Company / Business / etc: Interface Carpet (manufacturing)

https://www.interface.com/US

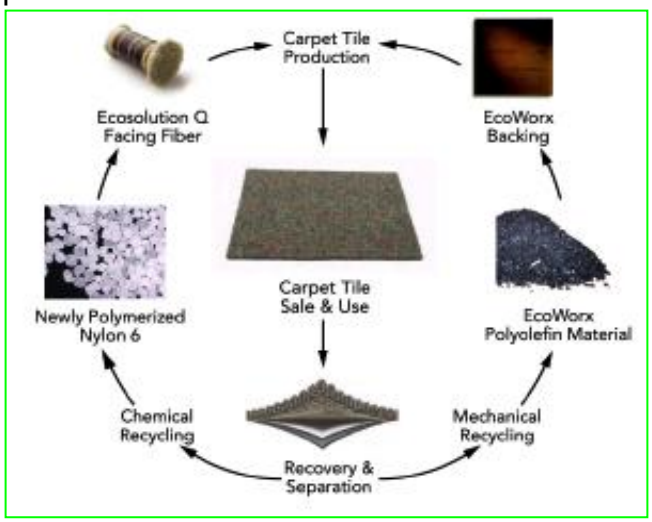
Problem: Carpet manufacturing was (and still is) one of the most polluting and resource-intensive businesses. Many noxious chemicals were (and still are) used. CEO Ray Anderson understood this, saw that he was compromising the quality of life or his grandchildren, and took steps to change.

Solutions and Environmental Principles: Ray Anderson worked with William McDonough to design a new way to manufacture and sell carpets that enabled carpets to be recycled rather than landfilled. **William McDonough Partners employ 3 simple Principles from** living systems, to guide their work:

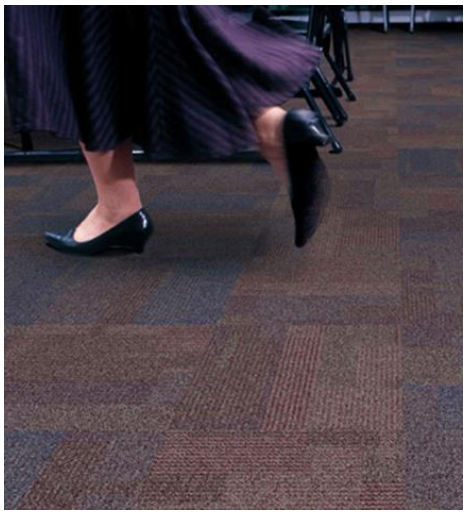
- **USE DAILY SOLAR INCOME** - Renewable energy.
- **WASTE = FOOD** - Everything is a resource for something else.
- **CELEBRATE DIVERSITY** – diversity of place.

Interface began to create carpets that use non-polluting and recyclable chemicals so the carpet can be recycled after its use and used to make new carpet. They began to produce carpet squares rather than wall – to – wall carpet so that if a section is damaged or stained, that one section can be replaced rather than the entire carpet.

Interface now is carbon-neutral because of its use of renewable energy and zero waste policy as well as its currently carbon neutral products. They are now aiming for carbon-negative products.



Carpet squares (tiles) are recycled



Carpet tiles instead of wall-to-wall

The mission of this carpet company is: "to overcome the biggest challenge facing humanity and reverse global warming. It's no longer enough to limit the damage we do, but to think about reversing it. We want to restore our planet and leave a positive impact."

Company / Business / etc: Moxie Bread (Food)

https://www.moxiebreadco.com/

Problem: Ingredients for our food are often sourced from very far away and then produced far away as well. This results in high energy consumption and little to no control over farming practices, land use, pesticide use and more.

Solutions and Environmental Principles:

- **Localize resource use to minimize energy consumption** - Moxie uses 'organic, unprocessed grains directly with family farms (across Colorado, Kansas, Nebraska, Montana, North Dakota and South Dakota) that ethically grow high-quality grains.'
- **Use food resources best adapted to local climate and soils –** Moxie uses 100% **HEIRLOOM GRAINS** that are easier to digest and provide greater nutritional benefits than modern grain varieties.
- **Use food processes most healthy and nutritious for humans (while still having lowest impact on environment)** – Moxie uses '**SLOW FERMENTATION**
  All of our breads undergo a long, slow fermentation process that essentially pre-digests the grains, increasing the bioavailability of their nutrients.'

"As a local, independent bakery, our choices are entirely guided by a desire to nourish our neighbors and foster community."

***Moxie* is "proud to be a founding member of the Colorado Grain Chain, a non-profit organization with the mission of promoting, producing and supporting the use of heritage, ancient and locally-adapted grain products."**

Company / Business / etc: Slow Money (Finance)

https://slowmoney.org/

Challenge: A need to enhance food safety and food security; promote cultural and ecological health and diversity; and, accelerate the transition from an economy based on extraction and consumption to an economy based on preservation and restoration

Environmental Principles and solutions to the problem: In order to address the above challenges, the Slow Money Institute affirms the following **Slow Money Principles:**

1. We must bring money back down to earth.

2. There is such a thing as money that is too fast, companies that are too big, finance that is too complex. Therefore, we must slow our money down — not all of it, of course, but enough to matter.

3. The 20th Century was the era of Buy Low/Sell High and Wealth Now/Philanthropy Later—what one venture capitalist called "the largest legal accumulation of wealth in history." The 21st Century will be the era of nurture capital, built around principles of carrying capacity, care of the commons, sense of place, diversity and nonviolence.

4. We must learn to invest as if food, farms and fertility mattered. We must connect investors to the places where they live, creating healthy relationships and new sources of capital for small food enterprises.

5. Let us celebrate the new generation of entrepreneurs, consumers and investors who are showing the way from Making A Killing to Making a Living.

6. Let us begin rebuilding our economy from the ground up, asking: *What would the world be like if we invested 50% of our assets within 50 miles of where we live? What if there were a new generation of companies that gave away 50% of their profits? What if there were 50% more organic matter in our soil 50 years from now?*

The Slow Money Institute catalyzes the formation of self-organizing local groups, which use a diversity of approaches: public meetings, on-farm events, pitch fests, peer-to-peer loans, investment clubs and, most recently, nonprofit clubs making 0% loans. Since 2010, more than $73 million has flowed, via dozens of local groups, to 752 food enterprises, in deals large and small.

A Slow Money event at Lone Hawk Farm, Longmont, CO

The mission of the Slow Money Institute is: "Slow Money Institute is a non-profit organization dedicated to catalyzing the flow of capital to local food systems, connecting investors to the places where they live and promoting new principles of fiduciary responsibility that "bring money back down to earth."

Rich Earth institute (Fertilizer from Human Urine)

https://richearthinstitute.org/

Challenge: Treatment of human waste requires huge amounts of energy and water and is very expensive. At the same time, fertilizers for food production are expensive to produce and/or becoming limited. How can both of these problems be addressed?

Environmental Principles and solutions to the problem: We know that life is a circle - everything recycles. In human systems, we can design our systems so that by-products of processes are pre-planned to be used in other processes, thus eliminating the concept of waste altogether.

Urine Diversion is the practice of keeping human urine separate from the rest of the wastewater stream. Urine contains most of the plant nutrients found in human waste. Separation of urine at the source keeps these nutrients from causing water pollution and allows them to be used as an agricultural resource.

For millennia, people around the world have been collecting their urine to fertilize plants. While this is already a common practice in many communities, there is a new movement growing to incorporate urine reclamation into infrastructural design.

Through research, demonstration, and education projects, we strive to illustrate the positive effect of this approach in important areas including water quality, food security, energy use, soil health, economic sustainability, carbon footprint, public health, and emergency preparedness.

The mission: The Rich Earth Institute engages in research, education and technological innovation to advance the use of human waste as a resource.

RICH EARTH INSTITUTE

COMPLETING THE FOOD NUTRIENT CYCLE

CROCS (Shoe Industry)

https://investors.crocs.com/esg/environmental/default.aspx

Challenge: Making shoes is very costly and detrimental to the environment, with tons of carbon dioxide and chemicals being emitted into the air as a result. A true challenge is thus posed for the companies of these industries to produce a product that is both comfortable and environmentally efficient. Also, the material used to make crocs is not recyclable - see this website Are Crocs Recyclable? (And Are They Biodegradable?) - Conserve Energy Future (conserve-energy-future.com)

Environmental Principles and solutions to the problem: Crocs has a goal of having net zero carbon emissions by 2030. And, they intend to improve with the materials they use and process in manufacturing their shoes. Specifically, "In addition to eliminating leather from our product line, we're finalizing our approach to a more sustainable bio-based Croslite, the predominant material in our footwear." See Crocs, Inc. - ESG - Environmental. Other solutions to their sustainability goals include:

The mission of Crocs is: committing to providing profound comfort, fun, and innovation in all the shoes that they create.

Soupergirl (Local Restaurant)

https://thesoupergirl.com/souper-partners/

Challenge: To put it simply, this business is aware of the complexity and issues found in major food company systems and the waste that is a notable factor from both consumers and manufacturers. Concerning plastic ,water, food production and more, there are a lot of areas that need to be addressed in order to benefit the environment instead of harm it.

Environmental Principles and solutions to the problem:

Some practices that this business is taking:

- All food waste is minimized.
- Composting is used via a partnership with a company called Compost Cab.
- They use renewable energy via a partnership with
- Soupergirl is now certified Plastic Neutral by rePurpose Global.
- Sourcing ingredients from farms that are organic and using best practices on their land.
- Soupergirl has developed a custom soup for DC Food Project's recipients. The Red Bean-Sweet Potato-Rice soup is packed with nutrients, protein, fiber, and flavor to help fight food insecurity.

The mission of Soupergirl is: "Our food system is broken. We're trying to fix it. Soupergirl believes in real, responsible food. We support our local farming community and fight food waste. We compost."

Savory Institute: Ranching methods that regenerate land

https://savory.global/

Challenge: Raising of livestock in modern times results in degradation and desertification of land and the need for large inputs of food and energy from the outside.

Environmental Principles and solutions to the problem: Large, grazing herbivores have been key components of most grassland ecosystems on Earth by fitting in as a symbiotic, usually migratory part of the landscape. Savory Institute researches and demonstrates methods by which grazing herbivores can become part of the solution of building soil health rather than depleting it.

Holistic Management restores grasslands. Healthy grasslands lead to carbon sequestration, drought resilience, food security, and financially viable communities. The Savory Institute believes the solution to pressing world issues is that management of our land, livestock, and people must be viewed holistically. One key to this management is keeping herbivores moving across the landscape so instead of compacting soil and eating all available desirable plants, they “churn” the soil briefly and leave behind a mix of plants that can regrow after they pass.

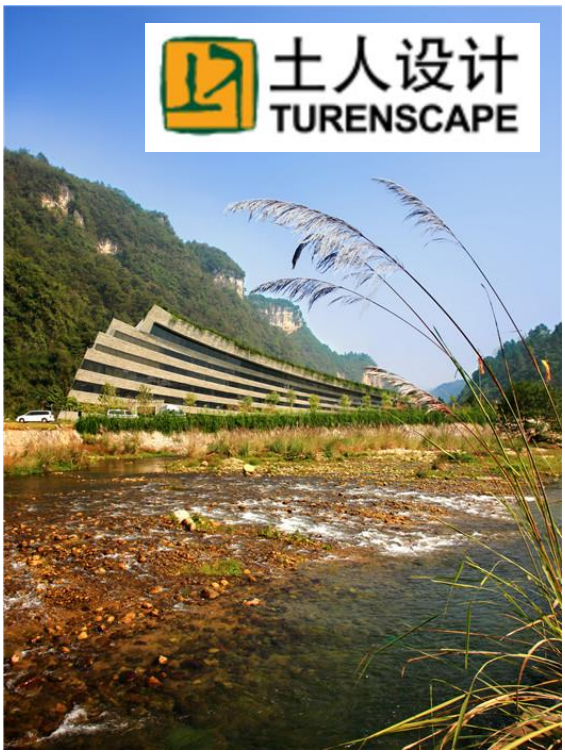
The mission of the Savory Institute: To facilitate the large-scale regeneration of the world’s grasslands and the livelihoods of their inhabitants, through holistic management.

Turenscape: Architecture / Landscape Architecture (Chinese)

https://www.turenscape.com/

Challenge: Buildings and alteration of the landscape are often sources of great pollution and energy use. How can our landscapes and buildings be envisioned and built to have the least negative impact and also restorative effects on living systems? e

Environmental Principles and solutions to the problem: Turenscape's whole philosophy is to "create the harmony between land and people and to create sustainable environments for the future." The company harnesses modern technology and science, *but uses these in the service of traditional Chinese views of the relationship between human beings and nature.* In fact, "Tu-Ren" is two Chinese characters: "Tu" means dirt, earth, or land while "Ren" means people**. Thus, an important part of the scientific knowledge that Turenscape draws from is ecology and Earth System Science. Visit their website to find out more about the company's philosophy.**



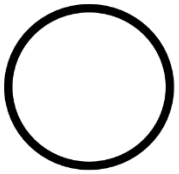
Turenscape was founded by Doctor and Professor Kongjian Yu. Yu defines landscape architecture as the art of survival, and tries to protect and reconstruct ecological infrastructure[5] as holistic nature-based solutions to provide ecosystems services for cities. **His pioneering research on "ecological security patterns,"negative planning" and "sponge cities" have been adopted by the Chinese government as a guiding theory for national land use planning and urban ecological restoration.**

Pattie Firestone (Retired): Sculpture

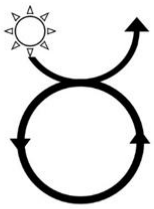
http://www.pattieporterfirestone.com/

Challenge: There is a need for greater understanding of environmental principles, especially the flow of energy. Often, the arts are the avenue through which people first open up to learning about important topics, and artists can be a big force in helping our society understand environmental principles and feelings of connectedness.

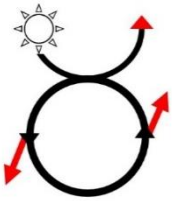
One example of Patty Firestone's sculptural rendition of environmental principles: Potomac Overlook Regional Park in Arlington, VA, commissioned Patty to do a sculture to convey environmental principles they stressed in Earth System Science programs. These principles included those shown diagrammatically, below. Patty created a sculpture called "Gaian Energy" that conveyed these principles in an attractive and interactive way. See her website to find more examples of sculptures conveying the flow of energy.



The Circle of Life

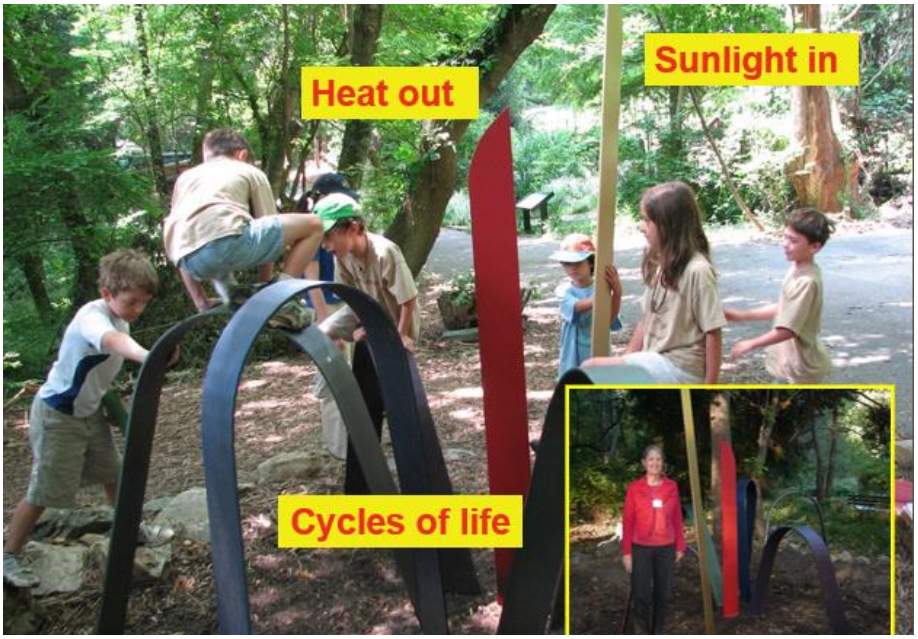


The Sun's energy turns the Circle of Life



Heat is lost with every transformation of energy

Earth is Alive – One Living System



Artist statement: Using the simple vocabulary of metal lines in space, I create three-dimensional objects anchored in the earth yet breaking away from their gravitational limitations. Searching to comprehend nature's invisible language, I use line, rhythm and movement to express energies connecting us with the earth.

Sezane:(Fashion Industry)

https://www.sezane.com/en/about/behind-the-label

Challenge: The fashion industry has a very large negative impact on the environment. It is the second largest polluter in the world, just after the oil industry, and environmental damage is increasing as the industry and rate of throughput of the products grows. The apparel industry accounts for 10% of global carbon emissions.

Environmental Principles and solutions to the problem:

- 100% of Sezane's locations are powered by renewable energy and last year they reduced the carbon footprint of a Sézane garment by 22%.
- A goal of zero waste production
- Currently, ¾ of their material is eco-friendly and four of their lines are 100% eco-friendly.
- Use of recycled packaging
- Ethical labor standards

See this independent review: Is Sézane A Sustainable Fashion Brand? | Curiously Conscious

The mission of Sezane is: create high quality fashion made to last forever. With its organic, efficient, and sustainable practices, Sezane pushes forward by leaving a safer environment using principles sure to make a positive impact.

Vancouver Police Department, Vancouver, Canada

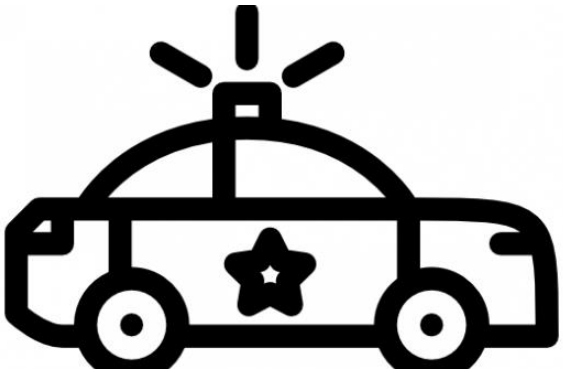
See: Green Policing: Recommended Actions for an Environmental Sustainability Plan for the Vancouver Police Department (ubc.ca) **and** Green Policing (ubc.ca)

Challenge: Many cities, including Vancouver, Canada, featured here, have developed sustainability goals. However, implementation of these goals is often lacking in part because tangible goals are not set for individual departments.

Environmental Principles and solutions to the problem: The report featured here, includes specific information on climate change including specific effects that changes in temperature and weather patterns are likely to have on Vancouver. With this as a core, the following actions were recommended:

Actions were targeted to address 4 objectives:

- Carbon footprint: Reduce the carbon footprint of the VPD. Waste:
- Reduce the amount of waste produced by the VPD. Procurement:
- Pursue environmentally friendly and ethical procurement.
- Leadership: Establish the VPD as a leader in green policing.



Actions were organized according to 4 strategies.

- Awareness and green behaviour:
- Promoting awareness of sustainability, educating employees on best practices, and encouraging sustainability in everyday actions.
- Green fleet: Purchasing fuel efficient and electric vehicles and optimizing fleet and vehicle management to reduce fuel consumption. Sustainable operations:
- Embedding sustainable practices into every level of the VPD. GREEN POLICING: RECOMMENDED ACTIONS FOR A VPD ENVIRONMENTAL SUSTAINABILITY PLAN 4
- Zero unnecessary waste: Integrating a zero-waste approach to procurement, administration, and – where appropriate – operations.

The purpose statement of the University Of British Columbia's reports (see top of page) is: This report recommends actions that can be taken to improve the environmental sustainability of the Vancouver Police Department (VPD). A broad scan of the literature was conducted to identify best practices and assist in the development of a long-term environmental sustainability plan for the VPD that aligns with the corporate sustainability goals of the City of Vancouver (COV). A total of 50 actions were identified.

Polyface Farm, Swope, Virginia: Farming

https://www.polyfacefarms.com/

Challenge: Modern farming practices are often fossil-fuel intensive and otherwise stress on living systems. They also have tended to make farming more difficult for medium and small, family farms that have traditionally been the backbone of rural areas in America.

Environmental Principles: Polyface Guiding Principles are really "environmental principles" in which human beings are seen as part of the living system. They include:

TRANSPARENCY: Anyone is welcome to visit the farm anytime. No trade secrets, no locked doors, every corner is camera-accessible.

GRASS-BASED: Pastured livestock and poultry, moved frequently to new "salad bars," offer landscape healing and nutritional superiority.

INDIVIDUALITY: Plants and animals should be provided a habitat that allows them to express their physiological distinctiveness. Respecting and honoring the pigness of the pig is a foundation for societal health.

COMMUNITY: We believe in integrity food. We should all seek food closer to home, in our foodshed, our own bioregion. This means enjoying seasonality and reacquainting ourselves with our home kitchens.

NATURE'S TEMPLATE: Mimicking natural patterns on a commercial domestic scale insures moral and ethical boundaries to human cleverness.

EARTHWORMS: We're really in the earthworm enhancement business. Stimulating soil biota is our first priority. Soil health creates healthy food.

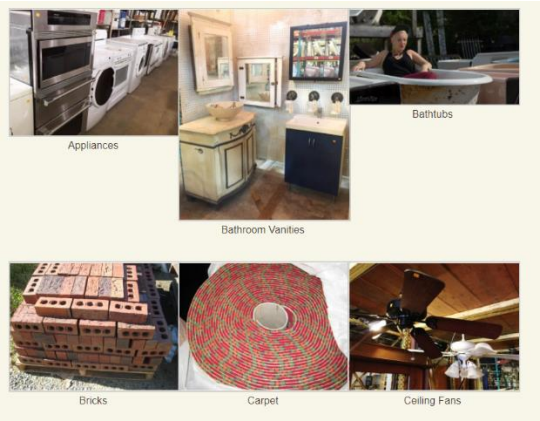
See Principles | Polyface Farms for other very important principles around their business operation

The mission of Polyface Farm is: "to develop emotionally, economically, environmentally enhancing agricultural enterprises and facilitate their duplication throughout the world." The Salatins continue to refine their models to push environmentally-friendly farming practices toward new levels of expertise.

Community Forklift: salvage/sale of materials destined for landfill

https://communityforklift.org/

Challenge: building materials make up approximately 30% to 40% of our nation's solid waste stream! Then, we buy brand new materials. To produce these new building supplies we must harvest, drill, mine, and transport natural resources across continents, causing serious environmental damage. Manufacturing the items and transporting them to stores uses even more fossil fuel, releasing carbon into the atmosphere.



Environmental Principles and solutions to the problem:

- **Help create a circular economy – Community Forklift turns the waste stream into a resource stream. Since 2005:**
  - Recovered an estimated $45 million of building materials in the DC metro region.
  - Supplied materials to 20,000 homeowners, businesses, nonprofits, and historic restoration projects.
  - Provided over $500,000 in free materials to neighbors in need and local nonprofits since 2011.
- Community Forklift has created a lot of green jobs and economic activity. 30 jobs at the site and additional jobs through promotion of deconstruction of buildings, etc.

The mission of Community Forklift is: Community Forklift lifts up local communities by making repairs affordable, reducing waste, promoting reuse, and creating green jobs.

Green Eyed Motors: Car Sales

https://www.greeneyedmotors.com

Challenge: The internal combustion engine produces air pollution that is changing the climate.

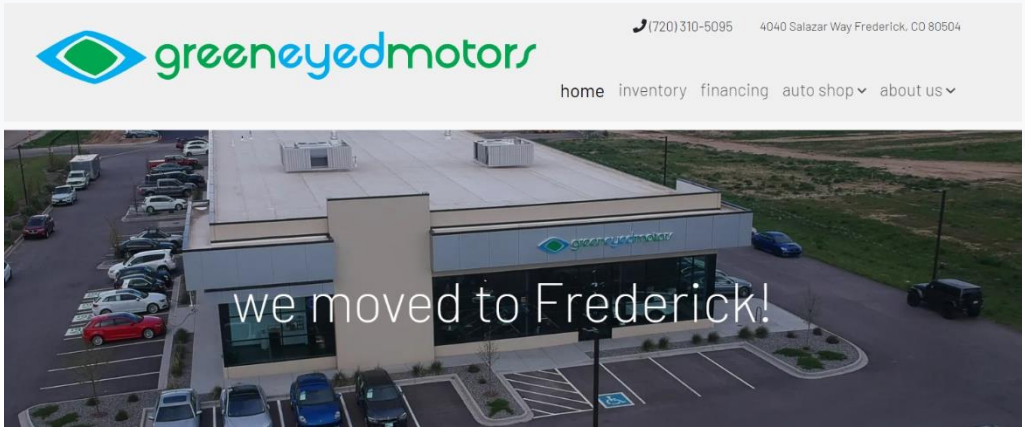
Environmental Principles and solutions to the problem:

- **Use of electric and other alternative fuel vehicles that do not result in as much carbon being deposited in the atmosphere.** Green Eyed Motors focuses on selling clean, green used cars. It wa named the first pre-owned Gold Status EV Dealer in Colorado.

- **Properly serviced cars produce the fewest pollutants** - Green Eyed Motors' service team offers Castrol Edge Bio-Synthetic® motor oil which is 25% plant oil derived from renewable sources and reduces metal-to-metal contact across a range of different driving speeds. This oil also decreases the chance for dirt and grime to build up so your engine burns cleaner.

- **Operations of the business itself, should be part of addressing the challenge –** Green Eyed Motors is PACE Certified and in 2018 diverted over 91% of their waste from the landfill by composting and recycling; they have installed LED lighting to reduce energy consumption; they purchase supplies from fair trade and socially responsible vendors. We only use natural, sustainable, or recycled products.

- **Work with business partners to address the challenge** – Green Eyed Motos promotes Enel x JuiceBox for EV charging solutions for homes.



The mission of Green Eyed Motors: Luke Walch started Green Eyed Motors because he wanted to make a change in the world. he wanted to provide the community with an eco-friendly car dealership to help end air pollution. we're a locally owned and environmentally aware company with a focus on selling clean, green used cars. we will take care of you from the original sale to the service and maintenance of your new vehicle.

Ecovative: Material Manufacturing (to replace food and plastic)

https://ecovativedesign.com/

Challenge: Plastics and animal agriculture have many documented negative impacts on ecosystems that adversely affect our lives. See company's interpretation of this at Why — Ecovative Design

Environmental Principles and solutions to the problem:

- Reduce toxicity of materials and energy needed to produce materials - Ecovative developed a process to produce a variety of products from fungal mycelium using agricultural waste products as feedstock.

- Produce materials that are biodegradable – these mushroom materials are organic and compostable and replace materials that are non-recyclable.

- Minimize infrastructure needed to produce useful materials – these mushroom materials can be used to produce a variety of products, including building materials, insulation, packaging and food products. All can be produced in a similar setting called a "mycelium foundry."

Atlast™

MycoFlex™

MycoComposite™

The mission: At Ecovative, we are passionate about sustainability. That's why we're working with nature to replace unsustainable plastics and foams with natural composites. Using innovative new materials and radical new technologies, our products perform at least as well as current state-of-the-art synthetics, but at a lower cost to both you and the environment.

John Todd Ecological Design: Wastewater treatment

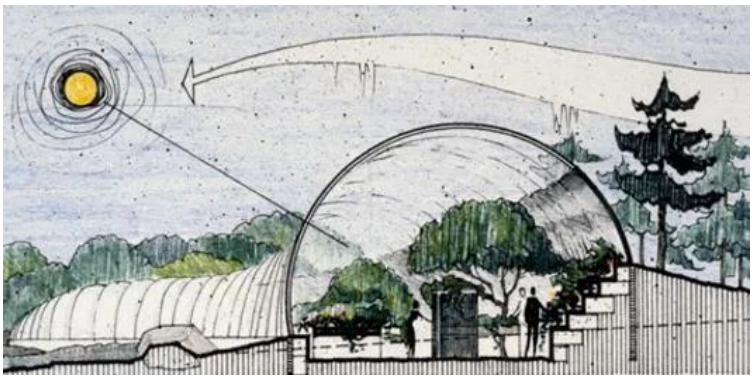
https://www.toddecological.com/

Challenge: Conventional water and wastewater treatment uses large amounts of energy and result in water and land pollution

Environmental Principles and solutions to the problem: Wetlands with thick vegetation naturally purify contaminated water using biological activity and sunlight. So:

- John Todd and colleagues developed "living machines" - self-contained treatment systems that use diverse communities of bacteria and other microorganisms, algae, plants, trees, snails, fish and other living creatures in a series of tanks.
- Greenhouse waste treatment plants clean water from sewage. Bacteria consume the organic sewage and turn ammonia into nitrates. The nitrates are used as food for algae and fertilizer for duckweed. Zooplankton and snails consume the algae. Fish eat the zooplankton. Floating plants soak up the leftovers. Bulrushes, cattails, and water hyacinths render the toxins harmless. Trees absorb heavy metals. The byproducts are decorative plants and minnows, both of which are sold. By enclosing such a system within a greenhouse, it becomes possible to do this in the colder northern climates as well.

Above is from John Todd (Canadian biologist) - Wikipedia



Ecological design uses sunlight, biodiversity and natural processes to create clean water with the byproducts of natural gases and biological material.

The mission: Building the next generation of natural systems for the treatment of wastewaters and the remediation of degraded water bodies

FROM THE BLOG http://richardlouv.com/blog/want-a-nature-rich-career-11-new-jobs-for-a-nature-smart-future (FROM RICHARD LOUV ON MARCH 25, 2014)

Want a Nature-Smart Career? 11 New Jobs for a Nature-Rich Future (and for Right Now)

Want to make a decent living and a better life? Here's one way. Get a job – a nature-smart job. Or better yet, be a nature-smart entrepreneur. By that, I don't mean a career devoted only to energy efficiency. That's important, but there's a whole new category of green jobs coming. These careers and avocations will help children and adults become happier, healthier and smarter, by truly greening where people live, work, learn and play.

Here are some exciting careers that you—and your kids— may never have considered: [the following has been condensed to a list. See blog to read details.]

1. Nature-smart workplace architect or designer.
2. Restorative employee health and productivity specialist.
3. Nature-smart residential builder.
4. Nature-smart yard and garden specialist
5. Urban wildscaper
6. Outside-In decorator
7. New Agrarian.
8. Health care provider
9. Green exercise trainer
10. Natural teacher.
11. Bioregional guide.

The list of possible careers can go on. Stream restorers, law-enforcement officials who use nature for crime prevention and improved prison recidivism, specialists in nature-based geriatric services.

Once the entrepreneurial spirit kicks in, it's easy to start thinking of products and services. **And when people begin to consider the career possibilities of human restoration through nature, their eyes light up: here is a positive, hopeful view of the human relationship with the Earth, a way to make a living and a life.**

The Natural Funeral: Funeral and Burial

https://www.thenaturalfuneral.com/

Challenge: Burying our dead creates a big impact on the health of the environment. ourvuig a big toll. Toxic chemicals such as formaldehyde, phenol, methanol, and glycerin used in embalming, burial, and cremation process leach into the air and soil. The amount of materials used is huge – for instance, the amount of wood used for caskets each year is enough to build 4.5 million homes! Cemeteries take up ever-increasing amounts of land and maintaining them is energy and water intensive.

Environmental Principles and solutions to the problem: The Natural Funeral addresses the above challenges with practices such as the following:

- **No embalming** They use only safe, biodegradable products that will be part of the natural breakdown process of the body.
- **Natural or green burial** - a simple, direct return to the earth with a biodegradable container and without a concrete, plastic or fiberglass vault covering the grave opening. The gravesite is in a natural setting with sustainable landscaping.
- **Conventional Cremation is offered, but** without embalming and with a biodegradable container.
- **"Water Cremation" (alkaline hydrolysis -** which turns a body into nutrient-rich, pathogen-free, fertilizer and bone cremains for scattering or burial.
- **Burial in a conventional cemetery, but** without embalming and with a simple shroud or biodegradable casket.

The Natural Funeral wishes to "minimize the impact of our final footprints at end of life. Until the Civil War, funeral practices in the U.S. were simple and in harmony with the earth. Families were also at the center of their loved one's care".

SLOW TRAVEL MOVEMENT; Travel Industry

Example Companies: https://www.smartertravel.com/art-slow-travel/ and https://likewhereyouregoing.com/slow-travel/

Challenge:

Traveling requires a lot of energy and, often, the use of large amounts of disposable materials, building of new buildings and facilities to accommodate expanded travel, etc. At the same time, there is a recognized need/desire for travel to be more relaxing and fulfilling.

Environmental Principles and solutions to the problem:

- **Reduce greenhouse gasses**
  - Slow travel reduces overall transportation needs per unit of time because one is spending more time in each place. And, one long, slow trip might replace several quick trips to different destinations.
  - Also slow trips are conducive to travel by rail, boat, bicycle and other means that consumer less energy.
- **Reduce impact on environment in locations around the world**
  - Slow travel often stresses connecting to the community and its culture of where one visits. Thus one is more conscious of creating fewer negative environmental and social impacts.
  - Slow travel is also more likely to include stays at locally owned accommodations, including homes, thus reducing the need for additional hotels and travel connections.
- **Slowing down rather than speeding up leads to reduced impacts in general and more benefits for the traveler including:** feeling more connected to places you visit, simply unwinding and not feeling rushed with a jam packed itinerary; finding hidden, local gems that are often missed by most other tourists.

LIKE Where YOU'RE GOING...

UNIQUE TRAVEL ITINERARIES + DESTINATION GUIDES

A mission: Alyssa, owner of "Like Where You're Going" writes: On my site you'll find useful, practical and authentic travel information. I've written tons of destination guides, sample itineraries and ultimate travel lists to fuel your wanderlust. I'm not an 'influencer.' I'm a real person who loves to plan, has a knack for finding hidden gems and enjoys living in the moment and not living for fake internet likes.

Nitricity - Electrified and distributed nitrogen fertilizer production

https://www.nitricity.co/

Problem: Today's global supply of fertilizer is fueled by coal and natural gas and travels through a complex supply chain to farms around the world. Fertilizer distribution is a hazardous and expensive process involving substantial storage and transportation infrastructure. Costs are high, and farmers are forced to make decisions based on prices rather than plants. Entrenched supply chains often miss developing economies, so nitrogen is not available where it is needed most. (from website)

Environmental Principles: 1) Nitrogen makes up 79% of the atmosphere; 2) Nitrogen is crucial for plant growth and thus needed for crops. However, excess nitrogen causes major water pollution problems; 3) an estimated **11-15%** of greenhouse gases come from agriculture and about a third of this is nitrous oxide (N2O), which largely comes from nitrogen fertilizer

Solutions: Nitricity produces nitrogen fertilizer at or near the point of use. Our technology has the potential to produce cost-effective fertilizer to both established farms and developing markets, while minimizing the environmental impact of the production, distribution, and application of nitrogen fertilizers. (from website)

GSK (GlaxoSmithKline) - Global Healthcare Company

https://www.gsk.com/en-gb/responsibility/environment/

Challenge :The Healthcare industry tends to focus its concern mainly with its patient health, not considering the impact that attending to human health has on the environment. Our present healthcare system is very material and energy intensive and has big impacts on the environment. How can we reduce healthcare's dependence on such high material and energy inputs? Some companies are starting to examine these questions.

Environmental Principles and solutions to the problem: GSK has created sustainability goals to target the climate and nature with a "Net zero impact by 2030" and "Net positive impact by 2030". Some specific goals were:

- Net zero emissions across all operations by 2030
- 100% renewable electricity by 2025
- 100% sites achieve good water stewardship by 2025, reducing overall water use by 20%
- 90% operational waste reused, recycled, downcycled, or incinerated with heat recovery by 2030
- 100% materials sustainably sourced and deforestation-free by 2030

GSK's **mission**: **"We are a science-led global healthcare company with a special purpose: to help people do more, feel better, and live longer."** GSK's Environmental statement: **"Protecting and restoring the planet's health to protect and improve people's health"**