Design Research and Methodology: 301-671B

An Eco-Village for Montreal’s West Island

M. Arch. 1

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The development of an ecologically based language for the architecture of a specific location, a sort of regionalism based on sustainable principles. The region in question will be Montreal's West Island (specifically, St-Lazare, in a forested area which will surely see development in the near future). This will involve a detailed study of the site which will help inform design decisions. The program will be a housing complex, an "eco-village", of which one unit will be developed in detail. As much as possible, this complex will be self-sustained: issues of energy, water, waste treatment, food production, density and transportation will be key.

The reasons for such a study are quite simple: to reduce human-kind’s impact on Nature by re-shaping the way in which we live. Housing provides the opportunity for an intimate relation between the building and it's occupants: a symbiotically didactic relationship which is mutually morphological. In essence, it is a response to the current trend of the suburbs and sprawl.

The house here is to be seen as tool (as opposed to a machine) for living; an extension of the human body, its shape based on the requirements of the task assigned to it (much like a hammer is an extension of the arm, design to tolerate high impacts, to increase the force of each blow and to be comfortably held be one's hand). The study of the site will provide the definition of the tasks to be performed by the house.
SITE

The site is located over several lots in St-Lazare along a main road (St-Charles). Each lot is approximately 165' x 537' and consists largely of forested area. Proximity to the commuter train provides inhabitants with easy access to various business districts.

PROGRAM

A housing complex which will mimic (or surpass) current suburban densities. The complex will be largely self-sufficient.
PRECEDENTS

-Fallingwater
Mill Run, Pennsylvania (1939)
Frank Lloyd Wright

source: http://www.inusa.com/tour/pa/laurel/fallingw.htm

- materiality (local materials)
- consistency in language (steel, glass, concrete, stone, colors)
- overall theme (waterfall/cascade)
- relationship with site (mutually enhancing)
- natural setting
- "eco-aesthetic"
- interior/exterior link

Casa Mila
Barcelona, Spain (1910)
Antonio Gaudi

"eco-aesthetic"
mysticism/romanticism
natural forms

-location; similar climatic conditions

-self sufficient; relies on few outside sources

-doesn't look like traditional house

**Toronto Healthy House**
Toronto, Ontario (1993)
Martin Liefhebber


Canada Mortgage and Housing Corporation (CMHC)

The Healthy House System
http://www.healthyhousesystem.com/

http://www.oja-services.nl/iea-pvps/pvpower/07_02.htm
location; similar climatic conditions
-self sufficient; relies on few outside sources
-food production
-waste treatment through natural means
-natural systems vs. mechanical systems

**Prince Edward Island Ark**
Charlottetown, PEI (1976)
New Alchemy Institute


Cave Painting Museum
Niaux, France (1993)
Massimiliano Fuksas

- simplicity in materials
- appropriate color palette
- dynamic (emerges from the cave/draws in)
- relationship with landscape (seems like it was always there)
- no style (timelessness)
- monumentality


Massimiliano Fuksas
http://art.dada.it/fuksas/home.htm
Mason's Bend Community Center
Mason's Bend, Alabama (1993)
Samuel Mockbee and the Rural Studio


Rural Studio
http://www.arch.auburn.edu/ruralstudio/
Arcosanti
Cordes Junction, Arizona (1976- ...)
Paolo Soleri


ARCOSANTI: a Prototype Arcology
http://www.arcosanti.org/
Habitat '67  
Montreal, Quebec (1967)  
Moshe Safdie

- doesn't look like traditional housing  
- high density using non-traditional form  
- visual dynamism (optical relationship between boxes)  
- time/seasons ever present  
- "pedestrian streets" provide intermediary state (not in, not out)


McGill University’s Canadian Architecture Collection: The Safdie Hypermedia Archive  
http://cac.mcgill.ca/safdie/Habitat/default.asp

Moshe Safdie and Associates  
http://www.msafdie.com/

Expo 67 – Montreal World’s fair  
http://naid.sppsr.ucla.edu/expo67/
Biosphere 2
Oracle, Arizona (1988)
Phil Hawes


Columbia University Biosphere 2 Center
http://www.bio2.edu/
Wind Song
Langley, B.C. (1996)
Davidson, Yuen, Simpson Architects


Windsong Cohousing Community
http://www.cohousing.ca/cohsng4/windsong/

Global Ecovillage Network
http://www.ecovillages.org/

Canadian Cohousing Network Home Page
http://www.cohousing.ca/
Earthships
(Housing typology)

Earthship Network
http://www.earthship.org

-often employ re-used materials

-passive strategies

-earth berm provides insulation and visual link to site

source: http://www.earthship.org/bld/index.php


[A brief survey of the evolution of windows and a study of current window technology. Recommended glazing strategies for desired results (solar heat gain, insulation, glare, etc.).]


[An introduction to the concept of an "eco-village" along with list of examples of built and future eco-villages across Canada.]


[A reminder that various means exist to achieve the same goal. Many societies have, and still do, rely heavily on what is provided to them by nature (as opposed to conquering nature with brut industrial force).]


[Strategies for transforming today’s city into once that in more in tune with nature. The idea that cities can become a source of food production and waste management instead of relying on externalities.]


[An analysis of the human impact on the Earth expressed in terms of the amount of land used. Footprint analysis provides us with a tool to measure our environmental impact for a given course of action.]


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[Examples of passive solar homes from climatic zones showing a wide variety of strategies.]


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