Do you believe that humans have the capability to effectively address the ecological imperatives we face on the planet?
Myelinated neural pathways (neuroplasticity)
Why should my business care about sustainability?

Why bother?

What can we do about such big issues anyway?
10 minutes

Close your eyes, feel the chair supporting you, feet grounded on the earth . . . take a deep breathe

Notice what’s happening in your mind – how you are thinking/feeling . . . be completely present.

Image: What issue associated with sustainability will have the most impact on my life? . . . Image the single greatest effect this issue will have on me and my family.

• What is it that this issue is calling me to work on that I really care about and feel uniquely qualified to address?
What are you trying to sustain?

Life

Life = processes exchange
10 minutes

Close your eyes, feel the chair supporting you, feet grounded on the earth . . . take a deep breathe

Notice what’s happening in your mind – how you are thinking/feeling . . . be completely present.

Think of a project in your business you are currently working on (early stages) or are about to begin that can serve as an instrument for working on this issue of sustainability that you deeply care about:

• What is the single greatest area of unrealized potential in my work on this project?

• What is the single greatest problem I face in my work on this project?

• . . . notice observable difference in your mental/physical state

• Discuss . . . reflections
What shifts in you when you focus on potential?
The Whole – potential is greater than the sum of its parts

The Law of Three . . . Charles Krone
So when we’re trying to transform the places we live and work (realize potential), what are we working on?
System Transformation: Three Lines of Work

Carol Sanford

1. Working on ME:
   Entity leading a transformation (change process)

2. Working on Team & Community:
   Need to develop my/our capability to work effectively together

3. Working on System:
   Transformation of a system (greater whole) which we commit to evolving
Environmental Imperatives . . . One Living System

- Potable Water
- Climate Change
- Resource Destruction
- Habitat Health
- Pollution/Toxins
Belief:
Human participatory role in each place (sustaining life)
Nested Systems
A High Performance Liver?
An Ecology
Habitat – People – Buildings – Infrastructure
A Whole Living System

Living System Design
Living & Whole systems
Pattern thinking

Less
Energy
required

Regenerating

Living Systems

Conventional
Degenerating

Green

Sustainable

Regenerative

Restorative

Technical System Design
Technologies & techniques
Fragmented thinking

More
Energy
required

Trajectory of Ecological Design
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Premises

• Business is a primary door to major change on a societal and planetary scale.

• **Regeneration** in business is a **disruptive** paradigm that can scale.

• By working with leaders who serve as change agents, it is possible to shift industries.

• **Destabilization** is required . . . a paradigm shift
Four Paradigms for Interacting with the World

Evolving Capacity . . . Regenerating Wholes

Doing Good . . . . . Improving Fragments

Arresting Disorder . . . Doing Less Bad (Green)

Extracting Value . . . . Taking
Philosophy: Shifting the Paradigm for Interacting with the World

<table>
<thead>
<tr>
<th>Extractive</th>
<th>Less bad</th>
<th>Do good</th>
<th>Regenerative</th>
</tr>
</thead>
<tbody>
<tr>
<td>About me</td>
<td>About us</td>
<td>About us</td>
<td>About us</td>
</tr>
<tr>
<td></td>
<td>Inter-connections</td>
<td>Reciprocity</td>
<td>System</td>
</tr>
<tr>
<td>Fragments</td>
<td>Fragments stabilize them</td>
<td>Fragments Improve them</td>
<td>Whole</td>
</tr>
</tbody>
</table>
Homework Assignment

Think again of the project you are currently working on that you deeply care about:

- What does it look to approach the project through each of the 4 paradigms?
  - Extracting Value
  - Arresting Disorder
  - Doing Good
  - Regenerating Capacity
First Principles:
What is Regeneration?

Wholes – focusing on our effect on the whole
Potential – initiating with potential (the disruptive intention & effect)
Reciprocity – operating with living dynamic processes
Essence – exhibiting singularity
Nestedness – understanding our role embedded in larger systems
Nodal – seeking interventions at the point of highest systemic return
Development – increasing capacity of wholes to be vital & viable
Is this possible?

Is this practical?
System Transformation: Three Lines of Work

1. Working on ME:
   Entity leading a transformation (change process)

2. Working on Team & Community:
   Need to develop my/our capability to work effectively together

3. Working on System:
   Transformation of a system (greater whole) which we commit to evolving

3. Effect on the Whole

2. Organization

1. Self
System we are seeking to Transform:

Processes that develop the interactions between human worldviews, the built environment, and living systems.
Belief: “Humans are nature”

- Processes for developing how humans create and inhabit built environments can regenerate life.

- Human world views evolve through processes of exchange.

- The built environment has the potential for regenerating life.

- All life is sacred.
Philosophy:
“Everyone plays a valuable role”

Use every project and interaction as an instrument for developing our own and others’ capacity to engage regenerative thinking/doing/being with caring and compassion.
Principles:
“The built environment serves as an instrument for regenerating life”

- Develop regenerative thinking . . . by engaging people in regenerative processes that builds their capacities and capabilities. Everyone in the organization engages regenerative thinking in everything we do.

- Make it real . . . regenerative frameworks must be grounded in reality to come alive.

- Image potential . . . which emerges when seeing wholes, not working with fragments.

- Everything is connected . . . and contributes to the whole through reciprocal interrelationships.

- Be of service . . . to our clients and what they seek to transform. Build systemic affectiveness in the way that we interact with everyone.

- Give it time . . . to evolve and develop. Slowing the process regenerates the exchanges necessary for growth.

- Care beyond ourselves . . . people come alive and regenerate energy when contributing to the greater good by working on what they really care about.

- Give it away . . . by sharing freely what we know and do not hold anything as proprietary. Give more than we take.

- Manifest Essence . . . in our work. Each person and place is entirely unique.
Lions Gate Secondary Wastewater Treatment Plant: Understanding the essence of Vancouver
Lion’s Gate WWTP Project Principles

**Think Big**: think beyond traditional boundaries . . . in order to:
- integrate technical and living systems
- understand effects beyond site boundaries
- develop longer term sustainable solutions
- serve larger ecosystems

**Embrace Waste**: use waste as a valuable resource . . . in order to:
- displace fossil fuels and reduce GHG
- generate local renewable energy
- offset potable use
- recover nutrients
- rehabilitate degraded ecosystems

**Optimize Interrelationships**: seek creative solutions that transcend constraints . . . in order to:
- reconcile cost, value, and performance
- maximize exchanges

**Enrich the Community**: increase quality of life & economic development . . . in order to:
- transform the health of the place
- become a catalyst for regional change
- be an affordable asset for current and future generations

**Inspire Stewardship**: foster responsibility, transparency & education . . . in order to:
- expand active engagement in the health of the community and ecosystem
- understand behavioral impacts
BUILD SCENARIO A RESOURCE

Resources from Waste

CASE STUDIES

GLOBAL Amager Ski Slope (Denmark)
- Integrated district energy and heating system
- Visual transformation of a waste to energy treatment plant, creating one of the largest environmental initiatives in Denmark
- A progressive vision for a new type of waste treatment facility

REGIONAL Dockside Green (Victoria)
- 12 phase, three neighborhood integrated development plan
- Urban regeneration through brownfield reuse, sustainable building and triple bottom line standards
- Innovative planning between owner and developer

LOCAL False Creek Energy Center (Vancouver)
- Domestic hot water and district energy for the NEU
- Visible landmark in Cambie Street Bridge community
- First plant of its type to harvest heat from municipal wastewater, substantially reducing GHG emissions of the City of Vancouver

Massing Diagram
Well-crafted headworks and UV treatment buildings establish the urban character along W. First St., independent of development partners

Site Section (N/S)
Development volumes along W. First St. provide a transition between existing grade and the working level of the facility

Treatment Diagram
BAF technology; digestion with food and yard waste at an on-site renewable energy centre; maximizing IRR synergies for energy and/or heat

Vignette
Development at the foot of Pemberton will be active, clearly expressing the need, "Something is happening here"
BUILD SCENARIO B  COMMUNITY
Strengthening Partnerships

GLOBAL: Highline (New York)
- Urban amenity that connects different rail lines
- Nature in the city, changing the busy street level experience to a passive park setting above the hustle of New York City
- Perception changing through design

REGIONAL: LUFA Farms (Across Canada)
- Game changers in urban agriculture profit and sustainability
- 2800 m2 greenhouses producing 40 varieties of produce
- Scientific and technological developments to forward urban agriculture initiatives

LOCAL: Granville Island (Vancouver)
- Farmers market, day vendors, and artists
- Glassblowing, Printmaking, Lutheri jewelry, pottery, art galleries, boatbuilders, and Woodworkers studios
- 50 permanent retailers and 100 day vendors

Boards created by The Miller Hull Partnership LLC
BUILD SCENARIO C  NATURAL
Brownfield to Greenfield

CASE STUDIES

GLOBAL  Marina Barrage (Singapore)
- Urban flood control / drinking water infrastructure education
- Active and passive recreation park on an occupiable green roof with panoramic views of Singapore
- Multipurpose leaseable community gathering spaces

REGIONAL  Olympic Sculpture Park (Seattle)
- Reconnecting the city to the waterfront, bridging traffic, trains, and steep grades
- Museum quality, regional destination
- Creates a vibrant waterfront amenity on a former brownfield site

LOCAL  Everett Crowley Park (Vancouver)
- Passive recreation, nature appreciation, and wildlife habitat in the city
- Make the natural processes of habitat regeneration visible
- Former site of Vancouver’s primary landfill and later a dairy farm

Regional Destination Park
Narrative Landscape
Centre for Urban Biodiversity
Divert flow from Existing Outfall
Highest quality effluent

Massing Diagram
The wetland park landscape lifts up and over the WWTP functions, with views both into the MBR gallery and to the city and Burrard inlet.

Site Section (N/S)
A one-meter deep expense of soil caps WWTP functions, hosting wetlands, swales, paths, gathering places, and habitat opportunities.

Treatment Diagram
Baffled flotation with MBBR, Thermal reduction with energy recovery; Advanced technology resulting in high quality effluent.

Vignette
This place is about water in all its forms; cleaned through natural processes and celebrated with reverence.

Boards created by The Miller Hull Partnership LLC
Metro Vancouver
Iona Island wastewater Treatment Plant

[Map of Metro Vancouver highlighting Iona Island wastewater Treatment Plant]
Metro Vancouver
Iona Island wastewater Treatment Plant
Metro Vancouver
Iona Island WWTP
Metro Vancouver
Iona Island wastewater Treatment Plant
Re-membering
Philosophy Revisited: Re-membering our role in the potential of each unique place

Image from www.wri.org
What is Development?

The act of bringing out the capabilities or possibilities of something to a more advanced or effective state . . . Manifesting potential

Are we discovering potential?

Are we creating new potential?
How can we shift our work/business to focus on transforming wholes by developing Potential?
Regeneration is:

- The act and effect of developing CAPACITY in specific beneficiaries, that is appropriate to their evolution at a point in time,
- Through particular offerings that enable further revelation and expression of the beneficiary’s ESSENCE,
- With the result of the beneficiary advancing and actualizing the VITALITY, VIABILITY AND EVOLUTION of Social and Planetary SYSTEMS that support life and living.
Living Systems: Guilds of Reciprocal Interrelationships

From Permaculture Designers Manual, Bill Mollison