

# Becoming Regenerative: Evolving American Business Practices

## Energypath 2019



Photo courtesy of Denmarsh Photography Inc.

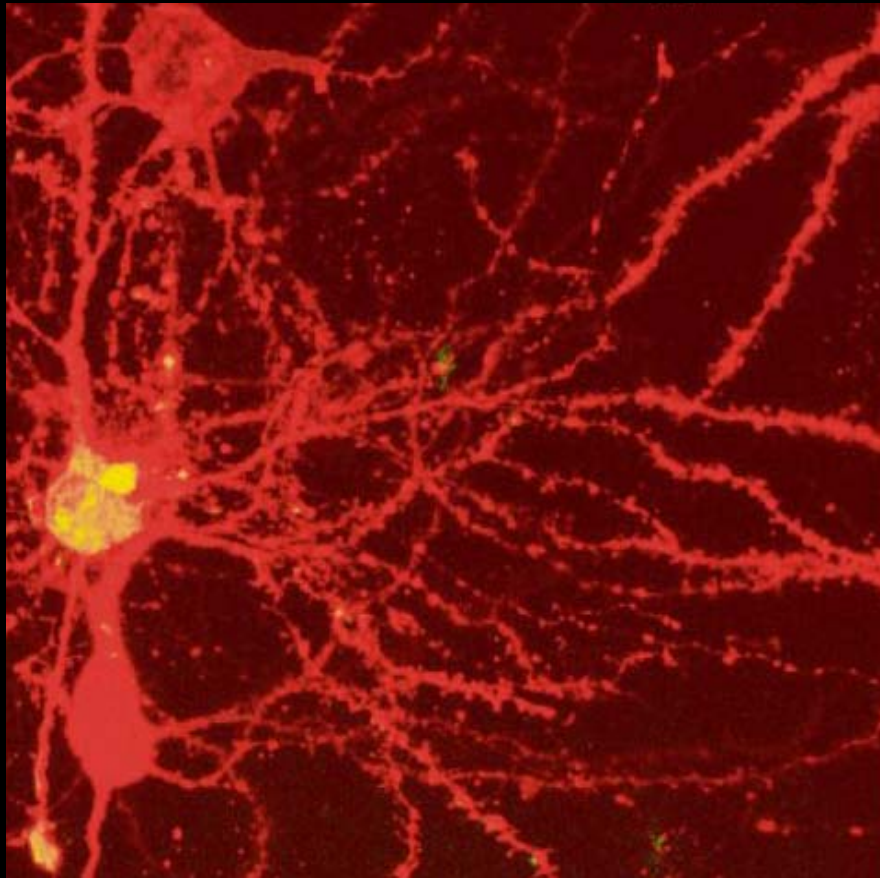
John Boecker, AIA, LEED Fellow

7group

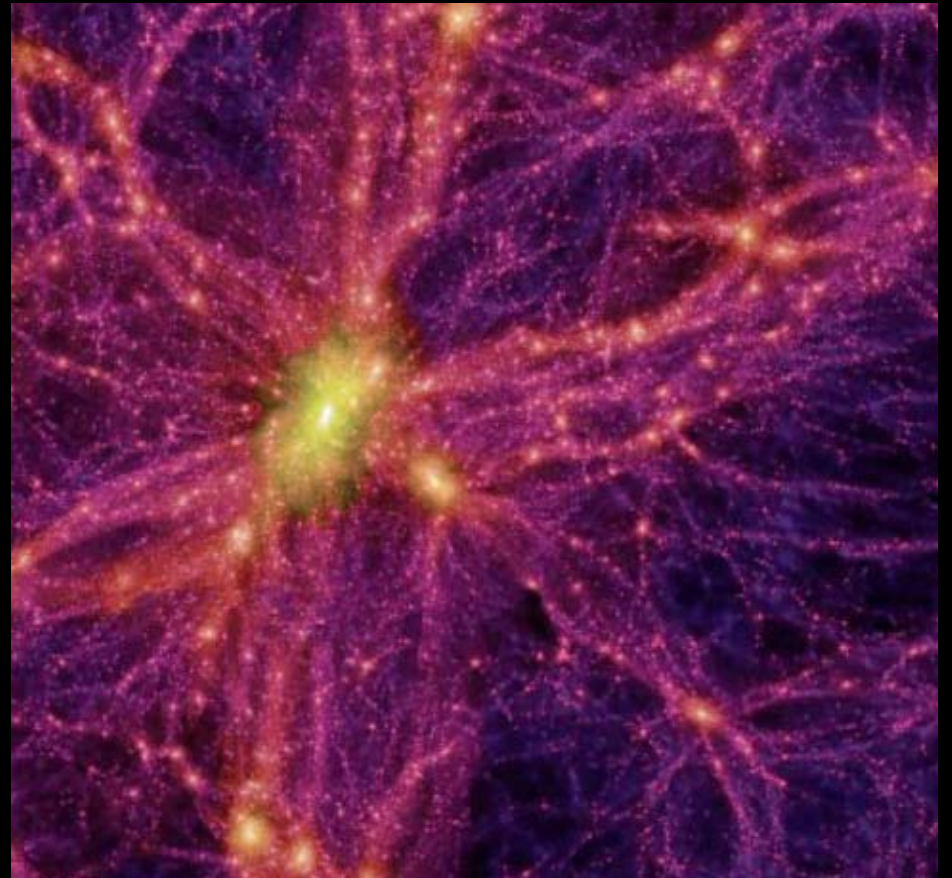
Do you believe that humans have the capability to  
effectively address the ecological imperatives  
we face on the planet?



## Myelinated neural pathways (neuroplasticity)



Brain Cell



The Universe

A EF HI KLMN T VWXYZ  
BCD G J OPQRS U

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:

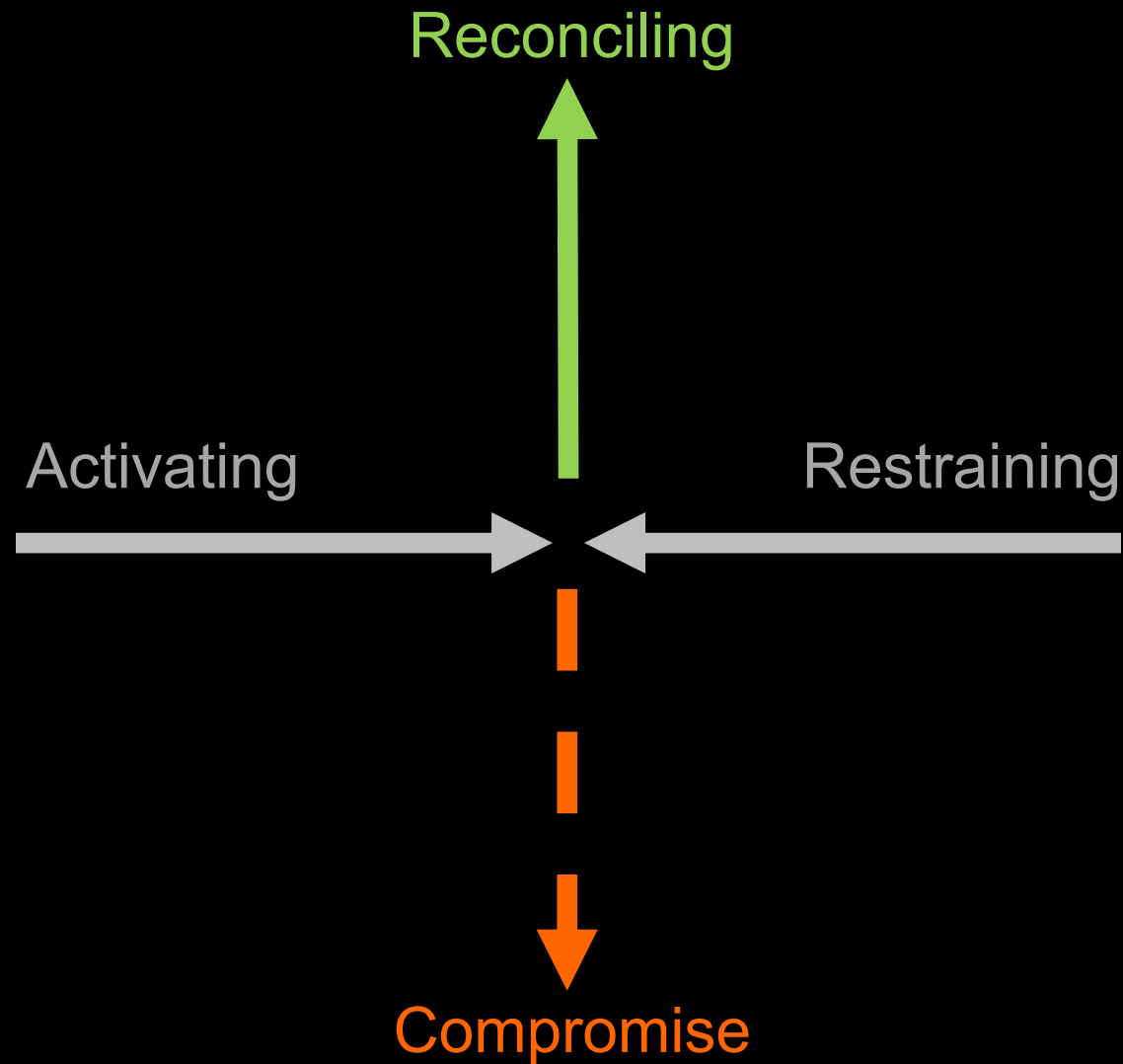
- What is the single greatest area of **unrealized potential** in my work on this project?
- What is the single greatest **problem** I face in my work on this project?
- . . . notice observable difference in your mental/physical state
- Discuss . . . reflections



What shifts in you when you focus on potential?

# The Whole – potential is greater than the sum of its parts

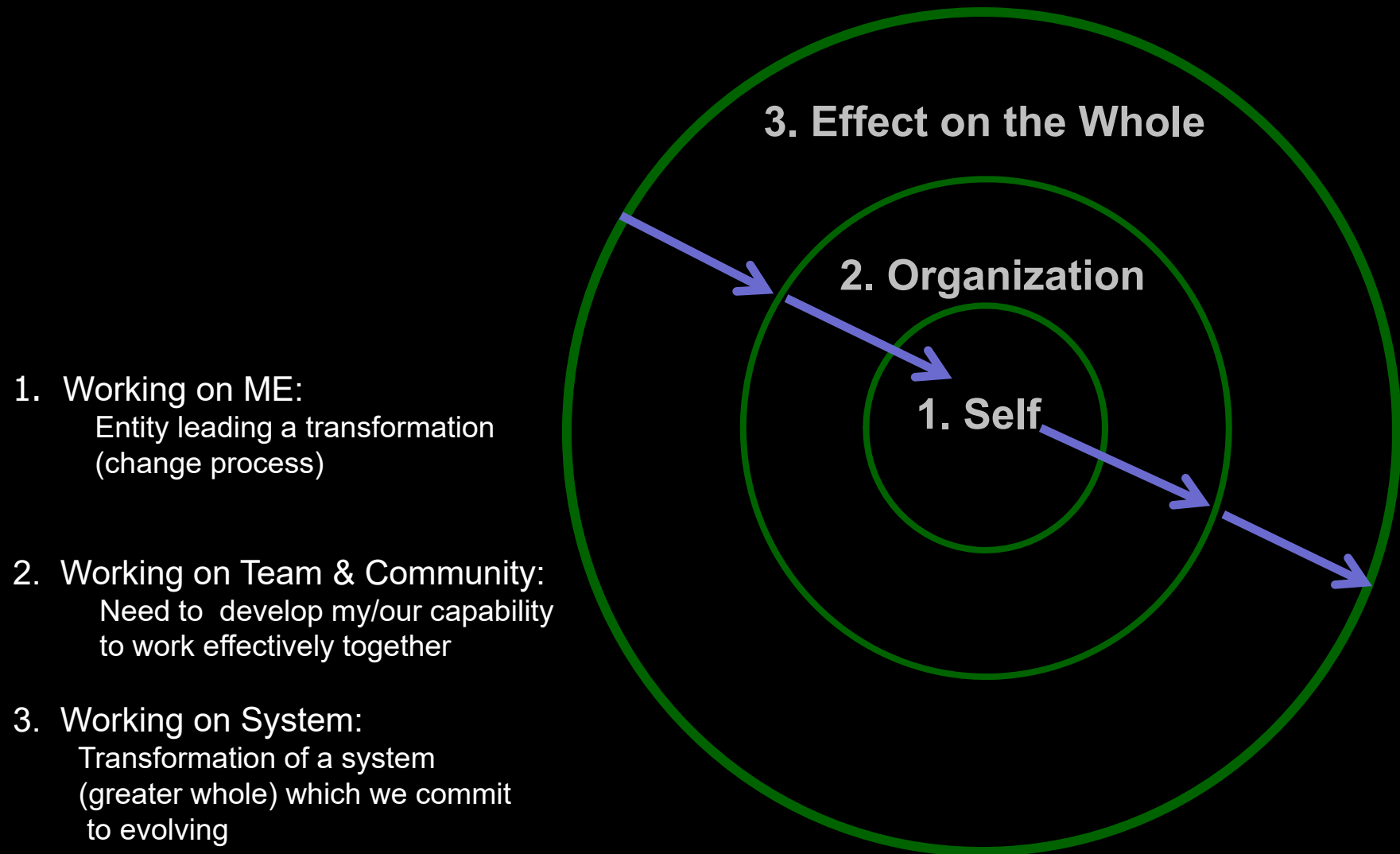
The Law of Three . . . Charles Krone



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





Belief

Philosophy

Principles

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Concept

Strategies

Design

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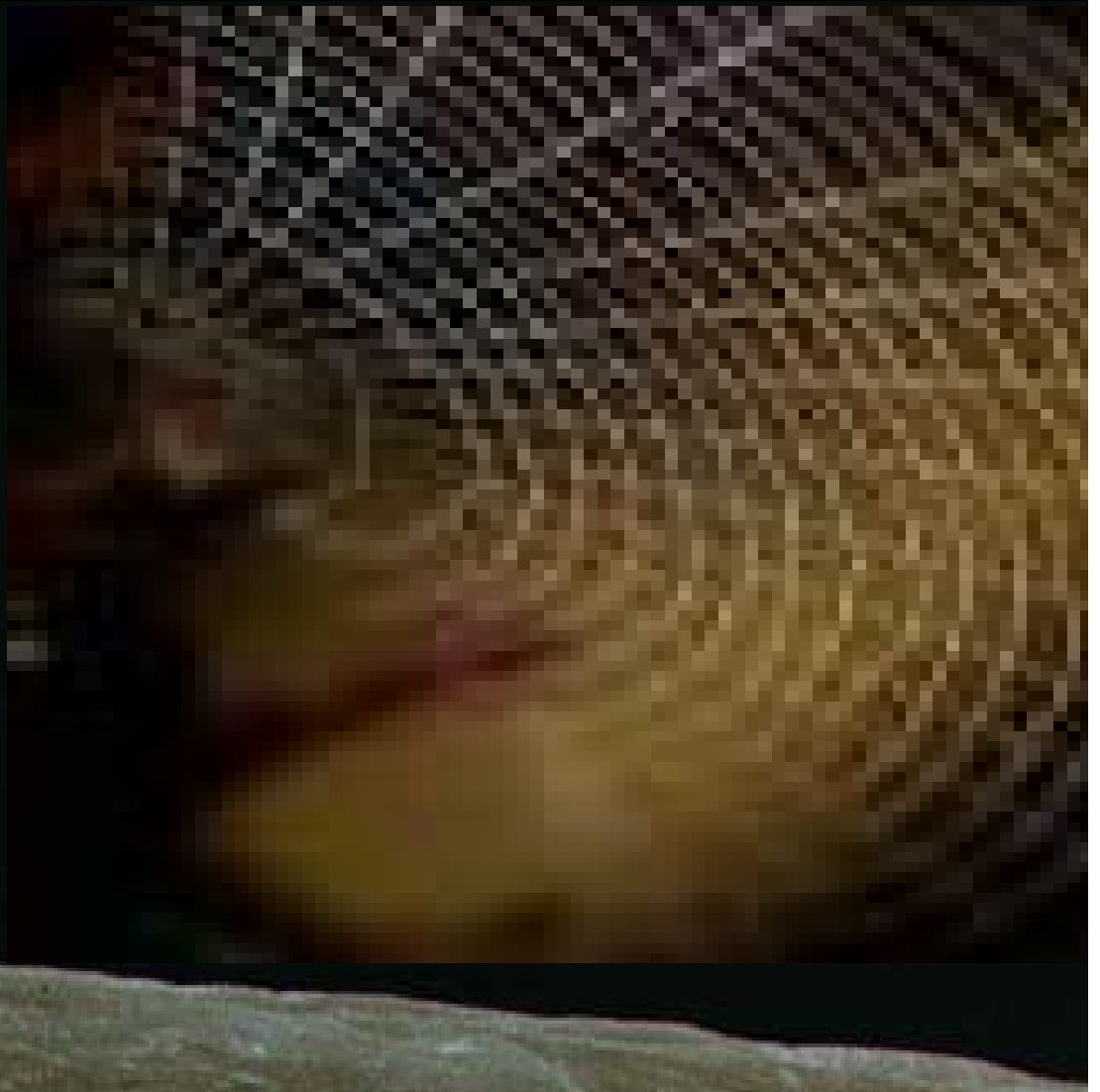
Test (Implement)

Audit

Evaluate

# Environmental Imperatives . . . One Living System

- Potable Water
- Climate Change
- Resource Destruction
- Habitat Health
- Pollution/Toxins

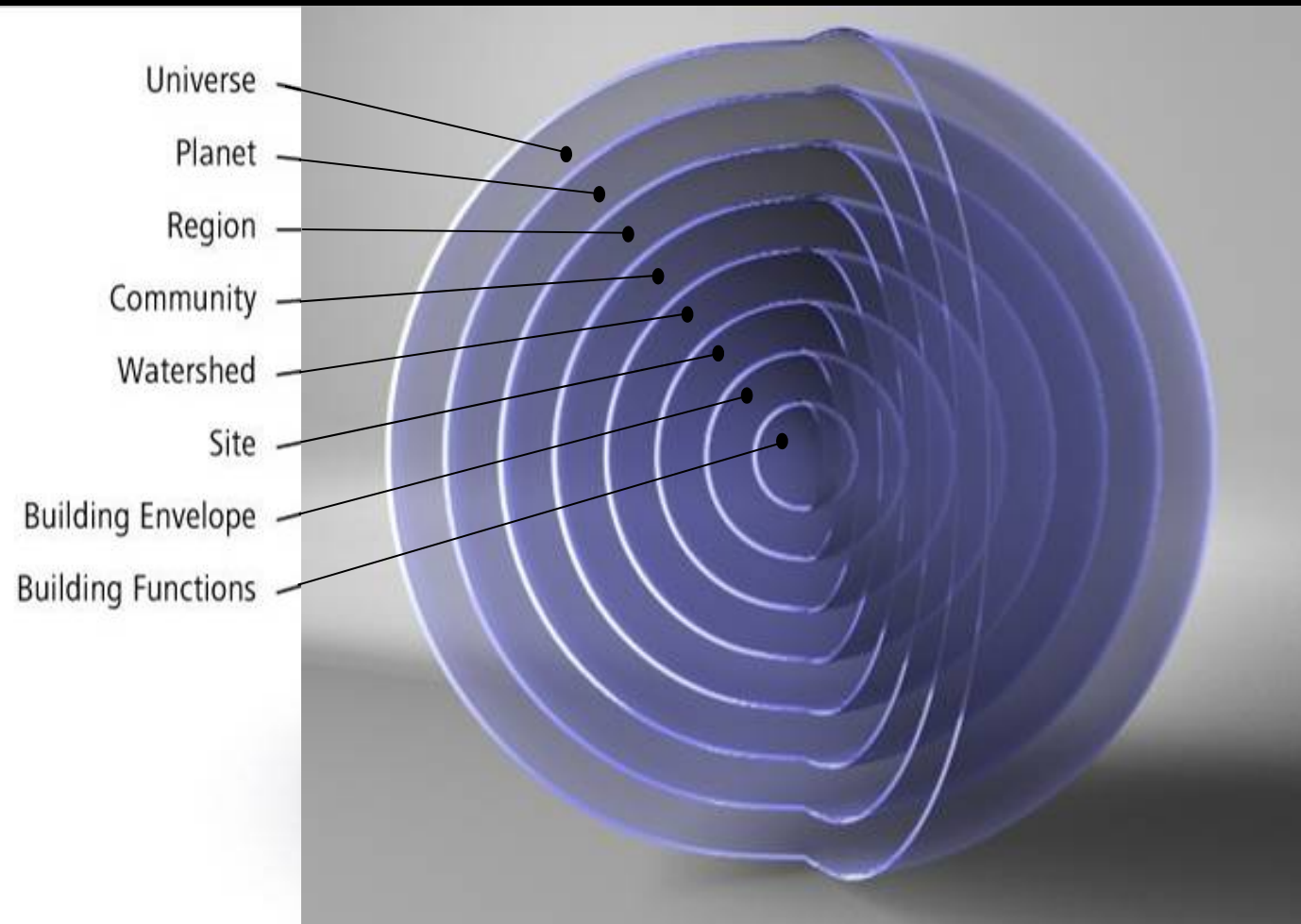


Belief:  
Human participatory role in each place (sustaining life)

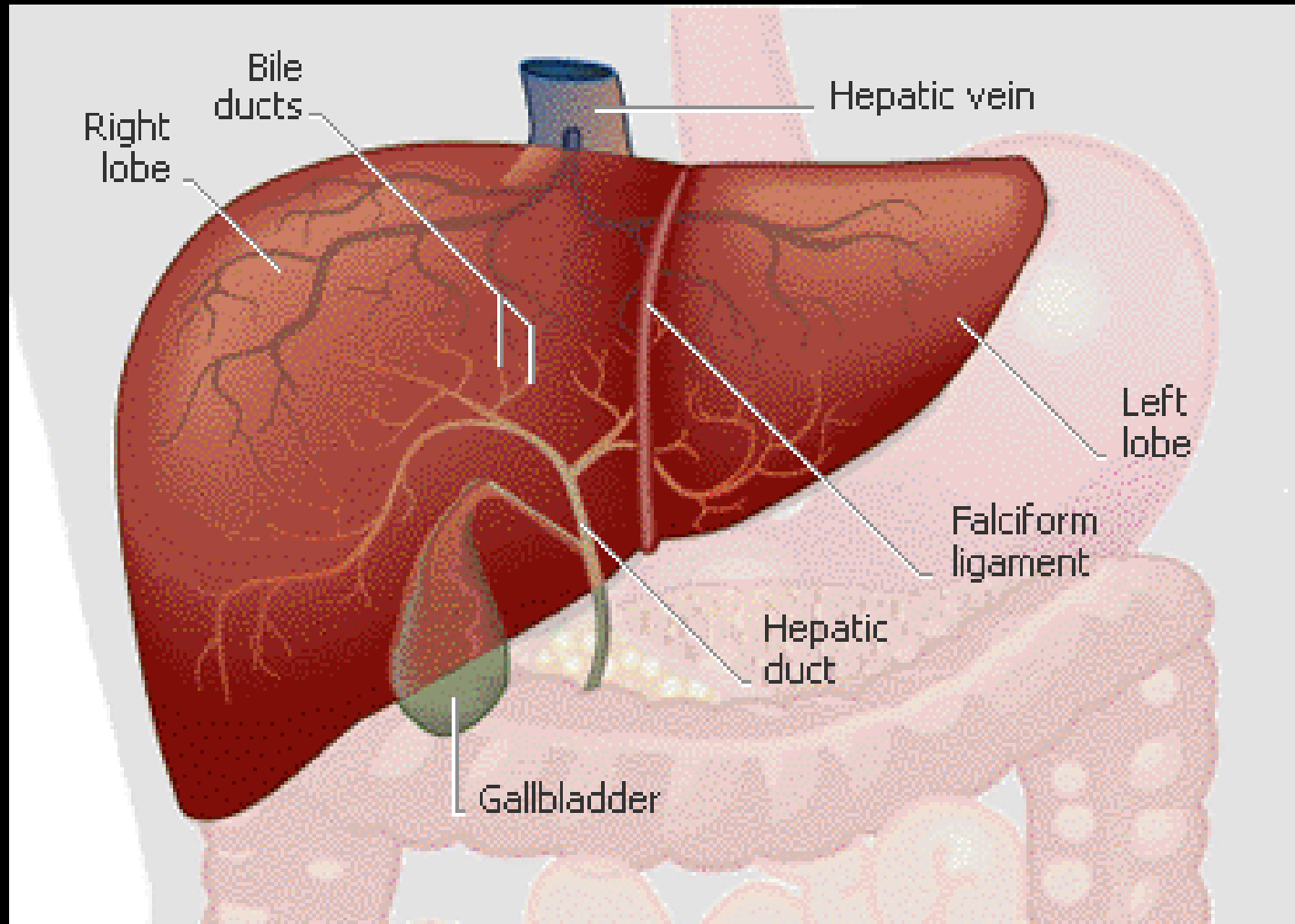


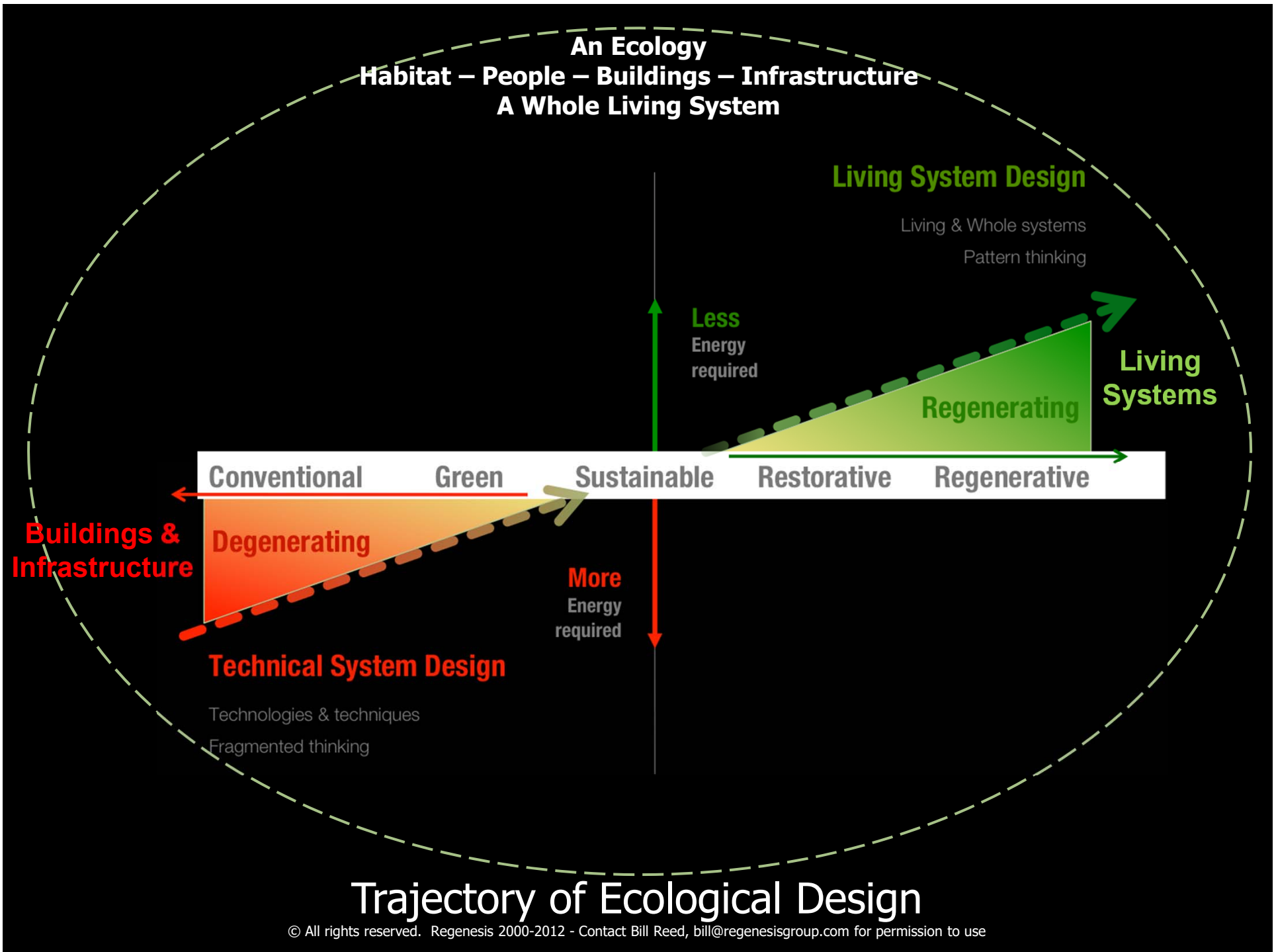
Image from Biohabitats, Inc.

# Nested Systems



## A High Performance Liver?







# 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

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Doing Good . . . . . Improving Fragments

Arresting Disorder . . . . Doing Less Bad (Green)

Extracting Value . . . . . Taking

# Philosophy: Shifting the Paradigm for Interacting with the World

Extractive	Less bad	Do good	Regenerative
About me	About us Inter-connections	About us Reciprocity	About us System
Fragments	Fragments stabilize them	Fragments Improve them	Whole



## 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

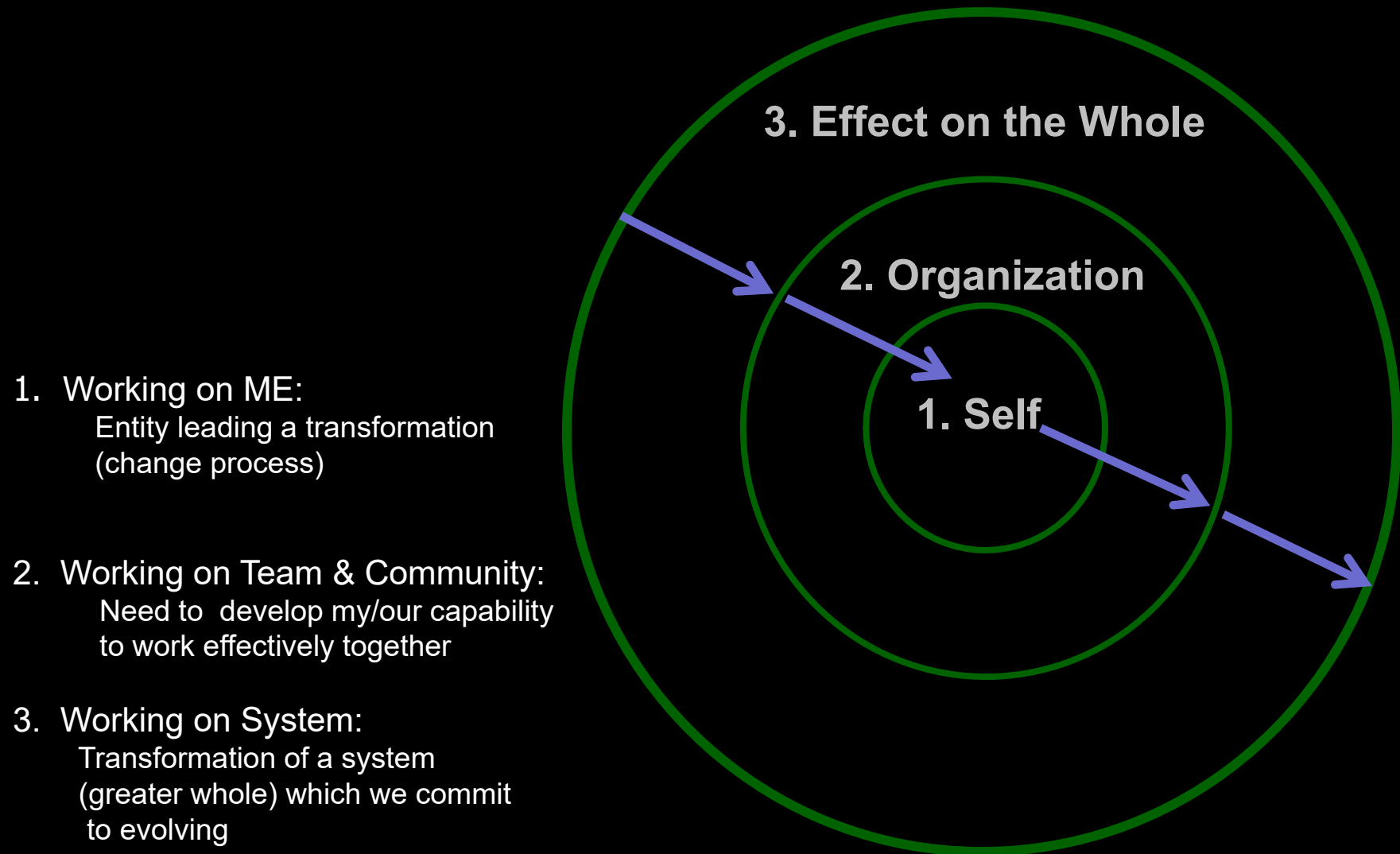
Development – increasing capacity of wholes to be vital & viable

Is this possible?

Is this practical?



# System Transformation: Three Lines of Work



## **System we are seeking to Transform:**

Processes that develop the interactions between human worldviews, the built environment, and living systems.

Belief

Philosophy

Principles

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Concept

Strategies

Design

---

Test (Implement)

Audit

Evaluate

## **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. **7group**



# 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:

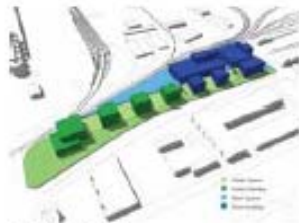
- expand active engagement in the health of the community and ecosystem
- understand behavioral impacts

# BUILD SCENARIO A RESOURCE

## Resources from Waste



Incubator Spaces  
Specialty Fabrication  
and Production  
R&D Workshops  
Food Truck Plaza  
District Heat / Energy  
Production



### 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; Codigestion with food and yard waste at an offsite renewable energy centre; Maximizing IRR synergies for energy and/or heat



### Vignette

Development at the foot of Pemberton will be active, clearly expressing the fact, "Something is happening here"

## CASE STUDIES



### GLOBAL Amager Skel 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 neighbourhood: Integrated development plan
- Urban regeneration through brownfield reuse, sustainable building and triple bottom line standards
- Innovative financing between owner and developer



### LOCAL False Creek Energy Center (Vancouver)

- Domestic hot water and district energy for the NEU
- Visible landmark to Cambie Street Bridge commuters
- First plant of its type to harvest heat from municipal wastewater, substantially reducing GHG emissions of the City of Vancouver

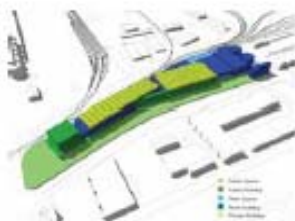


# BUILD SCENARIO B COMMUNITY

## Strengthening Partnerships



- Urban rooftop greenhouses
- Active public market place with conservatory
- Artist studio spaces
- Farmers market space
- Highest WWT adaptability



### Massing Diagram

The plant is largely invisible to the public, with its roof and north perimeter occupied by active community and agricultural functions



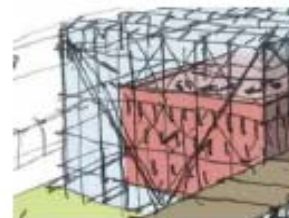
### Site Section (N/S)

An active street edge and covered market activities thrive along W. First St with greenhouses above the secondary clarifiers



### Treatment Diagram

Big Tanks accommodate future advances; Deep tank activated sludge with stacked secondary; TAD w/ biogas to produce electricity and heat



### Vignette

The glazed conservatory uses heat from the plant to grow and exhibit flora and educate visitors about the research discoveries onsite

## CASE STUDIES



### GLOBAL Highline (New York)

- Urban amenity that converts derelict 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 agricultural initiatives



### LOCAL Granville Island (Vancouver)

- Farmers market, day vendors, and artists
- Glassblowing, Printmaking, Luthiery, jewelry, pottery, art galleries, boatbuilders, and Woodworkers studios
- 50 permanent retailers and 100 day vendors

# BUILD SCENARIO C NATURAL

## Brownfield to Greenfield



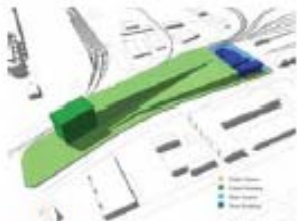
Regional Destination Park

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 MSR gallery and to the city and Burnard Inlet.



### Site Section (N/S)

A one meter deep expanse of soil caps WWTP functions, hosting wetlands, weirs, paths, gathering places, and habitat opportunities.



### Treatment Diagram

Ballasted flocculation 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.

## 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

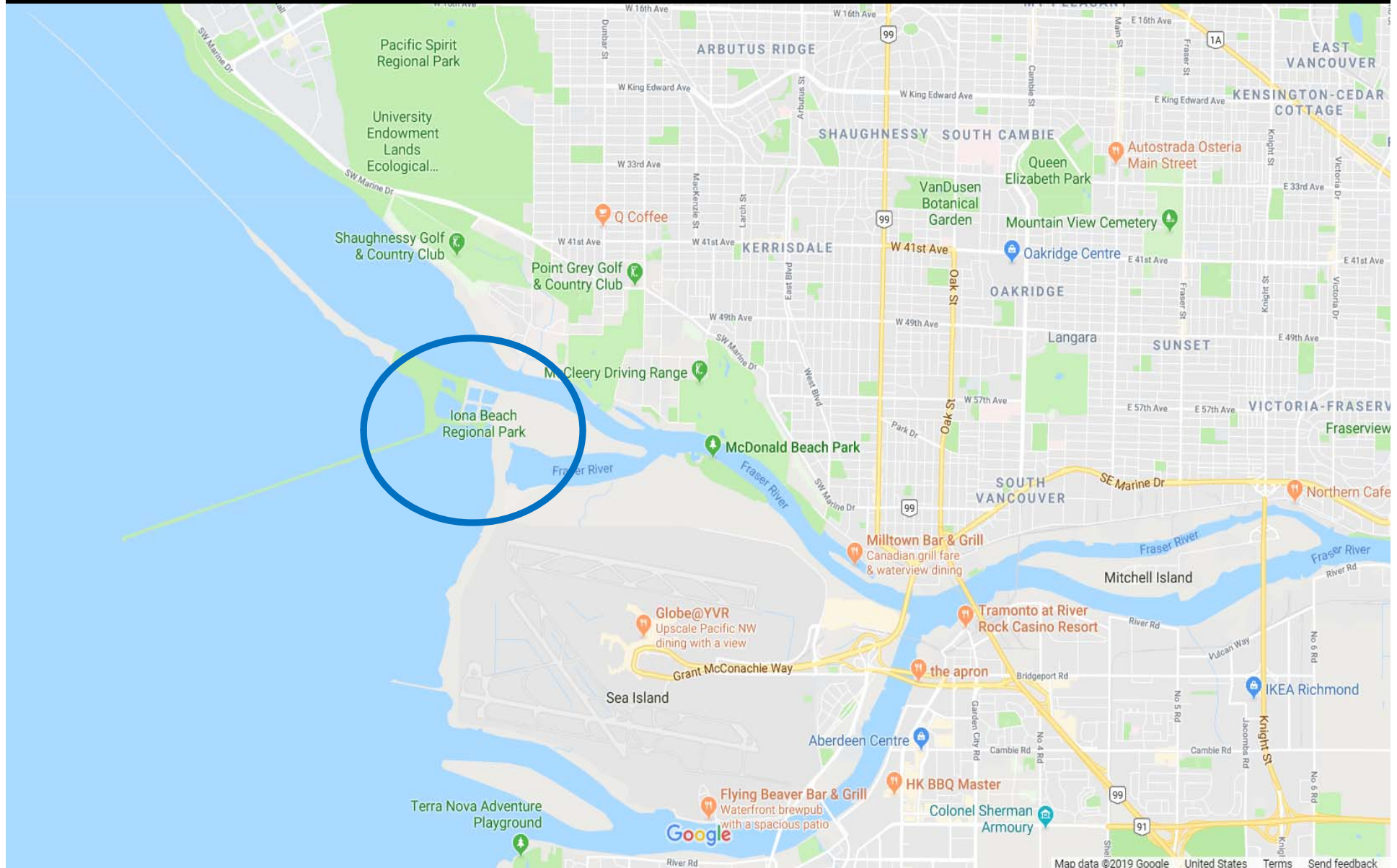


### LOCAL Everett Crowley Park (Vancouver)

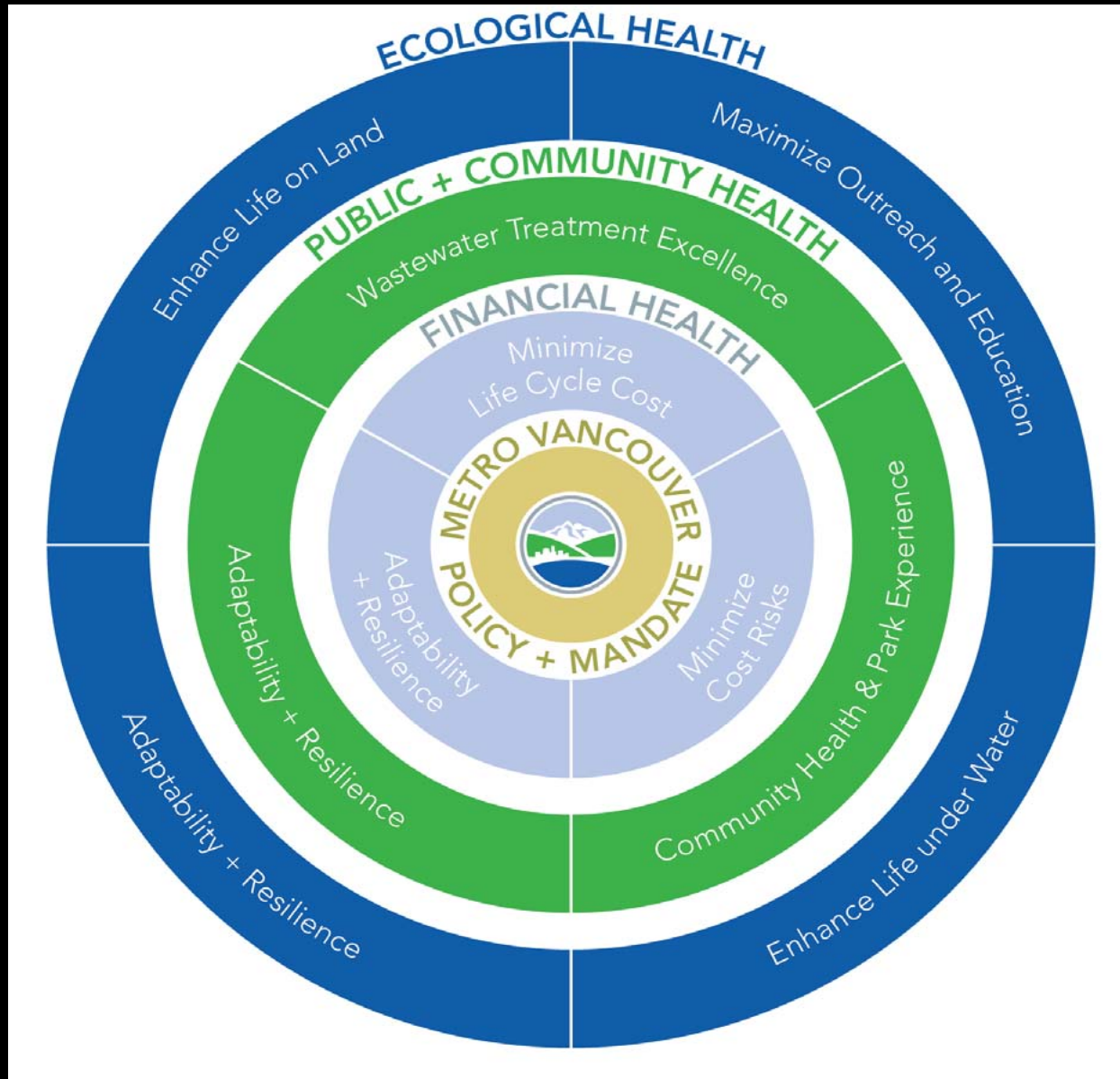
- Passive recreation, nature appreciation, and wildlife habitat in the city
- Make the natural processes of habitat regeneration visible
- Former site of Vancouver's primary landfill and later a dairy farm



# Metro Vancouver Iona Island wastewater Treatment Plant



# Metro Vancouver Iona Island wastewater Treatment Plant



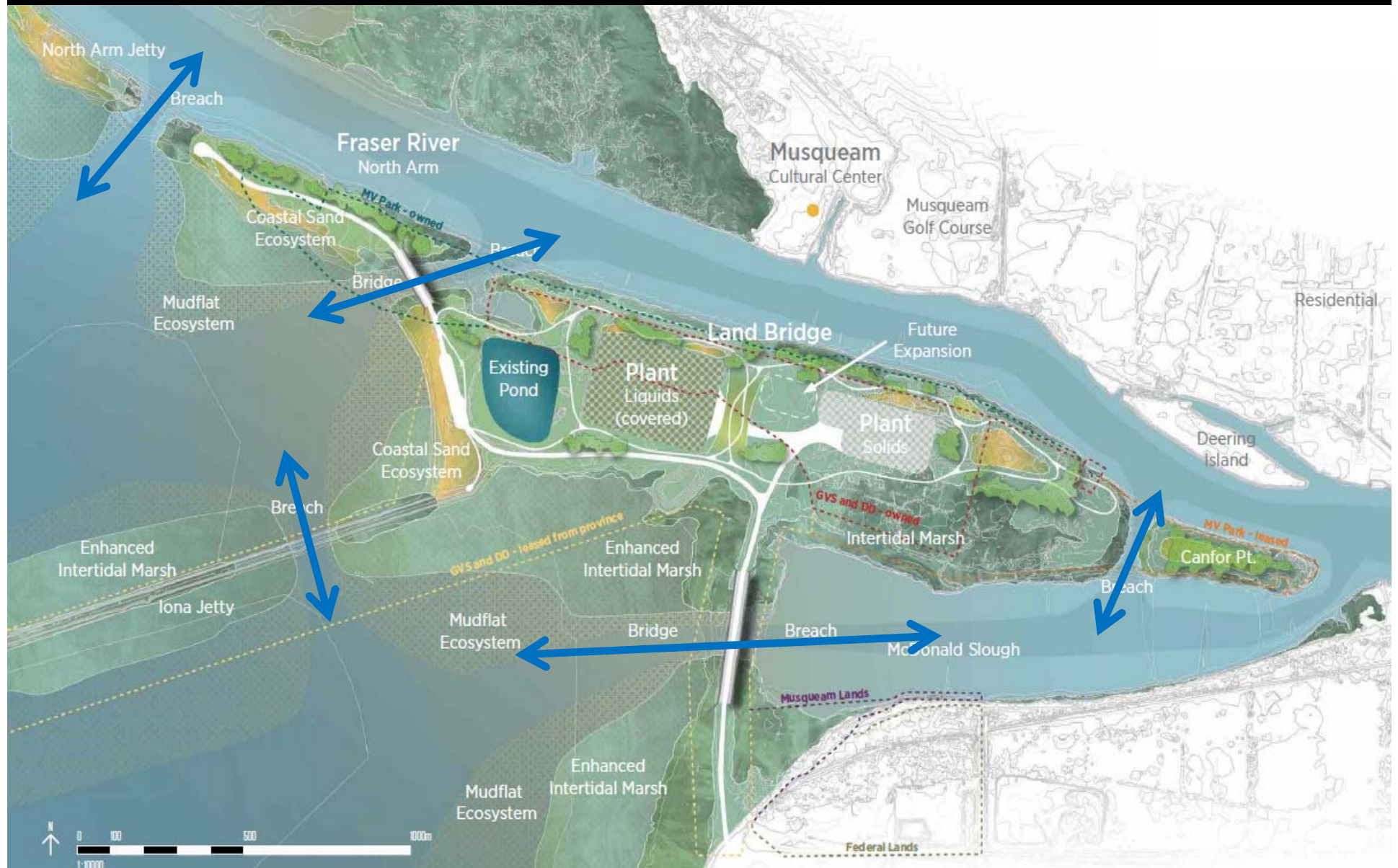


# Metro Vancouver Iona Island WWTP

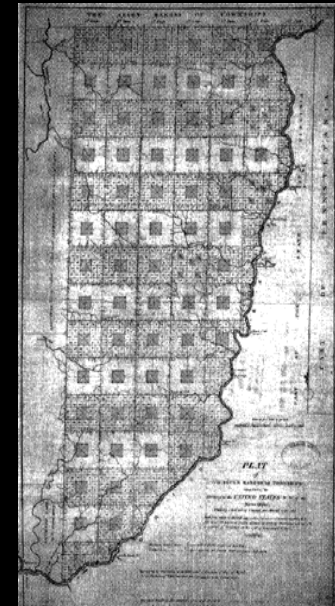
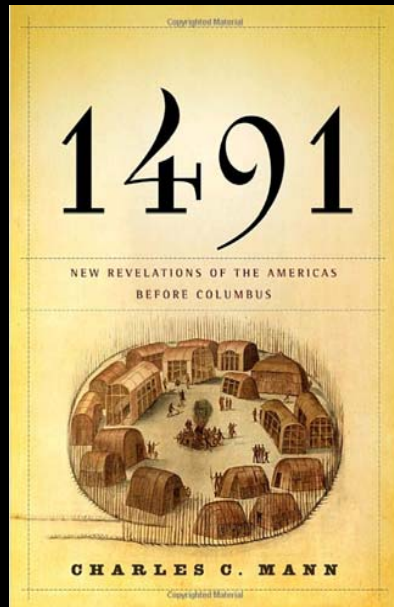




# Metro Vancouver Iona Island wastewater Treatment Plant



# Re-membering



Philosophy Revisited:  
Re-membering our role in the potential of each unique place



Image from [www.wri.org](http://www.wri.org)

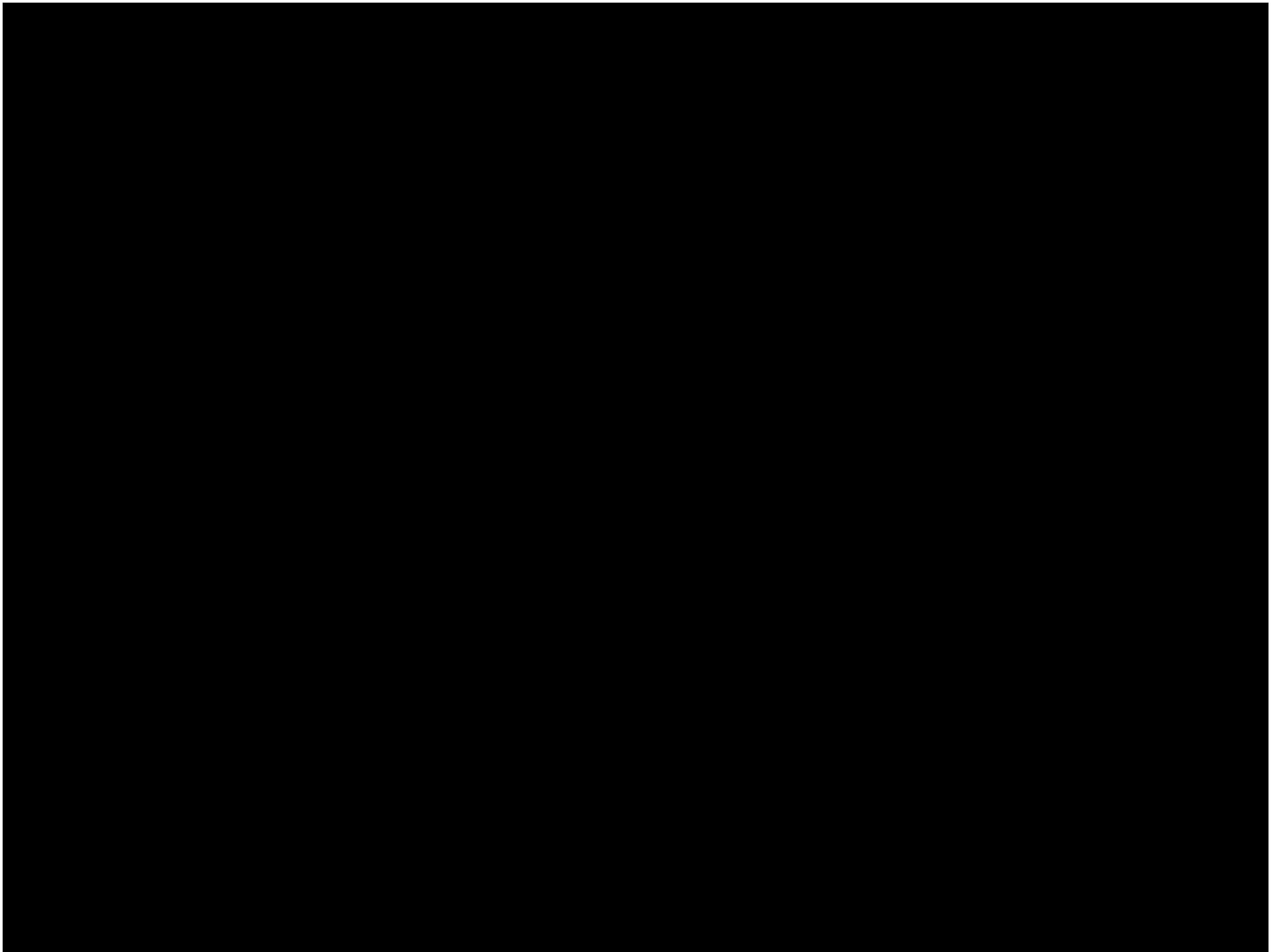
# What is Development?

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?

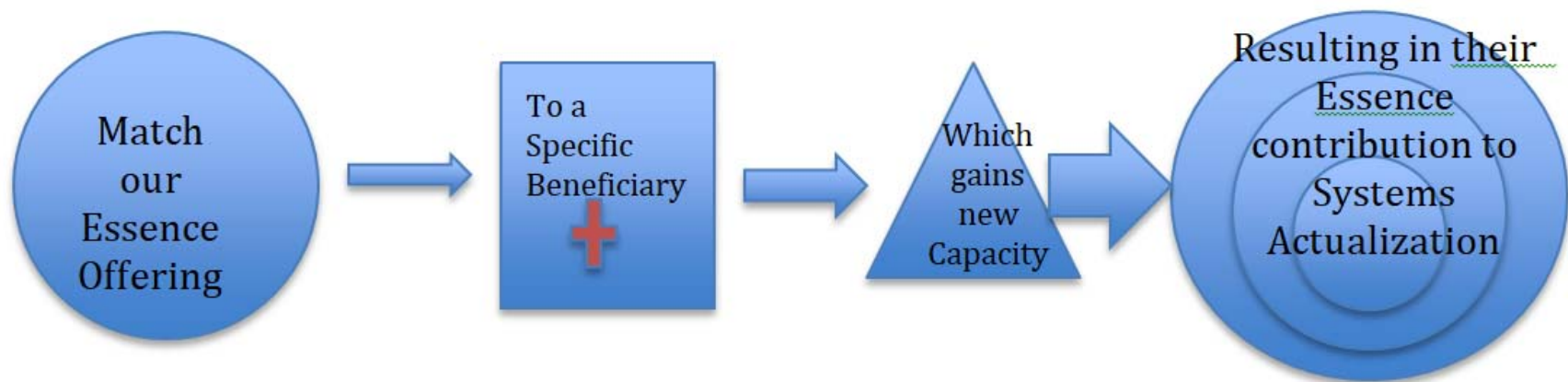
How can we shift our work/business to focus  
on transforming wholes  
by developing Potential?





# The Regenerative Business

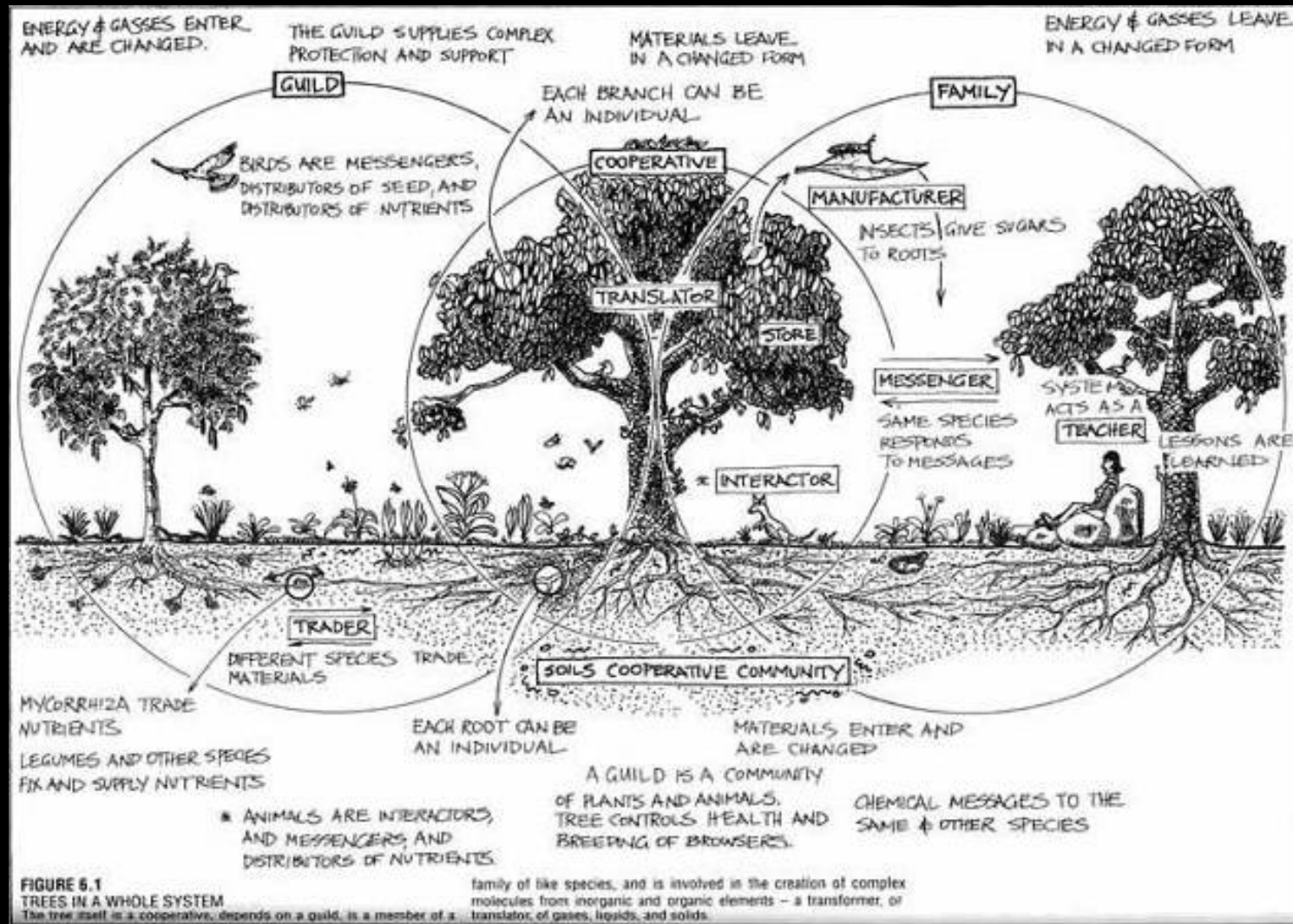
## Regeneration: What is it and how does it work?



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