and storing water on your land, the biggest benefit to having a swale is the growing potential of the berm. It will be mostly composed of rich topsoil that'll be well hydrated. It's important to plant on the berm immediately to prevent it from eroding. Trees will help to make sure the soil doesn't get too saturated. Deep rooting plants—the aforementioned strawberries, rhubarb, comfrey and so on—will help to stabilize it. And, as always, a good, nitrogen-fixing ground cover is going to stop the earth from drying out or getting overly weedy while simultaneously enriching the soil. YouTube! Video: Hydrating a Suburban Food Forest With Swales

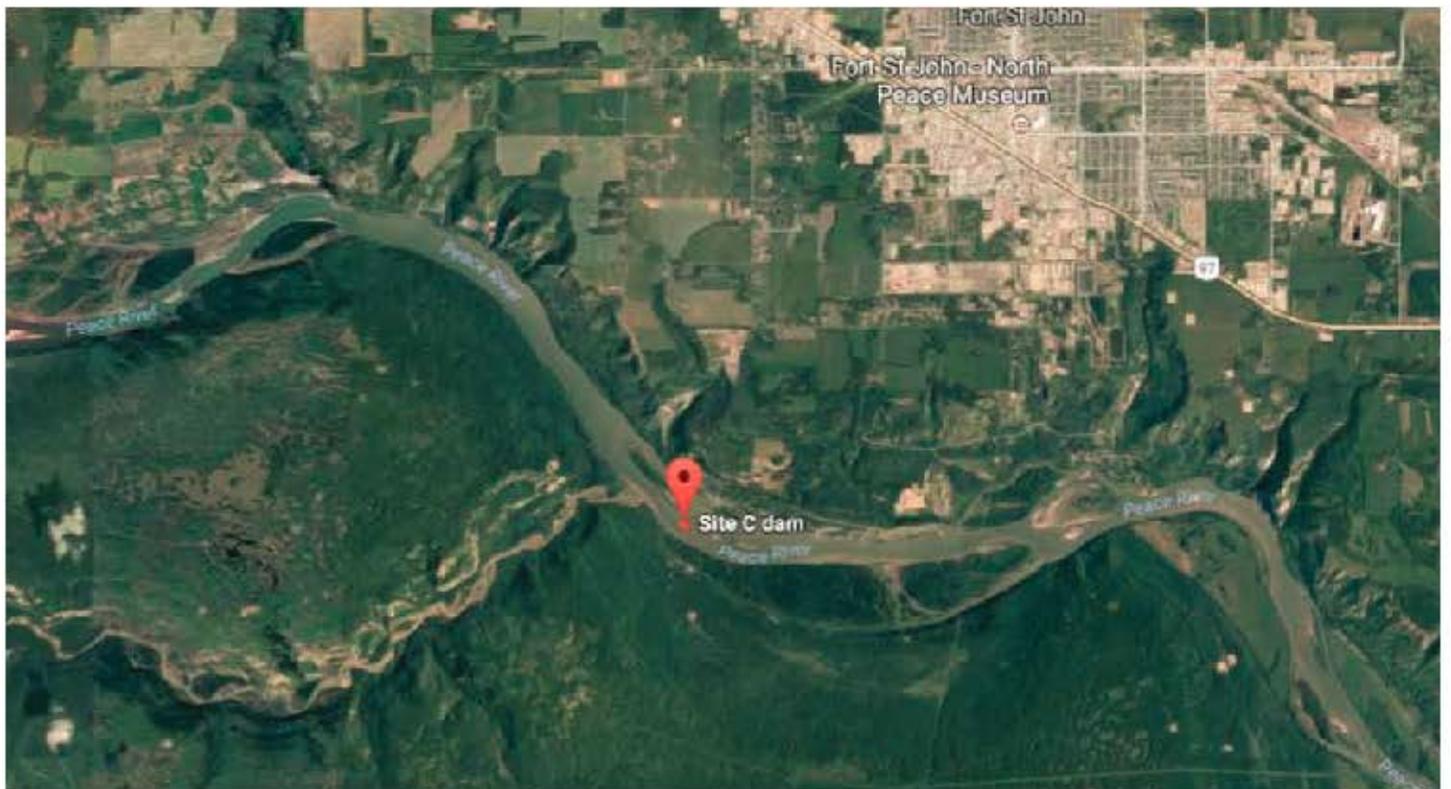
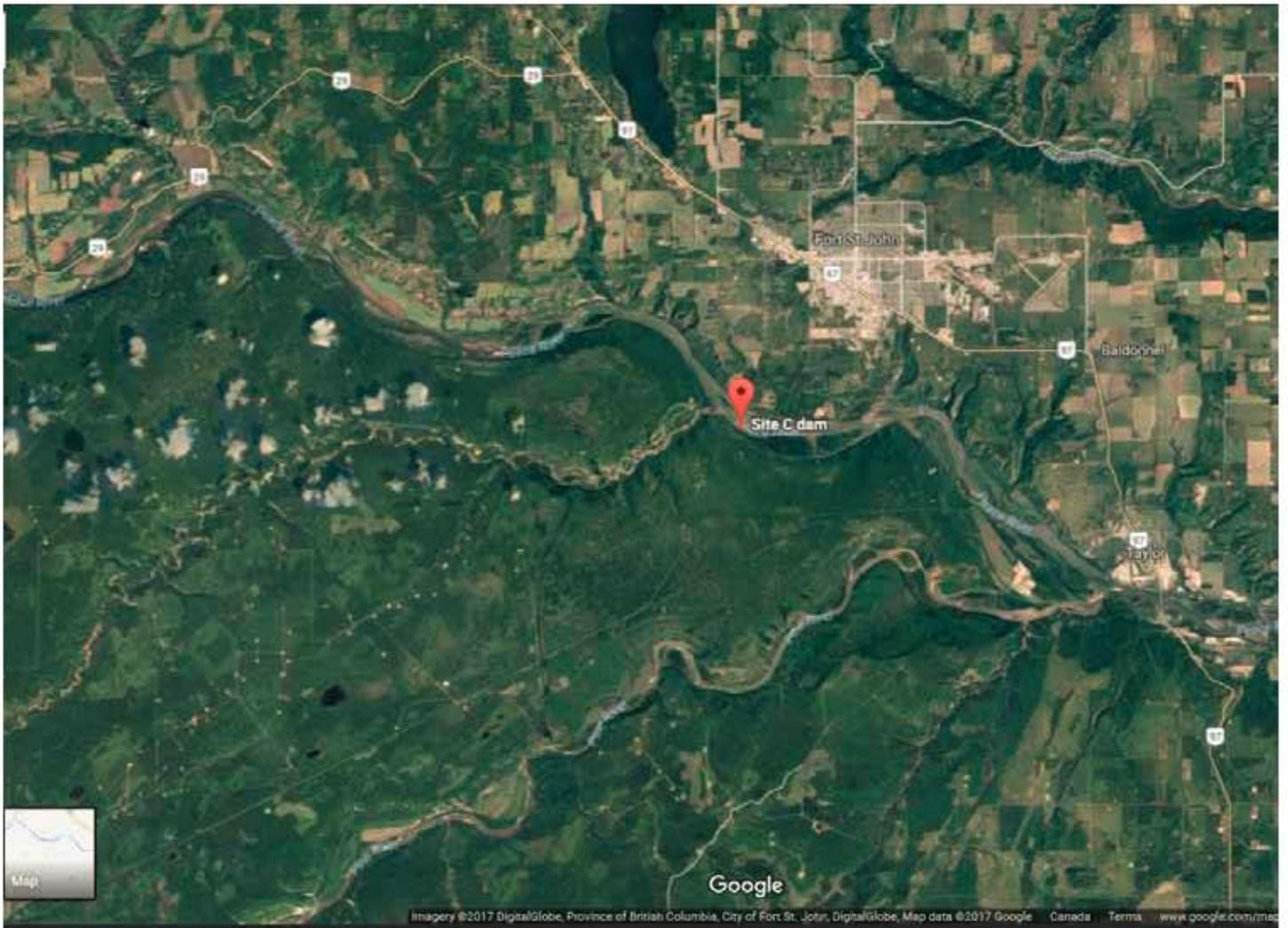
“I've not had a chance to try it, but an interesting technique I've seen to prevent water from going beneath the berm and washing it away is to have it begin just inside the lip of the swale rather than atop the lip. The water will be absorbed into the base first, which is kept in place by the fixed dirt left when digging the swale, and this should insure that water permeates into the berm rather than eroding it.”

The Finishing Touches

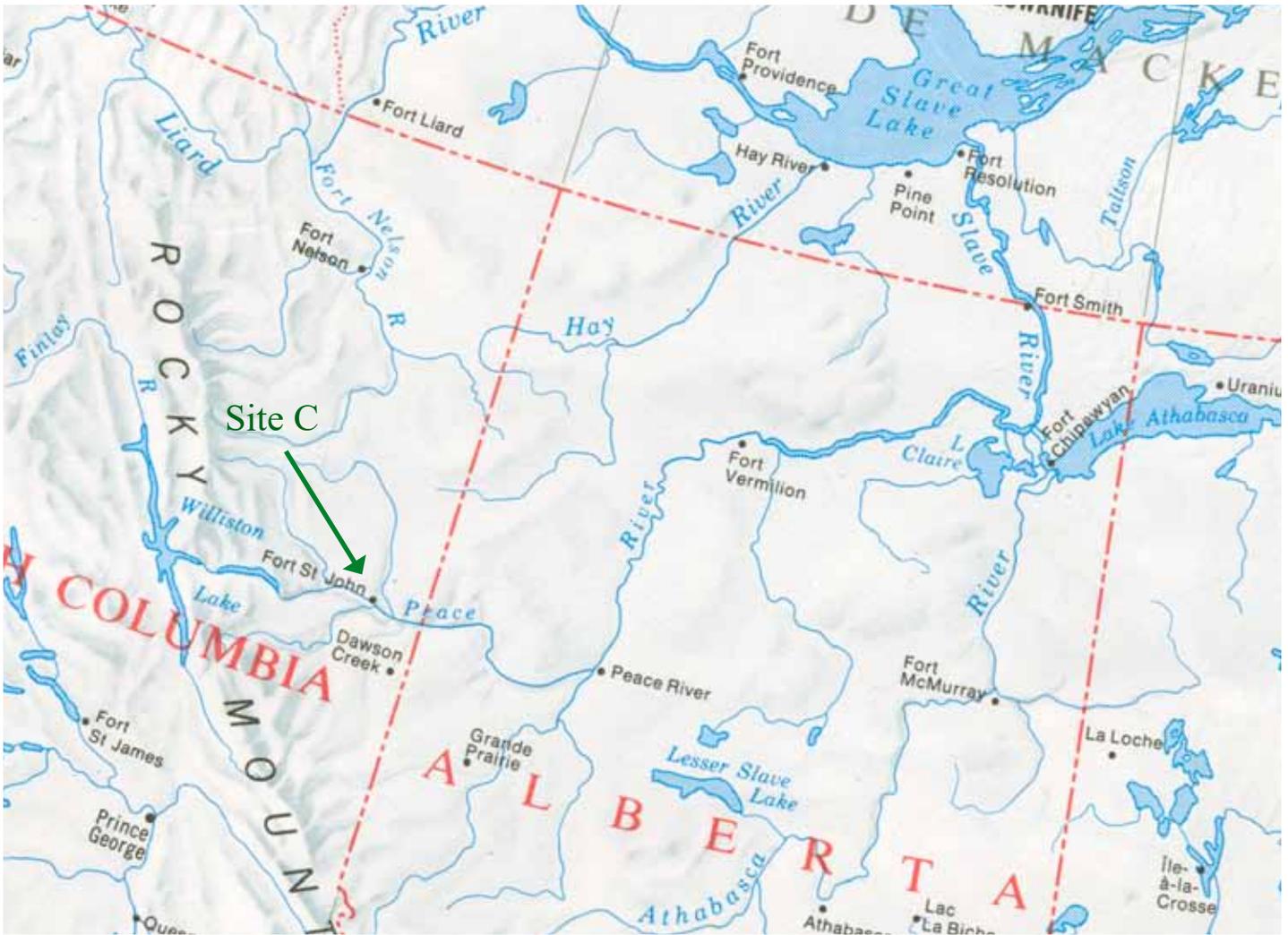
Another important aspect of making a swale and, particularly, avoiding possible problems is to plan for passive overflow. The best way to do this is to have a sizeable, say equally as wide as the swale is, spot that is perfectly level and below the top of the berm where water can overflow into a safe place, either a pasture or another swale or a water catchment like a pond or dam. At the overflow point, it's best to have something like a plastic sheet, stones or—ugh!—concrete to prevent erosion.

Once the base of the swale is satisfactorily level, a nice thick layer of mulch is a good idea. It will add nutrients to the water that is going into the soil below, as well as prevent evaporation. In fact, many people choose to fill up their swales in order to make convenient and logical access paths around the property. It's just another viable purpose for having a swale.

After that, it's just the permaculture way: Observe, find solutions within the problems that arise (with the right steps these shouldn't be too grand), and reap the productive benefits of forethought and working with nature.



Images courtesy of Google.



Restoring the Landscape:

1. create swales to direct the water into the land and to grow trees to create shade.
2. Use some Nitrogen fixing plants to support the succession.

Nitrogen Fixers:

Cytisus scoparius, or Scotch broom, syn. Sarothamnus scoparius, is a perennial

leguminous shrub, Crimson Clover, clover, alfalfa, Lupine, legumes, and the Canada buffaloberry (Shepherdia canadensis), also known as russet buffaloberry,[2] soapberry, or foamberry is one of a small number of shrubs of the genus Shepherdia bearing edible red berries. -wiki.

75th Anniversary Edition

Skinner's Garden Classics 2000
MAIL ORDER CATALOGUE



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CLIMBERS FROM THE EXPLORER SERIES:

John Davis, Henry Kobay, John Colton, William Ruffin, William Beach.

Details about these roses can be found on pages 9 - 11.

LIMITED AVAILABILITY ROSES:

We have a few plants available of the following rose cultivars. If we sell out in this spring, let us know if you want us to ship in the fall when the new stock is available. Please indicate product code and variety name on the order form. Prairie Danes, "Red Dawn X Suzanne", Ames, Chabrey, Frühlings' Gold, Freizeitrose, Morden Ruby, Dr. Meakley, Australiane, Morden Anouette, Double White Burnet, Charles Albright, Capt. Samuel Holland, Dwarf Pavement, Purple Pavement, Belle Rivière. Rose begoniata, R. laur, R. multiflora.

RO-LIM-VAR-C1

1 gal. - \$16.00

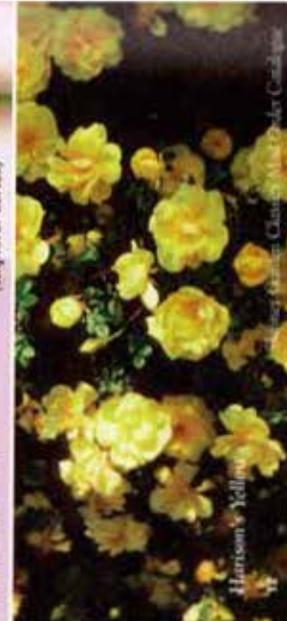
Our collection of roses continues to expand. We have added a number of varieties to our list and more to our collection. It was exciting this summer to travel to Alberta to visit the rose gardens at Brooks and to continue on to visit with Bobbers Fickens near Rocky Mountain House. As a result of this trip we have added a number of rare and worthwhile Canadian originals to our collection. These will be planted in your gardens over the next 2 years. The roses we have planted were of interest to visitors this past summer. Their growth has been good and they should provide a spectacular display this summer. We hope that many of you will come to visit and to study these interesting and worthy hardy roses.



Pink Maniqueville (R. laur hybrid)



Royal Edward (Explorer series)



Harrison's Yellow (Explorer series)

FLOWERING TREES

ROCKY (GREENES)

MOUNTAIN ASH Heritage Collection
(Sorbus scopulina)

A small tree with dark reddish-brown bark. Large white flower clusters are followed by clusters of orange berries in fall.
TF-SOR-SC-C5120 cm. - \$30.00

RUDOLPH ROSYBLOOM

CRAB Skinner Hybrid

(Malus X Rudolph)

This Skinner variety is introduced in 1954. It's bright pink flowers, hardness and disease resistant have made it a proven winner.
TF-MAL-RU-C5120 cm. - \$30.00

THUNDERCHILD ROSYBLOOM CRAB

(Malus X Thunderschild)

This variety was selected at Sutherland, Sask. It was hardy and the most disease resistance variety. Compact habit.
TF-MAL-TH-C5120 cm. - \$30.00

SKINNER'S BRONZE MAYDAY

(Prunus padus Skinner's bronze)

Fast growing tree to 6 m. Large panicles of white flowers in spring. Leaves unfurl green and turn dark bronze purple as they mature. A new variety!
TF-PRU-PS-C5120 cm. - \$28.00

SHUBERT CHERRY

(Prunus virginiana Shubert)

This small tree develops dark purple foliage during the summer.
TF-PRUVA-C5120 cm. - \$34.00

EUROPEAN MOUNTAIN ASH

(Sorbus aucuparia) Heritage Collection

Tree grows to 8 m. Clusters of white flowers in the spring are followed by red berries in the fall.
TF-SOR-AU-C5120 cm. - \$34.00

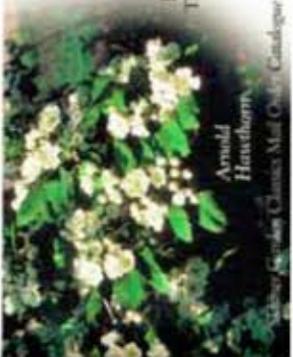
ARNOLD HAWTHORN

(Crataegus arnoldiana)

Small tree with white flowers in early June. Edible large red fruit.
See also Skinner's Hedge Options
TF-CRA-AR-C740 cm. - \$10.00



Rocky (Greene's) Mountain Ash



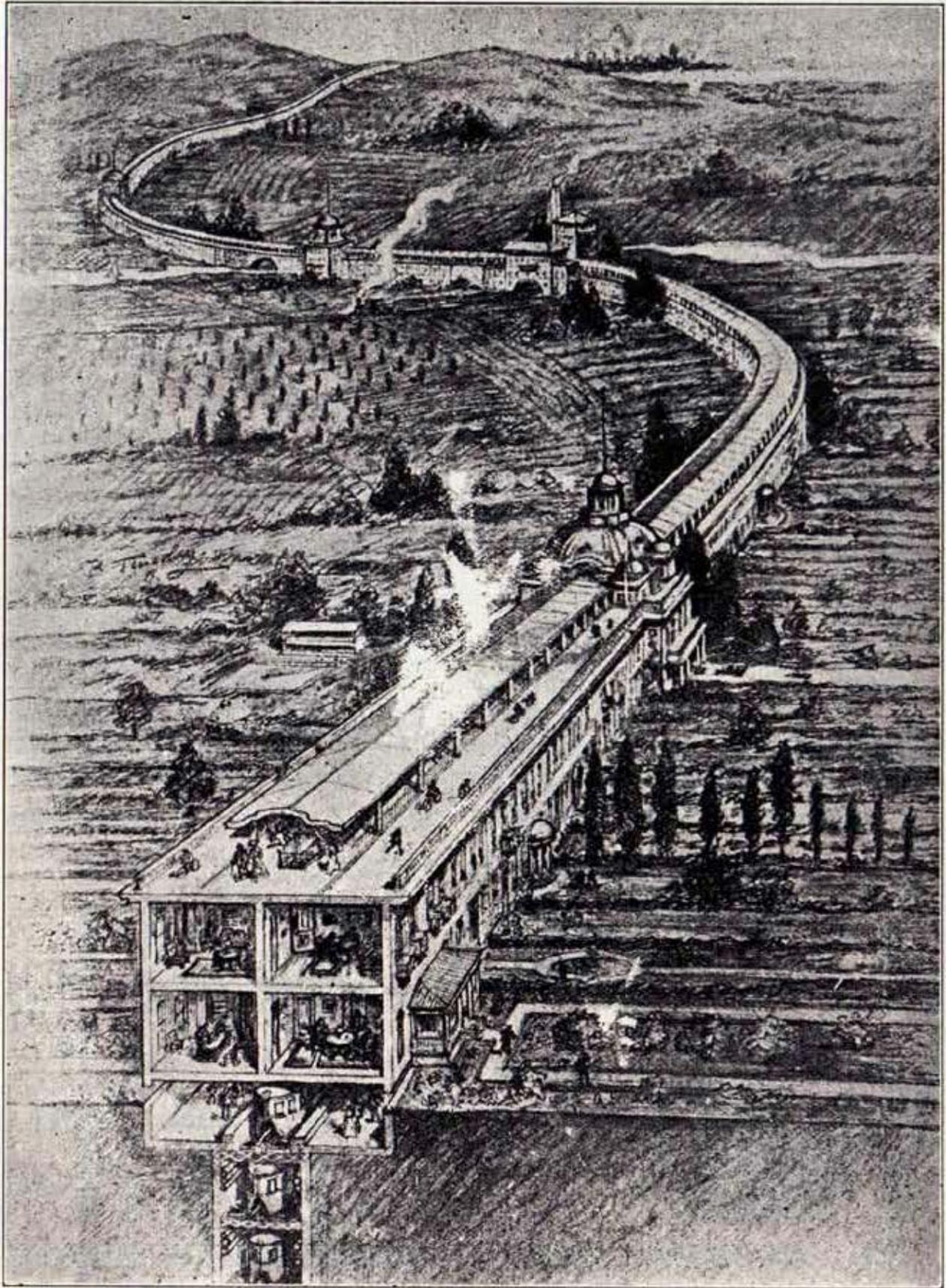
Arnold Hawthorn

Skinner's Garden Classics Mail Order Catalogue

The Prairie Hardy Ornamental Plant Introductions of Frank Leith Skinner, Dropmore Manitoba 1925 - 1965

Type of Plant SML	Hybrid &/or Common Name	Cross Between or Selection of	Yr Intro
TREES Deciduous			
Large Broadleaf	Northern Chinese Birch	Betula albo-sinensis var. septentrionalis	1926
Medium Broadleaf	Daurian Birch	Betula davuria	1930
Large Broadleaf	Manchurian Walnut	Juglans mandschuria	1934
	Carpathian Walnut	Juglans regia var carpathia	
Medium conifer	Kurilian Larch	Larix gmelini var. japonica	1952
Large Broadleaf	Tristis Poplar	Populus tristis	1935
Large Broadleaf	Striped Poplar	Populus octorbdos	1948
Large Broadleaf	Songar (Sinkiang) Poplar	Populus songarica	1948
Medium Broadleaf	Cork Tree	Phellodendron amurense	1940
Medium Broadleaf	Ussurian Pear	Pyrus ussuriensis	1918
Large Broadleaf	Dropmore Siberian Elm	Ulmus pumila 'Dropmore'	1937
Large Broadleaf	Dropmore Oak	Quercus macrocarpa x Q. Mongolica	1959
Large Broadleaf	Dropmore Weeping Willow	Salix amygdaloides x Wisconsin WW .	1960
Large Broadleaf	Dropmore Basswood	Tilia cordata x T. americana	1960
Small flwr & Foliage	'Rudolph' Crabapple (pink flowers bronze foliage)	Malus pumila var neidzwetskyana F2 hybrid	1954
Medium flower & frt	Pear 'Dropmore'	Pyrus 'Pioneer' x P. ussuriensis	1958
TREES			
Evergreen			
Large Conifer	Northern Norway Spruce	Picea abies var borealis	1930
Large Conifer	Siberian Spruce	Picea obovata	1936
Skinner Garden			
Hardy Edible	Rudolph Crabapple	Malus pumita 'Rudolph'	
Hardy Edible	Pear 'Dropmore'	Pyrus 'Dropmore'	

See previous page, Skinner Garden Classic for more hardy perennials.



The Roadtown is a line of city projected through the country. It is not a town; not a rural community—it is both.

from the Early Sunset Magazine 1898-1928 published by the California Historical Society

The Continuous House

By MILO HASTINGS

January 1914

EDGAR Chambless has come to San Francisco. Chambless is the Roadtown man and Roadtown is a machine for making an improved variety of civilization at a reduced cost.

And this man Chambless, seventeen years ago sat on Angel's Flight in Los Angeles and wondered why the ground was bare within a stone's throw of the most expensive land of the city. He was half blind, this inventor, and books for him were closed. But his mind had eyes, and he saw many things that mere light rays cannot convey. He saw, as he sat on Angel's Flight, the relation that exists between transportation and land values. He saw the paradoxical struggle of men to find dwellings accessible to the public and yet isolated and hidden for the home nest—for men like birds will not mate and reproduce amid the flutter and chatter of the flock.

And Chambless played with the needs of men and built the blocks of civilization into new playhouses of the mind. When the blocks were arranged at last, the builder breathed deeply and said that it was good. He had invented Roadtown, the new plan of housing that promises to give us quick and easy access to things and to each other, and yet greater privacy for the home nest, and fellowship with the land and the live things—our companions of the ages before bricks were made.

In giving Roadtown a hearing remember that it is not a town and not a rural community. It is both. Compared with our present ideas of either it will have obvious advantages and obvious shortcomings, but take it as a whole and compare it with a modern town plus the surrounding farm territory, and then judge of Roadtown.

The Roadtown is a line of city projected through the country. This line of a city will be in the form of a continuous house. In the basement of the house are to be placed means of transporting passengers, freight, parcels and

all utilities which can be carried by pipe or wire.

The first good seen in the continuous house idea is that of economy of construction. The excavating will be done with steam-shovels. The entire structure can be made of cement and part or all of the building will be poured. Mr. Edison figures he can build a seven-room cement house for \$1200. In Roadtown this expense will be further reduced, not only by the elimination of one wall and the economics of repetition and continuity of construction, but by the fact that the Roadtown may all be constructed from a railroad track alongside. The great task of shifting steel molds, which is well nigh insurmountable in the individual house pouring scheme, becomes in Roadtown an easy duty for a steam crane on the railroad.

One of the essentials of Roadtown is a noiseless method of transportation. From each house a stairway will lead down into the endless basement, where the trains will run with no more disturbance to the inhabitants than is made by elevators in a hotel. It is just as feasible mechanically to make a noiseless horizontal, as a noiseless vertical car. The electric automobile running on smooth asphalt is sufficiently near the goal of silent efficiency to further prove the point.

Another stairway will lead from the Roadtown dwelling to the endless roofway above. Upon the outer edges of this roof promenade will be paths for bicycles and rubber-tired roller skates.

Another plan is to eliminate the basement, except a central trench for pipes and wires. The supporting walls would then be built well-trussed to carry a roofway sufficiently rigid for light-running motor vehicles.

No streets will be needed in Roadtown. This permits the windows and doors on both sides of the house to open into private gardens with no traffic beyond. With the heavy cement walls between the individual houses and with the traffic ways shut off from sight and sound, the

Roadtown home, in spite of the actual proximity to neighbors will give more privacy than is now attainable in village or city life.

The continuous passageway underneath the house will contain the pipes and wires which will bring into every home the conveniences that now mark the chief difference between city and country life. The more common of these are sewerage, hot and cold water, gas for cooking, telephone, steam heat (or hot water heat) and electric light.

All of the above list of utilities are now found in prosperous city homes, but every additional pipe laid into a city house means that the pavement in the street must be dug up and replaced, the sidewalk and cellar wall torn open, and the politicians well paid for a new franchise. In the Roadtown the adding of a new utility will cost but the expense of the house

length of main pipe and a connection to lead through the floor into the room above.

Hence it will be practical to install in the Roadtown home a brine pipe for refrigeration, eliminating the use of ice; vacuum dusting and sweeping; distilled drinking water; carbon-dioxide gas for putting out local fires and making "fizzy" drinks; a disinfecting gas, the telegraphophone or recording telephone, and the dictograph or loud speaking telephone, and electrically conveyed music.

Quite as marvelous as the utilities to be brought into the home by pipes and wires is the change which will be effected in home life by superior transportation. A parcels carrying system, not unlike that used in department stores or to carry books in large libraries, will serve central stores and the individual home. Each car will be set with a key trip which will

automatically switch it into the proper house.

One of the most significant features of the Roadtown is that this perfected mechanical system of distributing solids, liquids and gases makes coöperation of all kinds more practical. This will not only apply to the marketing of farm crops and the purchase of raw supplies, but will undoubtedly extend to laundrying and cooking. It will be entirely feasible to send a daily bill of fare into each home from which prepared food may be ordered by telephone, and delivered from a central kitchen in heated or chilled receptacles, as the case may be. In like manner the dishes may be sent back to be washed, hotel fashion.

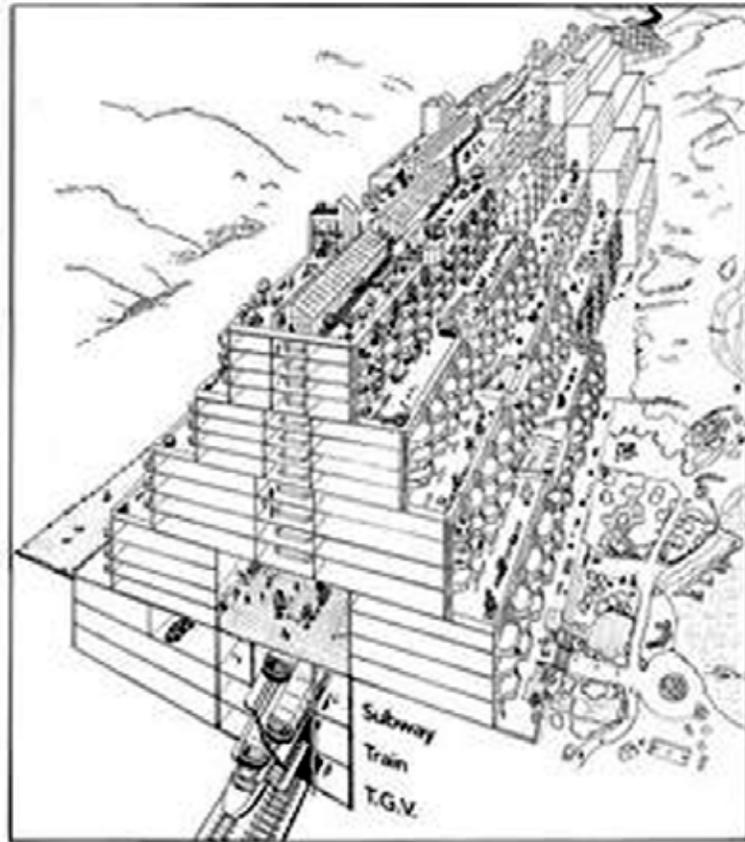
Previous schemes of coöperative cooking have failed because the common mess halls destroyed family life. In the Roadtown the actual mingling with one's neighbors will be about like that of the suburban or country town.

Mr. Chambless hopes to see Roadtown built and managed by restricted corporations, with provisions for the ownership ultimately passing to the inhabitants. Roadtown bonds paying a moderate rate of interest would be sold to the investing public. The tenant of Roadtown would be required to pay such a rental as would meet running expenses and interest, and pay off the principal in perhaps fifty years.

Is the Roadtown inhabitant to be the owner of his home? That depends on what we call ownership. The savage chief who owns an island owns it absolutely until some one takes it away from him. The man in New York or Sacramento, who owns his house and lot, owns it with the provision that the city may tax him for paving, water, sewerage and police protection; while private corporations charge him for light, heat and transportation. If he does not pay the first his house is taken away from him, and if he refuses to pay the latter, his house is useless. Clearly there are different kinds of ownership. The form of ownership worked out for Roadtown may differ from that with which we are now familiar, but the principle will be the same.

Few of us realize how little land we really use in production. On the basis of 33-foot houses and five to a family, it would take just about three thousand miles of Roadtown to house

all the people of California. Parallel to this imaginary "state house" California's magnificent irrigated belt would form a strip extending but three-fifths of a mile on either side of the building. The wheat fields would form a band one-fourth of a mile wide and the alfalfa belt the same. The state's magnificent combined acreage of table, raisin and wine grapes would form a continuous vineyard 57 rods wide. The poultry, with 400 hens to the acre, could be provided for in a yard 37 feet in width. And all of these crops and all others, all improved farm land, in fact, could be placed within less than three miles of this ultra-urban civilization of the endless house. #



Linear City - Across Canada?



Housing concepts from <http://spacebox.nl/>



DISTRICT DE FRANKLIN

TERRITOIRES DU NORD-OUEST

DISTRICT OF
KEEWATIN

DISTRICT DE
KEEWATIN

Hudson
Bay

QUEBEC

MANITOBA

ONTARIO

QUEBEC



**Top: BC Peace River looking Northeast downriver. Taken from Hudson Hope bridge highway
Bottom: Site C looking West, upriver, taken from the Fort St. John bridge crossing. Photos by CLJ**

