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Author: Richard Piacentini

SDG 13: CLIMATE CHANGE
BEING LESS BAD IS NOT GOOD ENOUGH ANYMORE

Center for Sustainable Landscapes (Denmarsh Photography, Inc.)

The Phipps Conservatory and Botanical Gardens helps its constituents understand the connections between people, plants, health and the planet

SDG13: Take urgent action to combat climate change and its impacts

Target 13.3:
Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

Introduction

We need a major paradigm shift in the way we build and operate our gardens and live our lives. Being less bad, which is what most sustainability programs seek to achieve, is not going to help us solve major human and environmental challenges such as climate change, habitat destruction, loss of biodiversity and issues related to water, energy, health and food security. We need to inspire our communities to embrace positive change by leading by example.

We often focus on the symptoms of problems, like climate change or cancer, and not the causes of the problems, which are related to unsustainable use of natural resources and lifestyles. Greening our buildings, programs and operations can help us inspire our constituents to change the way they interact with the world and address important human and environmental issues. Our progressive leadership in this area can direct us toward a regenerative world in which we respect other forms of life, share the earth's resources and live in harmony with nature. It is an opportunity in which botanical gardens are uniquely qualified to make lasting positive impacts in our communities.

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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

Four different paradigms for interacting with the world

In her work, Carol Sanford describes four different paradigms for interacting with the world.[1]

In the *extractive* model it is all about "me"; the individual doesn't care who or what they hurt to get what they want. The world is seen in fragments, there for the taking. This is colonialism. In the *less bad* model we see a shift in thinking from "me" to "us"; an individual in this paradigm sees the world as fragmented, but recognizes the fragments as interconnected and tries to stabilize them. This is where the environmental movement started, as exemplified by the "reduce, reuse, recycle" hierarchy and the first green building certification systems. The *do good* model is also about "us," but recognizes reciprocity; an individual in this model sees the world as fragmented but interconnected and tries to improve it. Some later iterations of green building programs fit this model. The final paradigm is *regenerative*. It is about "us," and seeing the world as a whole interconnected system rather than separate fragments.

A regenerative world

In a regenerative world, individuals move beyond thinking about themselves in isolation and see the larger social and natural systems that we collectively need to survive. This is the paradigm we need to adopt for the long-term health of the planet. Climate change, loss of habitats and biodiversity are all symptoms of a problem that can be addressed with regenerative thinking.

It is a lifestyle issue. We routinely ignore and support activities that are bad for human and environmental health. With our use of end products, we support fossil fuels, mineral extraction, monoculture crops propped up by chemical fertilizers and pesticides and meat produced in inhumane conditions

Aerial view of the Phipps Living Campus (Lofty Views)

Café Phipps (Adam Milliron)

with a diet of antibiotics and hormones, to name just a few. Nothing like this exists in nature. We are polluting the planet with millions of pounds of toxic persistent chemicals each year. By 2050, it is estimated that our disposable way of living will result in more plastic in the ocean than fish. We are presently headed toward a future where we will be remembered not for our technological or artistic achievements, but for the terrible devastation we brought upon the planet.

It doesn't have to be this way, but it means we can no longer ignore the way we live.

Imagine what your garden would look like 10 years from now if it were regenerative. Will you reach that goal? If not, what is holding you back? Quite often the answer given is "We can't afford it." In the developed and rapidly developing parts of the world, that answer isn't good enough anymore. If we cannot build a building or operate a program that contributes to making the world a better place we need to seriously consider whether we should build or do it at all. It comes down to acting on our values. If climate change and the loss of biodiversity and habitats are truly important, than everything we do contributing to that needs to be seen as a high priority.

The Phipps 'journey'

At Phipps that line of thought sent us on a journey beginning in the late 1990s. We started with our buildings because the built environment is responsible for much of the energy and water we use

[1]Sanford, Carol, personal communication, February 25, 2017

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and pollution we produce each year. Over the years since then we have built increasingly greener buildings, ultimately leading up to the Center for Sustainable Landscapes (CSL) in 2012 which is still recognized as one of the greenest buildings in the world.

A defining attribute of the CSL was the adoption the Living Building Challenge (LBC) as our design standard. The LBC is the most rigorous green building rating system in the world. It supports a regenerative way of thinking and is systems-based, which is how nature works. The LBC starts with a powerful premise to create a world that is socially just, culturally rich and ecologically restorative. It requires that projects meet net-zero energy from renewable energy produced on-site, and that buildings capture and treat all their storm and sanitary water. Materials must be non-toxic and low impact. Projects must integrate local culture, biophilia and beauty to foster community and natural connections.

Following our immersion in the LBC, we set out to make all of our programs and projects, from horticulture and facilities to food service, comply with the standard.

More recently, we have begun to align our actions with the 7 First Principles of Regeneration:[2]

1. **Whole:** We think in wholes rather than parts. Holistic rather than reductionist. We see our organization, staff, visitors and ecosystem as interconnected. Nothing works in isolation. We are constantly looking for ways to demonstrate how human and ecological wellness are inextricably connected. We manifest our core values in every initiative and program. We seek to understand whole living systems and our roles as members of nature.

2. **Potential:** We initiate with potential. Rather than trying to solve problems we focus on what we want to achieve and why: We demonstrate the links between human and environmental health at the intersection of the built and natural environments to inspire visitors to change the way they interact with the world.

3. **Reciprocity:** We recognize that we operate within living, dynamic, nested systems, and that we make reciprocal, mutually beneficial interactions with the larger and lesser systems in which we are nested. In our café, for example, we begin with responsible sourcing based on how food is produced, add healthful preparations with no junk food and follow through by composting all pre- and post-consumer waste and eliminating plastic disposables to minimize landfill waste.

4. **Essence:** We exhibit singularity, recognizing that our institution should always work from a place that recognizes our non-displaceable uniqueness. The depth of commitment to linking human and environmental health throughout all of its activities and focus on core values, mission and purpose is what makes Phipps unique.

5. **Nestedness:** We are embedded within greater and lesser systems, each playing a core role in the success of the whole and other nested wholes. We see our roles within our community, region, nation and world as opportunities to develop reciprocal, mutually beneficial relationships, particularly in areas that link human and ecological health.

Center for Sustainable Landscapes - Green Roof (Paul G. Wiegman)

Welcome Center (Paul G. Wiegman)

[2]Sanford, Carol (December 15, 2017). What is Regeneration? Retrieved from https://theregenerativebusinesssummit.com/regeneration/

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6. **Nodal:** We seek interventions at the point of highest systemic return. Similar to acupuncture, where a single point or set of points can have the greatest impact. With programs like *Homegrown*, which installs vegetable gardens at homes in food deserts, or *Let's Move Pittsburgh*, which focuses on regional children's health, we move beyond the conventional botanical garden mission to amplify our impact.

7. **Development:** We seek to grow and develop the capacity in everyone we reach to help them make sustainability a defining component of their lives.

For Phipps it started with our own organization. The following timeline illustrates some of the key decisions that were driven by our developing value chain:

Date	Decision
2005	Adopted 100% renewable energy campus-wide
2005	Aggressive IPM and toxic pesticide reduction
2006	Eliminated plastic disposable serviceware
2006	Began composting all pre- and post-consumer food waste
2009	Eliminated bottled water
2009	Switched to hormone- and antibiotic-free meat, rBST-free milk, and cage-free eggs
2010	Offset all carbon produced to heat all of our buildings
2011	Eliminated soda and junk food from our café
2011	Eliminated factory farmed meats
2015	Divested from fossil fuel investments
2017	Defined new socially responsible investment guidelines

From 2005 to 2016, we reduced the CO_2 output from our buildings by 56% per square meter, twice as much and twice as fast as the Paris Climate agreement. We continue to look at ways to improve efficiency and reduce the use of fossil fuels.

Building sustainable lifestyles

Once we had our house in order, we started to look at ways to develop the capacity in our visitors to adopt more sustainable lifestyles. In mid-January 2017 we forged an agreement with a renewable electricity provider to purchase discounted Phipps memberships that they could use as incentives for visitors to switch their home electricity to renewable energy. Because nobody knows what a ton of CO_2 looks like, we related the amount of CO_2 to barrels of oil burnt. In June, after the U.S. announced plans to withdraw from the Paris Climate Agreement, we lined our front walkway with 16 oil barrels to demonstrate the CO_2 a typical Pennsylvania household produces to power their home each year. To eliminate procrastination, we stipulated that anyone who wanted the free membership had to switch on the spot while visiting Phipps. The result has been phenomenal. In the first 11 months, over 2,000 families have switched to renewable electricity, and those 16 barrels of oil not burnt each year are now more than 32,000.

Conclusions

By taking a regenerative approach in the way they see and interact with the world, botanical gardens can help their constituents understand the connections between people, plants, health and the planet. We all can, and should, take short –term actions to deal with the symptoms of our lifestyles, but ultimately addressing the core problem and adopting a regenerative way of interacting with the world is the best long-term solution for our health and the health of the planet.

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